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January 6, 1997

Midwest Ridge-Till Conference Will Be Jan. 30 at Mankato

Several ridge-till farmers who have used new ideas successfully will share their experiences during the upcoming Midwest Ridge-Till Conference in Mankato. The conference will be Jan. 30 at the Mankato Civic Center, and is designed for all interested Midwest ridge-till farmers.

The farmers will describe their experiences with twin-row corn production and corn planted in 20-inch rows in a ridge-till system. The farmers are from Minnesota, Iowa, Nebraska and Ohio. Other topics include using low rates of herbicides and control of perennial weeds in ridge-till. A total of nine difference topics will be covered in concurrent sessions.

Conference registration begins at 8 a.m. and the program concludes at 3:30 p.m. For those who wish to stay overnight, the Holiday Inn in Mankato has set aside rooms at a special rate. For more details on the conference, contact Tracey Benson at (612) 624-3708 or (800) 367-5363.

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Web,DTN,V2,C4,F4,X2

NESP5415

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



NEWS INFORMATION

MINNESOTA EXTENSION SERVICE

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6/27/97
UNIVERSITY OF MINNESOTA

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January 6, 1997

Experience April in historic Washington, D.C.

The splendor of our nation's capital will be the focus of a University of Minnesota Wonders of Washington tour this spring. The university's Minnesota Extension Service will sponsor the six-day journey.

Participants can learn more about our national heritage while taking in the April beauty of the District of Columbia. Wonders of Washington highlights include various museums of the Smithsonian Institution, the U.S. Capitol and Supreme Court, the White House, the Jefferson and Lincoln Memorials, the Washington Monument, the Vietnam and Korean Veterans' Memorials, Ford's Theater and the Kennedy Center, and Arlington National Cemetery.

The Wonders of Washington tour will depart on April 26 and return on May 1. The tour has been expanded from previous years to six days and five nights. But the cost is only slightly more at \$989 per person. This includes round-trip airfare, lodging at an historic downtown bed and breakfast inn, all breakfasts and three dinners, admissions, tour guide and a 3-hour dinner cruise on the Potomac.

For more information, contact Leon Meger, Minnesota Extension Service, Extension Special Programs, 405 Coffee Hall, 1420 Eckles Ave., St. Paul, MN 55108-6068; telephone (612) 625-2722 or (800) 367-5363; fax (612) 625-2207.

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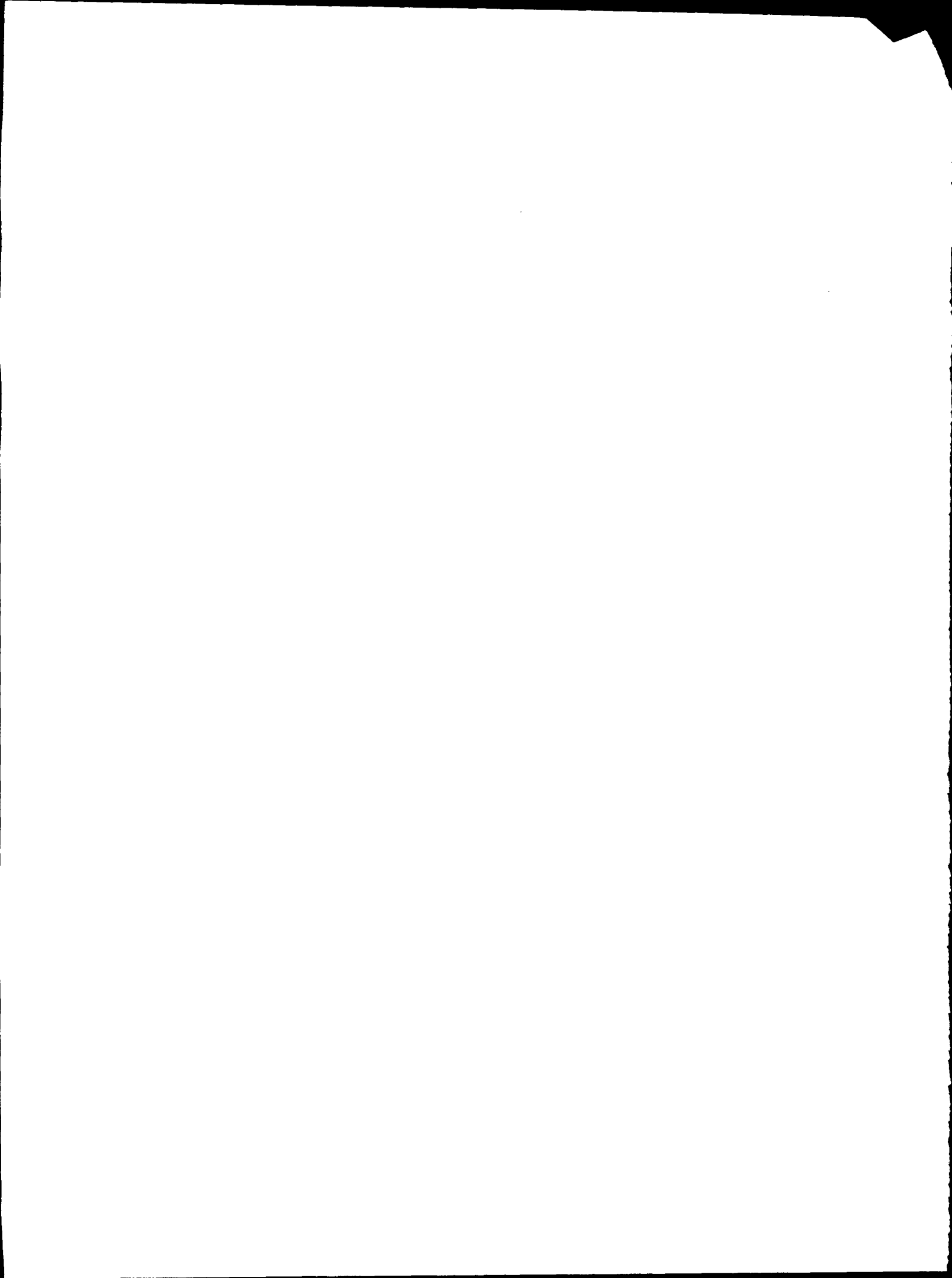
Web,V3,V4MN,V5,V8,A1,A3,E2,H3,N1,T1

NESP5414

Source: Leon Meger, (612) 625-1214, lmeger@mes.umn.edu
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(page 1 of 1)





MSC
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January 8, 1997

Kids can prevent foodborne illness by practicing food safety

Kids today have more independence than ever in fixing snacks for themselves or helping to prepare family meals. Knowing how to handle food safely can help youth avoid food-borne illnesses that can come as a result, according to Bill Schafer, food technologist with the University of Minnesota's Extension Service.

Kids often experience flu-like symptoms, such as vomiting or diarrhea. However, these symptoms do not necessarily come from the flu. They could sometimes come from bacteria or viruses in the food they eat. "These could be the result of food that's been contaminated or handled improperly," says Schafer.

Schafer says that kids should know that there are both good and bad kinds of bacteria in food. Good bacteria are desirable because they produce alluring flavors and sensory qualities in such foods as cheese and pickles. They also help prevent bad bacteria from setting up shop by producing acids and other compounds which may inhibit illness-causing pathogens.

But you can't rely on the good bacteria alone. Many foodborne illnesses occur due to eating food which has been contaminated by human hands or from other contaminated foods. It is especially important to avoid contamination from raw foods, which are a potential source of bacteria and viruses, to food you're about to eat.

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Washing food and the hands and utensils that touch it is an important element of food safety. Encourage your children to wash their hands thoroughly after they go to the bathroom or handle pets and before they make snacks.

It is also necessary to restrict the growth of harmful bacteria. This can be done by keeping hot food hot and cold food cold. Raw meats, poultry, milk, and fresh fruit and vegetables that have been cut or sliced are most susceptible to pathogen growth or survival.

For example, one of your children drinks out of a milk carton and doesn't put it back in the refrigerator. Another one of your children comes along and wants to drink out of the same carton after it has been sitting on the counter for half of the afternoon. What should he or she do?

First, they should not drink the milk. If the first child was carrying any contaminated bacteria, that bacteria will have had time to grow, and the virus may be transferred to the second child. Instead, they should dispose of the milk, and the children should be reminded not to drink directly from the carton or leave it out of the refrigerator. As a general rule, milk and other types of perishable food should not be consumed if left out at room temperature for more than two hours.

Youth need to be particularly aware of these safe food-handling practices because they are considered a high-risk group. "The effects of foodborne illness can be more life threatening for kids than for adults," says Schafer.

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Web,V4,V5,V7,V8,V9,A1,A4,C1,F7,H2,H3,P1,Y1

NAGR5416

Source: Bill Schafer, (612) 624-4793

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January 10, 1997

Good hay storage, feeding management help stretch winter feed supply

How you store and feed hay can make a big difference in how long your hay supply lasts this winter. Overall short supplies have been driving up hay prices in many areas, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota's Extension Service.

Storage can have a lot of impact on quality and quantity, especially with big round bales, says Kjome. He cites information from Iowa State University extension crop specialists Jim Jensen and Al Seim. "They concluded from a study that even when the big bales are covered or stored inside, curing loss of hay dry matter amounts to five percent," he says. "They also found that hay stored outdoors is subject to additional weather losses. Dry matter weight losses of 10-25 percent were common. The more fibrous, weathered hay can be as much as 25 percent lower in feeding value."

Kjome cites another Iowa State study showing the value of binding bales with plastic net and storing on crushed rock. This practice reduced weathering and digestible dry matter losses. Hay in the outer 12 inches of the round bale mass, which represents 66 percent of the volume, had a higher nutritive value.

Weathering occurs on the tops and sides of bales where they touch moist ground. "Research in Indiana has shown that round bales stored on crushed rock lost only 11 percent of their original bale weight, compared with an average of 23 percent for bales

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stored on the ground," says Kjome.

A Missouri study cited by Kjome showed a benefit from closer twine spacing. The hay in the study received 10.81 inches of rain. Bales with a four-inch twine spacing and a twine cost of 33 cents per bale had only 16 percent spoilage. This compared with 38 percent spoilage for bales with an eight-inch twine spacing and a twine cost of 21 cents per bale.

Kjome passes along the following guidelines compiled by Iowa State specialists on how to reduce storage losses with big round bales:

--Try to bale at about 20 percent moisture and make dense, evenly formed bales.

--If storing bales outside, use a well-drained site. Don't allow rounded sides of bales to touch. Flat ends can be butted together with little increase in storage loss.

--Don't stack big round bales unless you cover them. Large, deep stacks of wet, heating hay can lead to spontaneous combustion, particularly when stored inside. If large round bales are to be stacked and covered or stored inside, consider moving them to the storage site about a week after baling to allow some loss of moisture and heat.

Kjome says you can reduce feeding losses by limiting animals' access to the bales. One way is to use a bale rack. If you don't use a rack, you can limit the supply of hay you feed. "A Purdue study showed cattle would refuse or waste about five percent of hay fed in a rack," says Kjome. "However, they would refuse or waste about 11 percent when a one-day supply was fed without a rack. One-fourth more hay was needed when a four-day supply was fed without a rack than when a one-day supply was fed.

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Web,DTN,V2,B1,D1

NAGR5419

Source: Dave Kjome, (507) 280-2869

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January 10, 1997

<http://www.mes.umn.edu/Documents/news.html>

'Minnesota Dairy Development Guide' available from U of M

The "Minnesota Dairy Development Guide," a new 240-page resource designed to help dairy producers strengthen their operation, is now available by mail from the University of Minnesota.

The guide emphasizes business management skills and is designed for dairy operations of all sizes. It contains sections on planning, business management, financing, facilities, permitting, labor, youngstock, herd health and grazing.

"It is impossible to provide a complete set of dairy information and resources," says David Weinand, Dairy Initiatives coordinator at the university. "But we have attempted to assemble a base set in this guide to lead dairy producers to many other additional resources. We have worked hard to assemble the best balance of current dairy philosophy, research and technology to ultimately increase bottom-line profitability and quality of life."

Cost of the guide is \$25 per copy, which includes mailing cost. To order, send a check payable to the University of Minnesota to David Weinand, Dairy Initiatives Coordinator, University of Minnesota, 126 Peters Hall, 1404 Gortner Ave., St. Paul, MN 55108.

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Web,DTN,V2,V4MN,D1,X3

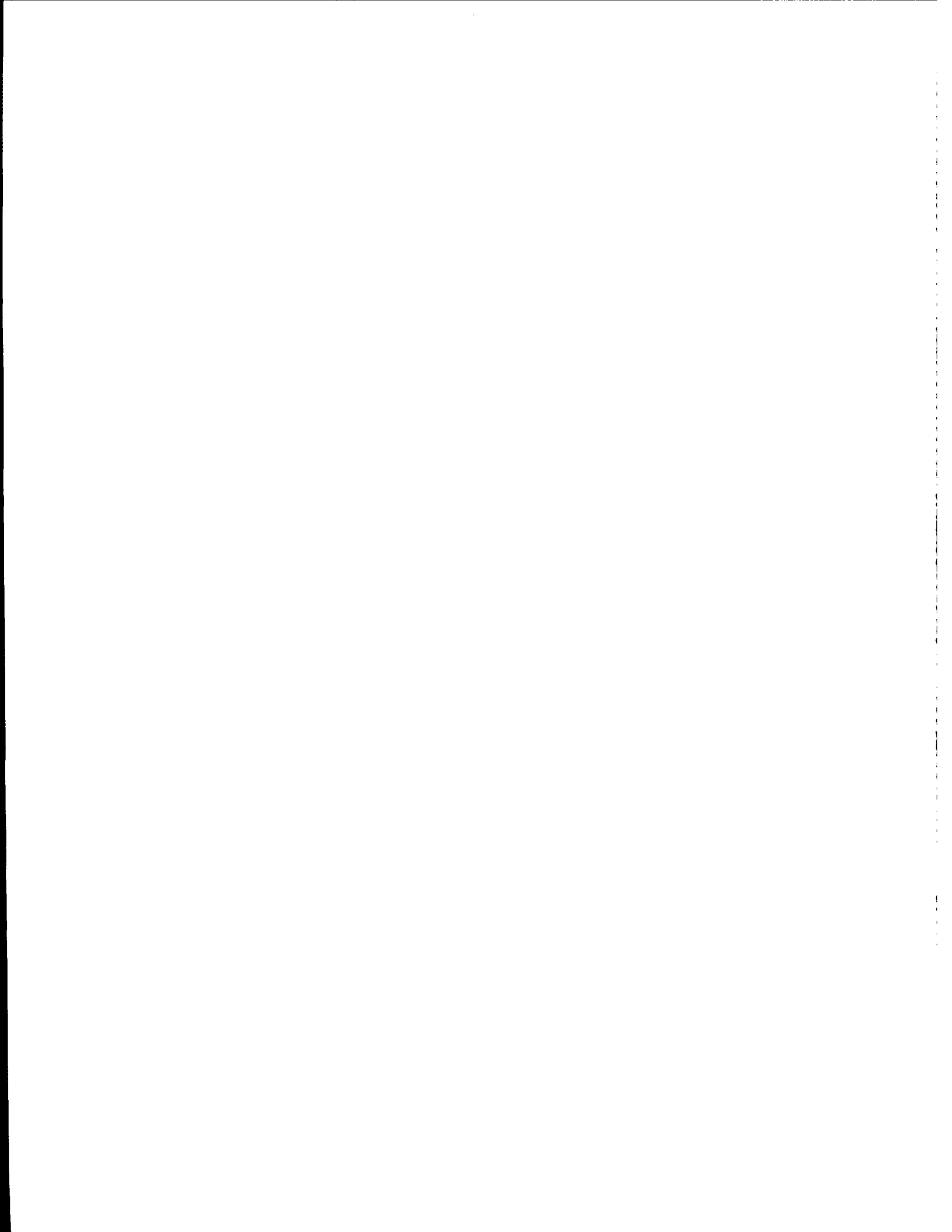
NAGR5421

Source: David Weinand, (612) 625-9757

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(Page 1 of 1)





MSC
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January 10, 1997

Dairy bull calves have profit potential

Dairy producers should be able to make some money by selling bull calves at two weeks of age rather than one to three days of age. The profit potential at current prices is \$35 to \$45 per head, say Dave Kjome and Jim Linn, dairy scientists with the University of Minnesota's Extension Service.

"Currently, dairy producers are receiving little or nothing for one- to three-day old bull calves," say Kjome and Linn. "However, healthy bull calves at two weeks of age currently sell for 65 to 85 cents per pound, according to staff members of sales commission firms. An average Holstein bull calf will weigh about 110 pounds at two weeks of age and sell for about \$82.50. The cost of rearing for two weeks will be about half the gross sale price. So selling bull calves at two weeks of age leaves a profit margin of \$35 to \$40.

Some of the dairy scientists' cost estimates for each calf are \$18.48 for milk or \$12.60 for milk replacer from day two to day 15, \$2.25 for bedding, \$19.95 for labor, \$1.00 for the beef check-off, and \$6.50 for sales commission and yardage fees.

To realize even more profit from rearing bull calves, Kjome and Linn have the following suggestions:

- 1) Be sure bull calves receive the same care and high-quality colostrum at birth as heifer calves. This will reduce or eliminate health care costs.

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- 2) Store and feed excess colostrum milk to bull calves. The average Holstein cow will produce about 165 pounds of colostrum and non-salable milk during the first three days (six milkings) after freshening. This is enough to feed a calf for 15 days.
- 3) Store and feed non-salable milk from treated and mastitic cows. This milk can be stored in plastic garbage cans or metal cans lined with a plastic bag. The first milk after treatment should not be fed directly. Dilute it with milk from subsequent withheld milkings. Do not store it in the milk house and be careful of antibiotic residues in the calves if they are sold directly for meat.

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Web,DTN,V2,A2,D1

NAGR5420

Source: Dave Kjome, (507) 280-2869

Jim Linn, (612) 624-4995

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January 13, 1997

<http://www.mes.umn.edu/Documents/news.html>

Midwest Ridge-Till Conference will feature Iowa farm manager

Larry Neppel of Iowa Farms Associates at Fort Dodge, Iowa, will be the featured speaker for the 1997 Midwest Ridge-Till Conference at Mankato, Minn. The conference will be Jan. 30 at the Mankato Civic Center.

The title of Neppel's presentation is "Yes, People Are Still Ridge-Tilling." A farm management specialist in the Fort Dodge area, he is an enthusiastic supporter of the ridge-till farming system. He has a first-hand knowledge of the system and the profits that go with it.

The program also features several concurrent sessions in which ridge-till farmers who are working with new ideas will describe their experiences. Topics will range from cost-effective weed control to planting ridge-till corn in 20-inch rows. Farmer-speakers will come from Minnesota, Iowa and Nebraska. Exhibitors who market products designed especially for the ridge-till system also will be on hand.

The conference begins with registration at 8 a.m. and runs until 3:30 p.m. The Holiday Inn in Mankato has set aside rooms at a special rate for those attending the conference. For information on registering for the conference, call (800) 367-5363 or call George Rehm at (612) 625-6210.

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Web,DTN,V2,V4,C4,F4,X2

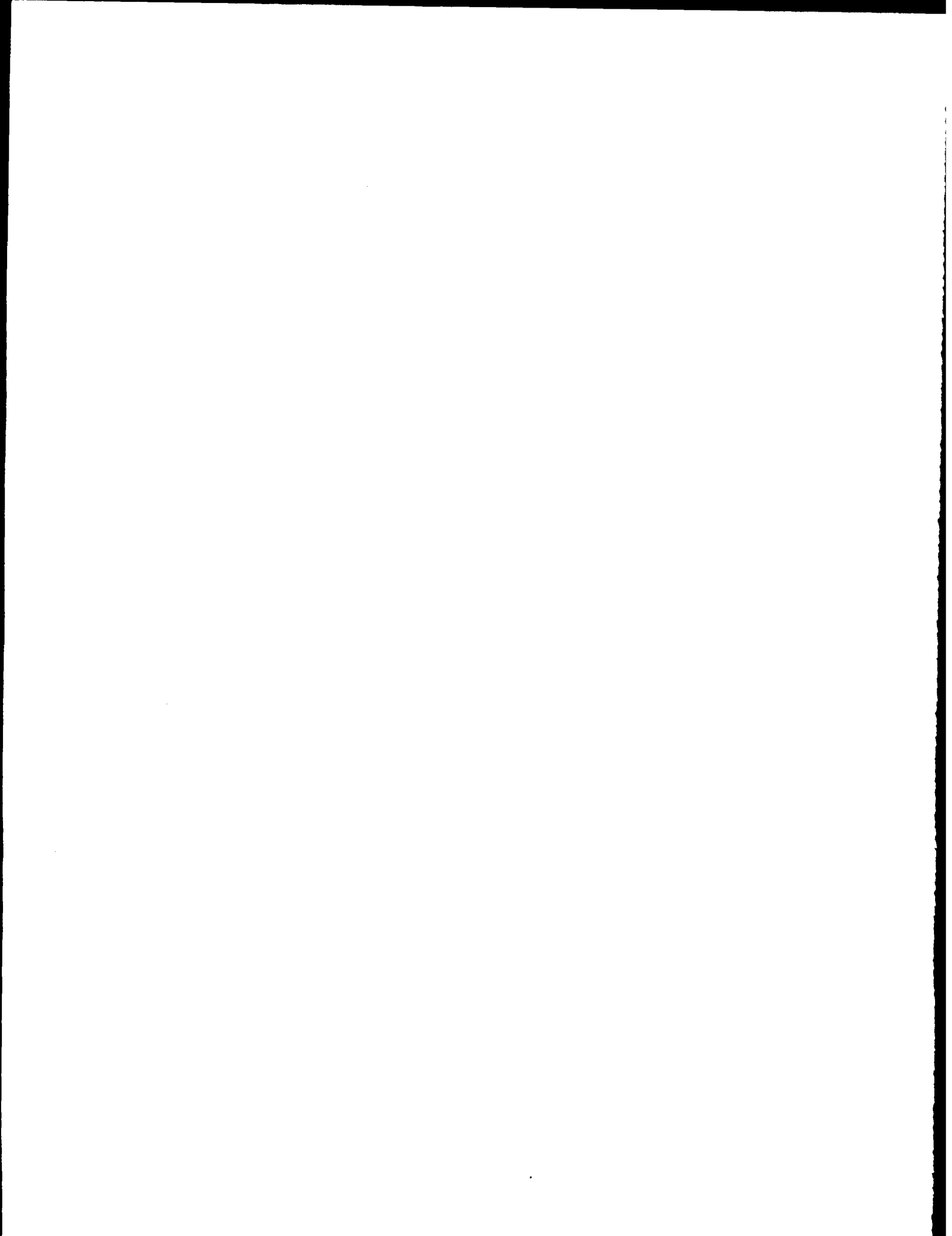
NAGR5424

Source: George Rehm, (612) 625-6210

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(Page 1 of 1)





January 13, 1997

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Adopt strategies to raise dairy herd resistance to infectious diseases

Infectious diseases can limit the productivity of a dairy herd in numerous ways. They may lower milk production, reduce milk quality, impair reproduction, reduce calf survivability, or cause chronic debilitating infection or even death.

Jerry Olson, veterinarian with the University of Minnesota's Extension Service, says one important tactic in the battle against infectious disease is to raise the herd's level of resistance. He recommends the following strategies to accomplish this:

1. Develop a strategic vaccination program with your herd veterinarian.
2. Reduce environmental stress by:
 - providing clean, dry, comfortable, housing for all animals on the farm;
 - using cooling strategies in summer, windbreaks in winter.
3. Reduce nutritional stress by:
 - providing a transition between the dry period and early lactation;
 - supplying high-quality forage to all lactating cows;
 - maintaining a balanced ration with adequate levels of trace minerals and vitamins.
4. Maximize the colostrum intake of newborn calves.

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Web,V2,D1

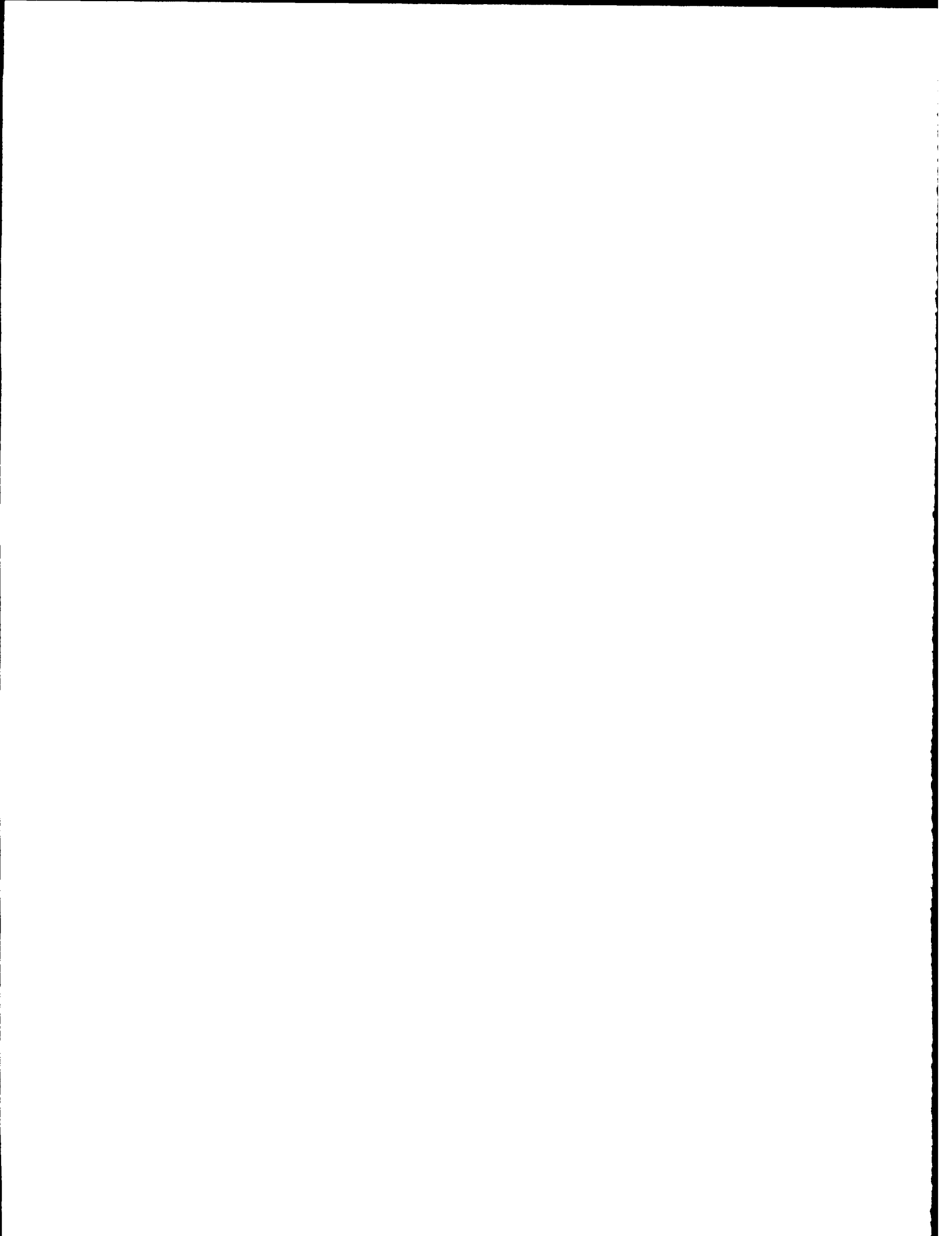
NAGR5422

Source: Jerry Olson, (612) 625-0280

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(Page 1 of 1)





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January 13, 1997

Decrease dairy herd exposure to infectious diseases

Decreasing the exposure of a dairy herd to infectious diseases is one of the keys to keeping the herd productive. Jerry Olson, veterinarian with the University of Minnesota's Extension Service, has the following recommendations for decreasing dairy herd exposure to infectious diseases:

--Isolate sick and diseased cattle with unusual clinical signs, or cattle that do not respond to customary treatments.

--Have a veterinarian necropsy (autopsy) any animal that dies from undetermined causes. Dispose of dead animals promptly.

--Utilize individual calf hutches for newborn calves. Thoroughly disinfect between uses.

--When selling cull cows and bull calves, use a location outside the barn for buyers to pick up these animals without entering the barn.

--Reduce manure contamination of water sources, bunks, feeds and feeding equipment.

--Require hoof trimmers to sanitize their chutes, tables, knives and other equipment before coming to the farm.

--Limit access to the dairy facilities from outside visitors.

--Lock the doors to the barn.

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- Post a warning sign asking visitors to keep out. Leave a phone number to call.
- Provide clean coveralls and boots for all visitors.
- Maintain a logbook of all visitors, recording date, time and origin.
- Employ rodent and other pest control measures.

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Web,DTN,V2,D1

NAGR5423

Source: Jerry Olson, (612) 625-0280

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NEWS INFORMATION

MINNESOTA EXTENSION SERVICE

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January 13, 1997

Farm crop variety trials data now available electronically

"Varietal Trials of Selected Farm Crops" from the Minnesota Agricultural Experiment Station (MAES) has entered the electronic world. Data for 1997 crop production is now available on the Internet's World Wide Web, under "Bulletins and Publications" at the new MAES home page. The electronic address for the home page is: <http://www.mes.umn.edu/~maes>.

The electronic version of MAES variety trial data is designed to be more comprehensive and useful to producers than past printed editions. Each crop is reported separately. Two versions of each report have been produced, one for easy viewing on screen, the other formatted for printing from your computer.

In coming weeks, crops which have not regularly appeared in recent print editions will be reported at the MAES web site. Electronic reports will contain the most recent MAES data.

Minnesota residents who do not have access to the Internet can contact their local county office of the Minnesota Extension Service (MES) for assistance in obtaining crop production information. Printouts of crop reports will be available for sale through the MES Distribution Center near the end of January.

Individual printed crop reports will range from four to 35 pages. Crop reports will be priced separately. After January 30, contact the MES Distribution Center at 20

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Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6064, phone (800) 876-8636 or (612) 624-4900 for cost information on reports for specific crops.

MAES variety trial data is gathered by the University of Minnesota's experiment station agronomists, who grow test crops at sites across the state. Sites include seven experiment station facilities, and cooperating farmers' and other agencies' fields. Test sites cover the range of agricultural conditions in the state, from Roseau in the north to Fairmont in the south.

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Web,V2,V4,V5,F4,P1

NEXP5425

Source: Larry A. Etkin, (612) 625-4272, letkin@mes.umn.edu
Editor: Jennie Y. Rominger, EDS, (612) 625-6294, jrominger@mes.umn.edu

MSC
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January 15, 1997

Beef cattle publications now available from the University of Minnesota

Three new beef cattle publications offering current, research-based information are now available from the Department of Animal Science at the University of Minnesota.

The "1996 Minnesota Cattle Feeders Report" provides information on beef cattle feedlot research carried out in Minnesota. This 80-page publication also contains proceedings of all presentations made at the 1995 Cattle Feeders Day. Mailed copies of the report may be purchased at a cost of \$5 to cover publication and postage charges.

Topics highlighted in the report include steer performance, manure handling, feedlot health maintenance programs and a retailer's perspective on beef quality.

The 125-page "1996 Minnesota Beef Cow/Calf Report" is also available from the University of Minnesota. This publication includes the proceedings of each presentation given at the 1996 Cow/Calf Days, as well as cow/calf research. It also carries extension program progress reports summarizing various beef cattle projects. Topics of the publication include grazing management, injection site blemishes, and reproduction in postpartum beef cows. This report is available by mail for \$6.

In addition to these publications, the new 1996 Minnesota Cattle Feeder Days Proceedings are now out. The December proceedings total 45 pages, and include

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reports on feedlot cattle protein nutrition, food safety and the media, and feedlot cattle implanting strategies. This publication is available individually for \$5.

If you wish to order any two of these items in combination, they can be purchased at a discount of \$1 less than the sum of their individual prices. For a set of all three publications, the discounted price is \$2 off the sum total, or \$14.

To obtain a table of contents and order form for the publications, please write to Brent Woodward, Extension Animal Scientist, Department of Animal Science, University of Minnesota, 101 Haecker Hall, 1364 Eckles Ave., St. Paul, MN 55108-6120, or call (612) 624-4995. You can also order the publications directly by sending a check for the appropriate amount (payable to the University of Minnesota) to Woodward at the above address.

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Web,V2,V4,B1,X1

NAGR5426

Source: Bonnie Rae, (612) 624-4995
Writer: John Winzenburg, (612) 625-3168, news@mes.umn.edu

NEWS INFORMATION

MINNESOTA EXTENSION SERVICE

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January 23, 1997

<http://www.mes.umn.edu/Documents/news.html>

Program on phosphorus will be on interactive TV

The effect of phosphorus on the quality of lakes and streams is the focus of an upcoming series of educational programs on interactive television. The program will be delivered to sites at Marshall, Mankato and Minneapolis by the University of Minnesota's Extension Service. Sessions will be from 9:30-11:30 a.m. on four Fridays--February 7, 14, 21, and 28.

The program, "Phosphorus in the Agricultural Environment," is designed for crop producers, agribusiness personnel, educators, and environmentally minded citizens. It's intended to provide a more complete understanding of the fundamentals of phosphorus in soils, and of management practices that minimize the loss of phosphorus from the landscape.

The interactive television format allows the audience to talk directly to the speaker and ask questions that can be answered directly.

Presenting the information will be Lowell Busman, Gyles Randall, Mike Schmitt, John Lamb, and George Rehm, all University of Minnesota faculty members.

To obtain more information about the program or a registration form, call Tracey Benson at (800) 367-5363, Judy Martens at (612) 625-5797, or George Rehm at (612) 625-6210. Information is also available from county offices of the Minnesota Extension Service.

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Web,V2MN,F4,42

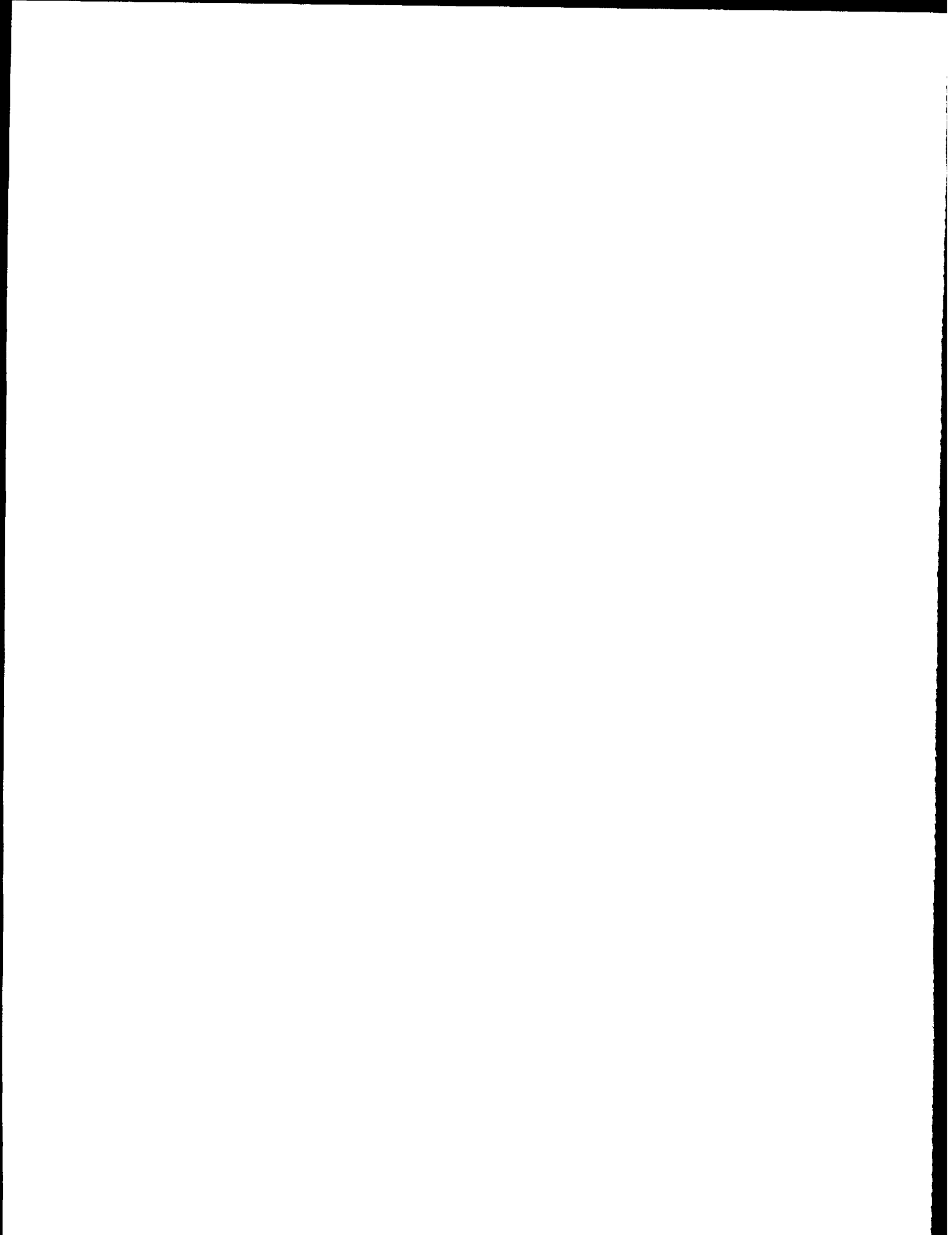
NAGR5429

Source: George Rehm, (612) 625-6210

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(Page 1 of 1)





MSC
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January 27, 1997

Maintain ventilation in cold free-stall dairy barns

Reducing ventilation in a naturally ventilated dairy barn during frigid winter weather might seem like a good way to keep the barn warmer. But this strategy could be a disaster, says Kevin Janni, biosystems engineer with the University of Minnesota's Extension Service.

"Some dairy producers who have uninsulated, naturally ventilated free-stall barns are thinking about tightening them up and closing the eave inlets to keep the barns warmer," says Janni. "The barns may seem too cold and drafty for the cows. However, barns of this type are designed to be cold--within a few degrees of the outside air temperature."

Janni says closing eave inlets will create wet, damp conditions and lead to respiratory health problems in the cows. Wet, damp conditions will be evidenced by fog, condensation or frost on building surfaces, and high humidities.

"At 30 degrees F, a 1,100-pound dairy cow will give off about 20 pounds of water vapor per day through respiration and losses through its skin as sweat," says Janni.

"This moisture must be removed by ventilating air. It can take a ventilating rate of 170 cubic feet per minute per cow to remove it."

Closing eave inlets restricts the ventilating rate and causes moisture to accumulate in the barn, the Minnesota engineer points out. As moisture accumulates it

(over)



will begin to condense on cold surfaces and, if the surfaces are below freezing, frost will form.

"In severe cold weather and during blizzard conditions, eave inlets can be partially closed to reduce airflow and the amount of snow blowing into the barn," says Janni. "According to Midwest Plan Service, the minimum inlet opening during severe cold weather is one-half inch for each 10 feet of building width. (There should be an inlet on each long side of the building.) When normal winter weather returns, eave inlets should be reopened to the standard one inch per 10 feet on both sides of the building.

"Of course, eave inlet adjustments are much easier if the inlets have been designed to be adjusted. Boards on hinges are the most common type of adjustable eave inlets."

Janni says cows need a dry, draft-free resting area. Drafty conditions at cow level can be reduced by patching curtain holes, minimizing gaps at the ends of curtains, and sealing around doors to eliminate small gaps where the wind blows through.

"Avoid the temptation to keep uninsulated, naturally ventilated free-stall barns too warm," Janni concludes. "They were designed to be cold, and dairy cows do quite well in cold temperatures when they are dry, protected from wind, and properly fed and watered."

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Web,V2,D1,X3

NAGR5431

Source: Kevin Janni, (612) 625-3108

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
A2/p

January 27, 1997

Forage Conference will be Feb. 5-6 at Willmar

Alfalfa as a fuel, a cash crop and a livestock feed will be the subject of the 22nd Annual Forage Conference Feb. 5-6 at Willmar, Minn. Several University of Minnesota faculty members will speak at the conference, which is sponsored by the Minnesota Forage and Grassland Council and the Minnesota Valley Alfalfa Producers (MnVAP).

"Alfalfa--A Burning Issue and More" is the theme of the conference, which will take place at the Holiday Inn in Willmar. Recently the Minnesota Valley Alfalfa Producers, a cooperative selected by the U.S. Department of Energy to study generating electricity from alfalfa, received a grant to develop a power plant that will produce energy from the gasification of alfalfa stems. A co-product of this process is high-protein alfalfa meal.

The conference will begin at noon Feb. 5, and will feature commercial exhibits along with educational presentations. The first afternoon, University of Minnesota faculty members will speak on alfalfa leaf meal feeding research, alfalfa production for biomass, alfalfa harvesting economics and testing alfalfa for quality. The speakers will be animal scientist Alfredo DiCostanzo, agronomists Craig Sheaffer and Neal Martin, and economist Jerry Fruin.

There also will be presentations on new hay harvesting equipment, minimizing hay storage losses, custom hay making, the Minnesota Agri-Power Project and alfalfa

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breeding for biomass.

The morning session Feb. 6 will be on forage crop management. University of Minnesota meteorologist Mark Seeley will speak on drought and winterkill, and Martin will discuss relative maturity in forages. There also will be a presentation on forage crop quality.

In the afternoon, conference participants can attend one of three concurrent sessions--"Getting Started with Alfalfa," "Managing Forage Profitability" or "Grazing." University of Minnesota faculty members speaking at these sessions include Martin, extension educator Lisa Behnken, dairy scientist Jim Linn, agronomist Greg Cuomo, and animal scientists William Head and John Hall.

The conference will also include presentations by scientists from other universities, as well as producers and industry representatives. A special roundtable dinner the evening of Feb. 5 will allow conference participants more time to interact with speakers.

A Forage Crop Production Workshop for Certified Crop Advisors and Forage Crop Advisors will take place at the same location Feb. 4-5 preceding the Forage Conference.

All interested persons are welcome at the Forage Conference. To register or obtain additional information, contact your local Minnesota Extension Service office or call (612) 436-3930.

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Web,V2,A4,D1,F4

NAGR5432

Source: Neal Martin, (612) 625-8700

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

*MSC
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January 28, 1997

Some data from yield monitor should be discarded

If you used a yield monitor on your combine when harvesting your 1996 crops, you need to throw out bad data before developing a yield map. That's the recommendation of John Lamb, soil scientist with the University of Minnesota's Extension Service.

"Whether you incorporate data into a yield map yourself or hire a consultant to do it, it's crucial to examine the data before developing the yield map," says Lamb. He cites two sources of bad data:

--Data where a momentary loss of the global positioning satellite (GPS) differential signal occurred.

--Data collected when mechanical problems occurred that affected the grain flow in the combine. Examples are plugging, breakdowns, getting stuck, and the beginning and end of a swath.

"The loss of the GPS differential signal results in a wrong value for the position where the data point was taken," says Lamb. "Sometimes this can be adjusted, but only after a close look at the data."

He says grain flow data problems occur because the combine has stopped moving and the threshing area is emptying. "The data from these points should be discarded," he concludes.

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Web,V2,E4,F4

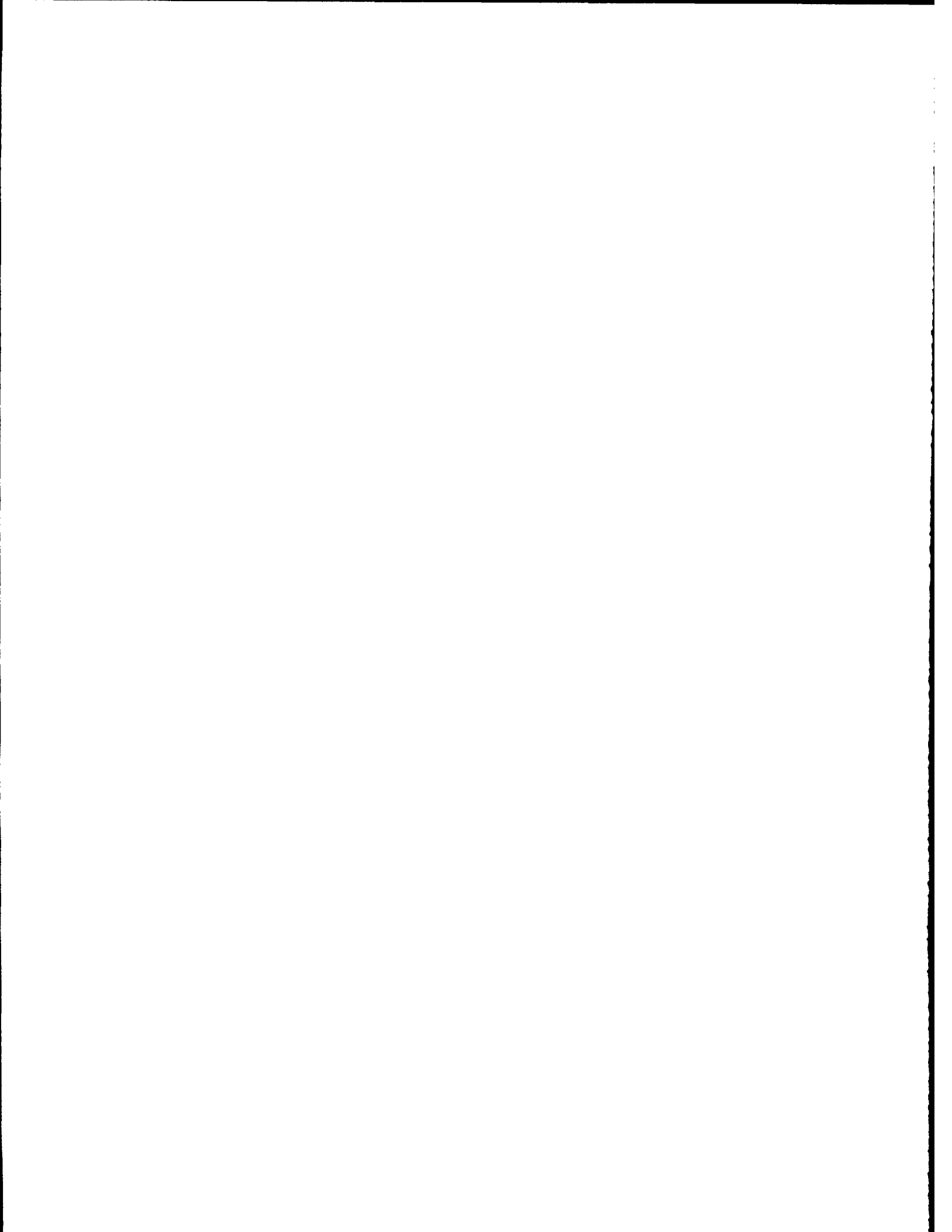
NAGR5433

Source: John Lamb, (612) 625-1772

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





MSC
9 A 27 p

January 28, 1997

Be careful when using yield map information

If you used a yield monitor when harvesting your 1996 crops and have developed a yield map, evaluate the yield map cautiously. Don't use one year of data to make radical management changes, says John Lamb, soil scientist with the University of Minnesota's Extension Service.

"Look for patterns," says Lamb. "Patterns with straight lines tend to be man-made. To interpret these patterns, refer to last year's management records. More importantly, look at management information on the field from the past 30 to 40 years. Old farmsteads, feedlots, manure and fertilizer applications, chemical spills, and fence lines leave long-lasting effects."

The next step, says Lamb, is to look at more recent practices. Consider variety, previous crops, tillage or poor agrochemical applications. Irregular, smooth patterns on the map may be reflecting different soil conditions such as soil series, eroded areas, landscape position or pest infestations such as perennial weeds and insects.

If you are ready to implement management practices based on the yield map, start by changing the obvious, says Lamb. "This could include better equipment maintenance to correct poor application distribution of seed, fertilizer or pesticides," he points out.

(over)



Also, don't overlook the drainage system. Lamb says drainage is crucial in Minnesota, whether by tile or on the surface. "Mother nature controls a significant amount of the crop growth potential compared with what we can control, and drainage is probably the closest we can come to controlling moisture," says Lamb.

If you want to use a yield map to establish yield goals for variable rate fertilizer application, you'll need information from more than one year, says Lamb. "The worst-case scenario is that some fields may have yield maps from several years and the maps have no common features," he says. "In that case, it's impossible to assign varying yield goals."

Lamb says it should be possible to combine yield maps from several years to create a yield potential map for a field. To combine the yields, it's necessary to index each year's yields to the best yield of each year. Information from abnormal years such as 1993 should be discarded.

"Don't use a yield map as an indicator of crop removal of nutrients and figure fertilizer recommendations from there," Lamb emphasizes. "Basing fertilizer recommendations entirely on crop removal is a very expensive fertilizer management program that is not recommended."

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Web,V2,E4,F4

NAGR5434

Source: John Lamb, (612) 625-1772

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

January 29, 1997

1997 University of Minnesota Swine Day Proceedings booklet available

Articles on feeding high-producing sows, high-oil corn in swine diets, genetic evaluation and odor research are included in a new swine publication available by mail from the University of Minnesota.

The "1997 University of Minnesota Swine Day Proceedings" is published by the university's Department of Animal Science. The 87-page booklet contains nine articles, including updates from some of the university's swine-related research and information presented at the university's Swine Day programs earlier this winter.

The price for the "1997 University of Minnesota Swine Day Proceedings" is \$5 per copy, which includes postage. To order, send a check payable to the University of Minnesota to Charles Christians, Department of Animal Science, University of Minnesota, 101 Peters Hall, 1404 Gortner Ave., St. Paul, MN 55108-1098.

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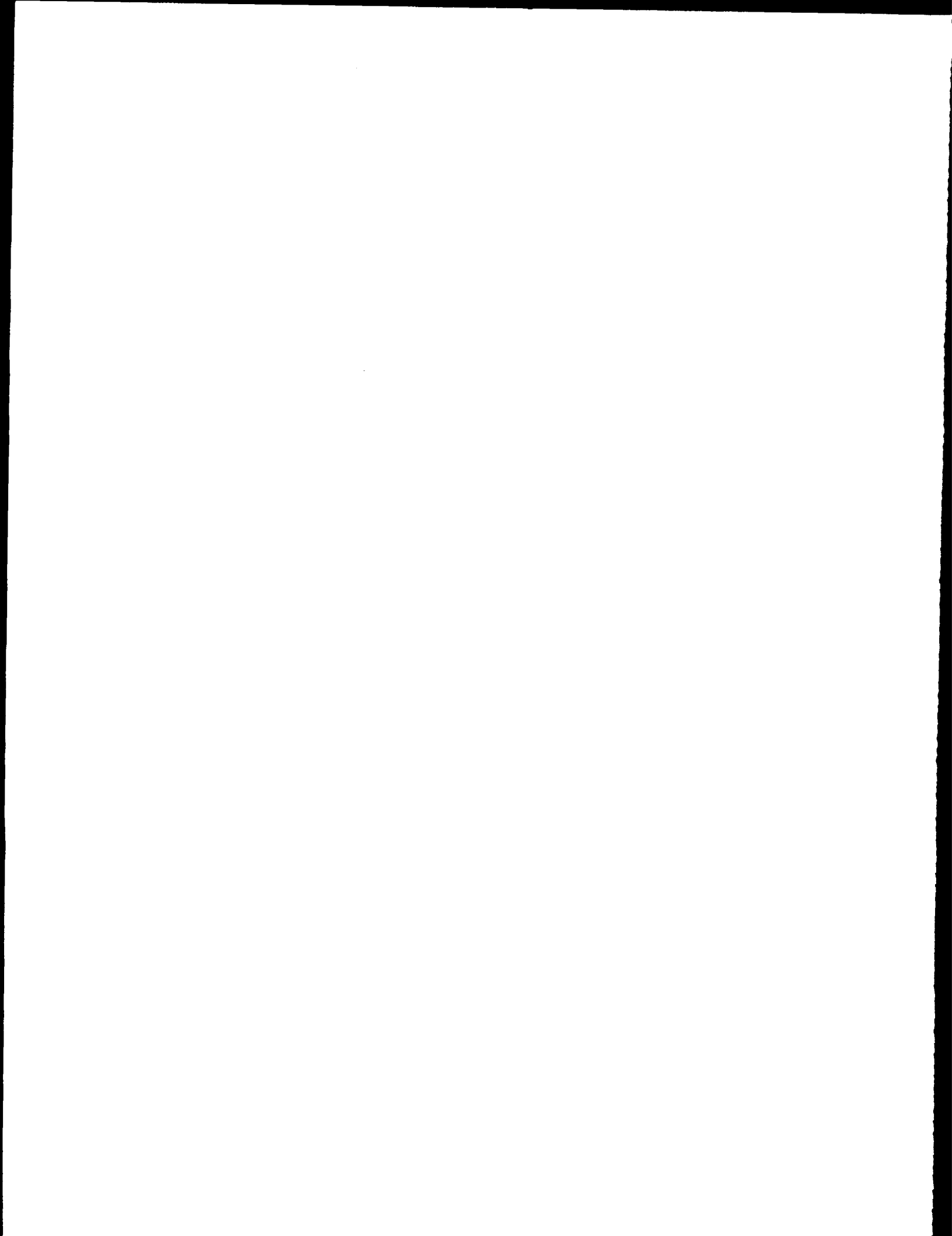
Web,V2,S2,X5

NAGR5436

Source: Charles Christians (612) 624-0766

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu





MSC
9 A 2/P

January 30, 1997

University of Minnesota sets cow/calf programs

Success and profitability in beef cow/calf operations will be the focus of University of Minnesota extension programs at six Minnesota locations in February.

The schedule for the programs is:

Feb. 10, Glenwood, Minnewaska House, 10 a.m.-3 p.m., contact Bill Zimmerman, (320) 589-7423. Topics--market outlook, feeding hay vs. grain, raising replacement heifers, vaccination and weaning programs. Cost--\$15 per farm, lunch served.

Feb. 11, Staples, Staples Technical College, 10 a.m.-2 p.m., contact Jim Carlson, (320) 632-0161. Topics--beef cattle cycle, winter and summer feeding, raising replacement heifers, vaccination and weaning programs. Cost--\$10 per farm, does not include lunch.

Feb. 11, McIntosh, East Polk County Extension Office, 6:30-9:30 p.m., contact Vince Crary, (218) 563-2465. Topics--feeding hay vs. grain, microelement and vitamin nutrition, raising replacement heifers. Cost--\$10 per farm, refreshments served.

Feb. 12, Grand Rapids, Sawmill Inn, 6-9:30 p.m., contact Dan Brown, (218) 327-4490. Topics--cattle cycle, winter and summer feeding, raising replacement heifers, vaccination and weaning programs. Cost--\$10 per farm, refreshments served.

(over)



Feb. 25, Pipestone, Pipestone Technical College, 1-4 p.m., contact Philip Berg, (507) 825-5416. Topics--CHAPS record keeping, cutting costs, hay vs. grain, raising replacement heifers. Cost--\$7 per farm, refreshments served.

Feb. 26, Rushford, American Legion Hall, 10 a.m.-2 p.m., contact Jerry Tesmer (507) 765-3896. Topics--microelement and vitamin nutrition, feeding and managing cows on summer pastures, raising replacement heifers, hay vs. grain. Cost--to be announced, lunch served.

University of Minnesota animal scientists Alfredo DiCostanzo and John Hall will make presentations at all six sites. Also on the program at one or more of the sites will be Phil Berg and Jerry Tesmer, University of Minnesota extension educators; Brian Buhr, U of M extension economist; Don Boggs, extension animal scientist from South Dakota State University; and Jon Seeger, senior technical services veterinarian for Pfizer Animal Health.

Cow/calf producers with the Snake River and Tri-County Cattlemen's Associations and the Pine County Extension Office will host a Cow/Calf Day Feb. 22. Details on the program, time, and location are available from Steve Drazkowski at (320) 384-6156.

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Web,DTN,V2MN,V4MN,B1,X1,31,63

NAGR5438

Source: Alfredo DiCostanzo, (612) 624-4995

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
9 A27p

January 31, 1997

Minnesota-Wisconsin Dairy Policy Conference will be March 6

Policy issues affecting the dairy sector of the U.S. economy will be the subject of a March 6 conference at the University of Minnesota. The Minnesota-Wisconsin Dairy Policy Conference will take place in the Earle Brown Continuing Education Center on the university's St. Paul campus.

The conference is designed for dairy producers, dairy co-op directors, managers and personnel of dairy marketing firms, government officials, farm organization officials, news media representatives and others interested in dairy policy.

Registration for the event will open at 8:10 a.m. March 6, and the program will be from 8:30 a.m.-4 p.m. The program will begin with a session on the international trade situation for dairy products. Topics and speakers will be:

- Irish Dairy Board activities, Nicholas Simms, Irish Dairy Board.
- Post-GATT/NAFTA export situation, Donald Street, CEO, M. E. Franks, Inc.
- U.S. dairy export outlook, Paul Kiendl, economist, USDA.

A session on dairy pricing institutions will feature these presentations:

- National Cheese Exchange, Bruce Marion, economist, University of Wisconsin.
- New cash market for cheese, representative of Coffee, Sugar, and Cocoa

Exchange.

(over)



Topics and speakers in the afternoon will be:

--Federal Milk Order pricing alternatives, Robert Cropp, economist, University of Wisconsin.

--Changing demands and changing product promotion institutions, Paul Christ, vice-president, Land O' Lakes, Inc., Arden Hills, Minn.

--New retail formats, Jean Kinsey, economist, University of Minnesota.

--Dairy product development, Lynn Girouard, vice-president, Land O' Lakes.

--Restructured dairy product promotion institutions, Mike Kruger, CEO, American Dairy Association/Dairy Council of the Upper Midwest.

Registration fee for the conference is \$45. To register, send name, address and registration fee to Registrar--1997 Dairy Policy Conference, Extension Special Programs, PO Box 64780, St. Paul, MN 55164-0780. Make checks payable to the University of Minnesota. To obtain a registration brochure, contact Leon Meger at (800) 367-5363 or (612) 625-2722. For more information about the program, call Jerome Hammond at (612) 625-2749.

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Web,V2,V4,A2,D1,F6

NESP5439

Source: Leon Meger, (612) 625-1214

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
9A 27p

February 10, 1997

Recognizing cabin fever is the best way to deal with it

You're bored, edgy and irritable. You're restless and dissatisfied with being at home. Maybe you're even claustrophobic. Yet, you are immobilized by a pervasive feeling of inertia. You may have "cabin fever."

Most Minnesotans would recognize the symptoms. They've either had cabin fever or know others who have suffered through it. Cabin fever strikes most often during our long, often severe winters, but it can get a person down anytime during the year.

What few may realize, says a family social scientist at the University of Minnesota, is that cabin fever is closely related to relationships. Paul Rosenblatt's research has found that this is particularly true for people who are home caring for children or the infirm. But having a moody housemate is also a way of getting cabin fever. "It's clear that cabin fever is not only a matter to deal with in yourself, but a matter to face when others interact with you," says Rosenblatt.

People react to cabin fever in a variety of ways. For some, there is confusion or bewilderment. Others, according to Rosenblatt, blame themselves for the cabin fever of someone they live with, thinking it is caused by something in the relationship. They feel guilty about doing something that might have little to do with their partner's depression.

Yet Minnesotans can be most resourceful in dealing with cabin fever. Although there are people who may need outside help with a problem like cabin fever, people often find ways of coping on their own. "Some people can anticipate when they are going to have cabin fever and plan ways to

(over)



cope with it", says Rosenblatt. "People who know that their kids will be home from school for prolonged periods stock some games or plan a couple of excursions. Others stock up on books or save up chores to do."

However, some people's means of fighting cabin fever are for others an actual source of trouble. For example, while routine may add to the woes of confinement for many, it can give solace to others in the form of keeping busy.

At the same time, some people are less susceptible to cabin fever than others. Some typically enjoy the cold or snow-related activities or are true Minnesota stoics. They are so accustomed to adapting to bad weather that they do not even recognize the inconveniences, much less succumb to cabin fever.

But what about those who cannot escape cabin fever? A good way to head off tense interaction in the family, Rosenblatt points out, is to give the sufferer a wide berth to ease his or her sense of confinement. A temporary change of scenery or a break in routine may also help. "Planning a break or get-together, or calling a friend, are ways people end up not feeling so bad," he adds.

Rosenblatt stresses the normality of cabin fever, cautioning that there is nothing "wrong" with someone for having those feelings. Even the inertia people get is normal. Though many people may be able to help themselves out of the doldrums, others may be stuck because they feel too inert to do something even when they can conceptualize a possible means of coping. "The self-help angle is important," says Rosenblatt. "It's being able to recognize cabin fever in yourself and people around you and adjust for it."

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Web,V2,V4,V5,V8,A1,F1,F2,H2,H3,N1

NEXP5443

Source: Paul Rosenblatt, (612) 625-3120

Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 10, 1997

Legal immigrant workers can benefit from Earned Income Credit

Low-income immigrant workers may find some unexpected relief this tax season, according to Jean Bauer, family financial management specialist with the University of Minnesota's Extension Service.

Bauer says that the federal government's Earned Income Credit (EIC) and Minnesota's corresponding Working Family Credit (WFC) offer the working poor a chance to reduce their tax burden and supplement their wages. These programs extend to immigrants, as well. "If you're an immigrant and working legally in the U.S., you may be able to get EIC and WFC," says Bauer.

Workers can receive up to \$4000 in refundable tax credit, depending on their income and family circumstances. These funds are available to those eligible whether or not they owe taxes, according to Bauer.

Immigrants who wish to claim their tax credit must meet basic income requirements set by the program. Generally, workers raising more than one child are eligible if they made less than \$28,495 last year. The figure is \$25,078 for workers with just one child, while single workers between 25 and 64 with no children must have made below \$9,500.

The only special requirement for an immigrant is that he or she be considered a "resident alien for tax purposes." This means that an immigrant must either be a legal permanent resident with a "green card," or meet certain residency conditions. In this case, they

(over)



must have lived in the U.S. for at least six months in 1996 or for an average of four months each year from 1994 through 1996.

All those claiming income credit must also have social security numbers which permit them to work legally in the U.S. And if they wish to be considered for credit categories with children, those children must have lived with them in the U.S. for more than six months out of the year.

Bauer says that one problem in getting low-income immigrants to claim their tax credits is that many do not know that they are eligible. Another problem could be getting immigrants to file their tax returns.

Immigrant workers often don't fill out tax forms because they have taxes deducted from their checks, and they know that they don't owe anything. Bauer insists that this may be the only thing standing between the immigrants and their tax credit checks. "The most important thing is that they have to file their tax returns," she says.

Bauer adds that getting the EIC does not create problems for immigrant workers. For example, the EIC is not considered an indication of immigrants' ability to support themselves financially. Tax return information gathered by the IRS cannot be shared with the Immigration and Naturalization Service. "Confidentiality is often a concern for working immigrants," says Bauer, "but this is guaranteed by the IRS."

For information on tax issues, immigrants can call the National Immigration Law Center at (213) 938-6452 or the IRS at (800) 829-1040.

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Web,V4,V5,V7,V8,A1,A3,F2,F3,H3,N1

NHEC5442

Source: Jean Bauer, (612) 625-1763
Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 10, 1997

Low-income filers get a bonus this income tax season

Low-income, working families and individuals may be in for some sizable tax refunds this year, says a family financial management specialist with the University of Minnesota's Extension Service.

According to Jean Bauer, federal and state tax benefits are offered to the working poor in order to reduce their tax burden and supplement their wages. They are also designed to make work more attractive than welfare. "Working families now have the opportunity to buy something for themselves that they've put off because they couldn't afford it," says Bauer.

Bauer says that the federal Earned Income Credit (EIC) is available to single or married people who worked full or part time at some point last year. The state of Minnesota offers an additional Working Family Credit (WFC) to those who qualify for the EIC.

Tax credits are determined by income levels and the number of children in a family. For example, workers who were raising one child in their home and had a family income of less than \$25,078 in 1996 are eligible for up to \$2,152 from the federal credit and \$322 from the state credit. Workers raising more than one child can expect even more if they make under \$28,495. Single workers between the ages of 25 and 64 with no children are also eligible for benefits if their income was below \$9,500.

(over)



It is remarkably easy to claim these refunds, according to Bauer. The most important thing is for workers to file their income taxes. If they owe income tax for last year, their credit will be deducted from that amount. However, if they already have a tax refund coming, the credit is added on top of it. "This is a refundable tax credit," assures Bauer. "You can receive money even if you owe no taxes."

To make filing easier, low-income workers can even get free help with their tax returns. Volunteer Income Tax Assistance services are available at over 450 locations throughout the state. For information about these VITA services, call (800) 652-9094.

Bauer strongly urges anyone eligible to claim the credits. They may want to use the money to pay off bills or to take a small vacation with the family, or use the money in any way they wish. In 1996, over 212,000 tax filers throughout the state received nearly \$252 million through EIC, and an additional \$38 million with WFC.

Bauer recalls the example of one working father in his twenties who found that he had a substantial credit coming when he filed his tax return. He was able to use it to buy a used car and pay the medical bills for his child's birth. "This young man was ecstatic," she says. "He had safer transportation and no more debt."

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Web,V4,V5,V7,V8,A1,A3,F2,F3,H3,N1

NHEC5441

Source: Jean Bauer, (612) 625-1763

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 14, 1997

4-State Dairy Management Seminar will be March 4 at St. Cloud

Improved dairy cow feeding and management will be the subject of this year's 4-State Dairy Management Seminar, scheduled at five locations in Minnesota, Wisconsin, Iowa and Illinois in early March.

In Minnesota the seminar will be March 4 in St. Cloud at the Holiday Inn. The seminar is designed for dairy producers, feed industry personnel and agribusiness professionals. It's sponsored by the University of Minnesota, the University of Wisconsin, Iowa State University, and the University of Illinois.

Registration for the seminar will begin at 9:30 a.m., and the program will be from 10 a.m.-3 p.m. The seminar will feature four speakers. They are Marj Faust, extension dairy specialist, Iowa State University; Jerry Olson, extension veterinarian, University of Minnesota; Randy Shaver, extension dairy specialist, University of Wisconsin; and Dick Wallace, extension veterinarian, University of Illinois.

Each speaker will make one presentation in the morning and another in the afternoon. Faust's topics are breeding programs and artificial insemination. Olson's topics are controlled breeding and improving fertility without intrauterine antibiotics. Shaver's topics are feed additives for transition cows and preventing displaced abomasums. Wallace's topics are laminitis and proper hoof trimming.

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The seminar registration fee is \$25 per person before Feb. 25 and \$35 after that date. The fee includes lunch and a proceedings booklet. To register for the Minnesota session, send a check payable to the University of Minnesota to Stearns County Extension Office, Attn: Jim Salfer, Midtown Square, 3400 First St. N. #400, St. Cloud, MN 56303-4000. To obtain a registration flyer or further information, call (320) 255-6169.

Other dates and locations for the seminar are March 3, Breese, Ill.; March 5, La Crosse, Wis.; March 6, Fond du Lac, Wis.; and March 7, Dubuque, Iowa.

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Web,V2MN,V4MN,D1,X3

NAGR5444

Source: Jeff Reneau, (612) 624-4995

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

February 14, 1997

Help your trees survive damaging effects of road salt

With all the snowfall this winter, trucks have been out on the streets spreading salt and plowing snow more than normal. Salt is used on our roads to simplify our lives as drivers, but it is harmful to plants. Trees and shrubs planted along the roadside are hit with salt spray, which causes bud death, twig dieback, and disfiguration on broadleaf and evergreen trees and shrubs.

The salt spray affects plants above ground as well as below because salt accumulates in the soil. Common symptoms of plants that have been damaged by high salt accumulation include abnormal fall color, needle tip burn, and browning that starts on the edge of the leaf and progresses toward the leaf's middle vein.

"Extensive use of salt causes widespread damage, causing disfiguration of trees and shrubs," says Gary Johnson, urban forester with the University of Minnesota's Extension Service. He says there are several things you can do to prevent salt-related problems:

* Avoid planting salt-sensitive plants close to heavy traffic areas and busy intersections. Salt-sensitive trees include Littleleaf Linden, Sugar Maple, Red Maple, Crabapple, White Spruce and White Pine. Instead, plant salt-tolerant tree species such as Ohio Buckeye, Black Hills Spruce, Ginkgo and White Ash.

(over)



* Plant trees at least 60 feet from the road. Plants that are closer to the road stand a higher chance of being affected.

* Avoid using de-icing salts on your sidewalks or use smaller quantities. Use coarse sand instead.

* Protect plants with barriers made out of plastic, burlap or snow fencing.

* Keep your plants healthy. A healthy plant is better equipped to survive the damaging effects of salt spray and accumulation.

If you would like additional information, consider purchasing a copy of "Minimizing De-Icing Salt Injury to Trees," item FO-1413-NR2, from the University of Minnesota's Extension Service. It's available for \$3 plus \$2 shipping. Call (800) 876-8636 or (612) 624-4900 for more information. This item is available to disabled persons in alternate formats upon request.

This information is cosponsored by the Minnesota Shade Tree Advisory Committee (MnSTAC) which is a forum for tree advocates to form a collective vision for Minnesota's community forests. Its members represent nurseries; commercial tree services; academic institutions; federal, state and local agencies; and nonprofits.

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Web,V4MN,V7,G1

NNRD5445

Source: Gary Johnson, (612) 625-3765
Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

MSC
9A276

February 17, 1997

<http://www.mes.umn.edu/Documents/news.html>

Rapid snow melt could pose threat to grain in flood-prone bins

If you have grain stored in an area subject to flooding, rapid melting of this winter's snow could pose a threat to the grain. That word of caution comes from Bill Wilcke, engineer with the University of Minnesota's Extension Service.

"For people who are planning to sell their grain this spring anyway, one option is to sell grain from flood-prone bins a bit early," says Wilcke. "It's possible that prices are somewhat lower now than they will be later in the year. However, it's important to weigh the price differential against the risk of losing all the grain, or the extra cost and grain damage associated with transferring grain to a drier location."

Wilcke recommends that livestock feeders, or others who need to hold grain beyond spring, seek access to storage space on higher ground. This could include bins on neighboring farms, commercial storage facilities or buildings such as machine sheds that are modified for temporary grain storage.

"After grain is removed from flood-prone bins," says Wilcke, "also consider moving fans, electric motors from unloading augers and any other equipment that would be damaged by flood waters."

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Web,V2,A2,F4

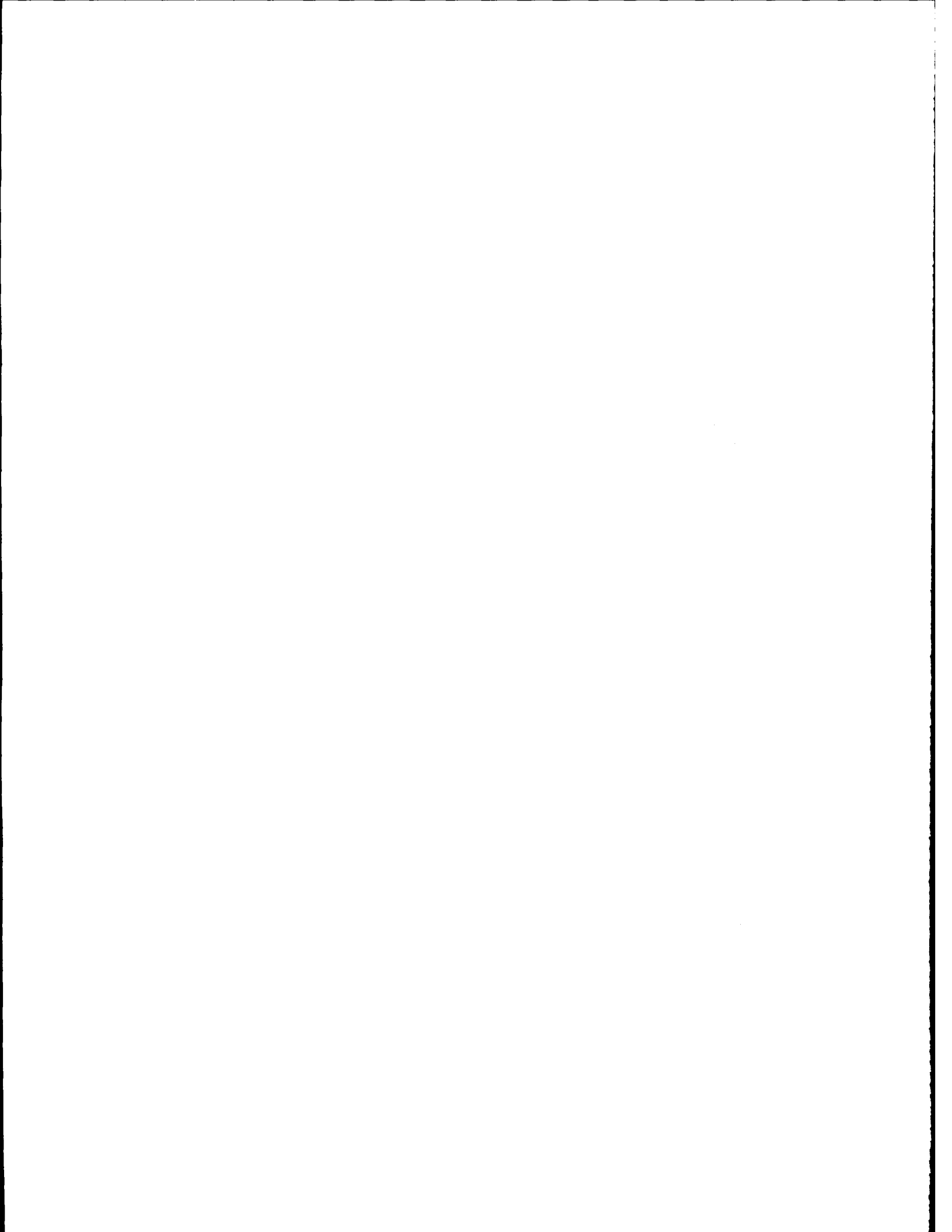
NAGR5449

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





*MSC
EAD/P*

February 17, 1997

University of Minnesota plans program for sheep producers March 8

Keeping baby lambs healthy will be one of the main topics at an upcoming program for sheep producers on the University of Minnesota's St. Paul campus. The program will be March 8 in Room 125 of the Animal Science/Veterinary Medicine Building. It's sponsored by the university's College of Veterinary Medicine.

Registration will open at 9 a.m. and the program will run from 9:30 a.m.-4 p.m. Cindy Wolf, U of M small ruminant veterinarian, will lead off the event. Her topic will be baby lamb health and management. She will be followed by Bert Stromberg, U of M parasitologist, who will talk about internal parasite control in sheep.

A six-station hands-on session on lambing management will take place before and after lunch. U of M extension educators Dale Carter and Dave Resch will conduct the session. Participants will have an opportunity to visit four stations. The stations will focus on lamb resuscitation, lamb warming and tubing, milk replace management, handling difficult births, ewe prolapse repair, and parasite diagnosis and control.

An explanation of why ewes may be losing wool will take place in the afternoon. The speaker will be Peter James, U of M graduate student in entomology.

Wolf will give the final two presentations. The topic of the first will be scrapie and offal management and industry responsibility. The final topic will be lamb necropsies and their value to producers.

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The registration fee, which includes lunch, is \$20 per person and \$10 for each additional family member. To register, send a check for the fee to Veterinary Outreach Programs, 414 Veterinary Teaching Hospitals, 1365 Gortner Ave., St. Paul, MN 55108. Make checks payable to the University of Minnesota. To obtain a registration brochure or further information, call Peggy Naumann at (800) 380-8636 or (612) 624-3434.

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Web,V2,S1,X6

NAGR5447

Source: Peggy Naumann, (800) 380-8636 or (612) 624-3434
Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
EATP

February 17, 1997

Single-row field windbreaks could help avoid mammoth snowdrifts

If you think you've seen it all with your present winter woes, just wait until you head out to till the fields this spring. You may find that the windbreaks curbed the elements too well, according to a retired forester and shelterbelt specialist from the University of Minnesota's Extension Service.

Harold Scholten says that if your existing windbreaks didn't allow some snow to filter through during this year's deluge of winter storms, you will find huge snowdrifts on the leeward side. You will then have to wait to till the land until the drifts melt and the soil becomes dry enough this spring. "This could put tillage back a couple of weeks behind the rest of the cropland," says Scholten.

According to Scholten, windbreaks do the best job when they slow down the wind during a snowstorm and allow snow to filter through the trees and spread uniformly across protected cropland. This will result in uniform recharge of soil moisture when it melts.

The most effective permanent barrier for uniform snow distribution in agricultural fields in Minnesota is a single-row tree windbreak, says Scholten. These windbreaks are sometimes referred to as "living snow fences." The ideal distance between rows should be 20 times the average tree height when the trees reach maturity.

(over)



The model windbreak tree would be tall and fast-growing with a narrow and porous crown, nonspreading root system, nonbrittle branches, minimum tendency to sprout at pruning wounds and high resistance to chemical spray damage. "Since no one tree species fills this bill, the most adaptable species should be selected with adjustments made through improper spacings and perhaps later pruning and thinning," says Scholten.

For example, green ash on a 10-foot spacing is one of the best species and doesn't require pruning from underneath. The Siberian larch is also effective, with its narrow crown that allows wind to filter through. Consider factors such as shade tolerance and life span, which vary by tree species. For more information, contact your county extension office for a copy of "Effective Field Windbreak Design on Snow Distribution Patterns in Minnesota," published by the University of Minnesota Agricultural Experiment Station, Tech Bulletin 329-1981, Forestry Series #36.

If you have functioning windbreaks that produced unwanted snowdrifts this winter, Scholten says that you may want to consider thinning them by taking out every other tree to allow more snow to filter through. Remembering these tips in the aftermath of this harsh winter may help you get better prepared before next winter hits.

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Web,V2,V4,C4,F4,P1

NNRD5446

Source: Harold Scholten, (612) 633-1092
Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

*MSC
EADTP*

February 17, 1997

Heavy snowfall can cause problems in stored grain

This winter's heavy snowfall can create problems for crop producers who have grain stored on their farm. Bill Wilcke, engineer with the University of Minnesota's Extension Service, recommends that producers check their grain bins for three potential problems: (1) large amounts of snow blown into the top of the bins, (2) melting snow wetting grain on concrete floors, and (3) snow covering aeration fans.

"It's not unusual for high winds to blow snow through eaves, vents and other openings in the tops of grain bins," says Wilcke. "This can lead to grain spoilage, but the situation often looks worse than it is. Remember that it takes 10-12 inches of snow to produce an inch of water, and some of the snow will evaporate without wetting any grain. So if there are only a few inches of snow in a bin, not many bushels of grain will be affected."

Keep checking such bins, says Wilcke, and if melting snow wets grain at the top of the bin, use a rake or shovel to mix wet grain with drier grain below the surface. Then, when weather permits, aerate the bin to dry the surface.

If you find more than a few inches of snow at the top of a bin, Wilcke says it's probably worth trying to shovel the snow out through the entrance hatch. "Large amounts of snow could lead to a significant moisture increase and spoilage of surface grain," he points out. "Trying to empty a bin containing lots of snow through the

(over)



bottom unloading sump could result in a blocked sump and major unloading problems."

For a bin that doesn't have a raised false floor, assess the location and amount of snow piled around the base of the bin, says Wilcke. If it looks as though snow melt might run under the bin wall and wet grain that is resting on the concrete bin floor, consider pushing snow away from the bin, or moving the grain out of the bin before melting occurs.

"At this time of the year, stored grain in the upper Midwest should have a temperature of 20-30 degrees F," says Wilcke. "If you find grain temperatures above or below this range, wait for a forecast of average temperatures in the 20-30 F range, and then aerate the grain. (If the grain is heating or has other major storage problems, aerate immediately!) Before starting aeration fans, make sure they are not covered by snow. If necessary, move enough snow to provide several feet of clearance around the ends of fans.

"Once fans have been started, let them run continuously (unless it starts to snow again) until a temperature front has moved all the way through the bins. The amount of time required for aeration depends on the airflow per bushel provided by the fan, but aeration times of six days or more are not unusual."

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Web,V2,A2,F4

NAGR5448

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

February 25, 1997

Minimize your financial loss from flooding

With the heavy snowfalls this winter, film shops in the hardest hit areas of Minnesota have been hard-pressed to develop all the photos of the snowy outdoors coming in from local residents. According to a family financial management specialist with the University of Minnesota's Extension Service, some of those residents might be better off in the future if they use their film now on the insides of their houses.

Jean Bauer says that with the risk of spring floods running high this year, now is the time to use a roll of film and take photos of potential flood areas in your house to document your valuable goods. "The preparation done for record keeping now will help you if you have flooding later," says Bauer.

For residents of river communities around the state, property that is lost or destroyed due to flooding may be claimed as a casualty loss, depending on your homeowners' insurance policy. But casualty losses require documentation. So if you don't have a household inventory, Bauer suggest using a roll of film to shoot valuables and structural areas of the house. "Record anything of value--large or small--that water could destroy or damage," advises Bauer.

Check your insurance coverage for nonbusiness casualty loss. Call your agent to find out what is covered and for what amount and whether you're eligible for national flood insurance. You should also find out find types of records you will need to file claims later. For example, large or complete losses are usually treated differently than small or partial losses.

(over)



Bauer says that, generally, household inventory and photos of the property before and after damage will be useful in proving condition and value. Other information to gather to establish loss include a description of what was destroyed, evidence that the loss was a direct result of the casualty and that you were the owner of the lost item, fair market value determined immediately before and after the loss, and amount of compensation insurance or other compensation received if you are claiming a tax deduction.

Property appraisals before and after the loss are other good ways of proving a casualty loss. Time documenting valuables may be well spent if it significantly reduces your eventual net loss as an direct result of catastrophe. Documentation would help you assess later progressive damage to property caused by moisture. This would fall under the category of progressing deterioration.

Bauer also says that documenting items now may encourage you to take preventive measures. She recommends that you look at the items around your house, especially in the basement and on lower floors, and ask yourself if they are replaceable. If not, take a moment to plan where you will put those items if flooding starts. "Even planning ahead won't change things you can't control," says Bauer, "but it might help you to move things that you don't want to lose."

Bauer speaks from experience. Her own basement was flooded in the past, and she lost valuables that had been left on the floor. She says that now she is always careful to keep valuables up off the floor. "Since that experience," says Bauer, "my advice has always been to plan for the worst, but hope for the best."

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Web,V4MN,V5MN,V8MN,V9MN,F2MN,H4MN

NHEC5453

Source: Jean Bauer (612) 625-1763

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 27, 1997

*MSC
g. j. p.*
<http://www.mes.umn.edu/Documents/news.html>

Minimize damage from this year's ice dams and prepare for next winter

With all the snow and cold temperatures of this winter, you may have some unwanted icicle decorations hanging from your roof. If you do, then you probably have ice dams building up, which can cause damage to your house.

A specialist in wood science at the University of Minnesota says a combined short- and long-term approach can help minimize that damage. According to Tim Larson, you can take limited steps to keep existing ice dams at bay this late in the winter. But it is more important for you to prepare for future years by hitting ice dams at their source. "Ice dams can be prevented by controlling the heat loss from the home," says Larson.

An ice dam is a ridge of ice developing at the edge of a roof which prevents melting snow from draining off the roof. The dam grows in size as it is fed by the melting snow above it. The water above will back up behind the ice dam and remain as a liquid. This water will find cracks and openings in the exterior roof covering and flow into the attic space. From the attic it could flow into the home and damage exterior walls, insulation and the ceiling finish. This may lead to the growth of mold and mildew, which could have an adverse impact on the occupants' health.

Ice dams are caused by non-uniform roof surface temperatures. These occur due to heat that comes from the house. The heat can move through the ceiling and insulation, or if there are cracks or openings in the ceiling, the warm air from the house will rise into the attic space and heat the roof as well. "There is a complex interaction between the amount of heat loss from a

(over)



house, snow cover and outside temperatures that leads to ice dams," says Larson.

How should a homeowner deal with ice dams? Over the long term, you can increase your ceiling or roof insulation to cut down on heat loss. You can also make the ceiling airtight so no warm air can flow from the house into the attic space. However, you should evaluate the impact air tightening will have on ventilation systems, combustion devices and other exhaust systems. Natural roof ventilation can also help maintain uniform roof temperatures. Weatherization contractors are professionals who can deal with the heat transfer problem.

For more immediate action, you can take the following steps:

* Remove snow from the roof. A "roof rake" and push broom can be used to remove snow. However, performing this work on or below the roof can be very dangerous. It's best to have professionals do this job.

* In an emergency situation to stop water from continuing to flow into the house structure, make channels through the ice dam. Hosing with warm tap water will do this job. Work from the lower edge of the dam up. The channel will become ineffective within days, however, and is only a temporary solution.

* The ice dam can be removed from the house but places the roof and the remover at tremendous risk. This also should be done by professionals.

For further information on ice dams, refer to the Minnesota Extension Service Distribution Center online catalog for item FS-1068, "Ice Dams," at <http://www.mes.umn.edu/DC/item.html?item=1068>.

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Web,V2,V4,V5,V7,V8,V9,H5

NNRD5455

Source: Tim Larson, (612) 624-6289

Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 28, 1997

ACC
9/10/97

There's more to disaster-related problems than money

Despair, discouragement and personal anguish are often the result when a natural disaster, such as a flood or a brutal series of winter storms, wipes out something you value. Families throughout Minnesota have encountered building damage and lost livestock this winter. And with the possibility of spring flooding, there could be more losses on the way. Dealing effectively with the emotions connected to these losses is difficult, but not impossible.

"Denying that hardships exist works only in the short term," says Sharon Danes, a family resource specialist with the University of Minnesota's Extension Service. "People also deny they're afraid of what will happen to them," she says. "It's human nature to feel uncomfortable with having to rely on others for assistance."

Danes says continued denial can lead to accidents, blaming others and health problems. Depression can also result if one doesn't express the feelings that everyone experiences from a major loss. "We need to remember that the death of a loved one isn't the only time it's okay to grieve," she says.

Past research on farm families experiencing economic difficulties indicates that both negative and positive responses can evolve from loss. Some people concentrate only on the fear of giving up a past in which their personal identity has been grounded. Danes says, "They have tremendous insecurities about beginning a new lifestyle, with a loss of continuity and having nothing substantial, like land, to pass on to future generations. In a sense, they feel like pioneers."

(over)



Yet the research also showed that other farm families experienced a clarification of values and set more realistic goals. "These families," Danes says, "moved forward after their loss. Along the way they improved their family decision-making and long-range planning skills." For some, family and business interaction patterns and managerial practices improved.

When available family resources decrease it becomes even more essential to discuss with all family members how those resources will be used. When a family can agree on their goals, these discussions proceed better and the resources are used more efficiently.

"Don't forget to involve the kids in these discussions," Danes advises. "You might be surprised at the positive contributions kids can make when they know what is going on and are given an opportunity to become involved."

Danes says the first step in dealing with your grief over the losses caused by the extremely cold or wet weather, as well as by heavy snow or flooding, is to talk about your problems. Admit them and dare to say the unspeakable.

Next, do something about the situation. Attend a public meeting about the issue, write to your congressional representatives, or help someone else. Even if there seem to be very few options, talk about alternative plans.

How you perceive the problem is the key. People can adjust their thoughts from "what we have lost or may lose is the most important part of life" to "our family and health are the most important parts of life."

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Web,V4MN,V5MN,V8MN,V9MN,F1,F2

NHEC5457

Source: Sharon Danes, (612) 625-9273

Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 28, 1997

'Picking Up the Pieces' videos offer solutions for post-disaster recovery

Natural disasters cause distress to families on numerous fronts. Most people focus on the more immediate effects of calamity. However, while families are attending to issues such as physical damage to their home or business in the wake of a flood, or financial setbacks when livestock are lost after a winter storm, the emotional impact of these events are often set aside.

"Picking Up the Pieces," a four-part video/guide package, focuses on dealing with the emotional aftermath of natural disasters. It can serve as a springboard for community educators dealing with victims of disasters and is especially relevant for educators, human services professionals and groups interested in family communications issues.

The video/guide package includes four 10-minute video dramatizations on related topics and accompanying text guides which contain discussion themes and activities. The issues dramatized in the videos are easily recognizable, and the guidebook activities are useful both for individuals and groups.

"Ending Isolation after a Natural Disaster" (item EP-6453-NR1) discusses ways in which people can counter a natural tendency to become withdrawn from others after a calamity. Activities focus on mustering the strength and discipline to turn back

(over)



towards the people whom we need most. Main themes of the guide include asking for help, talking and being with people.

When disaster strikes, parents often have so many immediate worries that they might overlook how the situation is affecting their children. "Talking with Children after a Natural Disaster" (item EP-6451-NR1) offers a short description of stress-related behaviors and direct methods of helping children cope. Topics include taking time to talk to your kids, accepting their feelings, and letting children help.

"Managing Anger after a Natural Disaster" (item EP-6452-NR1) places anger in the light of a normal, healthy emotion, and focuses on how to keep anger from becoming hurtful. Methods used in the guide include changing how you see things, expressing your emotions, and calming down.

When people experience loss of one form or another during a disaster, they often find themselves overcome with grief. "Coping with Loss after a Natural Disaster" (item EP-6450-NR1) helps people deal with that grief by understanding its stages, giving into them, and working through them. The stages discussed include denial, anger, bargaining, depression, and acceptance.

These items are for rent only at a fee of \$10 per individual package, and are available through the MES Distribution Center by calling (800) 876-8636 or (612) 624-4900. Please refer to the appropriate item numbers when ordering.

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Web,V4MN,V5MN,V8MN,V9MN,F1,F2

NHEC5456

Source: Judy Keena, (612) 625-7047

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

February 28, 1997

Parents can help children cope with catastrophes, crises

Parents often wonder how children react to crises and catastrophes and what the long-range effects will be on their attitudes, feelings and behavior. This winter has already brought hardship to a number of Minnesota families. With the risk of spring floods, there may be an even greater need to prepare for dealing with children and crises.

Several studies have been made of the effects on children of natural disasters like floods and tornadoes, according to Ron Pitzer, a family sociologist with the University of Minnesota's Extension Service. The studies revealed that some parents felt it best not to talk to their children about the disaster for fear it would only upset them more. Some felt it was best to get the children back into their usual activities as quickly as possible, without acknowledging that a disaster had occurred. Because of their own anxieties, some parents found it difficult or impossible to tolerate discussion with their children.

This unwillingness or inability to discuss the distressing event may have an effect opposite to what the parent intended, according to Pitzer. Adult evasion and concealment may shake children's trust and increase their apprehensions and anxieties. When children are not helped to bring their fears, fantasies and confusions out into the open, they may be expressed in troubled behavior--"bad" dreams and nightmares, anxieties about situations incidental to the disaster, "clinging" behavior, requests to

(over)



sleep near the parents, and regressive behavior such as thumb-sucking and bed-wetting.

The actual crisis event, though potentially frightening, probably is not the most important factor in the child's emotional adjustment, according to Pitzer. At the moment of crisis, children turn to their parents for cues on how to behave and how to feel. If adults avoid feeling needless alarm and irrational panic, children pick up this cue. Parents should not become so involved in the "instrumental" tasks (clean up, etc.) that they do not adequately perform the "integrative" tasks of providing support, comfort and reassurance to their children.

Researchers who have studied the reactions of children to disasters such as floods recommend that parents, teachers or other helpers give children an opportunity to talk out such experiences in their own way. Ideally, discussion of a child's worries should occur when the child brings them up and wants to talk about them, not at a time the parent selects. "Provide simple explanations appropriate to the child's age and ability to understand," says Pitzer.

The results of disaster studies suggest that children can be helped most by providing them with an opportunity to talk out such experiences in their own way, by giving the support and security they need and by being understanding if they slip back a step in moments of crisis.

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Web,V4MN,V5MN,V8MN,V9MN,F1,F2

NHEC5458

Source: Ron Pitzer, (612) 625-8169

Editor: Jennie Y. Rominger, EDS, (612) 625-6294, jrominger@mes.umn.edu

1156
9 Apr 7

March 5, 1997

White mold is growing concern for soybean producers

White mold is a soybean disease that is a growing concern for many producers.

Weather patterns and increasing levels of sclerotia (seed of white mold) in fields seem to be raising the probability that the disease will occur. Jim Nesseth, extension educator in Jackson County with the University of Minnesota's Extension Service, lists the following information that scientists have learned about white mold:

--Sclerotia will grow from a depth of two inches or less with adequate moisture and cool temperatures (40-60 degrees F).

--Plant canopy is a major factor in sclerotia germination, completion of the reproductive cycle and plant infection.

--Sclerotia can survive in soil up to 10 years.

--Spores from germinated sclerotia (apothecia) infect soybeans at flowering.

That's because the spores need nutrients from the blossoms and a wet surface 12-16 hours daily for 3-5 days, or 42-72 hours continuous, for germination.

--Completion of the reproductive cycle results in white mycelium and sclerotia that develop on the surface of the stem and in the pith and pods.

--Corn is a non-host crop.

--Sunflowers, alfalfa, clovers, peas and edible beans are host crops.

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--Reported weed hosts are lambsquarters, redroot pigweed, velvet leaf and common ragweed.

--Sclerotia buried less than one inch deep often germinate the next year.

--Limited research indicates the herbicide Cobra applied postemergence at the R1 stage of soybeans significantly reduces the incidence of white mold and increases yield.

--The herbicide atrazine, at the full two-pound rate, in laboratories has stimulated sclerotia to germinate with abnormal apothecia. Lower rates would have less effect.

--Treflan, Prowl, Sencor and Command stimulate germination of sclerotia.

--Fungicide treatments of Benlate and TopsinM need to be applied during 20-30 percent bloom or to blossoms on the lower half of the plant. It's essential to have good spray coverage and penetration of the entire plant.

Management practices can reduce the impact of white mold, Nesseth points out.

He says the following practices can be beneficial:

--Use wider rows.

--Use lower plant populations.

--Select varieties that have the most disease tolerance (use data from Iowa State University and University of Wisconsin research trials).

--Select varieties that have less dense canopies.

--Don't plant on manured fields.

--Develop a rotation of non-host crops using herbicides and tillage systems to stimulate sclerotia germination.

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--Control host weeds.

--Postemergence applications of Cobra when soybeans are just beginning to bloom are reported to result in lower incidence of disease. There could be additional benefits if broadleaf weeds controlled by Cobra are present in the field.

--Consider late cultivation of soybeans during early bloom when apothecia (spores from germinated sclerotia) are most likely grown and ready to release infected ascospores.

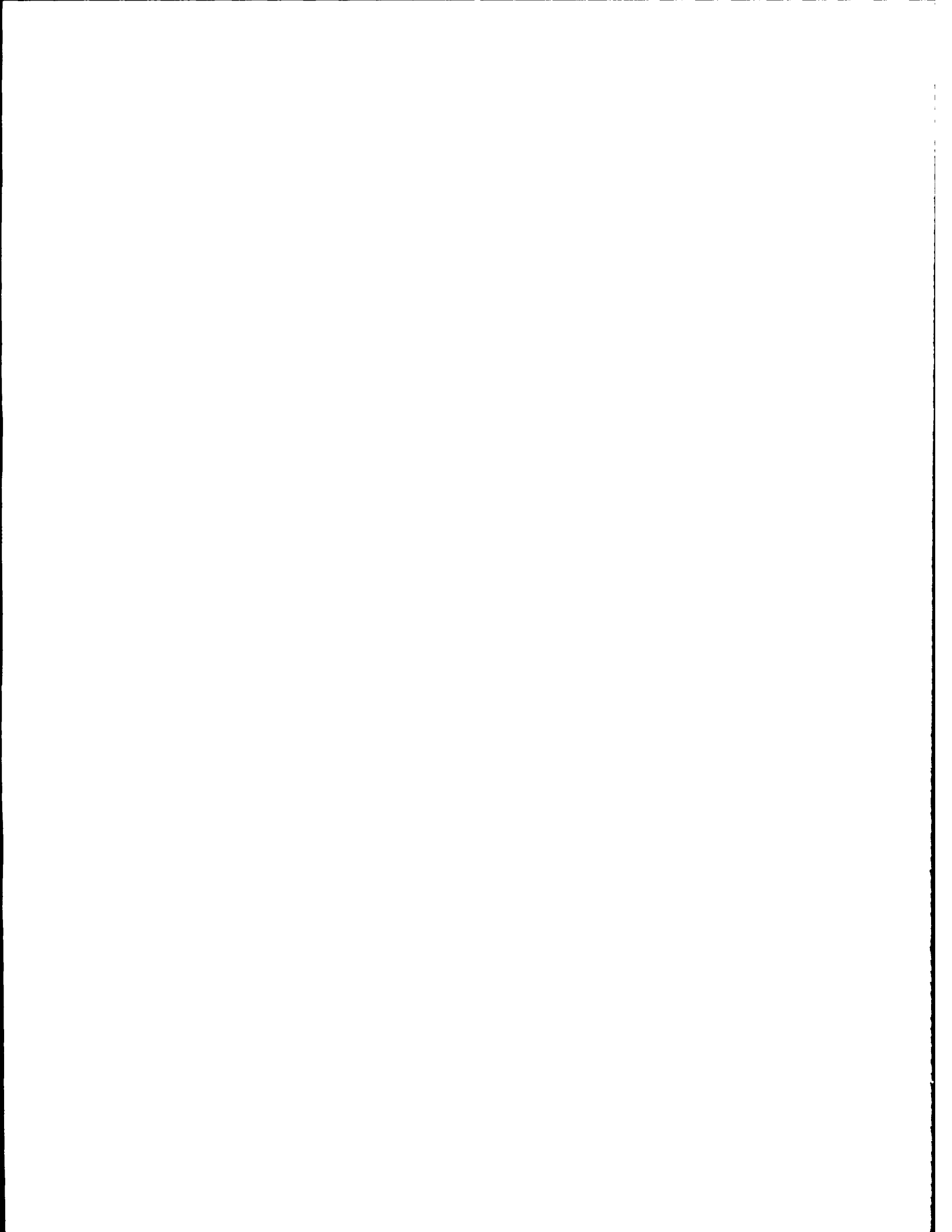
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Web,V2,F4

NAGR5459

Source: Jim Nesseth, (507) 662-5293

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



March 6, 1997

Practice tolerance and understanding in the wake of snow days

If you're a parent and have been living amid the Minnesota snow dunes this winter, you may have found yourself at wits end with the kids at home because of all the canceled school days. Unfortunately, the aftereffects of this harsh winter may breed even more emotional stress in the months to come, says Ron Pitzer, family sociologist with the University of Minnesota's Extension Service.

All those missed school days will have to be made up this summer. This could create an atmosphere of stretched nerves for the ones who are still smarting from winter cabin fever. "Everybody's being inconvenienced," says Pitzer, "so everyone needs to remember that others are affected."

Yes, you weren't the only one afflicted with cabin fever. Your kids are also susceptible to the pressures of being stuck at home day after day. However, where adults will often sink into depression, kids might instead become obnoxious, disobedient, or aggressive. Pitzer says that parents may simply miss the connection.

On top of that, you may not have been happy about having your children out of school for so many winter days. But the kids weren't necessarily happy either. Once the excitement of being excused from school was past, the reality of an extended school year set in for them as well. "They may not have been in school for quite a while," says Pitzer, "but it was still hanging over their heads."

(over)



Ironically, as the makeup days eat away into students' summer vacation, some parents may later complain and undermine the importance of school. This will be especially true if they count on their kids' help around the house or farm when school is out. Pitzer stresses the need to understand that school is for children an important full-time job that has merely been delayed. "Demeaning its importance could harm their kids' own self-esteem, performance and commitment at school," says Pitzer.

Come June, it will have been a long time since the start of the school year. This unusual length could adversely affect students' motivation toward schoolwork. They will also be unhappy about missing out on their summer fun or summer jobs. Pitzer points out that the cabin fever from this January could well linger all the way to June unless steps are taken to allay the stress.

Pitzer suggests that you'll do yourself a big favor by first admitting the toll which cabin fever may have had on you and your family. Try to reframe your negative feelings by at least acknowledging your lack of control over this situation. Then, if possible, take it one step further and look for something positive from the experience. Forcing a temporary break from your mental or physical surroundings will help steer you back onto a healthy course.

One sure way to boost your spirits, Pitzer adds, is to keep up with some form of physical exercise. This is especially helpful in venting built-up stress when you have been held inside for long periods.

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Web,V4MN,V5,MN,V8MN,C1,F1,F2

NHEC5462

Source: Ron Pitzer, (612) 625-8169

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

MSC
a A J 7p

March 6, 1997

Mold/mildew growth can affect your health

This year's heavy winter snows and threatening floods could provide fertile breeding ground for mold and mildew in your home. Apart from the damage that mold can cause to your household items, it is important to be aware of the its health implications.

Most people associate mold and ill health effects with consuming perishable food after it loses it freshness. But according to Andrew Streifel, hospital environment specialist at the University of Minnesota, the mold and mildew that grow in damp parts of your home also can cause health problems. "The body reacts to mold particles which are airborne, spread and breathed into our lungs," says Streifel.

When mold grows in one area of the house, it can emit particles which travel through the air. Generally, these particles will settle into one area if there is little air movement. But some of the particles will inevitably stay airborne, so that inhabitants can be exposed not just in the room where the mold is growing, but throughout the entire house.

Streifel says that a person breathing in mold particles can be at risk for numerous illnesses. The biggest health threat is from hypersensitive diseases, including asthma and chronic nasal drip.

(over)



Humans can also develop infections caused by airborne fungus. According to Streifel, people who are immune-suppressed are particularly susceptible. "For example," says Streifel, "if someone with a transplanted kidney organ were exposed to high doses of mold particles, they could develop an infection of the lung."

An emerging health issue involves fungal growth which produces toxins in spores, which can cause symptoms. But Streifel says that knowledge on this reaction remains limited and is being investigated.

There are various symptoms of mold exposure, including eye irritation, shortness of breath, running nose or general malaise. You may notice that you suddenly feel better when you leave an affected area. Poor indoor air quality is associated most often with inadequate ventilation, but investigations are linking microbial growth with occupancy problems.

The best way to prevent mold-related illnesses is to stop mold at its source of growth, which means stopping moisture. Keep the house dry, especially in predictably damp areas like the bathroom or the basement. If an area of your house starts smelling like mildew, Streifel says it has already set up shop and you will need to get the mildew under control. Bleaching the moldy area thoroughly is the first step. But Streifel warns that mold can grow back even after the area is cleaned, so it is a good idea to dehumidify damp areas.

Ironically, house occupants become most heavily exposed to mold particles during the cleaning process; this is especially true for the one doing the cleaning. The cleaning stirs settled particles and the ensuing air movement causes them to become airborne again.

(more)

If you're going to clean up a mold-ridden house, Streifel advises that you wear a face mask. If you use a vacuum cleaner to clean a moldy area, the particles that are taken in could be reintroduced in the outflow every time you vacuum. Use a highly filtered vacuum and be sure to replace the used vacuum bag.

Streifel stresses the importance of getting the moldy air out of the house. Plan carefully to protect yourself and others in the house when cleaning moldy areas, and see a physician if you have persisting symptoms of mold exposure.

For more information, refer to "Mold and Mildew in the Home" (item #FO-3397-NR1) or "How to Prevent and Remove Mildew" (#FO-6211-NR1). These publications are available from the MES Distribution Center, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6069; or call (800) 876-3636 or (612) 624-4900. The costs are \$1.50 and \$2.00 respectively. Tax and shipping charges are extra.

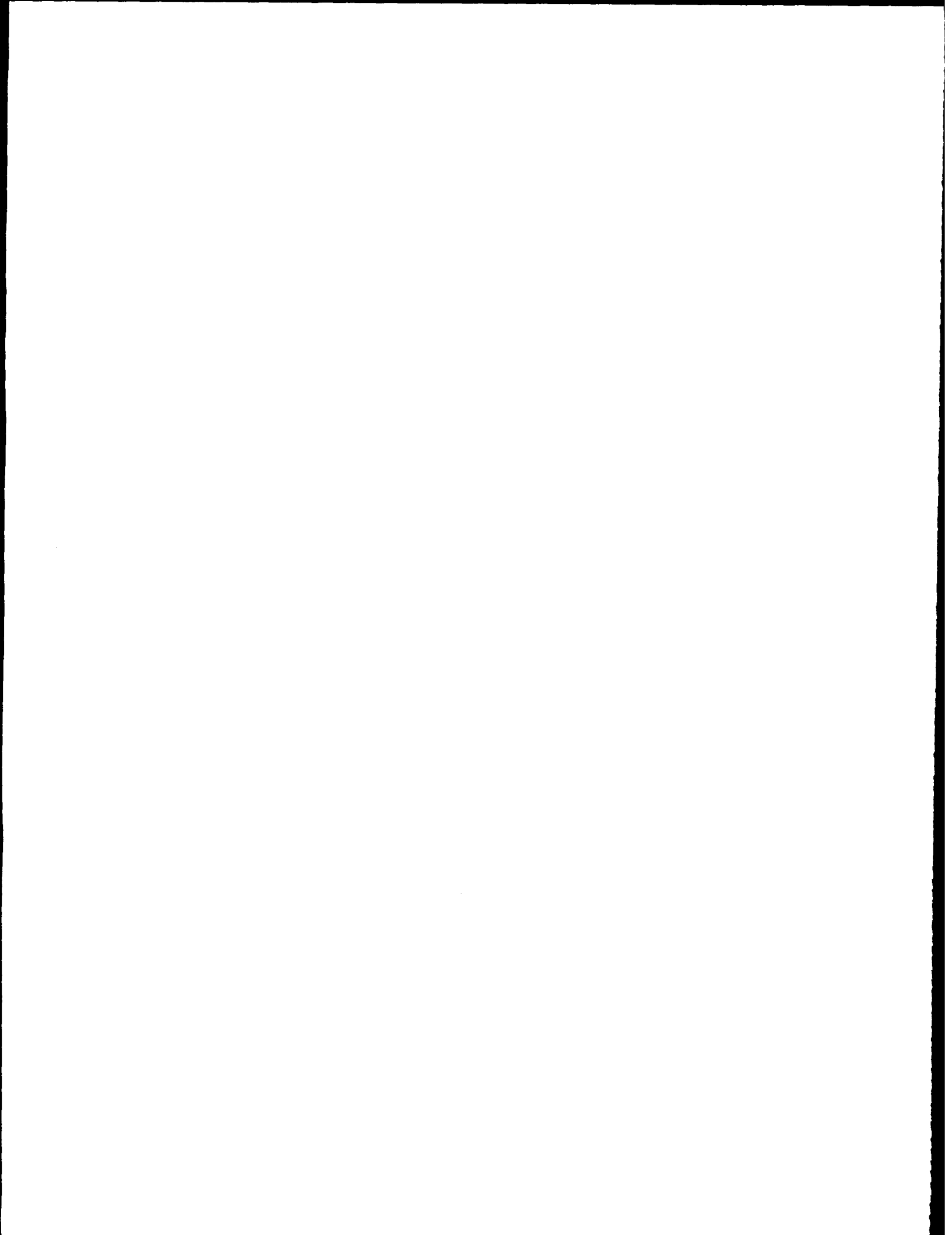
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Web,V4,V5MN,V7,V8MN,H2,H5

NEXT5460

Source: Judy Keena, (612) 625-7047

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu



MSC
9 A 2 7

March 11, 1997

Take steps to improve farmstead drainage, reduce spring mud problems

Mud is a fact of life on a farmstead during spring snowmelt, especially in outside livestock lots. However, strategies to reduce mud problems and improve drainage can make a difference, says an engineer with the University of Minnesota's Extension Service. Kevin Janni offers the following suggestions:

--Remove deep snow. A foot of snow is the equivalent of one to two inches of water just waiting to make mud. If you get a big snowfall or develop a large drift in a lot, plow or scrape it off to the side. This will reduce the snowmelt come spring. Snow containing manure needs to be handled carefully so that the manure does not run off into surface waters when the snow melts.

--Pile snow strategically. When you do move snow around the farmstead, think about where you put it. Locate piles so the snowmelt they produce will drain away from the lot rather than through it.

--Divert drainage. Take a good look at the overall farmstead drainage pattern in the vicinity of livestock lots. If other parts of your property drain through the lot, invest some time this summer in regrading the slope or adding shallow diversion ditches so that runoff water flows around lots.

--Manage roof runoff. On many farms, water runs off the barn roof into the livestock lot. A shallow trench or ditch beneath the overhang can help direct this water

(over)



out of the yard. Better yet, install gutters and downspouts that empty away from animal lots.

--Add a pad. A concrete pad along feed bunks and around waterers can help keep eating and drinking cattle high and dry. Pour pads 10 to 12 feet wide for best results.

--Raise your grade. Another long-term solution is to grade your lot to provide continuous drainage away from the animals. A four to six percent slope is recommended.

--Make mounds. Mounds of earth five to six feet high with a 16 to 20 percent slope are used in beef feedlots to help keep animals dry. If you decide to build mounds, it's a good idea to stabilize them by adding bedding or disking in barn lime at a rate of one pound per square foot on top of the mounds.

Additional information on improving drainage and reducing mud problems is available in two Midwest Planning Service handbooks. They are MWPS-6, "Beef Housing and Equipment Handbook," and MWPS-18, "Livestock Waste Facilities Handbook." Check with your county office of the Minnesota Extension Service on the availability of these handbooks.

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Web,V2,V4MN,V5MN,B1,D1,H6,S1,S2

NAGR5463

Source: Kevin Janni, (612) 625-3108

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

*MSC
gtdp*

March 11, 1997

Two-pass herbicide strategy reduces risk of injury to corn

A risk management approach is the best strategy for chemical weed control in corn, says a weed scientist with the University of Minnesota's Extension Service.

Jeff Gunsolus says current University of Minnesota studies indicate two-pass weed control reduces the risk of herbicide-induced crop injury compared with one-pass postemergence weed control. That's because the two-pass system reduces the amount of chemical being applied to the plant at any given point in time, or to any location in the environment. It also recognizes the fact that not all weeds germinate at the same time.

"Research also indicates the two-pass system is economically viable," adds Gunsolus.

The Minnesota scientist says the current trend toward postemergence systemic herbicides, rather than soil-applied herbicides, supports the two-pass system. "The action of postemergence herbicides takes place in a less buffered system," he points out. "That contrasts with soil-applied herbicides, which have some degree of binding to soil particles and are not always as readily available for uptake into the plant. After a postemergence product is applied, environmental stresses such as cold temperatures, even of short duration, at a critical time of plant development can injure the crop.

(over)



"Also, because postemergence systemic herbicides can move in the plant, we are seeing crop injury symptoms we have not previously seen."

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Web,V2MN,F4

NEXP5464

Source: Jeff Gunsolus, (612) 625-8130
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

*MSC
9/27*

March 12, 1997

Farm safety and health conference will be April 2 in Rochester

A conference for health care professionals, educators, and agribusiness leaders on how to make farming healthier and safer will take place April 2 in Rochester, Minn.

The "Agricultural Medicine: Caring for Farm Families" conference will be at the Radisson Plaza Hotel in Rochester. It's sponsored by the Midwest Center for Occupational Health and Safety, an educational resource center that includes the University of Minnesota and St. Paul-Ramsey Medical Center.

"Farming remains Minnesota's most dangerous industry," says John Shutske, agricultural safety specialist with the university's Minnesota Extension Service. "In 1996, 38 people died in farmwork-related accidents. This conference is an effort to make farms safer and healthier places for farmers, farm workers, and children who live on farms."

The conference will include in-depth discussions about the prevention and treatment of important farm safety and health issues, including respiratory diseases, hand injury and pesticide exposure control. Health care professionals who attend the conference will receive appropriate medical or nursing continuing education credits. Others who attend also will receive continuing education certification.

To obtain a brochure or additional information about this conference, call Sharon Kopp at (612) 221-3223.

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Web, V2, A4, E4, F2, Z4

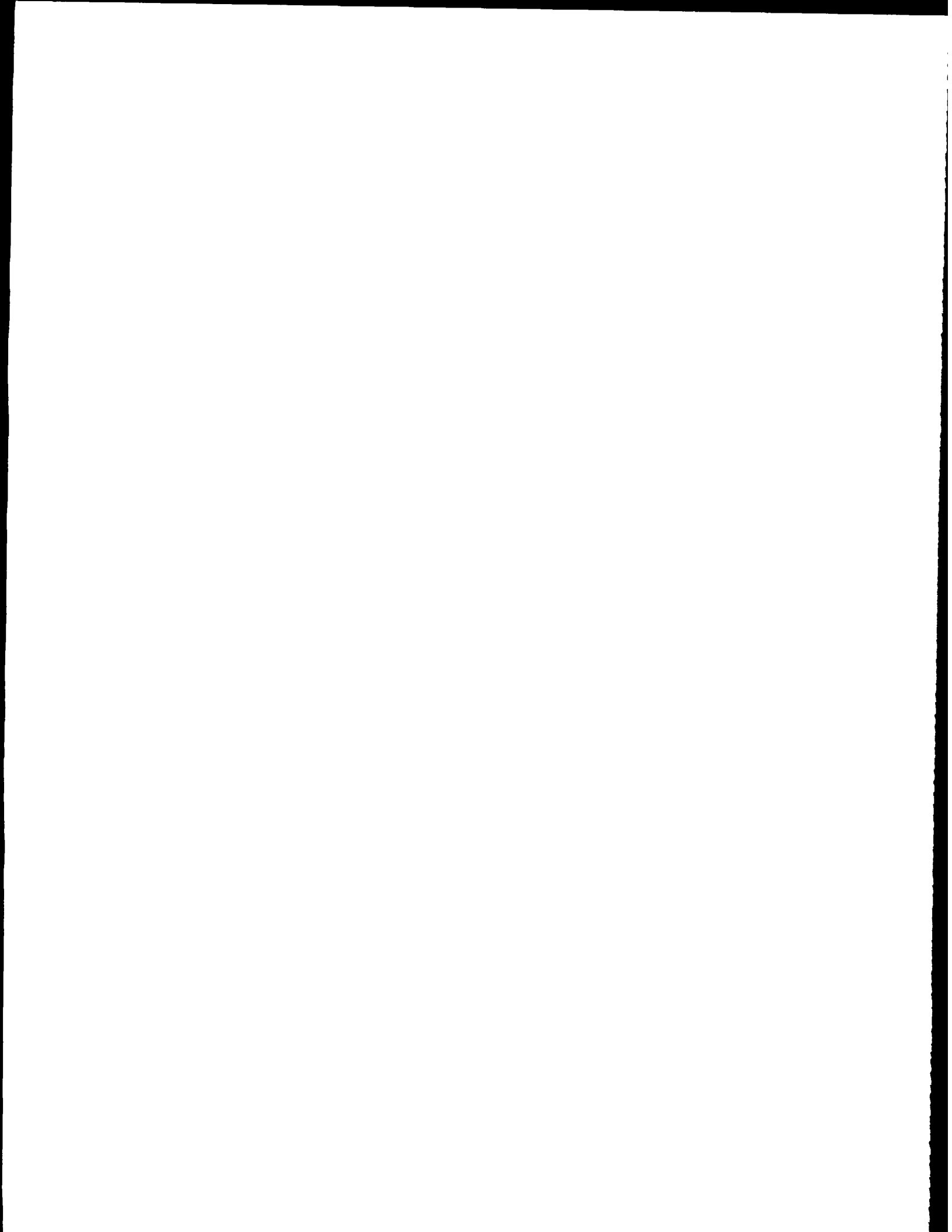
NAGR5465

Source: John Shutske, (612) 626-1250

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





MSC
9/27/97

March 17, 1997

Editor: Please note the two reproducible graphics which follow this release.

Farm work deaths in Minnesota continue upward climb in 1996

The year 1996 was another deadly one for Minnesota farm families. Thirty-eight farmers and members of rural families were killed in the farm workplace last year, according to figures compiled by the Farm Safety and Health Program of the University of Minnesota's Extension Service. That's up from an all-time low of 24 just two years ago and 31 in 1995.

"We've seen a dramatic upturn in farm deaths the last two years after achieving the record low in 1994," says John Shutske, U of M farm safety and health specialist.

There were six grain bin fatalities on Minnesota farms last year, compared with an annual average of fewer than two during the past several years. There were also five tractor rollover deaths and six deaths from falling off farm equipment or tractors.

Nearly one in five farm fatalities involves a child, according to Shutske's statistics. "The deaths of children on a farm most often occur after they fall off a tractor or other heavy machine and then are run over by a wheel or other piece of equipment," says Shutske. "Our fatality investigations show this consistently.

Exact reasons for the jump in farm deaths the past two years are hard to pinpoint. However, Shutske cites some possible explanations.

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"In 1996, Minnesota experienced relatively high crop yields," he says. "However, crop condition was not optimal, leading to more producers having to enter potentially deadly grain storage bins to manage grain quality. Also, larger yields can lead to more total hours of work exposure and longer periods of work without rest breaks.

"Another possible explanation is that we haven't had a 'dramatic' farm injury such as the one in North Dakota that amputated John Thompson's arms in 1992. That single event caused a tremendous amount of public concern. Farm families were on high alert during the two years following Thompson's injury."

Shutske also suggests another possible factor in the death rate upturn--the cutback or elimination of several statewide and local educational and safety promotion activities in Minnesota. Federal and state funding reductions since 1994 have led to cutbacks or changes in program priorities.

"Changing the behaviors of farm families, including kids, parents and grandparents, is an ongoing process," Shutske points out. "It takes a commitment from the entire community. According to all available research on successful community-based injury and illness prevention, one-shot programs have little lasting effect. Supporting local programs and providing people with current and useful information takes time and resources to do the job right."

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Web,V2MN,V4MN,V5MN,A4,E4,F2MN

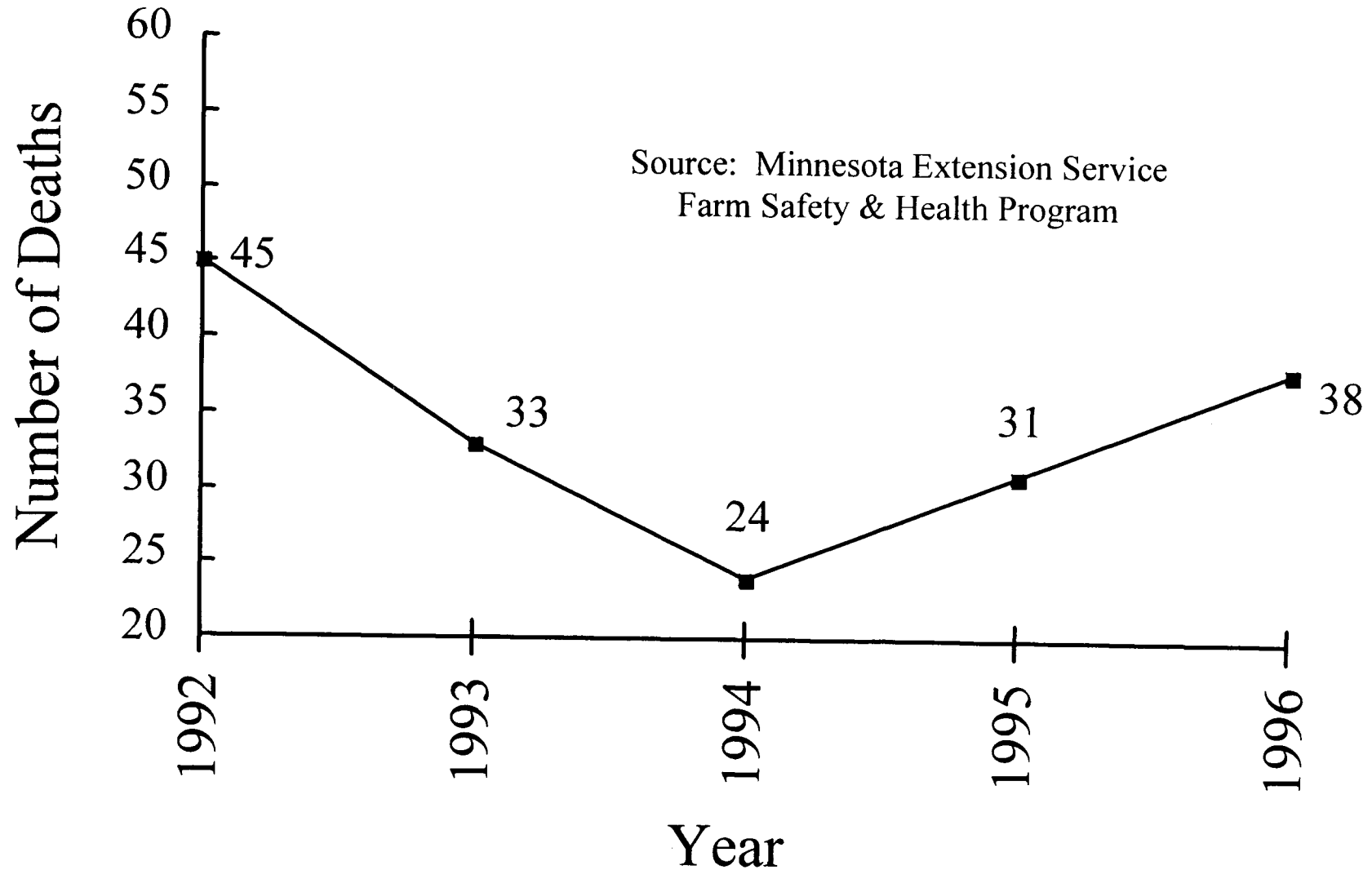
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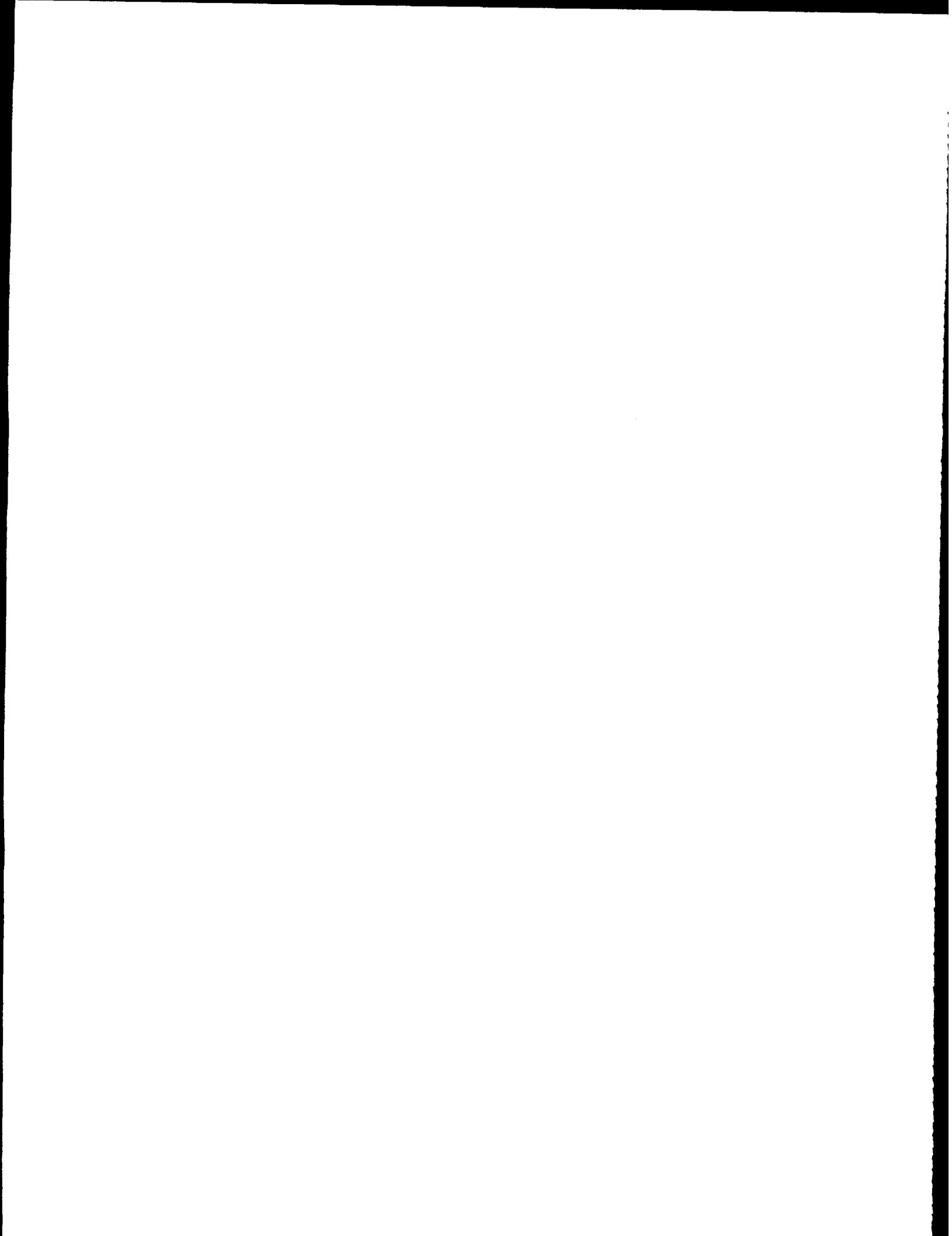
Source: John Shutske, (612) 626-1250

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

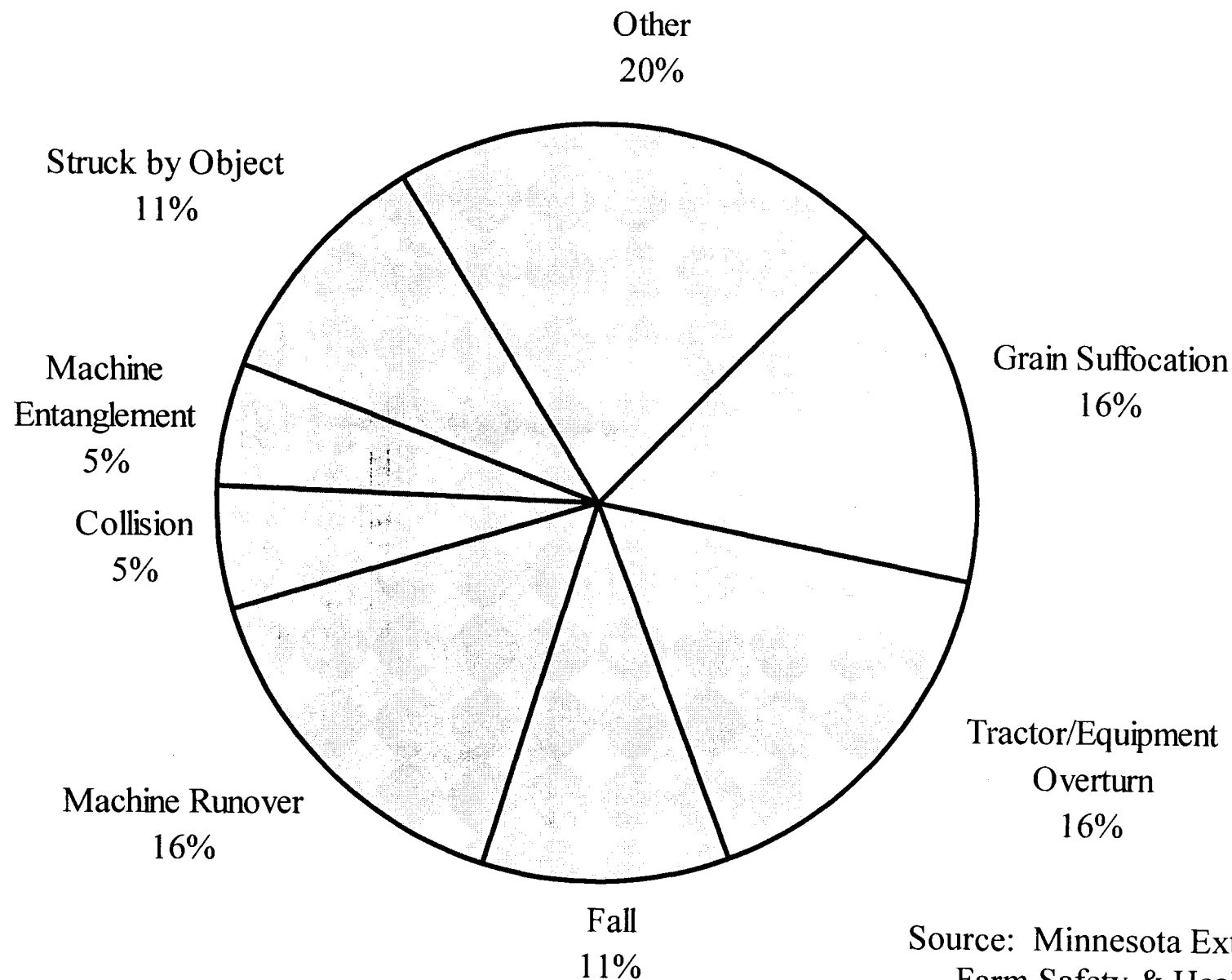
Farm Work Deaths in Minnesota

past five years

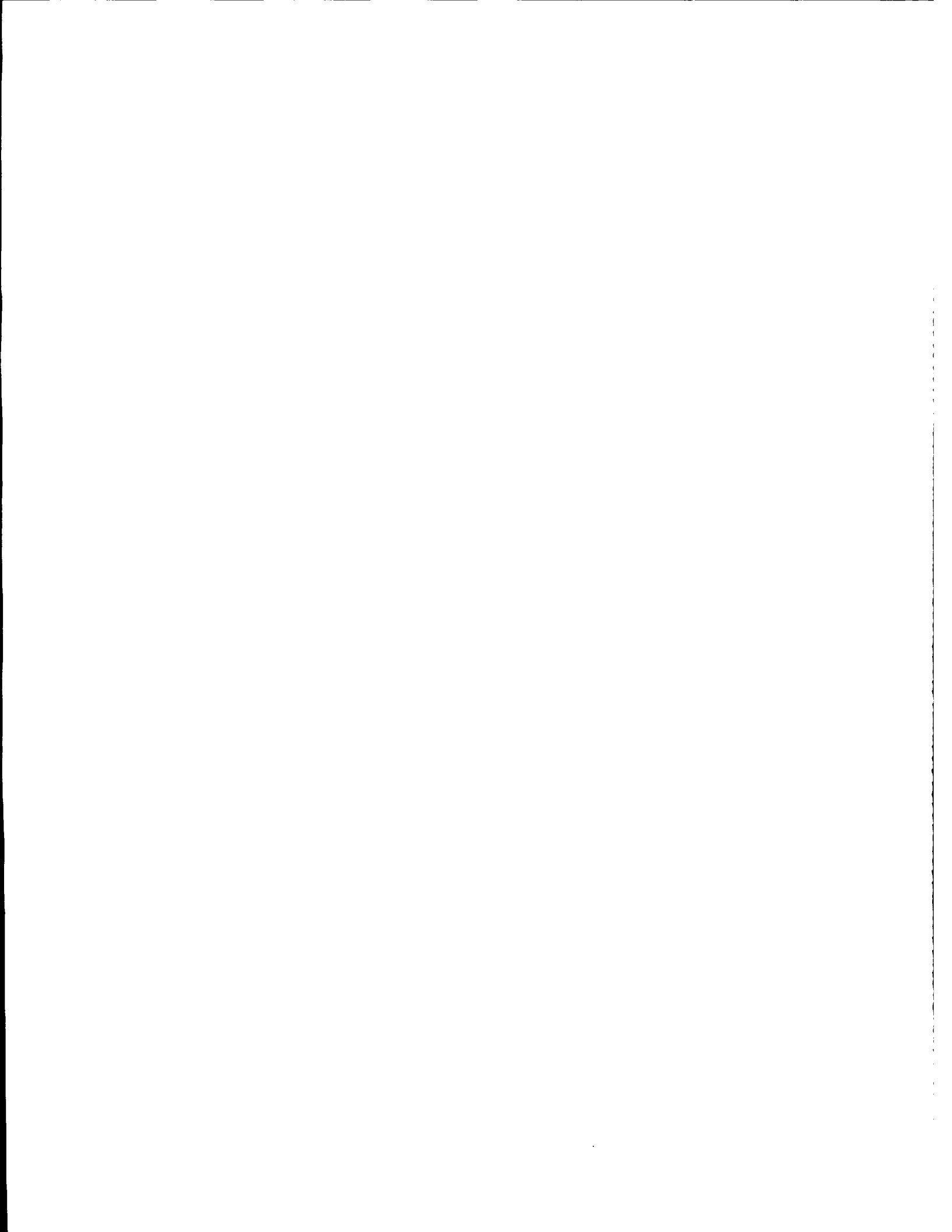




Minnesota Farm Deaths - 1996



Source: Minnesota Extension Service
Farm Safety & Health Program



March 19, 1997

Harsh winter brings potential for alfalfa winter kill

The weather that has made life difficult for Minnesota people this winter has probably also done some damage to the state's alfalfa crop. But the extent of any alfalfa winter kill won't be known until spring, says Bob Byrnes, extension educator in Lyon County with the University of Minnesota's Extension Service.

"The November ice storm and the persistence of ice sheeting are the biggest concerns," says Byrnes. "Fields that were cut close last fall, with short stubble and no late-season regrowth, are at highest risk. The risk is much lower for fields with abundant uncut fall growth and stubble of six inches or more."

Byrnes says the main causes of alfalfa winter kill are cold exposure, crown heaving and ice sheeting. He provides the following review of these factors:

Cold exposure winter kill occurs when the alfalfa crown temperature drops below 15 degrees F at a four-inch soil depth for more than two weeks. This occurs during a cold, open winter period. Early 1996 brought such conditions, resulting in widespread alfalfa winter kill a year ago.

Alfalfa crown heaving is due to alternate soil freeze and thaw cycles that literally heave the crowns from the soil. This is fairly rare, but can happen in either winter or spring.

(over)



Ice sheet damage occurs in two ways. One is from cold exposure. In fields with little stubble, the ice sheet is in contact with the soil. This reduces soil and alfalfa crown temperature enough to cause winter kill. The second type of ice sheet injury is smothering. The alfalfa crown is a living organism that respire, or breathes. Ice sheeting traps the respired carbon dioxide, which can accumulate to toxic levels if ice has sealed the soil surface. Research has shown that ice sheeting lasting 21 days or longer will result in dead alfalfa plants. However, the winter kill potential is minimized if the ice becomes porous during that time.

If alfalfa is killed from smothering, dead plants will show up early in the spring. The plants will show no regrowth and the top of the crowns will be mushy and rotted. This contrasts with last year's cold exposure winter kill, which was visible when the crowns were depleted of carbohydrates to support shoot growth. In many cases this did not occur until mid- to late May.

"This winter, in fields where snow cover came quickly after ice sheeting, the result may have been porous ice that did not trap toxic gases," says Byrnes. "There is less likelihood of winter kill in these fields. Younger stands of alfalfa are also less susceptible to winter kill than older stands, due to the plants' smaller, more flexible crowns."

If winter kill occurs this year and affects an entire field, Byrnes suggests rotating the field to corn. The corn will benefit from the accumulated nitrogen and the rotation effect. If plants in only parts of a field are killed, those areas should be interseeded with 10-12 pounds of alfalfa seed per acre.

(more)

"Auto-toxicity may be a concern for some producers," says Byrnes. "This can inhibit germination and reduce seedling growth. Experience and research in Minnesota has shown that auto-toxicity is not a concern in fields of one- or two-year alfalfa. In fields older than two years, auto-toxicity can be managed with tillage. Tillage of killed acreage with a delay between tillage and reseeding will greatly reduce auto-toxicity concerns."

For more information on alfalfa winter kill potential, contact your county office of the Minnesota Extension Service.

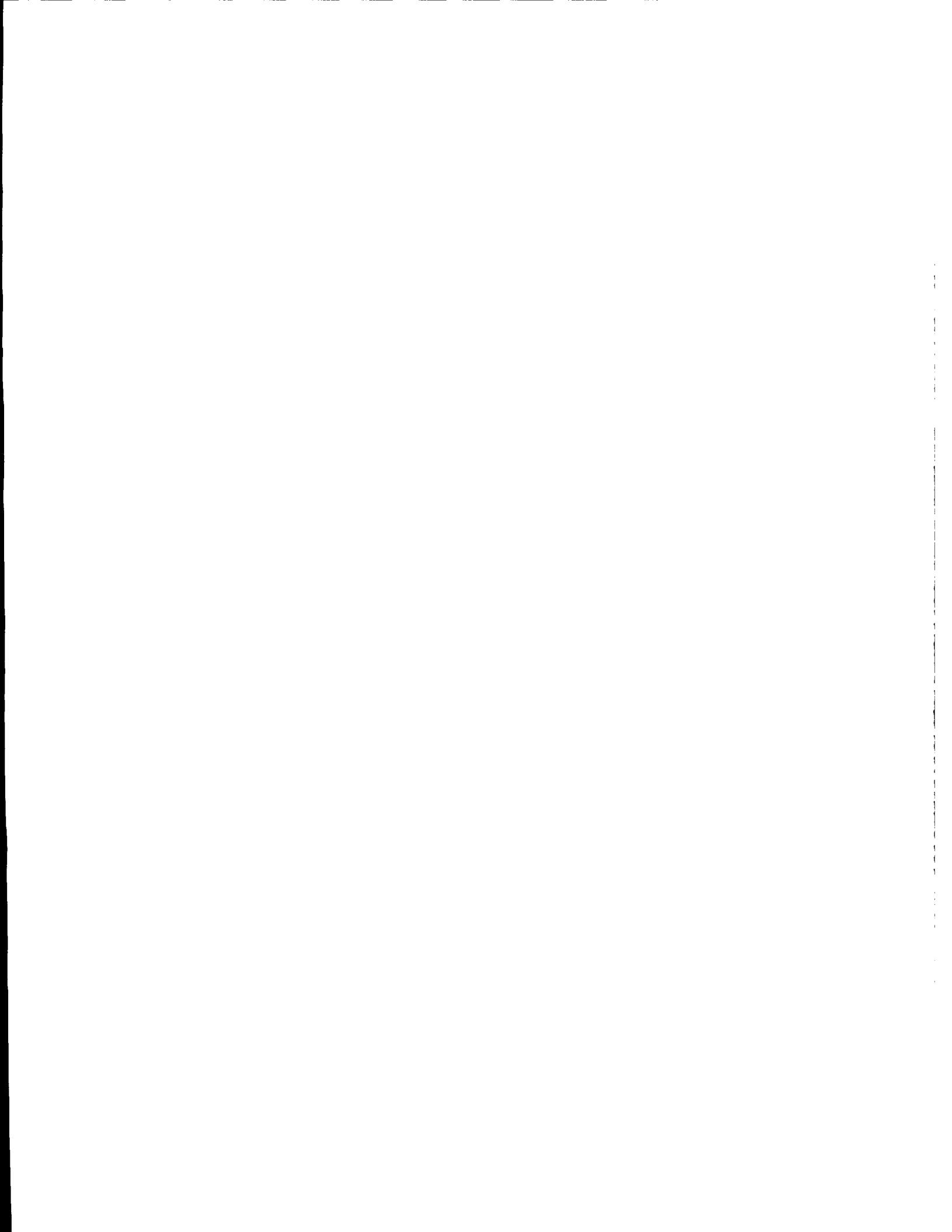
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Web,V2,F4

NAGR5468

Source: Bob Byrnes, (507) 537-6702

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



March 19, 1997

Row crops may not be best option when CRP contracts expire

In you have land in CRP (Conservation Reserve Program), it's a good idea to consider all options when CRP contracts expire. Getting the plow out and converting the land to row crops may not be the best choice, says Bill Wilcke, engineer with the University of Minnesota's Extension Service.

"CRP has produced a number of environmental benefits over the last decade," says Wilcke. "It would be desirable to continue those benefits where possible. "

There may be situations where moldboard plowing is the best choice, notes Wilcke. However, he suggests considering the following questions before you plow:

--Would the land, or at least part of it, be eligible for the next CRP sign-up?

Contact your county extension office or NRCS office for details on eligibility criteria for the new CRP. Land that would provide significant environmental benefits if kept out of crop production might have a good chance of being accepted back into CRP.

--Are you interested in grazing, or in renting the land to a grazier? The first step is to evaluate the quality of forage on your CRP land. If the forage that's there now is inadequate for grazing, what would be necessary to improve it? Some farmers have had good success improving forage without major tillage. Also, estimate the cost of providing water and fencing. NRCS has started a new Grazing Land Conservation

(over)



Initiative, and is gearing up to provide technical assistance to farmers interested in grazing. Contact NRCS or extension offices for help in assessing grazing potential.

--If you're not interested in grazing, would hay production be feasible? Again, the first step is to evaluate forage quality and determine what would be necessary to improve it. For hay production, providing fencing and water isn't a concern, but leveling gopher mounds and controlling gophers might be.

--Can you establish crops with minimal or no tillage? In situations where gopher infestation and biomass coverage are light, some farmers have been able to establish crops without tillage. In other cases, disking to level gopher mounds has been sufficient to allow for crop establishment. Consider these time- and soil-saving options before resorting to heavy tillage.

Wilcke says extension educators in southeast Minnesota have evaluated forage on some CRP land. They also surveyed farmers who have already converted land coming out of CRP to various other uses. To find out what they learned, contact the extension offices in Rice County at (507) 332-6109 or Steele County at (507) 444-7685.

In addition, extension educators in southwest Minnesota carried out a demonstration project converting CRP land to several different crops. Contact extension offices in Lincoln County at (507) 694-1470 or Lyon County at (507) 537-6702 for more information. To learn more about converting CRP land for grazing, contact the extension office in Adams County, Iowa, at (515) 322-3184.

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Web,V2,V4MN,V5MN,C4,F4,P1

NAGR5467

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

March 19, 1997

<http://www.mes.umn.edu/Documents/news.html>

Editor: Call Sam Brungardt at (612) 625-6797 or Jennie Y. Rominger at (612) 625-6294 to obtain a b/w print or color slide of the cover. The price and availability in this release are good until June 30, 1998. If you run this release after that date, please call (800) 876-8636 or (612) 624-4900 to confirm price and availability.

Butterfly gardens help compensate for loss of natural habitat

Sadly, all too often wildlife habitat is one of the casualties of residential and commercial development. Butterflies are affected as much by this loss of habitat as are other animals. They too need the proper habitat to thrive and increase in numbers.

What can we do? If you enjoy the variety, interest and beauty that butterflies provide, consider establishing a butterfly garden, a bit of habitat that will encourage butterfly populations.

Butterfly gardening involves planning your garden to attract, retain and encourage butterfly populations, says entomologist Vera Krischik, director of the University of Minnesota's Center for Urban Ecology and Sustainability and author of the new Minnesota Extension Service bulletin, "Butterfly Gardening."

Krischik says gardeners should plant a variety of nectar-producing plants to provide food for adult butterflies throughout the growing season, but especially in mid- to late summer. They should also plant the specific host plants that each butterfly species needs to provide food for its larvae, or caterpillars. For example, adult Monarch butterflies may feed on the nectar of beebalm, zinnias, coneflowers, sedums and butterflyweed, but they will lay their eggs only on butterflyweed and milkweeds that can serve as a source of food for their caterpillars.

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Other important elements of a butterfly garden are a basking rock, a bowl of wet sand or a mud puddle where they can obtain minerals, and shelter from gusts of wind.

"One of the most important decisions the butterfly gardener must make is to avoid using broad-spectrum pesticides all around the yard," Krischik says. "Instead, use more benign spot treatments on insect pests. Alternative control methods include the use of oils, soaps and microbial insecticides. One desirable side effect of decreased pesticide use will be an increase in the number of natural predators, such as spiders, lacewings and ladybird beetles, that help control unwanted insect pests."

"Butterfly Gardening" has many line drawings, 40 color photographs and a diagram of a sample butterfly border garden. The 22-page bulletin explains how butterflies differ from moths, discusses the life histories of a few common butterflies, describes common butterfly behaviors and explains how to create a butterfly garden. It has a list of caterpillar host plants for common butterfly species, an extensive listing of butterfly and moth garden plants and a checklist of Minnesota butterflies. Information in the publication will be most applicable in the North Central United States and central Canada--Illinois, Indiana, Iowa, Kansas, Manitoba, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Ontario, South Dakota and Wisconsin.

"Butterfly Gardening" is available from county offices of the Minnesota Extension Service. Or, credit card orders for it can be placed by phoning (800) 876-8636 or (612) 624-4900 and asking for item BU-6711-NR. The cost is \$5 plus shipping and sales tax (where applicable).

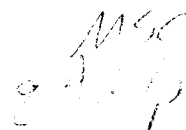
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Web,G1,T2,V4,V5,V7,V8,V9,Selmedia

NAGR5469

Source: Vera Krischik, (612) 624-3636

Writer: Sam Brungardt, EDS, (612) 625-6797, sbrungardt@mes.umn.edu



March 20, 1997

Forest Ecology Summer Camp for teens set in northern Minnesota

Forests are a valuable source of wood products, wildlife habitat and recreational opportunities. They protect our soil and renew our water resources. Producing these benefits requires generations of careful planning and management. Tomorrow's forests depend on today's youth.

Forest Ecology Summer Camp will provide an opportunity for teens to explore the natural environment, natural resource careers and forest stewardship. The camp, for young people ages 14-18, will be offered July 27-August 2 at the Wolf Ridge Environmental Learning Center on Minnesota's north shore.

Camp participants will work in teams to develop a management plan for a 10-acre woodland. The plan will demonstrate how a well managed forest can serve as a valuable source of wood products, wildlife habitat and recreational opportunities, while protecting woodland beauty as well as soil and water resources. Leisure activities will include canoeing, rock climbing, hiking and a high ropes course.

The number of participants is limited, so early registration is suggested. Young people of color are encouraged to apply. Cost for the week-long camp is \$220 per person. Some scholarships are available.

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Camp sponsors include the University of Minnesota's Extension Service, College of Natural Resources, Center for 4-H Youth Development; USDA Forest Service; Minnesota Department of Natural Resources; Wolf Ridge Environmental Learning Center; and Minnesota Society of American Foresters.

For more information contact your local county extension office or Stephan Carlson, Center for 4-H Youth Development, phone (612) 626-1259 or (800) 444-4235, e-mail scarlson1@mes.umn.edu.

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GOPH,V4MN,V5MN,V8MN,F8MN,F9MN,A1,A3,H3,N1,Y1MN,Z1,Z2,Z3,Z7

NNRD5470

Source: Stephan Carlson, (612) 626-1259, scarlson1@mes.umn.edu
Editor: Jennie Y. Rominger, EDS, (612) 625-6294, jrominger@mes.umn.edu

MSC
8A-7p

March 24, 1997

Protect your septic system from flood damage

If you have a septic system in an area that is subject to flooding this spring, there is potential for damage to the system. However, you can take action before the flooding to minimize the damage, says Barbara Liukkonen of the University of Minnesota's Extension Service.

"When floodwaters cover your septic system, it should not be used," says Liukkonen, a U of M water quality education coordinator. "If the drainfield or ground above your septic tank floods, your individual sewage treatment system is not working."

Liukkonen adds that if your drainfield is saturated or has standing water not caused by flooding from a nearby river or lake, you may have a serious problem. Contact your county health department or planning and zoning department for an inspection.

Before flooding occurs, you can prepare to minimize the adverse effects of floodwaters on your septic system, says Liukkonen. She lists the following steps:

--Seal all possible points of entry to the system. If possible, seal the manhole and inspection ports to keep excess water out of the septic tank.

--Turn off the pump at the circuit box before the area floods. If you have a pump in the lift station of a mound system, turn off the electricity. Don't forget to turn the

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pump back on before you use the system again. If possible, remove the pump from the tank to prevent sediment damage.

--Waterproof all electrical connections to avoid electrical shock or damage to wiring, pumps, and the electrical system.

--Plug the sewer line where it leaves your house. This may prevent sewage backup into the house. Be sure to remove the blockage before using the system again.

--If possible, have the tank pumped a week or more before the area floods. If floodwater enters the septic tank, sludge may be suspended and flushed into the drainfield. Proper pumping will reduce the amount of solid material and scum that is available to flush into the drainfield. Be sure there is enough time after pumping for the tank to refill with effluent so the tank doesn't float when the area is flooded.

After the flood, says Liukkonen, you can help your system recover. She lists the following steps to accomplish this:

--Pump the system again as soon as possible after the flood. Be sure to pump both the tank and the lift station. This will remove silt and debris that have washed into the system.

--Be careful not to compact the drainfield area by driving or operating equipment in the area, since saturated ground is especially susceptible. Compaction reduces the capacity of your drainfield to treat wastewater and could lead to an early failure of your entire system.

--Review electrical connections for damage or wear before turning electricity back on.

(more)

--Check that the manhole cover is secure and that inspection ports have not been blocked or damaged. Check for animal damage or intrusion in the drainfield area.

--Check the vegetation over your septic tank and drainfield. Repair erosion damage; sod or reseed as necessary to provide a good plant cover.

--Inside, be sure to disinfect thoroughly if sewage backed up into the house or garage. Disease-causing organisms (pathogens) in wastewater can cause serious illness, such as dysentery, hepatitis, and other waterborne illnesses.

"Remember, if your septic system has been flooded, your well may also have been inundated," says Liukkonen. "Use an alternate water source until you can test and disinfect your water supply."

A 24-page illustrated book, "Septic System Owner's Guide," is available through county offices of the Minnesota Extension Service. The book is a complete guide to the operation and maintenance of individual sewage treatment systems. The book can also be ordered from the Minnesota Extension Service Distribution Center. Cost is \$4 per copy plus shipping and sales tax (where applicable). To order by credit card, call (800) 876-8636 or (612) 624-4900. Ask for item PC-6583-GMM.

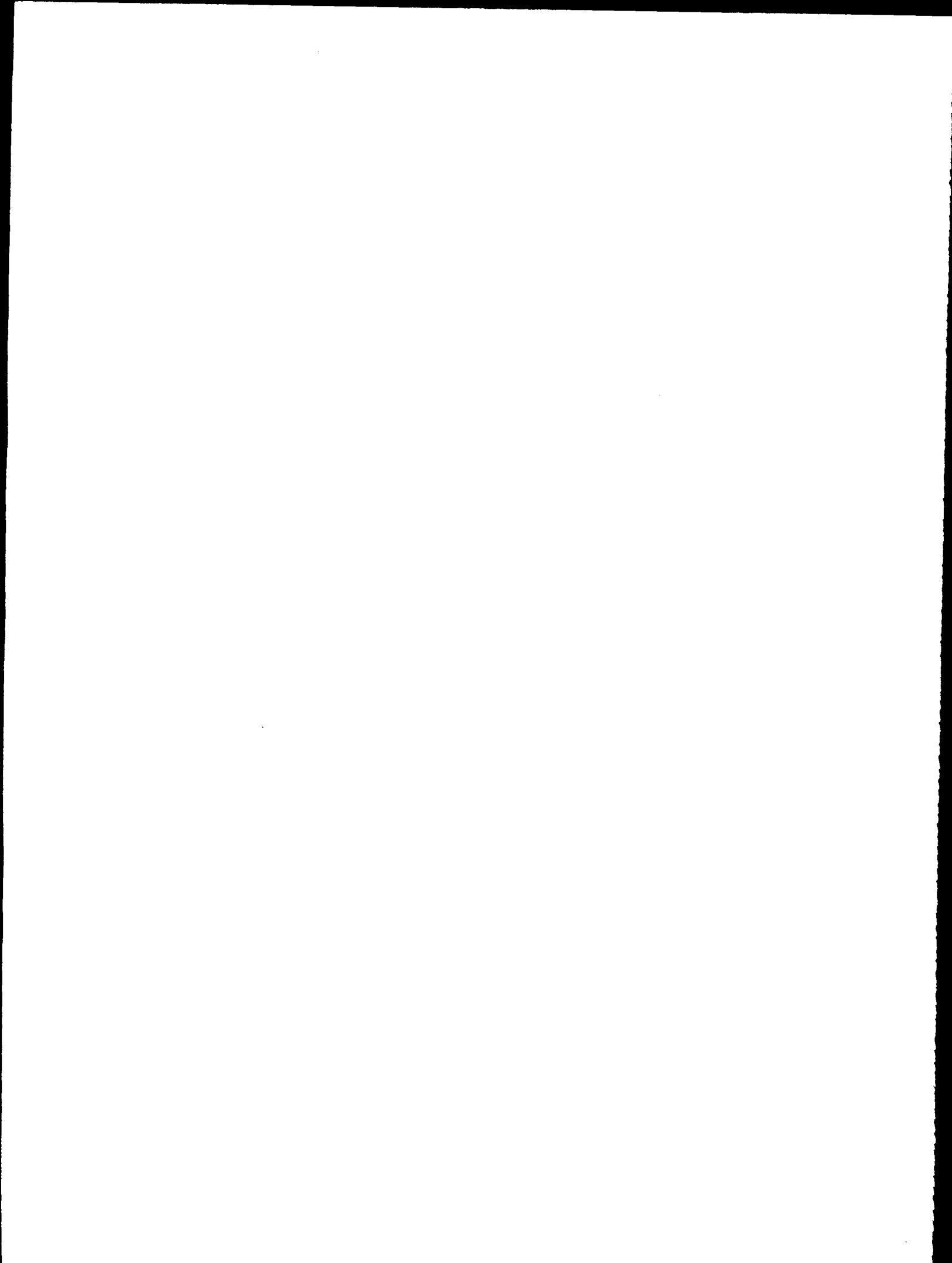
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Web, V2, V4MN, V5MN, V8MN, C4, F2, H2, H5

NAGR5471

Source: Barbara Liukkonen, (612) 625-9798

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



NEWS INFORMATION

MINNESOTA EXTENSION SERVICE

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8-11-97
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March 25, 1997

Editors: A limited number of b/w photos are available for use with this news release. If you would like a photo, contact Jennie Y. Rominger, phone (612) 625-6294, fax (612) 625-2207, e-mail news@mes.umn.edu.

Minnesota Livestock Hall of Fame adds 3 new members

Three Minnesotans were honored recently for their longtime contributions and service to the state's livestock industry. Ray Nicolai of Hampton, Benjamin Pomeroy of St. Paul, and DuWayne Swenson of Dawson were inducted into the Minnesota Livestock Hall of Fame. Their induction took place during the 101st annual meeting of the Minnesota Livestock Breeders' Association in St. Paul.

Nicolai grew up on a farm west of Hampton where he and his wife, Marianne, still live. They had a dairy operation until 1969, when the herd was sold. They began a herd of Duroc hogs in 1952.

They showed the Grand Champion Duroc boar at the Minnesota State Fair in 1957 during their first year of State Fair competition. After that, they showed their hogs at county fairs, the State Fair, the National Duroc Congress, and the Minnesota State Duroc Show and Sale. They showed numerous champions and high place winners.

Ray Nicolai was one of the organizers of the Dakota County Pork Producers Association. He has served as the group's chairman and received its Distinguished Service Award. He also helped organize the state pork producers group and has been named to its Honorary Swine Honor Roll.

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Nicholai served as a 4-H senior leader for 16 years. He has also been active in the Hampton Business Association, school PTA, the local Booster Club, St. Matthias Catholic Church and several other community organizations. He was named Outstanding Citizen of Hampton in 1983 and Dakota County Outstanding Senior Citizen in 1994.

He and his wife, Marianne, are the parents of seven children and 23 grandchildren. One of their sons and his family now live on and operate the farm.

Pomeroy is a veterinarian who joined the staff of the University of Minnesota Veterinary Diagnostic Laboratory in 1934. He took a prominent part in programs and activities aimed at eradicating animal diseases that threatened the health of people or curtailed the sale or exportation of Minnesota livestock and livestock products. He has given educational programs on the importance of healthy herds and flocks and the proper use of vaccines, serums, antibiotics and quarantines.

He has championed the causes of livestock breeders and producers with the Minnesota Legislature for over 40 years. In 1984 he helped organize the Minnesota Forum for Animal Agriculture, an organization of livestock and farm groups. The group produced and published the "Minnesota Farmers Care" booklet that was widely distributed throughout Minnesota.

He has been active in local, state and national veterinary medical associations. Among his many awards are Outstanding Educator in America Award, Veterinarian of the Year Award, and WCCO Radio Good Neighbor Award. He has held many positions at the University of Minnesota, including Director of Graduate Studies in the College of Veterinary Medicine and Coordinator of Avian Disease Research Programs.

(more)

He and his late wife, Margaret, have four children, nine grandchildren, and five great-grandchildren.

Swenson farms and raises Suffolk sheep at Dawson. He has been a leader and supporter of Suffolk sheep at local, state and national levels. He served as president of the Minnesota Suffolk Sheep Association for six years and has held various offices in the North Central Wool Growers. He has also been active in the National Suffolk Sheep Association and served as its president for two years. Swenson is a past recipient of the group's Distinguished Service Award.

He has shown purebred Suffolk sheep at the Minnesota State Fair for 30 consecutive years. In addition, he has shown at numerous state fairs across the nation and at the North American Livestock Exposition in Louisville, Ky.

He has been active with the Lac Qui Parle County Livestock Committee, hosting many 4-H judging sessions and sponsoring local and state 4-H awards. He is a lifetime member of Grace Lutheran Church, serving as president and in other capacities. Swenson has chaired his local township board since 1969 and served on the local school board. He is a veteran and active in the VFW and American Legion. He is a member of the Bell Wether Club of the West Central Sheep Association.

He and his wife, Victoria, have two sons and a daughter, nine grandchildren, and one great-grandchild.

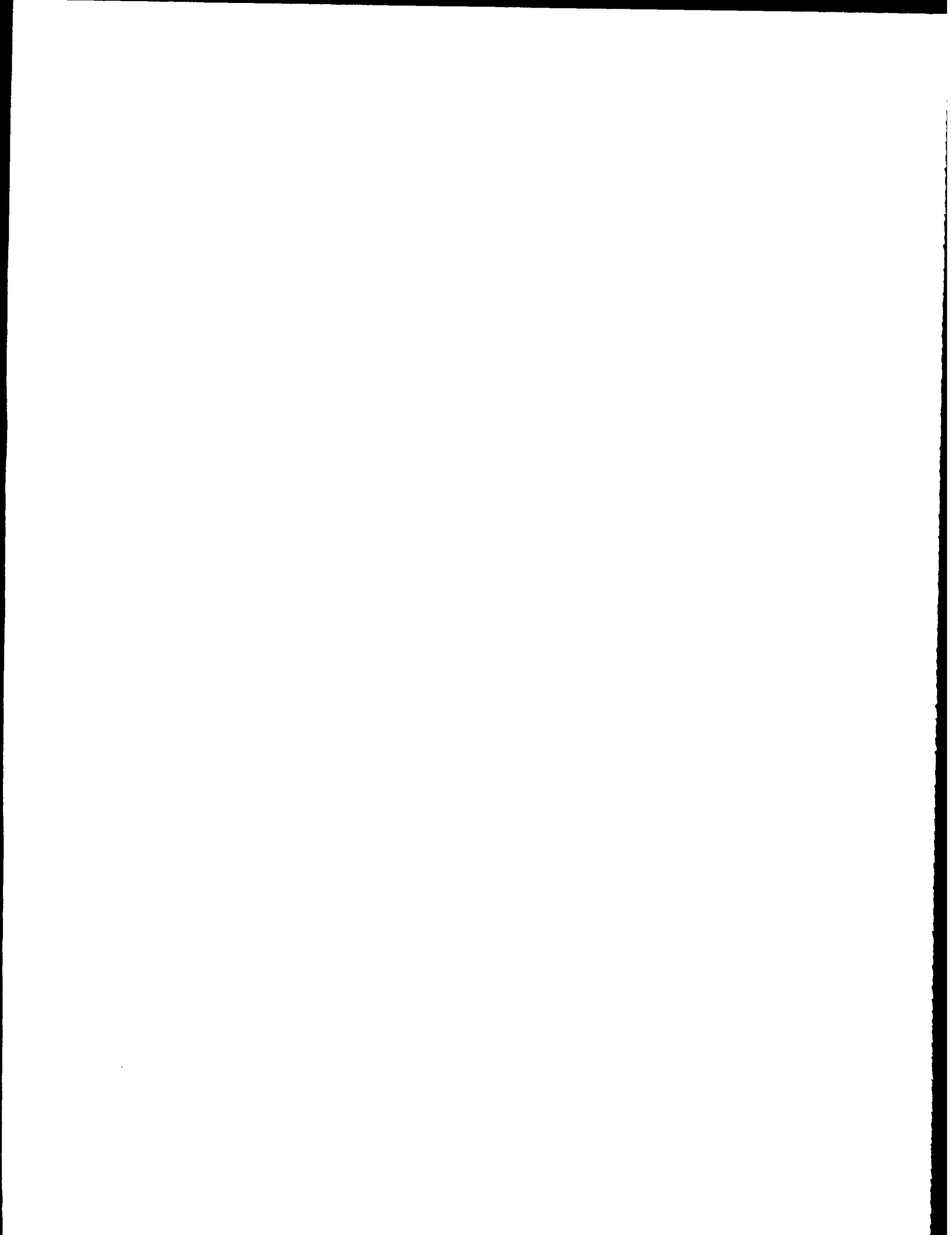
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Web,V2MN,D1,P3,S1,S2,19,37,SelMedia

NAGR5472

Source: Judy Sunvold, (612) 625-3775

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



MSC
9A27p

March 26, 1997

Spring floodwaters could test survivability of your trees

Should the river tides enter your domain this spring, your house, car and property could well be threatened. According to an assistant extension specialist in urban and community forestry with the University of Minnesota's Extension Service, this survival test will extend to your trees, as well. "Since trees are immobile," says Rich Hauer, "they must tolerate both flooding and water-saturated soils to survive."

Trees and other plants are well-known oxygen producers. However, trees also require oxygen to support their survival and growth. Problems arise during flooding because the floodwaters reduce the amount of oxygen in the root area. This can eventually produce compounds such as ethanol, which are toxic to roots.

Hauer says that a number of other factors can also influence a tree's susceptibility to flood damage. For example, the speed at which water flows can impact oxygen content. Swiftly moving water has more oxygen than stagnant, non-flowing water because of wave action. So depending on the species, some trees may have a hard time surviving areas where the water is at a standstill.

Timing also plays a role. According to Hauer, dormant trees generally tolerate flooding more than those that are in bloom. And regardless of whether or not it is the growing season, longer flooding periods increase the chance of injury. "Tree mortality

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increased greatly during the midwestern floods of 1993 as flood duration increased," says Hauer. In certain flooded areas, up to 80 percent of the trees were killed that year.

Will tree mortality this spring be as great as that reported during 1993? Hauer believes that if extended spring rains do not occur, even with the accumulated winter snows, extensive tree death should not occur. However, if April showers turn into May showers instead of flowers, the chance of tree damage and mortality along floodplains greatly increases.

The good news for many homeowners is that some commonly planted shade trees in Minnesota are native to river bottoms and tolerate floods well. These include the American elm, green ash, honey locust, silver maple, eastern pin oak and sycamore. However, commonly planted shade trees, including sugar maple, paper birches and spruces, are native to upland sites and don't weather the floodwaters as well.

If the trees in your yard are put to the flood survival test this spring, Hauer suggests that you watch to see if they are leafing out by June. If they aren't, there is a good chance that they have a problem. And if they are dead, they could pose a threat to your house, car or even children who play around them as decay sets in and they run the risk of falling. To prevent any danger from falling trees, you will need to take steps to remove them once you are certain that they are dead.

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Web,F8,G1,H7

NNRD5474

Source: Rich Hauer, (612) 624-3020

Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

NEWS INFORMATION

MINNESOTA EXTENSION SERVICE

*MSC
9A27p*

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March 27, 1997

Advice on cleaning up after a flood is right at your fingertips

If your community is in the flood path in the coming weeks, the Minnesota Extension Service has a series of free telephone messages available to help answer your questions on how to clean up in the aftermath.

To get quick advice on any of ten related topics, just dial up the MES INFO-U service. If you live in outstate Minnesota, call (800) 525-8636. Metro area residents should call 624-2200. Once your call is received, simply follow the voice prompts to hear one of the following messages:

- #298 Water testing and safety
- #260 Cleaning up after a flood
- #261 Priorities for clean-up and repair after a flood
- #262 Cleaning flood-soiled carpets and rugs
- #263 Drying flood-damaged books and family papers
- #264 Cleaning and removing odor from refrigerators and freezers
- #266 Cleaning flooded floors and woodwork
- #267 Drying walls after a flood
- #268 Cleaning flood-soiled clothing
- #528 Repairing temporarily flooded lawns.

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If you have Internet access, this same information is available under INFO-U on the MES homepage at: <http://www.mes.umn.edu>. Also, don't forget the special "Minnesota Meltdown" page at the same web site. This page includes a wealth of publications, news releases and web links that offer important information on coping with flood-related problems. For more detailed assistance, please contact your county extension office.

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Web,V2MN,V4MN,V5MN,V8MN,F2,H4

NEXT5478

Source: Judy Keena, EDS, (612) 625-7047

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

MSC
g A 1 p

April 2, 1997

Private wells with contaminated water supplies can be cleansed

If your community is hit by flooding this spring, the effects of the high water will linger in your area even after the floodwaters have receded. One of the immediate effects is the high potential for outbreaks of diseases, such as dysentery, hepatitis and giardiasis. These and other water-borne illnesses can be transmitted through private wells that have been contaminated by floodwaters.

Beyond the health risks, flooding can damage private water systems. Sediment can enter your well during flooding and cause problems for pumps and plumbing systems. Bacteria that create a rotten-egg smell and stain plumbing fixtures or laundry also may be introduced by flooding.

Many of these problems can be eliminated through careful disinfection of a private water system, according to Barb Liukkonen, a water quality educator with the University of Minnesota's Extension Service. "Treating your well with chlorine is a relatively simple process," Liukkonen says, "but it's important to do a thorough job." If bacteria or other disease causing organisms--called pathogens--remain in the system, they will recontaminate the water supply.

"Even if you don't think your water supply has been contaminated by floodwater, having it tested by a lab is a good idea," Liukkonen says. Use a lab that's

(over)



certified by the Minnesota Department of Health. "A test is also the only way to find out if your decontamination efforts have been successful." A list of local, certified labs is available from your county public health department or your county office of the Minnesota Extension Service.

If floodwater covers the top of your well, you need to disinfect the well and then test to make sure the pathogens are no longer present. If you have a shallow sandpoint or driven well and floodwater approached it, you should disinfect the well to ensure a safe water supply.

Bacteria and other living organisms will be killed through disinfection with chlorine, but disinfecting the well won't remove other chemicals. If you suspect nitrate or man-made chemicals are present in your well, use an alternative water supply until you confirm that the water is safe. Either purchase water or carry from a supply that is known to be safe.

If sediment has entered your well, steady pumping should remove it over time. An alternative is to not pump water from the well and to allow the sediment to settle out. But hard pumping in the future may stir up the sediment again. If your water is muddy or cloudy, chlorine disinfection won't be as effective.

Chlorine Disinfection

For a shallow well, you can use any laundry bleach containing a 5.25 percent hypochlorite solution. For a deeper well, you may want to use chlorine in a solid tablet or pellet form--sodium hypochlorite. These pellets will settle to the bottom of

(more)

the well and dissolve to ensure the entire water column is disinfected. They're available from well drillers and swimming pool supply stores.

To guarantee that pathogens are completely eliminated, you need to expose them to chlorine at a sufficient concentration for an adequate period of time. The chlorine bleach should be diluted with water--1 part chlorine to 12 parts water--so you aren't working with a concentrated solution.

The first step is to carefully calculate the amount of bleach that is appropriate to the size and water depth of your well. Be careful not to exceed appropriate levels since excessive amounts of chlorine are difficult to remove from a water supply. Tables are available from your county extension office.

The second step is to remove the cap from the well. If your well contains a submersible pump, there are certain guidelines for making sure the chlorine/water solution gets past the pump seal. If you have questions, contact your well driller for assistance.

The third step is to pour the chlorine/water solution down the well, trying to coat the sides of the well as you pour. If you splash the solution on the pump, flush thoroughly with fresh water so the stainless steel doesn't corrode.

The fourth step is to turn off your water heater since chlorine is not as effective at temperatures above 105 degrees Fahrenheit. You might want to disconnect your water softener, but if contaminated water has passed through it, you must take steps to disinfect the softener as well.

(more)

The fifth step is to run water through all of the service lines in your house until you detect the odor of chlorine at each tap. Make sure you run the chlorinated water through every faucet in the system, including the waterline on refrigerators with chilled water and icemaker features. You may also want to flush the toilets.

The sixth step is to let the chlorinated water stand in the system for eight to 12 hours.

The seventh step is to flush out the system, starting with your well. This large volume of chlorinated water should not be flushed through your septic system or run on your garden or lawn. Use a hose connected to an outside faucet and drain the water so that it doesn't flush through your septic system or run onto your lawn or garden. After water from the well is free of the chlorine odor, flush the rest of the household plumbing. This small volume of chlorinated water should not damage your septic system.

For more information, refer to "Safe Drinking Water from Wells in Flooded Areas" (item #FS-6213-A-NR2). This publication is available from the Minnesota Extension Service Distribution Center, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6069, phone (800) 876-8636 or (612) 624-4900. The cost is 50 cents for each fact sheet. Tax and shipping charges are extra.

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Web,V4MN,H2

NHEC5479

Source: Barb Liukkonen, (612) 625-9798
Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

MSC
4-4-97

April 4, 1997

Use strategies to reduce farm debt risk

Debt is a necessary part of doing business in many farming operations. With debt comes debt risk, the risk of not being able to repay borrowed money. Jim Christensen, extension educator in farm management with the University of Minnesota's Extension Service, lists the following strategies for reducing debt risk:

- Get advice from farm management associations and consultants.
- Share machinery through joint ownership with other producers.
- Periodically set goals, measure achievements, and redirect resources to the most profitable enterprises.
- Develop a business plan and discuss it with your lender.
- Communicate often and well with your lender.
- Liquidate unused assets, retire debt, and improve your working capital.

#

Web,DTN,V2,A2,A4,F2

NAGR5481

Source: Jim Christensen, (507) 752-7372
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



April 4, 1997

Take steps to reduce uncertainty about passing on farm

Many farm owners face uncertainty over the prospect of eventually leaving farming and passing the farm on to someone else. Jim Christensen, extension educator in farm management with the University of Minnesota's Extension Service, cites some ways to minimize this uncertainty:

--Work with a financial planner to develop a retirement savings plan.

--Find out how much risk your investment portfolio will stand. If you're 20 to 40 years old, you can afford more risk. If you're 55 to 60, move to more risk-free investments, even if return is lower.

--Develop a farm transfer plan that will meet both your needs and those of the incoming farmer.

--Develop a "retirement from farming" plan to minimize income tax bite.

Strategically plan your grain, livestock, building site, and machinery sales. Consider selling your farmstead on a contract for deed.

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Web,DTN,V2,A2,A4,F2

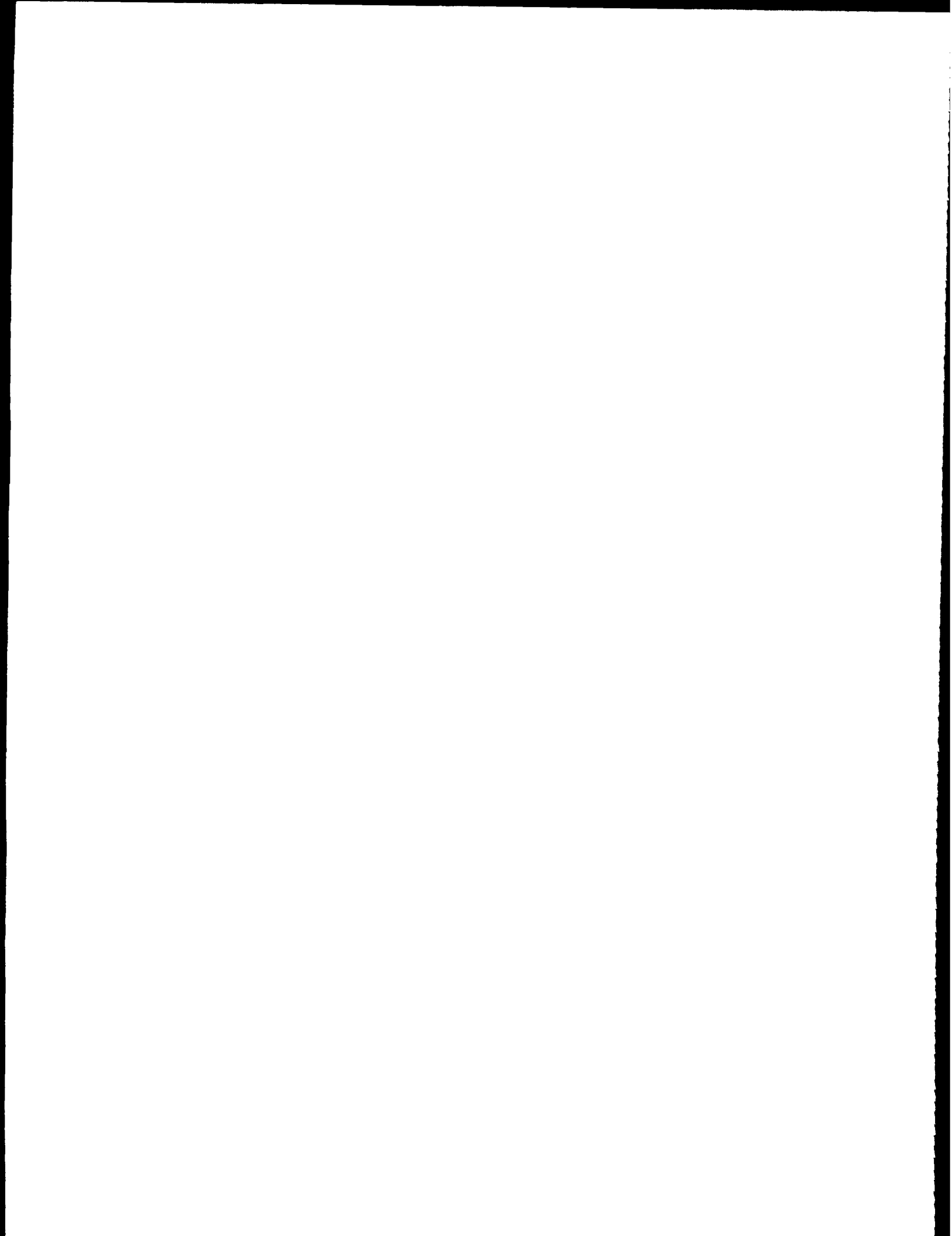
NAGR5480

Source: Jim Christensen, (507) 752-7372

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





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April 11, 1997

Spring moisture can lead to allergies from molds

Handling moldy materials can be hazardous to your health. And this year's extra dose of winter and spring moisture, especially if you reside in a floodplain, may expose you to higher levels of molds than you might normally encounter.

"High levels of molds in the air can cause allergic reactions," says Ian Greaves, environmental health expert in the University of Minnesota's School of Public Health. Reactions to mold come in several forms. The most common occurs when exposure to mold particles causes irritation to the eyes, nose, throat or lungs. Sore eyes, sneezing and a runny nose, a sore throat, coughing and tightness in the chest can be present. These symptoms disappear shortly after the exposure ceases, without causing long-term effects. A second type of reaction produces fevers, aches and pains, and chills--similar to a bout of influenza--which also subside within a few days.

But Greaves says that mold exposure can also result in more serious problems, including allergic reactions. Traditional allergies in the forms of hay fever, asthma and skin problems may develop. Serious attacks of asthma can also result from breathing moldy materials, but most allergic reactions are less severe.

A different and more serious reaction is characterized by high fever, coughing and breathing difficulties. "This type of allergic reaction is similar to the condition known as 'farmer's lung' and resembles pneumonia," says Greaves. Farmer's lung is a

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disease related to repeated mold exposure; farmers are often exposed to moldy hay.

While allergic problems occur mainly during periods of actual mold exposure, they may also cause persistent lung problems. Greaves says that repeated episodes of mold exposure and allergic reactions can cause lungs to become scarred. If the lung loses normal tissue as a result of scarring, breathlessness and even heart failure can occur. "Damage occurs slowly and with repeated exposures over time," warns Greaves.

Sensitization magnifies the effects of normal exposures to certain molds. Greaves thinks people may be more likely to become sensitized to molds in very wet seasons in a year like Minnesotans are now experiencing

Homeowners who experience flooding are likely to get a heavy dose of mold when they re-enter their homes after the floods recede. If your home has been flooded, it will likely harbor mold particles even after the moisture has dried. It is best to wear a dust mask and eye protection before and during the clean-up period. "Whether it's moldy hay or a flooded basement," says Greaves, "the best idea is to reduce the amount of mold you breathe and not to get sensitized."

If you think you've been exposed to mold and are experiencing breathing problems or other allergic symptoms, you may need to see a lung specialist. Specialists can identify mold sensitivities and treat some forms of mold-related allergies. Greaves stresses the importance of both preventing exposures to molds and closely monitoring the effects of mold exposure. "Always take extra precautions," he advises.

#

Web,V2,V4,V5MN,V7,V8MN,H2

NEXT5483

Source: Ian Greaves, (612) 626-4855

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

MSC
e 427p

April 14, 1997

Soil testing of farm fields that have been flooded is essential

If flooded farm fields are to produce crops successfully this year, soil testing is essential once the water recedes. The erosion and soil deposits that come with flooding can have a big impact on soil, says Bob Byrnes, extension educator in Lyon County with the University of Minnesota's Extension Service.

"Reconstructing fields to even out the effects of erosion or deposition can create new soil profiles," says Byrnes. "This 'new' soil may have completely different physical and chemical characteristics than the pre-flood soil."

Byrnes recommends taking the approach that nothing is known about the soil in a field that has been flooded. "Don't rely on previous soil test results from the field to build a nutrient management plan," he says. "Affected fields should be retested and nutrient management plans should be based on these results. In addition to general fertility--pH, P, and K--check organic matter and zinc levels. Sand deposits are often very low in organic matter and nutrients."

Byrnes says significant changes in organic matter levels could impact herbicide choices and recommended application rates.

Flooding, or even very extended wet periods, can also impact nitrogen management, Byrnes points out. "Flooding, with the erosion and deposition, tends to

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reduce the organic matter pool in soils," he points out. "Reduced organic matter means less mineralization release of nitrogen from this pool during the growing season.

Extended wet periods increase the potential for leaching and/or denitrification in soils."

Leaching is the downward movement of nitrate nitrogen with soil water, notes Byrnes. Leaching is more of a problem on coarse-textured soils. Denitrification occurs in saturated soils as temperatures warm. Denitrification losses are not a concern at this time, but could be a concern if saturated soils persist later into the spring when the weather is warmer.

Byrnes recommends a nitrogen soil test on flood-affected fields to determine nitrate nitrogen levels in the soil. Results of the nitrogen soil test, along with expected crop yield, allow accurate nitrogen fertilizer recommendations.

"On fields where heavy sand deposits are incorporated into existing soil, micronutrients, particularly zinc and sulfur, may be a concern," says Byrnes. "Soil testing will determine the need."

Information on other topics related to flooding is available on the Minnesota Extension Service "Minnesota Meltdown" page on the Internet at <http://www.mes.umn.edu/Documents/K/A/weather.html>. The Minnesota Extension Service home page Internet address is <http://www.mes.umn.edu>.

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Web,V2,V4,V5,F4

NAGR5498

Source: Bob Byrnes, (507) 537-6702
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 17, 1997

Some corn on silt loam soil affected by potassium deficiency

If you're growing corn on a silt loam soil in southeast Minnesota, check the soil test level for potassium. Potassium deficiency can hurt yields, say Tim Wagar and Jerry Tesmer of the University of Minnesota's Extension Service.

The extension educators say potassium deficiency symptoms have been showing up in some corn on silt loam soil in recent years. Most of the deficient fields were fertilized with liquid starters containing no K (potassium), such as 10-34-0, or low K, such as 7-21-7. Wagar and Tesmer say use of liquid starter fertilizers resulted in low K testing fields when combined with one or more of the following factors:

1. Farming rented land that was very deficient in potassium.
2. Insufficient replacement of potassium removed when alfalfa, soybeans or corn silage was grown.
3. High potential for the clay component of the silt loam soil to fix potassium fertilizer.
4. Limited availability of suspension starter fertilizers that require constant agitation. Higher amounts of potash can be applied in a suspension fertilizer.

Wagar and Tesmer say demonstration plots with a low K soil test in Fillmore County have responded to potash. Corn plots getting the recommended broadcast

(over)



application rate of 90 pounds potash per acre yielded 17.6 bushels per acre more than those getting no additional potash.

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Web,V2MN,F4MN,Z4

NAGR5500

Sources: Tim Wagar, (507) 280-2866; Jerry Tesmer, (507) 765-3896
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 17, 1997

Keep your livestock dry and disease-free after a flood

If your farm has been inundated by floodwaters and you have livestock, you'll need to take extra care to keep the animals healthy. Jerry Olson, veterinarian with the University of Minnesota's Extension Service, says that livestock will need extra attention even after the floodwaters recede.

According to Olson, the immediate concern both during and after a flood is to provide dry space for your livestock. Your animals can lose a great deal of body heat if they are wet from standing in water or even lying down in damp pastures. While older livestock are better equipped to deal with the wetness, younger ones can't keep up with the energy they expend in trying to keep warm. "This stress can lower a calf's resistance to diseases such as scours or pneumonia," warns Olson, "and can even cause them to starve to death."

Muddy lots and corrals may encourage livestock producers to move cattle to pasture and feed them on the drier ground there. When cattle are fed on the same ground over a short period of time, the feed often becomes contaminated with manure and a problem with coccidiosis infections can develop. Coccidiosis can cause a severe diarrhea with straining in calves and adult cattle. When cattle are fed on the ground, the area of feeding should be moved frequently where possible, and coccidiostats such as Bovatec, Rumensin and Deccox should be fed to prevent coccidiosis.

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Olson points out that the spring flooding and pools of water left behind could bring on an early flush of the mosquito population. This will heighten the danger of a summer encephalitis problem. "Horse owners should consider vaccinating their horses early in the season this year," says Olson. He recommends vaccinating in May to be on the safe side.

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Web,V2MN,V4MN,A4,H6

NAGR5499

Source: Jerry Olson, (612) 625-0280

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

April 23, 1997

Food, utensils need special handling after a flood

Food contamination from floodwaters is often a problem because these waters can carry silt, raw sewage, oil or chemical wastes which make food unsafe to eat. In addition, flood-related power outages can cause spoilage of foods stored in freezers and refrigerators. It is essential that food be handled carefully after a flood.

Contamination by floodwaters is possible if water has covered, dripped on or seeped into the food. Although some containers may fully protect the food, if you are unsure, it's best to throw it out rather than risk food-borne disease.

Here are guidelines for deciding what to throw out and how to disinfect food and utensils that can be saved.

Discarding Food

Discard the following foods if they have come in contact with floodwater:

- Containers of nuts, spices, seasonings and flavorings.
- Canisters or bags of grains, sugars, salts, coffee and tea.
- Foods stored in paper, plastic, cloth, fiber or cardboard boxes.
- Pastas, cereals, rice, dried milk, crackers, cookies or mixes that are in plastic bags inside of boxes and other containers.
- Foods in screw-topped and crimp-topped jars or bottles that have been touched by floodwaters, even if never opened. This includes any foods in glass jars and bottles,

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such as jams, jellies, honey, molasses, syrups, fruits, pickles and home-canned foods. Because no lid on glass food containers will keep water out if immersed, the food will be contaminated.

--Porous non-food items used with food or put in the mouth and items made of hard rubber, plastic or other flexible and porous materials. This includes baby bottle nipples, pacifiers and plastic or wooden dishes and utensils.

Sanitizing Utensils

You can save some cans of food as well as dishes and utensils of glass, ceramic, china and metal by disinfecting them according to the following.

Cans of food without dents or rust can be saved if they are handled properly before they are opened. Remove labels and relabel each can with a permanent marker. Wash the cans in a strong detergent solution with a scrub brush to remove all silt. Make a chlorine disinfecting solution according to directions below.

Immerse scrubbed containers completely in the lukewarm chlorine solution for one minute. Remove containers from the solution and allow to air dry before opening. Relabel with a marker if necessary. Use as soon as possible because containers may rust.

Dishes and utensils of glass, ceramic, china or metal, including glass baby bottles and canning jars, also can be saved by disinfecting. Wash them thoroughly in strong detergent solution to remove all filth and mud. Disinfect china and glass in the chlorine solution described below. Disinfect metal pots, pans and utensils by boiling in water for 10 minutes.

To make the chlorine disinfecting solution, check your bleach label for chlorine

(more)

content. Household bleaches can contain 2 to 6 percent chlorine. Then mix bleach with water, based on the percent chlorine in your bleach, as follows.

If the bleach has 2 percent chlorine, add 2 teaspoons of bleach to 1 quart water or 2 tablespoons of bleach to 1 gallon water. If it has 4 percent chlorine, add 1 teaspoon of bleach to 1 quart water or 1 tablespoon of bleach to 1 gallon water. If the bleach has 6 percent chlorine, add 1/2 teaspoon bleach to 1 quart water or 2 teaspoons of bleach to 1 gallon water.

During Power Outages

Power outages can also endanger food safety. Outages can last from several hours to several days. You need to take steps to ensure food stored in refrigerators and freezers is safe and to prevent and minimize the loss of meat, poultry and other foods.

If floodwaters have entered the refrigerator or freezer and covered, dripped on or seeped into food, contamination may occur. If this is the case, the food must be discarded. If not, the following guidelines will help you determine what to discard and what is safe to eat.

There are things you can do to prepare for a power outage. When your freezer is working but not full, put blue-ice freezer packs or plastic containers of frozen water in with foods to help keep them frozen should a power outage occur. Learn where to get block and dry ice locally and how to handle dry ice safely.

After an outage has occurred, however, it is important to know how long food will be safe. If you anticipate that power will be restored in a few hours, simply minimize opening the freezer and refrigerator and the food should be safe. During a longer outage, keep in mind that a fully stocked freezer usually keeps food frozen for two days after power loss; a half-full freezer, for about one day.

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If the freezer is not full, group packages together to retain the cold more effectively. Be sure to keep raw meat and poultry items on a tray so their juices won't get onto other foods if they begin to thaw.

If the outage lasts longer than your freezer will stay cold, you may want to put dry ice in the freezer. Never touch dry ice with your hands or breathe its vapors in an enclosed area.

Refrigerators will keep food cold about four to six hours, depending on the kitchen's warmth. If the outage is expected to last longer, you may want to put block ice in the refrigerator.

After Power Is Restored

After power is restored, follow food safety guidelines for your frozen foods. If ice crystals are still intact and the food is still at 40 degrees F or below, the food is safe to refreeze. Prepared foods, vegetables and fruits can be refrozen safely but quality may suffer. Juices can be refrozen without compromising quality.

If food thawed but was kept above 40 degrees F for two hours or less, it is not safe to refreeze. Raw meats and poultry should be cooked and then served immediately or frozen. Prepared foods and vegetables should be cooked or reheated thoroughly and served immediately. Fruits can be refrozen if they taste and smell acceptable. Juices can be refrozen without compromising quality. Well-wrapped hard cheeses, butter and margarine can be refrozen.

Perishable foods held above 40 degrees F for over two hours should generally be discarded because bacteria that cause food poisoning can multiply to unsafe levels on perishables held under these conditions. Fruits and vegetables can be cooked and served immediately if they are still firm and there is no mold, sliminess or yeasty smell.

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Juices can be used provided they look and smell acceptable. Well-wrapped hard cheeses, butter and margarine can usually be refrozen but should be discarded if mold or rancid odors develop.

Refrigerated foods such as fresh meats, poultry, lunch meats, hot dogs, eggs, milk and prepared foods should be discarded if they have been held above 40 degrees F for more than two hours. Bacteria which cause food poisoning can multiply to unsafe levels on perishable foods held under these conditions.

Fresh fruits and vegetables are safe as long as they are firm and there is no mold, sliminess or yeasty smell. Juices, opened containers of vinegar-and-oil dressings, ketchup, pickles, jams and jellies and well-wrapped hard cheeses are safe as long as there is no mold and they look and smell acceptable.

Well-wrapped butter and margarine can usually be kept as long as they do not melt, but should be discarded if mold or rancid odors develop.

If there is an outage when you are not home, your refrigerator will likely smell from food spoilage. After discarding the contents according to the above guidelines, try washing both refrigerator and freezer with a solution of baking soda and water. Place an open box of baking soda inside both for several weeks. If the odor persists, try putting in several crushed charcoal briquets instead. If this doesn't work, an open dish of vanilla extract may help. If the insulation inside the walls of the refrigerator has absorbed the odor, you may not be able to get rid of it.

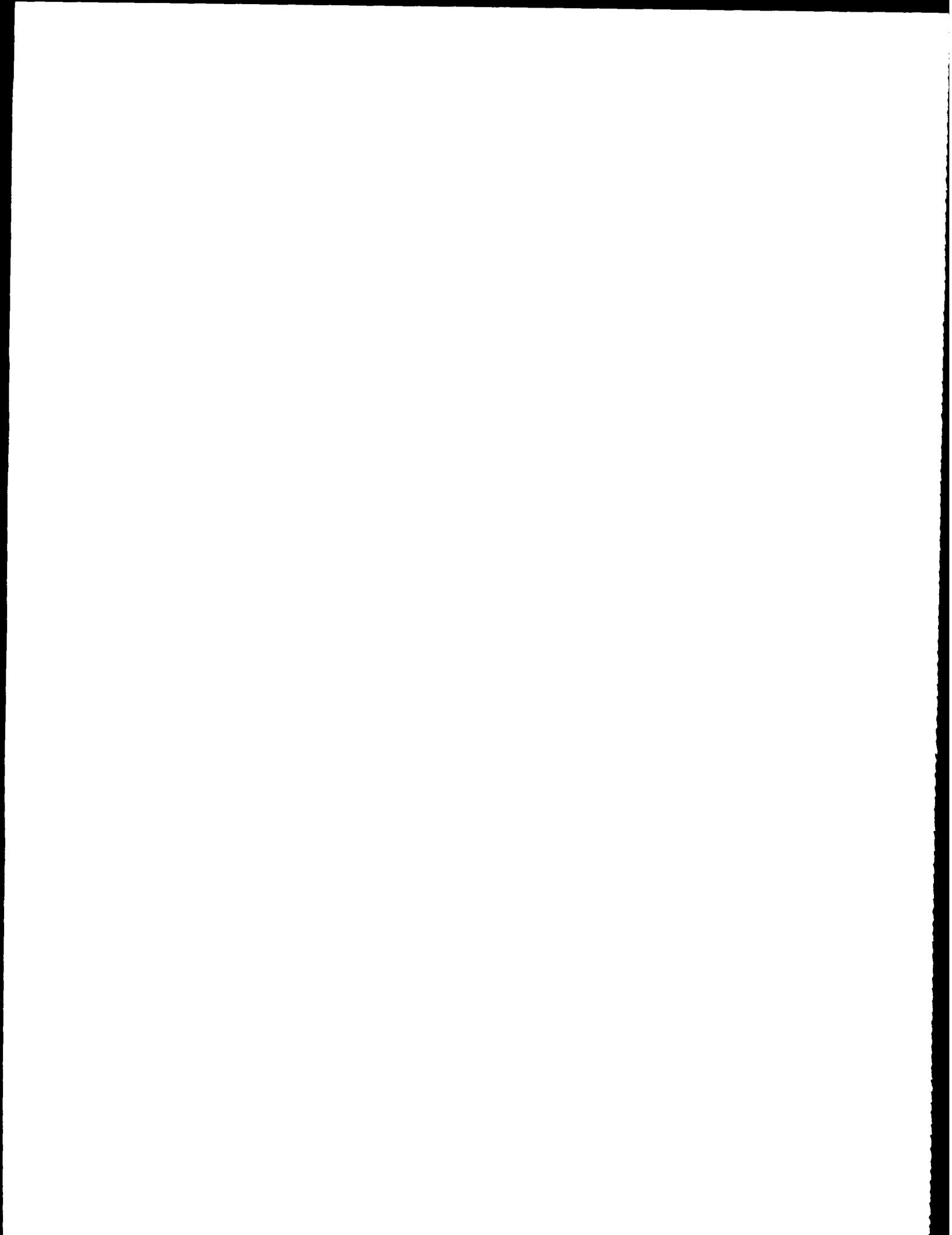
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Web,V4MN,F7,H2,Z1,Z5,Z6,Z7,10

NHEC5506

Source: William Schafer, (612) 624-4793

Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu



April 23, 1997

Wet soil brings need to cut back on spring tillage

Wet soil in farm fields means many corn and soybean producers need to cut back on tillage before planting this spring. Too much tillage in wet fields is likely to bring soil compaction problems, say extension educators Bob Byrnes and Jim Nesselth of the University of Minnesota's Extension Service.

Compaction means the soil has less pore space filled with air, limiting root respiration, say Byrnes and Nesselth. This reduces root metabolism, absorption of nutrients and other plant functions.

Full-width deep tillage under wet conditions can result in a poor seed bed, leading to delayed crop emergence and reduced stand. Byrnes and Nesselth recommend keeping spring tillage with a disc or field cultivator shallow--2-3 inches deep--to avoid wet soil further down.

Planting in wet soil can also prevent good seed-to-soil contact. If soil is wet at planting, sidewall smearing of the seed furrow and compaction may occur. The germinating seed may have a difficult time, especially if conditions turn dry. Subsequent dry conditions may also result in the partial opening of the seed slot as the soil shrinks. Poor contact between seed and soil may be the outcome.

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Dry, cloddy conditions at planting often produce the same problem of poor seed-to-soil contact. This problem can be compounded by heavy crop residues that are not cleared from the seed zone. "Hair pinning" of residue in the seed furrow allows moisture to escape and may prevent good contact of seed and soil.

Soybean fields that have not been tilled will be the first to dry, due to the absence of heavy cover, note Byrnes and Nesseseth. Corn can be planted into these fields with little or no tillage. Field cultivation or a light discing is usually adequate. Research and farmer experience have shown that most conventional planters will work with very little or no tillage in medium- to fine-textured soils having soybean residue.

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Web,V2MN,V4MN,F4

NAGR5507

Sources: Bob Byrnes, (507) 537-6702; Jim Nesseseth, (507) 662-5293
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

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April 24, 1997

Protect your trees from construction damage

Wooded lots are more valuable than lots without trees," says Gary Johnson, urban and community forester with the University of Minnesota's Extension Service, "so homeowners need to protect their investment by minimizing the stress that construction causes their trees."

Construction damage to trees is often invisible, not showing up for years. "Ask yourself what you can do to minimize changes for your trees," says Johnson. "Also consider what you can do to help trees tolerate necessary changes."

Johnson says that protecting trees during construction comes down to saving the best trees, building their health, and avoiding changes near them. "Some trees, such as sugar maples, white oaks and basswoods, don't accept changes well," he explains. "Damage from construction may cause these trees to present a hazard later, so it's best to save trees that can handle change."

With some forethought, you can make trees as healthy as possible before construction begins. Simple steps you can take to encourage tree health include watering, fertilizing, pruning and mulching. Once you've decided which trees you want to save, avoid their areas completely. "Don't rake leaves or store materials near these trees and don't park or clean vehicles by them," says Johnson.

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Before construction starts, Johnson suggests the simple formula, "Save the best and chip the rest," using the chips from unwanted trees as mulch for the desirable trees. Water the trees you keep because ground in wooded areas dries quickly after trees are removed.

After construction, Johnson says it's important to watch for early symptoms of damage. "Leaves may have a duller look," he says, "and it's common the next spring for trees to leaf more slowly and for leaves to be yellower." Other signs include scorched leaves (brown or yellow on the edges during growing season), earlier fall color than nearby trees, and sucker branches. "If you recognize stress at this stage, the trees can be helped," he notes. "But if branches start to die, and that's when most people notice something's wrong, it's usually too late."

In addition to keeping areas around trees mulched, not covering them with turf grass, and watering soil when it's dry, Johnson recommends hiring an arborist two years after construction to see if any branches need to be removed for safety reasons and to find stress the average person wouldn't see. "Don't call when the tree is almost dead," Johnson says. "Your trees increase the value of your lot and you pay for them in your mortgage, so it's worth paying an arborist to protect your investment."

Johnson offers these tips to prevent and repair construction damage to trees:

--Before construction starts, obtain site development plans and mark off construction areas.

--In general, save young, small trees. Large trees within five feet of a new building almost never survive, so consider removing them.

--Save groups of trees rather than an individual tree.

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- Transplant healthy young trees out of the construction zone.
- Fence as widely as possible around trees to be saved and post "off limits" signs.
- Take photographs before construction begins to document original condition.
- Have all contractors sign a landscape protection contract.
- Monitor the construction process.
- Use future driveways and sidewalks for material storage, vehicle use.
- Tunnel for utility lines instead of trenching.
- Make sure trees' root flares have not been covered.
- Photograph any damage to trees for potential claims.

For more information, refer to "Protecting Trees from Construction Damage: A Homeowner's Guide," a publication available from the Minnesota Extension Service Distribution Center, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6069, phone (800) 876-8636 or (612) 624-4900. When ordering, refer to item FO-6135-NR1. The cost is \$4 per copy plus tax and shipping charges.

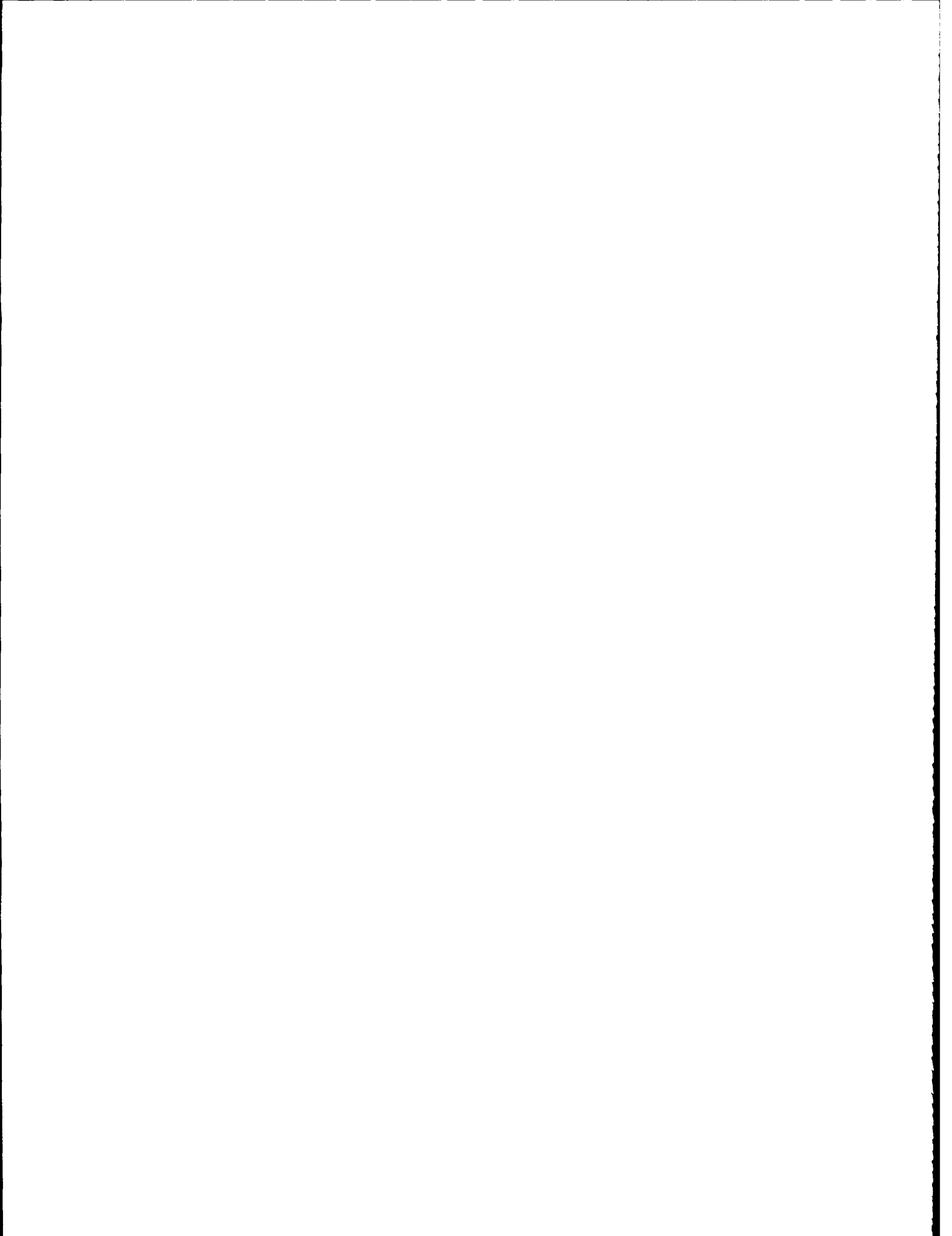
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Web,V4MN,V5MN,V6MN,V7MN,V8MN,V9MN,F8,G1

NNRD5504

Source: Gary Johnson, (612) 625-3765

Writer: James Bohlen, (612) 625-3168, news@mes.umn.edu



April 24, 1997

Use professionals to estimate tree values

When a tree that's too large to be replaced by a nursery is lost or damaged, the job of estimating the tree's economic value should be left to professional appraisers, says Rich Hauer, urban and community forester with the University of Minnesota's Department of Forest Resources.

"The average person can't judge the condition of a tree or the value of its location," says Hauer, "so it's best to hire somebody qualified to do that." Consider certified arborists, consulting foresters, and nursery and landscape professionals with training in tree valuation. For valuing trees, appraisers use a formula known as the CTLA or ISA formula.

You can do things to increase and preserve the value of your trees. Hauer suggests that you choose trees that are hardy, adaptable and free from objectionable characteristics; then protect and preserve them. Care by professionals is recommended.

To help with evaluating a tree's worth, take photographs at the height of the growing season (June or July) and during dormancy (December) to document tree condition.

To protect your investment, Hauer suggests:

--Check insurance policies to see if coverage for any one tree exceeds the usual \$500. A rider for additional coverage can be purchased.

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--Keep accurate records of landscape and real estate appraisals. The value of a lot can be anywhere from 8 to 27 percent higher with trees than without them.

--Check to see if tree loss is deductible on federal taxes.

--Tell an appraiser what a tree means to you. It may not affect the appraisal, but an appraiser should know, for example, that the loss of shade will limit your family's use of your yard for some years.

In choosing an appraiser, Hauer says to make sure the person has past experience appraising trees and can explain how they will appraise your tree. Questions to ask a potential appraiser include:

--Do you know how to use the CTLA formula?

--Are alternative appraisal methods more appropriate than the CTLA formula?

--Can you explain how you'll consider the four factors--type of tree, tree size, tree condition, and location--used in estimating value? (It's helpful to know, for example, that a tree standing alone is often worth more than one in a group, or that trees usually have more value if they're near a house or the focal point of a landscape.)

--Are removal or repair costs included in your service?

Tree valuation is a subjective process that requires skilled practitioners who can make appraisals that are defensible, perhaps in court. "Ultimately," says Hauer, "any appraisal must be reasonable in relation to overall property value."

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Web,V4MN,V5MN,V6MN,V7MN,V8MN,V9MN,F8,G1

NNRD5505

Source: Rich Hauer, (612) 624-3020

Writer: James Bohlen, (612) 625-3168, news@mes.umn.edu

*MSC
9/27/97*

Editor: Reproducible graphic of correct planting level follows copy.

April 24, 1997

Avoid tree-killing girdling root syndrome by planting correctly

Girdling root syndrome kills many trees. It can best be prevented by planting trees at the proper level, says Dennis Fallon, an urban and community forester with the University of Minnesota's Department of Forest Resources.

"Trees need to be planted at a specific height," says Fallon. "Too many people plant trees too deeply. When that happens, the roots of the tree may partially or completely encircle the trunk above the root (or buttress) flare." The root flare is the wide base of the tree, the transition zone between a tree's trunk and roots, that is usually partly above ground. "When roots grow above the root flare, the flow of sap to the roots is interrupted. Eventually, the flow stops and the tree dies," Fallon says.

Girdling root syndrome is caused in part when a tree's root flare is covered by soil during improper harvesting or planting. If the root flare isn't visible on a tree you're considering buying, Fallon recommends removing a small amount of dirt to locate the root flare. If you must dig more than an inch or so to find it, he says you might want to consider purchasing a different tree.

To avoid girdling root syndrome, Fallon says it's better to plant a tree too high than too deeply because the soil that comes with a tree (usually in a container or burlap ball) may settle. The ball, when measuring from the root flare, should be an inch higher

(over)



than the depth of the hole you dig for planting. Holes should be two to five times wider (depending on the species of tree) than the width of the soil that comes with the tree.

If it's necessary to remove soil above a tree's root flare, clear away all soil above that point. Creating a "donut" around the trunk by removing some soil will do nothing to prevent girdling root syndrome.

If tree roots are growing in a spiral, make cuts down the sides and a criss-cross cut on the bottom of a soil ball. Cuts should be deep enough to cut the net of roots.

Girdling root syndrome develops slowly. Early signs are reduced growth and smaller or scorched leaves (outer margins brown or yellow during growing season). As the syndrome worsens, multiple symptoms appear. These include early fall color and leaf drop when other trees are green, leaning, and roots visibly girdling a tree's trunk. A late symptom is dieback (dead branches) in the tree's crown.

There are no figures on the success rate of treating trees with girdling root syndrome and treatment can be expensive. "The best cure is prevention," according to Fallon, "which means harvesting and planting trees properly." To treat a tree with the syndrome, Fallon advises consulting a certified arborist, a licensed tree care specialist, a government forester, or a county extension agent. "You definitely need somebody who is trained; dealing with roots is always touchy," he says.

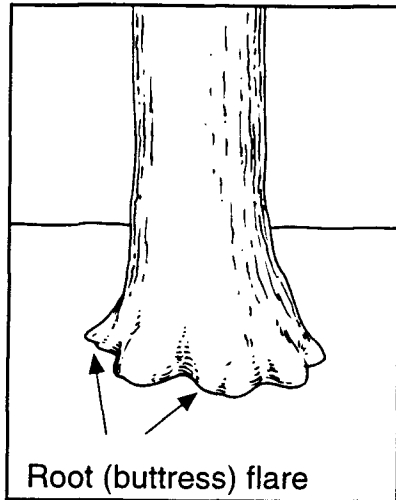
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Web,V4MN,V5MN,V6MN,V7MN,V8MN,V9MN,F8,G1

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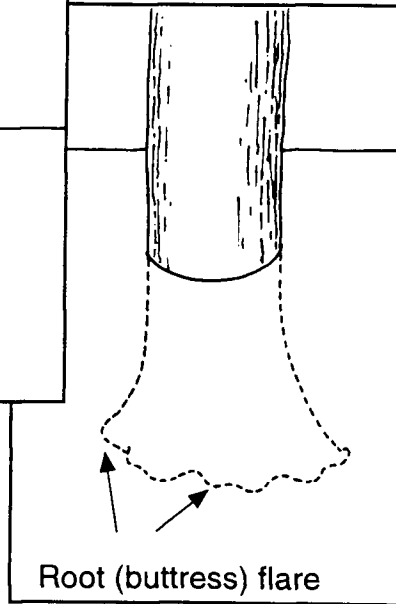
Source: Dennis Fallon, (612) 624-3400

Writer: James Bohlen, (612) 625-3168, news@mes.umn.edu



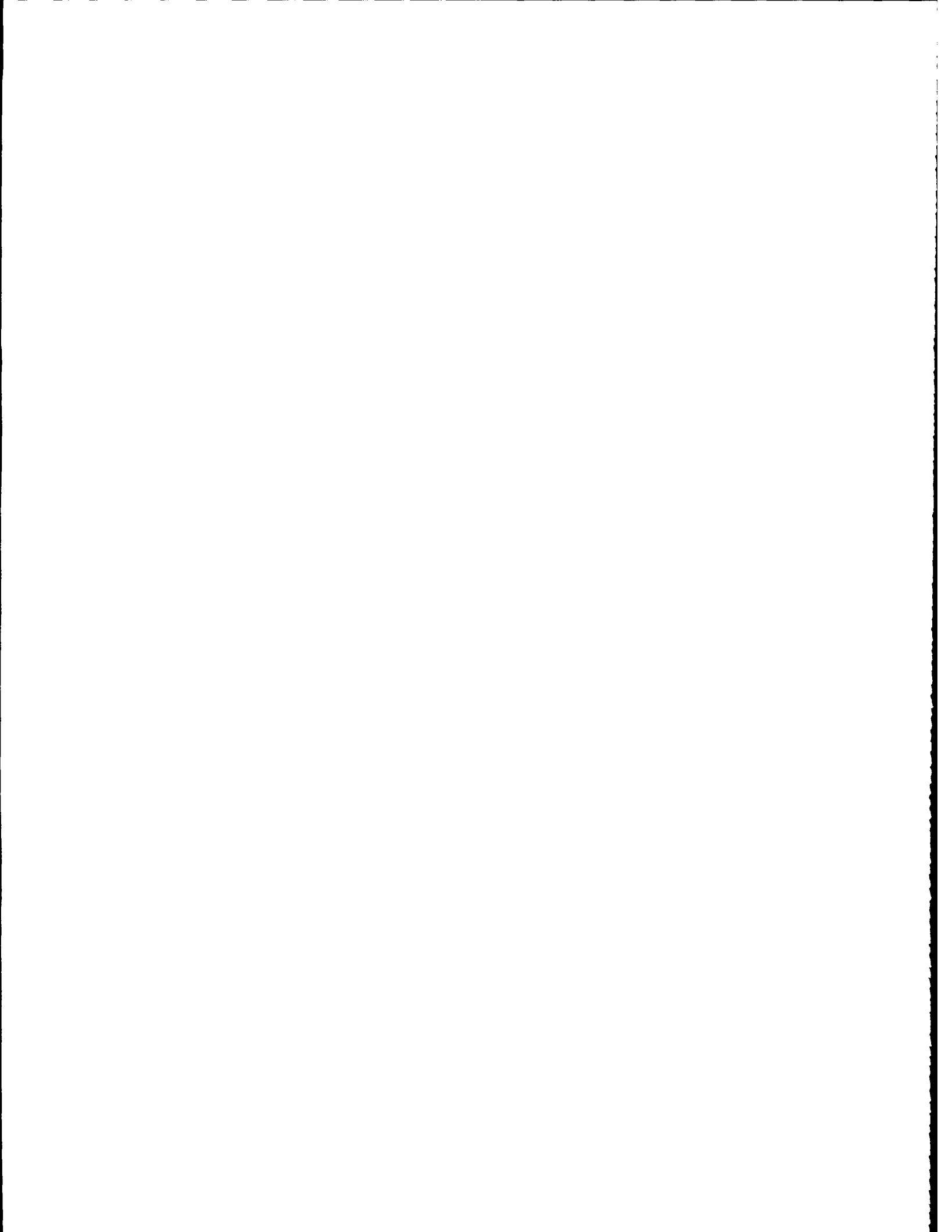
Root (buttress) flare

Tree planted with root flare at the correct level, partially above ground.



Root (buttress) flare

Root flare is covered by soil. Planting this deeply interrupts the flow of sap to the tree's roots.



April 24, 1997

Spring is best season for planting trees

Spring is the best time to plant trees, says Mike Zins, horticulturist with the University of Minnesota's Extension Service, because spring planting allows trees to get established earlier, grow more and do better when hot weather comes.

Spring planting is especially important for bare root stock. Most containerized and container-grown stock, as well as balled and burlapped trees, can be planted throughout the growing season, but benefit from spring planting.

When transporting trees, protect them from excessive wind, drying and rough handling. Planting holes should be dug at least two feet wider than the size of the root system. Trees should be planted an inch or so higher than the depth they grew in the container or nursery to allow for settling. Air pockets should be eliminated through watering and tamping after planting. Fill in the hole with a mix of existing soil and soil amendments such as organic material or loamy top soil.

Fertilizer should not be applied directly to roots. Zins recommends waiting a year before fertilizing at all because the tree needs to get established first. He does recommend cultivating the area four to five feet around the base of a newly-planted tree and mulching. Don't put plastic under mulch, and keep the mulch away from the tree trunk.

(over)



For bare root and packaged trees, prune damaged roots and spread them evenly before adding soil. Gently raise the plant to the proper depth as soil is added. When the hole is three-quarters full with soil, fill with water to eliminate air pockets, then add soil before watering again.

For balled and burlapped (B&B) trees, lift only by the soil ball and be careful not to loosen it. Remove all twine, pull burlap away from the tree trunk and make sure no burlap is above ground after planting. Backfill the hole three-quarters full, saturate the soil ball slowly with water, then finish filling the hole with soil. If necessary, remove soil from the ball to make sure the root flare (wide base between the trunk and roots) is not covered.

For containerized and container-grown trees, remove all containers at the planting site. Treat containerized roots gently. If container-grown roots are growing in a spiral, make vertical cuts on the sides of the soil surrounding the roots and a criss-cross cut on the bottom to cut nets of roots. Plant as you would a B&B tree.

"You can't just plant them and forget them," Zins says. "Trees require a good amount of water during the growing season; water during the summer is critical to tree establishment." According to Zins, short, frequent watering stunts deep root growth, so a slow trickle of water for hours at the base of a tree works best.

Zins also suggests you make sure trees don't get defoliated from insects or diseases the first year. On smaller trees, caterpillars may be picked off by hand. A good blast with a garden hose will help control aphids or spider mites.

(more)

For good tree growth and health, Zins suggests you prune only when trees are dormant. Stake a tree only if it's floppy, using two stakes and wide tying material, and allow trunks some room to move. Remove stakes after one growing season.

For more information, consult "Planting and Transplanting Trees and Shrubs," a publication available from the Minnesota Extension Service Distribution Center, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6069, phone (800) 876-8636 or (612) 624-4900. When ordering, refer to item FO-3825-NR2. The cost is \$1.50 per copy plus tax and shipping charges.

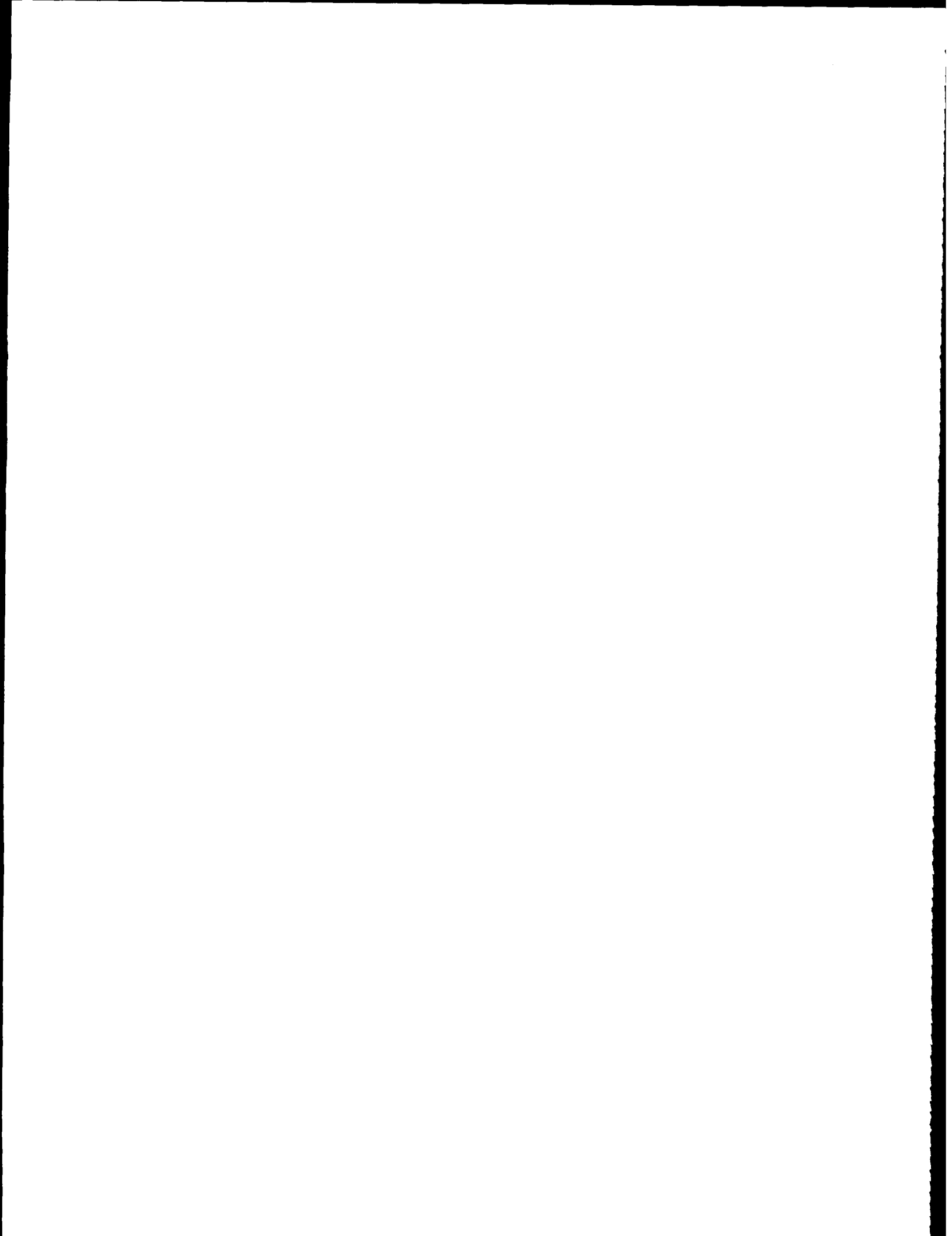
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Web,V4MN,V5MN,V6MN,V7MN,V8MN,V9MN,F8,G1

NNRD5502

Source: Mike Zins, (612) 443-2460

Writer: James Bohlen, (612) 625-3168, news@mes.umn.edu



April 24, 1997

Determine tree's purpose before choosing species to plant

If you're thinking of planting a tree this spring, there are factors to consider when deciding what species to plant and where to plant it, says Mike Zins, horticulturist with the University of Minnesota's Extension Service. But everything starts with why the tree is being planted.

"When deciding what kind of tree to plant and where to put it," says Zins, "ask yourself what purpose you want the tree to serve. Do you want a shade tree? Do you want a tree to make your lot look better? What you want a tree to do makes a difference in what you plant and limits the sites you can use."

When choosing a tree-planting site, consider four factors: soil type and drainage, availability of water, amount of sunlight, and location. "Soil is very critical," notes Zins. Compacted soil is a big problem because of poor water drainage and soil aeration. Zins suggests testing a site with a long screwdriver; if it goes in the ground easily, water will probably drain properly. Or dig a hole 18 inches deep (not after a rainfall), fill it with water and let it stand overnight. If the water has drained by morning, the site has good drainage.

Tree species that tolerate excess water are good in heavy clay soil and low areas where seasonal water may stand. Shade-tolerant trees are advised where light is low. And remember that the south side of a building is warmer and drier than the north

(over)



side. Zins warns against choosing trees that won't grow or do well in our climate. "Be aware of a tree's hardiness," he advises.

In many cases, lot size limits options. "Most yards are so small," says Zins, "that there aren't many available planting sites. The site is often dictated by existing vegetation, landscaping and location of buried utility lines."

When planting trees, Zins suggests you consider:

- How big the tree will get and how long that will take.
- Whether there is enough room for it to grow.
- Whether the tree has the characteristics to provide the desired benefits.
- If the tree will fit well into the overall landscape.
- If the tree could damage buildings, sidewalks, driveways, and other plants.
- Whether a tree planted on this site will infringe on a neighbor's property.
- Choosing a salt-tolerant tree if it will be planted near a heavily-salted road.

Zins advises people to consult planting guides or get help from experts. "Talking to a pro," he says, "may save you tree problems in the future."

For more information, consult "Planting and Transplanting Trees and Shrubs," a publication available from the Minnesota Extension Service Distribution Center, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6069, phone (800) 876-8636 or (612) 624-4900. When ordering, refer to item FO-3825-NR1. The cost is \$1.50 per copy plus tax and shipping.

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Web,V4MN,V5MN,V6MN,V7MN,V8MN,V9MN,F8,G1

NNRD5501

Source: Mike Zins, (612) 443-2460

Writer: James Bohlen, (612) 625-3168, news@mes.umn.edu

April 25, 1997

Editors, broadcasters: This information is time sensitive; please use within a week of receipt.

Check winter wheat for freeze damage

If you seeded winter wheat in south central Minnesota last fall, it would be a good idea to check wheat fields for stand loss in the wake of recent cold temperatures. That's the recommendation of Dave Pfarr, extension educator in Le Sueur County with the University of Minnesota's Extension Service.

"Extensive winter wheat stand loss has occurred in some fields from cold temperatures that occurred April 7 through April 11," says Pfarr.

Winter wheat goes through a process of cold hardening during the fall, Pfarr points out. This allows it to overwinter under normal conditions. Cold hardiness is quickly lost when the wheat resumes growth during the spring. Warm temperatures during the week after Easter prompted the winter wheat to break dormancy and begin spring regrowth. However, one week later, soil temperatures recorded at the Southern Experiment Station at Waseca dropped as low as 25 degrees F for three consecutive nights.

"It's important to assess fields immediately if you might replace the winter wheat with spring-seeded wheat," says Pfarr. "Dig up several plants and examine the growing point or crown that is just below the soil surface and directly above the seed. Growing

(over)



points that are discolored, display water soaking and lack firmness are dead and will not produce regrowth. Growing points that are firm and green or firm and have white tissue with a tint of green will produce regrowth."

University of Minnesota extension agronomist Erv Oelke says the ideal stand density for winter wheat is 20 plants per square foot. However, stands can be reduced by 50 percent before destruction of the crop is warranted. He also points out that weed control at marginal plant populations may not be as good due to reduced competition from the wheat. Oelke suggests that growers consider replanting winter wheat when populations fall to 5-7 plants per square foot. This equates to 17 plants in five feet of row when seeded with a drill with six-inch row spacings. Wheat planted in seven-inch and eight-inch row spacings should have 20 and 22 viable plants per five feet of row, respectively, to be at seven plants per square foot.

For further information about possible spring freeze injury to winter wheat, contact your local office of the Minnesota Extension Service.

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Web,V2MN,F4MN,Z5

NAGR5514

Source: Dave Pfarr, (507) 357-2251

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 28, 1997

Keep stored grain dry, cool as warm spring weather arrives

Keeping stored grain dry and cool is the key to protecting it from mold and insects. But that can be a challenge when warm spring weather arrives, says Bill Wilcke, engineer with the University of Minnesota's Extension Service.

Wilcke says that to maintain stored grain quality through the spring and summer, corn should be less than 15 percent moisture. Small grains should be less than 14 percent moisture, and soybeans less than 13 percent moisture. Stored grain temperature should be less than about 50 degrees F.

"If grain is not dry enough for safe storage, the first step is either to dry the grain or remove it from the bin," says Wilcke. "With adequate fan power on the bin--about one horsepower per 1000 bushels--you might be able to use unheated air to push a drying front through the bin before significant spoilage occurs. It's best if you can finish unheated air drying before May, or the grain is likely to get too warm and grain at the bottom of the bin is likely to get too dry. If you don't have large enough fans for drying, or the grain is wetter than about 20 percent moisture, remove wet grain from the bin and feed it, sell it, or dry it quickly in a heated-air dryer."

For grain that is dry enough for safe storage, Wilcke recommends measuring the grain temperature at several points in the bin. If you find temperature differences of more than 20

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degrees F between different parts of the bin, or if you find grain colder than 20 degrees F, it is probably best to start the fan and run a temperature front completely through the bin.

"Make sure you leave the fan on long enough to complete the task," says Wilcke.

"Aeration time varies from a day or two for large drying fans to a week or more for small aeration fans. Continue to monitor grain temperatures while the fan is running and stop the fan as soon as the temperature front has moved through the entire grain depth. If you run fans in the spring it is important to do it early, before average temperatures climb above 50 degrees F.

Wilcke says many grain managers do not run aeration fans in the spring and have no problems with grain going out of condition. This strategy works if stored grain temperatures are fairly uniform and if the grain is not too cold. But if there is a wide temperature variation within the bin, moisture will migrate from warm grain to cold grain. This will result in condensation and possible spoilage. In addition, any warm, humid, spring air that moves into the bin will condense on cold grain and, again, spoilage could occur.

Moving cold grain out of a bin on a warm day will also result in condensation on the cold kernels. Wilcke says this could lead to handling problems, erroneous moisture meter readings and possibly spoilage.

"After you've made sure that stored grain is at the appropriate moisture and temperature, keep a close watch on it during warm weather," says Wilcke. "Check bins at least once a week, and be prepared to take action if grain condition starts to deteriorate."

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Web,V2MN,V4MN,F4

NAGR5515

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 28, 1997

Don't count on STS soybeans for protection from herbicide carryover

If you used a herbicide such as Exceed on your 1996 corn and you're worried about carryover injuring this year's soybeans, don't count on STS soybeans as the answer. That's the recommendation of Jeff Gunsolus, weed scientist with the University of Minnesota's Extension Service.

STS soybeans are bred for tolerance to sulfonylurea (ALS inhibitor) herbicides. Exceed is a premix of two sulfonylurea herbicides, primisulfuron (Beacon) and prosulfuron (Peak). During the summer of 1996 there were numerous reports throughout southern Minnesota of Exceed carryover from 1995 corn to 1996 soybeans. Research indicates it was the prosulfuron that carried over, resulting in some cases of injury to 1996 soybeans.

"The use of STS soybeans in Minnesota is currently a very limited option due to the lack of adequate seed supplies and well-adapted Minnesota varieties," says Gunsolus. "Also, there is a lack of consensus within the university and the agricultural and seed industry as to the degree of tolerance that STS soybeans have to prosulfuron under field conditions. It's important to keep in mind that STS soybeans were not bred specifically for their tolerance to prosulfuron, but to specific Dupont sulfonylurea herbicides. Crop tolerance to some sulfonylurea herbicides should not be taken to imply that there is tolerance to all sulfonylurea herbicides."

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Gunsolus is a faculty member in the College of Agricultural, Food, and
Environmental Sciences.

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Web,V2MN,F4

NEXP5516

Source: Jeff Gunsolus, (612) 625-8700

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 28, 1997

Soybean injury from herbicide carryover is potential problem this year

The kind of herbicide carryover that injured soybeans in some southern Minnesota fields in 1996 could be a problem again this year. Soybean injury showed up in 1996 when Exceed used on 1995 corn carried over to the 1996 beans. Exceed is a premix of two sulfonylurea (ALS inhibitor) herbicides, primisulfuron (Beacon) and prosulfuron (Peak).

Jeff Gunsolus, weed scientist with the University of Minnesota's Extension Service, summarizes the potential for Exceed carryover in Minnesota this year. "The potential is greatest on soils above pH 7.0, with increasing pH and decreasing soil temperatures increasing the carryover potential," Gunsolus says. "How favorable soil temperature and tillage conditions will be at soybean planting time could also influence the degree of carryover injury to soybeans.

"The use of reduced rates of Exceed to shorten the time interval for degradation of Exceed may reduce the problem on some lower pH soils. However, this method has not been proven in the field, and will be highly dependent on conditions favorable for microbial degradation. Likewise, the use of STS soybeans is unproven under field conditions. Therefore, in soils above pH 7.0, options are limited."

In soils below pH 7.0, the rate of soil degradation of Exceed should be rapid enough that few problems are likely, says Gunsolus. "However," he points out, "it

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would still be important to treat your fields with Exceed before June 30 to maximize the period of Exceed degradation."

Gunsolus is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4

NEXP5517

Source: Jeff Gunsolus, (612) 625-8700

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 29, 1997

Be informed about flood-related insurance claims, contracting

If your home has been damaged by flooding this spring, you may be filing an insurance claim or hiring a contractor to perform repair or replacement work.

According to Becky Hintz, risk management specialist with the University of Minnesota, it is important to know what to look for before you take the first step.

If your insurance company's adjuster is pressuring you into settling an insurance claim for flood damages, Hintz suggests:

--Do not sign a "Proof of Loss" form which denotes that this is a "Full, Final and Complete" settlement.

--Do not accept a check from the insurance company that denotes "Full, Final and Complete" settlement.

Once your property is repaired or replaced, there may be additional expenses for which you are entitled to reimbursement from your insurance company. "If you sign off on or accept a check with the statement of 'Full, Final and Complete,'" says Hintz, "you may be releasing the insurance company for any further damages related to the floods."

When hiring a contractor to perform the construction work on your property, Hintz lists several things you can do to ensure the worthiness of the contractor:

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--Check with the Better Business Bureau for any complaints filed against the contractor.

--Request a performance bond in the total amount of the construction project. This bond will protect you if the contractor does not complete the work to your home.

--If a contractor is subcontracting any portion of the work, request a payment bond from the contractor. This bond protects you from any liens being assessed to your property by the subcontractors if the contractor does not pay them.

--If a subcontractor is not involved, a signed lien waiver should be obtained from the contractor in exchange for final payment.

--If jurisdiction requires, the contractor should provide evidence that the company is licensed and bonded.

--Request a certificate of insurance which names the property owner as additional insured. This certificate provides you with proof of liability insurance for any further property damage for which the contractor could be negligent, along with evidence of workers' compensation.

If you need additional assistance or further clarification, contact Hintz at the University of Minnesota's Risk Management Office, phone (612) 625-0062.

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Web,V4MN,V5MN,V8MN,F3

NEXT5523

Source: Becky Hintz, (612) 625-0062

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

April 29, 1997

Wait 24 hours after anhydrous application before planting corn

It's a good idea to wait 24 hours after applying anhydrous ammonia before planting corn. That amount of time should be adequate to avoid seed or seedling injury, says Mike Schmitt, soil scientist with the University of Minnesota's Extension Service.

"The 24-hour interval assumes that the anhydrous ammonia is applied at least six inches deep and that the soils are 'fit' for anhydrous application," says Schmitt. "It's also a good practice to apply the anhydrous at a slight angle to the proposed seed rows. As with all potential fertilizer injury for seeds and seedlings, the risk of injury is greater in drier soil than in wetter soil."

Schmitt says the most comprehensive field research done on this topic indicates the 24-hour recommendation is adequate. He cites a University of Illinois study from the 1970s. That study found that a "standard" nitrogen rate of 200 pounds per acre (larger than almost all Minnesota recommendations) applied at a depth of seven inches and planted to corn the same day resulted in only a two percent decrease in stands. For the 100-pound nitrogen rate, the stand loss was less than one percent.

"Our recommendation to wait a day would decrease the injury risk even further," Schmitt concludes.

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Schmitt is a faculty member in the College of Agricultural, Food, and
Environmental Sciences.

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Web,V2MN,V4MN,F4

NAGR5520

Source: Mike Schmitt, (612) 625-7017

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 29, 1997

If time is short, plant corn first and apply nitrogen later

This may be a good year to plant corn first and apply nitrogen fertilizer later. That's especially true if weather delays field work, says Mike Schmitt, soil scientist with the University of Minnesota's Extension Service.

"Although spring preplant N application is considered a best management practice for almost all of Minnesota, there are alternatives that spread the workload over a longer time period," says Schmitt.

Where there is time for pre-plant nitrogen application, Schmitt recommends anhydrous ammonia or urea. "Consider a nitrification inhibitor if you have poorly-drained soils," he says. "If you use urea, it's best to incorporate within three days after application. However, a separate pass just for incorporation is generally not necessary if there is a good probability that rain will move the urea into the soil, or you will make a final seedbed tillage pass."

One alternative to pre-plant application is to apply anhydrous ammonia between rows after planting. Research at the University of Minnesota has proven this to be a safe practice. You will need to be able to see the tire tracks or seed rows to ensure that the knives are not tearing up a seed row, notes Schmitt.

After the crop has emerged, side-dress or top-dress N application options are plentiful. Schmitt says making these applications as early as possible lowers the risk of

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reduced corn yields. Anhydrous ammonia can be side-dressed as soon as rows are visible.

Schmitt is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,V4MN,F4

NAGR5519

Source: Mike Schmitt, (612) 625-7017

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 29, 1997

Take steps to minimize soil compaction from wheel traffic, tillage

The following article is from Ronald Schuler, University of Wisconsin extension engineer. It is taken from Minnesota/Wisconsin Engineering Notes, a newsletter jointly published by the Department of Biosystems and Agricultural Engineering at the University of Minnesota and the Department of Biological Systems Engineering at the University of Wisconsin-Madison.

"Stay off wet soil" is the primary recommendation for keeping soil compaction problems to a minimum. Following this recommendation will be a major challenge for farmers in areas of Minnesota and Wisconsin that have received record snowfalls and have high soil moisture content. This might be a year when the only way to plant the crop is to work on wet soils.

If tilling and planting are going to take place on wet soils, it is important to use other steps to minimize the compaction caused by wheel traffic and tillage. These steps include proper ballasting of the tractor, using appropriate tires and tire pressure, avoiding unnecessary field operations and maintaining tillage equipment.

For tillage operations, the correct ballasting or weighting of the tractor can be checked by determining drive wheel slip. For operation that minimizes compaction and gives the best fuel efficiency, wheel slip should be 8-16 percent.

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Wheel slip can be determined by first staking the distance the tractor travels in a field with the tillage implement lowered or engaged for ten wheel revolutions. Then, count the number of wheel revolutions required to travel this same distance with the implement raised. If the number of revolutions is nine, then the wheel slip is 10 percent. If the number of revolutions is eight and one-half, then the wheel slip is 15 percent. For wheel slip to be in the correct range, the number of revolutions with the implement raised should be from eight and one-half to a little over nine. Add weight if the wheel slip is excessive and remove weight if the wheel slip is too low.

Tire pressure should be at recommended levels. High tire pressure will cause compaction, and low tire pressure can result in tire damage. Radial tires cause less compaction than bias tires, especially when the tire pressure is correct. Note that recommended tire pressure is lower for radial tires than for bias tires. Larger diameter tires cause less compaction because of a larger tire print in the soil. Concern about compaction is one of the primary reasons for the recent availability of larger tires. Using dual tires will also reduce compaction at the soil surface compared with single tires.

Minimizing the number of implement passes through the field is one easy method of reducing compaction. Evaluate the cost of each tillage pass compared with the expected increase in yield that will result from the operation. Many producers disk or field cultivate two times before planting; it might be possible to eliminate one of these operations with no yield loss.

Worn or dull soil-engaging tools on tillage equipment, such as chisel plow shovels and disks, will cause more compaction than new tools. Planters and tillage

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equipment should be level from front to rear. When these machines are not operating level in the field, they require more draft and power, and additional ballast is needed to keep wheel slip in the correct range.

Many crop growers may have no choice but to operate field equipment on wet soil this spring. It then becomes more important to take other steps to minimize soil compaction due to wheel traffic and tillage.

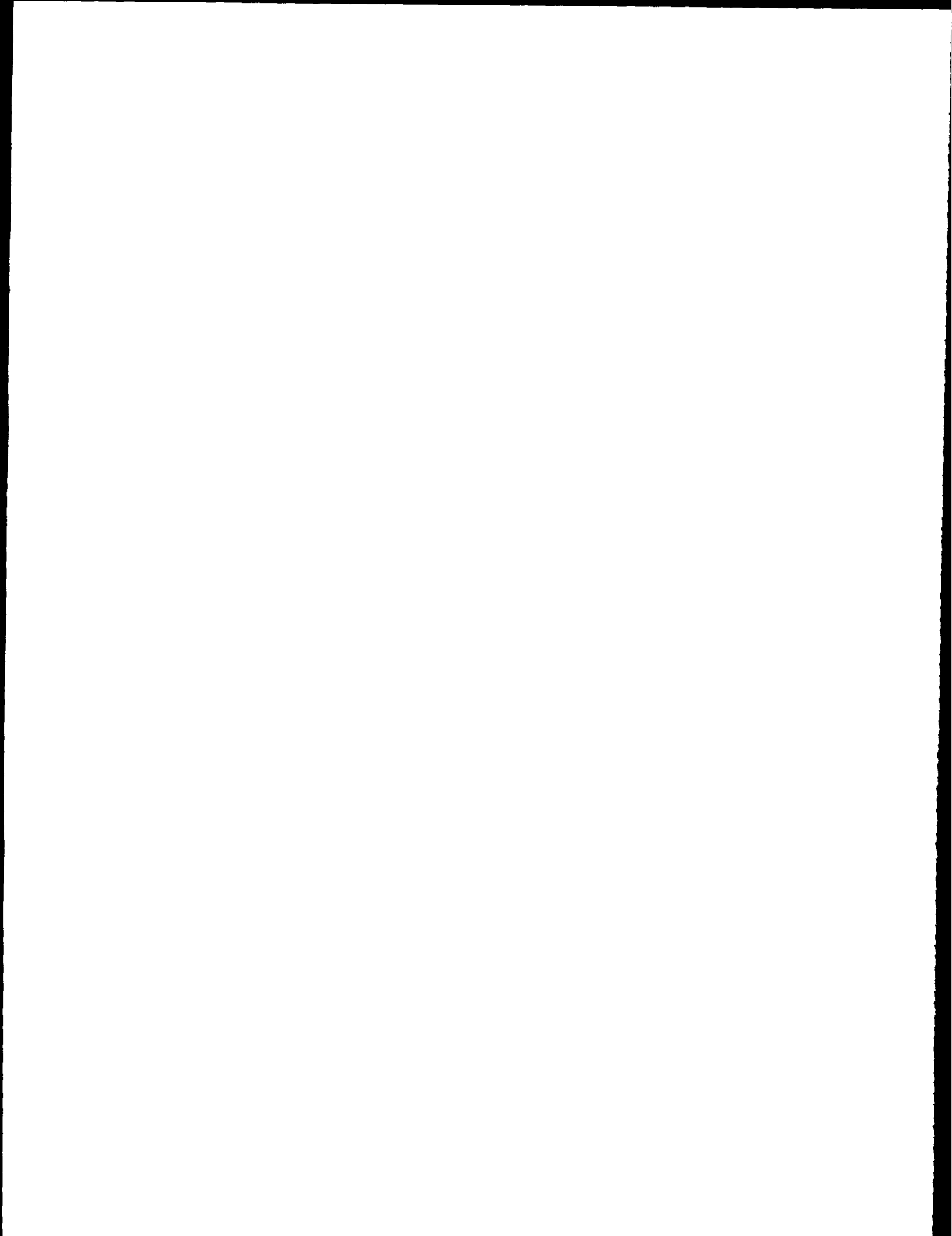
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Web,V2,V4MN,E4,F4

NAGR5518

Source: Ronald Schuler, (608) 262-0613

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



MSC
EAD 7/2

April 29, 1997

Now is the time to get your lawn and garden in great shape for summer

Has spring got you scrambling to get your lawn and garden in shape? Deborah Brown, horticulturist with the University of Minnesota's Extension Service, has some useful tips on how to make the most of the summer growing season.

Trees and Shrubs

Spring is a good time to add trees and shrubs to your landscape. Plant a flowering crabapple close enough to your house to enjoy its beauty when seated at the table or in your favorite armchair. Plant lilacs near your bedroom window so you can smell their wonderful fragrance those first warm spring evenings. New varieties don't sucker and spread the way the older common lilacs do.

Lawn Care

You'll probably also be thinking about lawn care for the coming summer. According to Brown, you may not need to fertilize at all in the spring if you fertilized once or twice last fall. "Try to avoid too much spring fertilizer," says Brown, "since succulent new growth is prone to disease."

If you do need to fertilize your lawn, don't be in a hurry to do so while your lawn is still dormant. Brown, an associate professor with the University's College of Agricultural, Food, & Environmental Sciences, says that it's best to wait until the grass has been mowed once or twice.

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Mulching Garden Plants

It's a good idea to mulch the soil around "cool season" plants in your garden. Vegetables like leaf lettuce, peas, spinach and broccoli, as well as flowers, including sweet peas, calendulas, pansies and stocks, all grow best when conditions are kept on the cool side. Mulching heat-loving plants like tomatoes, peppers, geraniums and marigolds is not a good idea this early in the season. "For these plants;" says Brown, "it merely serves to keep the soil cool and actually slows their growth."

Pet Residue

When collecting pet droppings from lawns and gardens, bag them and dispose of them in the trash. Do not put them into your compost pile because dog and cat feces often carry parasitic organisms that pose a threat to humans. Brown says these organisms may not be killed in the compost pile, so you could pick them up later when gardening.

Poison Ivy Control

Poison ivy must be actively growing for spray or spot treatment with a brush killer containing triclopyr to be most effective. Because poison ivy has a woody root system and may be quite old, you'll probably have to treat it several times. All forms of the plant, whether live or dead, are dangerous, so dress appropriately when working on it. Brown also warns against burning poison ivy. "The fumes from burning these plants can cause problems, too," she says.

Numerous sources are available for more information on lawn and garden topics. You can contact a Master Gardener through your local county office of the

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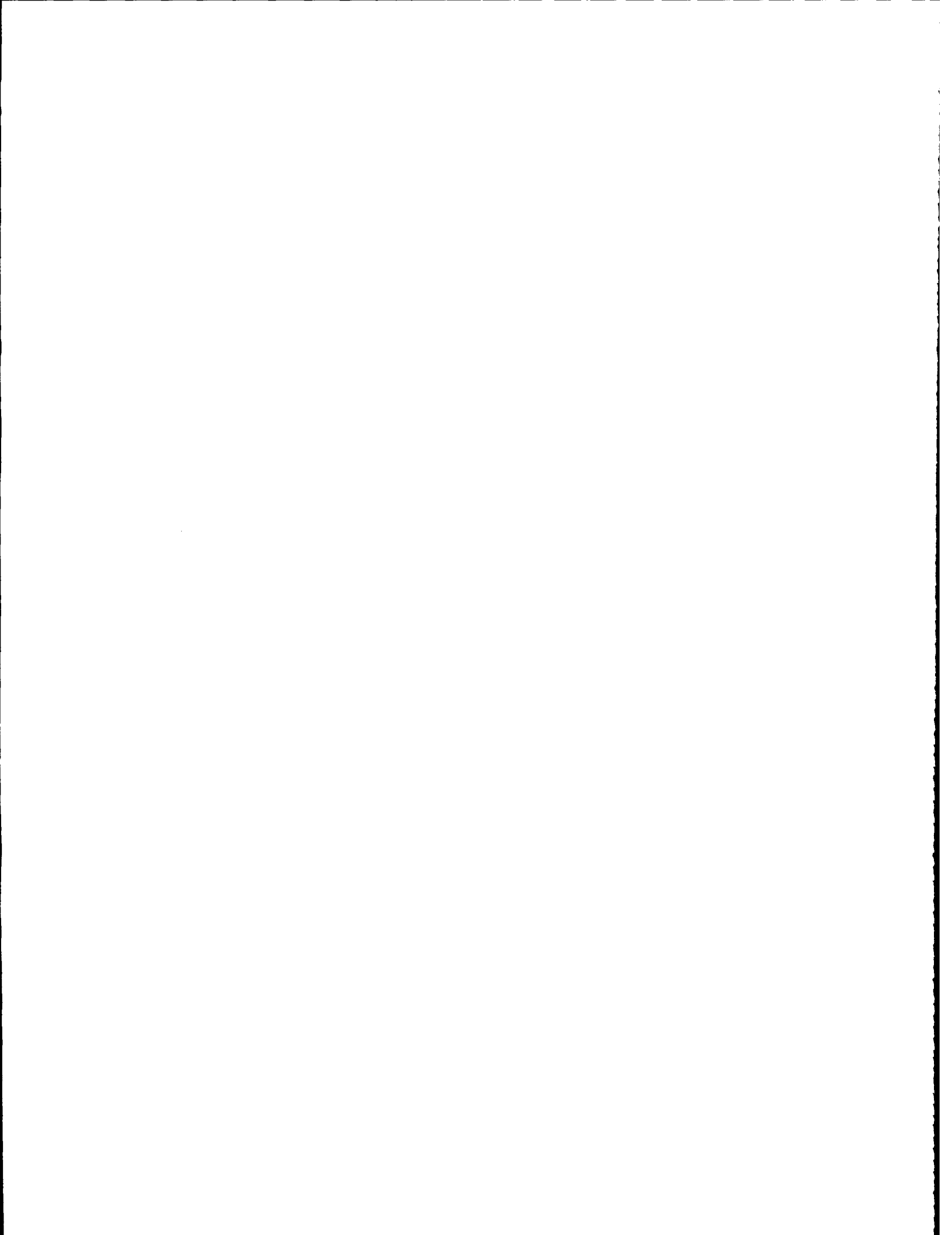
Minnesota Extension Service. You also can speak to an expert at the University of Minnesota's Dial U Insect and Plant Information Clinic by dialing (900) 988-0500 between 9 a.m. and 3 p.m. on weekdays. The charge for a Dial U call is \$2.99.

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Web,V4MN,V5MN,G1

NAGR5521

Source: Deb Brown, (612) 624-7491
Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu



*MSC
9/12/97*

April 29, 1997

Engineer outlines strategies for salvaging stored grain hit by flooding

If you have a grain bin that's been exposed to floodwaters, it's probably possible to save at least some of the grain. Even grain that was submerged may be salvageable, says Bill Wilcke, engineer with the University of Minnesota's Extension Service.

"Grain bins that have been exposed to flooding have probably sustained some damage, and some grain loss is likely," says Wilcke. "However, it is often possible to repair the bins and salvage at least part of the grain. Water doesn't 'wick' very far in whole grain, as it does in materials such as cloth or hay. So it is likely that grain at the top of bins that were only partly submerged is still in good condition. On the other hand, if grain was submerged in floodwaters, quick action will be necessary to prevent spoilage of this very wet grain."

Wilcke says actions necessary for salvaging flood-damaged grain depend on the extent of damage to the bin and to the grain. Therefore, the first step is to physically inspect the bin, including unloading and aeration equipment, and the stored grain. Then, contact your insurance company or disaster relief agency as soon as possible to find out what you need to do to document losses.

Wilcke offers the following answers to some likely questions about flooded grain bins:

(over)



--How much time to I have before wet grain spoils?

The rate of spoilage for wet grain depends on its moisture content and temperature. Grain that was submerged for more than a few days will have a moisture content of about 40 percent, plus or minus 10 percent. Even at temperatures of 40-50 degrees F, grain this wet could spoil in less than a week. Spoilage will be even faster at higher temperatures.

--If the bin was only partly submerged, can I just leave the dry grain on top of the wet grain?

It would be best to separate the wet grain from the dry grain as soon as possible. That's because the wet grain will begin to spoil in a few days, and mold, heat and odors from the wet grain could reduce the value of the dry grain. Try to unload the dry grain without mixing it with the wet grain. Using a vacuum-type grain conveyor to suck the dry grain out of the top of the bin might be the best way to do this. Consider selling the dry grain, moving it to an undamaged storage bin at your place or a neighbor's place, or temporarily storing it in a machine shed or other building modified for grain storage.

--What can I do with grain that has been exposed to floodwaters?

If the grain is not contaminated with excessive amounts of silt, bacteria, fuel, or chemicals from the floodwaters, it might be possible for you or a neighbor to feed wet grain or soybeans directly to livestock. Remember that wet grain will spoil quickly; if it can't be fed in a week or so, consider adding a grain preservative to extend shelf life. If the grain moisture is between about 25 and 35 percent, consider ensiling it in an upright silo, plastic-covered horizontal silo, or plastic silage bag. Beware that grain in ruptured

(more)

bins could contain bolts, bin hardware, or other debris that should be separated out (consider using grain cleaners and/or magnets) before the grain is fed.

Another option is to dry the wet grain in a gas-fired dryer. Energy costs for on-farm drying will be one to one and one-half cents per percentage point of moisture removed. Commercial drying charges will probably be two to three cents per point.

If you can remove the dry grain from the top of the bin and get the fan going, you might be able to use unheated air to dry wet grain in bins equipped with full-perforated floors and large drying fans. Chances of success for unheated air drying decrease as grain moisture, outside temperature and grain depth increase. If the grain is much wetter than 20 percent moisture, don't use this drying method for more than about six feet of grain.

Under certain conditions, grain molds can produce mycotoxins that can cause animal feed refusal, health problems or even death. So if grain develops a lot of visible mold, test for mycotoxins before feeding it or spending money to dry it. Grain that is badly damaged by mold or has high levels of mycotoxins should probably be discarded.

--How do I unload the bin?

Chances are that you won't be able to remove the grain through the bin's unloading system. If electric motors on the unloading system have been underwater, it is best not to start them until they have been cleaned, dried and lubricated. And very wet grain probably won't flow out of the bottom unloading sump anyway. Consider using a vacuum-type grain conveyor to suck the grain out of the top of the bin. Avoid

(more)

unloading the bin from one side or out of a side door; this creates uneven sidewall pressures that can damage the bin.

--What kind of bin damage is likely in flood situations?

It is not unusual to find structural damage to bins after floods. Because grain swells when it absorbs moisture, it exerts a great deal of pressure on the inside of bin walls. This often results in stretched bolt holes, broken bolts, and torn bin sheets. Sometimes, bins are knocked off their foundations or dented by the pressure of moving water or by impacts from floating ice and debris. Also, rapidly moving water can cause erosion around foundations.

Drying, aeration and unloading equipment on bins is likely to be inoperable immediately after floods. In many cases, however, electric motors and controls and gas burners will work again after they have been cleaned and dried. Don't try to start electric motors until they have been cleaned and dried or they might burn out. You should also clean mud and debris off fan blades to prevent imbalances that might lead to bearing damage. In many cases, aeration ducts and areas under full-perforated floors will contain mud and saturated grain fines. Make sure you clean these areas before next season.

Companies that work on grain bins will be busy this year. If repair work is necessary, try to line up a contractor as soon as possible to get bins repaired before next harvest.

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--Are problems likely if water surrounded the bin foundation, but didn't actually flow into the grain?

If the bin has an elevated, full-perforated floor and the water level remained below the floor, the grain is probably fine. You might still need to check for erosion around the foundation, damage to the fan and unloading system and mud accumulation under the floor.

If grain rests directly on a concrete floor, it is possible that water moved up through small cracks and pores and wet a few inches of grain next to the floor. It is also possible that in-floor aeration ducts are full of water and mud and that the fan and unloading system have been damaged by water. If you can get the aeration system to work, attempt to dry the layer of wet grain by aerating it. Or, if you can get the unloading system to work, consider transferring grain from one bin to another to get the layer of wet grain off the floor before it molds.

--Is it possible to salvage grain that was intended for use as seed?

Grain that has been exposed to floodwater and then redried will not make very good seed. For one thing, the moisture increase caused by flooding is likely to trigger premature germination. For another, mold growth that occurs prior to drying will probably reduce germination. And finally, unless seed temperature is kept below about 110 degrees F during drying, germination will be reduced even further. Note that any chemically treated grain cannot be fed to animals or sold in normal commercial channels.

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--Are there any safety concerns about working around flooded bins?

Possible safety hazards include electrical short circuits, gas leaks, sudden rupture of weakened bins, entrapment in flowing grain, and breathing dust and mold spores from damaged grain. Turn off gas valves and electrical power until you have a chance to clean, dry and inspect gas and electrical systems. Work in pairs and stay out of flowing grain. And finally, wear a tight-fitting, high-quality dust mask or respirator that is designed to filter mold spores and other toxic dusts when handling flood-damaged grain.

If you have further questions about handling flood-damaged grain, contact Wilcke by e-mail at wwilcke@mes.umn.edu or by phone at (612) 625-8205.

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Web,V2,V4MN,F4

NAGR5522

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

April 30, 1997

Skipping primary tillage is option for soybeans

If you don't have much time to get soybeans planted this spring, skipping primary tillage is an option. That strategy will work for soybeans that follow corn or small grains, say Bob Byrnes and Jim Nesselth of the University of Minnesota's Extension Service.

You need appropriate equipment to do the job, say Byrnes and Nesselth, who are extension educators in Lyon County and Jackson County, respectively. No-till drills will work well. Yields aren't likely to suffer, but strict attention to weed control will be necessary.

Corn stalks can be incorporated with shallow tillage, say Byrnes and Nesselth. The amount of tillage necessary will vary with the amount of residue and the ability of equipment to plant in corn residue. Most newer conventional planters with disc openers will plant with 30 percent residue cover if the top two to three inches of soil are loose. If you have a conservation tillage planter or drill, no spring tillage will be necessary for soybean planting.

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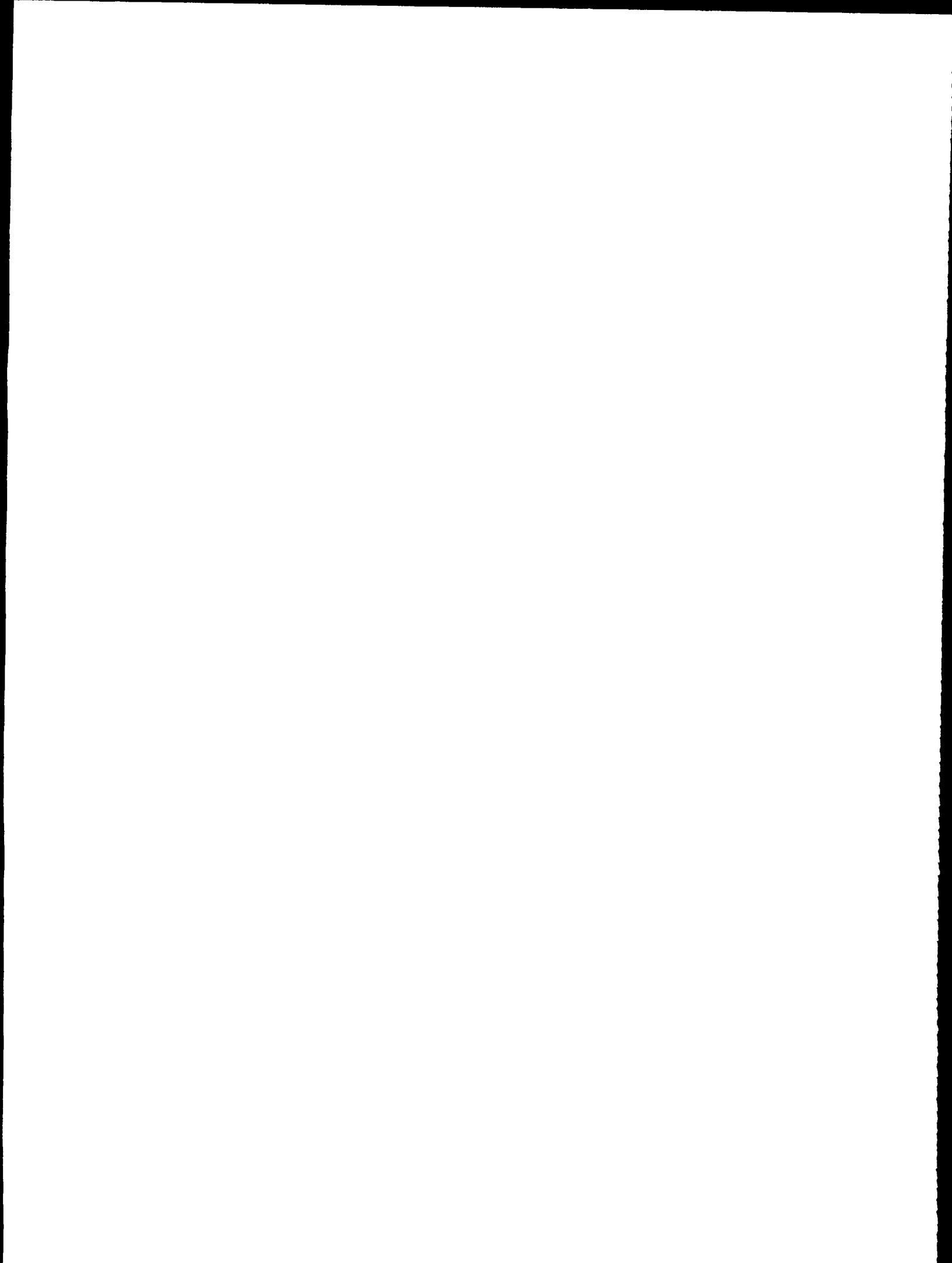
Web,V2MN,V4MN,F4

NAGR5524

Sources: Bob Byrnes, (507) 537-6702; Jim Nesselth, (507) 662-5293
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





May 2, 1997

Late grain planting can still bring in good yield

If spring flooding has held back your wheat and barley planting, there still may be time to get in a good growing season. According to Jochum Wiersma, small grains specialist with the University of Minnesota's Extension Service, some northwestern parts of the state can even take their planting into early June.

Wiersma says that wheat and barley are both cool season grasses. Delayed planting could pose a problem if temperatures increase normally as the season progresses. Below-normal temperatures, however, would help. "If we end up with a cool summer," says Wiersma, "the crop can still have an excellent chance of succeeding."

Should average temperatures be higher as crops are planted later, the plants will have less time to grow. According to Wiersma, this will result in fewer tillers, smaller heads, and fewer and smaller kernels per head, which can cut into yields. To compensate for this expected loss, you can increase your seeding rate and ensure that you have more main stems per unit area. Wiersma recommends increasing the seeding rate by 1 percent for every day after the optimum time frame.

Wiersma offers the following latest planting dates for areas of northwestern Minnesota which are south of the lines listed below:

Fergus Falls to Breckenridge (Hwy. 210) second week of May

Detroit Lakes to Moorhead (Hwy. 10) third week of May

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Mahnomen to Halstad (Hwy. 200)	fourth week of May
Grand Forks to St. Hilaire	first week of June
Canadian border	first week of June

Wiersma adds that these last possible dates for planting are somewhat arbitrary. The chances of a profitable crop drop because of the anticipated weather and temperatures later in the growing season. The experiences some farmers had in 1996 with excellent late-seeded wheat and barley crops should be considered an exception rather than the rule. "If your area is still wet beyond the last possible date," says Wiersma, "you may want to consider an alternative crop."

For seedbed preparation, Wiersma says that tilling wet soils can result in problems, including loss of soil structure, compaction, clumping and poor seed-soil contact. Subsequently, seedling emergence is uneven and erratic, plant stands are reduced and preplant herbicides may get incorporated poorly. Although delayed planting comes with a yield penalty because of the shorter growing season, Wiersma believes that an optimum stand is more important. He recommends waiting one or two days for seedbed preparation this year.

And as the Red River's floodwaters recede from your fields, don't be surprised to find debris, which can damage your equipment. If surface erosion occurred, these "mines" might even be hidden. Pay a little extra attention during field work this spring.

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Web,V2MN,F4,X7,Z1

NAGR5525

Source: Jochum Wiersma, (218) 281-8604
 Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

May 2, 1997

Using properly cleaned soybean seed helps combat white mold

Make sure the soybean seed you plant this spring has been properly cleaned and comes from a field that was free of white mold. Using that strategy means it's less likely white mold will reduce your soybean yields this year or in future years, says Jim Nesselth, extension educator in Jackson County with the University of Minnesota's Extension Service.

Nesselth says there is only a remote possibility that internally-infected seeds could survive and introduce white mold into another field. And since internally-infected seeds will not germinate, selecting soybean seed with high germination scores also lowers the probability of white mold.

"The sclerotia that carry the white mold fungus can be difficult to clean from seed and can easily be spread with the planter from field to field," Nesselth points out. "If you use bin-run seed, avoid using seed from white mold-infested fields. Make sure any soybean seed you have purchased was cleaned by high-quality cleaning equipment with sufficient fan and sieve requirements to separate and remove sclerotia."

Nesselth says sclerotia in soybean fields will germinate only if environmental conditions are favorable, with moist soil conditions and cool temperatures of 40-60 degrees F. Spores released from the fungal growth of germinated sclerotia (called

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apothecia) need wet surfaces 12-16 hours per day for 3-5 days, or 42-72 hours continually, during flowering to complete the white mold life cycle.

"Producers should consider selecting varieties that have shown tolerance for white mold," says Nesseseth. "They show tolerance by having a lower percentage of infected plants and higher yields."

Planting in wider rows and avoiding planting on manured fields are cultural practices Nesseseth recommends to combat white mold. "Avoid any practices that will provide an environment of wet, high-moisture conditions favorable to white mold spore survival," he adds.

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Web,V2,V4MN,F4

NAGR5526

Source: Jim Nesseseth, (507) 662-5293

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
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May 2, 1997

Remember to care for your pets after the flood

If you've had to evacuate your home because of flooding, remember that your pets may need special care after the immediate danger is past. Laurie Greene, veterinarian with the University of Minnesota, says there are certain issues to keep in mind when trying to locate lost pets or helping recovered pets get settled back in.

According to Greene, most dogs and cats will try to stay close to their homes if they are left behind, and may try to return to their homes if floodwaters forced them to leave. Contact your local and state animal shelters and humane societies with descriptions of your pets if they are missing, and visit the shelters often to see if your pets have been found. "It may take weeks or months to find all the missing pets and reunite them with their families," says Greene, "so don't give up right away."

When your pets have been found, you'll need to watch their health closely. Although the lack of food for several days is usually not harmful to most pets, contact with contaminated food and water can cause illnesses, especially in the digestive tract. Water-borne diseases can be a major cause of diarrhea for your pets. Greene notes that they will need access to clean water and should have a fecal sample checked by a veterinarian as soon as possible to detect exposure to parasites.

If your dogs or cats develop diarrhea and you are unable to see your veterinarian promptly, you can give kapectate at a dose of one teaspoon per 10 pounds of body

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weight up to three times a day. Do not give more than 3 tablespoons per dose (3 teaspoons = 1 tablespoon), and do not use human anti-diarrhea medications other than kapectate. Many contain medications that are harmful to pets.

You may not have access to pet food immediately. As a good substitute for dogs, cats and reptiles, Greene recommends a 50-50 mixture of cooked meat with a grain, such as rice. Raw or cooked vegetables are also good additions to the diet. If available, a vitamin-mineral supplement should be added to help balance the diet. "Remember that reptiles usually have a higher need for calcium in their diets," says Greene, "and this should be supplemented as soon as possible."

Contact your veterinarian immediately if your pet is routinely on medication, such as insulin or epilepsy medication. A veterinarian can advise you on critical health care needs, as well as how to safely get your pet back onto needed medication.

Greene adds that pools of water left behind after the flood will be a prime breeding habitat for mosquitoes, so be sure that your dogs and cats are on heartworm preventive during the mosquito season, which is generally April through November. If your animals have been soaked by floodwaters, a bath with a gentle cleansing shampoo is recommended to remove contaminants from their fur.

For more information, contact your veterinarian, your local Minnesota Extension Service office, or the Veterinary Outreach Office of the University of Minnesota College of Veterinary Medicine at (800) 380-8636.

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Web,V4MN,C3,Z2,Z6,Z7

NEXT5527

Source: Laurie Greene, (612) 624-4752

Editor: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

NEWS INFORMATION

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May 5, 1997

Planting early is best strategy for top soybean yields

Planting soybeans by early May is the best strategy for getting top yields, according to an agronomist with the University of Minnesota's Extension Service.

"Early planting allows use of full-season varieties, which are usually higher yielding than earlier maturing varieties," says Lee Hardman. "Plantings earlier than May 20 produces the best yields, while later plantings result in large yield decreases. Full-season varieties planted before June 10 can mature in southern Minnesota before the normal fall frost date in early October, but will have reduced yields."

Hardman lists the approximate percent yield loss for various planting periods as follows:

<u>Planting Period</u>	<u>Yield Loss (%)</u>
Late April to early May	0
Mid-May	10
Early June	20
Late June	40

Yield performance and other characteristics of the major public soybean varieties for various planting dates in Minnesota are listed in the "Soybean Variety Trials: 1997" report. It's published by the U of M Agricultural Experiment Station and is available from county offices of the Minnesota Extension Service.

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Hardman is a faculty member in the College of Food, Agricultural, and
Environmental Sciences.

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Web,V2MN,F4

NEXP5528

Source: Lee Hardman, (612) 625-8700

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

May 5, 1997

Direct seeding with no companion crop is option for alfalfa

If you want to establish some new alfalfa as part of your cropping system this spring, direct seeding without a companion crop is an option. In fact, that method is the first choice of Neal Martin, forage agronomist with the University of Minnesota's Extension Service.

Martin lists the following recommended methods of establishing alfalfa, from most to least preferred:

--Direct seed a pure stand of alfalfa at a seeding rate of 15 pounds per acre using herbicides. You can use pre-plant herbicides such as Balan or Emptam or post-emergent herbicides such as Poast or Pursuit to establish the crop quickly. For soils with erosion potential, seed with oats at 55 pounds per acre and spray the oats out with Poast or Pursuit.

--Establish alfalfa at 10-12 pounds of seed per acre using a small grain as a companion crop. The first choice is barley seeded at 50 pounds per acre (Royal is a recommended variety) to get early and highest quality small grain forage. Remove the barley at boot stage to obtain high quality, then second and third cuts will be all alfalfa.

Triticale is not different from barley in forage quality or yield, but it can become competitive with alfalfa if not harvested early. Oats produce lower quality forage and

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yield than barley or triticale. This seeding option is best to establish alfalfa-grass mixtures.

--Establish alfalfa at 10-12 pounds of seed per acre with small grain mixed with field peas. Use 50 pounds of seed per acre each for the small grain and peas. This will provide high forage yields for the first cutting, though the forage is difficult to dry and handle. Silage is the preferred option, but be sure the moisture level at ensiling is correct--55-65 percent moisture.

To re-establish killed areas in an existing alfalfa field, Martin recommends using secondary tillage to prepare a seedbed. Then seed oats at one bushel per acre with alfalfa, and manage the field normally. After the first cutting, newly seeded areas will catch up, says Martin. Early seeding is best.

Martin says the optimum planting date for seeding alfalfa with small grain is up to mid-May. Direct seeding can be successful until mid-June, although early May is preferable because it allows time to obtain two or three cuts the first year.

Martin is a faculty member in the College of Food, Agricultural, and Environmental Sciences.

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Web,V2MN,F4

NAGR5534

Source: Neal Martin, (612) 625-8700

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

May 5, 1997

Farm safety hazards may be part of flood clean-up

If you're working in and cleaning up previously flooded areas on a farm, you will probably be exposed to unique hazards that could lead to serious injury or even death. John Shutske, farm safety and health specialist with the University of Minnesota's Extension Service, offers the following safety reminders for flood clean-up work:

--Be extremely wary of electrical equipment that has been exposed to floodwater or other moisture. Don't turn the power back on until it has been inspected by a qualified electrician. Unless you are certain that the power is off, never enter flooded areas or touch electrical equipment if the ground is wet. Never handle a downed power line.

--Flood clean-up may involve the use of gasoline or diesel powered pumps, generators or pressure washers. Because these devices release carbon monoxide, a deadly, colorless, odorless gas, operate all these devices outdoors. Never bring them indoors. It is virtually impossible to determine whether or not ventilation is adequate.

--Be extremely cautious when using towing chains to free or move "stuck" tractors and equipment. Hitch only to the drawbar to avoid tipping the tractor over backwards. Never use a nylon rope--several fatalities have occurred in recent years

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when ropes, clevises or hooks have broken, turning the tow rope into a deadly sling-shot. Only use a long towing chain designed to support the towed load. Check the machine's operator's manual for additional safe towing information.

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Web,V2MN,V4MN,E4,Z1

NAGR5529

Source: John Shutske, (612) 625-9733
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
9/12/97

May 6, 1997

Flooding shouldn't affect phosphorus availability for crops

Flooding should not have an effect on the availability of phosphorus for farm crops, according to a soil scientist with the University of Minnesota's Extension Service.

"Phosphorus is not mobile in soils," says George Rehm. "Therefore, losses due to leaching should not be a major concern. There are no other chemical reactions whereby phosphorus should be lost from soils that were flooded."

Rehm says loss of phosphorus would be a major concern where a substantial amount of soil is lost to erosion. Phosphorus is attached to soil particles, so where soil is lost from a field, there will be phosphorus loss.

"Soil compaction may be more of a problem where soils were flooded," says Rehm. "This may restrict root growth early in the growing season. Applying phosphate in a band may help to overcome some of the restriction on root growth. A rate of 15-20 pounds of phosphate per acre should be about right for soils that have a medium to high soil test for phosphorus. Use higher amounts if soil test levels are in the low or very low range."

A Minnesota Extension Service publication on "Fertilizer Recommendations for Agronomic Crops in Minnesota" (item BU-6240-NR1) is available from county extension offices in Minnesota.

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Rehm is a faculty member in the College of Agricultural, Food, and
Environmental Sciences.

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Web,V2MN,V4MN,F4,Z1,Z7,Z8

NAGR5535

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

May 10, 1997

There's a new weapon in the crabgrass war

Homeowners battling crabgrass have a new weapon available to them this year, according to Deborah Brown, horticulturist with the University of Minnesota's Extension Service. The chemical "Dimension" (dithiopyr) has only been available to professional groundskeepers, but is now available as an ingredient in some combination fertilizer and pre-emergent herbicide products for the home lawn.

Brown says that Dimension is a long lasting herbicide, controlling weeds for three months or more. Its primary advantage over other pre-emergent herbicides, however, is that it also offers post-emergent activity on crabgrass and other emerging weeds. "That means that if some crabgrass sprouts before you apply it, the product will take care of those weed seedlings as well as prevent other seedlings from emerging," she says.

She cautions, however, that fertilizer/herbicide combinations containing Dimension should not be used on newly seeded lawns. Brown says, "If you seeded late last fall or this spring, use a pre-emergent herbicide containing siduron, also called Tupersan. It will prevent crabgrass seed from emerging without affecting desirable Kentucky bluegrass seeds."

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Web,G1

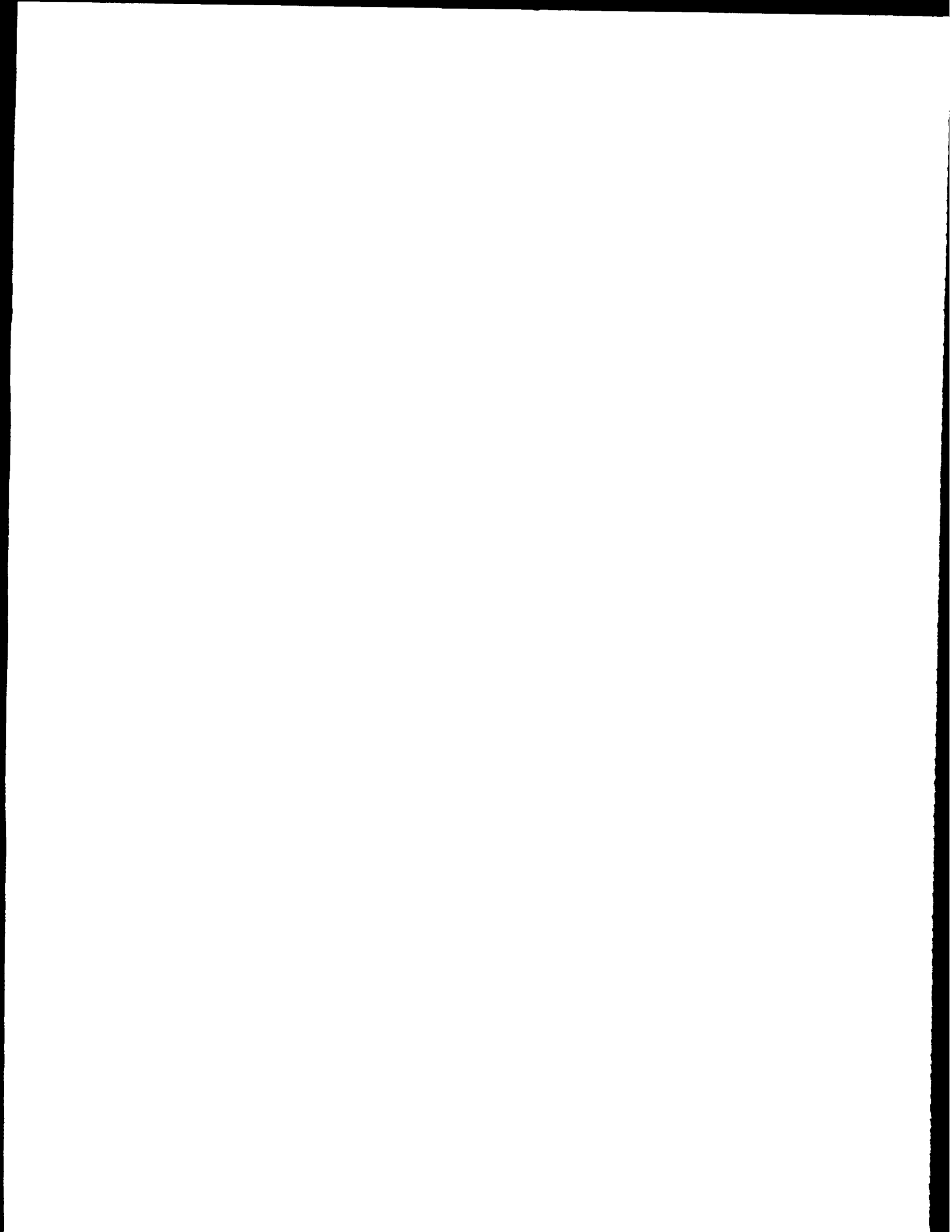
NAGR5536

Source: Deborah Brown, (612) 624-7491

Writer: Deedee Nagy, EDS, (612) 625-0288, dnagy@mes.umn.edu

(Page 1 of 1)





MSC
9A17P

May 10, 1997

Beware of grass seed rip-offs, expert warns

The claims in seed company catalogues and advertisements are the stuff of gardeners' dreams, but dreams and reality can be very different in your lawn. That warning comes from Deborah Brown, horticulturist with the University of Minnesota's Extension Service, who says several kinds of widely advertised grass seeds are poor choices for Minnesota lawns.

"Every year we remind people that zoysia grass is not a good performer in this climate," she says. "True, it's winter hardy here, but as a warm season grass, it greens up slowly in the spring and turns brown quickly at the first touch of frost in the fall."

Some new grass seed mixes are better suited to our climate than zoysia, but Brown says they are exorbitantly priced and contain more than their share of undesirable seeds. One of these, called Canada Green, contains more than 40 percent creeping red fescue, which is best adapted to shady locations. Another 25 percent is annual ryegrass, which only lives one year. About 30 percent of the grass seed is Kentucky bluegrass, but the bluegrass variety is not stated. Brown says that half of one percent of the seeds in Canada Green are weed seeds, an unacceptably high percentage.

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The bottom line on grass seed purchases? Brown says, "Don't be taken in by slick, glossy ads with extravagant claims for lush, easy-to-grow grass. The old adage applies--if it sounds too good to be true, it probably is."

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Web,G1

NAGR5537

Source: Deborah Brown, (612) 624-7491

Writer: Deedee Nagy, EDS, (612) 625-0288, dnagy@mes.umn.edu

May 12, 1997

University of Minnesota plans Dairy Study Tour to Pennsylvania

The opportunity to see successful dairy operations in Pennsylvania along with scenic and historic sites in that state will be available through a University of Minnesota tour this summer.

The 26th annual Dairy Study Tour will be July 30-August 5. It's designed for dairy producers from Minnesota, Wisconsin, Iowa and the Dakotas. Participants will be able to see some of the best dairy cattle and facilities in Pennsylvania and visit some of the state's top dairy producers. Production techniques include open lots, modern parlors, new concepts in calf raising, and innovative waste management systems that are environmentally sound.

Alfalfa, corn, oats, potatoes, beans and peas are major crops in the area.

The tour will also include visits to historic sites in Philadelphia and Civil War historic sites at Gettysburg. Travel through Pennsylvania Dutch and Amish farm country and a visit to a New Holland manufacturing plant are also on the agenda.

Cost of the tour is \$949 per person, which includes air and coach transportation, lodging and several meals. To obtain a tour brochure or further information, call Gerry Wagner or Leon Meger at (800) 367-5363.

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Web,V2,V4,D1,X3

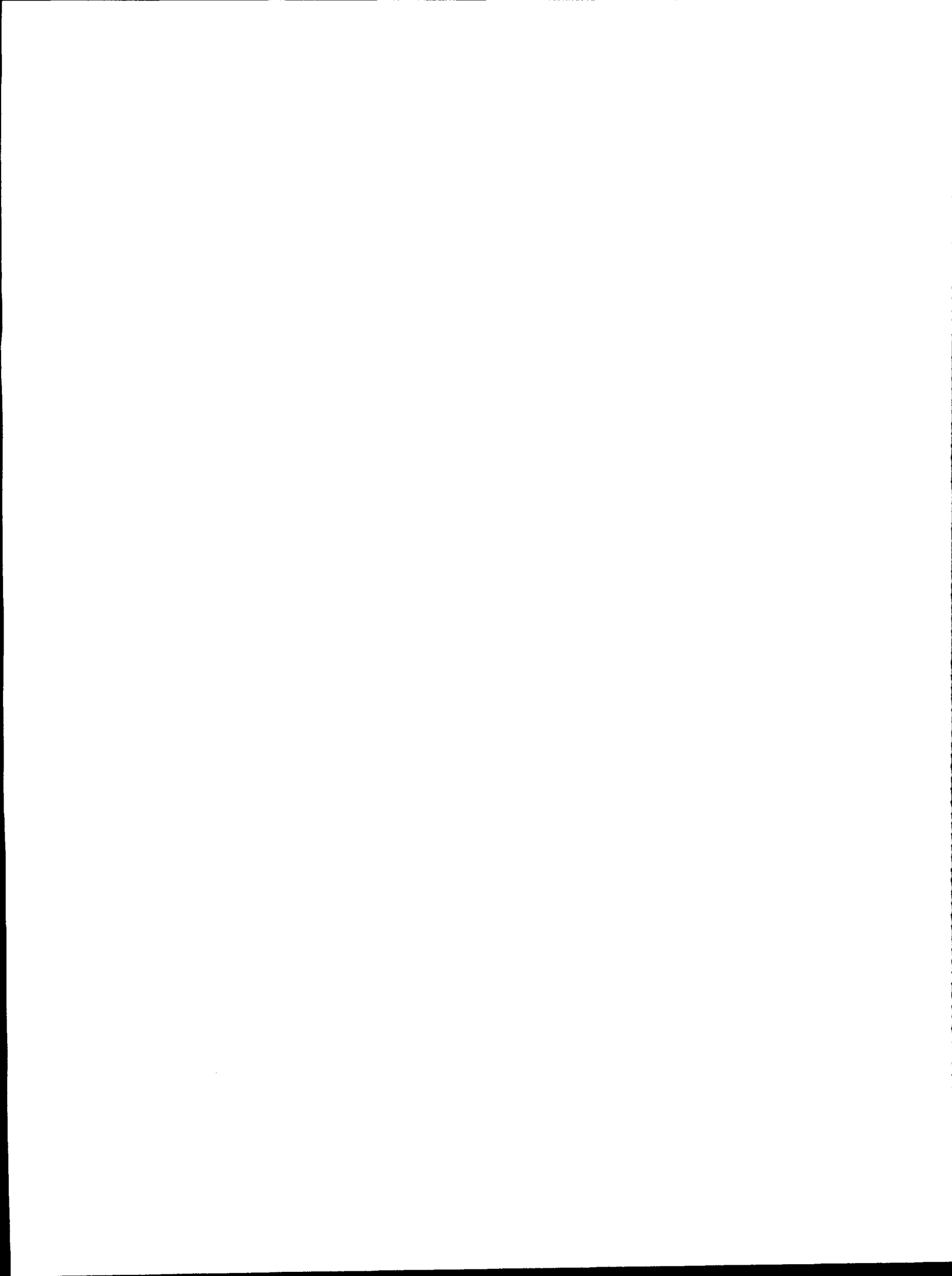
NESP5538

Source: Leon Meger, (612) 625-1214

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





MSC
9/17/97

May 13, 1997

University of Minnesota scientist offers weed identification help

Accurate identification of weeds in farm crops is an important step in keeping the weeds under control. Crop producers can usually get help in weed identification from local sources such as county extension educators, vo-ag instructors or agricultural inspectors.

For weed identification problems that can't be solved locally, producers can mail plant specimens to Beverly Durgan, weed scientist with the University of Minnesota Extension Service. Durgan provides the following instructions for mailing specimens:

--Do not put weeds into plastic bags or wrap them in plastic wrap. The plants will turn to mush.

--Put the plants in a fold of paper towel or newspaper. Press them overnight under a heavy book, and mail them in the paper. Plants can be folded, if necessary, to accommodate the envelope.

--Mail all plant samples at the beginning of the week, so they won't sit in the post office over the weekend.

--Send an identifiable portion of the plant, usually the top growth with flowers and/or fruits, if available. Roots are not normally needed for identification of older plants. However, if sending weed seedlings or vegetative plants, send the entire plant.

(over)



Send specimens to Beverly R. Durgan, Department of Agronomy and Plant Genetics, University of Minnesota, 411 Borlaug Hall, 1991 Buford Circle, St. Paul, MN 55108.

Information on weed management and herbicide application and timing is available in extension publication BU-3157-NR1, "Cultural and Chemical Weed Control in Field Crops--1997." Cost is \$4 per copy plus tax and shipping. It's available from county extension offices in Minnesota, or by calling the MES Distribution Center at (800) 876-8636 or (612) 624-4900.

Durgan is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,V5MN,F4,H7

NAGR5540

Source: Beverly Durgan, (612) 625-8700

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

MSC
9/1/97

May 13, 1997

Detective work helpful in finding cause of missing corn

If your stand of corn isn't what you'd like it to be this spring, you may need to do some detective work to find the cause of the missing plants. Soil compaction, diseases and insects are among the possible culprits, says Bruce Potter, integrated pest management specialist with the University of Minnesota Extension Service.

"Poor stands or seedling vigor are sometimes due to compaction and other field preparation problems," says Potter. "Patterns relating to wheels or tillage equipment will be visible. Misapplication of herbicide, herbicide carryover, and excessive nitrogen or potassium fertilizer in contact with the seed are identifiable problems. These symptoms can often be related to soil type and soil moisture."

Potter points out that stand losses from insects and plant disease don't follow straight lines, and damage usually doesn't occur throughout the entire field. Localized or spotty areas with a poor stand provide a clue that the stand problem is disease- or insect-related. He recommends examining entire plants as well as the appearance and location of problem areas in the field before drawing conclusions.

Several fungi, including Pythium and Fusarium, can cause pre-emergence and post-emergence "damping off" of corn, notes Potter. A rotted, discolored or water-soaked appearance of the seed or portions of the seedling indicates the presence of a pathogen. Corn seedling diseases are often associated with cold, wet soils such as are often found in low

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areas. Disease can be secondary to damage caused by other factors.

Damage from several insects tends to be worse when cool, wet soil conditions slow corn germination and emergence, says Potter. "Field history can provide clues to the species causing stand reduction," he adds. "For example, if a poor stand is associated with heavy manure application or other high organic matter conditions, you can suspect seed corn maggot. A recent history of sod implicates wireworms or white grubs."

Several species of cutworms attack corn in Minnesota, says Potter, who works at the Southwest Experiment Station at Lamberton. Unlike the problems previously mentioned, cutworm damage can be controlled effectively with insecticide rescue treatments.

"Early detection is important," says Potter. "Look for leaf feeding. Most species will feed on leaves before they are large enough to cut plants. Knowing which species is present, the stage of cutworm and corn development, and the amount of damage will help determine if an insecticide treatment is appropriate."

Modern seed corn has better early season vigor than its ancestors did. Infrequently, however, seed lots have problems with poor germination and emergence. Potter says to suspect poor seed only if planting, insect and disease problems have been eliminated.

"Consider the nature of the problem if the remaining stand dictates replanting," says Potter. "For example, a seed treatment may be appropriate when planting back into an insect problem. Keep records of where stand loss occurs, as problems can repeat themselves in future years."

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Web,V2,V4MN,F4

NEXP5542

Source: Bruce Potter, (507) 752-7372

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

*MES
9/1/7p*

May 13, 1997

Scout corn early to evaluate stand, check for potential problems

Scout your corn early to evaluate the stand and check for potential problems.

That's the recommendation of Bruce Potter, integrated pest management specialist with the University of Minnesota Extension Service.

"When the corn population is economically unacceptable, the earlier a replant decision can be made, the better," says Potter.

Check corn populations throughout the field, says Potter, who works at the Southwest Experiment Station at Lamberton. "Problems tend to develop in parts of the field farthest away from the field approach or road," he notes. "Before entering the field, look over the entire field for areas that appear different. Check those particularly well when scouting."

He suggests scouting fields in an X or M pattern, checking plant population closely in several parts of the field. A simple drive-by will not be sufficient, he points out, since only large-scale disasters show up at 55 miles per hour.

"Look for patterns," says Potter. "Is the problem throughout the field? Is there a pattern to the missing corn? Are individual rows missing or emerging erratically? In areas without corn, determine whether or not seed was planted. In spite of modern electronics, areas of a field can mysteriously be planted without seed. Check planting depth. Counting rows can show which planter row was malfunctioning."

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A publication on "Corn Growth and Development & Management Information for Replant Decisions" (FO-5700-NR2) is available from county extension offices in Minnesota. It's also available from the University of Minnesota Extension Service Distribution Center at (800) 876-8636 or (612) 624-4900. Cost is \$1.50 per copy plus tax and shipping.

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Web,V2,V4MN,F4

NEXP5541

Source: Bruce Potter, (507) 752-7372

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

May 20, 1997

Foliar fertilization of soybeans not recommended in Minnesota

Foliar fertilization of soybeans is not a practice you can rely on to be profitable in Minnesota. Several research studies point to this conclusion, says George Rehm, soil scientist with the University of Minnesota Extension Service.

Rehm says Iowa State University researchers reported a project in which foliar fertilization of soybeans increased yields by about 22 bushels per acre. They used a material supplying nitrogen, phosphate, potash and sulfur. Other researchers have attempted to duplicate the results reported by Iowa State, using the same fertilizer material. "Results of these replications by other researchers were very inconsistent, and there were few success stories," says Rehm.

He cites University of Minnesota soybean research at the Rosemount Experiment Station in which foliar fertilization did not increase yield.

"Part of the project at Rosemount involved substituting 28-0-0 for urea in the foliar mixture," he says. "This resulted in a lower yield, probably due to leaf burn."

The research project at Rosemount was repeated the following year at three Minnesota locations--Waseca, Becker and Rosemount. Again there was no significant yield increase from foliar fertilization. Also, the substitution of 28-0-0 for urea decreased yields at all locations.

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"There is general agreement that foliar fertilization of soybeans is not a good substitute for soil-applied fertilization," Rehm concludes.

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Web,V2MN,F4

NEXP5543

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

May 21, 1997

Dairy educator: U.S. producers need to work together to market products

Dairy producers across the U.S. need to move beyond their regional differences and work together to market their products. That's the best response to the rapid changes that have been taking place in the dairy industry recently, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"It is obvious dairy producers will no longer be able to look to Washington, D.C., for help with milk prices," says Kjome. "Prices will be determined by supply and demand. This means volatility, as we have seen during the past year."

The recent closing of the National Cheese Exchange at Green Bay, Wis., was a major dairy industry change, notes Kjome. "The cheese market provides the price basis for about 95 percent of U.S. milk production," he says. "While there could have been some improvements in the cheese exchange over time, it did a good job of reflecting the market.

"Trading on the National Cheese Exchange was done largely by Midwest or Wisconsin cheese plants. Since cheese trading has moved to the Chicago Mercantile Exchange, it's open to everyone. That includes traders from the West Coast, with its traditionally lower cheese prices. The inclusion of the West Coast market opens the potential for even lower cheese prices."

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Kjome says producers need to become more active in marketing their products. "We can easily lay blame and point fingers at individuals, dairy co-op leadership, etc.," he says. "The truth is, the industry has done a poor job of marketing. There is much opportunity for the producer to gain a greater share of the dairy market. Grocery store managers will tell you that dairy products have some of the highest profit margins on their shelves. Dairy producers need to work harder to get a higher share of that profit, and to develop more dairy products for the consumer."

Kjome says some positive factors are working for producers, including increasing per capita consumption of dairy products and increasing U.S. and world population. Also, dairy product variety is increasing. Further, the shrinking number of dairy farmers means the producers who remain can work together more closely.

"Dairy product marketers must recognize the changing lifestyles of consumers," says Kjome. "About 50 percent of meals are now eaten away from home. Many of these meals are eaten at fast-food restaurants, where promotions such as 'cheeseburger deals' can have a tremendous impact on consumption."

"There is opportunity for dairy producers today," he adds. "However, producers need to get beyond the regional difference debates and work together with a common vision and goals to market their products."

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Web,V2,V4MN,A2,D1

NAGR5544

Source: Dave Kjome, (507) 280-2863
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

May 23, 1997

Study shows two potash sources provide equal benefits for alfalfa

Applying potash will boost alfalfa yields in fields where potassium is lacking.

Potassium chloride and potassium sulfate are equally good potash sources, says George Rehm, soil scientist with the University of Minnesota Extension Service.

"Potash fertilization benefits alfalfa when soil test levels for potassium are in the very low (less than 40 ppm), low (40 to 80 ppm), and medium (80 to 120 ppm) ranges," says Rehm. "Many of the fields in southeastern Minnesota and many of the sandy soils in other areas have soil test values for potassium that fall into one of these ranges."

Potassium chloride (0-0-60) is the most common source of potash in Minnesota, notes Rehm. Potassium sulfate is another possible source, but is usually more expensive.

"Past research has shown that both sources have an equal effect on crop yields," says Rehm. "A trial at Staples, Minn., compared the effect of these two sources on alfalfa grown on a sandy soil under irrigation. The soil test for potassium at the trial site was 80 ppm. The application of 50 pounds of potash per acre increased yield by 0.4 tons of dry matter per acre. Both potassium chloride and potassium sulfate had an equal effect on yield. Forage quality measurements also showed both sources had an equal effect on quality."

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Rehm is a faculty member in the College of Agricultural, Food, and
Environmental Sciences.

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Web,V2MN,F4

NEXP5545

Source: George Rehm, (612) 625-6210
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 2, 1997

Get detailed cost estimate from builder for new dairy facility

If you're ready to build or remodel a free stall dairy barn or parlor, get a detailed cost estimate from a builder. That's a key step in getting the most for your money, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"It's just good business to get estimates from vendors in the business of constructing buildings and marketing dairy equipment," says Kjome. "Dairy projects of any magnitude should be treated like any commercial building project. If a new school is built in a community, the project requires an architect, open public bids, a major contractor and a host of subcontractors. Why should a major dairy project that will be in use many years not receive the same protocol?"

Kjome recommends obtaining a minimum of three estimates using a consistent list of specifications or plans. He says a dairy producer in south central Michigan a few years ago told him of soliciting three bids on a new 160-cow free stall and parlor system. There was a difference of \$100,000 between the top and bottom bids.

"Remember, the low bid does not always translate into the best buy," says Kjome. "Make certain the bids are offered by an experienced contractor who can perform the work in a satisfactory manner. Get references from the bidders, and ask them to show

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you similar projects they have completed. Don't be afraid to call references and get their honest opinions."

Kjome recommends spelling out the length of time for completing a project and providing for a penalty if work is not satisfactory or completed on time. While contractors prefer to bypass such language, it can save lots of headaches and frustrations, he points out.

"Building and construction estimates probably need a fudge factor," he says. "Change orders should be kept to a minimum, but often enter in during a building project, and can be costly. Cost overruns can cause problems with already-prepared loan documents and cash flow projections. Site preparation is a cost that is often significantly underestimated."

For producers just starting to consider a dairy building or remodeling project, general cost guidelines are available in the "Minnesota Dairy Development Guide." It's available for \$25 from David Weinand, Minnesota Dairy Initiatives, University of Minnesota, 126 Peters Hall, 1404 Gortner Ave., St. Paul, MN 55108.

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Web,V2,D1

NAGR5547

Source: Dave Kjome, (507) 280-2863

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 2, 1997

Good dairy farm employee management must be learned

Hiring and managing employees is becoming an increasingly important aspect of successfully operating a dairy farm. Good employee management is a skill that must be learned, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

In most dairy operations, labor accounts for 10 to 15 percent of total costs, says Kjome. Hiring a person not suited to your operation can be disastrous, he adds.

"Before hiring an employee, look objectively at your operation," he suggests. "Ask yourself these questions: Would I want to work on this dairy? Is it well cared for? Does pride in this operation show? Is the machinery clean and shedded? What about the farmstead and condition of the livestock buildings? The first impression to an outsider or a prospective employee is a lasting one."

When looking for employees, Kjome recommends spending time talking with others. Word of mouth is an excellent resource to build a pool of prospective employees. You can also advertise in local newspapers and shopping guides and in dairy magazines.

"When hiring new employees, interview them thoroughly," says Kjome. "Find out what expectations they have for the position. Ask them about their past experiences

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to see how they fit into your operation. Spend time with them--it may be some of the best business time you spend.

"When a new employee begins work, explain work rules and set the hours of work. Allow compensatory time off or compensation if an employee exceeds the expected work schedule. Explain what happens if rules are not followed. Be consistent and fair with all employees. Get everything on the table for discussion, including the amount of notice if an employee terminates. It's best to have job rules and responsibilities in print, and always have a written job description. An employee handbook is an excellent tool for outlining job descriptions and expectations. "

Kjome emphasizes the importance of training the new employee. Spend time with the employee during the first days on the job and make sure the employee understands how you want the job to be done. Give the person an opportunity to ask questions.

"It's important to set aside time each week when all employees meet with management to talk over what has been happening and what needs to be done," says Kjome. "It's a good time to share current information on DHIA records, milk plant test results, veterinary and herd health reports, feed inventories and cropping updates. Set aside time for employees to brainstorm and offer ideas for improving the operation. If employees feel they are part of the management team, they will work better and are more likely to perform as outlined in expectations."

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Web,V2,D1

NAGR5548

Source: Dave Kjome, (507) 280-2863

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 2, 1997

<http://www.mes.umn.edu/News>

Dairy producers need to pay employees competitive wages

How much to pay employees is an issue dairy producers must deal with when they hire labor. Paying wages that are competitive with other employers in the area is the recommendation of Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"An hourly wage is probably the most equitable, but it can be more costly in the long run than a straight monthly wage," says Kjome. "Keep in mind that you are likely to receive what you pay for in farm labor, just as in other areas of the operation."

Along with the issue of wage rates comes the issue of fringe benefits. "Health insurance is frequently a high priority area for both the employer and the employee," says Kjome. "It is costly, and few employers will pay the total cost of health insurance for the employee and family members. Often, the employer provides reimbursement for a portion or all of the employee health insurance cost, with family coverage paid by the employee."

Employee housing is a fringe benefit that varies widely in dairy operations. "As dairy farms expand and hire more employees, housing is less likely to be part of the package," says Kjome. "But it's an issue that needs to be addressed at the time the employee is hired."

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What about incentive programs based on job performance? "The trend is to reward employees in other ways than with incentive plans," says Kjome. "Four to six years ago, incentive were incorporated into many fringe benefit packages, but this is changing."

If an employer chooses to offer an incentive program, Kjome suggests the following guidelines:

1. Make sure the incentives are realistic and can be measured easily. Incentives such as a specific somatic cell count, or pregnancies confirmed at less than 90 days open, are measurable.
2. Make the incentive high enough that it will be noticeable in the employee's check. It can be awarded monthly or quarterly to make it more noticeable.
3. Don't have incentives that decrease income, such as herd average or earlier completion of milking.
4. Don't change incentive programs too often. It is much better to increase incentives than to lower them.
5. Avoid group incentives. They can lead to one person getting the blame for the group not reaching the incentive, or rewards for a person who is not contributing.

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Web,V2,D1

NAGR5549

Source: Dave Kjome, (507) 280-2863

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 3, 1997

Expiration of CRP contracts creates uncertainty

The expiration of Conservation Reserve Program (CRP) contracts is creating uncertainty about the future use of thousands of acres of land in Minnesota. Contracts on nearly two million CRP acres in Minnesota are set to expire in the next couple of years, according to Bob Byrnes of the University of Minnesota Extension Service.

"Many contract holders are uncertain about the future of their land after CRP," says Byrnes, who is an extension educator in Lyon County. "About half of the Minnesota landowners hoping to enroll their land in the new CRP program may be disappointed. Of the approximately one million acres of Minnesota land submitted for the new CRP, approximately 400,000 acres were accepted."

Byrnes says criteria for acceptance into the new CRP involved an evaluation which considered environmental benefits and cost. The environmental benefit index is a numerical score that considers the environmental sensitivity of the land as well as proposed practices such as vegetation to be planted if the land is accepted. The national average numerical score of land accepted into the new CRP is 307, with a low of 259 accepted in Minnesota.

The average payment rate for new CRP land in Minnesota is \$47 per acre. This compares with a maximum in southwest Minnesota of \$70 per acre for the previous CRP program.

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Byrnes says one option for landowners with soon-to-expire CRP acres is to try again. There will be another CRP sign-up this fall.

"Landowners may want to consider ways to make their land more acceptable for re-enrollment," he says. "This means reducing the bid and/or increasing the environmental benefit score. Key considerations for reducing the bid are minimum return on land investment and alternative use income. Keys to the environmental benefit score are practices such as cover vegetation selection."

Byrnes says another option is to consider the CRP continuous enrollment. Large land tracts may not qualify for continuous enrollment, but land that is especially environmentally sensitive will. The compensation will be reflective of that environmental sensitivity. For example, farmland along rivers, streams, or lakes can qualify if the land is used for riparian areas to protect the water from soil and nutrient runoff. The county Soil and Water Conservation District Office has information about CRP continuous sign-up.

If re-enrollment in CRP is not possible, return to crop production is the most likely choice of landowners, surveys in southwest Minnesota have shown. When transitioning land from CRP to crop production, environmental and economic factors are important, says Byrnes. "The Lincoln County CRP Research and Demonstration Project addressed those factors by replicating crop management scenarios farmers may consider in the transition," he points out. "Results of the Lincoln County CRP project, and management suggestions based on that project, are available from extension offices in Lincoln County or Lyon County."

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Web,V2MN,V4MN,A2MN,F4

NAGR5551

Source: Bob Byrnes, (507) 537-6702

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 9, 1997

Choose the right method for summer dandelion control

You've probably noticed the dandelions taking up a larger and larger area of your lawn over the past few weeks. According to Deb Brown, horticulturalist with the University of Minnesota Extension Service, you can begin to rid your yard of these unwanted weeds now. "The best way to keep your lawn free of dandelions is to do away with existing ones and prevent further growth," advises Brown.

If you prefer not to use herbicides, Brown recommends extracting the weeds with a dandelion digger when the soil is moist. They will be easier to dig out after a rain or several hours after you've watered the lawn.

If your yard is covered with dandelions, you may find it more convenient to use weed killers. Brown says that dandelions are very sensitive to 2,4-D and other broadleaf herbicides that include 2,4-D.

When spraying, it is best to use a hand-held or small tank sprayer, which is more accurate than attaching a sprayer to the end of a hose. Hold the nozzle part close to the ground to minimize drift onto any non-grass plants, such as flowers, vegetables or shrubbery. Weed killers won't harm established grass, but can hurt newly seeded areas, so try to target weeds individually or spray weedy patches only.

Brown offers some precautions to help you spray more effectively. Spray when the temperature is between the high 50s and low 80s and there is little wind to carry the

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herbicide. Also, only apply herbicides when the grass is dry and no rain is expected for at least 48 hours.

While weed killers will take care of the dandelion plant itself, its seeds remain viable as the flowers continue to mature. These seeds can sprout in thin grass, so the weeds may reappear over the summer with new seeds of their own. "Mark your calendar for a second spray in mid- to late September." says Brown, a faculty member of the College of Agricultural, Food, and Environmental Sciences. "That way, you can prevent dandelions from reappearing and blooming next spring."

Brown adds that spraying weeds is not enough. Homeowners should maintain lawns so grass grows thick and healthy. This can be done with regular watering and by fertilizing once in early fall and again in late fall. Mow your lawn regularly, taking off a third of the blade each time and allowing clippings to fall back to decompose. "Dandelion seeds are less likely to establish themselves in a thick, healthy lawn," says Brown.

For more information on weed control in lawns, call the Dial-U telephone clinic during weekday hours at (900) 988-0500. There is a flat fee of \$2.99 per call.

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Web,V4,V7,G1

NAGR5553

Source: Deb Brown, (612) 624-7491

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

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g A 27 p*

June 9, 1997

Extension web site has information on disinfecting flooded wells

If your well is located in a Minnesota flood area, it may be contaminated with bacteria, viruses or parasites, which can make you ill. The "Minnesota Meltdown" page on the University of Minnesota Extension Service web site now carries important information on what to do with contaminated wells in the flood's aftermath.

Water from flooded wells should be considered unsafe for drinking or food preparation until the well has been flushed and disinfected and the water has been tested safe. You can perform a simple disinfection of most types of private wells by following step-by-step instructions found on the "Minnesota Meltdown" page and provided by the Minnesota Department of Health. Information on safety precautions, accessing the well properly, and how to prepare disinfecting solutions is included.

To check the status of your well water, the Minnesota Department of Health and the U.S. Public Health Service are offering free on-site well inspections and water testing for Minnesotans with flooded wells. To arrange for an inspection, call (800) 383-9808.

If you must use well water for drinking or food preparation before the well has been disinfected and tested, the water must be heated to a rolling boil for at least five minutes.

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To access the instructions for disinfecting flooded wells, go to the University of Minnesota Extension Service home page at <http://www.mes.umn.edu> and click the "Minnesota Meltdown" icon at the top of the page. Then go to the "nutrition, food, and health" section and find the Minnesota Department of Health under "related links." Click on "disinfecting and testing" private wells.

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Web,V2MN,V4MN,H2,Z1,Z5,Z6,Z7

NEXT5552

Source: Judy Keena, EDS (612) 625-7047

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

June 13, 1997

Consider lack of rainfall when planning for sidedressing

If you're growing corn in an area that needs rain and plan to apply sidedress nitrogen to the corn, dry soil is a factor to keep in mind. George Rehm, soil scientist with the University of Minnesota Extension Service, offers the following points to consider:

--Dry soil could affect projections for a yield goal. Suggested rates of N are directly related to yield goal. If the majority of the needed nitrogen has not been applied, take a serious look at predicted moisture for the summer as it might affect yield goal. This is especially true for those growing corn on dryland sandy soils.

--If the soil surface remains dry, nitrogen applied on the soil surface (even with some incorporation) may not reach the actively growing root system. Significant rainfall will be necessary to move surface-applied nitrogen to the root system. Therefore, injection of the N source will reduce some of the risk associated with the dry soil surface.

--Keep an eye on costs. Calculate the cost of the N itself and then add the cost of application when choosing the N source.

--Past research at several universities has shown that all nitrogen sources have an equal effect on corn yield if applied properly.

--A spring soil test for nitrate-nitrogen has been developed for south central and southeastern Minnesota. This test is especially appropriate where corn follows corn and there has been a history of manure application.

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Rehm is a faculty member in the College of Agricultural, Food, and
Environmental Sciences.

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Web,V2MN,F4

NAGR5556

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 16, 1997

Thirsty lawns, gardens can survive this summer's watering restrictions

Just when rain shortages have Minnesota lawns and gardens parched, many communities are imposing watering restrictions. There are ways, however, to preserve your lawn and make the most of limited sprinkling hours, according to Deborah Brown, horticulturist with the University of Minnesota Extension Service.

It's best to water an area heavily, even if you can only soak that section once a week, she says. Moving sprinklers around to hit every portion of a lawn every other day, as most communities allow, almost guarantees shallow watering. That results in shallow roots on grass plants. Grass with shallow roots is more vulnerable if you discontinue watering, but grass that has been watered deeply will sink its roots deep and be more resistant to lapses in either rain or watering. Brown says most lawns need an inch of water a week to grow well, and it's better to soak an area with an inch of water once a week than to water lightly three or four times a week.

The exception to the deep watering rule is for newly seeded or sodded areas. Brown suggests checking with your local municipality for allowable exceptions to the watering rules. Unlike established lawns, new seed or sod needs frequent, shallow watering because roots are still close to the surface. Daily watering is a must to keep these areas alive, and many communities allow exceptions to their watering rules for new lawns.

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To make the most of your watering, Brown recommends turning on sprinklers in the early morning hours. Cooler temperatures and lighter winds then allow water to soak into the soil rather than evaporate before it reaches plant roots. "Watering at night is obviously better than not watering at all," Brown says, "But grass that stays wet all night is more susceptible to some turf diseases than grass that dries fairly quickly. That's why early morning watering is ideal since the rising sun and warming temperatures dry the grass quickly."

She adds that watering during the heat of the day is less efficient than early morning watering, but it does no damage. "Plants may wilt on hot, sunny days; watering cools and revives them. A light watering is okay if you can follow through with a heavier watering later," Brown says.

To save water, soaker hoses and trickle irrigation systems that supply individual garden plants are effective. Brown also recommends mulching gardens and around the base of trees and shrubs to insulate plant roots and conserve moisture. In a backyard garden where aesthetics aren't critical, Brown says shredded newspaper is an excellent mulch.

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Web,V2,V4,V6,G1

NAGR5557

Source: Deborah Brown, (612) 624-7491

Writer: Deedee Nagy, EDS, (612) 625-0288, dnagy@mes.umn.edu

June 24, 1997

Green ash, American elm need help to recover from water deficit

Many mature Green ash and American elms are showing injury, leafing out late or incompletely. That's because they went into winter and began spring with a water deficit, according to Mike Zins, horticulturist with the University of Minnesota Extension Service.

On some trees, branches have no leaves. On elms, you see remnants of frozen flower buds. On both Green ash and American elm, new shoots are emerging from last year's growth and from dormant buds on older twigs. In many cases, last season's twig growth has been destroyed.

The injury may be the result of last year's late summer drought, says Zins. "Mature trees that did not receive supplemental water during the long, dry fall had substantially reduced levels of stored energy--something they need for the new growing season to defend themselves from insects and disease." Zins adds that the water deficit happened when trees should have been building roots, hardening wood and storing food to be used for leaves and flowers in the spring.

Another contributor to tree injury may have been the extremely cold winter followed by the very hard freeze that occurred this spring just as Green ash trees were

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breaking dormancy, according to Mark Stennes, Minnesota Society of Arboriculture member. American elm and silver maple were in full bloom at the time. "Some people may be pleased there won't be any seeds this year. Unfortunately, the trees are more vulnerable than ever to insects, disease and other stresses," says Stennes.

Watering your trees will promote better growth, health and color this summer. According to Zins, newly planted and relatively young trees need their root systems soaked once a week. Soak the trees for several hours with a small trickle from the hose. For mature trees, which also need water, use a broadcast sprinkler. Apply one to two inches of water to thoroughly soak the soil.

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Web,V7,G1MN

NNRD5558

Source: Mike Zins, (612) 443-2460

Editor: Jennie Y. Rominger, EDS, (612) 625-6294, jrominger@mes.umn.edu

June 24, 1997

Young pigs like some chocolate in their diet

Pigs, as well as people, like chocolate. And they grow well on a diet that includes some low cost food by-product containing milk chocolate, according to recent University of Minnesota research.

Newly-weaned pigs grow better when their diet contains milk-based food by-products such as dried whey, says U of M animal scientist Lee Johnston. However, the dried whey is relatively expensive. Therefore, a team of scientists including Johnston conducted experiments in which they substituted less-expensive milk chocolate product (MCP) for some of the whey. MCP is a dried by-product of the milk chocolate, candy and food industries. MCP components that aren't fed to pigs usually end up in landfills, says Johnston.

The Minnesota scientists fed post-weaning pigs several diets containing various levels of MCP. "The young pigs in our experiments strongly preferred milk chocolate product over dried whey," says Johnston. "The experiments showed that milk chocolate product could replace dried whey at a dietary level of 5 percent without reducing the growth rate of pigs. However, MCP at dietary levels of 10 percent or more reduced pig growth rate. These findings suggest that the negative effects of high levels of MCP on growth are due to some factor other than palatability."

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The research team included graduate student Hong Yang along with Johnston, Jim Pettigrew and Roger Walker, all faculty members in the College of Agricultural, Food, and Environmental Sciences. The research took place at the university's West Central Experiment Station at Morris, Minn., and Southern Experiment Station at Waseca, Minn.

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Web,V2,V4MN,F6,R1,S2

NEXP5561

Source: Lee Johnston, (320) 589-1711

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 24, 1997

Corn borer numbers likely to be down this year

Corn borers should pose a more limited threat to Minnesota's corn crop this year compared with the last couple of years. That's due to population cycle, overwintering numbers and winter survival, says an entomologist with the University of Minnesota Extension Service.

"Corn borer population dynamics vary across the state," says Ken Ostlie. "Populations in southern Minnesota are volatile, with peaks occurring about every four years. In contrast, populations in northwest Minnesota, where the one-generation form of corn borer predominates, are much more stable, with long cycles exceeding seven years."

Ostlie says borer problems peaked in southeast and south central Minnesota in 1996. He says if historical trends continue, populations should decline for the next 1-2 years.

A survey of corn borers before harvest last fall by the Minnesota Department of Agriculture indicates populations had declined dramatically from 1995 levels. Overwintering numbers were highest in western Minnesota, says Ostlie.

"The highest potential for problems from first generation borers is in southwest, central, and northwest Minnesota," notes Ostlie. "Corn borer management in these areas may also be complicated by overlap of two biotypes. The one-generation form, which predominates in northwest Minnesota, has increased in prevalence to the south with the cooler weather of recent years. It has been found near Olivia since 1993 and at Lamberton last year. The one-generation biotype seems to fluctuate less in numbers."

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Conditions during the past winter were mild for overwintering corn borers, according to Bruce Potter, U of M integrated pest management specialist. Heavy snow cover insulated larvae from all but the late spring freezes. However, parasites and diseases seem to be taking a toll. "Mortality in borers within corn debris at the Southwest Experiment Station at Lamberton was over 50 percent," says Potter. "Mortality of 60 percent from disease and parasites showed up in larvae collected last fall from near Dawson. This level of disease and parasitism usually reflects a declining population."

Potter says corn borer problems this year are most likely to show up in western Minnesota, where pockets of higher overwintering densities occurred. Black light trap captures have been high recently at the Southwest Experiment Station at Lamberton, he notes.

"With the bulk of corn emerging over a short period, we could see a dilution of corn borers and lower risk of economic infestations," he says. "Delayed corn emergence may also reduce corn borer problems, since corn that is less than 16 inches in extended leaf height is more resistant to borers."

Potter says, however, that producers should not be lulled into ignoring corn borers this summer. "The weather will have a great impact," he says. "Taller corn fields are most at risk."

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Web,V2MN,V4MN,F4

NEXP5560

Sources: Ken Ostlie, (612) 624-9272; Bruce Potter, (507) 752-7372
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

June 24, 1997

Editor: Prices and availability of the publications mentioned in this release are good until Jan. 1, 1998. If you run this release after that date, call (800) 876-8636 or (612) 624-4900 to confirm price and availability.

Publications can help gardeners select cold-hardy, disease-resistant roses

Deciding to grow roses need not condemn Upper Midwest gardeners to years of spraying the plants with fungicides throughout the growing season and burying them or providing other winter protection each fall.

"It's possible to avoid this laborious, time-consuming cycle by choosing the right roses--cultivars that are vigorous, relatively disease tolerant and require little long-term maintenance," says Vera Krischik, University of Minnesota Extension Service entomologist.

Krischik, director of the university's Center for Urban Ecology and Sustainability, recently helped write an eight-page folder, "Selecting Hardy Roses for Northern Climates," which can help gardeners choose roses that are not likely to succumb to black spot, powdery mildew, rust or winter cold.

The publication includes three lists. The first describes (class; flower color and type; extent of repeat bloom; plant size and habit; zones of adaptation and other comments) 60 roses that are low maintenance due to their hardiness and disease resistance.

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The second list describes nearly 40 roses that may not be entirely hardy, may need some protection or may need applications of fungicides.

The third list identifies native wild roses that are adaptable to low-maintenance landscapes.

"Selecting Hardy Roses for Northern Climates" includes lists of mail order sources for hardy shrub roses; public rose gardens in Iowa, Minnesota, North Dakota, South Dakota and Wisconsin; and informative rose books.

"What we envisioned when we decided to write 'Selecting Hardy Roses for Northern Climates,' was a brief, inexpensive publication that gardeners could take on their buying trips to nurseries and garden centers," Krischik says. "What we ended up with was a very useful companion piece to the 'Roses for the North' report that the Minnesota Agricultural Experiment Station published about a year ago."

The "Roses for the North" report Krischik refers to is "Roses for the North: Performance of Shrub and Old Garden Roses at the Minnesota Landscape Arboretum." Based on several years' observations at the Minnesota Landscape Arboretum west of Minneapolis, the 96-page report rates 196 rose cultivars and species for floral traits, bloom pattern, plant size and habit, disease and insect tolerance, and extent of winter injury. It also includes recommendations for rose culture in cold-winter climates, including site selection, buying plants, planting, watering, mulching, fertilizing, pruning, winter protection and pest control. "Roses for the North" includes 50 color photos and many drawings, graphs, tables and a color USDA Plant Hardiness Zone map for the United States and Canada.

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"Selecting Hardy Roses for Northern Climates" and "Roses for the North" may be purchased at county offices of the University of Minnesota Extension Service. Or, place a credit card order by calling (800) 876-8636 or (612) 624-4900. To get "Selecting Hardy Roses for Northern Climates" (\$1.50), order item FO-6750-NR5. To get "Roses for the North" (\$11.95), order item MR-6594-NR5. Shipping and sales tax (where applicable) are extra.

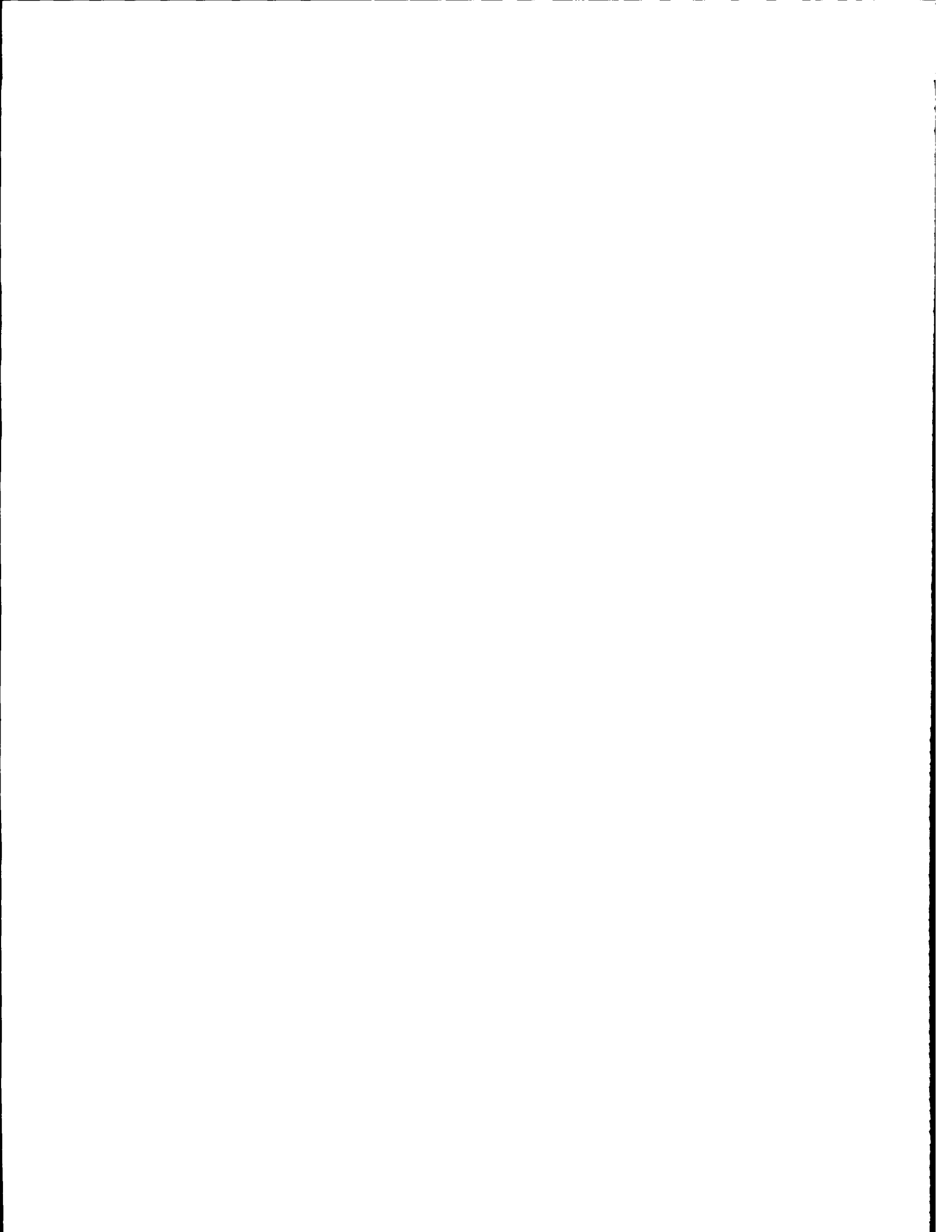
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Web,V4,V5,V6,G1,H7

NAGR5559

Source: Vera Krischik, (612) 624-3636, krisc001@tc.umn.edu

Writer: Sam Brungardt, EDS, (612) 625-6797, sbrungardt@mes.umn.edu



June 27, 1997

Choose the right wood for your summer building project

You may be getting your tools ready for an outdoor building project. If you're planning something that requires a wooden structure, such as a deck or playground equipment, remember that selecting the appropriate wood can make a lot of difference in the life of the structure.

According to Tom Milton, forest products specialist with the University of Minnesota Extension Service, one of the decisions you'll face is whether to buy treated lumber or natural wood. "Most consumers will want to consider both price and durability," says Milton.

While many builders prefer using naturally durable woods, such as redwood and cedar, these types can be rather expensive. So buyers often limit natural woods to visible areas, such as decking and railings. For sections like framing and posts, pressure-treated wood presents a more economical and durable alternative.

When the wood comes into contact with soil or moisture, Milton says you need either treated wood or a durable natural species. Pressure-treated lumber is wood that is impregnated with preservatives which prevent fungal decay and insect attack. This adds to the life span of certain woods.

When buying treated wood, the first thing to look for is a grade stamp or quality assurance tag which says the lumber conforms to AWWPA (American Wood Preservers

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Association) standards. It also tells you which preservative was used, how much was used and who applied the treatment. Meeting APWA standards assures the wood received chemical penetration to a satisfactory depth. "If the lumber doesn't have an AWPA stamp or tag," advises Milton, "ask for a guarantee certificate from the lumber yard."

According to Milton, Southern yellow pine is the most commonly treated wood, but red and ponderosa pine are also reliable. Milton cautions against buying aspen landscape timbers. "This species takes treatment very inconsistently, so its durability cannot be assured."

For wood products that will only have contact with the ground, Milton suggests looking for treated wood with a .40 (lbs./cubic ft.) retention level. For structural components like wood posts set in the ground, a .60 retention level is best. Wood that will be used above ground requires a .25 retention level.

For safety purposes, never burn treated wood scraps in a fireplace or wood stove. Until recycling methods are perfected, dispose of them in the garbage. The chemicals in treated wood pose no health hazards when fixed inside the wood cells, but always follow the proper handling and use precautions listed on the consumer information sheet available from your lumber dealer.

For further information, contact the university's Department of Wood and Paper Science Information Line, at (612) 624-7712.

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Web,V4MN,V5,F9,H5

NNRD5562

Source: Tom Milton, (612) 624-5307

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

June 27, 1997

Several stresses can cause purple corn

The purple corn that's showing up in many Minnesota fields this year can be caused by a variety of stresses. George Rehm, soil scientist with the University of Minnesota Extension Service, cites some of these stresses.

Where corn is both purple and stunted, the condition is generally referred to as the "fallow syndrome," says Rehm. The most severe stunting is likely to occur where corn follows sugar beets. It can also occur, but is usually less severe, where corn follows soybeans.

"Microscopic fungi called 'mycorrhizae' help corn plants take in nutrients, especially phosphorus and zinc," Rehm explains. "Sugar beets are not a host for these fungi, while soybeans are a mediocre host and corn is a good host. Also, the fungi probably didn't function as well in the cold, dry conditions of late April and May. Therefore, uptake of phosphorus and possibly zinc by corn has been limited, and the plants are showing typical phosphorus deficiency symptoms."

Rehm points out, however, that only the purple corn that is also stunted is likely being affected by fallow syndrome. "In general, the purple color comes from the accumulation of a pigment, anthocyanin," he says. "Production of this pigment varies among hybrids, with some hybrids showing it every year. This year, it seems to be accumulating in many hybrids."

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Rehm says several stress conditions can lead to the accumulation of anthocyanin. Among these are cool night temperatures in the range of 50 degrees F and restricted root growth. Root growth could be hindered by soil compaction, nematode damage, or herbicide injury.

"Adequate rain and warm weather should take care of most of the problems," Rehm concludes.

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Web,V2MN,F4

NEXP5563

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 3, 1997

Storms, floods spotlight problem of unwanted moisture in homes

Keeping unwanted moisture out of your home can save you thousands of dollars in maintenance costs. It may also prevent some serious health problems for you and your family, says Bill Angell of the University of Minnesota Extension Service.

"It's easy to ignore potential moisture damage to our homes until nature hits us with something like the recent storms or the spring floods," says Angell. "But uncontrolled moisture causes billions of dollars in damage to homes in this country every year. And it doesn't just come from storms and floods. Winter ice dams, poor site drainage, condensation and construction shortcuts can all create or add to the problem."

Angell says 90 percent of the deterioration in buildings that is not structural is due to uncontrolled moisture. Problems such as paint failure and the need to use a dehumidifier are likely to come from uncontrolled moisture.

"It's important to do whatever is reasonable to control water entry," says Angell, a housing specialist who focuses on indoor air quality. "Once the water gets in, it's more difficult to deal with."

New homes should be built with gutters and downspouts and flashings around doors, windows and other areas of possible water penetrations. Site drainage is important for keeping water out of basements. If a basement is to be finished, Angell

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recommends ground moisture control in the form of drain tile and waterproof membranes.

"If you don't control moisture, you set up prime conditions for mold contamination," he points out. "Molds have the potential to cause a variety of serious health problems, ranging from respiratory irritation to cancer and hemorrhaging in the lungs of infants."

When storms or floods bring water damage, people often make only cosmetic repairs, says Angell. "The natural tendency of most people who have water damage in their home is to replace the wallboard and do repainting," he says. "But that doesn't take care of the root causes of the problem. If you don't correct the problems that let in water in the first place, the potential for mold contamination and for recurring moisture problems is great."

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Web,V4,V5MN,V7,V8MN,V9MN,H2,H5

NHEC5566

Source: Bill Angell, (612) 624-6786

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 8, 1997

University of Minnesota develops Internet site for hay buyers, sellers

Minnesota livestock producers needing hay and hay producers needing a market can now take advantage of the Internet to meet their needs. The University of Minnesota Extension Service has developed a "Minnesota Haylist" database that can be accessed by computer at all county extension offices in the state. The Minnesota Forage and Grassland Council and the Minnesota Department of Agriculture are also cooperating in the project.

The haylist is organized so that users can search for specific kinds of hay lots located in specific states and telephone area codes.

Initially, the haylist will serve as a forum for sellers to describe available hay lots. Later, the haylist will add the ability to have buyers list their hay needs. Forage producers and users wishing to be included should contact a county extension office to complete the haylist entry form (copies of the form can be printed from the networked computer in the extension office). Extension personnel can then submit the form through the computer.

For a seller's listing to be accepted as complete by the computer, the following personal items must be provided: last name, state, zip code, and telephone number, plus specific hay lot data, including tons available, asking price, hay type (alfalfa, alfalfa-grass, etc.), form of hay package (small square bales, large round bales, etc.),

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harvest year and cutting, and number of days to be listed. The asking price and the quantity must be on a per ton basis, not a per bale basis. Optional items include forage quality (relative feed value, crude protein, dry matter), transportation options, and full address (street, city, county, fax, e-mail address).

Those with access to a computer connected to the Internet can use the haylist without going through extension offices. The computer must be equipped with a graphical web browser such as Netscape for users to submit or retrieve haylist data. The Internet address for the hay list site on the World Wide Web is <http://www.mes.umn.edu/Haylist>.

The haylist allows computer users to put in or change information on their hay lots on their own, and to search for and print out information on specific hay lots.

"Farmers are asking for hay supplies now and have been for some time," says Neal Martin, U of M extension forage agronomist. "Minnesota's hay stocks on farms May 1 were 540,000 tons, the lowest on record for that time of year. In addition, U.S. hay stocks on farms are at an all-time low."

Martin says the 1996 Minnesota hay crop was 4,573,000 tons, 8.3 percent below 1995 production and the second lowest production during the last 16 years.

"The situation didn't improve much with the first cutting of alfalfa this year," Martin adds. "The first cutting was late and the yield was below normal because of winter injury and low availability of soil moisture."

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Web,V2MN,V4MN,V5MN,D1,F4

NAGR5568

Source: Neal Martin, (612) 625-8700

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 8, 1997

Remember the roots when diagnosing crop problems

Remember the roots! That, says George Rehm, is one of the keys to figuring out what's wrong with a crop that seems to be unhealthy.

Rehm sees a lot of crop problems in his work as a soil scientist with the University of Minnesota Extension Service. Problems in the parts of plants growing above the soil surface are easy to see and important to consider. However, Rehm emphasizes that it's also important to examine the plants' root systems.

He cites as an example the roots of crops such as alfalfa and soybeans.

"Frequently legumes have a light green color and growth is stunted," he notes. "These crops, of course, can fix the nitrogen they need from the atmosphere if they are properly inoculated. A light green color is a good indication that they are short on nitrogen. So if they have a light green color, one of the first steps should be to look for nodules on the root system. If the nodules aren't present, you may have the answer to the problem. If they are present, there is another cause for the light green color."

Rehm says many diseases damage the root systems of various crops. Each disease usually exhibits specific characteristics or symptoms, and these are likely to show up in the roots. "For example, soybean plants that are damaged by the cyst nematode are frequently confused with plants suffering from iron chlorosis," says Rehm. "With experience and a hand lens, you can see the cysts if they are on the roots."

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In some fields, plants that appear to be stunted above the soil also have stunted roots. Many factors can cause this stunting, says Rehm. These include soil compaction, nematode damage and carryover from some herbicides. Examining the root system of stunted plants may not provide an explanation of the problem. However, if the roots are not damaged, some possible causes of the stunted plants have been eliminated.

"In evaluating roots, it's important to remember that several factors can cause similar symptoms," says Rehm. "For example, brown tip on roots may mean damage from anhydrous ammonia. But it also can be caused by nematode damage or high concentrations of salts near the developing roots."

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Web,V2,F4

NEXP5567

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 8, 1997

University outreach helps 'localize' state, national issues

Bonnie Braun first learned that the "welfare-to-work" grant program was being incorporated into the current federal budget bill while attending a late June conference in Washington, D.C. "There was a call to know what we thought about it," recalls Braun, collegiate program leader with the University of Minnesota Extension Service. With Congress set to vote on the bill by mid-July, Braun immediately got the word to county extension offices in Minnesota to formulate a response. She also alerted colleagues at other land-grant universities.

If this legislation were to affect a particular industry or labor association, those groups would have Capitol Hill lobbyists in place to defend their special interests. Braun's call to action exemplifies an alternative force at work to represent the average American. The land-grant university system serves to educate local citizens and lawmakers by engaging in research, classroom education and dissemination of information via its extension outreach programs.

The welfare reform bill is just one instance where extension educators can quickly move information from national level policy-making circles to local citizens. Braun and Jean Bauer, extension specialist, analyzed the federal legislation that determines funding for the welfare program. Then they informed county extension faculty about changes and opportunities presented in the bill. County educators shared

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the information with local citizens. "This quick dissemination of information empowers people by making them knowledgeable while there is still time to take action," says Braun.

Once a new law or policy is in place, extension educators follow up to ensure that affected people are informed. For example, when Minnesota Governor Carlson recently signed a new educational spending bill for the state, calls came in the next day to see how citizens would be affected. Braun says that extension will rapidly incorporate this new legislation into its collaborative program for educating working families on their eligibility for tax credits. Researchers are already gearing up to monitor the effect the credit has on family spending.

Extension faculty are also monitoring local responses to issues like welfare reform and measuring its impact. They take their findings to Washington to help policy makers make fact-based decisions.

For example, Braun and Bauer shared research-based details which outlined Minnesotans' current incomes, and changes in income levels which would take place under the proposed welfare reform. Their data showed that the proposed changes would not be enough to bring many Minnesotans over the poverty threshold. "This helped policy makers realize that just getting a job is not enough for families to become self-sufficient," says Braun.

Braun says that researchers analyze both immediate and long-term responses to legislation. In many cases, they find that a law results in both intended and unintended consequences. When Bauer researched the implications of the federal welfare reform

(more)

bill last year, she found that it actually affected some 80 related laws and 175 sections of other laws. As a result, extension educators were able to provide information which normally would not be publicized.

Braun stresses that extension's role is not to advocate any particular policy position, but to help people understand issues which affect them so they can make responsible decisions. "With the practical education that extension provides," says Braun, "people needn't feel disenfranchised from the decision-making process."

Braun and Bauer are faculty members in the university's College of Human Ecology.

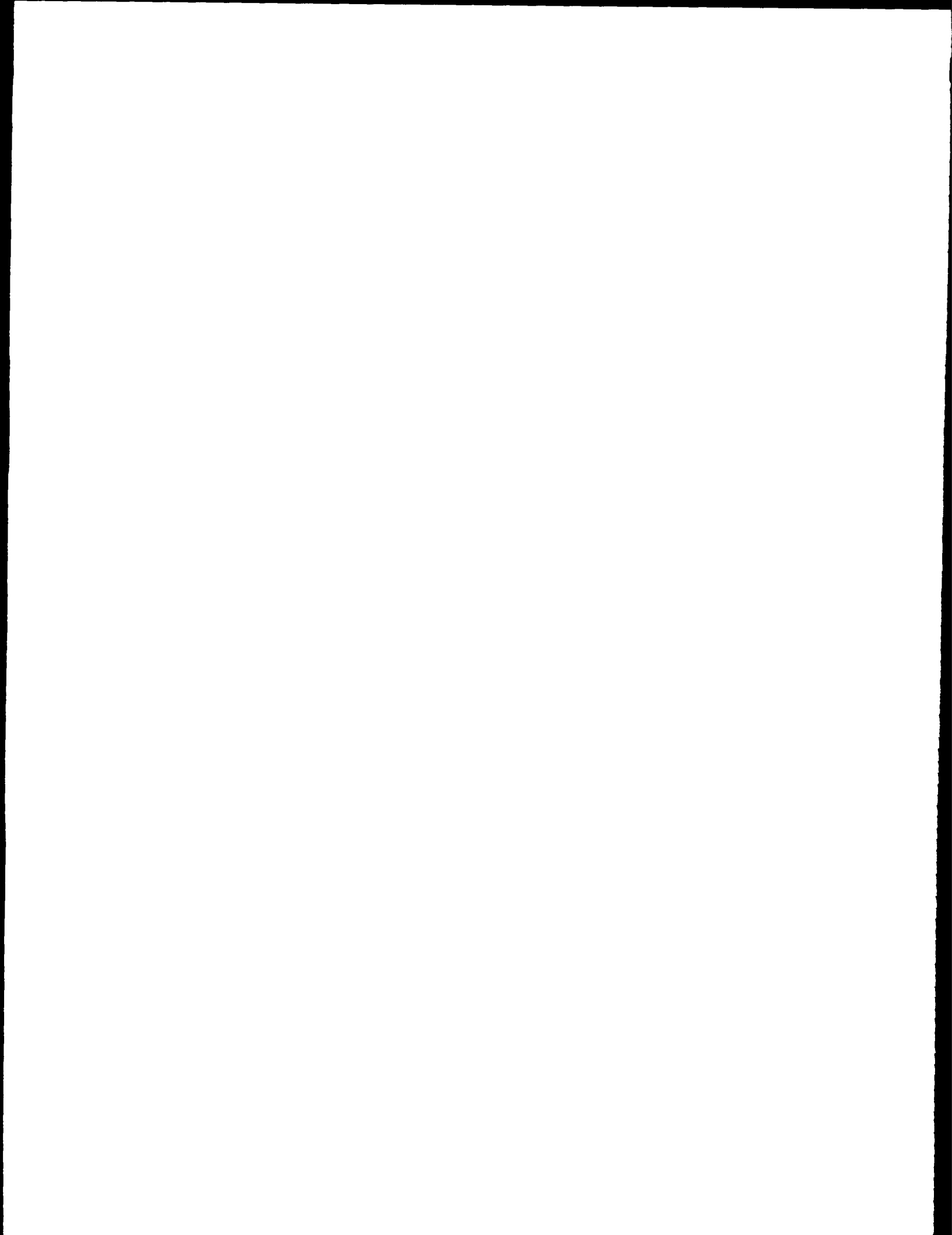
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Web,V4MN,V8MN,F2MN

NHEC5569

Source: Bonnie Braun, (612) 625-1201

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu



July 10, 1997

Get help when planning farmland drainage

Get some help when planning a farmland drainage system. That's the recommendation of Jerry Wright, engineer with the University of Minnesota Extension Service.

Wright suggests getting assistance from the local Natural Resource Conservation Service (NRCS), Farm Service Agency (FSA), Soil and Water Conservation District (SWCD), and watershed offices. "People in these offices can help with interpreting current wetlands restrictions and getting the pre-approvals necessary for some drainage work," he says. "The USDA Food Security Act and Farm Bills of 1985, 1990, and 1996 have some special wetlands restrictions. They mandate an evaluation for any new or improved drainage project."

Wright says it's also very important that the landowner, designer, and contractor understand the state's drainage laws and know what their rights and responsibilities are concerning both removing and receiving water from land.

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Web,V2,A2,C4,F4

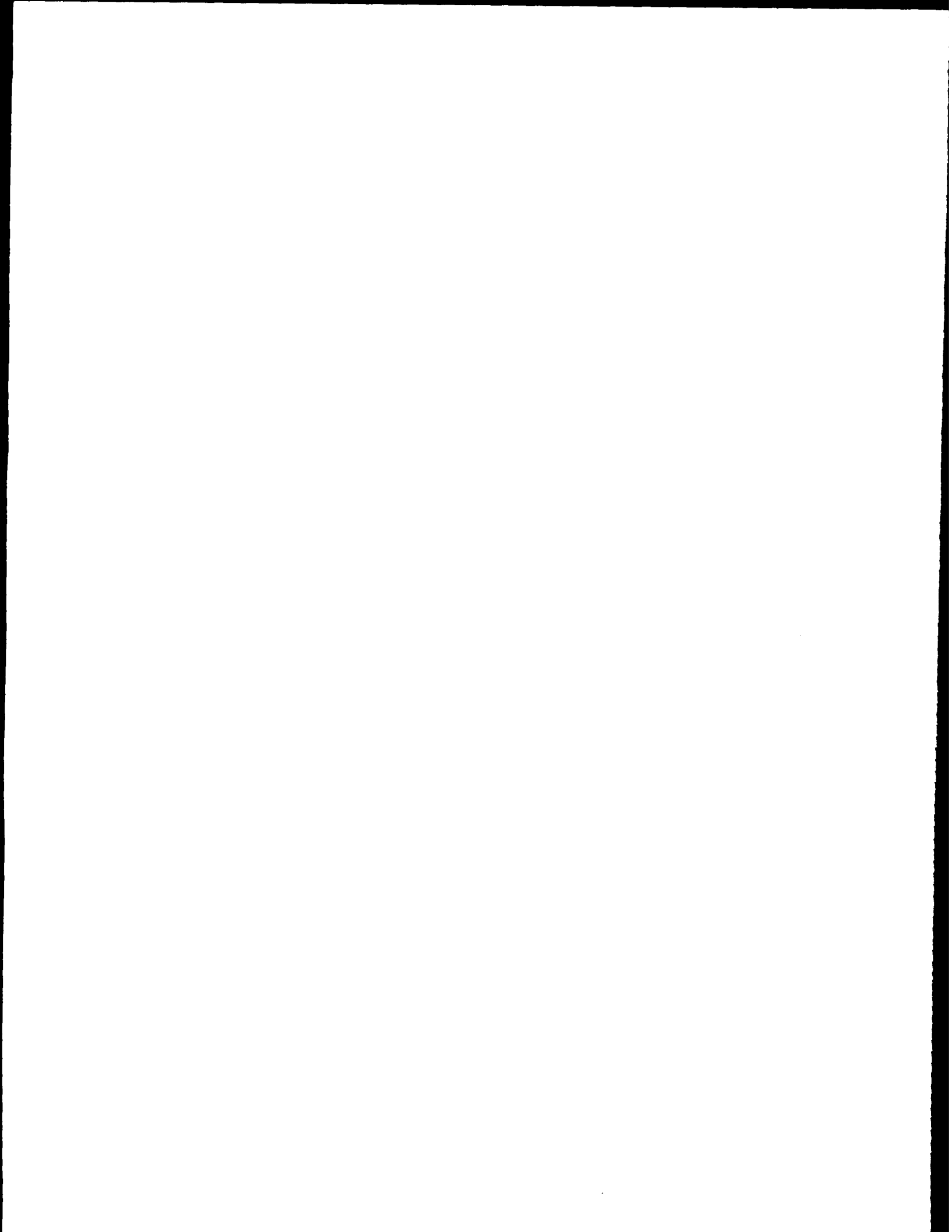
NAGR5572

Source: Jerry Wright, (320) 589-1711

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





July 10, 1997

Look at payoff potential when considering drainage work

Farmland drainage represents an investment in land to make it more productive. Before making the investment, it's a good idea to look at the potential payoff, says Jerry Wright, engineer with the University of Minnesota Extension Service.

"Assessing the economics of adding or improving drainage requires a realistic look at probable crop yield response," says Wright. "In-field data from a combine equipped with a grain yield monitor offers the best source of information on yield range and variability within a field."

Wright recommends being conservative in estimating potential yield response to drainage. "Never assume that improving the most poorly drained land in a field will bring its yield up to the level of the best soil types in the field," he says.

Other sources of information on potential yield response to drainage include neighbors, extension educators, and local Soil and Water Conservation District personnel. Some county soil survey mapping projects have identified the potential yield for each soil type under sound, well-drained management practices.

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Wright says Iowa researchers have suggested that yield improvements of 10-45 bushels per acre for corn and 4-15 bushels per acre for soybeans might be expected on moderate to very poorly drained land. Some early 1980s research in Ohio suggests that corn might respond with a 12-24 percent increase and soybeans with a 10-20 percent increase, depending on tile spacing, to tiling on a poorly drained silty clay-textured soil.

An article entitled "Minnesota Farmland Drainage: Profitability and Concerns" provides a more detailed look at the economics of farmland drainage. The article is in the spring, 1997 issue of the "Minnesota Agricultural Economist" newsletter. The author is Vernon Eidman, U of M professor of applied economics. A free copy is available from the Waite Library, Department of Applied Economics, University of Minnesota, St. Paul, MN 55108-6040; phone (612) 625-1705. The e-mail address is lletnes@dept.agecon.umn.edu.

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Web,V2,A2,C4,F4

NAGR5571

Source: Jerry Wright, (320) 589-1711

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 10, 1997

Engineer suggests farmland drainage guidelines

Landowners and contractors planning a farmland drainage system need to consider basic drainage design as well as tile size and spacing. Jerry Wright, engineer with the University of Minnesota Extension Service, suggests the following guidelines:

Start by assessing outlet locations and size, field topography, and soil types. The topography of a site greatly influences the subsurface drainage layout pattern. Whether the outlet is an open channel or a buried pipeline, either must be large enough to carry the necessary drainage runoff fast enough to prevent significant crop damage.

Generally, most farmland in the upper Midwest needs an outlet size and tile spacing that provides a drainage rate, or "coefficient," of between 3/8 and 1/2 inch of drainage per day (7.1 to 9.4 gallons per minute per acre drained). If the intended crops are high value, or if some of the surface waters will be drained by open surface inlets, the drainage coefficient should be increased to 3/4 to 1 inch per day. These guidelines should be refined in consultation with local Natural Resource Conservation Service personnel, tile drainage contractors, and other experts.

The maximum amount of water that a given tile size can carry depends on type of tile (inside roughness of tile), inside diameter, and grade of tile line. There are suggested maximum and minimum grades for given tile sizes and soil types. This is so

(Over)



that water velocities are not too slow, which can cause sedimentation, or too fast, which can cause flow problems that might result in an erosion hazard to the soil around the drain tile.

A close relationship exists between tile spacing, depth of tile, and soil permeability. With a system of parallel laterals, spacing should be based on soil type, soil permeability, drain depth, crops to be grown, desired drainage coefficient, and degree of surface drainage. Tile spacing should be determined according to the suggested guidelines in the "Minnesota Drainage Guide," and after reviewing local experiences from neighbors and contractors.

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Web,V2,A2,C4,F4

NAGR5573

Source: Jerry Wright, (320) 589-1711

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 24, 1997

Keep new or remodeled homes dry during summer months

The summer moisture and recent storms have wetted down the basements of many Minnesota homes. According to Pat Huelman, residential energy and building systems specialist with the University of Minnesota Extension Service, newly constructed or remodeled homes aren't immune from basement moisture problems.

Huelman says that despite improving construction methods, moisture often gets into homes, regardless of when they were built. This can become a major nuisance if it goes unchecked. "Even new homeowners need to be aware that mold and physical damage can result from moisture buildup," says Huelman.

Many newly constructed or remodeled homes have insulation set on the interior of their foundations. If not carefully sealed, this insulation can collect moisture when water infiltrates the foundation or condensation occurs in wall cavities or on the back of the vapor interior. Wet insulation promotes mold growth and deterioration of the framing.

According to Huelman, once insulation gets wet, it must be removed to prevent further damage and potential health problems related to mold. The first step must be removal of the basement wallboards and vapor barrier. "This is a very expensive fix," observes Huelman.

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If you're building a new home, Huelman recommends placing basement insulation on the outside of the foundation. You'll likely get better drainage and less opportunity for outside water to come into foundation walls. If water does get in, it can dry from the foundation and the basement, rather than getting trapped where it can lead to mold growth.

Huelman says that if you're remodeling an older home which has a history of moisture buildup on basement walls, be wary of adding interior insulation. Exterior insulation may be more expensive and adds another step in the building or remodeling process, but it lessens the later risk of tedious repairs.

If you build with interior insulation, Huelman urges careful planning during and after construction. Consider ways to keep insulation dry and divert moisture sources from both outside and inside. Understand that putting carpet on concrete slabs or putting insulation on potentially moist walls invites mold growth. Try to provide as much drying potential as possible in your basement.

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Web,V4,V5MN,V7,V8MN,F3,H2,H5

NNRD5577

Source: Pat Huelman, (612) 624-1286

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

July 23, 1997

Hotlines provide water use information for irrigators

Water use information valuable in managing irrigation in central Minnesota is available 24 hours a day this summer through telephone hotlines. The hotlines provide daily crop evapotranspiration, or ET, values for alfalfa, corn, dry beans and potatoes. The information helps irrigation managers keep track of soil moisture in a field, says Jerry Wright, engineer with the University of Minnesota Extension Service.

The information is available from three sites. The sites and hotline phone numbers are: Park Rapids, Hubbard Soil and Water Conservation District office, (218) 732-1963; Perham, East Otter Tail Soil and Water Conservation District office, (218) 346-7923; and Staples, Central Lakes Ag Center, (218) 894-3476.

"The phone messages present a reasonable estimate of the daily crop water use for alfalfa, corn, dry beans and potatoes," says Wright. "The estimates take into account the current growth stage of the crops, and are based on the previous days' climatic conditions as measured by a local weather station."

Irrigation managers can combine ET estimates with regular in-field inspections to determine when to next start irrigating, says Wright. When an irrigation system is serviced by an electric load control program, past ET averages can also help in planning. This helps assure that adequate soil moisture will be available during the power control period.

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Wright says the best irrigation strategy is to optimize crop growth while minimizing the potential for leaching some crop inputs, such as nitrogen, into the groundwater. "Keeping track of a crop's daily ET use, along with regular in-field soil moisture checking, can go a long way in accomplishing this strategy," he points out.

He recommends recording daily ET values on a calendar log for quick reference. One member of the family can be assigned to make the daily hotline calls.

Daily crop ET information can be managed using daily soil moisture balance worksheets, or with computer software such as WISDOM or PC-Irrigate. WISDOM was developed by University of Wisconsin extension specialists and is sold through Gempler's at (800) 874-4755. PC-Irrigate is available from the University of Nebraska at (402) 472-4259.

Daily crop soil moisture worksheets and ET estimates based on temperature only are in University of Minnesota Extension Service bulletin FO-1322-NR6, "Irrigation Scheduling: Checkbook Method" (\$1.50 plus tax and shipping). Information on how to set up an on-farm irrigation water management program is in FO-3875-NR3, "Irrigation Water Management Considerations for Sandy Soils in Minnesota" (\$1.50 plus tax and shipping). Both bulletins are available from county extension offices in Minnesota, or can be ordered by credit card from the U of M Extension Service Distribution Center at (800) 876-8636 or (612) 624-4900.

For more information on irrigation scheduling, contact Jerry Wright at the West Central Experiment Station at (320) 589-1711 or your county extension office.

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Web,F4MN,X8

NAGR5570

Source: Jerry Wright, (320) 589-1711
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 23, 1997

Custom services becoming more common in dairy industry

Many upper Midwest dairy producers don't have the resources necessary to do all the jobs that are traditionally part of running a dairy farm. Hiring someone else to do some of the jobs is becoming more common. It's the "custom" concept, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"It takes lots of expensive equipment and many hours of labor to do the milking, take care of the cattle, produce crops and manage the farm business," says Kjome.

"That's why more and more upper Midwest dairy producers are looking at new ways to do business with less capital outlay and hired labor. They also want to concentrate on the segment of the dairy enterprise that offers the highest financial return--milking cows."

Kjome says the word "custom" is being attached to heifer raising, crop planting and harvesting, manure application and feeding. "Hiring a custom operator to till, plant, control weeds, and harvest corn and soybeans has become more popular in the past decade," he says. "Custom harvesting of forages is getting lots of attention from dairy producers today as their old equipment wears out. Many dairy farms just can't justify new forage harvesting equipment based on annual use and return on investment."

(over)



Custom heifer raising is also gaining momentum, says Kjome. Full-time growers have proven they can raise quality dairy replacements to freshen at 22 to 24 months without adding extra cost for the dairy producer.

Most dairy producers can't afford manure application equipment to empty a manure storage facility once or twice a year. Custom applicators can do it quickly and efficiently and get the manure to fields that can best utilize its nutrient value, says Kjome.

"Now we are seeing dairy producers who are willing to construct feed centers large enough to store and deliver forages and feeds for a number of neighboring dairy farms," Kjome adds.

Although using custom services is often a plus for producers, Kjome does insert a word of caution. "Whatever custom service you consider using, know your present cost for the same work," he says. "And it's very important to make agreements in a businesslike manner. Put all agreements in writing; ask for and check references. The more you have in written form, the less chance for future problems."

The dairy industry in the southwestern U.S. has used custom services for years, says Kjome. "We need to understand that paradigms do shift over time," he points out. "The custom concept is not for every upper Midwest dairy producer, but it will become more common as we move into the 21st century."

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Web,V2,A2,D1

NAGR5575

Source: Dave Kjome, (507) 280-2869

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 23, 1997

Iron chlorosis showing up in Minnesota soybeans

Iron chlorosis shows up in some Minnesota soybean fields nearly every year. However, it seems to be more common than usual this year, says George Rehm, soil scientist with the University of Minnesota Extension Service.

"Iron chlorosis causes soybean plants to take on a yellow appearance, although leaflet veins remain green," says Rehm. "If it's serious enough it can kill plants. It tends to be spotty, but can sometimes wipe out several acres of a field. Yield reductions can be substantial."

Rehm says there is probably no single cause for the increased incidence of iron chlorosis this year. He lists variety selection, cultivation, foliar iron application and seed inoculation as management strategies that can reduce the severity of the problem.

He points out that iron chlorosis can easily be confused with damage caused by the soybean cyst nematode. He says it's important first to determine the cause of yellow soybeans before implementing management practices to correct the problem.

"Improved varieties are available today that are more tolerant of conditions that lead to iron chlorosis," says Rehm. "Most major seed companies have a rating system that describes tolerance. Don't hesitate to ask seed company representatives about iron chlorosis before purchasing soybean seed."

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Rehm says wet soils that have a calcareous pH and high organic matter content favor the development of iron chlorosis. As the soil dries and the temperature rises, favoring the exchange of oxygen between the atmosphere and the root zone, iron chlorosis symptoms often disappear.

"Practices such as cultivation that accelerate this oxygen exchange frequently reduce the severity of iron chlorosis," says Rehm. "Therefore, planting in rows wide enough to allow cultivation can be beneficial."

Rehm says it's possible to apply iron chelates as a foliar spray to reduce the severity of the problem. Application should take place before the third trifoliolate growth stage. However, the chelated products are expensive, and there is no guarantee they will correct the problem.

When soybeans are chlorotic, close examination shows there are very few, if any, nodules on their root systems. "Some soybean producers have taken the extra time necessary to inoculate the seed before planting and have reported positive results," says Rehm. "Research projects have not evaluated the effect of nodulation on iron chlorosis. Added inoculation is inexpensive and may be beneficial for fields where iron chlorosis is an annual problem."

Rehm also cites some suggested cures for iron chlorosis that don't work. One is to apply ammonium sulfate, and another is to apply very acid fertilizers. Field evaluations have shown no benefit from either of these practices.

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Web,V2MN,F4

NEXP5574

Source: George Rehm, (612) 625-6210
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 24, 1997

Make the most use of your storm-damaged trees

Heavy thunderstorms have brought down branches and trees in neighborhoods throughout the state this summer. A specialist in forest products with the University of Minnesota Extension Service says most of the wood from these storm-damaged trees can be valuable for home or farm use, or sold for commercial use.

According to Tom Milton, living trees enrich our lives and the environment in many ways, so it's natural to be saddened by the sudden loss of landscape trees. But fallen trees also provide environmental benefits. "Using these urban trees is one way to help extend our forest resources," says Milton.

When heavy winds hit, trees with root problems, internal decay or inadequate pruning are most likely to fall. Once the storm passes, homeowners are anxious to assess the damage. They often encounter large, broken branches still hanging from the tree. In some cases, they may find stems of trees are partially or wholly broken.

Milton says that in these situations, safety is the first thing to think about. Use extreme caution when approaching a damaged tree, especially if it stands near a power line. If a damaged tree segment is higher than your head or poses a particular danger, contact a professional tree service or public utility to bring down the tree or branch.

Once the tree section is on the ground, Milton suggests a "multiple use" approach to optimize a tree's utility and value:

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--Chip up branches smaller than 5 inches in diameter for use as landscape mulch.

--Cut branches larger than 5 inches in diameter into firewood to use or sell.

--Cut higher quality tree trunks into saw logs or veneer logs that can be sold to a logger or sawmill. Commercial mills are generally interested in buying species such as hard maple, red and white oak, cherry, walnut and ash. Logs must be 8 feet to 16 feet in length plus 4 inches trim, relatively straight and sound, with a minimum small end diameter of 12 inches for hardwoods and 9 inches for softwoods. Woodlot trees are more salable than single, yard trees. Neighbors could pool individual logs to make a marketable truckload.

--Another option is to hire a portable sawmill to process your logs into lumber on site. This can be an economical way to produce custom sawn lumber for woodworking and do-it-yourself projects.

For information on loggers or sawmills in your area, contact your nearest Department of Natural Resources Forestry office, your city forester or the university's Department of Wood and Paper Science Information Line at (612) 624-7712.

If you plan to cut your own wood, Milton reminds you that chain saws cause deaths and serious injuries every year, especially to inexperienced users. Always read instructions and carefully follow procedures for handling your chain saw.

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Web,V2,V4,V5MN,V7,V8,V9,F8

NNRD5576

Source: Tom Milton, (612) 624-5307

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

July 28, 1997

Environmental issues in pork production will be conference topic

Feedlot permits, water quality, odor control--these issues associated with modern livestock production are getting more and more attention in many communities today. A program focusing on these issues will be part of an upcoming swine conference sponsored by the University of Minnesota's College of Veterinary Medicine.

The program on "Environmental Issues in Pork Production" will be Sept. 20 from 9 a.m. to 5 p.m. at the Northland Inn in Brooklyn Park. The session is designed for veterinarians and swine consultants, as well as for state and local government officials. It's part of the university's annual Allen D. Lemman Swine Conference.

Topics and speakers will be:

- Technical review of environmental concerns, David Schmidt, U of M manure management specialist;
- Social consequences of environmental concerns, Paul Lasley, Iowa State University sociologist;
- Seepage from earthen storage basins, Chuck Clanton, U of M engineer;
- Ground and surface water concerns during land application of manure, Gyles Randall, U of M soil scientist;

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--Pathogen concerns in water contaminated by manure, Jeff Bender, Minnesota
Department of Health;

--Air quality fundamentals, Ann Wilkie, University of Florida soil scientist;

--Hydrogen sulfide ambient air standards, Randy Ellingboe, Minnesota Pollution
Control Agency;

--Odor and hydrogen sulfide measurements from pig production units, Larry
Jacobson, U of M engineer;

--County human health concerns from air pollution, Jill Bruns, Renville County
Public Health Services;

--Odor control technologies, Dwaine Bundy, Iowa State University engineer.

The registration fee for the conference is \$105 per person. To obtain a conference
brochure or further information, call (800) 380-8636 or (612) 624-3434.

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Web,V2,V4,V5,A2,A4,E1,S2

NAGR5579

Source: Charles Casey, (612) 624-1711

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

July 28, 1997

Annual conference on animal nutrition planned for Sept. 22-24

Leading scientists in livestock nutrition from across the United States will gather for a conference Sept. 22-24 in Bloomington, Minn.

They will take part in the 58th Minnesota Nutrition Conference and BASF Technical Symposium at the Marriott Hotel. The conference is designed for animal nutritionists, animal industry representatives, veterinarians, educators and livestock producers. Dairy, beef, swine and poultry nutrition topics will be on the agenda.

The BASF Technical Symposium will take place the afternoon of Sept. 22, and the Minnesota Nutrition Conference will begin the next morning. Ruminant nutrition will be the focus Sept. 23. The morning agenda Sept. 24 will center on swine and the afternoon session will center on poultry.

Conference presenters are from universities and private companies across the U.S.

The conference fee is \$60 per person in advance, \$75 at the door. The deadline for advance registration is Sept. 12. To obtain a conference brochure or further information, contact Leon Meger at (800) 367-5363 or (612) 625-2722.

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Web,V2,B1,D1,P3,S2

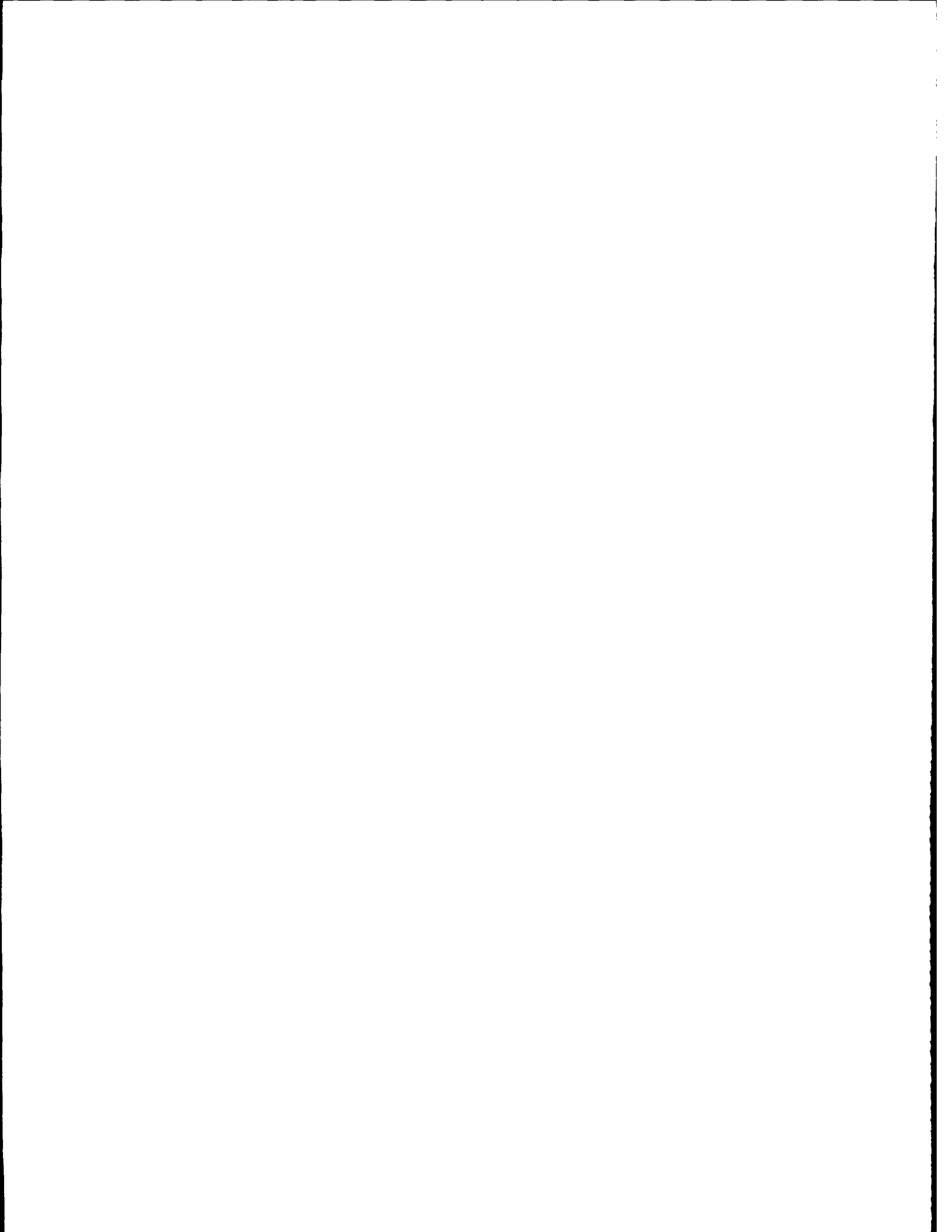
NESP5578

Source: Leon Meger, (612) 625-2722

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





July 28, 1997

MWPS publication on hoop structures for hogs available from U of M

Alternative housing systems involving hoop structures for hogs are the subject of a new publication from MidWest Plan Service (MWPS). The publication, AED-41, is entitled "Hoop Structures for Grow-Finish Swine." It's available by mail from the University of Minnesota's Department of Biosystems and Agricultural Engineering.

The 15-page publication is a summary of an alternative system for raising pigs. It provides basic designs, including multiple photographs, for using hoop buildings for grow-finish pigs. Research information and observations concerning how to operate and manage the structures for successful pig performance are included.

The system stresses manure handling techniques using deep bedding, but also incorporates all in, all out pig flow technology.

An economic analysis in the publication shows tradeoffs between the significantly lower per pig cost of construction and the higher maintenance and labor costs for operating the hoop structure system. There is also a comparative analysis of conventional curtain finishing barns and this alternative hoop housing system.

"This housing system will not work for every pork producer," says Larry Jacobson, U of M extension agricultural engineer. "However, it does offer an alternative system that may fit for a number of Minnesota farmers."

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The price of AED-41, "Hoop Structures for Grow-Finish Swine," is \$4 per copy. It's available from the University of Minnesota, Biosystems and Agricultural Engineering Dept., 219 BAE Bldg., 1390 Eckles Ave., St. Paul, MN 55108-6005, attention Terry. To order by phone, call (612) 625-7024.

For more information about hoop buildings for pigs, contact Jacobson at the Biosystems and Agricultural Engineering Department at (612) 625-8288.

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Web,V2MN,S2,P1

NAGR5580

Source: Larry Jacobson, (612) 625-8288
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 1, 1997

Sustainable landscapes offer alternative to high-input lawn care

Lush vegetation and turf growth are often seen as the ideal for residential yards. However, Vera Krischik, entomologist with the University of Minnesota Extension Service, suggests taking a more environmentally sustainable course as you manage your lawn and garden.

According to Krischik, your lawn need not resemble a high-cost, high-maintenance golf course to provide a rich aesthetic atmosphere. "Low-input yards can be just as beautiful and even more satisfying in the long run," says Krischik.

Commercial marketing of chemical lawn care products has steered homeowners towards an ideal of green, spacious yards. Minnesota agriculture has also depended on chemical fertilizers and pesticides for economic survival. Krischik believes that this has hurt the environment in areas such as lake and groundwater quality, as well as topsoil erosion.

To counter these effects, Krischik encourages creation of urban ecosystems within yards, allowing for both beauty and sustainability. Start by enriching your urban soil by composting. This, in turn, provides food for earthworms that aerate the soil. Plants that attract pollinators such as bees and butterflies, along with other insect predators, can then grow more freely. "It is important to understand that your lawn, its plant and animal inhabitants, and the water that runs through it are all linked

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together," says Krischik.

Both commercial and non-commercial interests have already begun to reintroduce alternatives to high-input landscaping. Environmental specialists are encouraging homeowners to retrofit their landscapes according to specific shade-sun layout, soil type and moisture levels. Retrofitting can be done over one summer, or more gradually from year to year.

Krischik says that you don't need to wipe out your entire existing lawn to make it sustainable. Rather, the goal is to reduce your maintenance time, limit nutrient and chemical input and support greater biodiversity of native plants and pollinators.

Retrofitting can also have a strong social impact. Krischik finds that neighbors frequently come over to admire the butterflies, insects, birds and colorful plants that inhabit her yard, and to inquire about how they might enhance their own gardens. "Gardens draw people together and increase feelings of community," she says.

For a walking tour of sustainable landscapes, visit the Minnesota Landscape Arboretum near Chanhassen, and stop by the Center for Urban Ecology and Sustainability (CUES) in the Arboretum's Andersen Library for further resources. You can also look up the CUES Internet web site at www.ent.agri.umn.edu/cues/.

Krischik is a faculty member of the University's College of Agriculture, Food, and Environmental Sciences.

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Web, V4, V5MN, V6, V7, V8, V9MN, G1, H5, P1, T2

NAGR5585

Source: Vera Krischik, (612) 625-7044

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

August 6, 1997

Minnesota farmers show strong interest in environmental program

Interest in environmental improvements on Minnesota farms is strong among farmers themselves, if response to the new federal Environmental Quality Incentives Program (EQIP) is any indication. The program is designed to encourage practices such as providing wildlife habitat, using grassed waterways, installing manure management facilities and capping abandoned wells.

EQIP was established in last year's federal farm bill to provide a single, voluntary conservation program for farmers, according to Tim Koehler, assistant state conservationist with the Natural Resources Conservation Service (NRCS). It combines four conservation programs that existed under previous farm bills into one comprehensive scheme.

EQIP provides incentive payments for adoption of specified management practices, as well as cost-sharing funds that pay up to 75 percent of the cost for approved environmental practices.

Minnesota was allocated \$6 million in EQIP funds for federal fiscal year 1997, the first year of the six-year program. "In Minnesota, we received approximately 700 applications requesting a total of approximately \$10 million by the June 27 application scoring period deadline for the current fiscal year," says Koehler. "These applications

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are now being rated for funding."

Sign-up for EQIP is continuous, Koehler emphasizes. He encourages interested farmers to sign up at local offices of the Farm Service Agency (FSA), NRCS, Soil and Water Conservation District, or University of Minnesota Extension Service.

"Some applications received after June 27 could still be approved and funded from current year funds," he says. "It depends on how much funding is approved for the 700 applications that came in by June 27. In addition, new applications may be considered for funding for fiscal year 1998, which begins October 1, 1997."

EQIP gives priority for cost-share funds to areas where there are significant problems with natural resources. It provides technical and educational assistance, as well as financial cost sharing and incentives to producers through contracts that run from five to ten years. Program participants must carry out activities according to a plan and schedule written into the contract.

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Web,V2MN,V4MN,V5MN,A4,C4

NAGR5586

Sources: Tim Koehler, (612) 602-7857; Jim Anderson, (612) 625-8209
Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 6, 1997

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Web,V2MN,V4MN,V5MN,A4,C4

NAGR5586

Sources: Tim Koehler, (612) 602-7857; Jim Anderson, (612) 625-8209
Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 12, 1997

Planting soybeans after CRP makes good use of nitrogen

Soybeans is a logical crop to plant the first year in fields that are coming out of the Conservation Reserve Program (CRP) and returning to row-crop production.

Planting soybeans makes sense from a soil-fertility standpoint, says Bob Byrnes, extension educator in Lyon County with the University of Minnesota Extension Service.

"Unlike corn, soybeans need no supplemental nitrogen," notes Byrnes. "In the first year of post-CRP crop production, there will be active mineralization of the three to four tons of biomass that have accumulated during the CRP period. This will result in the release of nitrogen that can be used by the second-year post-CRP crop. That crop would be corn in a soybean-corn rotation."

Byrnes cites results from a post-CRP research and demonstration project in Lincoln County, Minnesota. In that project, one of the highest economic returns came from second-year post-CRP corn that followed no-till soybeans with no supplemental nitrogen.

"A nitrate-nitrogen test in the fall of the first cropping year following CRP is important for determining available nitrogen for the next crop year," Byrnes notes.

When planting soybeans after CRP, Byrnes recommends inoculating seed with a seed treatment bacteria that will stimulate nodule formation. And since CRP soils may be wet and cold, he also recommends a fungicide seed treatment.

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Web,V2MN,F4

NAGR5587

Source: Bob Byrnes, (507) 537-6702

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 12, 1997

Plan ahead for returning CRP land to crop production

If you have land in the Conservation Reserve Program (CRP) and plan to put it back into crop production, it's important to plan the transition the summer before the cropping season. That's the time to choose a tillage and herbicide strategy, says Bob Byrnes, extension educator in Lyon County with the University of Minnesota Extension Service.

"One option is to combine no-till with intensive herbicide use," says Byrnes.

"Early planning is important with this option. Difficult-to-control weeds such as Canada thistle and milkweed should be targeted for herbicide treatment in mid-summer the year before crop production. Since excessive residue will interfere with successful no-till, the CRP growth should be mowed, chopped, or grazed no later than August in the season before the post-CRP crop."

If gopher populations have made the terrain excessively rough and pose a problem for herbicide application, Byrnes recommends leveling with a disk in August. Since CRP guidelines limit disking or leveling to no more than one third of a field, a 20-foot swath at 40-foot intervals should be adequate to allow commercial herbicide application with a 60-foot boom.

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Eliminating the living CRP vegetation is the next step with the no-till option. Byrnes says applying two quarts per acre of the burndown herbicide Roundup in late September will accomplish this.

"Later application of Roundup is important," says Byrnes. "The reason is that after a few frosts, the plants of perennial grasses such as quackgrass and brome grass efficiently translocate the herbicide throughout the root system. This is in contrast with spring growth, where the plant sends energy and nutrients from the root system to the top shoot growth, making herbicide control difficult."

Byrnes says a rule of thumb is to apply the fall burndown herbicide before brome grass has lost half of its green leaf tissue due to frosts and cold temperatures.

Soybeans are the preferred crop with the post-CRP no-till option, says Byrnes. "Soybeans can tolerate high-residue planting conditions better than corn," he points out. "That's due in part to higher seeding rates for soybeans and their ability to accept moderate population losses without significant yield-reduction potential. In addition, modern no-till soybean drills can effectively slice through the CRP residue to place seed in contact with the soil. And the weight of the drills is effective in leveling out gopher mounds."

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Web,V2MN,F4

NAGR5588

Source: Bob Byrnes, (507) 537-6702
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 14, 1997

Keep small grains dry, cool after harvest

Keep the grain dry and keep it cool. That's the best way to limit post-harvest mold and insect activity in your new crop of wheat, oats or barley, according to an engineer with the University of Minnesota Extension Service.

Bill Wilcke recommends a moisture content for small grains of 14 percent for up to nine months of storage and 13 percent for more than nine months. "If grain is wetter than 14 percent, run it through a heated-air dryer or put it into a natural-air drying bin," he says. "Since most heated-air dryers were designed for corn, monitor the dryer carefully and adjust the controls as needed to hold down kernel temperature. Keep the kernel temperature below 140 degrees F to prevent starch damage for milling grain, and below 110 degrees F to prevent germ damage for seed or malting grain."

To reliably dry small grain with natural air, Wilcke recommends using a bin that has a full perforated floor and an airflow per bushel that is matched to the grain's initial moisture content. Suggested airflow values are 0.5 cfm/bu (cubic feet of air per minute per bushel of grain) for grain with 14-16 percent moisture, 0.75 cfm/bu for 16-17 percent moisture and 1.0 cfm/bu for 17-18 percent moisture.

"Be aware that small grains, especially wheat, have greater airflow resistance than shelled corn," says Wilcke. "That means natural-air bins that were designed for shelled corn will provide much less airflow per bushel when filled with small grains."

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The University of Minnesota Extension Service has a FANS computer program available to help determine airflow for different fan, bin and grain combinations. The program is available through county extension offices in Minnesota. It can also be downloaded from the Internet (<http://www.bae.umn.edu/extens/harvest.html>). More information on drying is available in fact sheet FS-5949, "Wheat and Barley Drying," also available from county extension offices.

After grain is dry enough for storage, run aeration fans to cool the grain to less than 60 degrees F as soon as possible, says Wilcke. In late summer and early fall, you might have to run fans just at night to accomplish much cooling (fans should be run continuously during drying, but intermittent fan operation is okay for grain that is dry enough for storage). After all grain in the bin has cooled to less than 60 degrees F, wait until mid-fall to cool grain to about 40 degrees F. Finally, in late fall, cool it to about 25 degrees F for winter storage. See extension fact sheet FS-5947, "Wheat and Barley Storage," for more details.

Grain managers are often concerned about the storability of scab-infected wheat. "Our research has shown that scabby wheat does deteriorate slightly faster in storage than sound wheat, so cleaning grain on a gravity table to remove scab-infected kernels will improve storability," says Wilcke. "But if cleaning scabby grain before storage is not feasible, extra attention to grain moisture and temperature management should result in minimal deterioration in storage."

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Web, V2MN, F4, X7

NAGR5589

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 2 of 2)

August 15, 1997

Tillage can prepare CRP land for return to row crops

Using a moldboard plow or some other primary tillage implement is one of the options available for preparing Conservation Reserve Program (CRP) land to return to row-crop production. In most cases this tillage should take place the fall before the cropping season, says Bob Byrnes, extension educator in Lyon County with the University of Minnesota Extension Service.

"Spot treating weeds such as Canada thistle and milkweed with a herbicide the summer before the cropping season is a good idea," says Byrnes. "This can be followed by the tillage in the fall. The tillage will usually leave an acceptable amount of residue on the soil surface, due to the three to four tons of CRP biomass per acre. The tillage will also effectively deal with field roughness, which in some cases can make herbicide application to CRP land impossible."

If corn is the crop to be planted, supplemental nitrogen will be necessary, says Byrnes. The application rate should be similar to that used for corn following corn, keeping a reasonable yield goal in mind. "Tillage will speed the mineralization of the CRP biomass, but this still isn't likely to take place in time for the nutrients from the biomass to be utilized by the first-year crop," says Byrnes. "This makes corn a better second-year CRP crop from the fertility point of view. Phosphorus and potassium levels

(over)



remain unchanged from pre-CRP levels, regardless of tillage."

Using fire to burn off CRP biomass is not a good strategy, says Byrnes. Aside from the safety risk, burning causes loss of nutrients such as nitrogen and sulfur. Burning also complicates the timing for weed control. Studies in North Dakota, Montana, and Washington have shown reduced crop yields following burning.

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Web,V2MN,F4

NAGR5590

Source: Bob Byrnes, (507) 537-6702

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 21, 1997

Grain bin fan selection deserves time, effort

Selecting the proper fan for a grain storage bin or bin-type grain dryer deserves an investment of some time and effort. That's because such fans are fairly expensive to buy and operate, says Bill Wilcke, engineer with the University of Minnesota Extension Service. And a fan is a long-term investment, usually lasting 10-20 years.

Wilcke suggests the following steps for selecting the proper fan for a grain bin:

1. Determine the bin diameter, normal grain depth and the crop that will be dried or stored most often. Recognize that if a bin will be used for both a small-seeded and a large-seeded crop (wheat and corn, for example), the airflow and static pressure will be much different for the two crops.
2. Decide the airflow per bushel you would like to deliver. Airflow of 0.1 to 0.2 cfm/bu (cubic feet of air per minute per bushel) is common for dry grain aeration, and 1 cfm/bu is common for natural-air grain drying.
3. Get the fan performance information (airflow and static pressure) for several different types and brands of fans from the dealer or manufacturer.
4. Select the fan or fans that will give you the desired airflow per bushel.
5. Buy the fan that will give you the airflow you need at the lowest ownership and operating cost.

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More information on selecting fans is in a publication, "Selecting Fans and Determining Airflow for Crop Drying, Cooling, and Storage," FO-5716-NR2 (\$1.50 plus tax and shipping) The publication is available through county extension offices in Minnesota or by credit card from the extension Distribution Center at (800) 876-8636 or (612) 624-4900. The FANS computer program can also provide some guidance for selecting fans. The program is available through county extension offices in Minnesota, or can be downloaded from the Internet (<http://www.bae.umn.edu/extens/harvest.html>).

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Web,V2,E4,F4

NAGR5592

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

August 21, 1997

Protect against E. coli in your kitchen

For most consumers, cooking hamburger well is the best protection against rare forms of the E. coli bacteria, says University of Minnesota food scientist Sita Tatini. Other protective measures include good kitchen sanitation and washing fruits and vegetables before serving

Children and the elderly are most susceptible to E. coli infection. Initially, symptoms include stomach cramps, watery diarrhea that often becomes bloody, nausea, vomiting and low-grade fever. In severe cases, kidney failure and death can occur. About 2 percent of people affected in past outbreaks had symptoms serious enough to cause death.

E. coli are abundant in the digestive tracts of humans and animals, but only a few cattle carry the E. coli 0157:H7 strain. Tatini says some wild deer also carry the organism, which can easily spread to vegetation through fecal contamination and water runoff.

Newly developed tests for potentially deadly E. coli strains are now available for regulators and the food industry. But despite all voluntary and regulatory efforts, "it's almost impossible to assure that raw foods will be free of E. coli," Tatini says, "since the bacteria are present in such large numbers in the digestive tracts of some animals."

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The rare E. coli 0157:H7 strain is potent. Only a few organisms (roughly 10 to 100) are required to cause illness, says Tatini, who has done extensive research on the problem through the university's Agricultural Experiment Station.

He advises cooking hamburger to at least 155 degrees F, or until all liquid is clear, not pink. Better yet, use a metal, dial-type food thermometer. This thermometer type is accurate and reasonably priced. There should be no pinkness in the middle of the hamburger.

Other recommendations from University of Minnesota food scientists:

--If you're eating out, send back any meat, poultry or fish product that 's not thoroughly done.

--In your own kitchen, thoroughly wash fresh garden produce such as lettuce and celery--especially if it hasn't been washed in chlorinated water and packaged in plastic. Soap is not recommended for washing vegetables and fruits since the soap residue may cause illness.

--Don't mix raw and cooked food, and store them separately in the refrigerator. For example, don't put raw hamburger on a top shelf where juices could drip to cooked foods below.

--Never drink unpasteurized or raw milk or apple cider.

--Remember good, old-fashioned sanitation--wash hands, utensils and work areas with hot, soapy water after contact with raw meat. A solution of one quart water to one tablespoon chlorine bleach can be used as an additional sanitizer for cooking surfaces.

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The potentially deadly 0157:H7 strain is very rare and was first detected in raw hamburger meat in Michigan and Oregon in the early 1980s, Tatini says. About 1.2 million pounds of frozen hamburger patties distributed by Hudson Foods, Inc., may be contaminated with the strain 0157:H7 E. coli and have been recalled recently.

School children who drank raw milk in Wisconsin and Canada were affected in the mid-1980s. There was also an outbreak among Oregon consumers who drank raw milk. More recent cases include four deaths and over 600 illnesses of people eating at Jack-in-the-Box restaurants in the state of Washington in 1993.

Within the last year, cases have been reported in Scotland (from hamburger) and Japan, where over 10,000 people were exposed to the 0157 strain in 1996. The suspected source was radish sprouts.

More information on the Hudson Foods recall and E. coli contamination is available from the USDA Meat and Poultry hotline at (800) 535-4555.

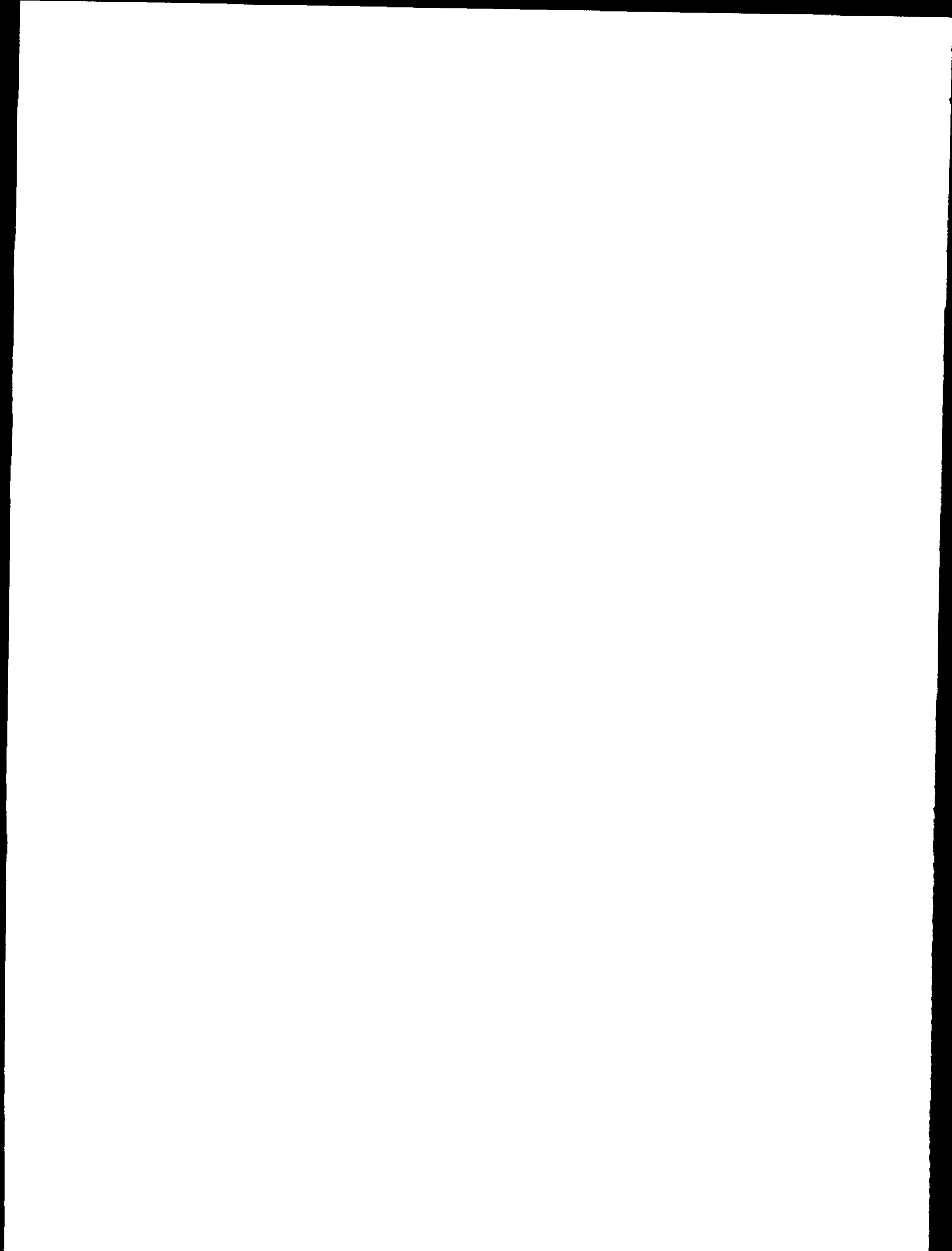
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Web,V4,V6,V7,V9,F7

NEXP5591

Source: Sita Tatini, (612) 624-7412

Writer: Jack Sperbeck, EDS, (612) 625-1794, jsperbeck@mes.umn.edu



August 26, 1997

Poultry Service Workshop at University of Minnesota will be Sept. 23

New developments in egg, turkey and broiler production will be the focus of the 13th Minnesota Poultry Service Workshop Sept. 23 at the University of Minnesota. The event is designed for poultry producers, veterinarians, agribusiness personnel and others with an interest in the poultry industry. It will be at the Earle Brown Continuing Education Center on the U of M St. Paul campus.

A general session in the morning will include presentations on challenges facing animal agriculture, poultry flock stress, a Minnesota Pollution Control Agency update, monitoring odor and air quality, and food safety. There will be concurrent sessions in the afternoon, one on egg layers and the other on turkeys and broilers. Both afternoon sessions will have presentations on disease control and pest control.

Most workshop speakers are University of Minnesota faculty members or representatives of private industry.

Pre-registration is encouraged, and there is a registration fee discount through Sept. 12. To obtain a registration brochure or additional information, contact Peg Naumann in the College of Veterinary Medicine at (800) 380-8636 or (612) 624-3434.

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Web,V2,P3

NAGR5594

Source: Peg Naumann, (612) 624-3434

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





September 4, 1997

Seeding alfalfa no-till cuts soil erosion

It's possible to seed alfalfa without tillage and successfully establish the crop in Minnesota. And no-till alfalfa seeding is a good way to reduce soil erosion, according to a soil scientist with the University of Minnesota Extension Service.

"No-till techniques have been used to successfully establish alfalfa on both sandy and fine-textured soils in Minnesota," says George Rehm. "Many of the state's alfalfa fields are located on sloping soils where reducing soil erosion can improve water quality in lakes and streams."

Rehm cites research in Wisconsin that measured the effect of three tillage systems--moldboard plow, disk and no-till--on soil erosion when alfalfa was seeded with and without an oat companion crop. The researchers measured residue cover as well as soil loss from erosion at one and four weeks after seeding. They used simulated rainfall for the erosion measurements.

"As expected, the highest amount of residue cover occurred with no-till," says Rehm. "At one week after seeding, this added residue reduced runoff and brought about a major soil loss reduction. It should also be noted that runoff and soil loss from disk tillage were equal to runoff and soil loss from no-till seeding."

Runoff and soil erosion were much less when erosion was measured at four weeks after planting, says Rehm. After the emergence of the alfalfa and the companion

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crop, tillage system had no major effect on runoff. There was, however, a substantial difference in soil loss as affected by tillage system. Again, soil loss was greatest with moldboard plowing.

The use of a companion crop did not reduce runoff or soil erosion in the study. Rehm notes that in the year of the study there was no rainfall for approximately four weeks after seeding. This inhibited the development of the companion crop. Results might be different with more rainfall at seeding time or soon after.

"The system used to establish alfalfa should take lime needs into consideration," says Rehm. "When lime is needed, it must be incorporated before seeding. The need for incorporation obviously prevents the use of no-till seeding. Therefore, be sure to collect soil samples and measure soil pH before seeding alfalfa and making a decision about tillage."

Rehm is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,C4,F4

NEXP5600

Source: George Rehm, (612) 625-6210
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 10, 1997

Tower silos can be converted to dry grain storage

The unused tower silos on many Minnesota farms can provide storage for dry grain this fall for some crop producers short on bin space. Many farmers have successfully stored dry grain in tower silos, says Bill Wilcke, engineer with the University of Minnesota Extension Service.

"There are some challenges involved in converting a tower silo once used for haylage, silage, or high-moisture corn to storage for dry grain," notes Wilcke. He provides the following recommendations for making the conversion:

--Make sure the walls will withstand the pressure of dry grain. Dry grain exerts more pressure on walls than does silage. Many newer silos were designed to handle the pressure of dry grain, but some older ones were not. Also, the steel rods on the outside of concrete stave silos have probably corroded and weakened over time. Carefully examine the condition of the silo walls and reinforcing rods and, if necessary, contact the manufacturer to find out if the silo is currently strong enough, or can be made strong enough, to hold dry grain.

--Make sure the silo is watertight. First, check the roof and repair or replace it to prevent water leaks. Then, examine the sidewalls for evidence of leaks. It may be possible to re-plaster concrete or concrete stave silos that have cracks and leaks. Some farmers have attempted to hang plastic liners inside of silo walls to protect dry grain

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from moisture. This can work, but it is difficult to keep the plastic in place, especially during unloading. Finally, make sure you have a good floor that is well above the ground surface outside the silo. If the silo has an earthen floor that is below grade, consider adding fill, putting in a plastic vapor barrier and pouring a new concrete floor several weeks before harvest.

--Develop a plan for filling the silo. Believe it or not, getting grain into silos can be one of the biggest obstacles to their use for dry grain storage. Silage blowers cause a lot of impact damage to grain kernels, so dry grain should not be run through a silage blower unless the grain will be fed relatively soon after harvest. Silage blowers can be modified for use with dry grain by running an auger into the pipe just above the blower. Because silage blowers really throw rather than blow silage, they don't generate much air pressure, so the handling capacity (bushels per hour) of modified blowers is very low.

Most transport augers will not reach the tops of silos, but you might be able to partially fill silos with side doors by running an auger into the highest door the auger will reach.

One of the best options for filling silos with dry grain is to use a pneumatic grain conveyor. This type of conveyor is slow and requires a lot of power, but should get dry grain up to the top of a silo with relatively little kernel damage. Pneumatic conveyors sometimes can be rented from equipment dealers, elevators or other farmers.

--Make sure grain is dry enough for storage. Because high fan power is necessary to blow large quantities of air through deep beds of grain, it is expensive to dry grain in silos. It is probably best to make sure grain is dry enough for the intended storage

(more)

period before it is moved into the silo. Corn that will be fed through the winter months can be held at up to 18 percent moisture, but corn to be stored into the following spring should be no more than 15 percent moisture. Use 14 percent moisture for corn storage into summer, and 13 percent for storage of a year or more. Small grains should be 13 to 14 percent moisture and soybeans should be about 13 percent moisture.

--Install some type of aeration equipment. Even if grain is dry when moved into the silo, it still should be aerated so that you can control grain temperature to reduce mold and insect activity and prevent moisture migration. You could install full perforated floors for silo aeration. You can probably get by, however, just using perforated metal over the unloading trench, or simple perforated ducts.

You also can get by with relatively small fans if you design for a low airflow per bushel. A good target might be 0.1 cubic foot of air per minute per bushel of grain (cfm/bu). Either positive pressure (air blowing into bottom of silo) or negative pressure (air pulled out of bottom of silo) aeration can be used; either system will work if managed properly.

In addition to installing fans and ducts at the bottom of the silo, you'll need to provide some open area at the top to let air in or out of the silo when the fan is running. Provide about 1 square foot of open area for each 1000 cfm of airflow.

--Unload from the center. It's especially important to unload silos from the center so that you don't end up with grain piled higher on one side, which causes uneven wall pressures that can lead to structural damage. Either install a conventional grain unloading sump in the center of the silo floor or simply run an unloading auger from one of the lower doors into the center of the silo. Some farmers have had success with

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inserting an open-ended aeration tube into the center of the silo and then unbolting the fan and sticking an unloading auger in through the aeration tube when it's time to unload the silo.

"In some cases, silos are not in a convenient location for dry grain storage, or it turns out that it would be cheaper to build a new metal grain bin rather than convert an old, dilapidated silo," says Wilcke. "But it's worth considering using silos for dry grain because silo conversion is relatively simple and provides safe, economical storage."

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Web,V2MN,F4

NAGR5604

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 10, 1997

Flat farm buildings can provide dry grain storage option

Existing flat buildings on a farmstead may provide a grain storage option for farmers who are short on space to store 1997 crops. Bill Wilcke, engineer with the University of Minnesota Extension Service, says this option is worth considering in years when grain yields are high and prices are low. Machine sheds, warehouses, or even livestock buildings sometimes can be used for temporary grain storage. Wilcke lists some things to consider when deciding whether a given building would be a good choice for grain storage.

--Sanitation. Can you get the building clean enough for grain storage? If the building previously contained manure, ag chemicals, or petroleum products, can you completely remove these materials and their odors so that grain will not be physically contaminated or pick up odors that would result in downgrading? Also, take a look at the way the building is constructed and try to determine whether you can keep birds and rodents away from the grain.

--Wall strength. Dry grain exerts high pressure on walls, and unless the building was specifically designed to withstand the pressure of grain or some other granular product, it will need to be reinforced. If the building was designed and erected by an ag building company, you might ask the company if a "grain package" is available. Or you could consider hiring an engineering consultant to design building modifications for you.

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Another option would be to set free-standing bulkheads inside the building to keep grain away from the walls. Extension currently doesn't have plans for do-it-yourself bulkheads, but some local contractors or building materials suppliers might be able to build them for you. Some farmers avoid the wall pressure problem by buying metal grain bin rings (without floors or roofs), and setting the rings inside the building. Finally, you could accept reduced storage capacity and just place grain in the center of the building in sloping piles that do not touch the walls.

--Capacity. When you are trying to decide whether it's worth using an existing building for grain storage, make sure you estimate how many bushels can be stored. It is disappointing to find how few bushels can actually be stored in some flat buildings, especially when buildings have low ceilings or when grain is not piled against the side walls. To estimate capacity, calculate the volume of the planned grain pile in cubic feet and then multiply by 0.8 bushels per cubic foot, or divide by 1.25 cubic feet per bushel to get volume bushels. Contact the University of Minnesota Extension Service if you would like assistance in estimating building capacity.

--Watertightness. First, check the roof for leaks and estimate how difficult and expensive repairs would be. Next, look at the grade around the building to make sure that water doesn't get onto the building floor. Finally, look at the floor itself. A vapor barrier (6 mil plastic, for example) is needed between the soil and the grain to prevent moisture from moving into the bottom layer of grain.

For buildings with earthen floors, consider piling the grain on plastic or installing a new concrete floor with a vapor barrier under it. New concrete floors should be allowed to cure for

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several weeks before grain is placed on them. If the building has an older concrete floor that does not have a vapor barrier under it and the grain will be stored more than a few months, it would be best to put down plastic over the floor as the building is filled.

--Filling and unloading the building. Grain handling is not as convenient in flat storage as it is in round metal bins, and it can be a challenge to move grain in and out of a building. There is some specialized equipment designed for this purpose that you could buy or rent. But if that's not practical, you might be able to use a portable grain auger to fill flat storage by making openings in the roof or by moving the auger around inside the building. A portable auger or a front-end loader can be used for unloading grain. Pneumatic grain conveyors also could be used for filling and emptying flat storage.

--Grain moisture. Because it's difficult to achieve uniform air movement in flat storage, it's difficult to dry grain adequately in the building. It's probably best to make sure grain is dry enough for storage before placing it in the building. Corn that will be fed through the winter months can be held at up to 18 percent moisture, but corn to be stored into the following spring should be no more than 15 percent moisture. Use 14 percent moisture for corn storage into summer and 13 percent for storage of a year or more. Small grains should be 13 to 14 percent moisture and soybeans should be about 13 percent moisture.

--Grain aeration. Even if grain is dry when it's moved into flat storage, it should still be aerated so you can control grain temperature to reduce mold and insect activity and prevent moisture migration. Perforated ducts placed on the floor can work well for flat buildings. If the grain pile is fairly level, duct spacing should be about equal to the pile depth. If you have a long, triangle-shaped pile, you might get by with one duct, centered under the peak, running

(more)

the length of the pile. Unusual pile shapes make aeration design tricky; consult with an experienced aeration system designer for these. Perforated ducts (metal or plastic) that are made for grain aeration work best. Ordinary plastic drainage tile doesn't work very well because it doesn't have enough perforated area for good air movement. Try to keep duct lengths to less than 100 feet to reduce problems with non-uniform air distribution.

Positive pressure designs (air blowing into ducts and out of the top of the pile) tend to work best for flat storage, but be aware of potential condensation problems under the roof. You can minimize condensation problems by providing plenty of air exhaust area and plenty of air movement over the pile while the fans are running, and by running the fans often enough to minimize the temperature difference between the grain pile and outdoor air.

Round metal grain bins are hard to beat for convenient grain handling and aeration, but flat storage also can work if you provide good management and can meet grain handling, aeration and pest control challenges. Contact the University of Minnesota Extension Service for more information.

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Web,V2MN,F4

NAGR5603

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 18, 1997

Study: Tillage system does not affect soybean cyst nematode population

Conservation tillage does not appear to be effective in managing soybean cyst nematode (SCN) in southern Minnesota, according to results of a four-year University of Minnesota study.

The study took place in a field at New Richland in Waseca County. It involved five tillage treatments--annual moldboard plowing, moldboard plowing following corn and chisel plowing following soybeans, annual chisel plowing, annual ridge tillage, and no-till. Soybean cyst nematode egg density was measured in each plot. The measurements showed no effect of tillage treatment on the SCN population.

U of M nematologist Senyu Chen and plant pathologist Ward Stienstra conducted the study. "Reports from several southern states indicate that no-till has reduced SCN population compared with conventional tillage," says Chen. "However, our study suggests conservation tillage is not likely to be effective for managing SCN in southern Minnesota."

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Web,V2MN,F4,R1

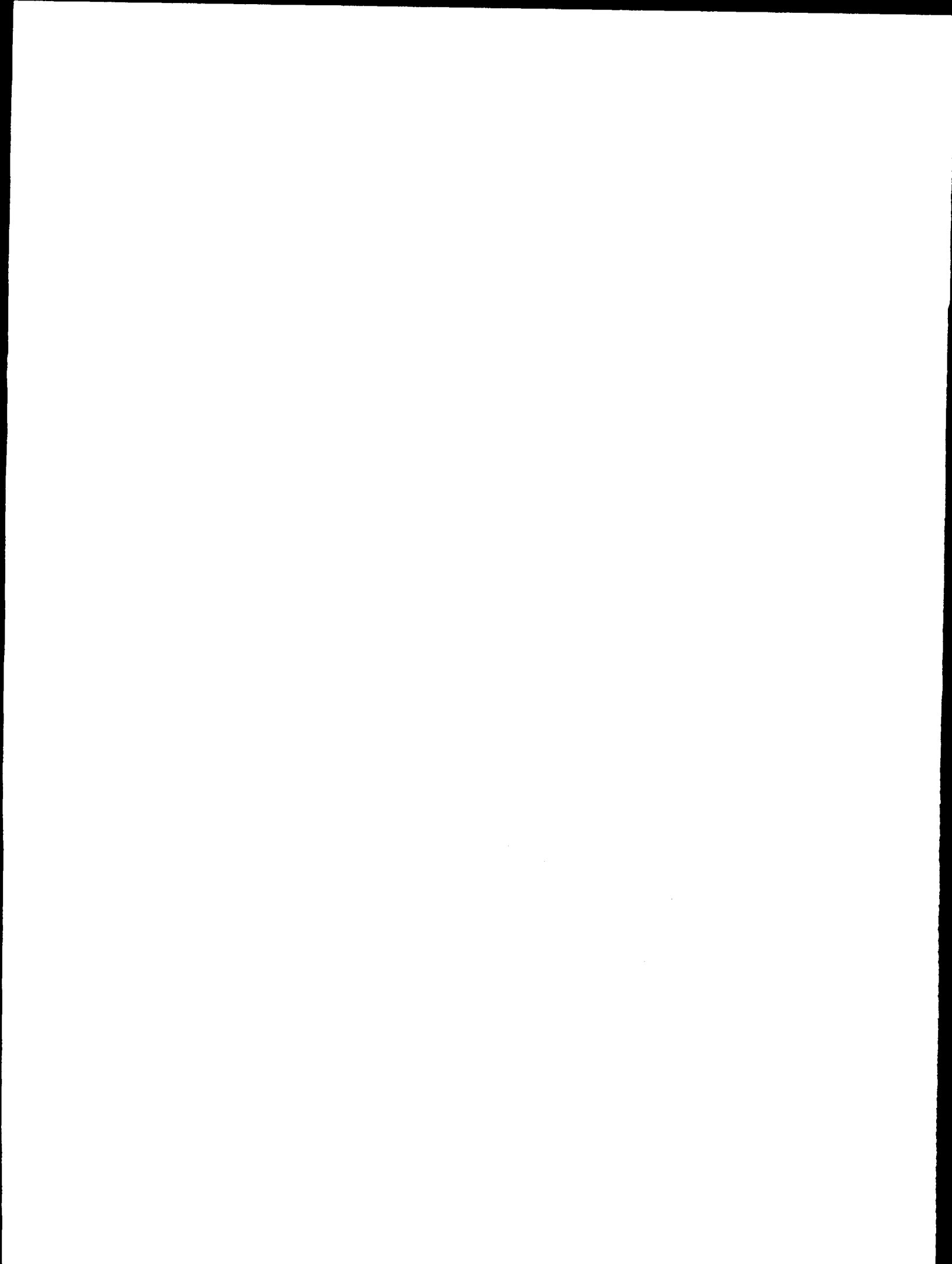
NEXP5610

Source: Senyu Chen, (507) 835-3620

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





September 18, 1997

Crop yields tend to drop, then recover with subsoil compaction

Soil compaction below the depth normally reached by tillage can reduce crop yields. However, the yield reduction tends to diminish with time, according to a soil scientist with the University of Minnesota Extension Service.

"Subsoil compaction is likely on many soils under wet conditions when there is traffic with greater than 10-ton-per-axle loads," says John Moncrief. "Equipment most likely to have loads in this range are combines, four-wheel-drive tractors and loaded farm trucks. Plowing with a tractor wheel in the furrow packs soil below the depth reached by normal tillage and can be another source of subsoil compaction."

In a study at Lamberton, nine years of cropping with annual freezing and thawing did not remove a compacted soil layer artificially formed at the bottom of the plow furrow in a Nicollet clay loam, says Moncrief. The compacted soil drained more slowly and remained wetter after a rain. However, in the seven years following compaction, corn and alfalfa yields were not significantly different on compacted and uncompacted treatments.

Plant response to subsoil compaction varies according to several factors, notes Moncrief. Subsoil compaction can affect water availability, nitrogen uptake and possibly potassium uptake. These factors can in turn affect corn growth and yield.

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Subsoil compaction can also reduce yields by delaying planting and other field operations.

There is good news, however, from studies conducted at several different sites in northern latitudes. "The studies show a trend of initially lower yields following compaction with axle loads of 10 tons or more," says Moncrief. "However, the effect decreases over time. Yields on compacted soil approach the yields on uncompacted soil after two to seven years, depending on the soil and climate. Slower recovery of yield generally has occurred on soils higher in clay."

Moncrief is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2,C4,F4

NEXP5608

Source: John Moncrief, (612) 625-2771

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 18, 1997

Soil compaction can be good, bad for plants

Soil compaction can have both good and bad effects on plant growth, says a soil scientist with the University of Minnesota Extension Service.

"A moderate amount of compaction in the row promotes good seed-soil contact and fast germination and prevents excessive drying out around the seed," says John Moncrief. "Many corn planters are designed specifically to provide the benefits of moderate compaction."

Moncrief says a medium-textured soil with a bulk density of about 1.2 grams per cubic centimeter--comparable to a non-tracked soil after a secondary tillage operation--is generally favorable for root growth.

The increased root branching and secondary root formation caused by moderate compaction means a given volume of soil can be more thoroughly explored for nutrients, says Moncrief. This can increase uptake of nonmobile nutrients such as phosphorus. Moderate compaction may also decrease water loss by evaporation.

When compaction exceeds the optimum level, however, root growth decreases, says Moncrief. Soil compaction has the potential to decrease the infiltration rate, increase runoff and decrease water storage; increase the water content above a compacted subsurface layer by slowing the internal drainage of water; and decrease root growth and reduce the soil volume explored by roots, which can decrease nutrient

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and water uptake. Severe subsurface compaction due to heavy traffic can cause nitrogen and moisture stress by restricting the depth and extent of rooting, and by increasing denitrification.

What's the relationship between compaction and yields? The amount of moisture in the soil is a key factor, says Moncrief. "Starting with very low bulk density conditions, meaning a low level of compaction, yields initially increase as compaction increases," he notes. "They reach a maximum when the level of compaction is optimum for the given soil, crop, and climatic conditions. As compaction is increased beyond this optimum, yields decline."

Under wet conditions the optimum level of compaction is considerably lower than under dry conditions, says Moncrief. Finer-textured soils have higher clay contents, and thus lower optimum levels of compaction, than coarser-textured soils with higher sand contents.

A publication on "Soil Compaction--Causes, Effects, and Control" is available for purchase from county extension offices in Minnesota. It's also available for purchase from the University of Minnesota Extension Service Distribution Center at (800) 876-8636 or (612) 624-4900. Ask for item BU-3115-NR1 (\$2.75 plus tax and shipping).

Moncrief is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2,C4,F4

NAGR5607

Source: John Moncrief, (612) 625-2771

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 18, 1997

Scientist suggests strategies to counter soil compaction

Avoiding soil compaction is the best strategy for keeping compaction from limiting crop yields. However, it's not always physically or economically possible to avoid compaction, notes John Moncrief, soil scientist with the University of Minnesota Extension Service.

"The principle of staying off a field until it's fit to work still applies," says Moncrief. "However, the possibly severe economic costs of delays in planting or harvesting may outweigh compaction damage or loss. A wet spring or fall can create a real dilemma for producers."

When potentially damaging compaction is unavoidable, one strategy Moncrief suggests is to confine wheel traffic to specific areas. Traffic may occur only between certain rows. Corn and soybean producers who use ridge tillage can, with care and proper equipment, confine traffic between certain rows and avoid compacting the row area. This requires matching all machines, including combines and manure-handling equipment, to confine compaction to the same between-row areas.

"Moldboard tillage of the compacted depth has been effective in removing surface compaction in studies at Lamberton," says Moncrief. "On high shrink-swell soils, wetting and drying loosen them in time. If you have cracks a half-inch or larger

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when the soil is dry, compaction problems probably won't persist more than a foot deep beyond three or four drying cycles."

Another strategy Moncrief suggests to counter compaction is to apply phosphorus and potassium in the row for corn to reduce the probability of these nutrients being limited. Using a split application of nitrogen guards against N losses due to poor aeration.

A publication on "Soil Compaction--Causes, Effects, and Control" is available for purchase from county extension offices in Minnesota. It's also available for purchase from the University of Minnesota Extension Service Distribution Center at (800) 876-8636 or (612) 624-4900. Ask for item BU-3115-NR1 (\$2.75 plus tax and shipping).

Moncrief is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2,C4,F4

NEXP5609

Source: John Moncrief, (612) 625-2771

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 19, 1997

New genetic testing available for Porcine Reproductive and Respiratory Syndrome (PRRS)

PE AgGEN, a division of Perkin-Elmer, and the University of Minnesota have announced the introduction of a testing service to detect Porcine Reproductive and Respiratory Syndrome (PRRS) in semen. PRRS is one of the leading causes of mortality in swine, and is considered one of the highest health priorities by virtually every major swine industry association.

The introduction of PRRS into a herd frequently occurs through the exchange of bodily fluids, often through transported swine and through artificial insemination. With the increasing popularity of artificial insemination, PE AgGen and the University of Minnesota focused on developing a cost-effective, high-volume test that detects the viral RNA of PRRS in semen.

"We're excited about this collaboration and the expanded ability of our programs in disease and trait testing to improve our ability to aid swine breeders and producers with important production decisions," says Mike Miille, general manager of animal testing at PE AgGen. "Our current swine testing programs for parentage verification, identification, PSS testing and now PRRS illustrate the benefits that commercial-academic collaborations offer in accelerating new technologies to improve breeding and herd management."

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"We are entering a new era of providing exciting technology for disease detection and prevention for breeders at a much lower cost and with decreased time requirements," says Lawrence Schook, director of the Food Animal Biotechnology Center at the University of Minnesota.

"We hope to provide an increasing number of affordable molecular diagnostic tests and are opening a new molecular diagnostic laboratory dedicated to that purpose," says James Collins of the U of M Department of Veterinary Diagnostic Medicine.

The University of Minnesota's Swine Center fosters an interdisciplinary approach to research for solving pork industry problems and providing communications to pork producers and consumers in Minnesota. The Swine Center combines faculty working in such areas as agricultural engineering, veterinary medicine, animal procedures, biology and chemistry.

PE AgGen, a genetic analysis services laboratory for plant and animal breeders, is a division of PE Applied Biosystems, a provider of automated DNA analysis systems worldwide. PE AgGen's laboratories are located in Salt Lake City, Utah, and Davis, Calif. The parent company, the Perkin-Elmer Corporation, develops, manufactures and markets life science systems and analytical instruments used in markets such as agriculture, biotechnology, pharmaceuticals, and environmental and food testing.

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Web,S2

NEXP5611

Sources: Bonnie Watkins, (612) 624-2752; Mike Miille, (800) 995-2473;
Valerie Tucker, (650) 638-5530

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 25, 1997

Early fall nitrogen application can mean corn yield losses

Don't be in a hurry to apply nitrogen fertilizer this fall for next year's crops.

Otherwise, yield losses and lower profits are likely, says a soil scientist at the University of Minnesota's Southern Experiment Station at Waseca.

"Research clearly shows greater potential for nitrate and yield losses with fall application of N," says Gyles Randall. "Farmers and dealers in southern Minnesota are strongly encouraged to delay fall application of N until at least October 20, and to consider using N-Serve nitrification inhibitor. Earlier applications greatly raise the potential for nitrate losses to surface water and groundwater, and yield losses. Increasing the rate of N when applying early in the fall will not prevent yield losses, but will likely lead to increased nitrate losses and expense."

Randall cites field experiments conducted on individually tile-drained plots at Waseca from 1987-1993. Anhydrous ammonia was applied in the fall with N-Serve and in the fall and spring without N-Serve. Corn grain yield and nitrate-N losses to tile drainage water were compared.

Corn yielded nine bushels per acre more with spring application or fall application with N-Serve, compared with fall application without N-Serve. This occurred even when fall anhydrous application was as late as October 25. Moreover,

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annual losses of nitrate-N in the drainage water were between 13 pounds and 19 pounds per acre greater when anhydrous was fall-applied without N-Serve.

Randall is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,A2,C4,F4

NEXP5613

Source: Gyles Randall, (507) 835-3620

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 25, 1997

Wood decay technology helps archeologists preserve rare finds

When archeologists discover wooden treasures of the past--ancient Egyptian artifacts, for example--one of their first concerns is preventing deterioration. They increasingly call on Robert Blanchette, plant pathologist and wood microbiologist with the University of Minnesota's Agricultural Experiment Station, for help.

Blanchette has developed a way to analyze fungus types that slowly decay wooden structures and artifacts. He also can offer possible methods for altering the process. "Our analysis gives archeologists and museums a way to identify deterioration in wood and provides information on its current condition so that they can better preserve the artifact," says Blanchette.

According to Blanchette, decay patterns are directly related to how fungi attack cell walls in wood. By viewing the cell walls microscopically, he can determine the structural and chemical changes which have occurred. This allows him to identify the fungus causing the decay and its degree of infestation.

Blanchette's classification of decay patterns to fungal types is particularly valuable to archeological institutions wanting to increase the longevity of rare wood. For example, a wooden tomb dating to 700 B.C. and thought to be the legendary King Midas' was found in Turkey. Blanchette, called to the site to observe the tomb's wood and its surrounding structure, took wood samples back to Minnesota for analysis.

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Results showed that, over a long period of time, a "soft-rot" fungus had caused the wood to decay. Blanchette also discovered a more modern fungus attached to the tomb's main chamber from its supporting beams. "After providing our Turkish counterparts with a mechanism for viewing the two-fold deterioration process," Blanchette says, "we are developing both long- and short-term preservation plans for this important archaeological site."

The technology also applies to larger structures, such as the pueblo dwellings in New Mexico. Some 25,000 trees may have been used to construct any one of these dwellings. Blanchette's analysis has been used to determine decay problems in the wood so these national historic dwellings can be maintained.

Though Blanchette's worldwide research is most often used to inhibit wood decay, he also has identified types of fungi beneficial to industry. He helped develop a method for pre-treated biological processing of wood before shipment to lumber mills. The process minimizes environmental pollution by saving energy and relying on fewer chemicals during paper production. "This allows for a faster, more efficient pulping process," says Blanchette, a faculty member in the university's College of Agricultural, Food, and Environmental Sciences. Blanchette believes that biological pulping will become widely used within the next five years.

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Web,V4,V5,V7,V8,V9,F9,R1

NEXP5612

Source: Robert Blanchette, (612) 625-0202

Writer: John Winzenburg, EDS, (612) 625-6243, news@mes.umn.edu

September 29, 1997

Spreadsheet for balancing winter beef cow rations available

A simple and fast method for balancing wintering beef cow rations is available from the University of Minnesota's Department of Animal Science. The method involves the use of an Excel computer spreadsheet. It was developed by Alfredo DiCostanzo, beef cattle scientist with the U of M Extension Service; Troy Salzer, extension educator in Roseau County; and Jim Cassady, animal science graduate student.

"Winter feeding costs comprise 50-60 percent of total annual beef cow enterprise costs," says DiCostanzo. "Cow-calf producers need a simple approach to balancing wintering cow diets. It is also essential to integrate other economic and production concepts to develop winter feeding programs that achieve least production costs. "

The Excel (v 7.0) spreadsheet was created to simplify balancing winter diets for energy and protein, to estimate feed needs and to evaluate the impact of winter feeding on annual cow cost and calf break-even price. Balancing cow rations and projecting feed needs with this spreadsheet requires forage test results and nutrient analyses of supplemental ingredients.

To obtain a copy of the spreadsheet and a "Beef Cattle Management Update" newsletter explaining how to use the spreadsheet, send name, address and phone

(over)



number to A. DiCostanzo, University of Minnesota Department of Animal Science, 122
Peters Hall, 1404 Gortner Ave., St. Paul, MN 55108.

#

Web,V2,A2,B1

NAGR5614

Source: Alfredo DiCostanzo, (612) 624-4995

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

September 30, 1997

Editor: Contact Jennie Y. Rominger, (612) 625-6294 or news@mes.umn.edu, to obtain a 35mm color transparency or black-and-white print to use with this story.

Calendar's maps can help make gardening in the North less chancy

When is it safe to set out seedlings? How cold is it likely to get this winter?

Northern gardeners need answers to these questions to make sound gardening decisions.

In Minnesota, for instance, the average frost-free date can be as early as May 26 or as late as June 20, depending on where you live. And with five USDA Plant Hardiness Zones covering the state, it's important that Minnesotans know the likely minimum winter temperature when selecting perennials, trees and shrubs for their properties.

"Gardening in Minnesota and in the adjoining areas of neighboring states can be a gamble," says University of Minnesota Extension Service horticulturist Deborah Brown, "but you can greatly increase the odds of success if you have some basic information. That's why each year we include maps that show the average frost-free dates in the spring and the average annual minimum temperatures in the 'Minnesota Gardening' calendar."

The maps are only a couple of the calendar's useful features, according to Brown, who writes the calendar's monthly tips for garden, lawn and houseplant care. For example, one of the tips for next September advises, "Ignore caterpillars feeding on tree or shrub leaves. They do little damage to landscape plants this late in the year."

(over)



Brown also compiles the lists of helpful extension and Minnesota Agricultural Experiment Station publications that accompany each month's color photo of horticulture in the North Star State.

Other features of the sturdy, spiral-bound calendar that gardeners will appreciate are a page for notes; a directory of county Extension offices; and information about horticultural education programs, services, facilities and organizations in Minnesota.

A special feature of the 1998 calendar is a page celebrating the anniversaries and achievements of the Minnesota Landscape Arboretum and the Horticultural Research Center.

The "Minnesota Gardening 1998" calendar is sold at county offices of the University of Minnesota Extension Service. Or you can place a credit card order by calling (800) 876-8636 or (612) 624-4900; ask for item MI-5741-NR. The calendar costs \$8 (\$7.20 if you buy four or more) plus applicable shipping and sales tax.

Proceeds from the sale of the calendar help finance extension's Master Gardener program and the development of new educational materials.

Brown is a faculty member in the university's College of Agricultural, Food, and Environmental Sciences.

#

Web,A4MN,G1MN,V4MN,V7,SelMedia

NAGR5616

Source: Deborah Brown (612) 624-7491, dbrown@mes.umn.edu
Editor: Jennifer Obst (612) 625-2741, jobst@mes.umn.edu

September 30, 1997

Apply phosphorus, potassium according to soil test values

It's a waste of money to broadcast fertilizer containing phosphorus or potassium when soil test values for these elements are in the high or very high range. Crops won't benefit from the fertilizer, says George Rehm, soil scientist with the University of Minnesota Extension Service.

"Applying low rates of phosphorus and potassium is a good idea when soil test values are in the high range," says Rehm. "In this situation, however, banding is a better choice for application than broadcasting."

Rehm says either broadcast or banded applications of potassium and phosphorus are effective when soil test values for these elements are in the low or very low range.

Rehm is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4

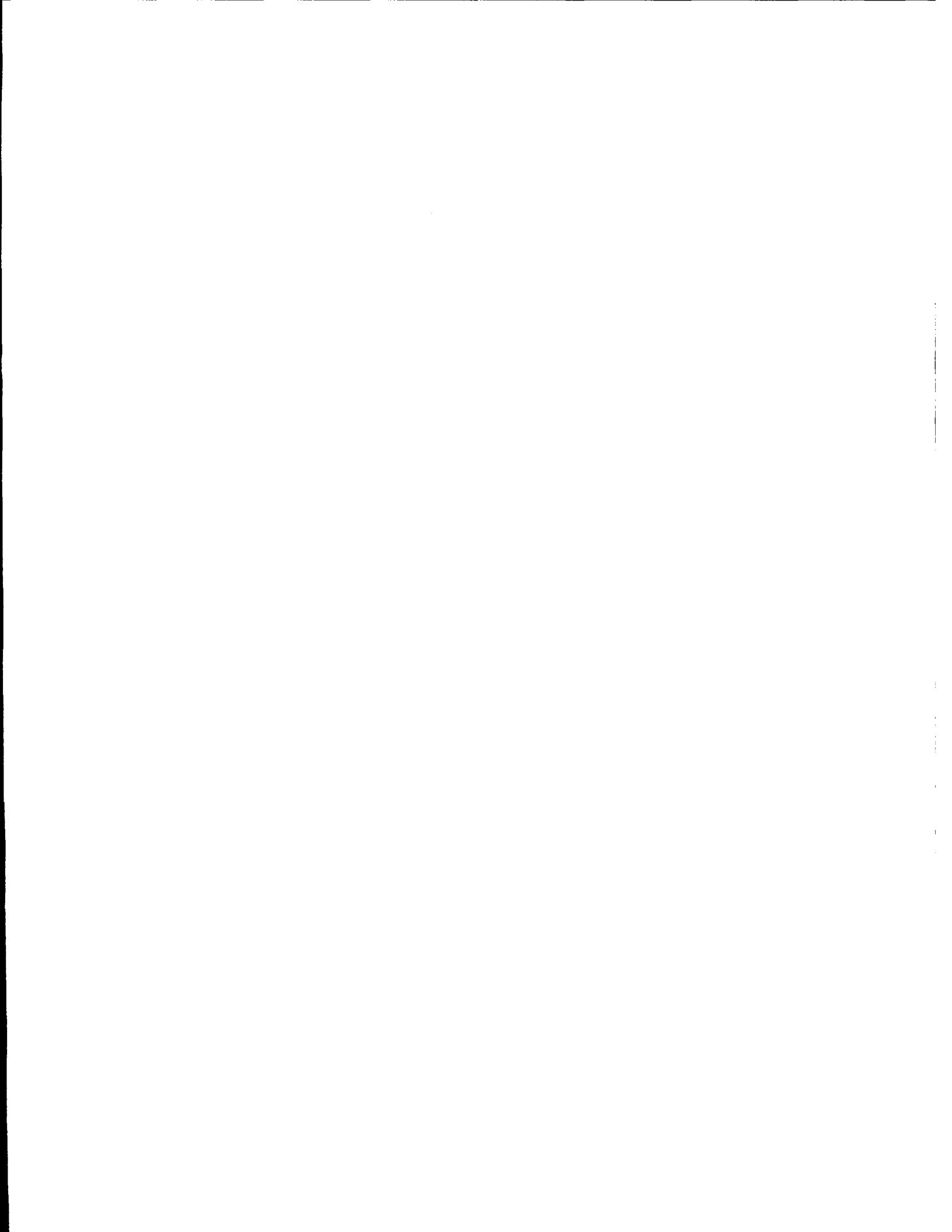
NAGR5615

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





September 30, 1997

Editor: Contact Jennie Y. Rominger, (612) 625-6294 or news@mes.umn.edu, to obtain a 35mm color transparency or black-and-white print to use with this story.

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#

Web,A4MN,G1MN,V4MN,V7,SelMedia

NAGR5616

Source: Deborah Brown (612) 624-7491, dbrown@mes.umn.edu
Editor: Jennifer Obst (612) 625-2741, jobst@mes.umn.edu

October 2, 1997

Red River Valley flooding during 1800s was as serious as 1997 flooding

Flooding in the Red River Valley during the 1800s was as bad or worse than the 1997 flooding, and caused a comparable level of human suffering. That's what the historical record shows, says a University of Minnesota scientist who has studied 19th century documents compiled by the U.S. Department of Agriculture.

"The history of flooding in that area is often forgotten," says Dave Mulla, a professor in the Department of Soil, Water and Climate. "There were several very large floods in the 1800s in the Red River Valley. According to the records, the worst were in 1897, 1852 and 1826."

He says a flood in the Red River Valley 100 years ago, in 1897, left 50,000 people homeless, and a number of lives were lost. That information is in a report compiled in April of 1897 by the Climate and Crop Service, which was a USDA agency. The number left homeless was a high proportion of the people living in the area, because, as Mulla says, "the population was not very big in those days."

The report says an area 30 miles wide and 150 miles long was inundated. "Property loss was enormous over an area of 4,500 square miles," says Mulla. "The report says whole counties were left with hardly a bridge, and roads were badly damaged. Railroads suffered severely from interruptions to service and damage to railroad beds."

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The flood began April 1 and by April 10, the river had reached 50.2 feet at Grand Forks, N.D. This was very similar to the stage reached in 1997, says Mulla.

The 1897 flood caused weather recorders to look back to previous years for comparisons, says Mulla. The records indicated that catastrophic flooding occurred in 1826, resulting from very heavy snowfall during the winter of 1825-26.

"The snow melted suddenly about the last of April," says Mulla. "Ice, ripped away by the violence of the current, uprooted trees and demolished buildings. Fish, a principal source of food, were dispersed by floods and could not be caught. The bison that ordinarily grazed by the river migrated away. The reports says 15 people died of starvation from not being able to catch fish or hunt bison.

"The distress that was produced by the flood of 1826 caused most of the people in the region to move out of the area."

The records show that in 1826 the river rose to 66 feet at Pembina, N.D., some 8-10 feet higher than in 1997. And in 1852, another massive flood lifted the river to 67 feet at the same location.

Mulla says the massive floods of the 1800s were all caused by a large winter snowpack that melted rapidly. "But even in 1897, there was not as much snow as in 1997," he adds. "There was record snowfall in 1997 in the Red River Valley. Some places received as much as 110 inches of snow. The amount of water held in the snow was as much as eight inches."

"All of the massive floods in the Red River Valley have been due to climatic effects," he continues. "Drainage of land for agricultural purposes cannot be the reason

(more)

for the flood of 1997. Floods of greater magnitude occurred in the previous century when there was no agricultural drainage and when snowfall was less than in 1997.

"For floods of lesser magnitude, the influence of climate may not be as great as in 1997 and 1897."

Mulla says what made the flood of 1997 so severe in terms of distress and property damage is that more people are living in the river basin now than in the past. "People feel safe building in the floodplain, not knowing that every 100 years, maybe even every 50 years, a devastating flood hits the river valley," he says.

Mulla holds an endowed chair at the U of M, the W.E. Larson Chair for Soil and Water Resources. His work focuses on interpreting the effects of a variety of factors on soil and water quality. He is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2,V4MN,V5MN,V9,C4,F4,Z1

NAGR5618

Source: Dave Mulla, (612) 625-6721

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



October 6, 1997

University of Minnesota plans educational tour to Washington, D.C.

Attractions such as the Smithsonian Institution and the U.S. Capitol will highlight a six-day University of Minnesota educational tour to Washington, D.C., during April 1998.

This "Wonders of Washington" tour will provide an opportunity to learn more about our national heritage while enjoying the spring beauty of the nation's capital. Additional tour highlights include the Kennedy Center, the Supreme Court, Arlington Cemetery, the National Cathedral, the Vietnam and Korean War Memorials, a show at Ford's Theater and a dinner cruise on the Potomac River.

The "Wonders of Washington" tour, sponsored by the U of M Extension Service, has two schedule options. The first is to depart April 18 and return April 23; the second is to depart April 25 and return April 30. The tour includes round trip airfare from the Twin Cities. Cost is \$1,089 per person (double occupancy), and a \$100 discount is available through Nov. 30, 1997.

For more information, contact Leon Meger, University of Minnesota Extension Service, Extension Special Programs, 405 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108-6068; telephone (612) 625-2722 or (800) 367-5363.

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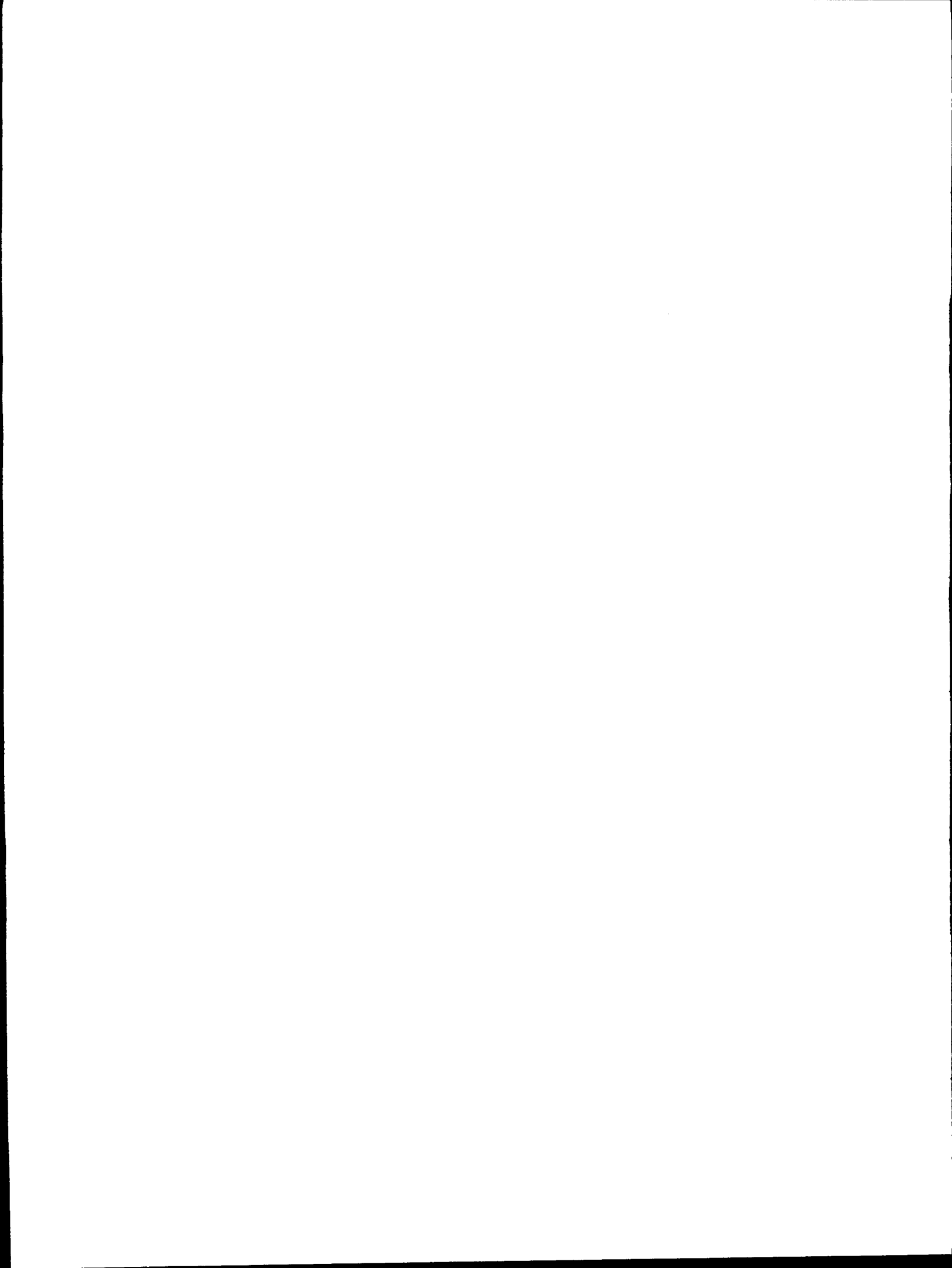
Web,V3,V4MN,V5,V8MN,E2

NESP5620

Source: Leon Meger, (612) 625-1214, (800) 367-5363
Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

(Page 1 of 1)





October 10, 1997

Minnesota Pork Conferences set at 4 locations

Pork profitability will be the objective of the Minnesota Pork Conferences scheduled at four locations in early December. The University of Minnesota Extension Service and the Minnesota Pork Producers Association are sponsoring the events.

The conferences will be Dec. 3 at Morris at the West Central Experiment Station, Dec. 4 at Worthington at the Ramada Inn, Dec. 9 at Austin at the Holiday Inn and Dec. 10 at Mankato at South Central Technical College. They are designed for producers, agribusiness professionals, and others with an interest in pork production. They will take the place of the Swine Health Clinics and the Swine Day programs of previous years.

General session topics and speakers at all four sites will be:

--What's ahead in the pork industry, John Lawrence, economist, Iowa State University.

--Artificial insemination, Kevin Rozeboom, animal scientist, U of M.

--Meeting consumer preferences for pork, Bob Morrison and Thomas Blaha, veterinarians, U of M.

--New environmental modules, Jim Zahn, USDA scientist with the National Soil Tilth Lab, Ames, Iowa.

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Following the general session there will be three breakout sessions. Each of these sessions will cover a variety of topics, and the topics will vary somewhat according to location. One session will be on adapting technology for herds with 200 sows or less. Some of the topics will be on using consultants, getting started with artificial insemination, biosecurity, feeding, and niche marketing. Another session on environmental issues will cover such topics as community relations, the effects of nutrition on manure, odor, and mortality composting. A third session will focus on employer-employee relations.

To obtain a registration brochure or additional information on the Minnesota Pork Conferences, contact Jan Swanson, Veterinary Outreach Programs, University of Minnesota, at (800) 380-8636 or (612) 624-2268; the West Central Experiment Station at (320) 589-1711; or the Southern Experiment Station at (507) 835-3620.

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Web,V2,S2,07,50,53,80

NAGR5622

Source: Jan Swanson, (800) 380-8636; (612) 624-2268

Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

October 14, 1997

Fall urea application brings risk of nitrogen loss

Applying urea as a source of nitrogen fertilizer in the fall means taking a risk of losing some of the nitrogen before a crop can use it. But the risk is lowest in western Minnesota, says Mike Schmitt, soil scientist with the University of Minnesota Extension Service.

"In western Minnesota, the probability of rainfall is lower," says Schmitt.

"Therefore, using either urea or anhydrous ammonia as a nitrogen source is considered a best management practice (BMP)."

Research indicates, however, that there is a greater risk that fall-applied urea will produce a lower yield than anhydrous ammonia over the long run, says Schmitt. "In most years," he notes, "there probably will not be a significant yield difference, but in a few years, urea will provide inferior yields to anhydrous."

In south central and central Minnesota, fall urea application is not considered a best management practice, says Schmitt.

The U of M soil scientist says the risk of nitrogen loss from denitrification tends to be somewhat greater with fall-applied urea than with anhydrous ammonia.

"Anhydrous ammonia is always applied in a band, and urea is generally broadcast," he notes. "With banding, the ammonium is exposed to fewer bacteria in the soil that will convert it to nitrate. Thus, banded N converts to nitrate more slowly.

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"In addition, anhydrous ammonia effectively stops activity of the nitrifying bacteria in the application zone. The anhydrous band has to repopulate with nitrifying bacteria before conversion to nitrate starts. Some people refer to anhydrous ammonia as being its own nitrification inhibitor, since it sets back nitrifying bacteria."

If you do decide to apply urea this fall, Schmitt recommends waiting until soil temperatures are consistently below 50 degrees at a 6-inch depth. Urea performance is more sensitive to fall application timing than anhydrous ammonia. Any fall-applied urea should be incorporated, either by tillage or rainfall, within four days, Schmitt emphasizes.

What about impregnating urea with N-Serve or Agrotain? "Although N-Serve is labeled for urea, it's important to remember that N-Serve is extremely volatile," says Schmitt. "The logistics of impregnating the urea and incorporating it immediately (not an hour later) limit its effectiveness. Using Agrotain is difficult to justify due to the low probability of significant N volatilization in the fall. Remember, N-Serve slows nitrification, while Agrotain only affects volatilization."

Schmitt is a faculty member in the university's College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4

NEXP5633

Source: Mike Schmitt, (612) 625-7017

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

October 14, 1997

Careful soil sampling important with grid cells

Timing is not an important factor when taking soil samples to test for phosphorus and potassium from fields divided into grid cells. Grid cell size and sampling system are more important considerations, says John Lamb, soil scientist with the University of Minnesota Extension Service.

"Research has shown that when testing for P and K, results are equally reliable regardless of whether samples are collected in the spring or fall," says Lamb. "However, soil samples should not be taken immediately after fertilizer application. The results will be quite variable and incorrect. And winter soil sampling for K has caused problems in obtaining good results and is not recommended."

Lamb says research shows that the smaller the grid cell size, the better an area can be evaluated for yield response to fertility. "Some fields or areas of fields may require different grid cell sizes because of varying landscape features and past management," he says. "The limiting factor for grid cell size is economics, since using smaller grid cells increases sampling and analytical costs."

Lamb says combining samples from more than five locations within a grid cell provides the best characterization of nutrient levels. Avoid taking samples from areas with soils that aren't typical of the rest of the cell, he adds. This means learning to

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identify these different areas, rather than relying on an electronic device to determine sample locations.

"Be sure to take samples at a consistent depth," he adds. "With reduced tillage, immobile nutrients become stratified in layers. When this happens, sampling at different depths can give very different results."

Lamb is a faculty member in the university's College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4

NEXP5634

Source: John Lamb, (612) 625-1772

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

NEWS INFORMATION

MES
8/10/97
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<http://www.mes.umn.edu/News>

October 17, 1997

Sheep program will be Dec. 5-6 in St. Cloud

A program on profitable sheep production that includes presentations by four University of Minnesota faculty members will take place Dec. 5-6 at the Kelly Inn in St. Cloud. The event is the Shepherd's Holiday sponsored by the Minnesota Lamb and Wool Producers Association. It's designed for all persons interested in sheep production, and includes a youth program and trade show.

The program begins at 1 p.m. Dec. 5 with presentations by two South Dakota State University extension sheep specialists. Jeff Held will discuss predicting target market weights for finished lambs, and Lowell Slyter will discuss management keys for fall lambing. There also will be panel presentations on predator control and producer questions.

The evening banquet speaker will be Paul Rodgers, American Sheep Industry Association representative. His topic will be the sheep industry's future.

Topics and speakers Dec. 6 will be:

--Retaining and increasing sheep numbers in Minnesota, Bob Koehler, U of M extension educator.

--Using the Internet, Ron Parker, computer consultant and author.

--Food safety issues, BSE, and scrapie, Rodgers.

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- Feeding lambs to heavier weights, Held.
- Fall lambing management, Slyter.
- Contract selling panel chaired by Dale Carter, U of M extension educator.
- Controlling pasture weeds, Greg Cuomo, U of M sheep specialist.
- Wool mills panel chaired by Bob Padula, U of M extension educator.
- Sheep production in Mongolia, Linda Johnson, Wisconsin sheep producer and shop owner.

For registration or other information, contact Pat Ryan at (612) 459-8554.

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Web,V2,V4MN,S1,X6

NAGR5635

Source: Cindy Wolf, (612) 625-1780, (612) 625-7755
Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

October 24, 1997

Red River Valley soybean growers need to limit iron chlorosis

Managing soybeans to limit the impact of iron chlorosis is important for growing the crop successfully in the Red River Valley. Iron chlorosis is a major problem for soybean growers in the region, says George Rehm, soil scientist with the University of Minnesota Extension Service.

"This yield-limiting condition usually shows up where calcareous soils stay cool and wet for extended periods of time," says Rehm. "There is always ample iron in the soil, but soil conditions prevent or reduce the uptake of iron by soybean plants."

Variety selection and cultivation are management strategies soybean growers can use to reduce the severity of iron chlorosis, says Rehm.

"The number of short-season varieties tolerant of iron chlorosis is limited," he points out. "However, there are some to choose from and seed sales representatives should know about them. Cultivation is also effective. It allows for more rapid exchange of oxygen and carbon dioxide between the soil and the atmosphere, thereby reducing the severity of iron chlorosis damage. Because of the value of cultivation, narrow-row soybeans are not a good idea in fields where iron chlorosis is a problem."

Research has shown that acid-forming fertilizer at economical rates has not reduced iron chlorosis severity, says Rehm. He adds that ammonium sulfate has also failed to correct the problem when tested in the field.

(over)



Rehm is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4,Z1

NEXP5636

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

October 24, 1997

Check soil fertility for Red River Valley soybeans

Fertilization is a key factor in successful soybean production in the Red River Valley. Soybean acreage is likely to be up in the region in 1998, says George Rehm, soil scientist with the University of Minnesota Extension Service.

"It's easy to determine the need for phosphate fertilization by using a soil test," says Rehm. "When soil test values for phosphorus are in the low or very low range, soybean response to phosphate fertilization can be substantial."

Rehm says research indicates broadcast application of phosphate fertilizer is more effective for soybeans than banded application. "For soybeans, applying fertilizer in contact with the seed can affect germination and reduce emergence," he points out. "Therefore, the practice is not recommended. However, by using an air seeder, it is possible to apply fertilizer while planting. Limited information collected during the past growing season suggests emergence is not affected when this method of seeding and fertilizer application is used."

Liquid and dry phosphate fertilizers have an equal effect on soybeans, notes Rehm.

Potash fertilizer may benefit soybeans on a limited number of fields in the Red River Valley. A University of Minnesota Extension Service publication, "Fertilizing

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Soybeans in Minnesota," (FS-3813) provides information on potash fertilization. Rehm recommends checking the publication, which is available at local extension offices, if a soil test shows a potassium level of less than 100 parts per million.

Soybeans are a legume and can use nitrogen from the atmosphere if properly inoculated. However, if carryover of nitrate-nitrogen from previous crops is high, soybeans use the nitrogen from the soil for growth and development. The partnership of the beans with the inoculating bacteria becomes less efficient. This lack of nodulation could lead to nitrogen-deficient soybeans late in the growing season, says Rehm.

"Recent research conducted in the Red River Valley has shown that nitrogen may increase soybean yields in some fields," Rehm notes. "Those are fields where it's difficult to get nodulation and the amount of residual nitrate-nitrogen in the 0-24-inch depth is 75 pounds per acre or less. Using 50 pounds of nitrogen per acre could benefit those fields."

Rehm is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4,Z1

NEXP5637

Source: George Rehm, (612) 625-6210
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu

October 27, 1997

Strong control measures necessary for Johne's disease in dairy herds

Johne's (pronounced "yo-nees") disease is an infectious disease that is becoming a widespread problem in dairy cattle. The disease can weaken animals to the point of death and cause milk production to plunge, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"In a recent survey of Wisconsin dairy herds, one-third of the herds tested positive for the disease," says Kjome. "A national study showed 21 percent of dairy herds across the U.S. are infected. And without strong measures to control the disease, an upswing in infection rates is certain."

Kjome says Johne's disease is a slow-developing disease caused by a strain of bacteria called "Mycobacterium paratuberculosis." These bacteria are closely related to the organism that causes tuberculosis.

Calves and younger cattle are most susceptible to the disease. A calf may become infected with Johne's disease in the cow's uterus before birth. As many as 25 percent of newborn calves from infected cows may be infected at birth. Newborn calves also can become infected by nursing infected cows that have fecal material on their teats, udders and flanks. Milk, even colostrum, may contain the organism. The bacteria can be shed profusely in the manure of infected animals. Fecal contamination of water and feed from shedding animals also can spread the bacteria.

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"After an animal ingests the bacteria, they grow slowly in the wall of the animal's intestine," says Kjome. "Thickening and inflammation of the intestine occurs. The disease begins to suppress milk production during the first lactation of an infected animal. The clinical signs of diarrhea and body weight loss most often appear in the second and third lactations. As the disease advances, it can best be seen in cows and bulls with chronic diarrhea that are continuing to eat, yet slowly wasting away."

There can be a lengthy incubation period during which an animal is infected but shows no clinical symptoms, says Kjome. Several factors affect the length of the incubation period. Some of these are the level of the disease-causing bacteria in the environment due to infected animals shedding the bacteria, nutrient status of animals, general husbandry in the herd, and stresses of production (breeding, milking, crowding, shipping, weather, other diseases). Diagnosis of the disease is best confirmed by laboratory testing and analysis administered by a veterinarian.

Once one animal raised on a particular farm shows clear signs of being infected, it is safe to assume five to ten other animals on the same farm are also infected, says Kjome.

Kjome says the first three steps to control Johne's are to measure prevalence, survey herd management, and design, with a local veterinarian, a program best-suited to the farm.

"According to University of Wisconsin veterinarian Mike Collins, major emphasis must be on raising calves that don't become infected and on eliminating infected adults," says Kjome. "Calving hygiene and using milk replacer for young calves rather

(more)

than milk from the cow are critical. So also are culling infected adults, farm sanitation and pre-purchase testing of all adult animals entering the farm."

He adds that testing animals under two years of age is not recommended, and vaccination is not recommended in most states.

"Non-infected herds need to remain free of Johne's disease," says Kjome.

"Producers with infected herds must work hard and smart to keep it under control.

Careful management of calves and animals less than six months old plus a disciplined testing program on animals over two years of age is the best strategy."

Kjome says Johne's is a worldwide problem, with Australia being the leading country in fighting the disease. "All states in the U.S. need to put it on the front burner of animal health and disease control," he concludes.

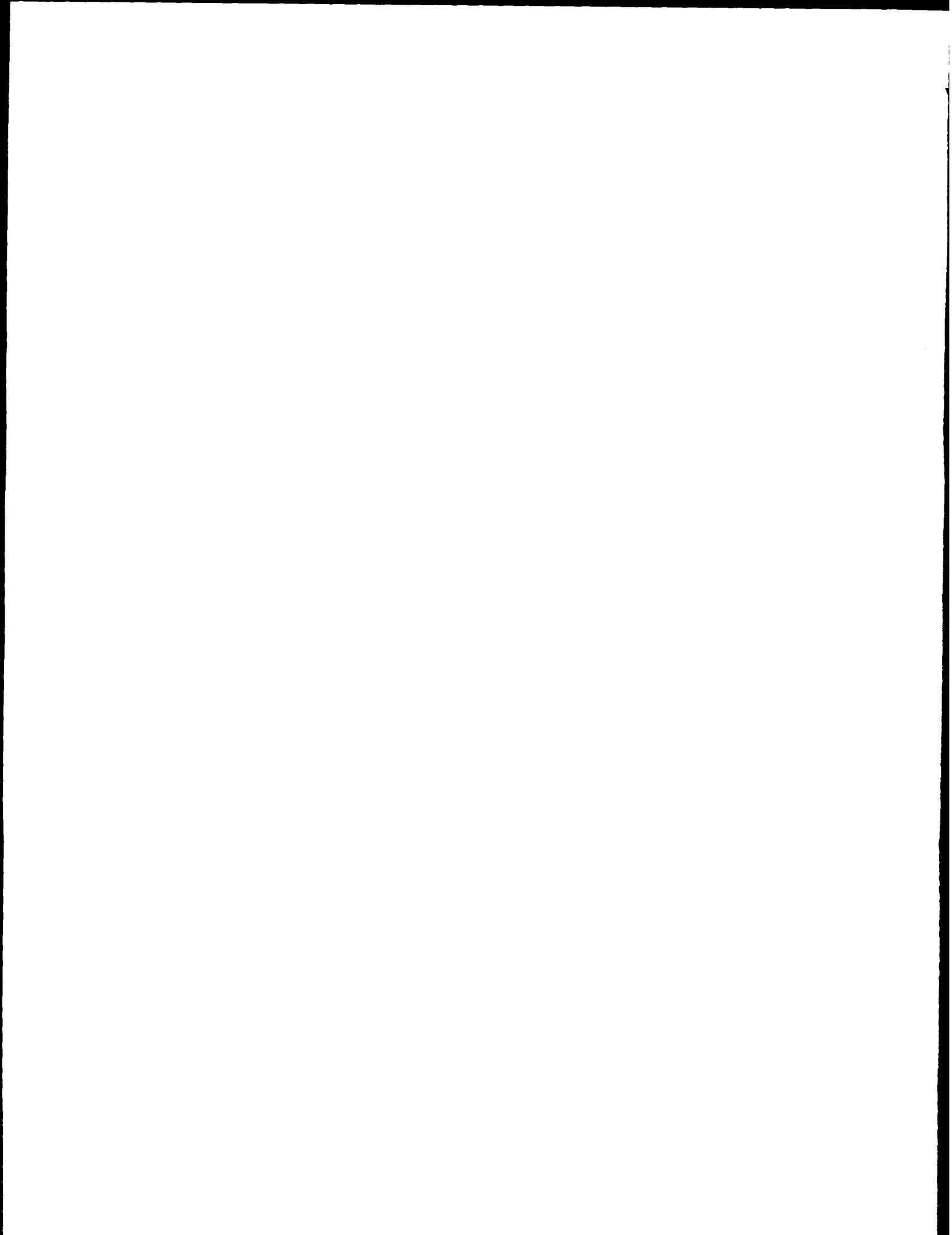
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Web,V2,D1

NAGR5638

Source: Dave Kjome, (507) 280-2863

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@mes.umn.edu



November 13, 1997

Irrigation system must meet crop water needs

Providing enough water for crops during peak water use is an important aspect of successful irrigation. Evapo-transpiration (ET) water needs of the crop are a key factor, says Jerry Wright, engineer with the University of Minnesota Extension Service.

"Minnesota research on field corn suggests that an irrigation system sized to meet an average ET of 0.25 inches per day should prevent plant moisture stress in nine out of ten years for soils holding 2.5 inches to 3 inches of water," says Wright. "High-value crops such as potatoes, when grown on sandy soils, might need an irrigation system that is sized to meet an average daily ET of nearly 0.3 inches per day to assure flexibility for the irrigation manager."

The table below lists the necessary pumping capacity in gallons per minute (gpm) per acre for selected ET rates and daily pumping times.

Peak ET in./day	IRRIGATION PUMPING CAPACITY (Gallons per minute per acre)			
	Pumping hours per day			
	16	20	22	24
0.15	5.0	4.0	3.6	3.3
0.20	6.7	5.3	4.8	4.4
0.25	8.3	6.7	6.1	5.6
0.30	10.0	8.0	7.3	6.7

"It's nearly impossible to operate most irrigation systems 24 hours per day," says Wright. "So make a careful assessment of available labor and the selected sprinkler

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system before identifying a minimum pumping capacity."

The pumping capacities in the table are calculated for a center pivot system, assuming an irrigation water application efficiency of 85 percent. Some sprinkler systems, such as traveling guns, have a slightly lower application efficiency, says Wright. GPM capacities, therefore, need to be increased by at least ten percent for these systems.

To estimate the minimum irrigation pumping rate in gallons per minute necessary for a proposed field site, multiply the appropriate pumping capacity from the table by the number of acres to be irrigated. For example, 100 acres x 6.1 gpm/acre = 610 gpm for 0.25 in/day peak ET and 22 hours per day pumping.

"If the water supply is not capable of yielding this amount, reduce the irrigated acreage, mix low-water-use and high-water-use crops, add a second water source, or cancel the irrigation project," says Wright.

For additional information on irrigation water supply and sprinkler system planning, contact a county extension office in Minnesota or Jerry Wright, University of Minnesota extension engineer, at the West Central Experiment Station at Morris by phone at (320) 589-1711 or e-mail jwright@gaia.bae.umn.edu.

Wright is a faculty member in the university's College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4,X8

NEXP5643

Source: Jerry Wright, (320) 589-1711

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

November 13, 1997

Test-pump well before installing irrigation

If you are planning to use a well as a water source for a new irrigation system, be sure to have the well test-pumped. That's the only way you can know what the water yield will be, says Jerry Wright, engineer with the University of Minnesota Extension Service.

"Pump testing by a licensed water well driller is the only sound way of determining a well's yield ability and how deep the pump must be set to produce a stable rate of flow," says Wright. "Pump testing takes time, and it can cost \$1,000 or more to determine the real yield of a well and the adjacent groundwater aquifer."

Irrigation system designers need information from pump tests to select the right pump, power unit, and nozzle system for the site, notes Wright. He says if a pump test is not done properly, an irrigation system cannot be designed to operate efficiently and reliably.

Wright recommends consulting with one or more local irrigation well drillers, the area Department of Natural Resources hydrologist, the local Soil and Water Conservation District office, and other area water resources specialists when investigating the water availability for a proposed irrigation system.

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*Wright is a faculty member in the university's College of Agricultural, Food, and
Environmental Sciences.*

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Web,V2MN,F4,X8

NAGR5644

Source: Jerry Wright, (320) 589-1711

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

November 14, 1997

Rewetting may be option for dry stored soybeans

The dry condition of some of the soybeans harvested this fall has prompted some interest in adding moisture to the beans before selling them. The moisture content normally used for trading soybeans is 13 percent, notes Bill Wilcke, engineer with the University of Minnesota Extension Service.

When soybeans are delivered to a buyer, the total weight is divided by 60 pounds per bushel to calculate the number of bushels. If soybeans are delivered to a buyer at a moisture content below 13 percent, the number of bushels is not adjusted upward to a 13 percent moisture basis, says Wilcke. This means the amount sellers are paid is less than they would receive if the beans were at 13 percent moisture. This also means that sellers have an incentive to rewet dry beans to 13 percent moisture.

"It is definitely illegal to add liquid water to any grain or oilseed to increase moisture content, and weight, for sale," says Wilcke. "But federal agencies have recently ruled that it is not illegal to force humid air through a crop to increase moisture content."

One way to rewet soybeans is to use a humidistat to control a fan that moves outdoor air through beans in a bin. "It appears that for typical Midwestern fall temperatures, if your target moisture is 13 percent, the humidistat should be set to turn

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the fan on when the relative humidity exceeds about 70 percent," says Wilcke.

"However, if the fan operates much above 70 percent, soybeans will rewet to levels well above 13 percent. Soybeans can be safely stored through the winter at 13 percent, but they are likely to mold during warm weather if the moisture is much above 13 percent."

Wilcke cites a study at Purdue University in which researchers used relatively high airflow (0.5 to 1.0 cubic feet of air per minute per bushel of beans) to rewet some 10 percent moisture beans. The researchers were able to increase the weight of the beans enough to more than compensate for the cost of electricity to run the fans. But they ended up with one-third of the beans too wet and two-thirds of them still at their initial moisture. This means that ability to mix the beans would be essential for successful storage and marketing.

Since soybeans swell when they absorb moisture, Wilcke says it seems possible that rewetting beans could damage bins. "Using a vertical stirring auger to mix layers of dry and wet beans might be one way to reduce pressure generated during wetting," he points out.

If you do try to rewet soybeans, Wilcke offers the following tips for increasing chances of success:

--If possible, use a negative pressure system that pulls air down through the soybeans. This will keep fan heat from working against you, and it will leave the rewet beans at the top of the bin. There you can more easily monitor their condition and can more easily remove them from the bin, if necessary.

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--After you've rewet a layer of beans, use a vertical stirring auger, or move the beans to mix the wet and dry layers.

--Use timers, humidistats, programmable controllers, or some type of automatic control to limit fan operation to weather conditions that will cause rewetting. If you don't have the ability to mix dry and wet layers, it also might be necessary to add a control that stops the fan during weather conditions that rewet beans to moisture levels that are too high for safe storage.

--Keep rewet beans cool (20-30 degrees Fahrenheit is the suggested winter storage temperature in the upper Midwest) to reduce chances of spoilage.

--Watch carefully for signs of moldy beans and for excessive stress on the bin.

An information sheet written by Wilcke on "Considerations for Rewetting Soybeans" contains additional details. Copies of the information sheet are available through county offices of the University of Minnesota Extension Service.

Wilcke is a faculty member in the university's College of Agricultural, Food, and Environmental Sciences.

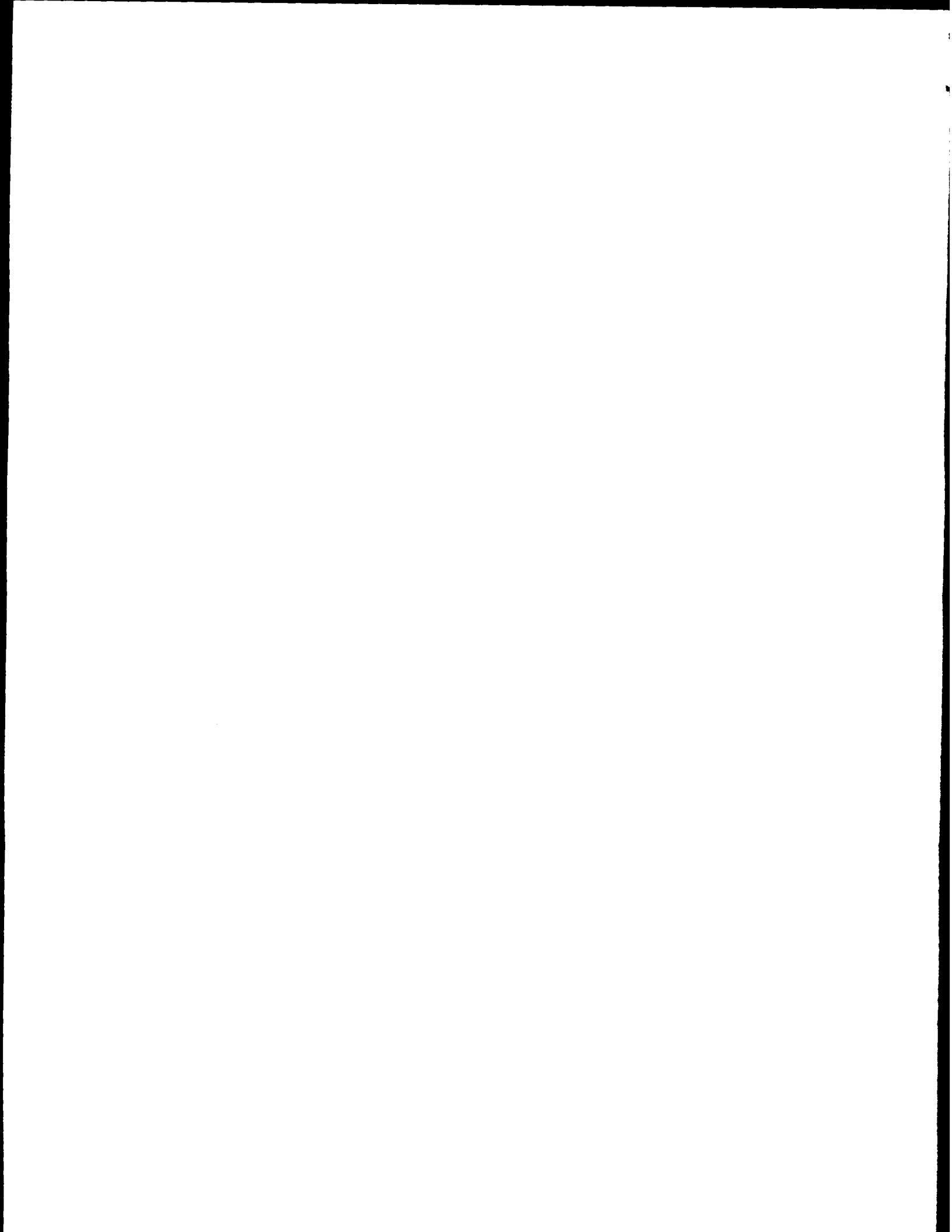
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Web,V2,F4

NEXP5646

Source: Bill Wilcke, (612) 625-9733

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu



November 14, 1997

Warm harvest weather boosts spoilage potential for stored corn

A significant portion of Minnesota's recently harvested 1997 corn crop is ripe for spoilage. Some of the stored corn is too warm and some is too wet, according to Bill Wilcke, engineer with the University of Minnesota Extension Service.

The warm, dry fall weather that was ideal for harvesting has contributed to potential storage problems, says Wilcke. "Any corn that was combined when temperatures were 60 to 80 degrees Fahrenheit and has not been aerated since harvest is likely to still be at its harvest temperature," he points out. "Corn temperatures of 60 to 80 F are too high for safe storage, because that is near the ideal range for molds and insects to grow and reproduce.

"Our target temperature for winter grain storage in the upper Midwest is 20 to 30 F. Check your stored corn and if you find temperatures greater than 30 F, regardless of corn moisture, run aeration fans in late November or early December to cool all the corn in the bin to 20-30 degrees Fahrenheit."

Some of this year's corn was also stored wetter than normal, says Wilcke. To limit mold and insects, he recommends storing corn to be sold during the winter at 15 percent moisture. Corn that will be held until the following summer should be stored at 14 percent, and any corn that will be kept a year or more should be stored at 13 percent moisture.

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"On a number of farms this year, corn dried quickly to 15-18 percent moisture in the field and went directly into storage without any artificial drying," he says. "In some cases, farmers bypassed gas-fired dryers to save time and money and to avoid the risk of overdrying the corn." (The controls on many gas-fired dryers don't work very well when the initial corn moisture is less than 18 percent, he notes.)

There are other cases where farmers used gas-fired dryers during warm weather. They ended up with high storage moisture because the corn didn't lose the normal amount of moisture during cooling. Wilcke explains that moisture loss during cooling is a function of the temperature difference between the hot corn and the cooled corn. When the weather is warm, cooling potential and moisture loss are both reduced.

You can expect a loss of about 0.25 percentage points of moisture for each 10-degree temperature drop when you remove corn from a gas-fired dryer at a high temperature and cool it slowly or delay cooling for a few hours, says Wilcke. For example, if you cool 140-degree corn on a day when the outdoor temperature is 40 F, you can expect 100 degrees of cooling and about 2.5 percentage points of moisture loss (100 divided by 10 times 0.25 equals 2.5). So if you unload hot corn from your dryer at 17.5 percent moisture on a 40 F day and it stays hot for 4-12 hours before you cool it, you should expect to find 15 percent moisture corn cooled to 40 degrees Fahrenheit in your storage bin. But when it's 80 F outside, you'll only lose 1.5 points of moisture during slow cooling (60 degrees of cooling divided by 10 times 0.25 equals 1.5 points). In that case, corn removed from the dryer at 17.5 percent would end up at 16 percent moisture and 80 degrees Fahrenheit in storage.

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"If you have warm, wet corn in a storage bin that isn't equipped for aeration, it would be best to feed that corn or move it into an aerated bin as soon as possible," says Wilcke. "If corn is in bins equipped with full-perforated floors and large drying fans, it might be possible to dry it this fall using unheated air. Or, cool the corn to 20-30 degrees Fahrenheit, hold it through the winter, and finish drying it in early spring.

"Wet corn in storage bins with low-airflow aeration can be cooled in late November or early December and held safely until spring. However, the corn will not dry much with a low airflow per bushel, and it will be necessary to feed, sell, or dry it before the weather gets too warm next spring."

Wilcke is a faculty member in the university's College of Agricultural, Food, and Environmental Sciences.

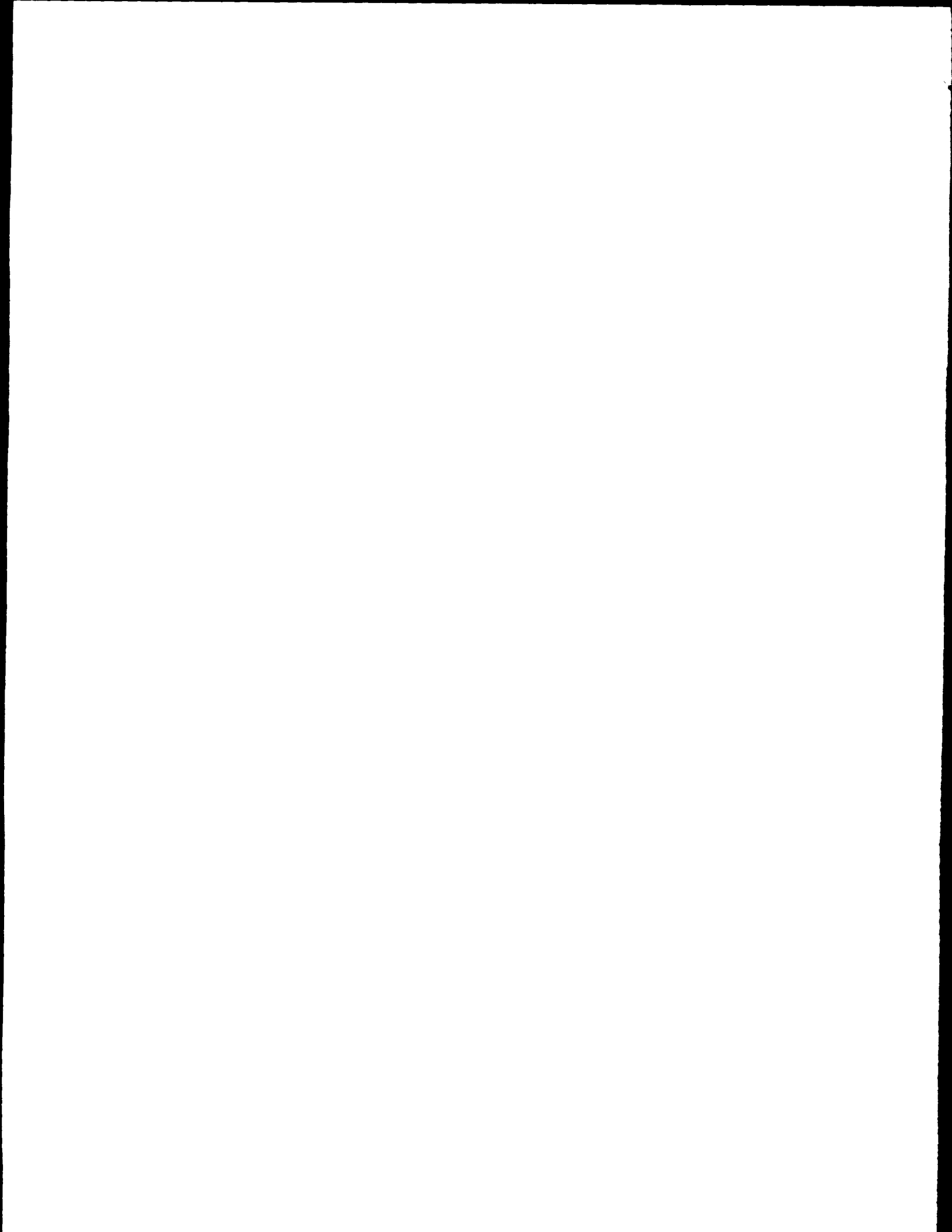
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Web,V2,F4

NAGR5647

Source: Bill Wilcke, (612) 625-8205

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu



NEWS INFORMATION

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November 18, 1997

U of M Cattle Feeder Days will be at Crookston, Morris, Slayton

Strategies for making cattle feeding more profitable will be the focus of the 1997

University of Minnesota Cattle Feeder Days coming up at three locations.

The events will be Dec. 9 at Crookston at the Northwest Experiment Station Auditorium, Dec. 10 at Morris at the West Central Experiment Station Auditorium, and Dec. 11 at Slayton at the VFW Hall. The Minnesota State Cattlemen's Association and the Minnesota Beef Council are co-sponsors.

The program is the same at each location, running from 10 a.m.-3 p.m. Topics and speakers will be:

--Evaluating where money is made and lost in cattle feeding, Dan O'Connor, Big Gain Inc., Mankato.

--Tailoring receiving health programs to cattle origin, Trevor Ames, University of Minnesota veterinarian.

--Tailoring nutrition and management to cattle type and marketing strategy, Brad Johnson, South Dakota State University beef cattle scientist.

--Research update, Alfredo DiCostanzo, U of M beef cattle scientist.

--Use of ionophores, Scott Laudert, Elanco Animal Health, Garden City, Kan.

--Nutrient budgets and manure management, Chad Zehnder, U of M graduate student in animal science.

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--Enhancing beef palatability, Jim Gibb, National Cattlemen's Beef Association,
Denver, Colo.

--Beef checkoff, Ron Eustice, Minnesota Beef Council.

There will be a modest registration fee at each location. For registration or other
information, contact Larry Smith at Crookston at (218) 281-8602, Bill Zimmerman at
Morris at (320) 589-7423, Bob Koehler at Slayton at (507) 836-6148.

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Web,V2MN,B1,X1,51,80

NAGR5648

Source: Alfredo DiCostanzo, (612) 624-1272

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

November 20, 1997

Plan dairy herd liquidation to maximize income

If you are a dairy producer getting ready to sell your herd, your earnings from the sale will depend a great deal on advance planning and effort. How, when, and where you sell the herd are crucial, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"Liquidating a dairy herd is usually a once-in-a-lifetime experience," says Kjome. "Why not capitalize on it for retirement funding or to move into another business or career?"

Kjome cites an advertisement he saw recently for a community auction sale of four small dairy herds. Two of the four sets of cows were listed as bred to a beef bull. In addition, the ad listed no official Dairy Herd Improvement Association (DHIA) records. Herd health history was listed for only one herd.

"The story following the sale will probably be that the majority of cows brought a cut above cull cow price, and the tail-enders sold for slaughter value," he says. "That's a rather sad ending. The auction sale barn staff is not to blame. They are merely an agent between the seller and buyer. The price is set in a few minutes as animals enter and exit the sale barn ring."

Kjome says most dairy herds with limited background information are bringing \$600 to \$900 per cow. "Recently, a herd of grade Holsteins with a DHIA rolling herd

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average of over 22,000 pounds of milk sold in an area auction barn for an average of \$1,275 per cow," he says. "Neighbors lined up three deep around the sale ring to bid on and purchase the animals. The cows came with bona fide production information and cow and herd health history. They were sired and bred with artificial insemination, had good body condition, and were ready to go to a new home and make some money for their new owners."

Kjome says today's dairy producers are educated and are looking for quality when purchasing replacement animals. They are likely to want cows equal to or better than those already in their herd. They are willing to pay extra dollars for replacements that meet their production and health standards.

"A producer planning to liquidate a herd should anticipate well in advance of the auction date how to maximize income from the sale," Kjome concludes.

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Web,V2,A2,D1

NAGR5654

Source: Dave Kjome, (507) 280-2863

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

November 25, 1997

New publication focuses on Bt corn, resistance management

Questions about how to use Bt corn, its added cost, and the dangers of corn borer resistance to Bt are addressed in a new publication available through the University of Minnesota Extension Service.

The four-color, 18-page publication is titled "Bt Corn & European Corn Borer: Long-Term Success through Resistance Management." It's a North Central Regional Publication, designated NCR 602 (BU-7055-NR1). It's designed for corn producers, agribusiness personnel, crop consultants, agronomists and educators.

The publication was developed with input from over 35 entomologists representing 20 universities, eight seed companies, the Environmental Protection Agency and the U.S. Department of Agriculture. The publication is designed to be open and easy to read, and uses 15 photographs, seven figures and a table to illustrate key concepts. It also contains a glossary that defines key terms relating to transgenic technology.

The prospect of widespread use of Bt technology has raised concerns about European corn borers developing resistance. The publication provides background information on resistance and advocates strategies for resistance management. It also

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has information on such topics as corn borer management, how Bt works and the economics of Bt use.

Copies of NCR 602 (BU-7055-NR1) are available for purchase from county offices of the University of Minnesota Extension Service. They are also available from Extension's Distribution Center by calling (800) 876-8636 or (612) 624-4900.

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Web,V2,V4,F4

NAGR5656

Sources: Bill Hutchison, (612) 624-1767; Ken Ostlie, (612) 624-9272
Writer: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

December 3, 1997

Check breeding program for Roundup-ready soybean varieties

If you're planning next year's soybean crop and considering a Roundup-ready variety, check carefully before making a selection. Otherwise, you may not get the yields you're looking for, says Jim Nesseth, extension educator with the University of Minnesota Extension Service.

"Producer testimonies on Roundup-ready soybean varieties harvested in 1997 have ranged from 'about the same' to significantly lower than conventional varieties," says Nesseth.

He recommends that producers ask seed suppliers questions about the breeding program of available varieties. Jim Orf, soybean breeder in the U of M College of Agricultural, Food, and Environmental Sciences, agrees.

"Yields may be lower with a Roundup-ready variety if the seed company hasn't taken the time to properly back-cross out the undesirable traits of parent material possessing the Roundup-ready gene," says Orf. "Many seed companies may have rushed commercial production of Roundup-ready seed. They may not have back-crossed the genetic material enough to recover the complete genetic makings of the desired parent material."

Orf says it normally takes at least five back-crosses to recover most yield or other desirable genes while maintaining the presence of the Roundup-ready gene. He says the

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original cross keeps 50 percent of the parent material. One back-cross will recover 75 percent of the parent material, two back-crosses 87 percent, three back-crosses 93 percent, and four back-crosses 96 percent.

"Most of the parent materials possessing the Roundup-ready gene were of group 3 or 4 maturity," Orf points out. "If rushed to commercial production they may possess some undesirable characteristics."

Orf recommends that producers ask seed suppliers to provide yield data from different locations over two or more years. It's then possible to compare performance with that of current varieties that don't have the Roundup-ready gene.

"The yield data given to producers may not be for the variety they are actually buying because of the seed companies' rush to meet demand for Roundup-ready technology," cautions Orf. "During the past year some people only asked if a soybean variety had the Roundup-resistant gene and did not consider other agronomic factors when purchasing seed."

Theoretically, Roundup-ready beans should not have lower yields if varieties have been back-crossed clean, says Orf. However, some plant breeders believe there might be some linkage in the DNA that could reduce yield when the Roundup-ready gene is back-crossed in earlier-maturing varieties.

"In the next couple of years, the performance of Roundup-ready varieties should improve much faster than the performance of soybean cyst nematode-resistant varieties has improved during the past decade," Orf adds.

Nesseth says Roundup-ready varieties that are properly screened and evaluated offer producers added weed control and crop tolerance options. "This technology in varieties with improved agronomic traits will continue to gain market share," he predicts.

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Web,V2,F4

NAGR5657

Sources: Jim Nesseth, (507) 662-5293; Jim Orf, (612) 625-8275
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

December 3, 1997

None of 5 fertilizer additives in Minnesota study increase corn yields

Sales claims of increased corn yields failed to materialize for several fertilizer additives in a 1997 University of Minnesota research trial.

Five additives promoted with various advertising claims were evaluated at two different locations. "The additives had no significant effect on yield or early crop growth at either site," says George Rehm, soil scientist with the U of M Extension Service. "There were small differences in yield averages for the treatments. However, these differences were due to natural variation within the plot areas and not due to the treatments applied."

The products evaluated in the trial were:

- ACA+, a product that contains nitrogen and zinc.
- Awaken, which contains some nitrogen and potassium and unspecified concentrations of various micronutrients.
- Asset PPS, which contains some nitrogen, potassium, phosphorus and micronutrients.
- Amisorb, which claims to help plants develop more fibrous roots.
- A combination of Achieve and Remedy, together containing some potassium, phosphorus and micronutrients.

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For the research trial, the additives were applied at rates recommended by the respective sales personnel at sites in Olmsted County and the Staples Irrigation Center. Grain yields were measured in October.

"In 1997, the additives evaluated did not verify or substantiate the advertising claims," Rehm concludes.

Rehm is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,F4

NEXP5658

Source: George Rehm, (612) 625-6210

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

December 4, 1997

Decline of 'big 3' soybean diseases not likely in 1998

The "big three" soybean diseases in Minnesota in 1997 were soybean cyst nematode (SCN), white mold and phytophthora root rot (PRR). These diseases are likely to be major concerns again in 1998, says Ward Stienstra, plant pathologist with the University of Minnesota Extension Service. He cites three reasons for this prediction.

"First, tillage changes over the years tend to result in better conditions for these diseases to survive and infect soybeans," he notes. "Second, only a limited number of growers use resistant varieties to manage these diseases. Many growers are unwilling to use resistant varieties or unaware of their potential benefits. And third, current production practices are increasing the opportunities for these diseases to develop."

In the case of the cyst nematode, Stienstra says evidence from recent years indicates that using an SCN-resistant variety after one or two years of corn isn't enough to reduce SCN risk. "The better option, after you identify SCN, is to find an SCN-resistant variety suitable for your farm and use it correctly after you reduce SCN egg counts by rotating to a non-host crop," he says. "The corn, SCN-resistant soybean variety, corn rotation is not effective enough to continue using SCN-susceptible soybeans in the rotation."

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Stienstra says seed can be a source of white mold, also called sclerotinia stem rot. "It appears that some seed lots have low levels of white mold present," he says. "These few seeds, while they do not produce a soybean seedling, can be completely colonized by the white mold fungus. The infected seeds produce sclerotia that can germinate in the soil and produce the disease."

Soybean samples from the 1997 crop show at least as much PRR as in previous years, Stienstra points out. "The race determinations are not complete, since this is a winter project," he says. "However, a field test indicates a 4.9 bushel-per-acre advantage for a variety with resistance to Race 3 of PRR, compared with a variety with resistance to Race 1. Other samples show that even varieties with resistance to Race 3 are showing PRR."

Stienstra is a faculty member in the university's College of Agricultural, Food and Environmental Sciences.

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Web,V2MN,F4

NAGR5659

Source: Ward Stienstra, (612) 625-6290
Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

December 9, 1997

Composting is the natural way to dispose of dead animals

A new project to evaluate composting cattle, hogs and sheep carcasses has started at the University of Minnesota's Southern Experiment Station, Waseca.

The poultry industry has used composting successfully for years, and this project will help fine-tune procedures for other animals. In addition to the Waseca research, there are demonstration sites on commercial hog operations. "Hog producers are very disease-conscious," says Roger Walker, a researcher at the Waseca station.

On-farm composting can help prevent spreading disease to other hog units. It's also more aesthetically pleasing to dispose of carcasses promptly. The carcasses are covered with a biological filter, usually either sawdust or poultry litter, that absorbs odors from the decomposing carcasses.

Once composting is complete, a manure spreader is used to spread the product on fields as a fertilizer. "This product is better for the land than partially decomposed bedding in manure," Walker says, since the latter must temporarily "rob" nitrogen from the soil for the decomposition process to work.

Walker says there are two basic approaches to composting animal carcasses: a passive system, which takes about six months; and a more aggressive approach where carcasses are turned every two to three weeks to speed composting. With the more active process, the carcasses become fertilizer in six to eight weeks.

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The Minnesota Department of Agriculture's Board of Animal Health is a project sponsor (and has issued a special permit since it's illegal to compost cattle in Minnesota). Other sponsors include the Minnesota Pork Producers' Association and the Agricultural Utilization and Research Institute (AURI).

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Web,A4,S2,P1

NEXP5663

Source: Roger Walker, (507) 835-3422

Writer: Jack Sperbeck, EDS, (612) 625-1794, jsperbeck@extension.umn.edu

December 11, 1995

Dairy farm stress can threaten physical, mental health of producers

Low milk prices and escalating expenses are making life difficult for many dairy producers today. The stress can be great enough to pose a threat to health, says Dave Kjome, southeast Minnesota dairy educator with the University of Minnesota Extension Service.

"Feelings of frustration, anger and helplessness develop," says Kjome. "Worry and fatigue add fuel to the feelings. Long hours with no time off for rest and relaxation can lead to depression."

Thinking about the changes in dairy farm life that have occurred through the years can cause producers more frustration, says Kjome. Many can remember a time when lots of families made a decent living just from dairy farming. Later, it became more common for a spouse to work off the farm to provide some extras.

"In the past 10 to 15 years, we have seen an increasing dependency on off-farm income just to keep the dairy farm business going," says Kjome. "Working off the farm, but still doing some chores, managing the household, and raising a family can definitely be stressful."

Comparing lifestyles with those of relatives and friends not in dairying can add to the stress for dairy farmers, notes Kjome.

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What is the best approach to dealing with stress? "Experts agree that each of us must learn to control our actions toward stress," says Kjome. "Keeping an optimistic attitude will do much to improve quality of life. Dairy family members need to vent negative feelings and hurts, but in a manner that won't harm others. Finding humor in difficult situations is one important stress reliever."

He says wives often become the check valve on a dairy farm. "They tend to have an inherent ability to listen, not to be judgmental and to put problems in a unique perspective," he says. "They often move to resolution of a problem rather than dwelling on it for a long time."

Taking good care of minds and bodies is important for dealing with stress. "Family and health experts recommend eating right, exercising, and getting sufficient sleep," says Kjome. "Setting aside time to reevaluate, recharge and refocus on a positive outlook and priorities is a good way to keep life in perspective. Often, faith convictions are a great support in troubled times."

Kjome says anyone struggling with unmanageable or prolonged stress is at risk for health problems. Physical symptoms such as insomnia, high blood pressure and digestive problems, along with alcohol and drug abuse or verbal or physical abuse, all signal that there is overload on the mind and body.

"The good news is there is a safety net of friends, clergy, doctors and mental health professionals available," says Kjome. "It's imperative that people in need seek help immediately."

While a culture of extreme independence and survival often exists on a dairy farm, especially among men, Kjome says it's important not to ignore signals from the mind and body that spell overload. "We must live in today's dairy world, but also manage our lives to remain healthy, both physically and mentally," he concludes.

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Web,V2,V4MN,D1,F1,F2

NAGR5665

Source: Dave Kjome, (507) 280-2869

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

December 16, 1997

Book on building, remodeling dairy facilities available from U of M

Information on building or remodeling dairy facilities is now available through the University of Minnesota in a newly revised book from MidWest Plan Service (MWPS). The book is the recently released sixth edition of "Dairy Freestall Housing and Equipment, MWPS-7."

"This book covers all aspects of freestall dairy facilities, including facility and equipment planning," says Kevin Janni, engineer with the U of M Extension Service.

"The book centers on total herd management by production groups, management by age groups and replacement animal housing."

The book has new information on designing and maintaining the freestall area, designing facilities for housing dry cows and creating a proper milking parlor environment. Other new topics include footbaths, safety passes, personnel passes, raised ridge caps, summer ventilation management, commodity storages and silos. Chapter topics include replacement animal housing areas, milking herd facilities, milking centers, special handling and treatment areas, building environment, manure and wastewater management; feeding facilities; and utilities.

The book contains more than 100 figures that provide design detail for elements such as forward and side lunge freestalls, post and rail feeding fences, brisket boards,

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milking center layouts, manure management systems and ventilation systems. It also includes more than 50 tables that provide specific information and data about topics such as freestall dimensions, minimum feed space requirements, ventilating rates for warm barns and water volumes required for flushing waste.

The price of "Dairy Freestall Housing and Equipment, MWPS-7," is \$22 per single copy, plus sales tax for Minnesota residents. To order, call the U of M Biosystems and Agricultural Engineering Department at (612) 625-9733.

Janni is a faculty member in the College of Agricultural, Food, and Environmental Sciences.

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Web,V2MN,D1,X3

NAGR5670

Source: Kevin Janni, (612) 625-3108

Editor: Joseph Kurtz, EDS, (612) 625-3168, pkurtz@extension.umn.edu

December 19, 1997

Maintain quality of stored wheat, barley

If you have wheat or barley in storage this winter, make sure the grain is dry and cool enough to maintain quality. It's also important to check the grain on a regular basis, says Curtis Nyegaard, extension educator in Kittson County with the University of Minnesota Extension Service.

"Limiting fines during harvest and while filling the bin is a key factor in stored grain quality," Nyegaard points out. "During harvest the combine should be set for minimum grain damage and maximum cleaning. Grain augers should run slowly and full of grain to reduce kernel breakage. The grain can also be cleaned before storage to remove fines."

Nyegaard says fines usually congregate in pockets and restrict airflow, making them more susceptible to attacks by molds and insects. He suggests using a grain spreader while filling the bin to uniformly distribute fines throughout the bins, or else periodically removing fines during filling.

Storing grain at the proper moisture is a key quality factor. "To store wheat for nine months, it should be at 14 percent moisture or less," says Nyegaard. "For longer storage, it should be 13 percent or less. Barley should be about half a percent drier than wheat."

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Keeping grain cool reduces mold and insect activity. "A 60 degrees Fahrenheit grain temperature significantly slows mold and insects," says Nyegaard. "The recommended winter grain storage temperature is 25 degrees Fahrenheit in northern Minnesota. The amount of time required to cool a bin of grain depends on the airflow per bushel provided by aeration fans. The minimum rate is 0.1 cubic feet of air per minute per bushel of grain in the bin. Check the temperature of the air exhausting from the grain, or the grain itself, to determine whether cooling is complete."

Nyegaard recommends checking grain in bins once a month during cold weather. If the temperature warms up, check every two weeks. Probe the grain to check for mold and insects and record the temperature at several locations. The fans should also be started briefly on cool, dry days so you can check the smell of the exhaust air for musty or sour odors.

For more information on good grain storage, contact your county office of the University of Minnesota Extension Service.

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Web,V2MN,F4,X7

NAGR5672

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1998 tax credit up to \$1,500 available to parents of many college students

Quick action by parents of many college students can bring a federal income tax savings of up to \$1,500 when 1998 returns are filed. The new HOPE Tax Credit can provide this savings for those who qualify, says Claire Althoff, extension educator in Wilkin County with the University of Minnesota Extension Service. But parents with dependents who are college freshmen or sophomores may need to act soon to take advantage of the credit.

Althoff says the HOPE Tax Credit eligibility starts on January 1, 1998, and will impact 1998 federal tax returns. The non-refundable credit will reduce the taxes paid by parents of certain post-high school students. The credit is 100 percent of the first \$1,000 of qualified tuition and fees and 50 percent of the next \$1,000 of qualified tuition and fees. Thus, the maximum credit is \$1,500 in 1998, but will be indexed for inflation in the following years.

The credit can be claimed by a taxpayer for expenses incurred on behalf of the taxpayer, the taxpayer's spouse, or a dependent claimed on the tax return.

To be eligible for a HOPE credit, the student must be enrolled in a degree, certificate, or other program leading to a recognized educational credential. The student must be at least half-time or more and never have been convicted of a felony. The

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student must be in the first two years of study to be eligible; third and fourth year college students do not qualify.

The HOPE credit is available in the taxable year expenses are paid. Tuition and expenses paid before January 1, 1998, are not eligible. The credit is phased out for taxpayers with modified adjusted gross incomes between \$40,000 and \$50,000 (\$80,000 and \$100,000 for joint tax returns).

"For parents who have a dependent child who is currently a sophomore in college, 1998 will be the only time the HOPE Tax Credit is available for that child," says Althoff. "In order to take advantage of this opportunity, parents need to pay the tuition that comes due after the first of the year."

She says many parents who have dependent children who are college freshmen and sophomores need to tune into the tax credit right away. If these children have tuition due shortly after the first of the year, the name of a parent needs to be on the check paying that bill.

"Parents who have been providing their dependent child with a monthly allowance may want to pay the tuition and fees instead," notes Althoff. "This way the parent will be able to recover up to \$1,500 back through the credit."

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Web,V4MN,V5MN,V7,V8,A1,A3,F1,F2,F3,H3,N1,Y1

NEXT5671

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