News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 5, 1988

Source: William Schafer
612/624-4793
Writer: Phyllis Jenks
612/625-7793

FRESHLY CAUGHT FISH NEEDS CAREFUL HANDLING

Minnesotans fish a lot, and that means many great fish dinners from our lakes and rivers. But safe, good-tasting meals require some careful handling.

"Fish very often develop off-flavors. To prevent this, keep fish alive as long as possible by using a metal link bag in the water instead of a stringer," recommends William Schafer, food technologist with the University of Minnesota's Extension Service. "Spoilage bacteria, already present on fish, multiply rapidly when fish are kept in warm water after death."

Clean and chill the fish as soon as possible, Schafer advises. This is the best way to prevent spoilage and off-flavors. After cleaning and chilling, fish should be eaten within a day or two.

Freeze the fish to store them longer. Small fish should be frozen whole; large fish, in fillet or steak form.

"Prior to freezing, set your freezer to its coldest setting. Rapid freezing minimizes the time for bacterial growth," Schafer says. "After the fish is frozen, return your freezer to its normal setting. Remember not to crowd packages of fish

together in the freezer and use smaller packages."

Schafer also recommends wrapping in heavy-duty aluminum foil or plastic wrap. To slow the deterioration of the fish, force the air out of the wrap or container.

Freeze sunfish and crappies in a small block of ice by placing them in a shallow pan, covering with ice water and freezing. Once frozen, wrap for freezer storage. If kept at 0 degrees F or less, these fish should be safe for seven to nine months. At the same temperature, northern pike, lake trout and smelt will keep for four to six months and walleye and yellow perch for about nine months.

Thaw fish in the refrigerator or under cold running water. "It is not safe to thaw fish under hot water or at room temperature," Schafer adds.

If you follow these simple practices, you and your family can safely enjoy some good meals together during and after the fishing season.

# # #

AEA,BSS,CEO,H1,L2 NHEC2568

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
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St. Paul, Minnesota 55108

July 5, 1988

Source: Charlotte Eberlein
612/625-8237
Writer: Sam Brungardt
612/625-6797

SCIENTISTS EVALUATE RYE COVER CROP FOR WEED CONTROL IN SOYBEANS

Using a rye cover crop to control weeds in soybeans was one of the research efforts reported on June 28 and 29 during field days at the University of Minnesota's Southern Experiment Station, Waseca, and Southwest Experiment Station, Lamberton.

The research, conducted by University of Minnesota weed scientist Charlotte Eberlein and research agronomists Dennis Warnes and Harlan Ford, is one of the alternatives the Minnesota Agricultural Experiment Station is examining in its quest for cultural practices that reduce the need for chemical inputs and help safeguard the environment.

Using a rye cover crop to suppress weed growth depends on the ability that rye has, thanks to substances the plant produces, to inhibit the germination and growth of plants where the rye grew. Rye is planted as a cover crop, either in the fall or in the spring, then killed with a herbicide shortly before soybeans are planted with a no-till planter in the rye stubble. The system has worked best when the soybeans are planted in narrow rows, Eberlein reported.

She pointed out, "This strategy has several potential benefits over standard cultural practices. First, it can help control soil erosion by wind and water in southeastern Minnesota and erosion by wind in southwestern Minnesota, which is often a problem in the winter and spring. Other benefits are increasing the organic matter content of the soil and reducing the use of herbicides that could contribute to groundwater contamination."

How well has this rather unconventional approach to weed control worked?

From a cost standpoint, the researchers have found no advantage, Eberlein reported. Cost of using a rye cover crop to control weeds in soybeans has averaged $33.50-37.00 an acre, compared to $30.15-34.85 for weed control with Treflan and Sencor.

And, when one considers yields, much depends upon the weather. For example, soybean yields for plots in which weeds were suppressed by a fall-planted rye cover crop averaged 53 bushels an acre in a "wet" year (one in which the soil profile was full of water in the fall). For a spring-planted rye cover crop under similar moisture conditions, soybeans yields averaged 40 bushels an acre because there was less effective weed control.

However, in a "dry" year, soybean yields averaged 28 and 37 bushels an acre for the fall- and spring-planted rye cover crops, respectively.

Weed-free soybeans at the savme locations averaged 54 and 40 bushels an acre, respectively, during the wet and dry years.

Eberlein explained, "Although weed control was better with the fall-planted rye, soybean yields were reduced if the spring was short on moisture. This is because the fall-planted rye used some of the soil moisture that the soybeans would otherwise have benefited from.

"The major risk involved in using a rye cover crop to control weeds is that soybean yields can be reduced if moisture's short in the spring. That's why using a rye cover crop to control weeds in soybeans is more feasible back East, where rainfall is more likely to be adequate."

# # #

AEA,BSS,CEO,V1,C,F,M1 NAGR2571

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 7, 1980

Source: Dave Pace
612/625-3736
Writer: Evelyn Anderson
612/624-3770

4 YOUNG PEOPLE TO LEAD MINNESOTA 4-H FEDERATION

Larry Goelz of Franklin, Minn., is the new president of the Minnesota 4-H Federation, elected at a statewide annual meeting in June. Candace Schilling, Ellsworth, is the new vice president; Barbara Weckman, Shakopee, secretary; and Kay Wolff, Little Falls, treasurer.

The officers were elected by county delegates to the federation's annual meeting during the Minnesota 4-H Junior Leadership Conference at Hamline University in St. Paul. They will preside over the statewide organization for the coming year and will represent 4-H at the Minnesota State Fair, at state and national conferences and other events. Sixteen young people vied for the four offices.

Purpose of the Minnesota 4-H Federation is to further 4-H in all communities, in cooperation with the Minnesota Extension Service. The federation is financed by contributions and dues collected from each county based on member enrollment.

Minnesota 4-H Youth Development is the state's largest out-of-school educational program, providing learning and leadership opportunities to 137,000 young people. It is part of the Minnesota Extension Service, University of Minnesota.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 7, 1988

Source: Mike Schmitt
612/625-1796
Writer: Jack Sperbeck
612/625-1794

DON'T GIVE UP ON CORN CROP

Wait until late July before deciding whether to salvage the weakened corn crop by chopping it into silage.

"Give the plants a chance to recover from current stressed conditions," advises Mike Schmitt, agronomist with the University of Minnesota's Extension Service. He lists these reasons:

--Nitrate levels are probably high, so greenchopping for immediate use is risky.

--Ensiling corn reduces potential nitrate poisoning problems. But corn moisture levels are still 80 to 90 percent--too high for good silage. Seepage would remove 25 percent of the nutrients.

--Yields for both stover and grain have not reached the maximum potential. Rain could still bring increases in dry matter yields and grain production.

The grain component can double the amount of dry matter in a field. If the corn is barren by late July, you can still chop it for silage when moisture levels are lower.

More detailed information is available from the July 8 "Plant Pest Newsletter," available from county extension offices throughout Minnesota.

# # #

News
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Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 7, 1988

Source: Donald L. Wyse
612/625-7064
Writer: Sam Brungardt
612/625-6797

STUDY SEEKS DATA ON FATE OF HERBICIDES ON DIFFERENT SOIL TYPES

"Other than the drought, the impact herbicides are having on groundwater quality may be the most important issue facing agriculture today," Donald L. Wyes said June 28 at Waseca during the Southern Experiment Station's Summer Crops and Soils Field Day.

Wyse, a University of Minnesota weed scientist, reported on a study he is conducting to learn more about the fate of herbicides on three soil types: the clay loams of south-central Minnesota (like those at Waseca), irrigated sand (like that at Westport) and the Karst soils of southeastern Minnesota.

The five-year-long study, supported by the Minnesota Agricultural Experiment Station, seeks to determine the movement and rate of dissipation of three widely used herbicides--alachlor (Lasso), atrazine and dicamba (Banvel)--on these soil types under four tillage systems. A second objective is to learn more about the development and movement of the metabolites (the compounds that result when these herbicides decompose) on the three soil types. A third is to learn how macropores influence herbicide movement.

"We think of soil as having a uniform structure, but that's far from true," Wyse said. "If the soil dries out and cracks, this may allow herbicides to move deeper into the soil. Worm holes may also facilitate herbicide movement. And in southeastern Minnesota, where alfalfa and corn are grown in rotation, the root channels that are left when alfalfa roots decompose may help herbicides move deeper into the soil."

In discussing the data obtained last year at the Southern Experiment Station under a chisel plow tillage system, Wyse said 7 percent of the alachlor and 16 percent of the atrazine remained in the upper 36 inches of the soil profile 14 weeks after application. And while all of the alachlor was in the top 6 inches of soil, some atrazine was found in the tile line water, indicating that atrazine had moved 36 inches into the soil profile.

"In contrast," Wyse said, "at the Lawler farm, which is 8 miles east of Rochester in the Karst area, 5 percent of the alachlor and 26 percent of the atrazine remained 14 weeks after application. But unlike at Waseca, some of the alachlor had moved 36 inches deep and, with the shallow soil there, might eventually contaminate the shallow groundwater."

Wyse concluded, "Our study shows that these herbicides have the potential to contribute to groundwater contamination in southeastern Minnesota under normal use patterns. Therefore, we must be site specific in our herbicide application practices if we are to safeguard groundwater quality."

# # #

News and Information

July 11, 1980

Educational Development System
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433 Coffey Hall
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St. Paul, Minnesota 55108

Source: Ernest Banttari
612/625-5290
Writer: Larry A. Etkin
612/625-4272

Editors: Call Carl Walker (612/624-3708) to obtain a black-and-white print or 35-mm color transparency to use with this story.

ASSAY MAY HELP POTATO INDUSTRY AVOID DARK CHIP PROBLEM

When you think of potato chips, you probably think "plain or rippled" or perhaps of onion or herb dip.

But to Minnesota farmers, processers and snack food distributors, potato chips are more than just a snack food that goes great with dip. They are an important economic product: more than 250 million pounds of Minnesota's 1978 potato crop were processed into chips.

University of Minnesota plant pathologist Ernest Banttari and Paul Orr of the USDA Potato Research Laboratory, East Grand Forks, Minn., have found that an old potato disease is responsible for some new problems in the chipping industry. Banttari and Orr have linked chip discoloration to a disease known as "purple top."

Purple top, which is descriptive of the disease in some potato plants, is caused by the aster yellows mycoplasma, an organism that can infect more than 300 plant species.

The aster yellows mycoplasma causes a variety of symptoms in different potato cultivars--the "purple top" foliage discoloration, yellowed and curled leaves, stunted growth and,

occasionally, inedible "aerial tubers".

The last severe outbreak of purple top was in 1981. "No firm estimate exists of the amount of loss from that outbreak because no surveys were made," Banttari says. "There were numerous questions concerning dark chips in the 1981-1982 processing season. At that time we did not have the answer.

"Now we know the problem is associated with infestations of potato fields with the aster leafhopper, an insect that can't overwinter in Minnesota but is often carried in on strong winds from southern states.

"A low percentage of the leafhopper may actually carry the mycoplasma but there can be enormous numbers--millions, billions of insects," Banttari explains. "Therefore, you don't need a high percentage of infective leafhoppers to cause problems."

Purple top can infect many potato cultivars, but Banttari and Orr have focused on its effects on those normally grown for chipping (Monona and Norchip are quite susceptible). Infected tubers appear normal at harvest. The problem shows up after the tubers have been processed into chips.

The disease causes an abnormal conversion of starches to reducing sugars which carmelize during frying. The result is a severe darkening and discoloration, which affects the appearance and taste of the finished chips. (Brown spots on chips might or might not be the result of purple top; discoloration can also result from other common causes, such as when potato tubers are bruised or overchilled.)

In his research, supported by the Minnesota Agricultural Experiment Station, Banttari is developing an assay to detect aster yellows mycoplasma in leafhoppers that can be completed fast enough so growers could control leafhopper infestations by applying an insecticide.

"At present, the only control measure possible is to control the insect," Banttari says. The current method of detection involves exposing healthy indicator plants to leafhoppers suspected of being infected, and then observing the plants for weeks to see whether symptoms develop.

Banttari is developing a simple seriological assay that should return accurate results within a day or two. This diagnostic test could be used not only on plants, but also to screen out heavily infected lots of potatoes before they are placed in storage. Banttari says this would be a great help because "we have some evidence that chip discoloration intensifies when storage of infected tubers is longer."

# # #

AEA,BSS,CEO,V4,H2,L1,N2 NAGR2580

News and Information

July 12, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Juanita Reed
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Writer: Evelyn Anderson
612/624-3770

MINNESOTA 4-H RECOGNIZES 60 FOR ACHIEVEMENTS

The University of Minnesota's 4-H Youth Development program has recognized 60 4-H members, alumni and volunteers from throughout Minnesota for their accomplishments. Awards were presented in June at the Minnesota 4-H Junior Leadership Conference.

Six 4-H'ers won trips to the National 4-H Congress in Chicago this fall: Keely Kleinwort, Dodge Center, and Kay Wolff, Little Falls, who received achievement awards; Amy Wagenknecht, Farmington, and Erik Rockstad, Ada, leadership awards; Barbara Weckman, Shakopee, and Shannon Tjaden, Northfield, citizenship awards. In addition, leadership award winners Michael Busch, St. James, and Marilyn Buhman, Pipestone, will attend a 4-H camp in Michigan this month.

Members who received recognition for their 4-H project work were (listed by county): **Benton**--Sam Zenk, Foley, sheep. **Clay**--Jared Nelson, Sabin, petroleum power. **Crow Wing**--Neil Kennedy, Pequot Lakes, forestry. **Dakota**--Mark Kieffer, Hastings, electric; Amy Taylor, Inver Grove Heights, horse. **Dodge**--Malinda Kleinwort, Dodge Center, bread, Tammy Lorch, Kasson, dog. **Goodhue**--Tim

Carlson, Welch, plant and soil science. **Grant**--Jon Olson, Elbow Lake, public speaking. **Isanti**--Todd Kruse, Harris, beef; Christopher Skiba, North Branch, agriculture. **LeSueur**--Brenda Gassman, New Prague, conservation. **Lyon**--Karlyn Doyle, Marshall, child development; Patrick Breczinski, Marshall, entomology; Jason Banks, Lynd, food nutrition. **McLeod**--Brian Milbrand, Glencoe, swine. **Mille Lacs**--Melissa Martin, Foreston, veterinary science. **Nicollet**--Jenni Starz, New Ulm, consumer education. **Nobles**--Lori Hyink, Worthington, home environment; Sarah Haberman, Brewster, horticulture. **Olmsted**--Doug McNallen, Pine Island, livestock. **Otter Tail**--Mary Erickson, Battle Lake, photography. **Pipestone**--Marilyn Buhman, Pipestone, clothing. **Polk**--Karen Odegaard, Crookston, needle arts. **Redwood**--Bruce Mathiowetz, Morton, wood science; Sharon Tetrick, Lamberton, gardening; Elaine Eischens, Tracy, dairy foods. **St. Louis**--Tom Kleven, Cook, wildlife and fisheries. **Sherburne**--Matt Carlson, St. Cloud, aerospace; Paul Berning, Elk River, dairy. **Sibley**--Doug Bening, Arlington, poultry. **Steele**--Jolene Peterson, Owatonna, creative arts. **Stevens**--Brian McNeill, Morris, rabbit. **Todd**--Julie Rach, Browerville, health. **Watonwan**--Michael Busch, St. James, safety; Julie Evers, St. James, bicycle.

4-H'ers who were named delegates to the 1989 National 4-H Conference were Lanette Shaffer, Cambridge; Larry Goelz, Franklin; Klint Willert, Lake Benson; David Klee, Rochester; Johanna Nesseth, Nerstrand; and Michelle Bergs, Arlington.

Nancy Jo Brueshoff, Ada, will receive a $400 Ball Corporation scholarship in food nutrition, and four other 4-H members will have the opportunity to compete for scholarships: Bryan Malone, Wadena, and Mymique Baxter, St. Paul, agricultural careers; Patty Appel, Aitkin, animal science; Bryan Malone, Wadena, Gertrude L. Warren scholarship; and Robert Sip, Ada, Edwin T. Meredith scholarship.

Four 4-H alumni received awards for their service: Margaret Rosendahl, Ada; Carmen Tripp, Faribault; Bette Packer, Anoka; and Robert Tetrick, Lamberton.

# # #

AEA,BSS,CEO,V1,V4,Y N4-H2578

News
and
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Educational Development System
Minnesota Extension Service
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St. Paul, Minnesota 55108

July 18, 1988

Source: Jeffrey D. Hahn
612/624-4977
Editor: Sam Brungardt
612/625-6797

WEEVILS ARE INVADING MANY HOMES

Many Minnesotans are now finding weevils--small, often dark-colored, hard-shelled insects with mouthparts elongated into a short snout--inside their homes.

"Weevils are mysteriously attracted to the interior of homes," says Jeffrey Hahn, entomology educator with the University of Minnesota's Extension Service. "They come inside for no apparent reason, entering through available entry points, such as cracks in the foundation, around loose-fitting screens and doors and under siding."

Once inside, weevils may be found crawling on ceilings and walls. They may be seen also around sinks and bathtubs because often they are attracted by moisture.

"Fortunately," Hahn says, "weevils don't bite or cause any damage. They are only a temporary nuisance and any that do come inside can be removed with a vacuum cleaner."

According to Hahn, caulking cracks and using tight-fitting screens and doors is the best way to keep weevils from coming inside. "Because some weevils are attracted by moisture," he

says, "placing pans of water outside the house can trap and drown them. Also, an insecticide, such as diazinon, can be sprayed around the foundation and other places where the weevils enter, but this solves the problem only temporarily."

# # #

I2,I4,V7 NAGR2589

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 18, 1988

Source: Deborah Brown
612/624-7491
Editor: Sam Brungardt
612/625-6797

MOISTURE STRESS IS APPARENT IN SOME VEGETABLE GARDENS

Surprisingly, many Minnesota gardeners are reporting very good results this year. In gardens that have been watered adequately, vegetables are maturing earlier than usual due to the abundance of heat and sunlight.

However, Deborah Brown, horticulturist with the University of Minnesota's Extension Service, notes, "We've seen some problems, though: radishes that never made large roots, but went right to seed because of the heat; sweet corn that tasseled before the ears and silks were ready to receive pollen; tomato and pepper flowers that aborted due to extreme heat."

Brown says watering regularly and thoroughly is important for more than just the obvious reasons. Without ample moisture, many vegetables, including carrots, lettuce, cucumbers and others, develop a bitter flavor. Tomatoes and squash are likely to suffer from blossom end rot when there are large fluctuations in soil moisture. Potatoes form knobby tubers, with small, constricted areas developing while it's dry, followed by bulges that swell out once moisture is available.

"To help keep soil reasonably moist, mulch around large plants and between rows, if possible, to reduce evaporation," Brown advises. "Water thoroughly to soak the soil 8 to 10 inches down. And be sure to pull out weeds that will compete with the vegetables for precious moisture."

# # #

I2,V4,V7 NAGR2585

News and Information

Educational Development System
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433 Coffey Hall
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St. Paul, Minnesota 55108

July 18, 1988

Source: Cynthia Ash
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Editor: Sam Brungardt
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BLACK ROOT ROT MAY BE CAUSE OF STRAWBERRY PLANTS' DEMISE

Many Minnesota gardeners' strawberry plants are dying this year from a disease complex called black root rot.

Cynthia Ash, assistant plant pathology specialist with the University of Minnesota's Extension Service, says, "Black root rot is caused by a combination of adverse environmental conditions and disease organisms. Above-ground symptoms include wilting and leaf scorch--often at fruiting time--poor runner production and general decline. These symptoms result from a dying root system."

How can a gardener tell whether he or she has a problem with black root rot?

Ash says, "Gently dig up individual plants and check for small root systems; lack of feeder roots; root tips that are dead and stubby-looking; blackened cortical tissue (the tissue between the outside and innermost parts of the root), whichs sloughs off easily when rubbed with a fingernail; and internal crown discoloration."

Ash says cultural measures provide the best approach to black root rot control. "Remove weak, infected plants," she advises. "Renovate old strawberry beds to keep the incidence of black root

rot low. Avoid planting strawberries in soils with a high clay content. Mulch to help maintain even soil moisture during dry periods and cut down on competition from weeds. Lastly, plant only healthy transplants of a winter-hardy cultivar."

# # #

I2,V7 NAGR2588

News and Information

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Source: Jim Anderson
612/625-8209
Writer: Larry Etkin
612/625-4272

Editors: Call Carl Walker (612/624-3708) to obtain a b/w print or 35-mm color slide to use with this story.

U OF M WATER QUALITY CENTER ENTERS SECOND YEAR OF FIELD RESEARCH

Now in its second year of field research, the University of Minnesota's Center for Agricultural Impacts on Water Quality hopes to be able to develop recommendations for agricultural practices to protect water quality sooner than expected.

"To be really statistically sure, you probably need three to five years of research," says soil scientist Jim Anderson, who directs the center. "But if our results are consistent from fall through winter into spring and summer, we'll be fairly confident in saying some things about management strategies sooner."

The center conducts most of its research on the soils considered most vulnerable to groundwater pollution. Coarse-textured soils are being investigated at Westport, in Pope County. Silt-loam-over-limestone-bedrock sites are being examined in Goodhue, Olmsted and Winona counties, in southeastern Minnesota.

Westport, a former USDA research site, has an established soil management history and valuable research facilities already in place. Anderson says duplicating that site today--if that were even possible--would possibly cost as much as the center's entire budget.

The Center operates on an annual budget of about $250,000 from the university's Agricultural Experiment Station. In addition, the Legislative Commission on Minnesota Resources has provided a two-year grant totaling $300,000. The center is collecting data on nitrogen movement and agricultural practices, pesticide pollution, groundwater flow and economic impacts.

At Westport, University of Minnesota soil scientists Gary Malzer and Gyles Randall are measuring the fertilizer nitrogen that passes through the soil to the groundwater. Thirty 5-foot wide, 4-foot deep, stainless steel lysimeters buried in the earth allow them to measure exactly how much of a chemical compound passes through the soil.

On acre-size plots, on which wells have been drilled, Malzer and Randall are measuring the amounts of nitrates and pesticides that are reaching the groundwater under a variety of tillage and soil management treatments. And on more than 100 small plots, they are testing different combinations of agricultural chemicals, crop rotations, tillage practices and irrigation use.

Anderson says, "This should tell us what we can do to minimize the impacts of agricultural practices on groundwater, how to time applications of nutrients and pesticides, how much to use and adjustments to accomodate different crops, rotations and tillage."

The Center for Agricultural Impacts on Water Quality also assists local projects. One of those is a farm well-monitoring program in Faribault, Martin and Watonwan counties. "Local involvement is

important to us," Anderson says. "It ties into an increased interest and awareness by people that they should be concerned about the condition of their wells. It was the people there who took the initiative.

"We try to work with the people from particular areas that have concerns, to help set our research priorities."

# # #

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News and Information

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St. Paul, Minnesota 55108

July 18, 1988

Source: Bill Lueschen
507/835-3620
Writer: Larry A. Etkin
612/625-4272

EXPERIMENT STATIONS ARE EXPERT AT GROWING WEEDS

The University of Minnesota's agricultural experiment stations may be the best weed growers in the state. And it's not by accident; it's part of the process for developing more productive crop varieties and more effective cultural practices for Minnesota farmers.

But why grow weeds? Even amateur gardeners know you have to eliminate weeds to improve your harvest. And, in fact, that's precisely why weed seeds are deliberately sown.

With the need to develop better varieties and farming practices, researchers have to know that an experimental treatment is the only probable cause for an effect they see on their test plots. Bill Lueschen, an agronomist at the university's Southern Experiment Station at Waseca, says they seed weeds and promote diseases to create uniform and severe conditions for their tests.

"One of our more important functions is that we create an environment for research here," Lueschen says. "That means doing things an average farmer wouldn't dream of doing. That includes practices that a farmer would call mismanagement, but that's the environment we need to evaluate these things." The research

environment also requires that soil conditions be uniform so that only deliberate changes influence the outcomes of experimental trials. "Whether it be fertilizers, herbicides or cultural practices, we try to manage the station as uniformly as possible," Lueschen says.

The Southern Experiment Station and the university's other branch stations apply this principle to staying ahead of problems farmers will face. That means weeds are investigated before they become a severe problem, but only after they are known to be in an area.

Velvetleaf is a good example. Lueschen says, "Back in 1969 we seeded velvetleaf on the station to get a uniform population for evaluation of controls in soybean and corn. The weed, which came from Southeast Asia, had entered Minnesota as far back as the 1940s. We even had some of it here at the station." But the stand was not uniform enough for research so station personnel intervened and helped nature along.

Numerous experiments since then have used the infestation to evaluate controls. There's even a project, begun in 1974, to see whether any of seven crop management practices will completely eradicate it velvetleaf from a field. In some of the systems being evaluated, the weed's seed population has been reduced by more than 90 percent. That's encouraging because velvetleaf is a very stubborn weed; its seed has a very long life in soil. Complete eradication has proved impossible even 14 years later, demonstrating that eternal vigilance is currently the only

practical weapon against this noxious weed.

The experiment stations don't just plant new weeds at the drop of a hat. They will not introduce a weed into their fields until its presence in the area has been documented. Wild proso millet, for instance, was not planted at the Southern Experiment Station until 1982, despite the earlier request of a researcher wanting to study it. The weed had not appeared in the area before then.

# # #

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News and Information

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Source: Pauline Boss
612/625-0291
Writer: Sam Brungardt
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Editors: Call Carl Walker (612/624-3708) to obtain a 35-mm color transparency or black-and-white print to use with this story.

RESEARCH AIMS TO HELP FAMILIES WITH ALZHEIMER'S VICTIMS

"Quality of life." The phrase is often used in talking about things that make life pleasant, but we seldom hear it in talk about situations that involve impending death.

Yet, improving the quality of life for families that have a member with Alzheimer's, a fatal disease, is the goal of a five-year study being conducted by University of Minnesota family social scientist Pauline Boss and mental health professionals with the Minneapolis Veterans Administration Medical Center.

More than 3 million Americans in their mid-40s and older have Alzheimer's disease, an irreversible form of dementia. The disease causes drastic personality changes, progressive memory loss and reduced intellectual capability. In its later stages, victims require constant supervision, putting great stress on caregivers.

People with advanced Alzheimer's are physically present but psychologically absent. Boss says this phenomenon (or its reverse), called "boundary ambiguity," occurs when there's an unclear loss in a family. With Alzheimer's, family members do not

know whether the victim is in or out of the family system. He or she can no longer relate to them in old, familiar ways.

Additional stress comes because only an autopsy can conclusively prove Alzheimer's presence. In early stages, only the spouse may see symptoms of the disease and others may doubt that anything is amiss. Later, a son or daughter may deny the disease's existence, stay away or otherwise cease to be a source of support and comfort for the caregiver and the patient. Stress in the family increases as family members fail to support each other. The family becomes unable to deal with the situation cohesively.

Boss' research extends earlier research she did for the University of Minnesota's Agricultural Experiment Station. Funded by the National Institute on Aging, it examines, through videotaped interviews, ways in which family members interact as they are confronted with the fact that one of their family has probable Alzheimer's.

"When there's a catastrophic illness, the entire family suffers," Boss says. "We're interviewing family members, gathered together in the home, during the first five years after the VA doctors confirm that a patient has Alzheimer's.

"We videotape the interviews as the disease progresses to record how family members interact as they attempt to deal with the ambiguity, the confusion as to whether the victim is on or out of the family system. You have to know what the components of any system are before you can organize that system to survive, and the

same is true of families."

Conclusions from the study so far include include:

--Caregivers may neglect their own physical and mental health. For example, a wife may stop taking medication for high bood pressure because it makes her tired and reduces her ability to care for her husband, or she no longer socializes because he needs constant care. Yet respite care, which gives a caregiver a break from the routine, is vital for the caregiver's continued well-being.

--Generally, male caregivers are more likely to use respite care without feeling guilt. Boss says this is a product of the roles that our society imposes on men and women; women are taught that their role is to care for their husbands no matter what.

--Although the government urges families to keep Alzheimer's patients at home and many families are reluctant to institutionalize one of their own, the stress of caring for Alzheimer patients at home is more than some families can stand.

--If family members accept that Alzheimer's exists and deal with the situation openly, both the patient and the caregiver experience less stress and will likely fare better. The caregiver gets more support, and the patient's confusion and frustration is reduced.

--The kind of support a caregiver needs varies. Some find support groups helpful; others may only want the facts about the disease and its implications to make the necessary decisions.

--The role the patient played in the family affects how a family deals with the situation. If, for example, if the patient was the one on whom a family tradition depended, the family may feel a severe loss when he or she can no longer fill that role.

--The family's cultural backround is also important. For example, a native American family may hesitate to "usurp" an elder's role, even if that person cannot make decisions because of Alzheimer's.

A videotape simulation of a family struggling with Alzheimer's has already resulted from the research. It shows how family members' behavior can increase or reduce stress. Cassettes of the videotape, "The Family and Alzheimer's Disease: The Case of Ambiguous Loss," may be rented through county extension offices or from the Minnesota Extension Service Distribution Center (phone 612/625-8173).

# # #

AEA,BSS,CEO,E2,E7,I1,N2,V4,V8 NHEC2594

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 21, 1988

Source: John Newman
612/625-7798
Writer: Jennifer Obst
612/625-2741

Editors: Call Carl Walker (612/624-3708) to obtain a 35-mm color slide or black-and-white print to use with this story.

RESEARCH AIMS TO BOOSTS IMMUNITY OF CHICKENS, TURKEYS

Viruses are the worst kind of enemy--hard to spot and quick to spread. In animals, they cannibalize living cells, using the cells' biochemical machinery to reproduce themselves, and then spread within the host and to others. In a closed environment, such as the kind in which most poultry is raised, viruses can be particularly dangerous once introduced.

University of Minnesota veterinary pathobiologist John Newman has been working on giving chickens and turkeys an even shot at fighting off viral invasions. The research he conducts for the Minnesota Agricultural Experiment Station, focuses on finding the best immunization system to use and ways to augment the passive immunity that is a gift from every chicken and turkey hen to her eggs.

Newman's specialty is avian respiratory diseases. In the United States, losses from disease- and management-related problems and lowered production efficiences cost the turkey industry about $320 million a year. "And respiratory diseases are the number one economic burden to the domestic poultry industry,"

Newman says. Approximately 50 percent of the deaths in young turkeys is associated with respiratory and complicated infections due to compromised immune systems.

As Minnesotans discover every winter, a heated air environment that is low in humidity is very conducive to viral infection. Low humidity is hard on the respiratory system, and it helps create dust, an additional irritant. Respiratory diseases are a very complex interaction of the environment, the host and the infectious agent, according to Newman.

Some of the viruses that cause respiratory diseases are more pathogenic than others. A North American outbreak of the particularly virulent exotic Newcastle disease occurred in 1974, and $54 million was spent to eliminate it from the continent.

But respiratory diseases do not have to be fatal to be a problem to the poultry industry. The less virulent viruses may not cause a lot of damage themselves, but they weaken the host's resistance and open the way for secondary microorganisms. As a result, "the birds don't eat quite as much, may not be as active; so these subclinical infections reduce production efficiency," Newman says.

There can be other complications. For example, a milder form of Newcastle disease seriously influences turkey egg production. "Not only does it create a significant drop in the number of eggs, but the eggs that are laid have poor shell quality, which means the chances of their hatching are not very good," Newman says. "So, it's very devastating to a turkey breeder if the flock gets

infected with Newcastle disease. In market flocks, it can be devastating because of the effect on the respiratory system."

Newman has been evaluating the effectiveness of various immunization programs for Newcastle disease. "We've looked primarily at optimum timing for vaccinating market turkeys," he says. "It turns out that the growing turkey should be vaccinated at least twice. This is because of the role of parental, or passive, immunity.

Newman explains: "Antibodies are found in the egg yolk that the young poult absorbs. These antibodies last about three weeks. While they are helpful in protecting the young poult, they hinder the immunization process because the vaccine is actually a modified form of the disease-producing virus. When you vaccinate in the presence of passive immunity, the viruses neutralize these antibodies."

Timing of vaccination is critical because while a poult's passive immunity declines, its immune system is not fully mature. "So, the first immunization is done at about three weeks, after the passive immunity has declined, but before the young birds have a chance to become infected. That immunity lasts about four to six weeks. Therefore, we recommend that poults in high-risk areas be revaccinated at about six weeks," Newman says. The vaccine is administered in aerosol form or placed in the drinking water.

Newman is also working on improving the birds' immune system in another way. He says, "We try to provide a uniformly high degree of antibodies in chicken and turkey breeders so the chicks

and poults that are hatched from their eggs have a more uniform level of antibodies. If we could develop a precocious immune system, those birds would not only be able to respond better to the vaccine, but would also resist various microorganisms.

"So, we are working with the breeders on a vaccination program that will produce a high and uniform level of immunity in the mother that she can pass on to her eggs. This, we found, is best achieved by using an inactivated vaccine and incorporating an adjuvant." This timed-release vaccine releases a little bit of the antigen over a long time. Newman is studying various types of adjuvants, such as oil emulsions, and some newer ones, called "liposomes," that show promise.

The ultimate solution would be to get rid of avian respiratory disease problems altogether. Newman says, "The industry is working on a program to eliminate some egg-transmitted diseases such as mycoplamas, but eliminating avian respiratory diseases would be very difficult. Part of the problem is that migratory waterfowl are an excellent reservoir for the Newcastle and avian influenza viruses, and they keep bringing the viruses back. We try to minimize the stress and maximize the quality of the environment, so that if the agent is introduced, the bird has the resources to fight it off."

# # #

AEA,BSS,CEO,N1,N2,V1

NAGR2597

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 21, 1988

Source: Cynthia Ash
612/625-6290
Editor: Sam Brungardt
612/625-6797

NOT ALL TOMATO PROBLEMS ARE CAUSED BY INSECTS, DISEASES

If you planted tomatoes this spring with dreams of harvesting picture-perfect fruits, nonparasitic disorders can deal you a low blow.

These conditions, which are caused by the plant's responses to abnormal environmental conditions, can result in blemished or disfigured fruit, and they cannot be corrected or prevented by the application of a chemical, says Cynthia Ash, assistant plant pathologist with the Minnesota Extension Service.

One of the more common nonparasitic disorders, blossom-end rot, usually makes its appearance about the time the first few fruits are maturing. A watersoaked spot appears at the blossom end of the fruit, becoming brown and leathery as it enlarges. The discolored tissues shrink to form a flat surface which is sometimes colonized by rot fungi.

Ash says, "Blossom-end rot can be reduced by incorporating fertilizers high in superphosphates and low in nitrogen prior to planting, by maintaining a uniform supply of moisture through irrigation and soil mulches, and by avoiding root damage during cultivation."

Sunscald is another common disorder. Initially, a light-colored spot appears on the side of the fruit that faces the sun. This is followed by blistering, and finally a large, flattened, gray-to-white spot with a dry,

paperlike surface forms. Ash says sunscald results when tomato plants lose their leaves from disease or other factors and the fruits are suddenly exposed to the sun. Following a disease control program will help prevent foliage loss.

Another nonparasitic disorder is growth cracks--cracks of varying depths radiating from or encircling the stem end of the tomato fruit.

"Growth cracks result from extremely rapid fruit growth brought on by periods of abundant rain and high temperatures, especially when such weather follows drought," Ash says. "Varieties differ in their susceptibility to cracking, and variety descriptions often include this information. Control methods mentioned for blossom-end rot may be beneficial in preventing growth cracks."

Catface is a puckering or distortion of the tomato fruit resulting from a disturbance of the flower. This can be caused by extreme heat, drought, low temperature or contact with 2,4-D type herbicides.

"Keep herbicides and mulches that have been treated with herbicides out of the garden," Ash advises. "Varieties vary in their susceptibility to catface so try a different variety if catface is a continual problem.

"Finally, watch out for 2,4-D type weedkillers," Ash cautions. "Their vapor or direct spray drift can seriously damage tomatoes. Older leaves of affected plants are excessively pointed, down-curved or rolled with prominent, light-colored veins. Young leaves do not expand fully and are narrow and elongated with parallel veins. The stems may split, and the fruits are catfaced. Plants may recover from light damage but do not recover from severe damage."

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 21, 1988

Source: Cynthia Ash
612/625-6290
Editor: Sam Brungardt
612/625-6797

STRESSED LAWNS ARE SUSCEPTIBLE TO DOLLAR SPOT

Dollar spot, a fungal disease, could be a problem on your lawn this summer.

Why? "Because environmental conditions have been poor for the growth of turf and stressed lawns are predisposed to attack," explains Cynthia Ash, assistant plant pathology specialist with the University of Minnesota's Extension Service.

"Dollar spot develops at temperatures of 60-85 degrees F--which are very common at night--when there is high humidity and low soil moisture. This is often the case in midsummer, when people water lightly, frequently and usually in the evening."

Ash says dollar spot appears on bluegrass lawns appears as 4- to 6-inch, straw-colored spots. These spots may coalesce to cover large areas. In the early stages, tan spots or bands develop on the blades of the grass.

"Early in the morning, when the grass is covered with dew, a faint cobwebby growth may be seen on the leaves of affected plants," Ash says. "This symptom can be used to identify the problem.

"Most dollar spot problems can be prevented by keeping the lawn adequately fertilized and by watering properly. In rare cases, in which dollar spot is an annual problem, fungicides labeled for its control may be used, but their effect is only temporary."

# # #

I2,V7 NAGR2590

News and Information

July 25, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Jeffrey D. Hahn
612/624-4977
Editor: Sam Brungardt
612/625-6797

PICNIC BEETLES ARE DIFFICULT TO DISCOURAGE

Many insects take an active interest in the fruits and vegetables Minnesotans grow. One pesky insect that can be found in gardens in the summer is the picnic beetle, a small, black beetle with orange spots.

"Picnic beetles are attracted to fermenting or souring smells and are found on overripe and rotting fruits and vegetables, such as corn, melons, berries and tomatoes," says Jeffrey Hahn, entomology educator with the University of Minnesota's Extension Service. "Once they are in the garden, picnic beetles can also attack produce that is still ripening."

Hahn says picnic beetles will be less attracted to a garden if a program of regular sanitation is followed. The best strategy against picnic beetles is to throw away overripe or rotting fruits and vegetables.

"Insecticides do not provide effective control," Hahn says. "If you spray the beetles you see in your garden, you will kill them but the insecticide that is left on the plants will prevent you from harvesting anything right away. By the time it is safe to harvest, other picnic beetles will have returned to the garden. It's better to observe good sanitation practices to keep picnic beetles out of your garden than to rely on pesticides."

# # #

News
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Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 28, 1988

Source: Bill Lueschen
507/835-3620
Writer: Larry A. Etkin
612/625-4272

U OF M SCIENTISTS USE DISEASES AS TOOLS IN PLANT IMPROVEMENT

Minnesota Agricultural Experiment Station scientists go out of their way to infect plants with diseases that farmers hope will stay far away from their fields. It's part of the process of developing crop varieties tolerant to destructive, yield-reducing diseases.

Soybeans and sweet corn are two of the crops that are currently being tested for disease resistance at the University of Minnesota's Southern Experiment Station at Waseca. Diseases are deliberately fostered to "weed out" susceptible varieties early in the screening process. Agronomist Bill Lueschen says the station promotes diseases to create uniformly severe conditions for the research.

Lueschen says the Southern Experiment Station does things the average farmer wouldn't dream of doing. "That includes practices that a farmer would call mismanagement, but that's the environment we need to evaluate these things."

The research environment requires that adverse conditions and, indeed, all soils conditions be uniform so that only deliberate changes can influence the outcomes of experimental trials.

"Whether it be fertilizers, herbicides or cultural practices, we try to manage the station as uniformly as possible," Lueschen says.

One example of deliberate "mismanagement" is testing soybeans in the same plot year after year. The plot is not tiled and purposely allowed to remain relatively moist to provide conditions highly favorable to Phytophthora root rot. If a proposed introduction can survive that test with good yield, it's likely to be a promising variety.

Horticultural scientist Vince Fritz investigates rust of sweet corn at the Southern Experiment Station. He plants rows of a highly susceptible variety early and infects them with rust spores to get the disease established in the field before he plants the varieties being evaluate for rust resistance.

Deliberately promoting favorable conditions for disease development does more than help scientists screen for resistant varieties. It also provide the opportunity for experiment station researchers to examine the life cycles of the disease-causing organisms, as they seek weak links that can contribute to future efforts at controlling the diseases.

# # #

AEA,BSS,CEO,L1,N2,V1,V2,V3 NAGR2603

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 28, 1988

Source: Tom Thorburn
612/625-9292
Writer: Joseph Kurtz
612/625-3168

PORK PRODUCERS TO VOTE ON CHECKOFF

Pork producers have an opportunity to vote in a September pork referendum to determine whether the national checkoff program on swine should continue.

In-person voting will take place September 7 and 8 in county extension offices in Minnesota and throughout the nation. Anyone who produced and owned two or more hogs or pigs for sale from Nov. 1, 1986 until the referendum date may vote.

Absentee ballots are available from August 1 through August 26. County extension offices and local pork producers' organizations have pre-addressed postcards that producers can use to request absentee ballots.

Producers can also request an absentee ballot by writing to: University of Minnesota, Minnesota Extension Servive--Ag, Attn: Pork Referendum Coordinator, 146 Classroom Office Building, 1194 Buford Avenue, St. Paul, Minnesota 55108. Another alternative is to stop by the above location in person to request a ballot.

One vote may be cast by an individual pork producer, partnership, corporation, cooperative or other entity, either in person or by absentee ballot. Spouses and young people who

produce and own hogs for sale in their own names may vote, regardless of age.

For example, if members of a family, corporation or partnership have produced or owned hogs for sale in each of their names, then each member may vote. A representative of the partnership or corporation may vote as both an individual producer and as a representative of the partnershop or corporation.

Voters will decide whether to continue the checkoff which began Nov. 1, 1986. The checkoff is at the rate of 25 cents per $100 of value on all hogs and pigs and is collected at the point of sale.

The checkoff was established in 1985 when the U.S. Congress passed the Pork Promotion, Research and Consumer Information Act. The purpose of the checkoff is to provide funds for pork promotion and research and to enhance the pork industry.

The Pork Referendum is being held because it is required by the law establishing the checkoff. If a simple majority of those voting in the referendum approve the checkoff, it will continue indefinitely. A future referendum on the checkoff can be held if 10 percent of all pork producers sign a petition asking for a referendum, or if the U. S. Secretary of Agriculture deems it necessary to hold a referendum.

The National Pork Board, headquartered in Des Moines, Iowa, administers the checkoff funds. Part of the funds go back to the state in which they were collected for use by the pork producers'

organization. The Minnesota Pork Producers Association receives 19.5 percent of the checkoff money collected in the state.

The Minnesota Pork Producers Association, reports about $1.8 million in checkoff funds was collected from Minnesota pork producers in 1987, with $389,000 coming back to the state organization.

An estimated 16,500 pork producers in Minnesota are eligible to vote in the Pork Referendum.

# # #

CEO,P1,V1,V2,V3,V4 NAGR2609

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

July 28, 1988

Source: George Rehm
612/625-6210
Writer: Jack Sperbeck
612/625-1794

WAIT UNTIL OCTOBER FOR SOIL TESTS

Wait until mid-October before you take soil samples for testing, advises George Rehm, soils specialist with the University of Minnesota's Extension Service.

Rehm says he's had farmers ask about sampling soils earlier this year due to the drought. "But if you sample now for nitrate-nitrogen, the soil test results are apt to be different than what you'll find next spring," he says.

Formation of nitrates in the soil depends on bacterial action, which in turn depends on temperature and moisture. And those interactions will not be stable until temperatures drop in the fall, Rehm says.

"In mid-October you still have a good two to three weeks to collect samples, get results back and apply fertilizer," he says. You can apply fall nitrogen after Nov. 1, he adds.

# # #

AEA,BSS,CEO,V1,F NAGR2611

News
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Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Aug. 3, 1988

Source: Ken Ostlie
612/624-9272
Writer: Jack Sperbeck
612/625-1794

SPIDER MITES THREATEN MINNESOTA SOYBEAN CROP

A rapidly developing spider mite outbreak threatens soybean production in more than 30 Minnesota counties. And you can blame the dry weather.

"Continued hot, dry weather makes it unlikely that we'll get natural control by disease and predators soon enough to prevent economic damage," says Ken Ostlie, entomologist with the University of Minnesota's Extension Service.

Spraying with a pesticide is recommended. At only a 10 to 15 percent loss in effective leaf area, yield losses will justify spraying.

Ostlie says a fungal disease and predator mites and insects usually control spider mite populations. But the drought upset the balance.

Spider mites injure soybean plants by piercing cells and sucking out the contents. As feeding intensifies, leaves change from grayish green to yellow to brown, then drop off. Damage begins on the lower leaves and works upward. Entire plants can be killed.

"This is the most severe mite outbreak ever recorded in

Minnesota," Ostlie says. And, because the problem is rare in midwestern soybeans, information on insecticide/miticide performance is sparse. However, three pesticides are recommended: the broad-spectrum insecticides dimethoate (trade names Cygon, Dimate, Dimethoate) and chlorpyrifos (Lorsban); and the miticide propargyte (Comite).

Comite can be used only until Aug. 15, 1988. Cygon is probably not available and there may be supply problems with other chemicals, Ostlie says.

"Other pesticides may be used legally but are not recommended because of unknown performance," Ostlie says.

Check fields every four days, as populations and damage can develop quickly. "Treatment of the whole field is recommended only if damage and mites are detected throughout most of the field. Edge treatments are not effective," Ostlie says.

"Fields with visible damage at margins have changed over a two- to three-day period to severe leaf loss throughout the field. There's no question that uncontrolled spider mite infestations will severely reduce yield. Farmers need to ask whether they'll save at least 3 bushels an acre--the treatment cost--by treating. The answer depends on careful assessment of remaining yield potential versus loss that could be prevented by treatment."

More details are available in the new publication "Controlling Spider Mites in Soybean," available from county offices of the Minnesota Extension Service.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 4, 1988

Source: Ray Arthaud
612/624-4995
Writer: Joseph Kurtz
612/625-3168

WEANING CALVES CAN SAVE FEED

If you are providing stored feed to your beef cow herd because your pastures have dried up, you can probably save on feed by weaning the calves.

Ray Arthaud, extension beef specialist at the University of Minnesota, suggests weaning calves that are more than 3 months old.

"Beef cows do not convert feed to milk very efficiently," says Arthaud. "Rather than providing relatively high-priced feed to the cow to produce milk, it may be better to wean the calf. You can then feed the cow less and feed the calf directly."

Arthaud recommends starting calves on grain at least two weeks before weaning. If they are used to eating dry feed, they can switch from milk with less stress.

If the calves are less than four months old, you might start them on a commercial or home-mixed starter feed such as dairy producers use. Then you can gradually shift to a grain-supplement ration.

Arthaud says calves will usually eat whole shelled corn quite well and will gain efficiently on the whole grain. However,

cracking or rolling the corn is a good idea if the cost is reasonable.

Even if you don't wean your calves right away, you may want to creep feed to reduce stress on cows that are on limited rations.

Calves getting corn or other grains should have access to hay free-choice, according to Arthaud. High-quality hay is best. Calves getting excellent alfalfa hay or mixed legume/grass hay should not require supplemental protein. With poor quality grass hay, feed about one-half pound per calf per day of an oilseed-based supplement.

Arthaud says young calves need 6,000 to 11,000 IU of vitamin A per head daily. Top quality new-crop hay should provide this. However, calves fed old or poor-quality hay should get vitamin A in the supplement.

Beef cattle should have salt and other minerals available at all times. Arthaud recommends a mixture of 60 percent trace mineral salt and 40 percent dicalcium phosphate, by weight.

# # #

AEA,BSS,CEO,V1,V2,V3,V4,A2 NAGR2615

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 4, 1988

Source: John Moncrief
612/625-2771
Writer: Jack Sperbeck
612/625-1794

TILLAGE TIPS FOR DRY GROUND

Crop residues on the soil surface can maximize soil water recharge in a dry year. The best fall tillage may be no tillage--soil type permitting.

"Leave the soil surface as rough as possible, with residue on the surface," advises John Moncrief, soils specialist with the University of Minnesota Extension Service.

Conservation tillage--with more soil residue--increases soil moisture two ways: It temporarily reduces evaporation the first 5 to 10 days following a rain, and reduces runoff on sloping ground.

"Residue won't help much during an extended drought. But it cuts down on evaporation following a rain since residue covered soil absorbs less radiation than bare soil," he says.

Surface residues also increase soil moisture from snow catch. Leaving standing stubble is the best option. Snow catch is also increased by chisel plowing with wide spacing between teeth to leave ridges.

Residue reduces runoff on sloping fields, especially on soils that tend to form surface crusts. Tillage systems like ridge till prevent

crusts and leave the soil surface rough, allowing for water infiltration.

"Ridge till farmers had problems with the soil getting too hot in the ridge," Moncrief says. Some soil temperatures at University Experiment Stations exceeded 100 degrees F (under the bare soil at 4 inches deep).

"This means that higher ridge temperatures could have affected root growth. If it's hot and dry in the spring of 1989, less prominent ridges after planting will help minimize this problem," he says.

Tillage systems like ridge till and shallow spring discing that eliminated full width, deep tillage may have resulted in limited root penetration on dry soil. And some ridge tillers say dry weather caused potassium deficiency on corn--even with a fairly high soil test for K. You can use K in starter fertilizer, or a fall applied band in the ridges to help reduce the problem. Potassium problems were worse on specific hybrids, Moncrief says.

A less sensitive hybrid may reduce the severity of potassium deficiency if the soil is dry. Another option is chisel plowing in combination with planter applied potassium. The effect of the drought on the interaction of tillage, corn hybrid and soil type on potassium uptake is being studied at several Experiment Stations. "By fall we should have data for recommendations," Moncrief says.

# # #

AEA,BSS,CEO,C,F,V1 NAGR2616

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 4, 1988

Source: Bob Appleman
612/624-4995
Writer: Joseph Kurtz
612/625-3168

LIVESTOCK PRODUCERS NEED TO PLAN FOR BEDDING

Now is a good time for livestock producers to plan for a winter supply of bedding.

Because of the widespread drought, straw from small grains will be in short supply, predicts Bob Appleman, extension dairy specialist at the University of Minnesota.

"Chopped, mature grass hay from set-aside acres or roadsides should work very well for bedding," says Appleman. "A pound of chopped, dry, mature hay, which is typically low in feeding value, will absorb nearly 20 percent more water than oats straw."

Select materials for bedding carefully, Appleman advises. Avoid using any grass hay treated with herbicides or pesticides not specifically cleared for use on feedstuffs for dairy cattle. Also avoid using hay known to contain weeds poisonous to livestock.

University of Minnesota research shows organic bedding materials such as straw and chopped hay support rapid bacterial growth when wet. This bacterial growth can cause mastitis problems in dairy herds.

"It is important to keep organic bedding materials as clean and dry as possible," Appleman concludes.

# # #

AEA,BSS,CEO,A2,D,O,P1,V2,V3,V4 NAGR2618

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 8, 1988

Source: Ron Moser
612/624-7745
Writer: Joseph Kurtz
612/625-3168

WATCH QUALITY WHEN FEEDING OLD CORN

With dry weather cutting the supply of new-crop corn this fall, livestock producers are likely to be feeding more corn that has been stored for a considerable length of time.

When feeding such corn, it is important to keep a close eye on quality, says Ron Moser, extension animal specialist at the University of Minnesota.

"Corn that has not been stored properly may be dry, dusty, or infested with insects or rodents,'' says Moser. "If it's less palatable, the animals may eat less."

Moser suggests blending the old corn with new, or adding water to the feed at the time of feeding to improve acceptance by livestock.

Mold may also be a problem in stored corn. "Fusarium mold produces mycotoxins," says Moser. "At low levels these cause the livestock to eat less. At high levels the toxins cause more acute symptoms such as feed refusal, vomiting, infertility and depressed immunity."

Fusarium mold may produce a white to pink discoloration in the corn, but the toxins may be present without the mold being

visible. Moser says the only way to be sure if toxins from the mold are present is to send a representative sample of the corn to a laboratory for analysis.

If you suspect that your corn is contaminated with toxins and a lab analysis is not feasible, feed the corn to a small number of growing animals, suggests Moser. Then watch their performance carefully. If they continue to eat as much as normal, you can feed them more of the corn.

Moser warns that suspicious corn should never be fed to breeding stock or laying hens.

What about nutritional changes in older corn? Any such changes will be minor, according to Moser, and should not affect animal performance.

# # #

AEA,BSS,CEO,V1,V2,V3,V4,A2,D,K,N1,O,P1 NAGR2622

News
and
Information

Educational Development System
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433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 8, 1988

Source: Jerry Hawton
612/624-2270
Writer: Joseph Kurtz
612/625-3168

ESCALATING FEED COSTS CHALLENGE PORK PRODUCERS

One of the main effects of this summer's drought on pork producers has been sharply boosted costs for feed.

Jerry Hawton, University of Minnesota extension swine specialist, says the escalating feed prices present a real challenge to producers trying to hold down costs.

"If grain were relatively cheap and soybean meal were high, you could lower overall production costs by reducing the amount of total protein in the ration," says Hawton. "But when grain and protein are both high-priced, it just doesn't pay."

Hawton says a low level of protein for growing and finishing pigs decreases daily gain and increases backfat. Carcass desirability drops, he says, and the detrimental effects of low protein levels are greater for meatier pigs.

It is possible to reduce total protein by two percent in growing-finishing rations by replacing lysine from soybean meal with synthetic lysine, according to Hawton. "A good rule of thumb is that three pounds of crystalline lysine-hydrochloride (containing 78 percent pure lysine) and 97 pounds of corn can replace 100 pounds of soybean meal per ton of diet,'' he says.

Whether such a strategy saves money depends on the cost of soybean meal and the cost and availability of synthetic lysine.

If you do make the substitution, do it only once in each ton of ration. "Additional substitution can result in a shortage of the second-limiting amino acid in the diet, reducing growth performance," Hawton points out.

Several other protein sources, including cottonseed meal, sunflower meal, safflower meal, linseed meal and corn gluten meal, can satisfactorily replace all or part of the soybean meal in a swine ration. Whether or not they will save you money depends on their cost.

Meat and bone meal and tankage were widely used in swine rations several years ago. "There has been a trend away from using these packing plant by-products because of variable quality, inconsistent supply and a higher level of salmonella contamination than plant proteins," notes Hawton. "You can use meat and bone meal and tankage in combination with soybean meal if it is available at a lower price than soybean meal."

For more information on holding down feed costs for hogs, contact your county extension agent.

# # #

AEA,BSS,CEO,V1,V4,P1 NAGR2621

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

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Source: Curtis Norenberg
612/625-1925
Writer: Martin Moen
612/625-6243

AG OUTLOOK '89 CONFERENCE SET FOR SEPT. 12

Agriculture's future is the topic of a fall conference being sponsored by the Minnesota Extension Service. "Ag Outlook '89" will be held Sept. 12, at the Earle Brown Center on the University of Minnesota's St. Paul campus.

This year's drought will be the focus of the day-long conference. Speakers include faculty from the University of Minnesota, North Dakota State University, South Dakota State University and the University of Wisconsin.

Minnesota's state climatologist Jim Zandlo, Minnesota Department of Natural Resources, will be among the presenters. Other presenters will include extension economists Steven Taff, Stanley Stevens and Al Harris, University of Minnesota; Richard Shane and Gene Murra, South Dakota State University; George Flaskerud, North Dakota State University; and Robert Cropp, University of Wisconsin.

Speakers will release their annual situation and outlook statements summarizing supplies, demands and prices. The conference will also address agricultural income projections for 1989.

For more information about attending the conference, call toll free 1-800-367-5363 or write to Cathie Bergum, Educational Development System, 433 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108.

# # #

AEA,BSS,CEO,V1,V2,V3,V4,V7,A1 NAGR2620

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Aug. 11, 1988

Source: Jim Linn
612/624-4995
Writer: Joseph Kurtz
612/625-3168

MANAGE CORN SILAGE FOR MAXIMUM FEED VALUE

Many dairy and beef producers who are short on hay because of the drought will be feeding their cattle more corn silage this winter.

Good harvesting and ensiling management are necessary to get the maximum feed value from corn silage, according to Jim Linn, dairy specialist with the University of Minnesota's Extension Service.

"Before harvesting corn for silage, check the moisture content of a few rows," says Linn. "Ensiling corn plants above 70 percent moisture will result in poor fermentation, excessive seepage from silos, low palatability and poor animal performance."

Linn recommends that corn plants be 65 to 70 percent moisture for ensiling in bunkers, trenches or piles and 60 to 65 percent for upright silos.

Corn should be chopped to a length of 1/4 to 3/8 inch, according to Linn. The longer chop is better for dairy cows, while the finer chop is necessary for dry silage that won't pack well.

While corn silage from drought-stressed plants can be high in

nitrate, grain development will drastically reduce nitrate levels. "Plants with no grain will decrease in nitrate level the longer they remain in the field and grow," says Linn. "If corn plants are high in nitrate when you are ready to chop, cut them 12 to 15 inches above the ground to reduce nitrate content."

Linn emphasizes that testing for nitrates is a good idea, especially with green-chopped corn. But he adds that corn harvested from late August through September should be low enough in nitrates after fermentation that there should be no feeding problems.

Silage from drought-damaged corn should have 75 to 90 percent of the feed value of normal corn silage. For silage from plants that are barren or low in grain yield, Linn suggests adding 100 to 200 pounds of shelled corn per ton of wet silage. This will improve fermentation and feeding value.

Linn recommends adding limestone to corn silage only if nitrate nitrogen is higher than 3,000 parts per million on a dry matter basis. For this high-nitrate feed, 10 pounds of limestone per ton of wet silage will extend fermentation, increasing nitrate breakdown.

Linn recommends filling silos rapidly and packing as tightly as possible. Pack bunkers and piles with rubber-tired tractors.

Linn has a final but important warning in connection with the silage harvest: "Beware of silo gas dangers. Do not enter upright silos for at least four weeks after filling."

# # #

AEA,BSS,CEO,V1,V2,V3,A2,D NAGR2640

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Aug. 11, 1988

Source: Lee Hardman
612/625-8700
Writer: Jack Sperbeck
612/625-1794

GETTING GOOD SOYBEAN YIELD ESTIMATE TAKES TIME

It's difficult to precisely measure soybean yields before harvest. It takes some time and attention to detail, says Lee Hardman, agronomist with the University of Minnesota's Extension Service.

Hardman has modified a procedure developed by Harold Reetz of the Potash and Phosphate Institute that will provide some good estimates:

1. Count the number of plants in 1/1000 acre in 10 randomly selected areas of the field. The following table gives the length of row required for various commonly used row spacings:

Row Width (inches)	Row Length in 1/1000 acre
7	75 feet, 1 inch
10	52 feet, 2 inches
20	26 feet, 1 inch
30	17 feet, 5 inches
36	14 feet, 6 inches

For narrow rows, it may be easier to count plants in a rectangular area. For 7-inch rows, count the plants in 5 adjacent rows, each 15 feet long. Or count the plants in 10 adjacent rows,

each 7 feet, 6 inches long.

2. To select a sample location, choose a point in the row, then count down the row 10 plants. Pull this plant and count the pods on it. This procedure is important to avoid any bias in selecting plants for the pod count. Repeat this procedure at least 20 times. The more plants on which you take pod counts, the more accurate the estimate.

3. Calculate the average number of pods per plant (divide the total number of pods by the number of plants on which pods were counted).

4. Determine the total number of pods produced on 1/1000 of an acre (multiply number of plants obtained in step 1 by the average number of pods per plant from step 3).

5. Calculate seed weight. Multiply total number of pods by 0.4024 grams to get total weight in grams. Divide total gram weight by 453.6 grams to get weight in pounds.

6. Calculate the yield equivalent in bushels per acre (multiply total pounds in sample by 1,000 and divide by 60).

"You can improve accuracy by sampling more areas," Hardman says. The method is more reliable the closer to harvest you take the measurements.

Here's an alternative calculation procedure for steps 5 and 6 above, based on the assumption there are 2.5 seeds per pod and 2,500 seeds per pound:

5a. Calculate the number of seeds per acre (multiply pods per acre by 2.5).

6a. Calculate the pounds of yield per acre (divide seeds per acre from 5a by 2,500).

7a. Calculate the yield (divide pounds of yield per acre from 6a by 60 to get yield in bushels per acre).

# # #

AEA,BSS,CEO,V1,F

NAGR2633

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 11, 1988

Source: Donna Rae Scheffert
612/625-7212
Writer: Richard Sherman
612/625-3154

FAMILY LEADERSHIP PROGRAM SEEKS VOLUNTEERS

"Future shock," coined in the 1970s, suggests social and technological changes so rapid that they overwhelm our ability to adapt. Not even the family, representing such basic needs as security, belonging and shared values, has been spared from it. Young families worry about providing high quality education for their children. Low-income families struggle to afford decent housing. Older Americans face losing their life savings to pay for health care.

Family Community Leadership (FCL), a national program now being implemented in Minnesota, won't slow the pace of change, but may help take some of the "shock" out of that future for families. The FCL program encourages and supports emerging leaders. It teaches practical leadership skills and encourages increasing awareness of issues.

Guiding change in ways that support and strengthen families is the key to FCL according to Donna Rae Scheffert, FCL's leadership program coordinator for the University of Minnesota's Extension Service. FCL is a cooperative effort between the Minnesota Extension Service and the Extension Home Economics Board. The

W. K. Kellogg Foundation is providing partial funding.

"Family issues like education, housing and health care demand that we redefine our programs and policies," says Scheffert. She says the yardstick FCL uses to measure its success is, "Does this strengthen and support families or pull them apart?"

To accomplish its goal of strengthening families, FCL seeks and trains volunteers from all walks of life to work as emerging family and community leaders. Scheffert says that persons trained by FCL will represent a diverse cross section of Minnesota's population, not just appointed or elected officials.

Scheffert encourages action-oriented men and women who are willing to work on behalf of families and their communities to become involved. FCL volunteers are not expected to be advocates for specific changes, she says. They will be expected to share their training to help resolve those issues with others.

Teams of volunteers will undergo 30 hours of training. The training will focus on six key areas: issue analysis, leadership, public policy, group process, teaching others and volunteerism. Each team accepted for training must agree to share the FCL information with others in their organization or community. Initial training for 25 teams from across the state will be held Oct. 21-23 at Craguns in Brainerd.

Anyone interested joining an FCL team is encouraged to contact Donna Rae Scheffert at (612) 625-7212. Applications will be accepted until Sept. 1.

# # #

V1,V4,V7,V8,E1,E2,E5,E7,J,Y NHEC2625

News and Information

Aug. 15, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Cynthia Ash
612/625-6290
Writer: Sam Brungardt
612/625-6797

POWDERY MILDEWS ARE COMMON EVEN IN DRY YEARS

Although it's been a hot, dry summer, Minnesotans may be surprised to find powdery mildew, a white-to-gray, powdery substance, on some of the plants in their yards and gardens.

Cynthia Ash, assistant plant patholigst with the University of Minnesota's Extension Service, says that powdery mildew, unlike other fungal diseases, does not need prolonged periods of free moisture on the foliage to infect plants. The several related fungi that cause powdery mildew need only occasional periods of high humidity to gain a foothold.

Ash explains, "The fungus grows over the surface of the leaf and sinks little structures into the leaf to derive nourishment. Powdery mildew seldom seriously harms the numerous types of plants it infects but it can reduce photosynthesis and weaken the plant.

"To prevent problems with powdery mildew, avoid planting susceptible plants in heavily landscaped areas. In existing landscapes, pruning or replacing plant materials to increase air circulation and sunlight penetration will help. Avoid overcrowding. Fungicides are available for some plants, but are only a temporary cure. For more information, consult your local office of the Minnesota Extension Service."

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Aug. 15, 1988

Source: Deborah Brown
612/624-7491
Editor: Sam Brungardt
612/625-6797

MID-AUGUST IS TIME TO THINK ABOUT LAWN RENOVATION

If we get enough rain in August for lawns to come out of dormancy, chances are they'll need some repair work and a bit of extra attention, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

If the lawn looks a little thin, fertilizing and watering might be all that's needed, Brown says. Fertilizer may be applied anywhere from mid-August through September, whenever the grass greens up again. A second application should go on in late October or early November. Meantime, if rainfall is on the light side, supplement with a good, weekly soaking to keep grass growing vigorously.

Brown says, "If the grass is very thin or has died in areas, you'll need to work harder to restore it. Begin by running an aerifying machine over the lawn, criss-crossing in several directions. Then, if you have a thatch build-up thicker than 1/2 inch, use a power rake to slice through the thatch and pull some of it out of the lawn.

"The combination of aerifying and power raking will loosen the soil enough so you can overseed. You'll also need to keep the

area moist to ensure good seed germination."

Brown advises using a mild fertilizer, such as Milorganite, which is made from sewage sludge, so as to not burn the young seedlings. The seed and fertilizer can be mixed together and spread at the same time. Just be sure to water the seed and fertilizer in well, and continue to water frequently while the grass is young.

"In southern Minnesota," Brown says, "you should be able to seed as late as Sept. 10 and still get good results. If renovation is begun too late, seeds won't have long enough time to become well established before winter."

# # #

I2 NAGR2645

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Aug. 15, 1988

Source: Craig Hassel
612/624-7288
Writer: Pam Barnard
612/625-4730

HOW TO AVOID A "ROLLER COASTER" STOMACH AT THE FAIR

Let's face it, as we head once again for the wonders of the Minnesota State Fair, thoughts of proper nutrition are quickly forgotten amid the smells of fried cheese curds, pizza, corn dogs, pies, ice cream and an array of other eatery options.

"Sometimes the choices are too much and we pay the price of overindulgence," says Craig Hassel, food technologist with the University of Minnesota's Extension Service. "Certainly there are lots of opportunities to go beyond our normal eating patterns. The question we need to deal with is, how can we make the best tradeoff between beckoning foods and discomfort afterwards?"

"Beyond knowing your own limitations, the issue to also be aware of concerns food safety," says Hassel. Food stands at fairs must meet food inspection and licensing requirements, and the Minnesota State Fair brings in merchandisers who generally know how to handle food safely.

Hassel gives these tips to help you most enjoy your visit to the fair:

--Look for a food booth that looks orderly and busy. Orderliness and cleanliness generally go together, and if the

product is selling, it doesn't have a chance to spoil.

--Be suspicious of foods left to sit out at temperatures between 45 and 140 degrees F for extended periods of time.

--Avoid cream pies, custards and cream-filled pastries unless they have been kept refrigerated. Be sure all mayonnaise-based salads are served cold.

# # #

CEO,V2,V4,V7,V8,H1,I1 NHEC2641

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 18, 1988

Source: Harold Wilkins
612/624-9703
Writer: Sam Brungardt
612/625-6797

Editors: Call Laura Kalisch at (612) 624-3039 to obtain a photograph of Wilkins to use with this story.

SOCIETY OF AMERICAN FLORISTS HONORS U OF M PROFESSOR

Harold F. Wilkins, a University of Minnesota professor who is considered the father of the alstroemeria industry, has been inducted into the Society of American Florists' Floriculture Hall of Fame, one of only 12 academics who have been so honored.

Wilkins has been a faculty member in the University of Minnesota's Department of Horticultural Science and Landscape Architecture since 1966. He is involved in floricultural research for the Minnesota Agricultural Experiment Station, extension work for the Minnesota Extension Service and teaching.

Wilkins' major research interests have been with the Easter lily, freesia, azalea, poinsettia and alstroemeria. His research group discovered how flowering is regulated in the alstroemeria, and this led to the development of a new, multimillion-dollar floral industry in the United States.

Wilkins, along with his graduate students and colleagues, has received awards for outstanding research papers from the American Society for Horticultural Science, and he was named a fellow of the society in 1984 in recognition of his graduate student

training, teaching, research and extension work. He also won a Fulbright Fellowship to Norway in 1987.

A native of southern Illinois, Wilkins received his Ph.D. from the University of Illinois. He also attended and taught at Cornell University, and worked at the University of Florida's Gulf Coast Experiment Station before moving to Minnesota.

# # #

V1,L1,N2 NEXP2644

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 22, 1988

Source: Cynthia Ash
612/625-6290
Editor: Sam Brungardt
612/625-6797

ASTER YELLOWS MAY BE CAUSE OF DYING MARIGOLDS

Aster yellows, a plant disease that was widespread in 1987, is again causing severe problems, especially with Minnesota gardeners' marigolds.

Cynthia Ash, assistant plant pathologist with the University of Minnesota's Extension Service, says aster yellows is caused by an organism called a "mycoplasma" that is spread from plant to plant by certain leafhoppers.

She says, "Marigolds are very susceptible to aster yellows, and other plants, including asters, delphiniums, daisies, petunias, phlox, lettuce and carrots can also become infected."

According to Ash, the first symptom of aster yellows is the loss of chlorophyll (the green pigment) in the veins of the leaves, followed by a yellowing of new growth, an erect habit, stunting and greenish flowers.

"Marigolds often take on a purple color," Ash says. "Asters have stiff, yellow growth with many secondary shoots, and the plants are stunted. The tips of carrot foliage will appear stunted, yellowed and bushy and the carrot root will have many

short, bushy, secondary roots, often arranged in several rows along its length."

What can one do about aster yellows? Not much, according to Ash. "Remove infected plants as soon you notice them," she advises. "No chemicals are recommended for control."

# # #

I2 NAGR2650

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 22, 1988

Source: Cynthia Ash
612/625-6290
Editor: Sam Brungardt
612/625-6797

SPRAY TOMATO PLANTS IF LEAF SPOT FUNGUS ATTACKS

Many people who faithfully watered their gardens during this summer's hot, dry weather may have unwittingly provided ideal conditions for the establishment and spread of Septoria leaf spot, a common foliage disease of tomatoes.

"Undoubtedly, many gardeners water late in the day," says Cynthia Ash, assistant plant pathologist with the University of Minnesota's Extension Service. "As a result, the foliage stays wet all night and provides an excellent chance for leafspot fungi to germinate and infect the plant."

Ash says now is the time for gardeners to check the lower leaves of tomato plants for symptoms of leaf spot and to take preventative measures.

"The spots form first on the lower leaves," she says. "They are brown or gray, circular, up to 1/8 inch in diameter and often have a light center with a darker margin. Persons with very good eyesight or a hand lens can see small, black structures forming in the centers of the spots. Numerous lesions will cause the leaves to yellow and fall off.

"When symptoms are first noticed, remove any infected leaves and begin a spray program with mancozeb or chlorothalonil, which

are sold under several different trade names," Ash advises. "In the future, avoid overcrowding, water early in the day and remove all tomato refuse from the garden in the fall. This will help to minimize disease problems."

# # #

I2 NAGR2652

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 22, 1988

Source: Deborah Brown
612/624-7491
Editor: Sam Brungardt
612/625-6797

WATER TREES, SHRUBS FAITHFULLY IF YOU PLANT THEM NOW

Many people have shied away from planting trees and shrubs because of the hot, dry weather. If you are able to water regularly, it's perfectly acceptable to plant. That's the opinion of Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

Brown says, "By late August, nights will be dependably cooler, and--we hope--more frequent rains should make the job of caring for newly planted trees and shrubs much easier."

What kind of stock can be planted in late summer and fall?

"Look for healthy, well-cared-for nursery stock growing in containers or plants with balled and burlaped root systems," Brown advises. "Don't transplant small trees from the woods or from one part of your yard to another. Instead, move those plants early next spring."

Brown says the best time to plant evergreens is after temperatures drop substantially in September through the middle of October. If they are planted later than this, there's less chance for the roots to become established before harsh weather sets in.

# # #

News and Information

August 22, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Jeffrey Hahn
612/624-4977
Writer: Sam Brungardt
612/625-6797

1988 IS YIELDING A BUMPER CROP OF BOXELDER BUGS

It's been a strange summer as far as boxelder bugs are concerned. Normally, they'd hardly be noticed as they feed on the seeds of boxelder trees. But, it seems the black-and-orange adults and bright red nymphs can be found everywhere but in boxelder trees.

Jeffrey Hahn, entomology educator with the University of Minnesota's Extension Service, says, "In addition to being found on a wide variety of trees and other plants, boxelder bugs have been found clustered outside buildings. Inevitably, some accidently come inside, although they are still primarily interested in feeding at this time of the year.

"As the weather begins to cool in late summer, boxelder bugs will look for sheltered places to spend the winter. They will often cluster around the foundations of buildings. In some cases, large numbers will manage to get inside. They cause no damage, but can be quite a nuisance."

Hahn says people need to act this fall if they are to reduce the number of boxelder bugs that will be around not only this autumn, but also next winter and next spring. Repairing cracks and loose-fitting screens and doors can help reduce the number

that come inside, although it is inevitable that some will manage to do so by entering under siding and through opened doors.

Although they do not seem to be effective for long, insecticides, such as diazinon or chlorpyrifos, can help control boxelder bugs on the exteriors of buildings. An alternative to insecticides is to spray with 1/2 cup of powdered detergent mixed in 1 gallon of water. Hahn says this should be applied directly on any boxelder bugs that accumulate along foundations. He warns, however, that this mixture may discolor some types of siding, so it's best to test it in a small, inconspicuous spot before spraying the entire area.

"Apply the mixture as often as is needed," Hahn says.

"Those boxelder bugs that are wandering indoors will not live long and cannot reproduce. It you cannot wait for them to die, simply use a vacuum cleaner to get rid of them."

# # #

I2,I4 NAGR2655

News and Information

August 22, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Tom Thorburn
612/625-9292
Writer: Joseph Kurtz
612/625-3168

QUESTIONS AND ANSWERS ON THE PORK REFERENDUM

The following information on the upcoming Pork Referendum comes from Tom Thorburn, agricultural program leader for the Minnesota Extension Service, who is serving as state coordinator for the referendum.

Q: When is the Pork Referendum?

A: Sept. 7 and 8.

Q: What is being decided in the referendum?

A: Whether to continue the checkoff of 25 cents per $100 of value on all hogs and pigs sold in the United States as well as on all imported hogs and pork products.

Q: Where will the voting take place?

A: In county extension offices throughout the nation.

Q: Who is eligible to vote?

A: Any person who produced and owned two or more hogs or pigs for sale from Nov. 1, 1986 until the referendum date. One vote may be cast by an individual pork producer, partnership, corporation, cooperative or other entity, either in person or by absentee ballot. Spouses and young people who produce and own hogs for sale in their own names may vote, regardless of age. If members of a family, corporation or partnership have produced or owned

hogs for sale in each of their names, then each member may vote. A representative of a partnership or corporation may vote as both an individual producer and as a representative of the partnership or corporation.

Q: If I am unable to vote in person, what is the procedure for voting by absentee ballot?

A: County extension offices and local pork producers' organizations have preaddressed postcards that you can use to request an absentee balllot though Aug. 26. You can also request an absentee ballot by writing to Pork Referendum Coordinator, 146 Classroom-Office Bldg., University of Minnesota, 1194 Buford Ave., St. Paul, MN 55108. If you prefer, you may stop by the office to request a ballot.

Q: Why is the referendum being held?

A: The law establishing the checkoff, passed by Congress in 1985, requires the referendum.

Q: What is the purpose of the checkoff?

A: To provide funds for pork promotion and research and to enhance the pork industry.

Q: Who administers the funds collected by the checkoff?

A: The National Pork Board, whose members are elected by producers, administers the checkoff funds. The board is headquartered in Des Moines, Iowa.

Q: How much money do Minnesota producers contribute to the checkoff?

A: In 1987, approximately $1.8 million was collected from Minnesota pork producers.

Q: How many Minnesota producers are eligible to vote in the referendum?

A: Approximately 16,600.

Q: What is required for the checkoff to continue?

A: If a simple majority of those voting in the referendum approve the checkoff, it will continue indefinitely.

Q: Will there be another referendum in the future?

A: A future referendum on the checkoff can be held if 10 percent of all pork producers sign a petition asking for a referendum or if the U.S. Secretary of Agriculture deems it necessary to hold a referendum.

# # #

AEA,BSS,CEO,V1,V2,V3,V4,P1 NAGR2656

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 25, 1988

Source: Jeffrey Hahn
612/624-4977
Editor: Sam Brungardt
612/625-6797

SPRAY WASP NESTS BEFORE IT'S TIME FOR QUEENS TO SEEK SHELTER

Despite this summer's hot, dry weather, the cool, wet weather Minnesotans enjoyed last April and early May slowed wasps during nest construction. This resulted in only average numbers of wasps compared to last year.

However, Jeffrey Hahn, entomology educator with the University of Minnesota's Extension Service, points out that even average numbers of wasps can cause problems. For that reason he says it's important to be aware of tactics for controlling wasps at different times of the year.

Hahn says, "As autumn draws near, the standard approach for controlling wasps needs to be modified. Earlier in the summer, a nest could be treated with insecticides, but in late summer wasps have a greater tendency to move toward the living quarters of a home, especially when control is attempted. If you have a wasp nest on or near your house, treat it immediately. The longer you wait to treat it, the greater the chance the wasps will try to come inside.

"As we get closer to our first hard freeze, it becomes less important to try to control wasps, especially with the risk of

driving them inside. Most of the colony will die after the first hard frost, making insecticide applications unnecessary. Subsequent freezes will finish off any remaining workers. Only newly mated queens will escape the colony and survive by spending the winter in a sheltered place."

# # #

I2 NAGR2657

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 25, 1988

Source: Jim Linn
612/624-8995
Writer: Joseph Kurtz
612/625-3168

CORN SMUT NOT A THREAT TO CATTLE

Corn smut may be more widespread than usual this year, but should not be a problem for dairy and beef producers.

"For cattle, smut-infested corn causes no palatability problems and no health problems," says Jim Linn, extension dairy specialist at the University of Minnesota. "This is true for both grain and silage from smut-infested corn plants."

Smut is a fungus disease which can produce a reddish-brown discoloration in both the grain and silage. It tends to be more common in seasons that are dry early, such as during May and June.

Linn cited research in Germany in which dairy cattle were fed smut-infested corn silage exclusively. The research showed no effect on feed intake by the cows and no effect on milk production or composition.

Linn says that although smut on corn looks ugly, it doesn't appear to cause problems for any ruminant animals.

# # #

AEA,BSS,CEO,V1,V2,V3,A2,D NAGR2661

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 25, 1988

Source: Ray Arthaud
612/624-4995
Writer: Joseph Kurtz
612/625-3168

NITRATES MAY STILL POSE DANGER TO CATTLE

Livestock producers need to continue to guard against feeding forages that are high in nitrates, a University of Minnesota beef cattle specialist warns.

Ray Arthaud says the recent rains may have lured some producers into thinking that problems with nitrates are over. "In some cases nitrate levels might actually be higher now," he points out.

The U of M specialist says there have been reports of cattle poisoned by nitrates after every recent rain. The most common problem is with green-chopped forages.

"Plants stressed by the drought may start growing again until the limited rainfall is used up, and then revert to the drought-stressed condition," says Arthaud. "While the new growth is going on, nitrates will be produced at levels similar to a normal year and be converted to plant protein in a fairly normal pattern.

"Once the soil moisture is exhausted again the nitrates may fail to be converted to protein. They may remain in the plant at even higher levels than before the rain."

Arthaud emphasizes that when there is concern about nitrate

levels in chopped forages, the best strategy is to send a sample to a laboratory for testing.

# # #

AEA,BSS,CEO,V1,V2,V3,A2,D NAGR2660

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 25, 1988

Source: Stanley Stevens
612/625-8770
Writer: Jack Sperbeck
612/625-1794

CONTACT ELEVATOR IF YOU HAVE FORWARD CONTRACTING PROBLEMS

Farmers who can't deliver grain sold under forward contracts should get in touch with the contracting elevator--quickly.

The sooner you contact the elevator about possible delivery problems, the better your chances of resolving the problem to your mutual satisfaction.

"There's probably a small percentage of Minnesota farmers in this situation, but it can be a serious problem for them," says Stanley Stevens, grain marketing specialist with the University of Minnesota's Extension Service. He estimates that about 25 percent of Minnesota farmers did some forward contracting this year--most for less than one-half of normal yields. And there's probably only a "few percent" of those who can't deliver grain due to the drought.

Some tips for farmers with contracting problems:

1. Review the contract obligations and compare them with your crop potential. Seek legal advice if you don't understand the contract language. If you believe that you can't meet the contractual commitment, you could deliver current stocks of grain to meet the contract.

2. Because there are many different forms of forward contracts, there could be several alternatives for resolving potential problems. Don't expect the elevator to completely relieve you of your commitments. Just "walking away" from a contract is no solution and could result in legal action and legal costs to both parties.

3. You may have to use funds from crop insurance, federal disaster payments or other sources to buy back contract obligations. Another potential source of funds is low-interest loans from federal lending agencies that may be available as drought or disaster relief.

4. You may wish to consult an attorney if you have questions about the legality, validity or enforceability of a contract. Litigation is expensive and time consuming. However, an attorney's advice may help you understand your alternatives.

In the longer term, widespread defaults on forward contracts could lessen the availability of future forward contracts. Defaults could also reduce the marketing options and prices available to farmers.

Elevators and other purchasers of forward contracts may be extremely cautious in limiting the amount of foward contracting to a modest percentage of the crop. And, they may do that only after considering the financial position of the seller.

Inability of the farmer or seller to deliver, means the loss is shared by other patrons in a purchasing cooperative or privately owned elevator.

# # #

AEA,BSS,CEO,V1,A1,F NAGR2662

News or information
for extension,
experiment station staff

Educational Development Systems
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 29, 1988

Source: Jeffrey Hahn
612/624-4977
Editor: Sam Brungardt
612/625-6797

COOLER WEATHER CAN BRING INCREASE IN FLEA PROBLEMS

Fleas--a very difficult problem to deal with any time--can be especially troublesome in autumn. They, like many other insects, migrate indoors as the weather cools, and when people and pets go on vacation, fleas get very hungry and literally make their presence felt when the family returns home.

Although fleas can be very persistent, it is possible to eliminate them, says Jeffrey Hahn, entomology educator with the Minnesota Extension Service. "If you have pets, carry out control measures on them at the same time you begin them in your home," he advises. "Consult a veterinarian to be sure you treat your pet properly."

Hahn recommends concentrating control efforts wherever fleas are seen. To determine where they occur, walk through the house in white socks. The dark-colored fleas will be very conspicuous as they jump against the white background.

"Thoroughly vacuum carpets and furniture where fleas are found, especially places where pets frequently sit or sleep," Hahn advises. "Washing sheets in hot water will kill all stages of fleas.

"Bug bombs are only effective on insects that are out in the open and leave little residual. They have little effect on fleas and are not recommended. Instead, insecticides, such as chlorpyrifos, available in most hardware stores in easy-to-use formulations, should be sprayed along baseboards, under and around furniture and other places where fleas occur. Insect growth regulators, such as Strike FleaEnder, are very effective against immature fleas but be sure to follow all label directions explicitly."

If the fleas persist despite your best efforts, Hahn says it may be desirable to contact a professional pest control company, whose experience and larger selection of pesticides will increase your chances of eliminating them.

# # #

I4 NAGR2653

News or information
for extension,
experiment station staff

Educational Development Systems
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 29, 1988

Source: Laura McCann
612/625-3775
Editor: Sam Brungardt
612/625-6797

Editors, broadcasters: Please include this symposium in your publication's or station's calendar of coming events.

SYMPOSIUM TO BE ON PRODUCTION, MARKETING OF CUT, DRIED FLOWERS

The University of Minnesota's Center for Alternative Crops and Products and the American Society of Horticultural Science are sponsoring a symposium entitled "Commercial Field Production of Cut and Dried Flowers" which will be Dec. 6-8, 1988 at the Ramada Inn in St. Paul, Minn.

The symposium's objectives are to discuss the current magnitude of the industry and its potential, identify useful marketing systems and strategies, present commercial production and handling information, and identify research needs in the industry.

For more information about the symposium, contact Cathie Bergum, Educational Development System, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108 or call (800) 367-5363 or (612) 625-3775.

# # #

V1,V2,V3,L1,SelMedia NESP2664

News or information
for extension,
experiment station staff

Educational Development Systems
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

August 29, 1988

CONTACT: Martin Moen
612/625-6243

NEWSLINE: 612/625-7720

MEMO TO NEWS PEOPLE

Here's the University of Minnesota Extension Service's Newsline schedule for Sept. 5-9. Watch the AP and UPI Newswires for substitutions or additions.

Tuesday, Sept. 6-11 a.m. until 5 p.m.

Extension climatologist Mark Seeley (612/625-4724) gives his Weekly Ag Weather Advisory, which provides a crop forecast based on the latest data from the National Weather Service. These reports include soil moisture reports from around the state.

Thursday, Sept. 8-6 a.m. until 5 p.m.

Extension plant pathologist Ward Stienstra (612/625-6290) discusses the latest outbreak of soybean cyst nematode. Because of the drought, many farmers are discovering they have this problem, which significantly reduces yields.

# # #

A1,SelMedia UM090588

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Mike Schmitt
612/625-1796
Writer: Jack Sperbeck
612/625-1794

AGRONOMIST RECOMMENDS EARLIER CORN HARVEST

You should probably harvest corn earlier this fall--at a higher moisture content.

"Field losses are apt to be much higher than normal this year," says Mike Schmitt, agronomist with the University of Minnesota's Extension Service. Schmitt cites these reasons for that assessment:

--The potential for stalk rot is high because most corn plants have been weakened by the drought and recent rains.

--Ear droppage may be a problem because many plants "shut down" early and the shanks collapsed.

--Lack of brace roots may cause lodging problems, even though most corn is not very tall.

--Pest infestations on ears are more likely because the husks of some hybrids didn't cover two-thirds of the ear.

Schmitt says, "You need to balance field losses and drying costs." Based on normal field losses and current drying costs, he recommends harvesting when the grain is 24 to 26 percent moisture.

# # #

AEA,BSS,CEO,V1,V2,V3,F

NAGR2666

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Jack True
612/625-9733
Writer: Jack Sperbeck
612/625-1794

COMBINE ADJUSTMENTS WILL BE IMPORTANT IN '88 CORN HARVEST

You'll probably need to pay extra attention to combine adjustment for this fall's corn harvest. Variable kernel size and shape plus smaller ears and many nubbins, courtesy of the drought, make normal combine adjustments more important.

"There's extreme variation within fields and even on corn ears," says Jack True, agricultural engineer with the University of Minnesota's Extension Service.

True recommends moving the stripper plates in to retain the smaller ears. Concave settings will probably need to be reduced and cylinder speeds changed to shell the smaller ears. However, these changes may result in excessive cob break-up and cause problems on the cleaning sieves.

True also recommends making sieve and wind adjustments to allow for a wider range of kernel size and additional cob pieces. Also, keep the header low and drive carefully to stay on the row to gather all possible ears.

But even with close attention to combine operation, grain may still require extra cleaning to remove trash and impurities. "Do this cleaning either at the dryer or elevator before storing or marketing the grain," True advises.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Craig Sheaffer
612/625-7224
Writer: Jack Sperbeck
612/625-1794

U OF M AGRONOMIST OFFERS TIPS FOR MANAGING ALFALFA THIS FALL

Your lowest risk of winter injury for alfalfa is to not cut after Sept. 1-10. The next best option is to wait until early to mid-October.

"If possible, avoid cutting in mid-September to reduce chances of winter injury," advises Craig Sheaffer, University of Minnesota research agronomist with the Minnesota Agricultural Experiment Station.

Sheaffer says it's important to apply potassium this fall. The best timing would be to take a cutting before Sept. 1, then fertilize soon afterwards. The potassium would help decrease chances of winter injury--especially if you need to take a cutting in October.

"Many farmers did not apply potassium fertilizer because they needed to save money to buy hay," Sheaffer says. "Now that hay prices have softened, it's a good time to apply potassium. High potassium levels--300 pounds per acre or more--decrease chances of winter injury."

If you take a cutting in October, leave longer stubble to help catch snow. Older stands are more susceptible to winter injury

than are younger stands. Also, a winter-hardy, disease-resistant variety is less prone to winter injury.

This year's drought left a wide array of management situations around Minnesota. Some farmers had a first cutting in June, then nothing until late August. Others, with more rainfall or irrigation, are getting three or four cuttings.

"One thing the drought did was to leave established alfalfa plants stronger--with more stored carbohydrates," Sheaffer says.

But he says many new seedings are weedy and have a high mortality rate, especially if they were seeded with a companion crop. "Check new alfalfa stands carefully this fall to help plan for next spring," Sheaffer advises. "You should have 20 alfalfa plants per square foot. You may need to reseed fields or spots in fields next spring."

# # #

AEA,BSS,CEO,V1,V2,V3,F NAGR2669

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Larry Karels
612/625-1229
Writer: Evelyn Anderson
612/624-3770

STATE 4-H SHOOT TO DRAW 450 YOUNG PEOPLE TO BUFFALO

Buffalo, Minn., will host North America's largest youth shooting and conservation event Sept. 10-11, when 450 young people will gather for the Minnesota 4-H Invitational Shoot at the Buffalo Rodeo Grounds on Highway 55.

The youth will compete in events including archery, trapshooting and birdcalling, as well as marksmanship with firearms. In addition, they will take part in educational activities such as retriever dog exhibits, trapshooting demonstrations and conservation displays by 4-H groups, conservation organizations and the Minnesota Department of Natural Resources.

Shooting sports/wildlife is the fastest growing 4-H project area, with 4,000 participants ranging in age from 9 to 19, about 40 percent of whom are female. The program teaches life skills through the study of marksmanship, wildlife and ethical conduct.

Minnesota 4-H Youth Development is the state's largest out-of-school educational program, serving 137,000 young people in cities, towns and rural areas. A program of the University of Minnesota's Extension Service, it is available in all counties.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Ron L. Moser
612/624-7745
Writer: Joseph Kurtz
612/625-3168

LIGHTWEIGHT CORN MAKES GOOD FEED

A bushel of corn harvested this fall will probably weigh less than usual, but a pound of the corn is likely to contain higher-than-usual levels of protein and fiber.

"Because of the drought, corn test weights this fall may be as low as 40-45 pounds per bushel," says Ron Moser, swine nutrition specialist with the University of Minnesota's Extension Service. "Protein and fiber contents as a percent of corn dry matter are higher, while carbohydrate and fat contents are lower in lightweight corn as compared with normal corn."

Moser says pork producers may be able to take advantage of the higher protein content of lightweight corn to save money on supplement.

"Substitution of lightweight corn for normal corn on a pound-for-pound basis will increase the protein content of the total diet," Moser says. "Producers should consider obtaining an analysis of the protein content of their lightweight corn from a commercial laboratory. They may be able to reformulate the diet to use less supplement."

The higher fiber content of lightweight corn is due to an increase in hull as a percent of the whole grain. Also, more cob may get into the grain when drought-stressed corn is harvested.

"Fiber increases the bulkiness of the diet, but hogs can adjust by eating more if the fiber content is not too high," Moser says. "Iowa researchers have reported that the feeding value of lightweight corn is equal to normal corn for growing pigs."

Moser says producers who feed lightweight corn should mix it with other ingredients on a weight basis, rather than on a volume basis. Those using a meter-type feed mill will need to recalibrate volumetric flow rates to account for the change in bulk density of the corn. Monthly calibration checks are essential. The Pork Industry Handbook publication "Calibrating Meter-Type Feed Mills" (PIH-94), available through Minnesota county extension offices, has more information on this process.

Moser says lightweight corn is often discounted more in the commercial market than its feeding value warrants. "It may pay to segregate corn going into different bins by test weight," he points out. "The higher-test-weight corn will be worth more on the commercial market, and the lighter corn can be fed or sold to local feeders."

# # #

AEA,BSS,CEO,V1,V2,V3,P1 NAGR2673

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Juanita Reed
612/625-9231
Writer: Sharon Oberg
612/625-7057

GRAND CHAMPION ANIMALS TO BE OFFERED AT 4-H LIVESTOCK AUCTION

When the auctioneers bark their final "sold" at the 4-H Livestock Auction on Monday, Sept. 5, at the Minnesota State Fair Swine Barn, 100 lucky bidders will go home with the finest 4-H animals in the state.

The auction, which begins at 12:30 p.m., is the culmination of 4-H Livestock Weekend, Sept. 2-5. It will feature 4-H purple-ribbon sheep, swine and cattle from this year's state fair, including the grand and reserve champions in each species.

Though the 4-H'ers who raised these prime animals will be justifiably proud, some may be sad when the time comes to sell their animals. A strong bond develops during the months of training, grooming and special care that it takes to develop a championship animal.

Of the 6,000 Minnesota youths participating in 4-H state fair projects this year, one-third are involved in livestock activities. Judges evaluate animals for quality, finish and conformity to standards for each class and species. About 25 percent of the 4-H market beef, sheep and swine shown at the fair

receive purple auction ribbons--signifying 4-H's Award of Excellence--and are sold in the auction.

Calling the auction will be Lt. Gov. Marlene Johnson and auctioneers John Barber of South St. Paul, and Ron Harder of Jackson, who have donated their services. A buyers' luncheon will be held at 11 a.m. in the Swine Barn just before the auction. The luncheon and auction are sponsored by the Minnesota Livestock Breeders Association. Lyle Lamphere of South St. Paul, secretary-treasurer of the association, will observe his 52nd year of work at the auction this year.

"Minnesota 4-H extends hearty thanks to the volunteer auctioneers as well as to the association and its members, who have made the auction a success for so many years," said Juanita Reed, University of Minnesota extension specialist. She also expressed congratulations to the 4-H members whose achievements are being recognized.

# # #

AEA,CEO,A2,O,P1,V1,V2,V4,Y

N4-H2671

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 1, 1988

Source: Harold Cloud
612/625-9733
Writer: Jack Sperbeck
612/625-1794

DROUGHT-STRESSED CORN IS BEST USED FOR FEED

Feeding drought-stressed corn locally may be a major economic advantage, says Harold Cloud, agricultural engineer with the University of Minnesota's Extension Service.

"On a pound-for-pound basis, drought-stressed corn will have about the same feed value as normal corn," Cloud says.

However, drought-stressed corn that's sold commercially will face major discounts--mainly for poor test weight. And if you buy drought-stressed corn from commercial sources, you'll probably pay market price.

The best economic return on the 1988 corn crop may be to handle, dry, store and use it as feed grain on the farm or to sell low test-weight corn to local feeders, Cloud says.

# # #

AEA,BSS,CEO,V1,V2,V3,F NAGR2665

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 8, 1988

Source: Joe Conlin
612/624-4995
Writer: Joseph Kurtz
612/625-3168

CONTROL FEED COSTS TO IMPROVE DAIRY PROFIT PICTURE

Controlling feed costs plays a big role in keeping dairy operations profitable these days in the wake of the jump in feed prices brought about by the drought.

Joe Conlin, extension dairy specialist at the University of Minnesota, says dairymen need to develop a well-planned strategy for keeping feed costs under control.

Conlin said a good place to begin is with a feed inventory. "Check the amount of feed you have stored and the amount you have left to harvest before you can replenish your supply with a new crop," he says. "Compare the inventory with the total amount of feed you will need during the same time. Excesses and shortages will show you the need to adjust feeding levels and to buy additional feed."

Forage testing and ration balancing are keys in stretching feed supplies, according to Conlin. They lower the chance of cutting production and profit by underfeeding, or wasting feed by overfeeding.

"Separate balanced rations for milking cows, dry cows, yearlings and calves," advises Conlin. "You can reduce the number

of overfed and underfed cows in the herd by feeding individually balanced rations to milking cows, or narrowing the production range of groups of cows you feed together. When rations are balanced for a group, higher producing cows tend to be underfed and lower producing cows overfed."

He cites University of Minnesota research showing a production increase of 1,100 pounds of milk when feed testing and ration balancing were done monthly. The increase was 780 pounds when testing and balancing were done seven times a year and 485 pounds when they were done five times a year.

When you buy feed, you may be able to save money by knowing your nutrient needs ahead of time, according to Conlin. This will allow you to base your purchases on the best nutrient price, such as cost per pound of protein or energy. It will also help you select appropriate substitute feeds, take advantage of quantity discounts, time purchases to take advantage of lowest prices, and buy only what you need.

One way to get the most mileage out of your forage supply is to give the best quality forage to your highest-producing cows during their peak production. The poorest forage will have the least consequence when fed to yearling replacements in a balanced ration, Conlin points out.

Some simple management adjustments can reduce waste at feeding time. Conlin says you may be able to save feed by fixing feed bunks, feeding more frequently, or topdressing with molasses to improve palatability.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Steve Taff
612/625-3103
Writer: Jack Sperbeck
612/625-1794

DROUGHT BRINGS CHANGES IN AG POLICY

Policy decisions made in reaction to the summer drought are likely to affect farm operations long after the rains return.

So say agricultural economists Steve Taff of the University of Minnesota and Norbert Dorow of North Dakota State University. In the longer run, there will be pressure on the secretary of agriculture to reduce required set-asides for the 1989 crop year.

This might be justified due to low or nonexistent surplus stocks, but the set-aside program accomplishes more than supply management. It's also the principal way the USDA manages its budget outlays. A higher set-aside rate might lead to higher market prices, but will also reduce total deficiency payments.

Reducing set-asides in response to drought shortfalls means increasing the USDA's budget exposure. Permitted plantings on which payments are made will be higher and farmers may respond to the present high market prices by planting even more next year than they might otherwise.

"A return to the price roller coaster seems inevitable," Taff says. As a result, Congress will still be confronted with the delicate balancing required among the sometimes conflicting

objectives of stable food supplies, moderate consumer prices, adequate farm income and affordable federal expenditures.

The ongoing General Agreement on Tariffs and Trade (GATT) negotiations, groundwater protection legislation and the next farm bill are other farm policy issues.

More details are in an article the economists wrote for the Ag Outlook insert of the Sept. 17 issue of "THE FARMER/THE DAKOTA FARMER."

# # #

AEA,BSS,CEO,A1,V1,V2,V3,V4 NAGR2689

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Bill Lazarus
612/625-8150
Writer: Jack Sperbeck
612/625-1794

THERE'S DOWNSIDE PRICE RISK IN WHEAT MARKET

Wheat prices may decline from fall levels since a short crop usually achieves its highest price early during the market season.

The "short" 1980 crop wheat crop reached the market peak in in November--about the usual time. It's possible we'll see a similar pattern this year, say economists with the University of Minnesota and North Dakota State University.

During the current marketing year, Minneapolis cash "to arrive" prices will probably average about $4.25 for hard red spring wheat and about $5.25 for hard amber durum of terminal quality.

Risk management suggests sales on rallies during the October-November period at prices above the projected averages. A farmer following this strategy would probably sell the crop at prices above the seasonal average farm price

Consider substituting 1988 production for any low protein wheat in the farmer-owned reserve. In addition to maintaining quality, the lower protein wheat can be sold at this fall's low protein premiums. The higher-protein wheat can then be held in the reserve until premiums are higher. The substitution of

reserve grain is subject to limitations and must be approved by the local ASCS office.

Sell wheat when prices are favorable since there's downside risk in the market. The Export Enhancement Program gave wheat considerable export support during the past marketing year. But it's uncertain how aggressively the USDA will use the program with higher prices and reduced stocks. Also, U.S. and world wheat production is likely to increase substantially during the 1989 crop year.

More information is available in the Ag Outlook insert of Sept. 17 issue of "THE FARMER/THE DAKOTA FARMER" magazine. The wheat outlook article was written by George Flaskerud, North Dakota State University, and Reynold Dahl and Bill Lazarus, both with the University of Minnesota.

# # #

AEA,BSS,CEO,A1,F,V1,V2,V3 NAGR2683

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Stanley Stevens
612/625-8770
Writer: Jack Sperbeck
612/625-1794

SOYBEAN MARKET TO BE MORE SENSITIVE TO OUTLOOK CHANGES

The best prices for 1988 soybeans will probably be at harvest or earlier. But there is some potential for new highs this winter, says Stanley Stevens, marketing economist with the University of Minnesota's Extension Service.

In the past, soybean prices following a drought had trouble sustaining harvest price levels into the second half of the marketing year. Substantial soybean and oilseed sales would be in order on harvest season rallies toward summer 1988 highs.

You may want to hold some oilseeds for winter pricing in case the Southern Hemisphere has production problems. The Southern Hemisphere weather has its strongest market impact from late December through early February. Oilseeds held beyond then will probably suffer loss of value.

Watch the level of Soviet interest to import soybeans and soybean meal between now and early February. That will impact whether Fall 1988 oilseed prices are sustainable into next year. If so, the planting season could offer good pricing opportunities again. But it's unlikely they will match harvest price levels.

Lack of subsoil moisture reserve build-ups this fall would become an important market factor and a good reason to moderately reduce the pace of sales.

More information on the oilseeds outlook will be in the Ag Outlook insert of the Sept. 17 "The Farmer/The Dakota Farmer" magazine. The oilseeds article was written by Stevens and Richard Shane of South Dakota State University.

# # #

AEA,BSS,CEO,A1,F,V1,V2,V3 NAGR2684

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Stanley Stevens
612/625-8770
Writer: Jack Sperbeck
612/625-1794

FEEDGRAIN PRICES MAY HAVE PEAKED FOR SEASON

There's a good chance feedgrain prices have already peaked for this season. Prices are apt to level off until harvest, then tail off as the marketing year continues.

One difference between the 1988-89 marketing year and other drought years is the severe depletion of subsoil moisture levels. Without good moisture after harvest, the market could be set for high price rallies next spring, says Stanley Stevens, marketing economist with the University of Minnesota's Extension Service.

With a narrow basis at harvest, producers wishing to speculate on such a price rally should consider using crop sales proceeds to purchase calls instead of storing corn.

Due to the drought, feedgrain supplies will be reduced by 25 percent, compared to 1987-88. But adequate supplies still exist. Higher prices will help ration supplies through reduced exports and feeding.

The expected reduction in set-aside requirements for next year will help replenish supplies in the longer term. Normally in a weather market, prices go higher than they need to and the short crop price pattern has an "early peak and a long tail."

More information on the feedgrains outlook is available in the Sept. 17 issue of "THE FARMER/THE DAKOTA FARMER" magazine. The feedgrains article was written by Stevens and Richard Shane of South Dakota State University.

# # #

AEA,BSS,CEO,A1,F,V1,V2,V3 NAGR2685

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: William Schafer
612/624-4793
Writer: Phyllis Jenks
612/625-7793

NEW PUBLICATION GIVES INFORMATION ON FOOD POISONING

A new publication from the Minnesota Extension Service can help people prevent illnesses caused by bacteria in food.

"Bacterial Food-Borne Illnesses" is by William Schafer, Minnesota Extension Service food technologist. It updates consumers, educators and food professionals on the transmission, incidence and economic effects of such illnesses.

A table lists foods involved and the symptoms, characteristics and prevention methods for each of the major illnessess. Schafer recommends ways to prevent illnesses in food prepared at home, take-out food and food eaten at restaurants. He also tells what to do if you contract a food-borne illness.

A copy of "Bacterial Food-Borne Illnesses" (HE-FO-3521) can be obtained from your county extension office. To order multiple copies, contact the Distribution Center, Minnesota Extension Service, (612) 625-8173.

# # #

CEO,H1,I1,V4,V7

NHEC2679

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Mike Boehlje
612/625-0231
Writer: Jack Sperbeck
612/625-1794

DROUGHT MAY BRING SECOND WAVE OF FINANCIAL STRESS

For some farmers, the financial crunch from the 1988 drought may come in 1989.

Debt-servicing problems from the drought are more likely to surface in 1989, say Michael Boehlje and Glenn Pederson, economists with the University of Minnesota's Extension Service. Farmers who negotiated debt-restructuring plans in 1987 and early 1988 may find lower yields from the drought will undermine their debt-servicing plans.

Most vulnerable to "second wave financial stress" will be farmers who went through debt restructuring this past year and livestock producers who buy most of their feed and don't qualify for federal feed assistance.

The agricultural sector continued to recover in 1988, but drought conditions make the future farm income situation uncertain. Nationally, net farm income is forecast at $40-45 billion in 1988, compared to $46 billion in 1987. That's roughly a 10 percent reduction.

The reduction is due to reduced inventories at the end of 1988 due to the drought. However, farm income in central and western

Minnesota and the Dakotas (where the drought was more severe) will probably drop more than the national average.

Effects of the drought suggest that farmers must continue to be aware of risk and risk-management strategies. Many farmers have become accustomed to carrying both cash reserves and feed reserves to protect against the risk of shortages or higher prices.

Other strategies for reducing risks of feed price increases include forward contracting and using options markets. Farmers who purchased crop insurance may find it was the difference between survival and financial failure in 1988.

More details on farm income are in the Ag Outlook insert of the Sept. 17 issue of "THE FARMER/THE DAKOTA FARMER" magazine.

# # #

AEA,BSS,CEO,A1,V1,V2,V3,V4 NAGR2688

News and Information

Sept. 12, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Ron Pitzer
612/625-8169
Writer: Phyllis Jenks
612/625-7793

CONFERENCE FOCUSES ON DROUGHT'S EFFECTS ON FAMILIES

Training helping professionals, community leaders, clergy and legislators in practical stress management skills was one of the goals of an Aug. 26 drought conference in Carver County, Minn.

Among the guest speakers was Ron Pitzer, family life specialist with the Minnesota Extension Service. An expert on stress management, he emphasized that although no one can do anything about the drought, there are ways people can deal positively with the stress it is causing.

Pitzer stated, "We're always hearing about stress because it's always there. The drought situation has simply accentuated existing stress many farm families have been experiencing for some time.

"An important job of the community," he said, "is to legitimize people's seeking help and support when they are experiencing such stress."

Encouraging stressed farm families to use local resources, such as mental health centers, social workers, county extension agents and clergy, Pitzer said, is an appropriate role for community leaders. He recommends that communities clearly communicate the message that seeking help in a crisis does not indicate weakness, but instead

indicates maturity and courage.

"It is key," Pitzer said, "that agencies and individuals helping these farmers continually keep the entire family in mind, not just the farmer. If real crisis coping skills are to be effective, the entire family needs to be involved in learning these skills. This means all family members communicating with each other about the problems, defining the situation together and working towards solutions as a unit. Pooling family resources for problem-solving can give back some feeling of control to the family while taking the burden of problem solving off of an individual family member.

"At the same time families should seek out and use the many external support systems available. These are some appropriate ways families can begin dealing with the stress caused by a crisis."

Pitzer particularly emphasized the effects of such a crisis on children and teens in the family. His message was clear: Parents need to express their feelings to their children. This lets children know that expressing feelings is okay and may also acknowledge their own feelings. Parents should speak candidly to their children about what to expect or what not to expect or even that they are unsure what to expect. The important thing is for parents to tell their children as much as they know. "And," Pitzer added, "if people have extra time because of the drought, they should use it in the best possible way...with their kids."

# # #

V1,V4,E5,E7,Y NHEC2680

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Allan Harris
612/589-1711
Writer: Joseph Kurtz
612/625-3168

SHEEP PROFIT OUTLOOK DIMS

Profit prospects for lamb producers are down from the high levels of 1986 and 1987, according to Allan Harris, marketing specialist with the University of Minnesota's Extension Service.

"Lamb production for 1988 is projected to be 6-7 percent above that of 1987," says Harris. "Coupled with projected increases in pork supplies, it is doubtful that fall slaughter lamb prices can reach above the low $70s, and prices in the upper $60s are more likely."

Harris points out that lamb feeders are feeling the pressure of higher grain and forage costs. This makes it likely that the differential between feeder and slaughter lamb prices will be less than last year. Feeder lamb prices at 10-15 cents above slaughter lamb prices are projected.

More details on the sheep and lamb outlook are available in the 1989 Ag Outlook in the Sept. 17 issue of "The Farmer/The Dakota Farmer" magazine.

# # #

AEA,BSS,CEO,A1,O,V1,V2,V3 NAGR2682

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Earl Fuller
612/625-6760
Writer: Jack Sperbeck
612/625-1794

ECONOMIST URGES DAIRY FARMERS TO TIME FEED PURCHASES

The challenge to dairy producers in response to the drought is to select the quality and quantity of feeds to maximize returns.

Here are some management tips from Earl Fuller, farm management economist with the University of Minnesota's Extension Service:

--Determine eligibility requirements and participate in the feed benefits of the Disaster Assistance Act.

--Use the dairy cow's ability to substitute one feed for another. Do nitrate testing on feeds. Nonprotein nitrogen can substitute for protein meals. Dairy cows can maintain production if up to half the forage usually fed by Midwestern producers is replaced by grain to provide sufficient energy, protein and other nutrients.

--Cash cropping neighbors could be a good source of both corn silage and ear corn for many dairy farmers who are otherwise short on feed.

--Timing of feed purchases will be important. Don't be pressured to immediately make all winter feed purchases. By harvest time prices will likely begin to decline as feedlots are

not refilled and panic purchasing, to assure supplies, ends.

More information on the dairy outlook can be found in the Ag Outlook insert of the Sept. 17 issue of "THE FARMER/THE DAKOTA FARMER." The dairy article was written by Fuller and University of Minnesota agricultural economist Jerome Hammond.

# # #

AEA,BSS,CEO,A1,D,V1,V2,V3 NAGR2686

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Ken Thomas
612/625-7040
Writer: Jack Sperbeck
612/625-1794

LAND RENTAL AGREEMENTS ARE EXPECTED TO VARY WIDELY

Flexible land rents that adjust for both price and yield are more fair over time, says Ken Thomas, farm management economist with the University of Minnesota Extension Service.

The drought showed that rents flexible only in terms of price--such as fixed bushel rents--should be avoided in many areas of Minnesota and the Dakotas.

The objective should be to establish a rate that will be fair to both the landowner and farm operator. You also want to establish or continue a good working relationship over time.

Due to the drought, fair, workable rents will vary tremendously by areas of the state and even by farms within an area. Farms with good soil conditions and yields will likely call for rent increases, while farms with lighter soils and poorer moisture conditions may bring rent decreases.

Variations in what you expect for yields and price have a tremendous impact on what you can pay for cash rent. For example, a southern Minnesota farmer who's expecting 115 bushels of corn and a market price of $2.50 would be able to pay about $85-90 per acre for cash rent.

But if yield drops to 95 bushels and the price to $2.30, a cash rent of $30-35 would be appropriate. Push your pencil to see how much rent you could afford to pay under your expected costs, yields and price. Also determine the impact of variations in yields and prices on the rent you could afford to pay.

More information is available in the Ag Outlook insert of the Sept. 17 issue of "THE FARMER/THE DAKOTA FARMER." The land rent article was written by Thomas, Perry Fales of the University of Minnesota and Burton Pflueger of South Dakota State University.

# # #

AEA,BSS,CEO,A1,V1,V2,V3 NAGR2687

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 12, 1988

Source: Allan Harris
612/589-1711
Writer: Joseph Kurtz
612/625-3168

HIGHER HOG NUMBERS DIM PROFIT OUTLOOK

More hogs going to market and higher feed costs dim the outlook for pork profits in the coming months. Producers need to minimize losses by holding the line on costs, according to Allan Harris and Warren Sifferath, marketing specialists with the University of Minnesota's Extension Service.

"The hog price cycle, typically about three and one-half years long, projects the next low to be in March of 1989 if September of 1985 was the previous low," Harris says. "The forthcoming three-and-one-half-year low will also coincide with the nine-year cycle low. The hog profit cycle averages about 30 months, followed by about nine months of losses."

If sow liquidation is heavy this fall, prices for the short term could bottom near $35, according to Harris. With limited liquidation, fall terminal prices could bottom in the upper $30s.

Hog prices could rally back to the low to mid-$40s in January and February as summer pigs go to market. Breeding during the extremely hot May-August weather should have a positive impact on February-May prices, Harris points out.

Harris offers these management considerations for dealing with the lower hog markets predicted for the coming year:

--Sell hogs close to minimal market weights, usually 220-230 pounds.

--Know your buyer's discount schedule. Estimate farm weights at about 10 pounds over the buyer's minimum weight to avoid discounts.

--Gradually reduce the size of your sow herd.

--Pregnancy check sows and observe them more frequently for scheduled heats after breeding. Cull open females to conserve feed. The sow herd will need be reduced 10-12 percent to provide profits next summer.

--Reevaluate feeding programs. Consider limit feeding or closely adjust feeders. Check protein levels in all rations and feed at the lower end of the suggested protein range.

--Buy feed hand-to-mouth. Feed prices should decline into late February before a spring rally.

--Market hogs on price rallies of 50 cents to $1.

--Consider forward pricing next summer's production above breakeven prices using put options.

--Use the federal drought assistance program to price feed.

More details on the outlook for hogs is available in the 1989 Ag Outlook insert in the Sept. 17 issue of "The Farmer/The Dakota Farmer" magazine.

# # #

AEA,BSS,CEO,A1,P1,V1,V2,V3 NAGR2681

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 15, 1988

Source: Cynthia Ash
612/625-6290
Editor: Mary Kay O'Hearn
612/625-2728

SLIME MOLDS ARE COMMON ON TURF, STRAWBERRIES, OTHER PLANTS

With this summer's drought, homeowners are looking more closely than usual at their lawns and other plants this fall to see how they have done. As a result, they are noticing some primitive little fungi called slime molds.

Slime molds exist as amoebae, single-celled organisms, which feed on bacteria until some unknown factor causes them to aggregate, according to Cynthia Ash, assistant plant pathology specialist with the University of Minnesota's Extension Service.

During cool wet weather, slime molds aggregate and can be seen on strawberry or grass leaves. They appear as gray to brown to cream-colored masses with numerous small individual parts or as a single mass. They are not parasitic.

Homeowners who wish to remove slime molds can wash, brush or rake them from the surface of the plant, Ash says. Frequent mowing will quickly remove them from rapidly growing turf.

# # #

I2 NAGR2695

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 15, 1988

Source: Deborah Brown
612/624-7491
Editor: Mary Kay O'Hearn
612/625-2728

RESEEDING LAWN IS ON FALL AGENDA OF MANY HOMEOWNERS

Lawns throughout Minnesota have suffered varying degrees of damage from the record-setting heat and drought of '88. Though some have come out of dormancy relatively unscathed, many have vigorously growing patches of weeds along with patches of dead, brown grass. And a few are just plain gone.

The best time to reseed or overseed a lawn ranges from Aug. 15 in northern Minnesota to about Sept. 10 or 15 in the southern part of the state. If seeding hasn't been done by that time, two options remain. The first is to wait until next spring to seed; the second, and preferable choice, is to do a dormant seeding later this fall, according to Deborah Brown, horticulture specialist with the University of Minnesota's Extension Service.

"The process of dormant seeding involves preparing the soil just as you would for early fall seeding, but waiting to spread the seed until late October or November, when temperatures are so cold there's no chance the seed will germinate," Brown says. "The seeds will be covered by snow, then sprout when the earth warms and the snow melts, next spring."

Dormant seeding is not a particularly good idea when the ground slopes, as it tends to wash down if snow melts rapidly. It's not recommended, either, for areas where there will be foot traffic over the winter.

Grass may be seeded in spring, but you should use a pre-emergent herbicide containing siduron (Tupersan), labeled for use on newly seeded lawns. Such products will kill germinating weed seeds, but will spare desirable bluegrass seeds.

Plant as soon as the soil is dry enough so it can be prepared. Then, water frequently, so the seeds never dry out. Mow young grass when it reaches 3 to 3-1/2 inches, keeping it between 2 and 2-1/2 inches tall, Brown says.

With some luck, grass planted this fall and next spring won't have to contend with drought conditions like those we had this summer, she concludes.

# # #

I2 NAGR2697

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 15, 1988

Source: Frank Pfleger
612/625-6290
Writer: Martin Moen
612/625-6243

BEDDING PLANT CONFERENCES ARE SCHEDULED FOR NORTHERN MINNESOTA

Commercial growers in northern Minnesota are invited to attend one of three conferences that will be held this October on growing bedding plants.

Information about insects, diseases, greenhouse equipment systems, soil mixes, nutrition, pH control and vegetable and flower varieties will be presented at the conferences, which are sponsored by the University of Minnesota's Extension Service.

The conferences are scheduled for Oct. 4 at the Duluth Area Vo-Tech Institute, Oct. 5 at the Brainerd Public Library and Oct. 6 at Bergen's Greenhouse in Detroit Lakes. The conferences will be similar, so people only need to attend the closest one.

The day-long conferences will start at 8:30 a.m. with registration and the programs will get under way at 9 a.m. Each conference will conclude with a tour of a local greenhouse.

For more information, contact Frank Pfleger, 495 Borlaug Hall, University of Minnesota, 1991 Upper Buford Circle, St. Paul, MN 55108 or contact a Minnesota county extension office.

# # #

CEO,V1,L1,Z1,Z2,Z7,05,78 NAGR2693

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 15, 1988

Source: David Noetzel
612/624-9272
Writer: Mary Kay O'Hearn
612/625-2728

IT'S EASY TO GET, GET RID OF LICE

With school starting comes the comb sharing after gym class (because you've forgotten yours) and the cap modeling (just to see how you'd look in someone else's). But these friendly gestures can go awry when head lice are the result.

"Lice problems don't have to occur because excellent control procedures are available," says David M. Noetzel in the Minnesota Extension Service fact sheet "Control of Lice on Humans." Noetzel, an entomologist, quotes an early medical entomologist who said, "It is not a disgrace to have lice, but it is to keep them."

Noetzel says three kinds of lice can be found on humans. He explains, "The head louse and body louse are closely related. The crab louse differs from the other two in appearance and behavior. None of these three is found on any animal other than humans."

Eggs or nits attached to hair, usually behind the ears or at the nape of the neck, can indicate head lice. However, head louse eggs have been also found on eyebrow, armpit and even chest hair. Positive identification should be made by an entomologist, physician or public health worker because hair spray residue, dandruff and flaking skin can be confused with the tiny eggs.

The adult head louse is 2-3 millimeters long and dirty white to grayish black, although those on fair-haired persons are often lighter. The female head louse can lay 50 to 150 eggs which hatch in 5-10 days, and the life cycle is two to three weeks long. Although the head louse usually spreads through bodily contact, transfer can also occur when combs and headwear are shared.

Noetzel says an insecticide can be used to kill both lice and eggs, but only after the presence of human lice is positively diagnosed. Obtaining medical advice is recommended; some insecticides require a prescription although the synergized pyrethrins do not.

For more information, ask your county extension office for a copy of publication number AG-FS-1030, "Control of Lice on Humans."

# # #

AEA,CEO,I1,Y NHEC2703

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 15, 1988

Source: Jeff Hahn
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

CHECK FOR INSECTS WHEN BRINGING HOUSEPLANTS INDOORS IN FALL

Plants that have been kept outdoors should be examined for insect pests, such as mites, thrips, whitefly, scale insects and aphids, before they are brought inside. Insects that are overlooked may continue to feed on the plant and can spread to others, says Jeff Hahn, assistant entomology specialist with the University of Minnesota's Extension Service.

These insects are small; a hand lens is often helpful in detecting their presence. Mites are very small, spiderlike creatures that feed on the underside of leaves. Webbing and areas speckled yellowish or whitish in color can be seen when plants are infected.

Thrips are slender insects about 1/16 inch long. They scrape the tissue of leaves and flowers with their mouthparts and feed on the resulting fluid. Damaged leaves show irregular silver blotches and black dots of excrement. Thrips do not usually live long indoors.

Whitefly adults are small, white, wedge-shaped insects which fly when disturbed. The immobile larvae are flat, oval and found on the bottoms of leaves. Leaves often become sticky from

whitefly feeding and can yellow, die and drop.

Scale insects do not look like a typical insect. They live under a protective shell-like covering that makes them appear like a bump. They are usually found on the underside of leaves along the veins and on the stems of plants. They excrete a sticky substance known as honeydew, which is often found on leaves below scale infestations.

Aphids are small, pear-shaped insects that feed on the underside of leaves, young stems, and flower buds in clusters. Like scale insects, aphids excrete honeydew.

"All plants with insect infestations should be sprayed before being brought indoors," Hahn says. Mites can be sprayed with dienochlor (e.g., Pentac) or dicofol (e.g., Kelthane). Aphids, thrips, whiteflies and scale insects can be treated with acephate (Orthene). Whiteflies can also be controlled with resmethrin. Light infestations of insects can also be controlled with insecticidal soap or alcohol washing. But do not wash hairy plants, such as African violets, Hahn cautions.

When brought inside, plants should be kept away from other plants for a few weeks, whether or not insects are seen, to ensure that all of them have been eradicated. If after that time, no insects are detected, the plants can be returned to their normal place.

# # #

I2

NAGR2696

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 22, 1988

Source: Joe Conlin
612/624-4995
Writer: Joseph Kurtz
612/625-3168

MORE MILK PER COW MEANS MORE PROFIT

Striving to get more milk from each cow in a dairy herd is not a new concept. But it's still the best way to increase the profit margin in most dairy operations, according to an extension dairy specialist at the University of Minnesota.

Joe Conlin says more milk per cow means more milk to sell, and usually, a lower cost per pound of milk produced.

He cites six management factors as being most closely related to production per cow. The six factors, and the differences they make in production as shown in a University of Minnesota study of herds in the DHI program, are:

1. Percent of cows positive for subclinical mastitis. Reducing subclinical mastitis (somatic cell count) from 350,000 to 200,000 can result in an added 340 pounds of milk per cow per year in average DHI herds.

2. Forage testing and balanced rations. Frequent forage testing and feeding properly balanced rations can increase production per cow as much as 1,200 pounds per year.

3. Percent cows identified by sire. Herds that have sire and dam identification for all cows produce 550 pounds more milk per

cow than herds with only 85 percent of the cows identified.

4. Sire predicted difference dollars. Herds using A.I. sires with a higher predicted difference of $20 average 400 pounds more milk per cow per year.

5. Percent heats detected. Herds with a heat detection rate of 60 percent produce 295 pounds of milk more per cow annually than herds with a 40 percent rate.

6. Percent cows dry more than 70 days. Herds that have 10 percent fewer cows dry longer than 70 days produce a yearly average of 370 pounds more milk per cow.

# # #

AEA,BSS,CEO,V1,V2,V3,D NAGR2704

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 22, 1988

Source: Jeffrey D. Hahn
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

NUISANCE INSECTS INVADE HOMES IN FALL

Many pests--including boxelder bugs, hackberry psyllids, elm leaf beetles, cluster flies, spiders and other insects--enter buildings in the fall, seeking winter shelter.

Although they are not harmful to people or their property, explains Jeff Hahn, assistant extension entomologist with the University of Minnesota's Extension Service, people do not tolerate these insects in their homes.

"Caulking, repairing or sealing obvious areas the insects use to enter buildings, such as cracks in the foundation, gaps along windows and doors, vents or other areas, will help minimize the number of insects coming inside," Hahn says. Hackberry psyllids, because of their small size, can also enter through most screens. A finer meshed screen should be used to exclude them.

If all entry points cannot be identified, an insecticide, such as diazinon or chlorpyrifos, can be applied around the outside of the building, although this may have a varied and limited effect. People who have trouble with cluster flies should contact a pest control operator to apply permethrin (which is not available to the public), says Hahn.

Boxelder bugs can also be treated with a soap solution of 1/2 cup laundry detergent mixed with 1 gallon of water. It should be sprayed directly on those bugs found on the outside of buildings as often as they are seen. The soap spray can stain some wood siding, such as cedar, so test the solution on an inconspicuous spot to be sure it is safe.

Fortunately these insects do not live long in the interior of buildings or reproduce inside. Insects found inside can be removed by hand, with a vacuum cleaner, or by other physical means. Large numbers can also be controlled with a household aerosol spray containing pyrethrin.

# # #

I2 NAGR2700

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 22, 1988

Source: Cynthia Ash
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

COMPOSTING IS GREAT--BUT MUST BE DONE PROPERLY

Composting is a good way to recycle plant materials from the vegetable and flower garden, according to Cynthia Ash, plant pathology specialist with the University of Minnesota's Extension Service. However, improper composting of diseased plant material can increase disease problems.

"Composting will kill most plant pathogens if the compost heats properly and the temperature is maintained long enough," Ash says. The compost pile must have a minimum volume of one cubic yard and be turned frequently to kill pathogens in the plant refuse.

She suggests turning the pile every two or three days to provide aeration and mixing. Adding sawdust, leaves, etc., helps to provide a mixture more likely to heat properly. Keep the pile at 65 to 75 percent moisture (fairly moist but not wet).

Most foliar (leaf) pathogens are destroyed rather quickly once crop refuse is in contact with soil and the refuse rots, Ash adds. However, some soil-borne pathogens, such as the wilt diseases of tomato, are soil inhabitants and are not destroyed by contact with soil or by the rotting away of crop refuse. These and other

pathogens will be killed if the temperature in the pile is 120-260 degrees F for two to three weeks.

Check the pile temperature with a candy or meat thermometer partially buried in the pile. If the temperature is too low or the pile is not being turned frequent enough, some pathogens will survive, particularly those near the edges of the pile. Ash cautions that if high pile temperatures cannot be maintained, it's best to destroy diseased plant refuse from the garden.

# # #

I2 NAGR2694

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 22, 1988

Source: Deborah Brown
612/624-7491
Editor: Mary Kay O'Hearn
612/625-2728

NOW'S TIME TO ASSESS HOW ANNUALS DID, PLANT OTHER FLOWERS

Now is a good time to assess the annuals you planted, to see which of them came through the heat and drought in good shape. It's not a bad idea to make a list for yourself to tuck away for future use, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

In the Twin Cities area, petunias have been "absolutely gorgeous" this year, she says, as have marigolds and flowering vinca (Catharanthus). Geraniums looked great, but only where they've had plenty of water.

Annual snow-on-the-mountain, a tall, succulent member of the Euphorbia family, not the common groundcover of the same name, has also been spectacular this year. Green and rather uninteresting in appearance until August, it develops tiny flowers and snow white bracts or modified leaves that make it a stand-out in the garden at a time when many annuals are past their peak bloom.

September is a good time to divide and plant early-flowering perennials including peonies, coralbells, creeping phlox, gas plant, astilbe and daylilies, to name just a few. Garden lilies can be put into the ground way into October. Plants that bloom

late, such as tall phlox, mums, daisies and others, are best moved and divided in spring, Brown says.

Tulip bulbs may be planted late into the fall...as long as you can still get your shovel into the ground. But most other spring bulbs do best when planted mid-September through early October. This includes some all-time favorites such as daffodils, hyacinths, crocus and other minor bulbs. Plant them in masses of a single color to get the most visual punch.

Don't forget some of the beautiful, smaller bulbs that can be naturalized right into the lawn. Siberian squill, Scilla siberica, is one of the first flowers to bloom in spring, poking out its royal blue buds and blossoms immediately after the snow melts. And it will spread from year to year, as long as you don't mow the leaves until they've yellowed, late in spring.

# # #

I2

NAGR2702

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 22, 1988

Source: Dick Meronuck
612/625-6290
Writer: Jack Sperbeck
612/625-1794

DROUGHT STRESSED CORN MAY CONTAIN AFLATOXIN

Freshly harvested drought and heat stressed corn may contain aflatoxin, which can be toxic to livestock.

"Badly infected ears will have visible, brown-yellow-green mold," says Richard Meronuck, plant pathologist with the University of Minnesota's Extension Service. These colored molds may be the Aspergillus flavus fungus, which can produce aflatoxin.

Corn suspected of containing this mold should be tested by a competent laboratory. The more samples you take from a grain bulk, the more accurate the test results will be. "Sampling during bin loading would be ideal," Meronuck says. Take a one pound sample every 500 to 1,000 bushels until you have a 10-pound sample. Then pick random handfuls from the 10-pound sample until you have a smaller sample of about 2 pounds. Submit this 2-pound sample for analysis.

Laboratories that will test for the mold include:

--Minnesota Department of Agriculture, Division of Laboratory Services, telephone (612) 296-3273.

--University of Minnesota Plant Disease Clinic, telephone (612) 625-6290.

--Minnesota Valley Testing, New Ulm, at 1-800-782-3557.

--Ingman Labs, telephone (612) 724-0121.

Other laboratories may also conduct tests. Call the labs to discuss prices and request a quantitative test so you know how much is in the grain, Meronuck advises.

The Agricultural Stabilization & Conservation Service (ASCS) has restrictions on the level of aflatoxin concentrations they will accept for farm loans. Contact your local ASCS office for more information on these restrictions.

"The bottom line is that feeding contaminated grain can cause toxicity in livestock," Meronuck says. Food and Drug (FDA) recommendations are:

--Less than 20 parts per billion (ppb) for dairy animals, since aflatoxin can be passed into the milk.

--Less than 100 ppb for mature, non-lactating beef and hogs and for poultry.

FDA does not permit corn with higher than 20 ppb to be used for food purposes; or corn greater than 100 ppb for animal feed being shipped out of state. The FDA also does not permit blending for interstate shipment.

Though FDA does not encourage blending, the states regulate local shipments. No Minnesota regulations exist as of Sept. 21, but the State Department of Agriculture plans to issue them soon.

Blending at the farm level is at the producer's risk. "Blending to reduce risks depends on knowing the aflatoxin concentration of the grain lots to be blended," Meronuck says.

More details are available from county extension offices.

# # #

AEA,BSS,CEO,V1,V2,V3,V4,A2,D,F,P NAGR2705

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 26, 1988

Source: Tom Halbach
612/625-3515
Writer: Phyllis Jenks
612/625-7793

RECYCLE MINNESOTA WORKSHOP SET FOR OCTOBER 25

Recycle Minnesota, sponsored by the University of Minnesota's Extension Service and the Government Training Service, is set for Tuesday, Oct. 25. This day-long workshop will provide current information on recycling to help communities develop recycling programs that best meet their needs.

A key presentation will provide legislative background on recycling in Minnesota, how recycling is currently being done and why it is being encouraged. There will be a review of several Minnesota communities' experiences operating their own recycling programs during the past two years.

Jerry Fruin, Agriculture and Applied Economics, University of Minnesota, will discuss how transportation costs affect the economics of recycling. John Sem, state program leader, Community Economic Development, Minnesota Extension Service, will provide information on how to establish a community recycling program. Other speakers include Kim Austrian, director, Legislative Commission on Waste Management; Sunny Jo Emerson, director of grants, Landfill Abatement Program, Metropolitan Council; and Dan Krivit of the Minnesota Waste Management Board.

The workshop is designed for local officials, county waste management personnel, legislators, Minnesota Extension Service agents and others interested in starting or improving a recycling program.

Recycle Minnesota is scheduled from 8:30 a.m. until 4:30 p.m. in Room 135 of the Earle Brown Center on the University of Minnesota's St. Paul campus. The $60 registration fee includes lunch. To preregister, call Vivian Hart at 222-7409 from the metro area and 1-800-652-9719 from greater Minnesota.

# # #

CEO,V4,V7,E1,R NCED2706

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 27, 1988

Source: William Angell
612/624-6786
Writer: Pam Barnard
612/625-4730

MEASURE RADON OVER SEVERAL MONTHS BEFORE TAKING CORRECTIVE ACTION

According to Bill Angell, housing specialist with the University of Minnesota's Extension Service, it is important that individuals measure radon levels on each living level of their homes for a 3- to 12-month period before they hire a contractor to correct structural deficiencies.

It can cost a lot to correct a home with high levels of radon, a naturally occurring radioactive gas that can cause lung cancer. Because of the cost, homeowners should be sure that corrective measures are really necessary.

Angell says, "Radon levels can significantly fluctuate hourly due to pressure changes, seasonally--lower in the summer to higher in the winter--and even over the life of the house as cracks develop. It is important to allow time for an accurate reading with an EPA-tested detector before assessing the options."

For valid screening results, radon detectors should be placed in the home according to manufacturer's directions which should reflect U.S. Environmental Protection Agency (EPA) standards. Although manufacturers of radon-testing devices are encouraged to

submit their products to the EPA for evaluation, not all devices are submitted.

For more information on radon testing and corrective construction techniques, contact your local county extension office.

# # #

V2,V3,V4,V8,I4

NHEC2709

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 29, 1988

Source: Cynthia Ash
612/625-6290
Editor: Mary Kay O'Hearn
612/625-2728

SOOTY BLOTCH, FLYSPECK CAUSE BLEMISHES ON APPLES IN FALL

Cloudy or smudge-like spots on the surface of apples are caused by a fungus called sooty blotch. Flyspeck, another fungus, may also be present, and is recognizable by groups of black dots on the surface of the fruit.

These diseases usually do not appear until late summer or early fall, says Cynthia Ash, assistant plant pathology specialist with the University of Minnesota's Extension Service. Their development is aided by moderate temperatures (65-75 degrees F), high humidity and abundant moisture. Symptoms on the fruits show up about 30 days after infection occurs.

The damage is superficial and does not affect the fruit itself. Since moisture and high humidity encourage the disease, judicious late winter pruning, plus mowing grasses and weeds in the area around the trees, will help to improve air circulation, she says.

# # #

I2

NAGR2699

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 29, 1988

Source: Deborah Brown
612/624-7491
Editor: Mary Kay O'Hearn
612/625-2728

FALL IS BEST TIME TO GIVE CREEPING CHARLIE THE HEAVE-HO

Even though we're seeing huge patches of crabgrass this year, over the past 10 years or so, the number one weed pest in people's lawns seems to be Glechoma hederacea, not so fondly known as 'creeping charlie.' In some parts of the country it's called 'ground ivy.'

Creeping charlie is an invasive perennial, a member of the mint family that roots down at every joint, where leaves are attached to the stem. It blooms with little spikes of purplish blue flowers each spring, and smells pungent when mowed, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

Introduced to this country as a shade-tolerant groundcover, creeping charlie quickly escaped and became a nuisance, choking out fine-bladed grasses without regard for how sunny or shady the locale.

Fall is the best time to work on eradicating this pesky plant. Spray it with a weed-killer containing 2,4-D and MCPP, when temperatures are in the mid-60s to low 80s. Be sure there's

little wind blowing to cause drift onto other plants, and check the forecast to see that no rain is expected for at least a day or two, Brown says.

"You may be able to get in two applications, about 10 days apart. And even if it doesn't manage to kill the weeds outright, they will be weakened so that winter weather should finish them off, once and for all," Brown concludes.

# # #

I2 NAGR2701

News
and
Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Sept. 29, 1988

Source: Cynthia Ash
612/625-6290
Editor: Mary Kay O'Hearn
612/625-2728

LAWN DISEASE PREVENTION CAN ASSURE GREEN SPRING IN '89

This is the best time of the year to tackle problems caused by improper watering and fertilization and the effects of this summer's drought.

Cynthia Ash, plant pathology specialist with the University of Minnesota's Extension Service, says that lawns can be fertilized twice in the fall with a fertilizer containing approximately four parts nitrogen to one part phosphorus to two parts potassium--unless a soil test indicates otherwise. Apply between the end of October and Nov. 15, she suggests.

"Review your watering practices. A well established lawn should be watered infrequently and deeply," Ash says. Apply at least an inch of water at a time in heavy soils or two applications of 1/2 inch each on lighter, sandy soils. One to two inches per week depending upon environmental conditions and rainfall should be sufficient.

She adds that newer lawns have a shallow root system and will need to be watered more frequently.

Thatch is that layer of difficult-to-decompose plant parts, light brown in color, located above the soil but below the grass

blades. The thatch layer should be kept below 1/2 inch in depth. Thick thatch layers encourage shallow rooting, which allows the turf to go into stress easily when the top inch or two of the soil dries out, according to Ash.

This is important, she adds, because one of the most common lawn diseases, patch disease (formerly called Fusarium blight), attacks stressed plants causing crescent-shaped or doughnut-shaped areas of dead grass about a foot in diameter. This problem is rarely found on well rooted lawns with a thin thatch layer.

She suggests to homeowners that thatch can be reduced by aerating and power raking early this fall and by avoiding higher than recommended applications of nitrogen fertilizer.

# # #

I2 NAGR2698

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

September 29, 1988

Source: Laura McCann
612/625-5747
Writer: Sam Brungardt
612/625-6797

Editors, broadcasters: Please include this event in your calendar of coming events.

PRESENTERS, EXHIBITORS SOUGHT FOR SHIITAKE SYMPOSIUM-TRADE SHOW

The University of Minnesota's Center for Alternative Crops and Products is seeking paper and poster presenters and commercial exhibitors for its upcoming national symposium and trade show on shiitake mushrooms.

The objectives of the event, which will be May 3-5, 1989 at the Ramada Hotel in St. Paul, Minn., are to assess the current status of the shiitake industry, to share information on production and management systems, suggest marketing strategies and identify research needs in the industry.

Extension, research and industry representatives are invited to present technical papers or posters relating to new developments in shiitake production, marketing and utilization at the symposium. Persons wishing to make a presentation should send a proposed title and a 4- to 5-sentence preliminary abstract to Laura McCann, Center for Alternative Crops and Products, 305 Alderman Hall, University of Minnesota, St. Paul, MN 55108 by Dec. 15. Abstracts will be reviewed by a planning committee prior to

acceptance, and final paper or poster summaries will be due March 1, 1989.

For more information on the symposium or on participating in the trade show, write to McCann or phone her at (612) 625-5747.

# # #

H4,L1,N2,SelMedia NNRD2711

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 6, 1988

Source: Lew Hendricks
612/624-9219
Writer: Pam Barnard
612/625-4730

NATIONAL CAMPAIGN, U OF M CENTER PROMOTE ENERGY CONSERVATION

What do America's windows have in common with the Alaskan pipeline? According to an article by Alan Durning in World Watch magazine, "American windows waste as much energy as flows through the Alaskan pipeline every year."

Other surprising facts from Durning's article include:

--Each degree the thermostat is set below 70 knocks 2 percent off the heating bill.

--A house's energy efficiency is in part determined by the yard. A mature tree can be thought of as five window-mounted air conditioners sitting on the lawn.

--For each calorie of food Americans eat in their homes, they use 71 calories of fossil-fuel energy in the kitchen--equivalent to about 2 teaspoonfuls of gasoline.

--Every American who halves his or her yearly home energy consumption effectively leaves 3,200 pounds of coal in the ground, along with 26,000 cubic feet of natural gas and a barrel of oil. That translates into 7,000 pounds of carbon annually held out of the atmosphere.

October is Energy Awareness Month, and a national campaign is promoting understanding of energy's role in our economy and its importance to our health, welfare and national security. The effort is supported by the Extension Service, Department of Energy, federal and state agencies, and private sector organizations.

More than 1,000 groups throughout the nation are expected to take part in energy conservation projects during October. USDA-suggested activities for communities and organizations include meetings, seminars and workshops; tours of power plants and energy-efficient homes; and distributing conservation tip sheets.

The goals of the October campaign mesh with those of the University of Minnesota's Cold Climate Housing Information Center (CCHIC). Lewis Hendricks, forest products extension specialist and CCHIC coordinator, says the center's objectives are "to help consumers, especially in cold climates, reduce the number of service calls, repairs and expense by providing information on creating and maintaining highly efficient homes."

With the help of Energy Awareness Month and the resources of the Cold Climate Housing Information Center, Minnesotans can save money on energy in their homes while contributing to the future health of the earth. For more information about either Energy Awareness Month or the CCHIC, contact your local county extension office or the Cold Climate Housing Information Center, 203 Kaufert Laboratory, 2004 Folwell Ave., University of Minnesota, St. Paul, MN 55108; phone (612) 624-9219.

# # #

V4,E3,I4

NNRD2719

News and Information

October 10, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Jerry Hawton
612/624-2270
Writer: Joseph Kurtz
612/625-3168

FEEDING HOME-GROWN SOYBEANS MAY CUT SWINE RATION COSTS

Some pork producers may have the opportunity to cut their feed bills this fall by feeding soybeans they grew.

"Producers can feed their own soybeans and buy less soybean meal," says Jerry Hawton, extension swine specialist at the University of Minnesota. "When properly processed, whole soybeans are comparable in feeding value to soybean meal. And the 18 percent fat content in soybeans benefits the hogs."

According to Hawton, "proper" processing means roasting at 240 degrees F for three minutes or extruding at 280 degrees exit temperature.

Is the heat processing worth the cost? Hawton says a formula developed at Michigan State University can provide the answer. The formula is: $A = .86Y + .17Z - (S + C)$. A is the cost advantage of processing beans; Y is the cost of a ton of 44 percent protein soybean meal; Z is the cost of a ton of feed-grade animal fat; S is the value of a ton of soybeans; and C is the cost of roasting or extruding a ton of soybeans.

Hawton says soybeans shrink about 5 percent during processing,

and this should be considered in figuring the value of a ton of soybeans.

Producers can also feed raw soybeans, but these should go only to gestating and lactating sows. "Raw soybeans contain trypsin inhibitors that decrease protein utilization in younger pigs," Hawton says. "However, research at Kansas State University and the University of Nebraska has shown that gestating and lactating sows can fully utilize raw soybeans without affecting reproductive performance."

In some areas, green, immature beans have been a problem in the 1988 soybean crop. Even though immature beans are likely to be discounted on the market, Hawton says their feed value is equal to that of other beans.

# # #

AEA,BSS,CEO,V1,V2,V3,P1 NAGR2721

News and Information

October 13, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Patrick Borich
612/624-1222
Writer: Deedee Nagy
612/625-0288

MOWER COUNTY HOME ECONOMICS EXTENSION AGENT GIVEN FACULTY AWARD

Mary Ellen Miller, Mower County home economics extension agent, was presented the Director's Award to Distinguished Faculty during the annual staff development conference of the University of Minnesota's Extension Service Oct. 11. Last year's winner of the award, Marie Lee-Rude of Lyon and Yellow Medicine counties, presented the award to Miller.

Miller was recognized for creative and innovative programming spanning 20 years in such areas as the volunteer food preservation consultant effort, the Mower County Senior Nutrition Alert Program and a cooperative effort with Austin Community College to educate nursing home staff about the aging process. She has also led programs on "Vitalizing Main Street" to strengthen rural communities and programs to train women in leadership skills and strengthen families through the Austin Early Childhood Program and the Mower County Senior Citizen Center.

Extension family life specialist Susan Meyers said of Miller's contributions, "(She) is an excellent educator, synthesizer of much research-based information....She seldom settles for the easy way when the better way may be a bit more difficult to identify.

She has given of her talents unselfishly to any in her field, presenting papers at meetings and 'mentoring' new agents....As a true mentor, she will encourage the best in her protegees and be delighted as they go on to bigger and better things."

The Director's Award to Distinguished Faculty is given annually to an outstanding field staff faculty member. It carries a $1,000 stipend through the University of Minnesota Foundation and is financed through contributions.

# # #

AEA,CEO,V4,E2,E7,20,24,50,79 NEXT2722

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 13, 1988

Source: Jerry Hawton
612/624-2270
Writer: Joseph Kurtz
612/625-3168

SELLING HOGS AT LIGHTER WEIGHTS BOOSTS FEED EFFICIENCY

Pork producers trying to keep the lid on feed costs should consider selling their hogs at lighter weights, according to an extension swine specialist with the University of Minnesota.

Jerry Hawton says it takes more feed for each additional pound of gain after a hog climbs above the 200-pound mark.

He says, "Even though some packers pay top dollar for 250- to 260-pound butchers, it may not pay to feed hogs from 230 to 260 pounds because of the poorer feed-per-pound-of-gain ratio."

Hawton cites a table (below) developed at the University of Nebraska that shows the expected feed efficiency of hogs as they add weight. The feed efficiency values in the table represent a composite of numerous experiments that reported growing-finishing pig performance over a variety of weight ranges.

Feed efficiency values in the second column of the table show the expected feed requirement for pigs growing from 40 pounds to the weight indicated in the first column. Values in the third column show the amount of feed required per pound of gain for the next 20 pounds of gain.

The table shows that, in feeding a pig from 40 pounds to 230 pounds, the expected feed efficiency would be 3.65 pounds of feed per pound of gain. However, if you feed the 230-pound pig on up to 250 pounds, the feed efficiency for the additional 20 pounds would be 4.59.

Hawton says, "At a feed cost of 8 cents per pound, the feed cost per pound of gain from 230 to 250 would be 37 cents. And this is only the feed cost per pound of gain; it does not include the additional costs for labor, bedding, utilities, equipment, facilities and interest."

FEED EFFICIENCY OF HOGS AS THEY GAIN WEIGHT

From 40 lbs. to:

Weight	Lbs. feed/lb. gain	Lbs. feed/lb. gain, next 20 lbs.
200	3.50	4.36
210	3.55	4.44
220	3.60	4.51
230	3.65	4.59
240	3.69	4.66
250	3.74	4.74
260	3.78	4.82

# # #

AEA,BSS,CEO,V2,V3,P1

NAGR2730

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 13, 1988

Source: John Sem
612/624-3070
Writer: Richard Sherman
612/625-3154

JOHN EIX RECEIVES SPECIAL COMMUNITY ECONOMIC DEVELOPMENT AWARD

John Eix, area extension agent from Park Rapids, Minn., received the Distinguished Service Award in Community Economic Development on Oct. 12 during the annual conference of the University of Minnesota's Extension Service.

John Sem, extension program leader in Community Economic Development, presented the award. Sem said, "John has made a major contribution to the tourism industry throughout the state with his program, ,Pricing Your Resort Based on Costs'."

Eix has served approximately 150 resorts, helping many of them to become more profitable. He developed the computer software and marketing that have made this program successful and has received letters of appreciation from many of his clients.

Eix has also been responsible for working with county agents to set up more than 15 Starting a Small Business workshops. These 18-hour programs take start-up businesses through the basics of business development and formation.

Sem said Eix was one of the first persons in the Minnesota Extension Service to begin programming in Community Economic Development. "John's pioneering effort was the forerunner of

today's many programs in this field," Sem said. "The Community Economic Development faculty wishes to thank John for his contributions to this important field."

# # #

E1,29 NCED2736

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 20, 1988

Source: Chuck Leifeld
612/624-7273
Writer: Evelyn Anderson
612/624-3770

NATIONAL SPEAKERS TO HIGHLIGHT 4-H CONFERENCE IN MINNEAPOLIS

Two educators who have had a major impact on popular television and a national foundation executive will be keynoters at the National Association of Extension 4-H Agents conference Nov. 6-10 at the Hyatt Hotel in Minneapolis.

Loretta Long, who plays Susan on public TV's "Sesame Street," will speak on "Assessing Reality" at 10 a.m. Monday, Nov. 7. A former teacher with a Ph.D. in education, Long frequently speaks to teachers and other groups on using media and making learning fun.

Alvin Poussaint, script consultant to "The Cosby Show," will speak on "Acknowledging Change" at 10:30 a.m. Tuesday, Nov. 8. Poussaint, a best-selling author and consultant, is associate professor of psychiatry and associate dean for student affairs at Harvard University.

Norman Brown, president of the W. K. Kellogg Foundation, will speak on "Taking Charge" at 10:30 a.m. Thursday, Nov. 10. Brown is a former dean and director of the Minnesota Extension Service. He directed 4-H programs in Michigan and served as a rural youth specialist in several Asian countries.

More than 1,000 youth educators are expected to attend the conference, which is being held in Minnesota for the first time. The National Association of Extension 4-H Agents is a professional association of county and state 4-H staff from all 50 states.

In addition to the keynote presentations, the conference will offer members a choice of four workshop sequences for which they may obtain graduate credit. Topics will be educating youth, administering leadership programs, engaging youth and the community through experiential education, and evaluating programs.

Other conference highlights will include a buffet of Minnesota-grown food, an exhibit hall, the annual awards banquet, and tours and activities for delegates and their spouses.

# # #

AEA,CEO,V1,V4,V7,E7,Y

N4-H2745

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 20, 1988

Source: Robert Busch
612/625-7773
Writer: Sam Brungardt
612/625-6797

MARSHALL IS MOST POPULAR WHEAT AMONG MINNESOTA FARMERS

Marshall, a midseason, semidwarf hard red spring wheat that the University of Minnesota's Agricultural Experiment Station and USDA's Agricultural Research Service introduced in 1982, continues to be the most grown wheat in Minnesota.

According to a variety survey funded by the Minnesota Wheat Research and Promotion Council, Minnesota farmers planted 58 percent of the state's hard red spring wheat acreage, or 1,384,300 acres, to Marshall in 1988.

Stoa, a midseason, medium-height variety, was the second most grown hard red spring wheat. It was planted on an estimated 259,700 acres, or 11 percent of Minnesota's 1988 wheat acreage.

The third most grown hard red spring wheat was Wheaton, a University of Minnesota-USDA variety introduced in 1983. It was grown on 236,400 (10 percent) of the hard red spring wheat acreage, twice the percentage as in 1984, the time of the last Minnesota Agricultural Statistics Service wheat variety survey.

The survey found that Era, a 1970 University of Minnesota-USDA introduction, was no longer widely grown. Era had been by far the most widely grown hard red spring wheat in

Minnesota from 1972 through 1983. In 1988, it comprised less than 1 percent of the acreage, down from 16 percent in 1984 and 64 percent in 1979.

Hard red spring wheat accounted for 95 percent of the 2.52 million acres that Minnesota farmers planted to wheat in 1988. Hard red winter wheat was planted on 3 percent, and durum wheat on the remaining 2 percent, of the state's wheat acreage.

# # #

CEO,BSS,F,V1,V2 NAGR2743

News and Information

October 20, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Deborah Brown
612/623-7491
Editor: Mary Kay O'Hearn
612/625-2728

CONSIDER FORCING BULBS FOR INDOOR BLOOM

While you're out in the garden planting bulbs this fall, consider keeping some to force indoors during the winter. Blooming bulbs are enjoyable when it's cold and snowy outdoors although when forced they usually bloom only once. Forced bulbs make wonderful gifts for friends and family as well.

Daffodils, crocus, tulips and grape hyacinths can all be forced easily. Hyacinths are the most popular bulbs for forcing. "They have a lovely fragrance and can last a week or more when kept in a cool place at night," says Deborah Brown, horticultural specialist with the University of Minnesota's Extension Service.

"Spring-flowering bulbs may be planted in shallow pots with the pointy top or 'nose' of each bulb sticking just out of the soil. Water them thoroughly and place them in a cool, dark location to satisfy their need for a 'winter cold treatment.' Check the soil periodically for moisture, never allowing it to dry out during the forcing process," Brown says.

Unless they've come precooled from the garden center or mail order catalog, spring-flowering bulbs need 12 or 13 weeks at 35 to 48 degrees. An unheated attic or cold basement usually works

well. If you have neither, your refrigerator will do. Because refrigerators dry things out, though, place the pots in plastic bags. Poke a few air holds into the bags so too much moisture is not retained, Brown recommends.

After the required time has passed, you may begin bringing bulbs out of cold storage. First put them in a very cool but sunny location for a week or so. Then bring them into warmer living areas where you can enjoy their development. It will probably take about 3 or 4 weeks--a little longer if your home is cool--for bulbs to bloom once they're removed from the cold.

# # #

AEA,CEO,V7,I2 NAGR2748

News and Information

October 20, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Deborah Brown
612/623-7491
Editor: Mary Kay O'Hearn
612/625-2728

HORTICULTURAL TIPS FOR AUTUMN

Give your houseplants a "fall housecleaning." Days are growing shorter and the sun is lower in the sky, so less light reaches their leaves. "A layer of dust and grime further interferes with the amount of light that penetrates to the inner tissue where photosynthesis takes place," says Deborah Brown, horticultural specialist with the University of Minnesota's Extension Service. The plants will look nicer, too!

- - -

According to Deborah Brown, horticultural specialist with the University of Minnesota's Extension Service, fall is a good time to trim oaks, elms and most other shade trees. Some trees such as maples, walnuts, ironwood, and even elms are considered "bleeders." They lose a lot of sap the following spring after they've been pruned in late autumn or winter. Fortunately, that sap loss does not seem to hurt these trees but simply looks bad.

- - -

Wait to prune apples, flowering crabapples, hawthorns and mountain ash...all trees in the apple family...until very late in winter or early spring. If you prune too soon you're more likely

to see drying and dieback from the pruning wounds. Late February or March is best because wounds will heal rapidly with new spring growth, according to Deborah Brown, horticulturist with the Minnesota Extension Service. If you wait until the trees are actively growing, you risk fireblight, a bacterial infection.

- - -

Continue to water evergreens in the landscape, particularly smaller, younger specimens, until the soil freezes. They are much more likely to suffer winter injury if they are still moisture-stressed. No amount of watering now can completely make up for the hot, dry growing conditions earlier. But it might limit some of the damage, advises Deborah Brown, horticultural specialist with the University of Minnesota's Extension Service.

- - -

You can keep pumpkins and winter squash longer by "curing" them for ten days following harvest in dry room kept at 75 degrees. This helps the rind to dry and toughen. After curing, store them at 50 to 55 degrees. "Be sure to check them regularly for signs of mold, removing damaged ones as soon as you spot them," says Deborah Brown, horticultural specialist with the University of Minnesota's Extension Service.

- - -

Wrap young, thin-barked trees to protect them against sunscald this winter. Fruit trees need even more protection. A hardware cloth cylinder should be fashioned a few inches larger than the trunk, poked an inch or two into the ground and extended a foot or more above the

anticipated snow line. Such a physical barrier is the only sure way to keep rodents and other creatures from chewing through the bark. "Some heavy-gauge plastic wrapping will also deter them," says Deborah Brown, horticulturist with the Minnesota Extension Service.

- - -

If you ordered spring bulbs, but they came too late to plant, or you couldn't get them into the garden in time, don't try to store them over the winter. Chances are extremely slim that they will ever amount to anything when they are planted out. "Instead, use those bulbs for forcing, so you'll be able to enjoy them indoors this winter," says Deborah Brown, horticulturist with the Minnesota Extension Service.

- - -

"There are two ways to rebloom an amaryllis bulb that has been outdoors or in a sunny window all summer," according to Deborah Brown, Minnesota Extension Service horticultural specialist. One way is to keep it actively growing indoors in a very bright location. It should bloom next spring.

The other more commonly accepted procedure is to put the bulb in a cool, dark place such as a basement or attic, and simply withhold water for two to three months. The old leaves will dry up. New leaves will sprout from the bulb once it's brought back into a warm, well-lit location and watered regularly. Flowers should follow within a month or so if the bulb has had plenty of light and nutrients over the summer.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 27, 1988

Source: Jeffrey D. Hahn
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

BEWARE OF HIDDEN INSECTS IN FIREWOOD

If you are planning to use firewood this winter, a little advice now will help you to avoid problems with insects later.

A wide variety of insects such as wood wasps, long-horned borer beetles, horntails and metallic wood-boring beetles bore into dead and dying trees to develop into adults. These insects can be accidentally brought into a home in logs cut for firewood.

"When the firewood is not used right away, the insects leave the wood thinking spring has arrived. The result is often large, conspicuous insects flying or crawling in your home," says Jeffrey D. Hahn, entomologist with the University of Minnesota's Extension Service.

Are these insects a serious problem? They will not infest wood in your home nor are they dangerous to people. They are simply a nuisance. Insects that are found inside can be controlled simply by killing or vaccuuming. If no control is attempted they will die shortly on their own. To avoid having these insects inside, leave firewood in a cold location until it is ready for use. It will not be warm long enough for the insects to emerge from the firewood, according to Hahn.

Colonies of carpenter ants also nest in such wood. It is important to be able to identify whether the ants are coming from firewood or from a nest inside. A few carpenter ants brought indoors will not cause damage or establish a new nest.

# # #

AEA,CEO,V7,I2 NAGR2751

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

October 27, 1988

Source: Jeffrey D. Hahn
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

DORMANT OILS MAY BE APPLIED IN AUTUMN

It may be too early to be thinking of spring, but it's a good time to treat trees and shrubs infested with scale insects or mites.

"Ornamentals were especially susceptible to scale and mite damage due to the drought this year," says Jeffrey Hahn, entomologist with the University of Minnesota's Extension Service. Control of scales can be attempted during the summer when the vulnerable crawler stage is present, although they are easily missed then. A more reliable and equally effective treatment is dormant oil sprays.

Dormant oils are formulated from petroleum oil and are used to suffocate the scales and the mite eggs. They are applied when the tree is dormant during the fall or in the spring before bud break. Although early spring is generally best, you may safely spray trees and shrubs in the fall.

"It is important that the temperature is around 50 degrees F. Do not spray if the temperature is below 40 degrees or is expected to go below freezing within 12 to 24 hours," Hahn cautions.

Applying an oil spray when the temperature is too warm can cause burning. Trees that are sensitive to oil sprays, such as maples and conifers, should not be treated.

Hahn says, "There are some newer, more refined dormant oils that are much less harmful to sensitive trees. Unfortunately, these dormant oils are not readily available at this time. Hahn also cautions that the use of any dormant oils on Colorado blue spruce can affect their color.

# # #

AEA,CEO,V7,I2 NAGR2750

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 3, 1988

Source: Jeff Reneau
612/624-4995
Writer: Joseph Kurtz
612/625-3168

CONTINUE TEAT DIPPING DURING COLD WEATHER

Milk producers should continue to teat dip every cow at milking time, even during frigid weather. That's the advice of Jeff Reneau, University of Minnesota extension dairy specialist.

"Consistent use of an effective teat dip is a very important mastitis control procedure," says Reneau. "Some producers stop teat dipping entirely during very cold weather. However, this can allow the spread of contagious mastitis pathogens."

Under conditions of severe cold, Reneau recommends allowing 30 seconds of contact time after dipping, and then wiping the teats dry before the cow leaves the parlor. "Omitting teat dipping does not assure that teats are dry," he points out. "In severe cold, even the thin milk film should be dried before the cow is turned out."

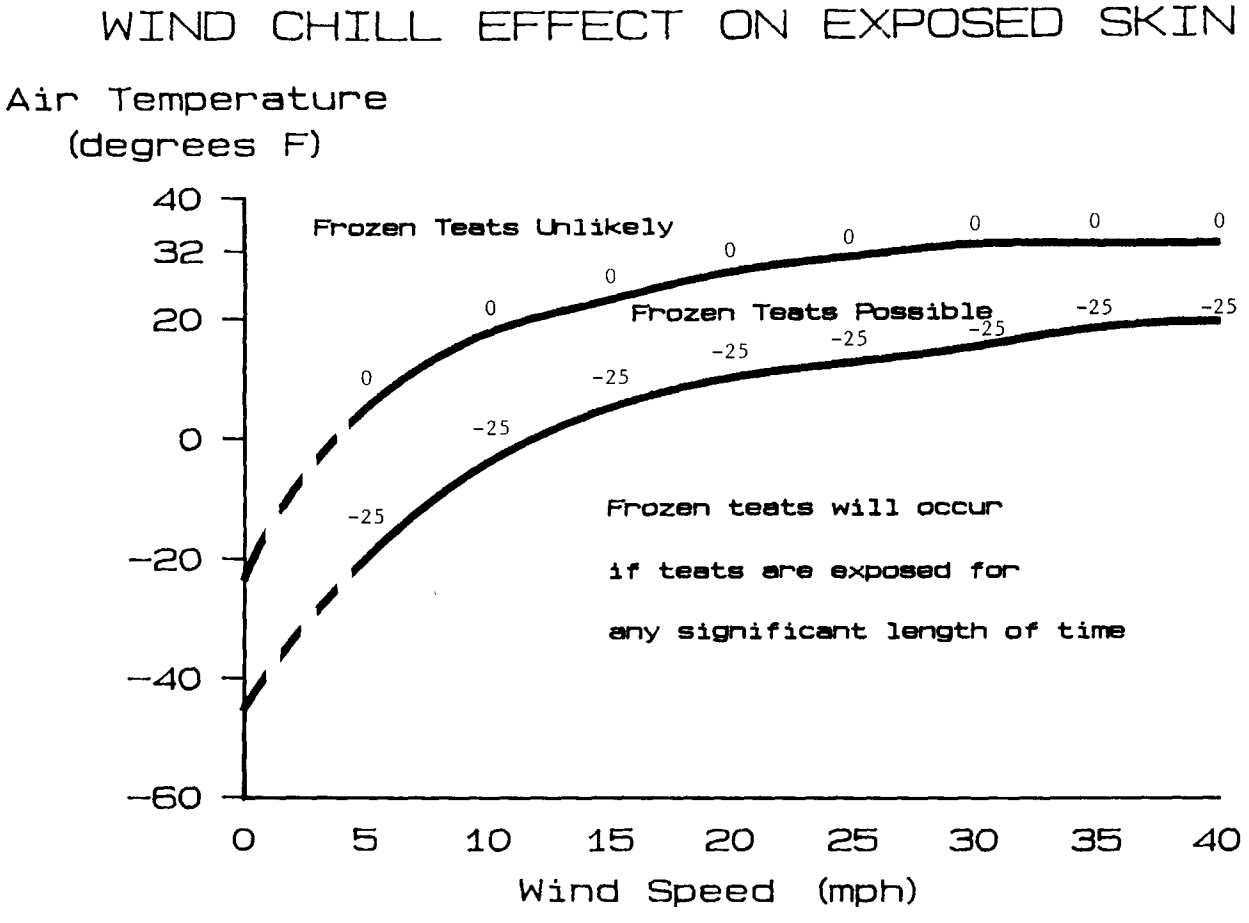
Except for cows with udder edema, the typical winter temperatures in sheltered, free-stall housing do not affect teats if they are completely dry, Reneau says. However, severe cold combined with wind can cause frostbite even when teats are dry.

"Any time cows go out of a parlor into conditions in which the combination of cold and wind result in wind chills of -25 degrees F, frostbite is a danger," Reneau says.

Having good windbreaks around parlor exits and locating feedbunks outside can minimize the effects of cold on the teat skin surface, Reneau notes. Also, it is important to provide plenty of bedding in free stalls.

Teat dips can freeze when stored in uninsulated, unheated buildings. This can cause the active ingredients in some teat dips to precipitate out of solution after they thaw, concentrating the active ingredients at the bottom of the storage containers.

"If the teat dip has been frozen and thawed, mix it thoroughly in the container before filling the teat dip cup," Reneau advises. "Otherwise, the solution may be too weak to be effective or so strong that it causes teat irritation."



# # #

News and Information

Educational Development System
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University of Minnesota
St. Paul, Minnesota 55108

November 3, 1988

Source: William Angell
612/624-6786
Writer: Pam Barnard
612/625-4730

HOME MAY NOT BE WHAT IT USED TO BE FOR RETIRED MINNESOTANS

For people nearing retirement age, today's housing choices are more complex than ever.

According to William Angell, housing specialist with the University of Minnesota's Extension Service, "home for most retired Minnesotans is more than mere shelter...the home is a major and often the largest financial asset." Furthermore, the time, energy and money needed for home maintenance can present enormous challenges for older persons.

Angell has written two Minnesota Extension Service publications that offer useful information for families making retirement housing decisions. "Retirement Housing Choices: Staying in Your Home" (item no. HE-FO-3522) discusses how to make one's present home safer, more comfortable and convenient. "Retirement Housing Choices: Planning for a Move" (item no. HE-FO-3523) explores the decision to move from one's present home and explains various housing alternatives.

Minnesotans can obtain single copies of both of these new publications from their county extension offices. Larger quantities can be ordered directly from the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 10, 1988

Source: Juanita Reed
612/625-9231
Writer: Evelyn Anderson
612/624-3770

2 POLK COUNTY YOUTHS TO GO TO CHICAGO FOR 4-H CONGRESS

Two Crookston youths, Kelly Wolfe and Karen Odegaard, have been named state achievement winners in the Minnesota 4-H awards program. They will receive expense-paid trips to the National 4-H Congress in Chicago Dec. 3-9.

Wolfe received the conservation achievement award; her trip is sponsored by Deere and Company. The daughter of Terry and Sue Wolfe, 716 Pine St., Wolfe is 16 years old and a seven-year 4-H member. Her 4-H career began in the fourth grade when a small group of families, including hers, formed a new 4-H club. In the 4-H conservation project, she has focused on birds and mammals.

Her first project was a census of ruffed grouse in the Huot Wildlife Management Area, which she reported to the Minnesota Department of Natural Resources. Although she did not find many grouse, she learned that the grouse population fluctuates in cycles and may balance out over a period of time. She emphasizes that providing good habitat is the key to survival of animals with cyclic populations.

Wolfe has studied the unique adaptions of the beaver and common loon to their environment and has shared her knowledge

through demonstrations and displays. With her father, a DNR wildlife manager, she helped band 300 wood ducks.

In school, Wolfe has researched and presented speeches on endangered animal species and on declining fossil fuel reserves, illustrating the importance of conserving fuels and finding alternative fuel sources.

She received a grant from the Minnesota Nongame Wildlife Program to study the prairie vole populations in northwestern Minnesota. Her goal is to increase the public's awareness of nongame animal populations.

As a West Polk County 4-H Ambassador, Wolfe helped organize and set up the county milk booth, made a radio spot promoting 4-H and emceed Share the Fun programs. She has been president of her local 4-H club and served on the Minnesota 4-H Youth Development Advisory Council. In school, she is active in cross-country, track, basketball and band.

Odegaard, daughter of Roger and Gail Odegaard, Route 1, Crookston, received the needle arts achievement award. She is 18 years old and a nine-year 4-H member. Her major projects are needle arts, clothing, foods, dairy, junior leadership and citizenship.

She has crocheted potholders, a farm scene, doilies and a wreath and has taught counted cross-stitch to others, making many gifts and Christmas ornaments. As a 4-H junior leader, Odegaard leads needle arts projects for five 4-H members. She has held workshops and assisted with members' exhibits and records.

Odegaard twice attended the state 4-H Junior Leadership Conference in St. Paul, has been elected to the County 4-H Federation executive committee and was selected as a county 4-H ambassador. Last July, she attended the 4-H Citizenship Washington Focus in Washington, D.C. For her citizenship project, she researched her family's roots and completed a family tree.

Odegaard has been president of her local 4-H club and has served on several committees. She is also active in school choir, marching band rifle squad, orchestra, FHA and peer counseling group.

# # #

61,C N4-H2766

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 10, 1988

Source: Juanita Reed
612/625-9231
Writer: Evelyn Anderson
612/624-3770

MCLEOD COUNTY YOUTH WINS SWINE ACHIEVEMENT AWARD, TRIP TO CHICAGO

A McLeod County youth, Brian Milbrand of Glencoe, has been named the swine achievement winner in the Minnesota 4-H awards program. As the state winner, he will receive an expense-paid trip to the National 4-H Congress in Chicago Dec. 3-9. His trip is sponsored by the Minnesota Pork Producers Association.

The 19-year-old Milbrand, son of Lester and Cordelia Milbrand, Route 1, Glencoe, has been a 4-H member for 10 years. He is a student at the University of Minnesota, Waseca, majoring in livestock production with an emphasis on swine production.

Milbrand began his 4-H swine project at the age of 10 with a barrow and two gilts. He entered the barrow showmanship contest at the county fair and was named reserve champion.

Each year, Milbrand has sold a barrow at the 4-H livestock auction, using the proceeds to purchase new breeding stock. At the National Barrow Show, he purchased four Hampshire gilts and a boar to begin his own purebred herd. In 1987, he helped design and construct a new, open-front facility that improved his operation and reduced some of the workload.

Milbrand shares all the responsibilities of managing a purebred swine operation: farrowing, ear notching, injecting, recording, weaning and recordkeeping. He makes decisions on the breeding, nutrition and health program and prepares advertising to promote sales of stock from his herd.

As a 4-H junior leader, he shared his swine knowledge and skills with younger members through demonstrations, project meetings and workshops on good showmanship, fitting, training, showing and sportsmanship. He has participated in 4-H and FFA livestock judging contests and helped host the four-day National Spotted Swine Type Summer Conference in Minnesota.

Milbrand's leadership ability earned him a trip to Washington, D.C., for the 4-H Citizenship Washington Focus, an opportunity to meet public officials and learn about the federal government. He has served as president of his local 4-H club also.

# # #

46,P1 N4-H2767

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 10, 1988

Source: Carl J. Rosen
612/625-8114
Writer: Sam Brungardt
612/625-6797

Editors: Call Carl Walker (612/624-3708) to obtain a b/w print or 35mm color transparency to use with this story.

SLEUTHING A SOLUTION TO THE SEWAGE SLUDGE SITUATION

Treating sewage and disposing of the resulting sludge is a mammoth challenge for large cities. In the seven-county Minneapolis-St. Paul metropolitan area, the Metropolitan Waste Control Commission (MWCC) operates 12 wastewater treatment facilities to handle the task.

A single plant--the Metropolitan Plant--treats about 80 percent of the flow for the entire MWCC system. Each year, the plant processes about 66,000 dry tons of sewage sludge. The sludge is dewatered and incinerated, resulting in approximately 16,500 tons of ash annually.

In the early 1980s, the MWCC began to investigate ways to use sewage sludge ash. It had become increasingly difficult to find landfill areas in which to dispose of the ash, and increasingly clear that environmentally acceptable ways would have to be found to use it.

University of Minnesota soil scientist Carl Rosen, who conducts ash use research funded by the MWCC, says, "The incinerator ash may prove valuable as a fertilizer and soil conditioner. It contains a number of elements essential for plant growth. Compared to triple superphosphate fertilizer, the ash contains 62 percent as much calcium, 860 percent as much magnesium and 35 percent as much phosphorus."

However, the ash also contains heavy metals that could eventually contaminate groundwater or become concentrated in food crops, causing problems for the animals--and, indirectly, the people--that eat them.

Rosen doing research to find out whether the incinerator ash can be applied to farmland to increase corn yields without the heavy metals concentrating in the crop or polluting the environment.

The ash contains 3.9 percent available phosphorus and is about one-seventh as efficient as agricultural lime for raising soil pH. Phosphorus is an essential macronutrient--insufficient amounts can limit crop production on many soils.

Last year, Rosen initiated a field experiment at the Rosholt Research Farm, outside Westport, Minn. University of Minnesota scientists who conduct research for the university's Agricultural Experiment Station use the farm for research to measure the effects of fertilizers and pesticides on groundwater, and to find agricultural practices that minimize environmental contamination.

"We went to Westport," Rosen says, "because it had the lowest phosphorus levels of any irrigated site. And, because it has sandy soil, we'd be able to see whether there was any movement of heavy metals through the soil profile."

This year, as last, Rosen grew field corn at Westport, fertilized with three rates of triple superphosphate (70, 40 and 280 pounds an acre) and with equivalent rates of incinerator ash from the Metro Plant.

Rosen says, "After one year, we didn't see any problems, based on analysis of water collected from the soil, with heavy metal accumulation." The concentrations of lead, nickel, chromium and cadmium were below detection levels. Other elements, such as zinc, copper and boron, were at background levels.

"Our results indicated that leaching of elements from the ash through the soil doesn't appear to be a problem in the short term. But that's not to say it won't be a problem after many years of application. Next year, we'll grow corn on the plots without any phosphate fertilizer or any ash to see what residuals are in the crop and in the soil after two years of application."

Rosen also tested the effect of ash on lettuce growth in a greenhouse. Lettuce is a good indicator crop because it accumulates fairly high levels of heavy metals in its leaves when the heavy metals are present in significant amounts.

"There were very dramatic increases in growth when we fertilized the lettuce with ash up to the equivalent of 56 tons of ash an acre, with no detrimental effect on the growth of the plant," Rosen says. "In short, we found the ash to be a very good fertilizer. We also grew field corn in pure ash and didn't see any adverse effects on growth. Determination of heavy metal levels in these lettuce and corn plants is still in progress. Down the line, I'd like to try the ash as a fertilizer for alfalfa and possibly some grasses."

While it's too early to tell whether sewage sludge ash can be generally used as a fertilizer without posing a hazard to the environment, research like Rosen's is essential in finding ways to meet the challenge that a growing population presents our cities' wastewater treatment facilities.

# # #

AEA,BSS,CEO,C,N2,R,V7

NAGR2795

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 10, 1988

Source: Laura McCann
612/625-5747
Writer: Sam Brungardt
612/625-6797

SYMPOSIUM WILL DISCUSS FIELD PRODUCTION OF CUT, DRIED FLOWERS

Farmers exploring alternative crops, university researchers, vocational agriculture instructors, extension personnel and others will have an opportunity to share information and learn more about the field production and marketing of cut and dried flowers and other plant materials at an early December symposium in St. Paul, Minn.

The symposium, sponsored by the University of Minnesota's Center for Alternative Crops and Products and the American Society for Horticultural Science in cooperation with the university's Extension Service, Agricultural Experiment Station and College of Agriculture, will be Dec. 6-8 at the Ramada Hotel, 1870 Old Hudson Rd. It will feature presentations by university scientists and extension specialists and persons involved in the industry.

Objectives of the symposium is to discuss the current size of the industry and its potential, identify useful marketing systems and strategies, present commercial production and handling information, and identify the industry's research needs.

The morning of Dec. 6 will be devoted to sessions on marketing and economics. Experts will discuss production basics in the

afternoon, and concurrent evening sessions will deal with woody plants and grasses and grains for the florist trade.

The sessions on production basics will continue the morning of Dec. 7, with sessions on fresh cut flower production in the afternoon.

Dec. 8 will feature sessions on harvesting wild species and weeds and dried flower production.

Registration fee for the Commerical Field Production of Cut and Dried Flowers Symposium is $150 before Nov. 15 and $170 after that date, with a fee of $100 for each additional registrant from any one family or company. Persons wishing to register or wanting information about the symposium should call Extension Special Programs at the University of Minnesota (800/367-5363 or 612/625-2722).

# # #

AEA,BSS,CEO,L1,V1,V2,V8 NAGR2798

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 10, 1988

Source: Tom Milton
612/624-5307
Editor: Sam Brungardt
612/625-6797

SCANDINAVIA MAY BE MARKET FOR BIRCH PULPWOOD FROM MINNESOTA

Is it feasible to export birch pulpwood from Minnesota to Scandinavia? That's the question that a Dec. 14 Birch Pulpwood Export Seminar in Duluth, Minn., will deal with.

Tom Milton, a forest products specialist with the University of Minnesota's Extension Service, says, "In Minnesota, there's an overabundance of white birch and only limited markets for birch pulpwood. On the other hand, pulp mills in the Scandinavian countries use birch to make paper, but the birch resource is limited."

John V. Ward & Associates, a consulting firm that specializes in international trade, investigated the trading opportunity this situation presents. The firm carried out a study that was designed by the Minnesota Department of Natural Resources and funded by the USDA's Forest Service, state agencies and private forestry firms. The study analyzed birch consumption, demand, projections and delivered-wood prices at Scandinavian pulp mills and examined shipping methods, handling and loading considerations, and transportation costs.

During the morning (9 a.m.-12 noon) portion of the Birch Pulpwood Export Seminar, John Ward will reveal and explain the findings of the study. An afternoon technical session, which will run from 1:15-3:15 p.m., will give additional information and answer questions about this export opportunity.

The seminar, which will be at the Radisson Hotel in Duluth, should be of special interest to loggers, foresters, timberland managers and owners, and wood-using industries. Registration will begin at 8 a.m. the day of the seminar at the hotel. The registration fee is $5. Persons wishing more information about the seminar may call John Krantz (612/296-6491) or Tom Milton (218/327-4490 or 612/624-5307).

# # #

AEA,NEdist,H4 NNRD2793

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 14, 1988

Source: James O. Hanson
612/624-1711
Writer: Joseph Kurtz
612/625-3168

U of M SWINE HEALTH CLINIC TO BE DEC. 14 IN ST. CLOUD

A presentation by Ray Hankes, president of the National Pork Producers Council, will be one of the highlights of the Central Minnesota Swine Health Clinic Dec. 14 in St. Cloud.

Registration for the clinic for pork producers, which will be held at the St. Cloud Holiday Inn, will begin at 8:30 a.m. Hankes will give the opening presentation at 9:30 a.m. His topic will be "The National Pork Producers Council--the 1990s and Beyond."

The morning program also includes an update on pseudorabies by Robert Morrison, professor of veterinary medicine at the University of Minnesota.

Three optional sessions highlight the afternoon program. Jerry Hawton and Ron Moser, University of Minnesota extension swine specialists, will present a swine nutrition workshop. Michael Boehlje, head of agricultural and applied economics at the University of Minnesota, will discuss the economics of pork production. A panel of four Minnesota veterinarians will give a presentation on cost effective health management programs.

The clinic will include an exhibit area where agribusinesses will be promoting equipment, buildings, supplies, medications and

other items related to the swine industry.

The registration fee for the clinic is $15. Additional family members may attend for $10 each. Lunch is included in the registration fee. Advance registration should be made by Dec. 8, and registrations after that date will be on a space-available basis.

Checks for the registration fee should be made payable to the University of Minnesota and mailed to Dr. James O. Hanson, College of Veterinary Medicine, University of Minnesota, St. Paul, MN 55108.

# # #

AEA,BSS,CEO,V1,V2,P1 NAGR2800

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 14, 1988

Source: Mark L. Brenner
612/624-6735
Writer: Sam Brungardt
612/625-6797

Editors: Call Carl Walker (612/624-3708) to obtain a b/w print or a 35mm color transparency to use with this story.

RESEARCH SEEKS TO UNLOCK BLACK BOX OF CROP YIELD

University of Minnesota horticultural scientist Mark Brenner looks at the inner workings of a plant like a plumber would look at a system of interconnected water pumps.

That's the analogy he brings up often in describing his work. "Our research with corn, soybeans and peas is directed at understanding how yield is regulated in a system composed of many interconnected components, just like interconnected pumps push water through a system," he says.

"To get water from point A to point B, you have to push it so it goes from an area of high pressure to one of low pressure. Like water through pipes, products of photosynthesis are moved through a plant in a number of ways--you can push real hard at the point of origin, you can have a transfer station along the way or you can have a draw pump at the end that creates suction."

Brenner's research for the university's Agricultural Experiment Station seeks to understand where important events that regulate plant yield take place, and then, how they speed up or slow down the manufacture and storage of starches, proteins and fats in the seed or

fruit. "You have to take a systems approach to study even a single point in the yield system," he says.

In the yield system that Brenner describes, carbohydrates and amino compounds manufactured in the leaves are degraded and loaded onto the plant's food-conducting (phloem) vascular system. This "pipe" transports them to where they are unloaded and stored, in the "sink"--the fruit or seed.

"Simply increasing the rate of photosynthesis is no guarantee of increasing yield," Brenner maintains. "Our interest is finding plants that are more efficient in getting the carbohydrates and amino compounds to the fruit or seed and understanding how each step of the way is regulated by hormones."

Brenner thinks hormones may regulate several complex steps: "fixing" carbon from carbon dioxide in photosynthesis; converting photosynthates to starch or simple sugars; degrading carbohydrates and loading them onto the vascular system for transport; regulating the phloem transport system; unloading sugars and amino compounds into the seed; moving them across an area of free space between the seedcoat and the developing seed; and incorporating and storing the sugars and amino compounds in starches, proteins and fats.

Like the water system he likes to compare it to, Brenner believes the creation of gradients drives the plant system. For example, the depletion of sucrose in the phloem transport system creates a "suction" that causes carbohydrates to be degraded into sucrose in the leaves and to be loaded onto the transport system. Brenner stresses that yield can't be maximized by optimizing only one of the regulation points. Unless scientists can understand how these hormonal regulation points affect each other, they will never be able to manipulate the system. The

understanding is essential for approaches to crop improvement that will work across many varieties.

Discovering how hormone production is controlled in the system would interest scientists and farmers. For example, both the oil content and the protein content of soybeans is important. When a soybean plant is stressed, the ratio of proteins, fats and starches in its seeds changes. If Brenner and other scientists can understand how hormones affect this, they can begin to select plants that are less susceptible to stress or create them through bioengineering techniques to use in plant breeding.

Brenner says, "Companies have spent millions of dollars trying to find the single magic component to improving yields, and it may well be that the system is so tightly controlled that if you improve the efficiency at one point, it may slow down somewhere else so that the net gradient ends up to be no different."

The U.S. Department of Agriculture and two private bioengineering firms, which currently support the research of Brenner and his graduate students, share Brenner's conviction that significant increases in yield quantity and quality will only come through a complete understanding of the system.

Brenner says his research and that of his students, who are coadvised by agronomic scientist Robert Jones, has a long way to go to practical applications. However, in the end, Brenner may prove himself to be quite the hydraulic engineer, as he plumbs the secrets that may one day allow substantial advances in the quantity and quality of crop yield.

# # #

BSS,F1,L1,N2 NAGR2797

News and Information

November 17, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Joseph Sowokinos
218/773-2473
Writer: Larry A. Etkin
612/625-4272

STORAGE MANAGERS: REDUCE LOSSES WITH CHEMICAL MATURITY MONITORING

Keeping stored potatoes in top condition for processing is a major concern in the Red River Valley (which provides the raw material for about one-third of all potato chips made in the United States) as well as other production areas. That's why Joseph Sowokinos, a University of Minnesota horticultural scientist who works at the USDA's Red River Valley Potato Research Laboratory in East Grand Forks, Minn., has developed chemical maturity monitoring (CMM).

CMM is the first commercially feasible method for monitoring and maintaining potatoes in top condition for chipping. It measures the sugar content of potatoes from the field or in storage, providing storage managers with the basic information they need to minimizes losses from immaturity and other stresses.

The problem with discolored chips is the result of tuber sucrose being converting to reducing sugars, such as glucose. When the potato is chipped and fried, the reducing sugars caramelize and form dark pigments. Only a very few days of storage is needed for the undesirable sucrose-to-glucose conversion.

CMM lets a producer quickly measure sugar content and adjust storage temperature and ventilation to remove excess sugars. The process is described in detail in "Maintenance of Potato Processing Quality by Chemical Maturity Monitoring (CMM)," a bulletin of the Minnesota Agricultural Experiment Station.

The bulletin is available as item AD-SB-3441 for $3.50 (plus 6 percent sales tax on Minnesota orders) from the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108. Orders must be accompanied by checks made payable to the University of Minnesota.

# # #

AEA,BSS,CEO,L1 NAGR2805

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 17, 1988

Source: Phil Steklenski
612/624-4230
Writer: Larry A. Etkin
612/625-4272

COMPRESSION-DRIED WOOD CHIPS CAN BE ECONOMICAL ALTERNATIVE FUEL

A recently published Minnesota Agricultural Experiment Station publication discusses the economic feasibility of squeezing water from wood fuel chips, bark and other large-particle manufacturing residue as an industrial-scale alternative to traditional fuels and as an environmentally safer and less costly way to dispose of otherwise nonburnable residues.

The publication is one result of an 18-month study funded by the U.S. Department of Energy that analyzed operating requirements for an industrial compression drying press as an energy-saving measure.

The new publication, "Economic Analysis of Compression Drying Green Wood Fuel Chips," covers situations where compression-dried fuel chips are used instead of traditional fuels in existing boiler systems, and also as an alternative to new equipment purchases in expanding firms where boiler capacity needs to be increased.

Providing detailed analyses of both dollar savings and payback years under many scenarios, the publication concludes the process is economically feasible under most conditions.

"Economic Analysis of Compression Drying Green Wood Chip Fuels" is available from Phil Steklenski, Department of Forest Products, 24 Kaufert Lab, University of Minnesota, 2004 Folwell Ave., St. Paul, MN 55108.

# # #

AEA,BSS,CEO,E1,H3 NNRD2807

News and Information

November 17, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Peter Bates
612/624-4280
Charles Blinn
612/624-3788
Writer: Larry A. Etkin
612/625-4272

INFORMATION ON REGENERATING QUAKING ASPEN IS NOW AVAILABLE

Quaking Aspen, one of the most widely distributed forest tree species in North America, is important to Minnesota's wood products industries. Although aspen readily regenerates from suckers that grow from the roots after it has been harvested, it's important to know how to best promote regeneration.

Good management techniques for regenerating this species are not always obvious. Fortunately, a new Minnesota Agricultural Experiment Station bulletin is available to help owners of mature aspen stands plan their harvesting to minimize root damage and other stresses that can decrease or delay the development of new suckers and negatively effect long-term regrowth.

Copies of the bulletin, "Factors Affecting the Regeneration of Quaking Aspen: A Literature Review" are available as item AD-SB-3610 from the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108. Cost per copy is $1, prepaid, and Minnesota orders should include 6 percent sales tax. Please include title and item number and make checks payable to the University of Minnesota.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
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St. Paul, Minnesota 55108

November 17, 1988

Source: Chuck Christians
612/624-0766
Writer: Joseph Kurtz
612/625-3168

USDA SWINE IDENTIFICATION RULES ARE NOW IN EFFECT

A federal regulation requiring the identification of all swine moving in interstate commerce took effect Nov. 14.

The identification program was developed and implemented by the U.S. Department of Agriculture. Mandatory identification will make it easier to locate the source of hogs carrying disease organisms or those with harmful drug residues, according to Charles J. Christians, extension swine specialist at the University of Minnesota.

The regulation requires individual identification of all swine in interstate commerce and the keeping of records for two years. Eartags, tatoos and backtags are acceptable forms of identification. Everyone involved in marketing swine, including livestock markets and truckers, must identify and keep records of the swine moving between states.

Christians said the rule does not require new identification at each marketing step. If swine are identified once during the sale and transportation process, the identification information can be used and updated during each step.

The regulation does not apply to feeder pigs sold and then held for additional weight gain, or to market hogs sold and processed by packers within the same state.

Swine produced in farrow-to-finish operations and sold in interstate commerce can be identified by a lot number if they will be processed by the packer as a lot, and not mixed with other hogs.

Christians said the regulation is likely to have less impact in Minnesota than in many other states because most hogs moving in Minnesota are already being identified. "Because of the pseudorabies program that went into effect July 1, producers north of Minnesota Highway 7 are already required to identify their hogs," he said. "And most packers in Minnesota have for some time been identifying hogs brought in for slaughter."

Two agencies of the USDA, the Animal and Plant Health Inspection Service and the Food Safety and Inspection Service, were involved in developing the new regulation. The regulation was supported by numerous professional and trade organizations, including the National Pork Producers Council and the American Meat Institute.

# # #

AEA,BSS,CEO,V1,V2,V3,P1 NAGR2804

News and Information

November 17, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Ralph Farnsworth
612/625-3130
Writer: Joseph Kurtz
612/625-3168

BULK TANK SCREENING CAN AID IN MASTITIS CONTROL

Milk producers who want better control of mastitis in their herds may want to consider a bulk tank mastitis screening test.

Bulk tank screening will not provide all the answers to mastitis control, according to Ralph J. Farnsworth, University of Minnesota extension veterinarian. However, it can provide useful information in developing a more effective mastitis control program, notes Farnsworth.

"In some herds, mastitis results primarily from bacteria being spread from cow to cow," says Farnsworth. "In other herds, it results primarily from bacteria present in the environment. As a result, the same strategy will not be effective in controlling both kinds of mastitis."

Farnsworth notes that even though dairy producers may be working diligently to prevent the spreading of mastitis from cow to cow, improvement of their barn and lot sanitation may be the real need.

Farnsworth says producers interested in a bulk tank screening test should contact their local veterinarian. The test involves taking samples from the bulk tank and freezing them immediately.

Samples are taken for five consecutive days. The samples can then be sent to the Veterinary Diagnostic Laboratory on the University of Minnesota campus in St. Paul for testing. The charge for the laboratory work is $25.

"Bulk tank screening is a tool that veterinarians can use along with visual observation and DHI somatic cell reports in helping producers improve mastitis control," Farnsworth concludes.

# # #

AEA,BSS,CEO,D,V1,V2,V3 NAGR2803

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 17, 1988

Source: David L. Rabas
218/327-4490
Writer: Sam Brungardt
612/625-6797

Editors: Call Carl Walker (612/624-3708) to obtain a b/w print or 35mm color transparency to use with this story.

A PERFECT MARRIAGE: ASH AND ALFALFA

Not every research effort ends up saving taxpayers money.

Not every research effort both increases crop yields and lowers farmers' production costs.

Not every research effort encourages farmers to grow perennial crops, which reduce the chance that groundwater and the environment will be polluted by agricultural chemicals.

And not every research effort rids Minnesota's paper and pulp industry of a bothersome and costly disposal problem.

Most Minnesota Agricultural Experiment Station scientists would be delighted with research that resulted in any one of these benefits. Dave Rabas' research has been blessed with them all. They've resulted from his decision to try ash from the Blandin Paper Company's cogeneration plant, which is adjacent to its paper mill in Grand Rapids, Minn., as a topdressing for alfalfa. That was in the fall of 1985, and the alfalfa's response to the ash was excellent.

Today, the Blandin plant is booked with orders from farmers for its ash a year in advance of deliveries. And Rabas, an

agronomist at the University of Minnesota's North Central Experiment Station in Grand Rapids, is evaluating ash from other northern Minnesota pulp and paper mills--from Bemidji to Duluth--as a fertilizer and soil amendment.

Rabas' research, originally funded by a Blandin Foundation grant, is now is made possible with a grant from the Legislative Commission on Minnesota Resources. Most of the mills he works with now, like the one at Grand Rapids, burn wood and coal. A few burn wood and natural gas.

Minnesota's pulp and paper mills produce great quantities of ash from wood, wood waste and coal. Several, like Blandin's Grand Rapids plant, produce more than 50 tons of ash each day. Most of this ash is deposited in landfills at considerable expense to local taxpayers, despite nominal dumping charges.

Blandin's Grand Rapids plant used to dispose of its waste in landfills before it began burning it about eight years ago. Now, it delivers the ash free to farmers within about a 20-mile radius of the plant.

The farmers are delighted to get the ash because it amounts to free fertilizer and a free soil amendment they can use in place of lime.

"Generally, we recommend that they incorporate 10 tons of ash an acre before they seed a field to alfalfa and topdress existing stands with about 5 tons an acre," Rabas says. "This amounts to a light dusting over the field, which we've found does not adversely affect the plants' ability to regrow after they've been cut."

What does the ash supply?

Rabas says, "It appears that 2.5 tons of ash has the same neutralizing effect on soil pH as 1 ton of lime. In addition, each ton supplies 40 pounds of potash, 20 pounds of magnesium, 40 pounds of sulfur and 0.5 pound of boron. These are all nutrients that our sandy soils are deficient in and nutrients that alfalfa needs to grow well here, so the ash turns out to be a pretty good fertilizer as well as a good liming agent."

All told, Rabas figures that the ash is worth about $24 a ton to farmers.

In many cases, getting the free ash has encouraged area farmers to keep their land in alfalfa, rather than planting it to corn and small grains as they once did. This, Rabas points out, ends up being good for the environment.

He says, "We're hoping that farmers will be more inclined to keep these acid sands in alfalfa or long-term grass cover. Because of the free ash, they are growing alfalfa and using less nitrogen fertilizer and less pesticides, which keeps the groundwater from being polluted with agricultural chemicals in the long run. And so far our analyses have not shown the ash to contain harmful levels of heavy metals or volatiles. In fact, its available heavy metal content is in most cases lower than what exists in the topsoil."

"All in all," he says of the ash and alfalfa, "it's a perfect match of the nutrients and liming ability with the needs of the crop."

# # #

AEA,BSS,CEO,C,D,F,H3,M1,N2,R NAGR2796

News and Information

November 21, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Jim Linn
612/624-4995
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA SCHEDULES DAIRY DAYS

Increasing profitability will be the goal of the 1988-89 Minnesota Dairy Days, a series of 11 one-day educational programs that the University of Minnesota will conduct this winter.

The programs are open to all interested milk producers. Program topics and speakers will vary some, but most of the events will include presentations by Minnesota Extension Service dairy specialists.

The programs will run from mid-morning to mid-afternoon, with starting times varying with the location. Some of the programs require modest registration fees, while others are free.

Copies of the "1988-89 Minnesota Dairy Report," which contains articles by University of Minnesota extension personnel and Minnesota Agricultural Experiment Station scientists, will be available at each site.

The 1988-89 Minnesota Dairy Days schedule is:

Tuesday, Nov. 29:	VFW Hall, Perham, Minn.
Wednesday, Nov. 30:	Edson Hall, University of Minnesota, Morris
Thursday, Dec. 1:	Holiday Inn, St. Cloud, Minn.
Friday, Dec. 2:	Lions Building, Goodhue, Minn.

Thursday, Dec. 8:	Victorian Inn, Hutchinson, Minn.
Friday, Dec. 9:	Lewiston Community Center, Lewiston, Minn.
Wednesday, Jan. 11:	ARC Auditorium, Northwest Experiment Station, Crookston, Minn.
Thursday, Jan. 12:	Fireside Inn, McGregor, Minn.
Friday, Jan. 13:	National Guard Armory, Pine City, Minn.
Tuesday, Feb. 7:	Auditorium, University of Minnesota Technical College, Waseca
Friday, Feb. 8:	Howard Johnson's, Sioux Falls, S.D.

Details about the program for each location are available from county extension agents in the area.

# # #

AEA,BSS,CEO,V1,V2,V3,D NAGR2808

News and Information

November 23, 1988

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

Source: Brian Larson
612/624-4995
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA SCHEDULES CATTLE FEEDERS' DAYS

Current information and research results relating to profitable cattle feeding will be featured at three Minnesota Cattle Feeders' Days in December.

The University of Minnesota will conduct the programs, which are scheduled for Dec. 6 at Morris, Dec. 7 at Crookston and Dec. 8 at Slayton. The programs are open to all interested persons.

Each of the events will begin with registration starting at 9:30 a.m. Presentations will begin at 10 a.m. and end at 3 p.m.

Three of the speakers and topics will be the same at each location. Charles Nichols, a cow-calf operator and cattle feeder from Arnett, Okla., will give an evaluation of retained ownership. Richard Goodrich, head of the University of Minnesota's Department of Animal Science, will discuss the impact of biotechnology on the cattle industry. Brian Larson, University of Minnesota assistant extension specialist, will discuss protein and nonprotein nitrogen sources and alternative feedlot systems.

Each of the events will also feature reports on beef cattle research conducted by the Minnesota Agricultural Experiment Station.

Copies of the "1988 Minnesota Cattle Feeders' Report," containing articles by University of Minnesota extension personnel and Minnesota Agricultural Experiment Station scientists, will be available at each site.

At Morris, the Cattle Feeders' Day will be at Edson Hall on the campus of the University of Minnesota, Morris. At Crookston, it will be in the ARC Auditorium at the Northwest Experiment Station. At Slayton, it will be at the Royal Supper Club.

Registration details are available from the branch experiment station at or near each location and from county extension offices in the area.

# # #

AEA,BSS,CEO,V1,V2,V3,A2 NAGR2809

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

November 28, 1988

Source: Patrick Huelman
612/624-7291
Writer: Pam Barnard
612/625-4730

HUELMAN BRINGS EXPERTISE, EXPERIENCE TO HOUSING INFORMATION CENTER

Patrick H. Huelman, former program leader in energy extension at Iowa State University, Ames, joined the University of Minnesota's Cold Climate Housing Information Center (CCHIC) on Oct. 17 as an extension specialist.

The CCHIC is a resource center that offers building contractors and consumers information on energy conservation, moisture control, indoor air quality, ventilation and heating systems for energy-efficient, cold-climate housing.

Huelman received a bachelor's degree in environmental design and a master's degree in architectural studies from Iowa State University. Since 1980 he has held positions of specialist, program coordinator and program leader with Iowa State University's Extension energy group. He initiated and coordinated the Iowa Quality Housing project, providing builders, designers and suppliers with valuable design and construction information.

Huelman's areas of specialization include residential design, construction methods and energy conservation.

Says Huelman of his new position, "I'm excited to be in Minnesota and to be able to participate in the work of the center,

which shares my philosophy of the systems approach to housing--integrating livability, efficiency, durability, safety and affordability in cold-climate housing."

# # #

CEO,V7,V8,E3,E5,H3,I4,SelMedia NHEC2811

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 1, 1988

Source: Ed Zottola
612/624-9274
Writer: Jennifer Obst
612/625-2741

Editors: Call Carl Walker (612/624-3708) to obtain a b/w print or 35mm color transparency to use with this story.

GOOD AND STICKY BACTERIA COULD IMPROVE HUMAN HEALTH

Of all the opportunists of this world, the microflora that inhabit a human being's digestive tract are among the most inventive and tenacious.

The gastrointestinal tract is colonized soon after birth by a variety of bacteria. Some, part of the normal flora expected to be present in healthy animals and people, are good to their hosts. Others are not so benevolent; they can make you sick.

With the help of electron microscopy, University of Minnesota food scientist Ed Zottola studies the activity of these bacteria. His research, supported by the Minnesota Agricultural Experiment Station, includes examining the ability of bacteria to adhere to the stainless steel surfaces used by the food industry for storage and processing.

"We had been studying how bacteria contaminates the food environment, and their capacity to stick to food contact surfaces," Zottola says. "These bacteria are about 1 micrometer in length. Under scanning electron microscopy, the stainless steel surface reveals huge craters for the bacteria to attach and fill. They stick to everything. They are absolutely amazing."

Examining microorganisms that contaminate food contact surfaces and cause food spoilage made Zottola curious about the behavior of good microbes. Lactobacilli are one such group. These organisms colonize your intestinal tract and are involved in digestion. Lactobacillus species are used in the production of foods such as yogurt, acidophilus milk, kefir, Italian cheese, sourdough bread, distillery mash, pickles, olives and some cured meats.

"Lactobacillus acidophilus is one of the first of these microflora to colonize your intestinal tract. As you grow older, the microflora in your gut changes and L. acidophilus is less and less a major component of the gut," Zottola says.

Recent research has suggested that L. acidophilus may benefit us by stopping unhealthy fermentation going on in the gut. It may help in cholesterol assimilation, and in suppressing the enzymes involved in generating toxic and carcinogenic substances in the intestinal tract.

But to do this good work, these microflora probably need to first adhere to and grow in the dynamic environment of the digestive tract. Just as contaminating bacteria adhere to stainless steel, L. acidophilus must have some means of attaching in a human being's digestive tract. Zottola speculates that some strains of L. acidophilus may be better at adhering than others.

It's not easy to directly observe a microoganism in vivo (in a living organism), especially in humans. Biopsies can be done, but they represent only a relatively small surface area and if done at the time of surgery, altered diet and antibiotics can change the mix of intestinal flora. To improve his view of the process, Zottola grew

human intestinal cells in tissue culture and observed how the organisms attach to them.

He found that different strains behave differently. Some are stickier due to a layer of polysaccharide, a complex carbohydrate, on the outside of the bacterial cell. Scanned under an electron microscope, this layer appears as a darkened rim around the cell. "If the bacterial cell does not have this outer layer, it does not adhere," Zottola says. "We stripped away this layer to see what would happen, and the cells no longer adhered to the intestinal wall."

Zottola found that most of the strains he investigated don't have the extra polysaccharide layer and do not adhere. Only two of six strains produce the polysaccharide.

This research will help the dairy industry chose the right strain of L. acidophilus for fermented milk products. But Zottola is most interested in using these sticky good microorganisms to beat out the bad ones. He says, "You have millions of microoganisms competing for space on the intestinal cells. If we're able to find or develop a strain that very strongly adheres, we might be able to implant that in the intestinal tract and prevent pathogenic bacteria from gaining access to the intestinal wall. In the next phase of our research, we're going to look at competitive attachment."

In the end, understanding exactly how these microflora gain their competitive advantage may benefit not only the dairy industry, but human health in general.

# # #

AEA,BSS,CEO,D,H1,H2,N2 NHEC2791

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 5, 1988

Source: Brian Larson
612/624-4995
Writer: Joseph Kurtz
612/625-3168

NEW U OF M PUBLICATIONS DEAL WITH ALTERNATIVE ANIMAL ENTERPRISES

The Minnesota Extension Service is developing a series of publications that deal with "alternative animal enterprises," and six of the titles in the series are now available.

The purpose of the publications is to provide information to evaluate nontraditional animal enterprises as possible income sources, according to Brian Larson, University of Minnesota assistant extension specialist.

Titles currently available in the series include: "Economic Potential of Domesticated Deer" (item AG-FO-3608), "Gamebirds" (item AG-FS-3604), "Farm to Consumer Meat Marketing" (item AG-FS-3607), "Farm Flock Poultry" (item AG-FS-3605), "Dairy Beef" (item AG-FS-3625) and "Honey Production" (item AG-FS-3603).

Minnesotans may obtain these publications through their county extension offices. They are also available by mail from the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108. Cost per copy for the deer publication is $1, and cost per copy for the others is 20 cents. Minnesota orders should include 6 percent sales tax. Please

include title and item number and make checks payable to the University of Minnesota.

Publications on buffalo, dairy goats, rabbits, llamas and several other topics will be added to the series in the future.

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AEA,BSS,CEO,V1,V2,V3,E1,M1 NAGR2836

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 8, 1988

Source: Ron Moser
612/624-7745
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA PLANS SWINE DAY PROGRAMS

Profitable pork production will be the focus of three Minnesota Swine Day programs the University of Minnesota will conduct in January.

The programs are scheduled for Jan. 10 in the auditorium at the University of Minnesota Technical College, Waseca; Jan. 11 at the Chalet Club in Marshall; and Jan. 12 in Edson Hall at the University of Minnesota, Morris. Presentations will begin at 10 a.m. and end at 3 p.m., with registration beginning about one hour before the first presentation.

The featured speaker at each location will be Stanley Curtis, a University of Illinois scientist who studies animal behavior and its implications for management. His topic will be "Designing for the 90s--Feeders and Crates."

Also on the morning program will be presentations on "Quality Control of Corn and Soybean Meal" and "Producing Pork for Future Consumers." The first of these topics will be presented by either Ron Moser, University of Minnesota extension swine specialist, or Hugh Chester-Jones, animal scientist at the Southern Experiment Station; the second, by Richard Epley, extension meats specialist.

In addition, a representative of the Minnesota Board of Animal Health will provide an update on Minnesota's pseudorabies monitoring program.

In the afternoon, Steve Cornelius, associate professor of animal science, will present an update on swine research at the University of Minnesota. Moser will discuss feeding strategies prior to farrowing and associate professor of animal science Jim Pettigrew will discuss feeding strategies during lactation. Lee Johnston, extension swine specialist at Morris, will talk about strategies to promote prompt return to estrus and extension veterinarian Gary Dial's topic will be "Optimizing Herd Productivity by Improving Sow and Facility Utilization."

Copies of the "1989 Minnesota Swine Research Reports," which contains articles by Minnesota Extension Service personnel and Minnesota Agricultural Experiment Station scientists, will be available at each site.

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AEA,BSS,CEO,V1,V2,V3,P1 NAGR2838

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 8, 1988

Source: Earl Fuller
612/625-6760
Writer: Jack Sperbeck
612/625-1794

THERE ARE STILL TAX ADVANTAGES TO PAYING FAMILY MEMBERS

There are still tax advantages to paying family members--especially children under 18 years.

The Tax Reform Act of 1986 may have reduced the amount of taxes you'll save. But the basic strategy is still sound, says Earl Fuller, farm management economist with the University of Minnesota's Extension Service.

If parents claim children as an exemption, the children can no longer claim themselves as exemptions agains their own income. But another option is for children to take the standard deduction of $3,000. Then the wages paid have no federal tax deduction for the parents.

In most cases, wages paid over $3,000 will be taxed at a lower rate. Payment of wages to a child under 18 also lowers the parents' self-employment taxes--a further tax saving. And Minnesota income taxes will decline since they're based on federal taxable income.

Wages paid to family members must be based on comparable rates for work actually performed. "Keep good employee records in case questions are asked," Fuller says.

Wages to the spouse of a self-employed person will reduce the self-employment tax. And, the spouse can start an IRA and may qualify for minimum social security retirement benefits.

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AEA,BSS,CEO,A1,E5,V1,V2,V3 NAGR2840

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 8, 1988

Source: Dennis Johnson
612/589-1711
Writer: Sam Brungardt
612/625-6797

CONFERENCE TO FOCUS ON USE OF BYPASS PROTEIN IN DAIRY RATIONS

A Jan. 27 conference at the University of Minnesota, Morris, will deal with research on bypass protein in dairy rations.

Dennis Johnson, dairy scientist with the University of Minnesota's West Central Experiment Station, says the conference should be of interest to feed manufacturers and their service representatives, veterinarians, extension personnel and dairy producers who want to understand the basic nutrition of their animals.

At the conference, Marshall Stern and Donald Otterby, scientists from the University of Minnesota's Department of Animal Science, will speak on the basics of protein digestion and utilization and on the current understanding of bypass protein, respectively. Stern and Otterby both conduct research for the university's Agricultural Experiment Station. Jim Linn, Minnesota Extension Service dairy nutritionist, will discuss formulating dairy rations with bypass protein. Rich Everson, with CENEX/Land O'Lakes' Agricultural Services, St. Paul, will moderate a question and answer session. In addition to the speakers, there will be posters and displays showing protein research.

The conference, which will be in Edson Auditorium at the University of Minnesota, Morris, will start at 10 a.m. and conclude at 3 p.m. Registration, which costs $8 before the conference and $10 the day of the conference, will include a lunch, refreshments and the proceedings. Those wishing to preregister should send checks, made payable to the University of Minnesota, to the West Central Experiment Station, Morris, MN 56267.

# # #

AEA,BSS,CEO,D,V2,V3 NAGR2839

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 8, 1988

Source: Lewis Hendricks
612/624-2790
Writer: Pam Barnard
612/625-4730

KEEP HOLIDAYS HAPPY BY AVOIDING FEEDING A FIRE

With the holidays here, along with the colder weather, more people will be spending time next to their wood-burning stoves and fireplaces.

Warns Lewis Hendricks, forest products specialist with the University of Minnesota's Extension Service, "Serious burns can result from misuse or carelessness around these heating units."

He offers these tips for operating wood-burning appliances:

--Wood-burning stoves should be installed according to manufacturers' instructions.

--Keep chimneys, flues and connector pipes clean to avoid dangerous creosote buildup. Make sure that the flue, connector pipes and chimneys are sized correctly.

--Never burn trash in a fireplace or stove.

--Keep stove fires properly dampered for even heat output, good fuel efficiency and to avoid overheating.

--Always use a fireplace screen to contain sparks and always have someone keep tabs on the fire while entertaining.

--Install and maintain fire extinguishers and smoke detectors

in your home. Develop and practice a home fire escape plan that even the youngest members of your household can understand.

"Heating the Home with Wood," a publication that offers more information on wood-burning is available from county extension offices throughout Minnesota. Ask for item CD-BU-0531.

# # #

CEO,E3,V4,V7 NHEC2844

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 12, 1988

Source: Jeff Reneau
612/624-4995
Writer: Joseph Kurtz
612/625-3168

DAIRY FARMERS NEED TO BE CONCERNED ABOUT DRUG RESIDUES

Dairy farmers need to develop and implement a specific plan for avoiding drug residue contamination in the milk they produce. That's the advice of Jeff Reneau, extension dairy specialist at the University of Minnesota.

"Detectable levels of antibiotics, antibacterials and other drug contaminants are illegal and are carefully monitored by state and federal agencies responsible for human health," says Reneau. "Also, residue-free food animal products are necessary to ensure consumer confidence. Surveys have shown that consumers are more concerned about drug residues and hormones in food than about cholesterol."

Reneau has the following recommendations for avoiding drug residues in milk:

--Seek advice, in writing, from your veterinarian about proper antibiotic use. Together you can develop a plan as to when and how antibiotics will be used on your herd.

--Make one person on the farm responsible for antibiotics and other treatment supplies. Check closely for the correct dosage and withdrawal times each time you buy and use antibiotics. Allow only responsible persons to treat cows.

--Keep an accurate written record on all treated animals. Include the date of treatment, product used, dosage and withdrawal times for the milk and meat. Use these records to monitor antibiotic use in your herd.

--Identify treated cows with markings on legs, tails or flanks. You must be able to quickly and accurately identify treated cows in the milking parlor. Be sure an unexpected absence of a worker will not result in milk from a treated cow getting into the tank. The best procedure is to separate treated cows from the rest of the herd. But since these cows seem to have a way of finding their way back to the milking herd, be sure to mark them.

--Consider cows you buy treated cows unless you know otherwise. If you're not sure whether a cow's milk contains drug residue, ask the dairy plant that buys your milk to test it.

--Follow product label directions exactly to avoid residues in milk and meat. This applies to any method of antibiotic treatment.

--After intramammary treatment, discard milk from all four quarters regardless of how many quarters were treated. Be very careful with dry cow treatment products. Their use must be discontinued as long as six weeks before the cow freshens, so accurate breeding records are essential.

--Do not sell treated animals for slaughter until the withdrawal time for meat shown on the product label has elapsed.

--If in doubt, have milk tested. Most dairy plant labs will run an antibiotic test on questionable milk prior to shipment.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 15, 1988

Source: Phil Larsen
612/625-8200
Writer: Jack Sperbeck
612/625-1794

NEW PLANT DIAGNOSTIC KITS GIVE FAST RESULTS

New plant diagnostic kits can help you diagnose some plant diseases within minutes.

The new kits cut diagnostic time from a week or so to minutes, says Philip Larsen, plant pathologist with the University of Minnesota's Extension Service and head of the university's Department of Plant Pathology.

The kits should also help eliminate excess chemicals in the environment, Larsen says. For example, a fungus may be present, but in amounts that won't cause crop damage. Subsequent tests may show a disease build-up that may warrant chemical applications.

"This way you get the chemical on when it's needed instead of applying it every two weeks whether it's needed or not," Larsen says.

The new kits have been used to detect turfgrass diseases and aflatoxins in stored grain. They will soon be available for other diseases, including Phytopthora root rot in soybeans and wheat streak mosaic virus.

"The kits are very easy to use," Larsen says. Thus far, the kits have been used most widely by golf course workers who collect

samples of suspected diseased grass, grind it up and get a colored reaction that tells whether specific pathogens are present.

In the past, samples of suspected diseased plants were submitted to a laboratory for diagnosis. The fungus had to be grown from tissue, which took roughly a week.

Accurate, fast diagnosis means that treatments can be applied faster to prevent losses. It also helps farmers make planting decisions rapidly.

For more information on plant disease diagnostic kits, contact the Plant Disease Clinic, 495 Borlaug Hall, 1991 Buford Circle, University of Minnesota, St. Paul, MN 55108.

# # #

AEA,BSS,CEO,F,V1,V4 NAGR2851

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 19, 1980

Source: William J. Boylan
612/624-1727
Editor: Sam Brungardt
612/625-6797

Editors: Call Carl Walker (612/624-3708) to obtain a black-and-white print of Boylan with the Canadian stock.

NEW CANADIAN BREEDS MAY BE SUITED TO ACCELERATED LAMBING, DAIRYING

The University of Minnesota is preparing to evaluate the potential of two new Canadian sheep breeds it recently imported under a cooperative agreement with Agriculture Canada.

Agriculture Canada developed the breeds, known as the Outaouais (pronounced oo-TOW-ay) Arcott and Rideau (reh-DOE) Arcott, as part of a long-term breeding program. Arcott is an acronym for the ministry's Animal Research Centre, Ottawa, where the breeds were developed.

In 1966, Agriculture Canada researchers began to develop the foundation stock for the new breeds, using Suffolk, Dorset and Shropshire stock. Their objective was to develop breeds that could be used in accelerated lambing programs. Between 1968 and 1971, the Finnish Landrace and East Friesian breeds were imported to Canada and integrated into the Arcott breeds. The Finnish Landrace is valued for its ability to produce several lambs at a single lambing; the East Friesian, for its high milk production.

According to animal scientist J. N. B. Shrestha of Agriculture Canada's Animal Research Centre, Ottawa, the Outaouais Arcott and Rideau Arcott are designed to be used as dam lines in terminal crosses with a third breed (which the University of Minnesota has not imported).

Although, nine breeds figured in the development of the Outaouais Arcott, Shrestha says it is predominantly Finnish Landrace, Shropshire and Suffolk. The Rideau Arcott also has nine breeds in its background, but is mostly Finnish Landrace, Suffolk, East Friesian, Shropshire and Dorset.

This fall, the University of Minnesota imported 36 ewes and rams of the two breeds. Animal scientist William J. Boylan, who conducts research to improve the efficiency of sheep production for the university's Agricultural Experiment Station, intends to evaluate the breeds' growth, reproduction, wool production and milk production. The ewes will go on a milking trial this spring, following lambing.

Boylan's evaluation is part of a two-year project that he and Shrestha are directing to evaluate the new breeds. According to Shrestha, the Outaouais Arcott and Rideau Arcott performed well in trials at the Animal Research Centre, Ottawa, compared to control flocks of purebred Suffolks and purebred Finnish Landrace, when the ewes were on an eight-month lambing schedule.

Although an evaluation is also under way at the University of Manitoba, the only data on lactation in a milking trial will come from the University of Minnesota flock.

Boylan says the Outaouais Arcott and Rideau Arcott may have become available at about the "right time." He says, "We've been interested in dairy sheep for some time, but until these sheep arrived, we didn't have access to genes from the East Friesian breed. The Rideau Arcott contains 14 percent East Friesian genes. The East Friesian is internationally recognized for its superior milk production and has been the basis of many high-producing dairy flocks in Europe and the Middle East. In view of the interest in dairy sheep in the United States and Canada, we are anxious to assess the production of these new breeds."

Shrestha says Agriculture Canada is releasing the Arcott breeds to Canadian farmers under limited restrictions to establish nucleus flocks. The Arcott flocks at the University of Minnesota are the only ones outside Canada.

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AEA,BSS,CEO,V1,V2,V3,E1,M1,N2,O NAGR2858

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 19, 1988

Source: Brian Larson
612/624-4995
Writer: Jack Sperbeck
612/625-1794

U OF M TO HOLD MEETINGS ON ALTERNATIVE ANIMAL ENTERPRISES

Meetings on earning extra farm income from alternative animal enterprises, such as fish farming, gamebirds and rabbits, are scheduled throughout Minnesota. The meetings are sponsored by the University of Minnesota's Extension Service.

"Extension agents and local people are selecting specific topics for each meeting," says Brian Larson, animal scientist with the Minnesota Extension Service.

The dates, locations and topics for the January alternative animal enterprise meetings are:

Jan. 10, Hinckley--bison, fish farming, gamebirds, rabbits.

Jan. 18, Pipestone--fish farming, llamas and alpacas, farm poultry, red deer.

Jan. 20, Glenwood--bison, fish farming, gamebirds.

Jan. 21, Detroit Lakes: bison, dairy beef, rabbits.

The Minnesota Extension Service will also hold alternative animal enterprise meetings Feb. 21 in Montevideo; March 7 in Sauk Centre or Melrose; March 28 in Rochester and April 8 in Duluth. The topics of those meetings are yet to be determined.

For more details, contact your local county extension office.

# # #

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 22, 1988

Source: William J. Boylan
612/624-1727
Writer: Sam Brungardt
612/625-6797

NORTH AMERICAN DAIRY SHEEP SYMPOSIUM PLANNED FOR JULY

A symposium on sheep dairying will be held at the University of Minnesota, July 25-28, 1988.

The North American Dairy Sheep Symposium, which will be held on the university's St. Paul campus, is designed to provide information and expertise on dairy sheep milking and the manufacture of products from sheep milk. It is being sponsored by the University of Minnesota's Department of Animal Science, Center for Alternative Crops and Products and Minnesota Extension Service.

Among the topics that specialists from Europe and North America will cover are genetics and breeding; nutrition of the lactating ewe; management strategies for dairy sheep; machine milking techniques and equipment; manufacturing high-quality sheep milk products; economics, marketing strategies and developing a new business; dairy sheep health management; and a review of dairy sheep enterprises abroad.

There will also be a poster session that is expected to attract research papers from throughout the world, as well as a demonstration of the manufacture of cheese and yogurt from sheep

milk. An optional tour of Minnesota agricultural and industrial enterprises and historic American Indian sites is also planned.

For more information, contact Gerald Wagner, Educational Development System, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108; telephone (612) 625-1978 or (800) 367-5363; Telex 5106013001 (INTAGSTPUQ); FAX (612) 625-0286.

# # #

AEA,BSS,CEO,E1,H2,O,V1,V2,V3,SelMedia NESP2860

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 22, 1988

Source: Chuck Clanton
612/625-9218
Writer: Joseph Kurtz
612/625-3168

Editors: Call Joseph Kurtz (612/625-3168) to obtain a black and white print of Arthur J. Muehling to use with this story.

U OF M SWINE HOUSING SEMINARS SCHEDULED

The future in swine housing--intensified swine systems--will be spotlighted February, at two free University of Minnesota Swine Center seminars.

Arthur J. Muehling, professor and extension agricultural engineer at the University of Illinois, will discuss "Intensified Swine Systems -- Past, Present and Future." He'll cover developments in natural ventilation, heat exchangers and earth tubes; controlling feed waste; manure handling and storage; new, longer-lasting materials for swine buildings; animal welfare concerns; human health topics; and size of swine units that will be profitable in the future.

Each one hour seminar will be followed by an hour of discussion.

One seminar will on the St. Paul Campus of the University of Minnesota, Feb. 14 at 1:30 p.m. in Room B45, Classroom Office Building. The other will be Feb. 15 at 1 p.m., at the Best Western Garden Inn, Highway 169 North, North Mankato.

Muehling has worked with swine housing for over 30 years. He has studied swine facilities in Australia, Europe, the People's Republic of China and the Soviet Union.

Both seminars are open to all interested pork producers. Producers can bring individual problems or questions to either seminar. No advance registration is required for these free seminars.

The University of Minnesota Swine Center promotes an interdisciplinary approach to swine research, and communicates current issue information to pork producers.

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AEA,BSS,CEO,V1,V2,V3,E4,P1 NAGR2861

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 22, 1988

Source: Ray Arthaud
612/624-9791
Writer: Joseph Kurtz
612/625-3168

U OF M AREA BEEF COW-CALF DAYS SCHEDULED FOR JANUARY, FEBRUARY

The latest information on cow-calf feeding, disease control and reproduction will be available to Minnesota producers at the 1989 Area Beef Cow-Calf Days, presented by University of Minnesota extension and agricultural experiment station specialists.

The Cow-Calf Day presentations will be given at nine locations across Minnesota in January and February. The program will run from 10 a.m. to 3 p.m., at most locations and is preceded by registration and coffee beginning at 9:30 a.m. The program at Grand Rapids will be from 7:30-9:30 p.m. At Mora the program will be repeated in the evening. All sessions are open to all interested persons.

The programs will cover:

"Vaccines -- What's New and 'Tried and True'" by Dale Haggard, U of M extension veterinarian.

"How Good (or Poor) Are Your Forages?" by Neal Martin, U of M extension forage specialist, or Dave Rabas, agronomist at the North Central Experiment Station at Grand Rapids.

"Utilizing Available Feeds for Good Performance" by Ray Arthaud, U of M extension beef specialist.

"New Developments in Estrus Synchronization: MGA and Prostaglandin Combinations" by Jay Meiske, U of M extension beef specialist.

Other topics may be included on the program at some locations, and each program will include a question and answer session.

Copies of the "1989 Minnesota Beef Cow-Calf Report" featuring articles by University of Minnesota extension specialists, will be available at each site.

The 1989 Minnesota Area Beef Cow-Calf Days will be:

Tues., Jan. 17	Elks Club, Brainerd, 10 a.m.-3 p.m.
Wed., Jan. 18	City Hall, Red Lake Falls, 10 a.m.-3 p.m.
Thur., Jan. 19	Lammers Town Hall, Solway, 10 a.m.-3 p.m.
Tues., Jan. 24	Becker County Agricultural Service Center, Detroit Lakes, 10 a.m.-3 p.m.
Wed., Jan. 25	North Central Experiment Station Meeting Room, Grand Rapids, 7:30-9:30 p.m.
Thur., Jan. 26	City Library, Mora, 10 a.m.-3 p.m. and 7:30-9:30 p.m.
Tues., Feb. 14	Happy Chef West, Mankato, 10 a.m.-3 p.m.
Wed., Feb. 15	American Legion Club, Westbrook, 10 a.m.-3 p.m.
Thur., Feb. 16	Edson Hall, University of Minnesota, Morris, 10 a.m.-3 p.m.

Registration information is available from county extension offices.

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AEA,BSS,CEO,V1,V2,V3,A2 NAGR2867

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 22, 1988

Source: Dave Wright
612/682-2181
Writer: Joseph Kurtz
612/625-3168

RELATING SWINE RECORDS TO PROFITS MAXIMIZES BENEFITS

Focus on profit related areas in your record keeping! That's the message to pork producers seeking the maximum benefit from their efforts in keeping records from veterinarian Dave Wright, Buffalo, Minn.

Wright was addressing pork producers at the recent Central Minnesota Swine Health Clinic, in St. Cloud.

"From a production standpoint, there are five general areas that should be monitored," said Wright. "They are reproduction, farrowing house performance, nutrition and feeding, death loss and genetic progress."

If performance is acceptable in each of these areas, it may not be necessary to spend time or money on detailed analysis, he said. But if performance slips for no apparent reason, more detailed records can help solve the problem.

If conception rate falls, for example, a producer may want to begin monitoring the incidence of standing heat, heat return intervals, and individual boar matings.

Wright said records are often more meaningful when plotted on graphs. "Computers can do arithmetic and graphs quickly and

easily, but calculators and hand plotting can accomplish the same thing without much difficulty," he said.

"Watching progress by the slope of a line can be a surprisingly effective motivational tool -- even if you are only trying to motivate yourself." You can't know where you are or what you need to do without good records, he said.

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AEA,BSS,CEO,V2,P1 NAGR2862

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 22, 1988

Source: Al Harris
612/589-1711
Writer: Jack Sperbeck
612/625-1794

SHEEP PRODUCERS ADVISED TO BUDGET WOOL PRICES AT ONE DOLLAR PER POUND

Sheep producers in Minnesota and the eastern Dakotas are encouraged to budget $1 per pound for wool prices. They will not benefit from the rise in prices for fine wool.

Fine wool prices have climbed from 50 to 100 percent over 1987, and should bring roughly $2.40 to $2.80 per pound. However, that's not true for the heavier wools produced by flocks in Minnesota and the eastern Dakotas.

North Dakota flocks have been producing heavier wools selling close to $1 per pound--some for even less.

"The current wool pricing system may be shifting the economics of sheep breeds," says Harlan Hughes, extension livestock economist at North Dakota State University.

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AEA,BSS,CEO,O NAGR2866

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 23, 1987

Source: David E. Pace
612/625-3736
Writer: Sam Brungardt
612/625-6797

Editors, broadcasters: You are invited to attend the Jan. 6 reception mentioned in this release.

EXHIBIT WILL FEATURE PHOTOS BY MINNESOTA, SOVIET YOUTH

An exhibit of more than 100 prize-winning photographs by Minnesota 4-H'ers and Soviet Pioneers will be shown during January at the Lutheran Brotherhood Art Gallery, 625 fourth Ave. S., Minneapolis. The exhibit is the result of an exchange initiated and coordinated by CONNECT/US-USSR. This is the first time that 4-H and the Pioneers, the USSR's national youth organization, have cooperated in such a project.

The Minnesota photographs were submitted by 4-H members from across the state and were taken to the USSR by CONNECT last April. They were displayed last summer at the Central Pioneer Palace and at the Trade Union Hall in Moscow.

In October, CONNECT brought the return exhibit of 50 photos by Soviet youth to Minnesota. The photos are from many parts of the USSR. They were initially selected at the district level and then sent to Moscow for the final selection process last spring.

The exchange represents an important breakthrough in establishing communications between American and Soviet youth organizations. For Minnesota 4-H, it is the first link with the

Soviet Union that involves students of high school age and younger. The exhibit is also unique for the Moscow Pioneer Palace; it is the first time their students' photos have been exhibited in the United States.

The exhibit at Lutheran Brotherhood, which includes photos from both countries, will give Twin Cities residents an opportunity to see the Soviets' world through Russian eyes and to compare those images with those the Minnesota students chose to present to the Soviets. During the first week of the exhibit, Jan. 4-10, all 102 photographs will be on display. For the remainder of the month, there will be a rotating display of 50-odd photos.

On Jan. 6, a reception from 5:30 p.m. until 7:30 p.m. will honor the 4-H'ers whose photographs were included in the exhibit.

In the spring, the exhibit will begin a two-year tour of the Upper Midwest sponsored by the Otto Bremer Foundation.

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V1,V4,V7,V8,Q N4-H2477

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 29, 1988

Source: Leland Hardman
612/625-6226
Writer: Larry A. Etkin
612/625-4272

NEW PERFORMANCE DATA FEATURED IN 1989 "VARIETAL TRIALS"

New performance data on three specialty alternative crops--adzuki, amaranth and lupine--are featured in the newly revised 1989 edition of "Varietal Trials of Farm Crops." The new edition of "Varietal Trials," an annual report on crop variety performance in Minnesota, is now available from the University of Minnesota Agricultural Experiment Station. "Varietal Trials" presents the latest results from the Minnesota Agricultural Experiment Station's testing program. That program evaluates the performance of varieties of 32 crops.

More than 500 varieties are grown and evaluated for yield, resistance to lodging and pathogens, and relative maturity. Many are grown annually and reported in the publication's listings and tables. Crops which are not grown every year are represented in tables presenting long term performance data for past trials

University agronomists grow the test crops at 12 sites across Minnesota, covering the range of Minnesota conditions, from Roseau in the north to Fairmont in the south. Their results are compiled annually and, along with planting recommendations for many crops, are published in "Varietal Trials."

Changes in this year's edition include new tables listing performance data for adzuki and lupine in the "pulse crops" section, and for amaranth in "grain crops."

Many tables have also been revised to make retrieving and comparing information easier. This includes a new, consistent heading format, and for some crops, new categories and subdivisions.

Copies of "Varietal Trials of Farm Crops" are available to Minnesota farmers for $1.00 each, through local county extension offices, or from the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108 (please include payment and Minnesota residents add 6% sales tax). Request publication number AD-MR-1953. Orders for more than one copy or from outside Minnesota should be directed to the Distribution Center. Checks should be made payable to the University of Minnesota.

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AEA,BSS,CEO,V1,V4,F1,N2 NEXP2870

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 29, 1988

Source: Chuck Christians
612/624-0766
Writer: Joseph Kurtz
612/625-3168

TV COURSE TO FOCUS ON SWINE REPRODUCTION

A television short course on swine reproductive efficiency will be available to many Minnesota pork producers in January.

The Purdue University Animal Sciences Department will sponsor the course, entitled "Improved Swine Reproductive Efficiency --Key to More Profitable Pork Production."

The course will be broadcast on three consecutive Tuesdays, Jan. 10, 17 and 24, from 7-9 p.m. CST. It will be available by satellite on Westar IV, Transponder 6D (10D for Jan. 17 only), Audio 6.2 and 6.8. Thus, those having access to a satellite dish can view the program anywhere in the U.S.

Pork producer groups may wish to rent a dish or a meeting room with downlink facilities to view the program. Some high schools, fire stations, county buildings, libraries, hospitals, TV stations and electrical companies have such facilities available.

Speakers for the course include pork producers and Purdue animal scientists, veterinarians, and ag engineers, as well as Stan Curtis, University of Illinois animal scientist.

Those who plan to view the program from the satellite can obtain course materials from Purdue University. Send a check made

out to Purdue University for $20 to Cathy Butzen, Continuing Education, Stewart Center, Purdue University, W. Lafayette, IN 47907. You can also order by phone at 317-494-3571 using Visa or MasterCard.

For a copy of the complete program, or more information, contact J. R. Foster, Dept. of Animal Sciences, Purdue University, W. Lafayette, IN 47907, phone 317-494-4837.

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AEA,BSS,CEO,V1,V2,V3,P1 NAGR2869

News and Information

Educational Development System
Minnesota Extension Service
433 Coffey Hall
University of Minnesota
St. Paul, Minnesota 55108

December 29, 1988

Source: Mervin Freeman
507/285-8153
Writer: Jack Sperbeck
612/625-1794

FARM PROFIT TIP: FLEXIBLE CASH RENT MAKES SENSE

Uncertain crop yields and prices make flexible cash rents an equitable way for landlords to share some of the risk. "We've seen how uncertain crop yields can be in a dry year," says Mervin Freeman, area farm management agent with the University of Minnesota's Extension Service.

And, it's hard to project accurate planning prices for corn and wheat since the loan rates aren't set until summer. Freeman has developed a fact sheet called "Flexible Cash Rent Ideas." It gives examples of how to project yields and prices, then adjust the cash rent accordingly.

Most county extension agents in Minnesota have the publication. Or, write to Mervin Freeman, Area Extension Office, 1200 S. Broadway, Rochester, MN 55904. Telephone (507) 285-8153.

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AEA,BSS,CEO,V1,A1,F1 NAGR2868