

NEWS/ INFORMATION

January 3, 1991

MSE 9A27
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

Source: Lee Johnston
612/589-1711
Writer: Joseph Kurtz
612/625-3168

SHEEP AND LAMB FEEDERS DAY TO BE FEB. 7 AT MORRIS

New information to help sheep producers improve their operations will be the focus of a Feb. 7 program in Morris. The event, the 63rd Annual Sheep and Lamb Feeders Day, is sponsored by the University of Minnesota's West Central Experiment Station. The site will be the P.E. Annex on the University of Minnesota-Morris campus.

Registration will begin at 9 a.m., with the first presentation at 10 a.m. Adjournment will be at 3 p.m.

Topics and speakers during the morning will be: ewe and ram lambs in the feedlot, Lee Johnston, University of Minnesota extension animal scientist; effect of gestational weight gain of ewe lambs on subsequent performance, R. M. Jordan, University of Minnesota extension animal scientist; effects of gestational energy intake on ewe performance, Johnston; urea versus soybean meal for lactating ewes, Jordan; a method to induce and synchronize estrus in ewes, Jon Wheaton, University of Minnesota animal scientist; milk, meat and money from forage, Kelley O'Neill, Bloomington, Minn., sheep producer.

There will be two presentations after lunch: John Lawrence, University of Minnesota extension livestock marketing specialist, will look at what's ahead for the lamb market, and Cindy Wolf, University of Minnesota extension veterinarian, will discuss scrapie and BSE (mad cow disease). A question-and-answer session will follow these

presentations.

Registration fee for the program will be \$10 per person. The fee will cover refreshments, lunch and a copy of the university's "1991 Report of Sheep Research."

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AEA,BSS,CEO,V2,V5,V6,N3

NAGR3761

**NEWS/
INFORMATION**

January 7, 1991

Source: Joseph F. Connor
217/357-2811Writer: Joseph Kurtz
612/625-3168**VETERINARIAN CITES 5 STRATEGIES TO COMBAT SWINE DISEASES**

Pork producers can slash production costs by using strategies to control or eliminate profit-robbing diseases in their growing and finishing pigs. Five such strategies were outlined recently by Joseph F. Connor, a swine veterinarian from Carthage, Ill., at the University of Minnesota's Swine Health Clinics at Austin and New Ulm.

The first strategy Connor cited is improving biosecurity. "More disease breakdowns occur because of poor biosecurity than for any other reason," he said. "We need to minimize the risk of introducing disease at load-outs, at new animal introduction and from traffic between farms. There should be a designated load-out area established on the farm, with pressure washing after each load-out. There should be no contact between people inside the unit and those outside. Equipment such as one-way gates and walk ramps are helpful. New animal introduction should come only after a period of isolation and acclimatization."

The next step Connor cited is all-in, all-out animal flow through buildings. Rooms or buildings are set up to accommodate some production increment, such as so many pigs produced per week or every two weeks. Connor said, "Conservatively, most of us estimate a 7 percent improvement in average daily gain and feed per pound of gain with all-in, all-out flow."

The third strategy Connor cited is multiple-site production. This involves producing hogs at more than one site, with distinct breaks between production phases. "Multiple-site production allows flexibility in controlling or eliminating diseases in the various phases without depopulating the sow herd," Connor said.

Modified medicated early weaning (MMEW) was the fourth strategy Connor advocated. This is a nonsurgical method for obtaining disease-free pigs. "The basic concept of MMEW is that pigs that receive adequate colostrum from their mothers will not become infected by disease agents," said Connor. "And if they are weaned and removed to a separate site prior to when colostral antibodies fall below protective levels, they will remain disease free. Medication is used to decrease the shedding of various disease agents to the pigs and to lower the risk that the disease agents will become established in the piglets. The vaccination and medication program is designed to eliminate disease that is a problem in a particular herd and that we are trying to eliminate."

The final strategy is depopulation/repopulation. Connor says this can produce a tremendous benefit in grow-finish performance. "A producer who sets up the depopulation/repopulation scheme correctly can produce more pigs in the following 12 months than previously," he said. "But, it is critical to start an off-site breeding project so down time for the depopulated unit can be kept as close to 30 days as possible."

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AEA,BSS,CEO,V2,P1

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**NEWS/
INFORMATION**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 18, 1991

Source: Bonnie Morrison
612/624-3633
Writer: Pam Barnard
612/625-4730

Editors, program directors: This is the 10th release in a series on energy conservation from the University of Minnesota's Cold Climate Housing Center.

IDENTIFY THE 'SLAVE,' REDUCE ENERGY USE

It runs our engines; surrounds our clocks; even holds our food in convenient, preprocessed packaging. Oil in the form of energy and products is central to everything we do.

Bonnie Morrison, head of the University of Minnesota's Department of Design, Housing and Apparel and member of the university's Cold Climate Housing Center, considers a society's lifestyle the progenitor of its energy consumption.

She says, "The 'snap, crackle and pop' of our cereal includes rice and other grains that have been modified--puffed up, flaked and baked...energy has been used to make it look, sound and taste like it does." While this might work to sell cereal, Morrison says we need to educate ourselves on the real energy and environmental costs we pay to live and even eat the way we do.

To emphasize her point, she cites a study done in 1972 that explored the concept of "energy slaves." The study found that the average household used something like "the equivalent of 300 persons, or energy servants" to function the way it did in the 1970s. The number of "energy servants" our households use today has probably only increased.

Morrison likes this concept because it challenges us to think of

energy differently--and that may be the key to using less. She says, "Energy equivalent bar codes that would let people do dollar budgets as well as energy budgets would help people understand how much energy was used to create the products they buy...from the planting of the wheat for the cereal, to the felling of the trees for the package it goes in, to the processing and disposal of the final product."

Although Morrison says work is under way to come up with a system that would use a bar code reader to tally the total energy costs of products, we can start thinking this way about the products we use right now.

We can also use this concept in our homes. When you think of a house as a collective system of interactions between people, equipment and structures, as the Cold Climate Housing Center would like you to, it's easy to see how any one of these parts could affect the whole.

And, Morrison notes, the incomplete part of the system is often the people who live within it. She says, "Because we fiddle with the thermostat, we use the hot water, we open the refrigerator on a summer day and stand there and enjoy the cool air while we're deciding what to have for supper--because we do those things, we need to understand the costs to our environment and energy resources, and adjust our habits to bring those costs in line. Only then will we be making decisions toward an ecologically sound and sustainable future."

For more information on the house as an energy-using system, as well how to modify everyday activities to save energy, contact your local county office of the Minnesota Extension Service or the Cold Climate Housing Center at (612) 624-9219.

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AEA,BSS,CEO,V2,V7,V8,E3,I4

NHEC3774

msc/nap

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
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St. Paul, Minnesota 55108

January 24, 1991

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

UNIVERSITY OF MINNESOTA DAIRY, BEEF RESEARCH REPORTS AVAILABLE

New publications on dairy cattle and beef cattle research at the University of Minnesota are now available.

The 41-page "1991 Dairy Cattle Research Report" contains reports of research on corn silage additives, dairy cow lameness, use of recycled newspaper for bedding and bovine somatotropin. Reports in the nutrition section include information on total mixed rations and feedstuffs such as animal by-product protein, dried sugarbeet pulp, menhaden fishmeal protein, sweet white lupine seed, dried distillers grains and whole sunflower seeds.

An appendix lists ongoing dairy research projects at the university and the Dairy Resource Group faculty in the Department of Animal Science and College of Veterinary Medicine.

Nine of the 11 reports in the 63-page "1991 Beef Cattle Research Report" relate to feedlot cattle. Topics include effects of various feedstuffs, feed additives, implants and management techniques. There are also reports on wild rice-ground beef mixtures and on using insecticidal mineral blocks for cattle on pasture.

Cost of these publications is \$5 each or \$8 for both mailed to the same address. They are available from Animal Science Extension, 101 Haecker Hall, University of Minnesota, St. Paul, MN 55108. Make checks payable to the University of Minnesota.

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AEA, BSS, CEO, V2, V5, V6, A2, D

NAGR3773

MINNESOTA EXTENSION SERVICE

**NEWS/
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UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
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St. Paul, Minnesota 55108

January 7, 1991

Source: Jerry Wagner
612/625-1978
Writer: Joseph Kurtz
612/625-3168

DAIRY EXPANSION CONFERENCE WILL BE JAN. 22-24 IN ST. PAUL

A three-day conference for dairy producers who are considering expanding or modernizing their operations will take place Jan. 22-24 in St. Paul, Minn.

This Dairy Expansion Conference, sponsored by the University of Minnesota's Extension Service, will be at the Ramada Hotel, I-94 and White Bear Avenue.

In addition to dairy producers, the conference should be of interest to suppliers of farm credit, consultants and planners, building and equipment suppliers and educators.

The conference will focus on dairy facility layout and design, business management and herd and farm management. Instructors and speakers will be university extension specialists and researchers from the north central and northeastern United States, representatives of private industry and producers who have expanded their operations.

The registration fee, which includes two nights' lodging, is \$300. Cost for a second family member lodging in the same room is \$90. For more information, contact a county extension office in Minnesota or Gerald Wagner, Educational Development System, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108 (telephone 612/625-1978 or 800/367-5363).

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AEA, BSS, CEO, V2, V4, V5, V6, D, IA, ND, SD, WI

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 10, 1990

Source: Larry D. Jacobson
612/625-9733
Editor: Sam Brungardt
612/625-6797

AG ENGINEERS NAME JACOBSON OUTSTANDING YOUNG EXTENSION WORKER

Larry D. Jacobson, associate professor and extension agricultural engineer at the University of Minnesota, St. Paul, received the Nolan Mitchell Young Extension Worker Award at the international winter meeting of the American Society of Agricultural Engineers (ASAE).

The award is presented annually "to honor members of ASAE under 40 years of age for outstanding contributions to the advancement of the profession and to stimulate professional achievement in extension work." Sponsor of the award is Aerovent Fan & Equipment Inc. of Lansing, Mich.

Jacobson, an authority on the design of swine nursery and finishing facilities, heat exchanger performance and air contaminants in livestock buildings, was recognized for his expertise in swine housing. Results from his studies for the Minnesota Agricultural Experiment Station have helped define environmental requirements for weanling pigs and are now being used in a regional project to develop a swine growth model.

However, the ASAE says Jacobson's real strength is his ability to interpret and apply his research and the research of others into meaningful educational programs and recommendations for the livestock industry. He has an excellent record of developing education and training programs for livestock producers, extension agents, equipment suppliers and the rural construction industry.

Jacobson received B.S., M.S. and Ph.D. degrees from the University of Minnesota. He is active on several ASAE structure and environment committees and has served as Minnesota Section officer and North Central Region officer. He has written many papers, several of which have appeared in "Transactions of ASAE" or were presented at ASAE meetings.

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AEA,BSS,CEO,V2,E4M,P1M,Se1Media

NAGR3766

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

January 10, 1991

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

SATELLITE PROGRAMS ON DAIRY PROFITABILITY, FEEDING STRATEGIES SET

Dairy producers can learn the latest information on profitability and feeding strategies by participating in two upcoming satellite video teleconferences.

The Minnesota Extension Service and the University of Wisconsin Extension Center for Dairy Profitability are sponsoring the conferences. The first, focusing on profitability, will be Tuesday, Feb. 19. The second, focusing on feeding strategies, will be Wednesday, March 13.

Minnesota producers can take part in the teleconferences at 18 downlink sites across Minnesota. The locations are in Alexandria, Carlton, Crookston, Faribault, Gaylord, Hutchinson, Pine City, Pipestone, Preston, Red Wing, Redwood Falls, Roseau, Rosemount, St. Cloud, Stillwater, Wadena, Willmar and Winona. Most of the sites are in county extension offices or technical colleges. Information on the locations of the downlink sites is available from county extension offices in Minnesota.

The Feb. 19 teleconference will begin with check-in at 10:45 a.m. and will run until 2:30 p.m. It will provide several perspectives on how to increase profit per hundredweight of milk. Individual producers will be able to assess their profit status. A panel featuring a producer, an industry representative and three extension educators will present information and answer call-in questions. There will be

producer presentations on strategies for reducing costs.

The March 13 teleconference will follow the same time schedule and format. It will provide a balanced view of all available feeding technologies. Producers will be have an opportunity to look at how they can apply new feeding technologies or strategies to their operations. A panel of extension educators will present information and answer call-in questions, and producers will present their experiences with various feeding systems.

The registration deadlines are Feb. 8 for the first conference and March 1 for the second. The registration fee is \$25 for one of the conferences or \$40 for both. Registration information is available from county extension offices throughout Minnesota or by writing to CALS Conference Office, Jorns Hall, 650 Babcock Drive, Madison, WI 53706.

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NEWS/ INFORMATION

January 10, 1991

MSC
9/12/91
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

Source: Curtis Norenberg
612/625-1925
Writer: Jack Sperbeck
612/625-1794

EVALUATING MID-YEAR GRAIN MARKETS TO BE DISCUSSED AT CONFERENCE

What are the mid-year market implications for planning and planting the 1991 crop? That will be one topic discussed Jan. 28 at the Grain Issues Conference at the St. Paul Ramada Inn.

The Minnesota Extension Service is sponsoring the conference. Speakers will be from the University of Minnesota's Department of Agricultural and Applied Economics.

Other agenda topics include crop input market projections for 1991, crop planning, budget projections, farm program influences on evaluating planting choices and implications of "The Trade War."

The conference will start at 9 a.m. and run through 3:15 p.m.

Preregistration is encouraged since only a limited number of people can attend.

For more information, contact Judy Sunvold, Extension Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108 (phone 800/367-5363 or 612/625-3775).

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MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 10, 1991

Source: Jerry Adwell
507/437-5470
Writer: Joseph Kurtz
612/625-3168

PACKER REPRESENTATIVE CALLS FOR LEANER HOGS

The trend toward marketing hogs at heavier weights works against the objective of producing the leaner pork consumers desire.

That's what Jerry Adwell, director of pork operations for George A. Hormel and Co., told pork producers attending the University of Minnesota Swine Health Clinics at Austin and New Ulm recently.

"It is a given that as a hog gets heavier it will reach a point where it begins to produce a higher percentage of body fat," said Adwell. "Sooner or later every hog reaches this point. Once the most desirable market weight, from a lean-to-fat ratio, has been passed, the trend toward more fat will increase dramatically. In other words, the relative leanness in the hogs we produce and sell in this country is influenced a great deal by the weight at which they are marketed."

Adwell said the packer can trim excess external fat, but this adds to labor costs. Also, the value of lard to the packer is much less than the value of pork.

He said the major problem with fatter hogs, however, is the extra fat between and through the muscle tissue. "The processors' ability to remove fat at this level is limited," he pointed out. "Thus, by producing heavier hogs, we are in danger of creating fat problems that are passed on to the consumer. And consumers have told us loudly and

clearly that such problems will cause them to look at other sources of protein."

Adwell said that once hogs pass 220 pounds, they begin to add at least .1 inch of last rib backfat for every additional 20 pounds of live weight. That is based on data from the hogs Hormel purchases.

"Think of the genetic and nutritional improvement that can be wiped out by selling hogs that have been fed beyond their optimal market weight," he said.

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AEA,BSS,CEO,V2,P1

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UNIVERSITY OF MINNESOTA
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 405 Coffey Hall
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NEWS/ INFORMATION

January 14, 1990

Source: Neal Martin
 612/625-3747
 Writer: Jack Sperbeck
 612/625-1794

ALFALFA SYMPOSIUM WILL FEATURE FEB. 16 CLINIC FOR HORSE OWNERS

A clinic on producing, feeding and buying alfalfa for horses will be part of the National Alfalfa Symposium at the Kahler Hotel in Rochester, Minn., Feb. 16.

"Alfalfa is a nutritious horse feed. It provides protein, energy, vitamins and minerals," says Neal Martin, University of Minnesota extension agronomist. "Alfalfa is often mixed with grass and used for hay or pasture for horses."

The clinic will give horse owners an opportunity to hear nationally known producers and educators speak on fitting alfalfa into a horse program, determining alfalfa hay quality and feeding alfalfa and alfalfa-grass hay to horses. Concurrent sessions will cover alfalfa seeding and management, alfalfa pests and feeding horses by growth and performance classes.

More information and registration forms are available from Neal Martin, Department of Agronomy & Plant Genetics, University of Minnesota, St. Paul, MN 55108 (phone 612/625-3747) or from county offices of the Minnesota Extension Service.

The fee for the clinic is \$20 (\$10 if registered for Feb. 14 or 15). For special rates on room reservations, call the Kahler Hotel (800/533-1655) by Jan. 31 and say you're attending the alfalfa symposium.

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AEA, BSS, CEO, V2, V4, K, IA, ND, SD, WI

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**NEWS/
INFORMATION**UNIVERSITY OF MINNESOTA
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DEVELOPMENT SYSTEM405 Coffey Hall
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January 14, 1991

Source: Marilyn Bode
612/626-1254
Writer: Pam Barnard
612/625-4730

Editors, program directors: This is the ninth release in a series on energy conservation from the University of Minnesota's Cold Climate Housing Center. Look for another tip next week.

FLUORESCENTS SHED NEW LIGHT ON ENERGY BILLS

The telephone wasn't adopted overnight either. It may be difficult to imagine, but many of the machines we consider necessities were once thought to be frivolous excesses. With changes in our society also come changes in what we define as necessities.

A fairly new development in residential lighting--the use of compact fluorescent lamps instead of the standard incandescent bulb--is poised to become the next "newfangled contraption" of the 90s, according to Marilyn Bode, housing specialist with the University of Minnesota's Extension Service.

Although the standard fluorescent lamp has been used in commercial lighting since its introduction at the New York World's Fair 52 years ago, recent refinements in compact fluorescent lamp design have made it much more attractive for use in the home.

Says Bode, the primary advantage to using a compact fluorescent lamp is twofold: "You'll save energy and money. First of all, the fluorescent lamp uses a fourth of the electricity of the standard incandescent bulb so you will be paying for only one-fourth of the electricity to operate the lamp. Secondly, although a compact

fluorescent lamp costs more than an incandescent bulb (approximately \$20 versus \$1), it should last around 10,000 hours compared to a typical 800 hours for the incandescent."

This can amount to important savings on your energy bill, especially with today's higher energy costs. You'll also feel good about doing your part to help our environment by using less energy.

Bode cites figures from a study done comparing use of a 75-watt incandescent bulb and an 18-watt compact fluorescent lamp. The cost of supplying light for equal amounts of time (in this case, for the life of the fluorescent--about 10,000 hours) with the fluorescent lamp was roughly half of that with the incandescent bulb (\$30.15 versus \$61.47).

Fluorescents have other advantages, also. Since they heat up less than incandescents, they are cooler to the touch and may help save on air conditioning. And since they have to be changed less often, they're good for hard-to-reach fixtures.

Of course, there are some disadvantages that you should know about:

--The higher cost of fluorescent lamps makes them less suitable for rarely used fixtures.

--In some cases, the larger fluorescent lamp may not fit in some light fixtures. However, in one midwestern home with 35 incandescent fixtures, all but six of the fixtures could accommodate the larger fluorescent lamps.

--Fluorescents often require a second or two to light up and then take a minute or two to reach full brightness.

--Fluorescent lamps cannot be used in cold environments, such as a porch or garage area, because they need to be warm to function.

--Fluorescent lamps do not come with a three-way feature and may not be able to be used with a dimmer switch.

More and more hardware and lighting supply stores are carrying fluorescent lamps. However, says Bode, "Until consumers create more of a demand, few stores are likely to carry a wide range of the more expensive compact fluorescent lamps."

For more information on how you can save on lighting, contact the Cold Climate Housing Center at (612) 624-9219 or your local county extension office.

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AEA,BSS,CEO,V2,V7,V8,E3,I4

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 14, 1990

Source: Neal Martin
612/625-3747
Writer: Jack Sperbeck
612/625-1794

COME TO NATIONAL ALFALFA PRODUCERS DAY FEB. 15

Alfalfa could be your crop of the 1990s for higher farm profits.

"Alfalfa is the most profitable forage crop for high-producing dairy and beef cattle, sheep and horses," says Neal Martin, University of Minnesota extension agronomist.

Farmers can learn more about alfalfa as a top-profit crop at the National Alfalfa Producers Day on Friday, Feb. 15, at the Kahler Hotel in Rochester, Minn.

Martin says, "We have several outstanding producers on the program. Some of them switched from all-corn production to alfalfa, and they say 'it's the smartest move I've made in years.'"

More information and registration forms are available from county offices of the Minnesota Extension Service or from Neal Martin, Department of Agronomy & Plant Genetics, University of Minnesota, St. Paul, MN 55108 (phone 612/625-3747).

Many Minnesota producers can grow good yields of high-quality alfalfa hay and haylage for \$35-45 a ton, and prime alfalfa hay sells for an average of \$117 a ton at Minnesota's quality-tested hay auctions.

"This shows tremendous profit potential for alfalfa hay," says Martin, "yet, we import alfalfa hay in many areas of Minnesota."

Topics on the program will include: establishing alfalfa with and without small grains, how to minimize loss of yield and quality from

weather, what alfalfa varieties will be like in the 1990s (commercial plant breeder panel), how to "turn alfalfa production up a notch" (panel of top producers) and the untapped potential for the future dairy farm in the Midwest.

The last National Alfalfa Day in Minnesota was held in 1978. "This will be the best opportunity for Minnesota farmers to discuss alfalfa profit tips with successful producers and researchers for another dozen years or so," Martin says.

Registration fees are \$15 a person in advance and \$20 at the door. For a special rate on room reservations, call the Kahler Hotel (800/533-1655) by Jan. 31 and mention the alfalfa symposium.

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AEA,BSS,CEO,V2M,V4M,A1M,F1M

NAGR3770

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
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January 14, 1991

Source: Joyce DeBoe
612/625-8198
Writer: Phyllis Jenks
612/625-7793

ENJOY WASHINGTON, D.C., IN THE SPRING

See the sights of Washington, D.C. this spring! Join an educational tour for adults and spend a week in our nation's capital. Gain a greater appreciation for our country's heritage as you learn about citizenship and watch our government in action.

This spring's Know America tour to Washington, sponsored and conducted by the University of Minnesota's Extension Service, will be April 29 through May 4. The tour will feature visits to the U.S. Capitol, Arlington Cemetery, the Lincoln and Jefferson Memorials, Mount Vernon, Ford's Theater, the Smithsonian Institution and many other interesting places.

Cost of the tour is \$850 per person. It includes round-trip airfare, lodging for five nights, breakfasts and dinners, bus transportation in Washington, admissions and tour guide.

A recent tour participant said, "I have traveled much these last 20 years...I must say your trip ranks among the very top in all categories. I left Washington with a renewed, deepened love and respect for my country."

For more information, write Joyce DeBoe, Know America Tour, Educational Development System, 405 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108 (or call 612/625-6294 or 800/367-5363).

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**NEWS/
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St. Paul, Minnesota 55108

January 24, 1990

612/681-5941

Source: Bill Penning
612/681-5941Writer: Jack Sperbeck
612/625-1794**USE "WHAT TO GROW" BUDGETS TO HELP DEVELOP CROPPING PLANS**

Bill Penning, area farm management agent with the University of Minnesota's Extension Service, has three quick pieces of advice on developing cropping plans under the new Farm Bill:

1. Make sure your local ASCS manager can tell you all the local rules before you finalize cropping plans. "It's good to plan ahead, but hold off until you have all the information you need before signing up," says Penning.

2. Use the "What to grow" budgets developed by the Minnesota Extension Service to help concentrate your efforts. The budget examples are available from county and area extension offices. "The figures you see in the budgets may not be an exact fit on your own fields, but you can use them to help develop your cropping plans," Penning says.

3. If you decide to plant sunflowers or other oilseed crops under the new flexible acres provision, make sure your rotation leaves three or four years between the oilseed crops. Penning says, "Personally, I like to see four years of small grain between sunflowers. You're asking for disease, insect and weed problems if you plant oilseeds too close together in the rotation."

The Minnesota Extension Service, ASCS and SCS are working together to interpret Farm Bill information to farmers.

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AEA, BSS, CEO, V2, V4, A1

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NEWS/ INFORMATION

January 24, 1990

Source: Carl Rosen
612/625-8114
Editor: Sam Brungardt
612/625-6797

Editors: To obtain b/w prints or 35mm color slides to use with this story, call Carl Walker (612/624-3708) or Sam Brungardt (612/625-6797).

SOIL SCIENTIST STUDIES FEASIBILITY OF FERTILIZING CROPS WITH SLUDGE ASH

Sludge ash, that powdery, brown by-product of wastewater treatment, is not exactly what people are breaking down doors to get. However, a Minnesota hauling company wants to change that. It wants to convince farmers that sludge is just the thing they need for well fed crops and, in the process, help solve a growing waste disposal problem, too.

The company, Rehbein, is treating farmland with an ash-based soil conditioner as a way to dispose of the waste and improve crops at the same time. Watching the project closely is Carl Rosen, a University of Minnesota soil scientist who conducts research for the university's Agricultural Experiment Station.

Rosen, who has monitored the effect of sludge ash on experimental plots of crops for several years at Westport, Minn., says, "After four years, we can say that the ash does contain nutrients that can be beneficial to plants if those nutrients are deficient in the soil. You are going to increase the concentration of heavy metals in the soil, because they're in the ash. But we feel that, at the ash rates applied, the metal loading should not be a problem."

Sludge ash disposal, a relatively new problem, is ironically a by-product of efforts to clean the environment. Years ago, cities sent

nutrient-rich wastewater right into lakes and rivers, often turning them green with weeds and algae.

Clean water laws spawned treatment plants to remove most nutrients from wastewater. This improved water quality, but also created mountains of nutrient-loaded sludge. In Minnesota, most of this sludge is burned, producing thousands of tons of ash annually. Almost all of this ash is dumped into landfills.

Rehbein aims to put the phosphorus-rich sludge to good use. It will mix it with waste lime from water treatment plants and offer it free of charge to farmers as a soil amendment. It will cost farmers nothing because the ash producer pays Rehbein to dispose of the wastes.

The project is experimental. Rosen and Minnesota Pollution Control Agency staff will be watching for potential negative effects. Their concern centers around metals, such as lead and cadmium, that are found in the sludge ash. These metals can sometimes be taken up by plants fertilized with the ash, potentially posing a health risk to animals, including people, that eat the plants.

Rosen's past field research showed no such uptake with corn. But studies of container-grown lettuce suggest that metals may be taken up by leafy plants when ash is applied at high rates. That's why Rosen will monitor the soil and plants in ash-treated areas to see if--and how--the metals travel.

"No matter how you look at it, there's some kind of risk," Rosen says. "You have to manage waste in some way. The ash is already there. We can either landfill it and wait for a problem or spread it on cropland in rates that we don't think will be a problem. This is a viable alternative to just throwing it away."

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 24, 1991

Source: Jerome Beker
612/624-3700
Writer: Jennifer Obst
612/625-2741

WHERE SHALL THE CHILDREN GO?

Orphanage. The word conjures up Oliver Twist or Jane Eyre images of unhappy children fending for themselves in impersonal institutions. "There has been a great rejection of group care in the past, and I think a lot of that has been justified," says Jerome Beker, youth development researcher for the University of Minnesota's Agricultural Experiment Station. "Such programs have frequently not been effective, and some have been abusive."

But as the number of children needing care outstrips the number of available foster families, group care is being reassessed, Beker says. A recent Citizen's League report recommended a "new version of the orphanage" to provide an alternative for children with special needs. Other voices--and this includes voices from minority groups and agencies--are adding their support to this idea.

Necessity is forcing that reassessment. Last year, there were 7,000 children in foster care in Minnesota. There were more than 1,200 requests for foster care in Hennepin County, which has 606 licensed foster homes. Beker says, "It is clear that there are not enough foster homes, and also that the numbers of kids in need are increasing, due to parental AIDS, drug addiction and other social problems." According to a recent government report, nearly 500,000 children were in out-of-home placement in the United States last year, and a 70 percent increase is expected by

1995. While a family setting is still best for young children, Beker maintains that group care can be a nurturing environment for preadolescents and adolescents if it is structured properly. For some, it may be the placement of choice.

Beker has been assessing group care settings in the United States, Europe and Israel. His research gives ideas for adopting positive models for preadolescent and adolescent youth care.

Group care in Israel, he has found, need not carry the degree of stigma that it does here; it is often seen as a normal alternative in child rearing.

The main difference between U.S. and European group care, Beker says, is that our programs tend to emphasize clinical services and give less attention to the living group, while many of the European programs emphasize a more holistic approach. He says, "In many of our programs, the kids have a therapist one hour a day, or whatever, and the rest of the time they live in a cottage where the personnel are poorly paid and untrained, where the average staff turnover is often greater than that of the kids.

"In most European settings, on the other hand, the focus is on the living group and the generalist-professional who's task it is to help the young people reorganize their lives." Beker adds that this professional is involved in daily care, counseling and activity planning with the children. In most American group care programs, these roles are separated, and the daily caregiver has the lowest status.

"In the European model, the workers and the young people are very much more empowered," Beker says. The European model is based upon a professional role which doesn't exist in the United States. This role, that of the educateur or social pedagogue, is a recognized and respected

profession. For example, in France, the Minister of Welfare is an educator.

This model of youth services originated in the United States. Following World War II, Europe faced the problem of reintegrating many displaced children. The French government asked Columbia University's Teachers College and the New York School of Social Work to design a program for training young workers to become professional caregivers. The concept they developed became the educator role, and it has been widely adopted in Europe, while being largely ignored here, Beker says. Similar approaches applied in the United States from time to time have largely disappeared in recent decades, to be supplanted by the kinds of programs that have left group care in such disrepute, he says.

One reason for the rejection of the European models, Beker explains, is "there may be parts of them that conflict with elements of our dominant culture." We are preoccupied with control. We talk about tasks, methods, management techniques. We abhor child labor.

"Work is important in group care settings to give the young people a feeling of ownership," Beker says, "but we are afraid it would be exploiting the kids. "Not that such exploitation is unknown, of course, but opportunities for meaningful work are needed."

So, there are obstacles to overcome in creating this kind of group care here. But Beker believes that today's displaced children, victims of social--not wartime--trauma, could respond to similar care.

Beker says a good group care program must have three elements. The first is challenge. He says, "If the kids are languishing in these places, they are not going to grow." The second is participation. "Young people need to try their wings in various ways in communities in which they are involved." The third is service. "They have to see themselves

as givers, not only as takers, whether it's in a family or an institution."

Beker believes a program like that needn't necessarily be more expensive. And, it would certainly be less costly in the long run than the social costs resulting from not helping these children. Most importantly, by reclaiming an idea that was developed in this country and has proved successful elsewhere, we would be offering some of our most needy children a better chance in life.

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AEA,BSS,CEO,E5,E7,Y

NHEC3777

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 24, 1991

Source: Mike Schmitt
612/625-7017

Writer: Jack Sperbeck
612/625-1794

RESEARCH LOOKS AT WAYS TO FINESSE N APPLICATIONS, PROTECT WATER

Many farmers who raise corn on manured land over-fertilize with commercial nitrogen. In some cases, the extra nitrogen can pollute both ground and surface waters.

But new ways to fine tune nitrogen applications could take much of the guesswork out of fertilizer nitrogen applications. And it will help reduce the potential for nitrate contamination of water supplies, says Mike Schmitt, soil scientist with the University of Minnesota's Extension Service.

Schmitt, extension soil scientist George Rehm and Minnesota Agricultural Experiment Station soil scientists Gyles Randall and Gary Malzer are refining Minnesota nitrogen recommendations. They're also evaluating use of soil nitrogen tests.

In 1989, this team of researchers began to examine the use of soil nitrogen tests for making fertilizer nitrogen recommendations. "We need to remember that 1989 was a drought year, and we had very high rainfall in 1990," Schmitt emphasizes.

Presently, Minnesota scientists generally recommend a soil nitrate test only in some 30 counties of southwestern, northwestern and west central Minnesota. However, Schmitt says such a test "seems destined for the future in eastern and central Minnesota."

Wisconsin and Iowa soil scientists are making nitrogen

recommendations by using soil tests, and the Minnesota scientists are researching the possibility of including a soil N test in their system.

The continuing study is based at 30 Minnesota sites. It involves various sampling depths and times, plus numerous forms of nitrogen analysis.

The present N recommendations use an equation approach, where nitrogen fertilizer needed equals the amount of fertilizer needed to produce a bushel of grain multiplied by the yield goal, minus nitrogen credits. Nitrogen credits can come from organic matter, legumes, manure and irrigation water.

Greatest misuse of this system is from not taking the full amount of credit, or from having yield goals that are too high. "Many farmers are very conservative with their manure credits. The feeling is that 'nitrogen is cheap' so they err by over-applying nitrogen fertilizer. In many cases, they could err in the other direction and still reach the yield goal," Schmitt says.

In addition, "more farmers need to take nitrogen credits the second and third year following manure applications. Second- and third-year credits can be 20 to 30 percent of the first year's, but I know of very few farmers who take them," he says.

Schmitt says the credit for organic matter in the Minnesota equation appears to be too low in southeastern Minnesota. He adds, "It may also be necessary to re-evaluate the effect of some previous crops on N recommendations. We found some application rates that were higher than what was needed.

"Soil tests can be used to limit or eliminate fertilizer nitrogen in fields with high residual nitrates." Substantial applications of manure and/or limited yields due to dry weather are examples of where high nitrate conditions may exist.

But the analytical quality of the nitrate data obtained by some of the "quick" tests being promoted is questionable. "We encourage using a professional soil testing laboratory, especially if the 'quick' test results call for a change in fertilizer nitrogen recommendations," Schmitt says.

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AEA,BSS,CEO,V2,F1M,L3M

NAGR3776

NEWS/ INFORMATION

MSC
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MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 28, 1991

Source: Francesca Cuthbert
612/624-1756

Writer: Dave Hansen
612/625-7290

Editors: Call Carl Walker (612/624-3708) or Dave Hansen (612/625-7290) to obtain b/w prints or 35mm color transparencies to use with this story.

"COMMON" TERN IS ANYTHING BUT

The common tern is anything but common to Francesca Cuthbert. Cuthbert, a University of Minnesota wildlife researcher, documented through her censuses that Minnesota's common tern population declined through most of the 1980s.

About 600 pairs of common terns now breed in the state, only as third as many as in the 1930s. The Minnesota Department of Natural Resources (DNR) placed the common tern on the "Special Concern" list in 1984. In 1988, Cuthbert predicted, "If the productivity observed in this study continues and no immigration occurs, few of the Minnesota colonies will exist beyond the year 2000."

Fortunately, Minnesota's common tern population is on the increase, thanks to creative habitat improvements. And, the status of the species is being reviewed to see whether it should be classified as threatened or endangered, as neighboring Great Lakes states have done.

Minnesota has common tern colonies in Duluth Harbor, Mille Lacs Lake, Lake Kabetogama, Lake of the Woods and Leech Lake. The colony on Gull Island in Leech Lake is the largest, comprising about half of the state's common tern population.

Cuthbert, who conducts shorebird research for the Minnesota

Agricultural Experiment Station, has concentrated her studies on the threatened Duluth colony. She found that the population experienced an alarming decrease, from 198 breeding pairs in 1983 to 88 in 1988. "We found that basically all the young terns died," Cuthbert says. "The parents were nesting in districts around the port where there was shipping activity, hiking, pets and other predators."

The Duluth Harbor population is now making a comeback; the 1990 census found 124 pairs, a 70 percent increase. Research assistant William Penning explains: "We provided secure, safe nesting sites away from human activity and competing ring-billed gulls. We created a 4.5-acre sandy island by cutting trees and scraping vegetation off. The terns think its great!"

One of the major problems facing the common tern throughout the Great Lakes is the ring-billed gull. The gulls arrive about a month earlier than the terns and take the best nesting sites, forcing the terns to nest in sites that often prove more susceptible to predators or too close to human activity. The terns haven't always had to compete with the gulls; the gulls, which eat dead fish, garbage, and worms exposed during farming operations, followed development into the area midway through this century.

Cuthbert and Penning tried several tactics to improve the nesting success of the Duluth Harbor tern colony. "We discouraged them from landing at poor nesting sites," explains Cuthbert. This was done by volunteers, who patrolled the areas at critical times. In addition, great horned owl decoys holding gull carcasses in their talons were used to make terns think twice about landing.

Improved nesting sites away from human disturbances were identified and prepared, including two islands in the St. Louis River Estuary. The

Minnesota and Wisconsin DNRs worked closely with the university researchers. Predators were controlled or kept out by electric fences. "We attracted the terns to the good sites with decoys and by playing tapes," Cuthbert says.

No tern chicks survived during the first few years of the study. Finally, in 1988, the terns were completely kept away from the undesirable nesting sites. However, severe storms that year continually destroyed their nests on the exposed sand of their new home, Wisconsin Point.

"The number one thing we can do is provide good, safe habitat," Cuthbert says, "and this year our efforts were successful."

Penning explains that in 1990, "all of the birds automatically went to Interstate Island, the improved site. There, 168 chicks survived. We have high hopes for the Wisconsin Point site also." With continuing efforts by both the Minnesota and Wisconsin DNRs and other agencies and many volunteers, the common tern may someday become common again.

The Minnesota Agricultural Experiment Station supports Cuthbert's research of several other shorebird species, including the sandhill crane, piping plover and burrowing owl. She is also involved in studies of the threatened Blanding's turtle.

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AEA,BSS,CEO,V7,V8,R,SelMedia

NNRD3780

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 31, 1991

Source: Judy Sunvold
800/367-5363
Writer: Sam Brungardt
612/625-6797

MARCH SYMPOSIUM WILL CONSIDER PROSPECTS FOR LUPINS IN NORTH AMERICA

A symposium on March 21-22 will give farmers, researchers, instructors, extension and agribusiness personnel and others an opportunity to share research results and information on all aspects of lupins, from production to marketing and utilization.

The symposium, titled "Prospects for Lupins in North America," will be at the Ramada Hotel, Interstate-94 and White Bear Avenue, St. Paul, Minn.

Tomasz Czerwinski of Poland's Wiatrowo Plant Breeding Station will present the keynote address on the morning of the first day of the symposium. He will be followed by presentations about experiences with lupins in various sections of the United States and Canada.

In the afternoon of the first day, 14 university and governmental researchers will talk about lupin agronomy, production and genetic improvement and about insect, disease and weed pests of lupins and their control.

The morning of the second day will be devoted to presentations about lupin utilization, including feeding lupins to animals. This will be followed by a panel which will give grower, industry and research perspectives on priorities for the development of lupin as an alternative crop.

The symposium will conclude in the afternoon with a meeting of the North American Lupin Association.

Registration fee for the symposium is \$100 (\$125 after March 15), and \$75 for each additional family member. For more information, contact Judy Sunvold, Educational Development System, 405 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108 (phone 800/367-5363 or 612/625-2722).

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AEA,BSS,CEO,V2,V5,V6,F1,L3

NAGR3783

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

January 31, 1991

Source: Gerry Wagner
612/625-1978
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA TO HOLD DAIRY POLICY CONFERENCE MARCH 5

Public policy issues affecting the U.S. dairy industry will be the subject of the annual Dairy Policy Conference March 5 at the University of Minnesota.

The conference will take place at the Earle Brown Continuing Education Center on the university's St. Paul campus. It is designed for those interested in dairy policy, including dairy producers, dairy co-op directors and management personnel, farm organization officials and news media representatives. Registration will begin at 8:30 a.m., and the program will begin at 9 a.m. Adjournment will be at 3:30 p.m.

Topics and speakers will be:

"New Requirements for Administration of the Dairy Price Support Programs--Implications for Price Support Levels"--Charles Shaw, Dairy Division, ASCS, U.S. Department of Agriculture, Washington, D.C.

"Issues and Constraints for the USDA in Response to the National Hearings on Federal Milk Marketing Orders"--Ed Coughlin, Federal Order Programs, National Milk Producers Federation, Arlington, Va.

"New Directions for Minnesota's Livestock Sector"--Elton Redalen, commissioner, Minnesota Department of Agriculture.

"The Future Role of California in the U.S. Dairy Industry"--James Gruebele, chief executive officer, Dairyman's Cooperative Creamery

Association, Tulare, Calif.

"Consequences of the Uruguay Round of the GATT Negotiations for U.S. Agriculture"--a representative of the American Farm Bureau, Washington, D.C.

"Outlook for Dairy Programs in the 1990s"--Ed Clark, editor, "Dairy Herd Management" magazine, Minnetonka, Minn.

Registration fee for the conference is \$35 per person. The fee covers program costs, materials, lunch and refreshments. More information and registration forms are available from county extension offices in Minnesota or from the Educational Development System, 405 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108 (phone 612/625-1214 or 800/367-5363).

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AEA,BSS,CEO,V2,V5,V6,A1,D

NAGR3784

UNIVERSITY OF MINNESOTA
 EDUCATIONAL
 DEVELOPMENT SYSTEM
 405 Coffey Hall
 1420 Eckles Avenue
 St. Paul, Minnesota 55108

NEWS/ INFORMATION

January 31, 1991

Source: Pat Huelman
 612/624-1286
 Writer: Teddi Barron
 612/624-2767

LET SOUTH WINDOWS HELP HEAT YOUR HOME

Nearly every house has a solar heater that can help cut energy costs in winter. A window on the south side of a house can be very effective as a solar collector, says Pat Huelman, extension specialist for the University of Minnesota's Cold Climate Housing Center.

"Although most people don't think of a south window as a solar collector, it is the simplest and most efficient means for gathering heat from the sun," Huelman says.

To maximize the heating benefit of south windows, it's important that drapes and blinds be open and the window unshaded on sunny, winter days. Summer screens should be removed, as well.

During a typical February day, 23,200 Btu (British thermal units) of solar heat can be gained per square foot of double-pane south window, while 18,300 Btu of heat are lost, according to Huelman. "Because an average window is about 10 square feet, this net heat gain would equal about 40 cents' worth of natural gas at current rates and even more for other fuel sources. For more than one south window and over an entire winter, this adds up to a great deal of free heat from the sun."

To offset the effects of heat lost through the window during the night, the window should have more than one pane, he says. "A multipane window with low-emissivity ("low-e") coating is especially effective in reducing nighttime heat loss," Huelman says. Low-e coating consists of

invisible layers of metal oxides on the glass that increase the window's energy efficiency.

Tight-fitting, movable insulation fastened onto the window at night provides a further reduction in heat loss. However, Huelman says, an airtight seal is critical to prevent condensation and frost formation between the window and the insulation.

Because of the heating benefits of south-facing windows, they are good places to make energy improvements. "Windows on the south side of your house can be upgraded and enlarged. Use tight-fitting windows with two or three panes and a low-e coating," Huelman recommends.

More information on home energy conservation is available from county offices of the Minnesota Extension Service and from the Department of Public Service.

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AEA,BSS,CEO,V2,V7,V8,E3,I4

NHEC3781

NEWS/ INFORMATION

January 31, 1991

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

Source: John Sem
612/624-4947
Writer: Phyllis Jenks
612/625-7793

TRAINING PROGRAM FOR RURAL TOURISM DEVELOPMENT TO BE AVAILABLE

A unique, national training program for rural tourism development will be available this spring from the University of Minnesota's Tourism Center.

The program is designed for use by rural community leaders, volunteers, extension staff and public agency personnel. It can teach persons how to revitalize their communities' economies through tourism, how to get a community-based tourism effort going and how to maintain a rural tourism industry through attractions, services, marketing and organization.

Included are a training guide of activities, marketing information, resources and evaluation material that can be used to plan and develop a rural tourism industry, print materials for community members and a supplemental videotape. In addition, a national teleconference on November 20 will feature experts from all over the country who will answer program participants' questions about rural tourism development.

This program is sponsored by the University of Minnesota's Tourism Center and the U.S. Department of Agriculture's Extension Service with funding from the Economic Development Administration, U.S. Department of Commerce; the Northeast and North Central Centers for Rural Development and the Southern and Western Rural Development Centers.

For more information, contact the Tourism Center, 101 Green Hall, University of Minnesota, 1530 Cleveland Ave., St. Paul, MN 55108 (phone 612/624-4947).

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E1(V2,V4,V8),P2(V2,V4,V8),SelMedia

NNRD3785

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 7, 1991

Source: Charles Christians
612/624-0766
Writer: Joseph Kurtz
612/625-3168

SWINE RESEARCH REPORT IS AVAILABLE FROM UNIVERSITY OF MINNESOTA

"1991 Minnesota Swine Research Reports," a 124-page booklet containing results and updates of swine research at the University of Minnesota, is now available by mail.

The booklet is published by the Department of Animal Science in cooperation with the Minnesota Extension Service and the Minnesota Agricultural Experiment Station. It contains reports on topics relating to swine feeding, housing, reproduction, health and economics.

Price of the booklet is \$6.50, which includes the cost of postage. Copies are available from Charles Christians, Department of Animal Science, 101 Peters Hall, 1404 Gortner Ave., University of Minnesota, St. Paul, MN 55108-1098. Checks should be made payable to the University of Minnesota.

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AEA,BSS,CEO,V2,P1

NAGR3787

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 7, 1991

Source: Carol Windels
218/281-6510
Writer: Larry A. Etkin
612/625-4272

Editors: The subject of this story, Carol Windels, is well known to the farmers in your counties who grow sugarbeets. Call Carl Walker (612/624-3708) or Larry Etkin (612/625-4272) to obtain a b/w print or 35mm color slide to use with this story.

SCIENTIST WORKS TO DEVELOP INTEGRATED CONTROLS FOR SUGARBEET DISEASES

As a college student, Carol Windels chose plant pathology as her field of study because that was one way she could merge her interests in biology and chemistry. Today, Windels, who was grew up as Carol Schrenk on a farm near Long Prairie, in west central Minnesota, is a research plant pathologist for the University of Minnesota.

For the past six years, Windels has worked in labs and experimental plots at the university's Northwest Experiment Station, Crookston, as well as in farmers' fields throughout the Red River Valley and west central Minnesota. Her job is to conduct research on diseases endemic to the Red River Valley, particularly those that affect sugarbeet stand establishment.

"The previous common view was that wind, insects and seedbed preparation were important," she says. "Most producers didn't consider plant diseases, but we've found that diseases are one factor of the stand establishment problem."

Plant pathogens, according to Windels, can be very persistent; some can remain dormant in the soil for years until proper conditions are present-- say, wet weather and an appropriate host for a water-loving fungus. She says, "I was working with one grower in 1986 who had not planted a field to

sugarbeet in 10 years, but he still had problems."

Windels' research focuses on developing integrated controls for soil-borne diseases. This has her looking at resistant varieties, effective and safe chemicals, sanitary improvements in processing techniques, green manure crops that might suppress disease and rotation effects.

Since sugarbeets are grown on a three- to five-year rotation to minimize disease problems, Windels looks at the effects other crops have on disease cycles. Small grains, particularly barley and wheat, command her attention as common rotation crops.

Beans used to be grown in rotations also, but Cheryl Engelkes, a graduate student who works with Windels, recently confirmed that beans serve as alternative hosts for the organism that causes Rhizoctonia root rot, a major sugarbeet disease. Negative yield-rotation effects had already been noted, and Engelkes' finding is encouraging the trend away from including beans in rotations with sugarbeets.

Windels' work has helped stabilize several areas that were poised to experience severe production losses from the spread of pathogens. Working with other university researchers, she had particular success in slowing the spread of Aphanomyces cochlioides, the fungus that causes damping off and sugarbeet root rot. That was in 1988, when, on Windels' recommendation, the practice of returning tare soil to fields was discontinued at the Southern Minnesota Beet Sugar Cooperative in Renville.

Tare soil, the field residue that is removed from sugarbeets when they are piled at receiving stations, can carry Aphanomyces cochlioides. Although this fungus is not yet widespread, Windels is concerned about it because no chemical control is available. The tare soil is now disposed of at designated sites so the fungus will not be spread to uninfected acreage.

What made that development exciting for Windels was the speed with which the industry adopted the new disposal recommendations. She notes, "The clientele are progressive and ready to implement the latest research results into their operations."

Because of the effects of recent droughts, it's difficult to estimate a dollar value for Windel's work to the industry, but she says, "I do know that we have much more grower awareness of disease problems, what to look for, and better use of cultural methods based on having more knowledge of plant diseases."

In fact, the sugarbeet industry funds most of Windels' research through a checkoff program, and growers provide ready access to their fields when her research requires samples.

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AEA,BSS,CEO,F1M,12,14,26,34,35,44,47,54,56,61,67,68,77,81,82,83,89,92 NAGR3786

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 11, 1991

Source: Jerry Shurson
612/624-2764
Writer: Joseph Kurtz
612/625-3168

SHURSON JOINS UNIVERSITY OF MINNESOTA ANIMAL SCIENCE FACULTY

Jerry Shurson, a Minnesota native with advanced degrees in swine nutrition, has joined the Department of Animal Science faculty at the University of Minnesota. He is an assistant professor with duties in teaching, research and extension.

Shurson grew up on a swine and dairy farm near Adams, Minn., in Mower County. He received his bachelor's degree from the University of Minnesota in 1981, with a double major in animal science and agricultural economics.

He then entered graduate school at Michigan State University in East Lansing, completing his master's and Ph.D. degrees in swine nutrition in 1983 and 1986. During his last year at Michigan State, he served as acting extension swine specialist.

Shurson then went to Ohio State University in Columbus, where he was an assistant professor and extension swine specialist until he assumed his present position.

At the University of Minnesota, Shurson teaches courses in swine production and management, swine nutrition and introductory animal science. His research for the Minnesota Agricultural Experiment Station focuses on swine nutrition and environmental management. His duties for the Minnesota Extension Service include training county extension agents and developing educational programs for swine producers. Shurson also chairs a national committee that is developing computer software to evaluate profit-affecting problems in swine enterprises.

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AEA,BSS,CEO,V2,P1,20,23,24,50,55,79

NAGR3795

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

February 11, 1990

Source: Elmer L. Schmidt
612/624-4792
Editor: Sam Brungardt
612/625-6797

Editors: To obtain a b/w print or 35mm color slide to use with this story, call Carl Walker (612/624-3708) or Sam Brungardt (612/625-6797).

NEWSPAPER DISPOSAL METHOD COULD YIELD VALUABLE MUSHROOMS, COMPOST

In his quest for ways to reduce the glut of old newspapers and other waste paper, University of Minnesota forest products specialist Elmer L. Schmidt came up with a delicious potential solution: grow oyster mushrooms, a gourmet favorite, on bales of shredded paper.

Schmidt, who conducts research for the university's Agricultural Experiment Station, says the bales could probably be easily broken up and incorporated into garden soil as compost after the nutrients in them had been exhausted by successive crops of mushrooms.

"I picture people getting bales of shredded paper that are already inoculated with the mushroom spawn, sticking them in a shady place in their backyards, giving them an occasional watering with a hose and then harvesting the mushrooms when they appear," he says.

Those who grew mushrooms on waste paper would get a pricey delicacy for almost no effort and do their bit toward eliminating the paper surplus as well, Schmidt adds.

Oyster mushrooms, which sell for about \$12 per pound in supermarkets, are meaty, with a soft texture and a delicate flavor that, Schmidt says, sometimes hints of anise. "They're a little like morels and more delicate than shiitake," he says. "They're good in omelettes

or fried gently."

Schmidt, who teaches an extension course in mushroom identification, and Keith Tusa, an undergraduate student, recently tested his idea successfully in research funded with a grant from the university's Educational Development Program.

Pleurotus mushrooms, white fungi that can be several inches or more in diameter, are called oyster mushrooms because of their shape. They grow wild around the world and are cultivated in many countries, particularly in Europe and Canada. In Minnesota, they grow on dead trees, feeding on the lignin and cellulose in the wood. They will also grow on wood products, such as newsprint and other paper, which also contain lignin and cellulose.

Schmidt and Tusa first tried growing oyster mushrooms on newsprint in closed, sterile jars. They decided that production in jars was not an option after shredded newspaper inoculated with Pleurotus spawn produced the vegetative mycelium stage of the fungus, but no fruiting bodies or "mushrooms."

Next, they tried growing oyster mushrooms on bales, made by compressing unsterilized, shredded newsprint with a small amount of wood chips for aeration. They inoculated the bales with two strains of oyster mushroom spawn and kept them under cool conditions indoors. In three weeks, one of the strains produced mushrooms. And, when Schmidt and Tusa placed the inoculated bales outdoors last summer and watered them occasionally, both strains produced mushrooms.

The mushrooms tasted good, according to Schmidt, and an analysis showed that they did not contain any greater concentration of metals than the fresh mushrooms sold in supermarkets.

"Cadmium and chromium are the metals to be concerned about," says Schmidt, "but since the analysis showed 0.6 and 0.2 parts per million (ppm), respectively, there is little to worry about. The mushrooms' low (1.6 ppm) lead level reflects the newspapers' switch to nonmetal-based inks, such as soy-based ink."

Schmidt acknowledges that using newsprint or other waste paper to grow mushrooms would solve only a small part of the paper pollution problem. However, he notes that researchers are working on other ways to use waste paper, including using it as cattle feed and livestock bedding. Such uses are not only practical and beneficial, they also complete a cycle rather than perpetuate it as some recycling methods do. Schmidt explains, "Newsprint can be recycled several times, but eventually it must be disposed of. On the other hand, some alternative disposal methods, such as growing oyster mushrooms on newsprint, deal with the disposal problem permanently."

Schmidt says more research is needed before consumers will be able to grow oyster mushrooms on bales of waste paper. Next, he wants to see whether paper other than newsprint can be used. Unfortunately, that research will have to wait until he can find some party that's interested enough in solving the paper pollution problem to finance that research.

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AEA,BSS,CEO,H3,I2,L3,V8,R1

NNRD3788

NEWS/ INFORMATION

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 11, 1991

Source: Ellen Schuster
612/624-7479
Writer: Phyllis Jenks
612/625-7793

STRETCHING FOOD DOLLARS IS ALWAYS IN SEASON

Recession or not, stretching your food dollars is always a good idea. The Extension Food and Nutrition Education Program (EFNEP) of the Minnesota Extension Service has lots of practical tips that can really add up to some great meals that go easy on the wallet.

--Dried beans and peas are great additions to your meals. They're packed with protein and are a good value.

--Plan meals with leftover meals in mind. Your groceries will go farther.

--Buy fresh fruits and vegetables when they are in season.

--Nonfat dry milk can stretch regular milk in all your favorite recipes. Besides, it's loaded with calcium.

--When shopping for meat bargains, remember that cuts with bone and fat should cost only one-fourth as much as those without.

--Bread crumbs, grated raw potatoes, grated carrots and ready-to-eat cereal can make ground beef go a lot farther.

--Combine rice, bread, taco shells and other cereals with lentils, peas or beans for good-tasting, high-protein meals.

If you're interested in more practical, money-saving EFNEP tips, contact your local county extension agent.

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AEA,BSS,CEO,V7,H1

NHEC3790

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

February 11, 1991

Source: Stan Wrzeski
612/624-7293
Writer: Pam Barnard
612/625-4730

HOME WEATHERIZATION SHOULD ALLOW FOR SUFFICIENT COMBUSTION AIR

Home improvements can change the way furnaces and water heaters operate, warns Stan Wrzeski, housing technology consultant to the University of Minnesota's Cold Climate Housing Center.

As you tighten your home--always a prudent and cost-effective energy conservation measure--you need to be sure to retain enough leaks to allow air to be drawn into the home to replace what is sent up the chimney.

Wrzeski points out that, in addition to fireplaces, many other devices in the home use chimneys. Furnaces, water heaters and other flame-producing devices all require large amounts of air for combustion and use some type of a chimney when they operate.

"A chimney is a very delicate device," says Wrzeski. "There must be sufficient heat to drive combustion products up the chimney, and sufficient air drawn into the home to replace that sent up the chimney."

He adds, "People who install a new, side-venting furnace may find there's not enough heat energy from the water heater alone to operate the chimney properly. In cold weather, the chimney can 'downdraft,' or reverse the airflow, causing toxic combustion products to dump into the home."

Wrzeski says there can be problems also with newly installed exhaust fans: "New fans can easily overpower the small forces of rising hot air which 'power' a chimney."

The solution is not to make a home leakier, but rather to assure that devices which use chimneys are checked whenever modifications are made to the home.

Wrzeski gives this simple test to check for downdrafting: Close the home as though it were winter (even if you do the test at some other time), turn on all the exhaust fans, then use an incense stick or other smoking device to check whether the effluent or airflow out of the firing combustion equipment is being drawn into the home.

For more information on how to test your home for combustion air problems, contact your local county extension office or the Cold Climate Housing Center at (612) 624-9219.

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AEA,BSS,CEO,V2,V7,V8,E3,I4

NNRD3793

MSC/9/2/91

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

**NEWS/
INFORMATION**

February 11, 1991

Source: Stan Wrzeski
612/624-7293
Writer: Pam Barnard
612/625-4730

SEWER GAS CAN CONTRIBUTE TO POOR INDOOR AIR QUALITY

If you find yourself spending more time indoors during the colder winter months, you probably should check your home's air quality.

One potential problem area can be your home's sewer system, says Stan Wrzeski, housing technology consultant with the University of Minnesota's Cold Climate Housing Center. During normal operations, all toxic and potentially explosive sewer gases are vented to the outside through pipes in the roof. However, small-diameter vent pipes may freeze shut when water vapor in the sewer gas freezes to form ice blockages.

Warns Wrzeski, "Gases can back up and enter living spaces if soil stack vents are blocked. Several symptoms, such as headaches, dizziness or nausea, can result when people are exposed to these gases." Vents should be inspected, especially during very cold weather, to verify that they are clear of ice and snow.

Clues to sewer gas problems can include sinks or bathtubs stopping up, gurgling or not draining normally or simply a pervasive, pungent odor in parts of the house. If this smell is coming from dry basement drains, you should check and refill them with water, says Wrzeski. Keeping them full of water (or linseed oil, which won't evaporate) is a good idea.

Other major indoor air pollutants include asbestos, carbon dioxide,

carbon monoxide, formaldehyde, nitrogen dioxide and radon. The first step in assessing your home's air quality is to assess the potential for problems. For more information, contact your local county extension office or the Cold Climate Housing Center at (612) 624-9219.

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AEA,BSS,CEO,V2,V7,V8,E3,I4

NNRD3792

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 11, 1991

Source: Lee Johnston
612/589-1711
Writer: Joseph Kurtz
612/625-3168

U OF M BEEF COW-CALF DAY TO BE FEB. 21 AT MORRIS

The 18th annual Beef Cow-Calf Day at the University of Minnesota's West Central Experiment Station, Morris, will take place Thursday, Feb. 21.

The event will be in the Administration Building at the station. It will begin with registration at 9 a.m., and the first presentation will be at 10 a.m. Adjournment is set for 2:45 p.m.

Topics and speakers on the program are:

"Managing Condition Scores in the Cow Herd," Mat Lewis, graduate research assistant, University of Minnesota;

"Handling Calving Problems," Dale Haggard, extension veterinarian, University of Minnesota;

"Cow Herd Appraisal Performance Software (CHAPS)," Randy Anderson, Stevens County extension agent for agriculture;

"Renovation and Establishment of Pastures," Neal Martin, extension forage specialist, University of Minnesota;

"Economic Considerations of Beef Herd Expansion," John Lawrence, extension livestock marketing specialist, University of Minnesota.

Registration fee for the event is \$8 per person, which includes refreshments and lunch.

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AEA, BSS, CEO, V2, V5, V6, A2

NAGR3794

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 11, 1991

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

Editors, broadcasters: Contact the University of Illinois, Animal Science Extension at Iowa State University or Dairy Science Extension at the University of Wisconsin-Madison to obtain registration information for this seminar in Illinois, Iowa and Wisconsin.

WACONIA TO BE MINNESOTA SITE OF 4-STATE DAIRY SEMINAR

Waconia will be the Minnesota site for this year's annual four-state dairy seminar, "Breeding for Profit...in the 90s." The seminar, which will be March 8 at the Lakeside Ballroom in Waconia, will feature extension dairy scientists from Minnesota, Illinois, Iowa and Wisconsin. The same program will be presented March 5 in Breese, Ill.; March 6 in Calmar, Iowa and March 7 in Arlington, Wis.

The seminar is designed to provide dairy managers and agribusiness professionals with current, research-based information on dairy cattle genetics and reproduction.

On-site registration for the seminar will begin at 10 a.m. The program will begin at 10:30 a.m. and conclude at 3 p.m.

Dennis Funk, extension specialist in dairy cattle breeding at the University of Wisconsin, will open the seminar with a presentation on reproductive management for heifers. He will discuss the economics of natural service versus artificial insemination, use of calving ease sires and heifer age/weight as it relates to breeding.

Jim Linn, extension dairy nutritionist at the University of Minnesota, will review the nutrient requirements of high-producing cows

for milk production and reproduction. He will look at the effects of various nutrients on reproductive performance, and how feeding management interacts with reproduction.

In the afternoon, the first speaker will be Ron Orth, extension dairy specialist at Iowa State University. Orth will discuss the challenges of reproductive management in high-producing herds. He will review DHI data from such herds and point out how DHI information can improve reproductive performance.

The final speaker will be David McQueen, extension veterinarian at the University of Illinois. He will discuss diagnosing, monitoring and controlling contagious diseases that cause conception failure, early embryonic death and abortion. His talk will also cover cystic ovaries, uterine infection and vaccine limitations.

Fee for the seminar, which includes lunch and materials, is \$15. Preregistration is encouraged, but not required. Registration forms are available from county extension offices in Minnesota or from Animal Science Extension, 101 Haecker Hall, 1364 Eckles Ave., University of Minnesota, St. Paul, MN 55108-1011 (phone 612/624-4995. Registration must include the fee, with checks payable to 4-State Dairy.

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AEA,BSS,CEO,V2,V5,V6,D

NAGR3789

MSC/9/12/91

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

February 14, 1991

Source: Lew Hendricks
612/624-2790
Writer: Teddi Barron
612/624-2767

BANKING A WOOD FIRE CAN CAUSE DANGEROUS CREOSOTE BUILDUP

Although long, slow-burning fires may be convenient during warm springtime nights, smoldering fires are among the most risky in wood-heated homes. During spring and fall, the practice of loading up the wood and shutting down the draft--known as banking a fire--can cause a dangerous formation of flammable creosote in the chimney, especially if that fire is starved for oxygen.

Unseasoned woodburners might opt for a slow-burning fire in spring or fall, says Lew Hendricks, extension specialist for the University of Minnesota's Cold Climate Housing Center. "Banking a fire is a very unsafe practice. But, during mild weather, this kind of smoldering fire might seem ideal because it produces some heat all night long and leaves enough hot coals to start a fire easily the next morning," Hendricks says.

Hendricks adds, "Certain kinds of controlled combustion wood-burning appliances can burn wood and gases efficiently under a low mode of burn such as might occur with a banked fire. But in general, this is a poor practice in spring and fall months."

Some of the same elements that facilitate a long, slow-burning fire also encourage creosote accumulation, he says. "Because the amount of air is restricted, the wood burns more slowly," he adds. "Within the firebox, a slower burn means that some of the wood is burning and some is not. In that situation, heat from the burning wood warms the unburned wood enough

to release--but not ignite--volatile gases and uncombusted particulate matter."

Because the fire never gets really hot, these gases are not burned off completely. Along with the byproducts of the fire, the gases go up the chimney and condense on the cool surface of the flue. Eventually they form the tar-like creosote. A creosote buildup can block the flue and is highly flammable.

"Creosote provides fuel for chimney fires, the most common type of fire related to wood heating. It's a dangerous fire that produces extremely high temperatures and is often difficult to extinguish," Hendricks says.

Woodburners can reduce the chances of creosote-related chimney fires by not banking fires or starving them of oxygen. "As the weather turns warmer, don't be tempted to build a slow-burning fire at bedtime," says Hendricks. "It's much safer to burn a short, vigorous fire and let it go out. A hot fire reduces the formation of creosote."

Regular removal of creosote is essential throughout the wood-heating season. Inspect the chimney frequently and clean it whenever the creosote deposits are one-quarter of an inch thick, Hendricks recommends.

Additional information on wood burning and other home energy topics is available from Minnesota Extension Service county offices and the Department of Public Service.

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AEA,BSS,CEO,V2,V7,V8,E3,I4

NNRD3796

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

February 14, 1991

Source: Ellen Schuster
612/624-7479
Writer: Phyllis Jenks
612/625-7793

Editors, broadcasters: On Feb. 11, we sent you a release with the same title as this one. In that version, the words for the acronym EFNEP were partially incorrect. EFNEP stands for Expanded Food and Nutrition Education Program. Please use this version, which has been corrected. We regret any inconvenience this may have caused you.

STRETCHING FOOD DOLLARS IS ALWAYS IN SEASON

Recession or not, stretching your food dollars is always a good idea. The Expanded Food and Nutrition Education Program (EFNEP) of the Minnesota Extension Service has lots of practical tips that can really add up to some great meals that go easy on the wallet.

--Dried beans and peas are great additions to your meals. They're packed with protein and are a good value.

--Plan meals with leftover meals in mind. Your groceries will go farther.

--Buy fresh fruits and vegetables when they are in season.

--Nonfat dry milk can stretch regular milk in all your favorite recipes. Besides, it's loaded with calcium.

--When shopping for meat bargains, remember that cuts with bone and fat should cost only one-fourth as much as those without.

--Bread crumbs, grated raw potatoes, grated carrots and ready-to-eat cereal can make ground beef go a lot farther.

--Combine rice, bread, taco shells and other cereals with lentils, peas or beans for good-tasting, high-protein meals.

If you're interested in more practical, money-saving EFNEP tips, contact your local county extension agent.

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AEA,BSS,CEO,V7,H1

NHEC3798

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 14, 1991

Source: Neal Martin
612/625-8700
Writer: Jack Sperbeck
612/625-1794

FORAGE DAY SET FOR FEB. 26-27 AT ALEXANDRIA

The 16th annual Minnesota Forage Day is scheduled for Feb. 26-27 at the Park Inn, Alexandria, Minn.

The program is open to all producers and is based on problems facing Minnesota forage and grasslands producers, says Neal Martin, agronomist with the Minnesota Extension Service.

A workshop for ag professionals is scheduled the afternoon and evening of Feb. 26. Early registration for the Wednesday, Feb. 27 program begins at 7 a.m. The registration fee is \$12, which includes lunch and proceedings.

The breakfast speaker (ticket required) will be Steve Taff, economist with the University of Minnesota's Extension Service. He'll talk on the new Farm Bill and other policy legislation affecting forage production and grassland utilization in Minnesota.

Forage day general sessions start at 10 a.m. Topics include:

--Control and identification of insects, Bill Hutchison, extension entomologist.

--Establishing alfalfa with herbicides, Roger Becker, extension agronomist.

--"Forage production on Mueller farms," Jeff Mueller, Minnesota Forage and Grassland Council's outstanding producer.

Concurrent sessions in the afternoon include:

- Feeding cows at \$10 milk prices.
- Feeding corn, sorghum or millet forages to dairy cattle.
- Liquid manure use on alfalfa.
- Perennial weed control.

More information is available from county offices of the Minnesota Extension Service. Discounted hotel rates are available at the Park Inn, Alexandria, 612-763-6577.

"Forage day has an excellent commercial display area and some excellent educational posters. It's one of the few events in Minnesota where producers can obtain product information and discuss ideas with other producers, educators and researchers," Martin says.

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AEA,BSS,CEO,V2,V4,A2M,DM

NAGR3797

**NEWS/
INFORMATION**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 14, 1991

Source: Sagar Krupa
612/625-7294Editor: Larry A. Etkin
612/625-4272

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

SCIENTIST SAYS STATE'S ECOTONES ARE IDEAL FOR CLIMATE RESEARCH

Greenhouse effect! Ozone depletion! Global warming! Open a newspaper or tune into the news, and you'll likely run into one of these red flag phrases. They flag changes to the chemical makeup of the air around us that result from human activity.

Heat-trapping molecules of carbon dioxide and methane--"greenhouse gases"--are building up in the atmosphere from industrial and biological activities. Ozone, a gas that absorbs harmful ultraviolet rays from the sun, is being destroyed by chlorofluorocarbons floating skyward from spray cans, refrigerants and other modern conveniences.

The gases are changing our atmosphere. And, it's uncertain what this means for the life beneath it, according to Sagar Krupa, an environmental scientist and plant pathologist at the University of Minnesota.

"The jury is still out," says Krupa, who conducts research on the effects air pollution has on plant growth for the university's Agricultural Experiment Station.

Because the chemical, physical and biological processes of air and earth are intricately entwined, there are few direct cause-and-effect relationships. Scientists have developed computer models in an attempt to predict the consequences of atmospheric change, but the predictions

generated by these models range from annihilation of life to only minor changes in weather.

Krupa initiated the formation of an interdisciplinary task force at the university to improve our understanding of what we are doing to ourselves by releasing atmosphere-altering gases. The group includes experts from many specialties, including plant biology, climatology, ecology and systems analysis. The mix of specialties should help the scientists initiate new approaches to research and to ways of understanding the problems.

Philip Larsen, head of the Department of Plant Pathology, says Krupa was "instrumental in getting the group together, in identifying individuals across the Twin Cities campus who can add important parts to this whole picture."

The group is trying to develop an experiment to mimic atmospheric changes. In that experiment, the scientists may release carbon dioxide or ozone or change the moisture of an enclosed system to see what happens.

Krupa says this will give a clearer picture of the effect of shifts in the chemical makeup of air than can be had with computer models. "Computer systems and models can only work with what you give them," he points out. "If, in the first place, you didn't put in the right information or complete information, they won't give you the correct answer."

Minnesota is an ideal place to investigate the climate change issue, according to Krupa. The state has unique and abundant narrow "ecotones"-transition zones between different kinds of ecosystems, such as wetland and upland or prairie and forest. Ecosystems often are delineated by the

water table, and a change in the water table is one of the first symptoms of altered climate. Krupa claims that such a shift would first appear in the ecotones: "If changes were occurring, this is where they would occur."

The research group hopes to get a boost from the U.S. Environmental Protection Agency. It's seeking designation for the university as one of four national environmental research centers. If the proposal is selected, the group will be guaranteed at least five years of funding to pursue an answer to the puzzle of global atmospheric change.

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AEA,BSS,CEO,V4M,V7,V8M,N2M,R1M

NNRD3791

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 21, 1991

Source: Lee Johnston
612/589-1711
Writer: Joseph Kurtz
612/625-3168

1991 UNIVERSITY OF MINNESOTA SHEEP RESEARCH REPORT IS AVAILABLE

A 71-page report that provides results and updates on sheep research at the University of Minnesota is available by mail.

The publication, "1991 Report of Sheep Research," covers research related to the management, feeding, reproduction, genetics and health of both lambs and breeding flocks. The report was compiled for use in conjunction with the recent Sheep and Lamb Feeders Day at the university's West Central Experiment Station.

Copies of "1991 Report of Sheep Research" are available for \$5 each from Lee Johnston, West Central Experiment Station, Morris, MN 56267-9739. Checks should be made payable to the University of Minnesota.

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AEA,BSS,CEO,V2,N3

NAGR3800

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 21, 1991

Source: Dee Ginthner
612/624-3293
Editor: Sam Brungardt
612/625-6797

CHOICES OF LIGHTING, COLOR ARE IMPORTANT FOR ELDERLY

Choosing the right lighting and colors for living spaces for the elderly can make a big difference in comfort and safety, according to University of Minnesota lighting specialist Dee Ginthner.

Ginthner, an assistant professor in the Department of Design, Housing and Apparel, conducts research on lighting and other design factors for the university's Agricultural Experiment Station. She offers the following tips on choosing lighting, decor and furnishings to suit the needs of older people:

Lighting

--Avoid lighting that produces a glare, either direct or indirect (reflected). "Glare actually hurts older eyes. Aging muscles don't adjust as quickly to changes in brightness as younger eyes. This can also cause difficulty with depth perception," Ginthner notes.

--Choose lighting that is bright rather than dim, warm rather than cool and evenly spread over an area rather than placed as spots of light amid patches of darkness. Ginthner says, "Light on a vertical surface (for example, a wall) is more comfortable for anyone than overhead light."

--Use enough light, from the right angle, to perform tasks. "Older people need as much as 10 percent more light than younger people to perform the same tasks," says Ginthner. "It becomes harder and harder

to read, look at the phone book or thread a needle without enough light. The best light for tasks comes from behind a person, without shadows or reflected glare. Think of the task surface as a mirror; if you can see the light or a window reflected on that surface, the lighting could be improved."

--For bathrooms, Ginthner advises having lights along both sides of the mirror, "but," she cautions, "not the Hollywood type of lighting with several small bulbs, because it can cause glare.

"This is a good place for fluorescent lighting. Many people shy away from fluorescent because they don't realize there is a much greater choice now in both colors and sizes. Also, fluorescent gives you a lot of light for minimum wattage and conserving energy should be an important consideration."

--In the kitchen, cove, bracket or cornice lighting can be used for general illumination. In addition, task lighting, such as under-cabinet lights, can be a good choice.

Colors, Surfaces

--Avoid shiny surfaces in floor coverings or even furniture, which can contribute to glare. "Use matte surfaces instead, they're more comfortable for older eyes," says Ginthner.

--On walls and floors, use colors that contrast in lightness and darkness. "If the wall and floor colors are a close match, it can be hard for older people to tell where the wall and floor meet and this can cause them to misjudge distance," Ginthner explains.

--Use floor coverings that do not have extreme contrasts in colors and shapes. "Most older people look at the floor a lot as they walk

along. They're often watching their feet," says Ginthner. "So, when they see a large block of contrasting color, they may mistake it for a step. Carpets or other floor coverings that have slight color contrast or a small pattern are much better than bold, large-patterned floor coverings."

--It's best that the feet of furniture be of a color that contrasts with the floor. Says Ginthner, "It's okay that the chairs be the same color as the carpet or walls, but people must be able to see the feet against the floor. If you're thinking of sitting down, you want to be able to see where to sit."

--When choosing color for decorating or furnishings, be aware that the color perception of older people changes as the lenses in their eyes yellow. "It becomes harder to distinguish color differences at the blue end of the spectrum," says Ginthner. "If people are concerned about that, they might stick to yellows and oranges, the warm end of the spectrum."

The lighting concerns of those with special needs is especially of interest to Ginthner. She and graduate student Rolf Sullivan recently used slide images to find out what kind of lighting older people prefer in long hallways. Ginthner hopes to get funding to continue the research with full-scale mockups. Meanwhile, she is conducting studies on various factors that influence the suitability of different carpets for older people.

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AEA,BSS,CEO,V4,V8,E2,I3,I4

NHEC3799

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 21, 1991

Source: Pat Huelman
612/624-1286
Writer: Pam Barnard
612/625-4730

PAYING RENT DOESN'T HAVE TO LEAVE YOU OUT IN THE COLD

Even if you make monthly rental payments instead of mortgage payments, there are incentives for making your home more energy efficient, says Pat Huelman, extension housing specialist with the University of Minnesota's Cold Climate Housing Center.

For one thing, most house renters (and even some apartment dwellers) pay their own energy bills. If landlords are paying heating or cooling bills, there is even more incentive for them to make their rental properties energy efficient.

Covering windows with plastic or sealing up an unused door are just two fast and inexpensive ways renters can make their homes more comfortable and energy efficient, according to Huelman.

In duplexes or units with their own furnaces, filters should be checked and replaced regularly, and the furnace should be serviced annually to ensure efficient and safe operation.

For rental units with radiator heat, tenants should make sure radiators have been bled, or the valves flushed out, at least once a year.

Huelman emphasized the comfort issue as well. "If you have to keep pushing the thermostat beyond 72 to maintain some degree of comfort, this is an indication that you might have to look into more serious

heat-efficiency measures."

Tenants might find landlords more cooperative to energy improvements by agreeing to perform some weatherization measures themselves. Other landlords might even pay for an automatic thermostat, costing from \$30 to \$50, or agree to install insulation in attics and crawl spaces.

However, Huelman warns, tenants should first seek permission from landlords before investing time and money in weatherizing their homes.

Renters can contact the Minnesota Department of Public Service (800/652-9747 or 612/296-5175) for information on how to check whether their residence meets minimum energy efficiency standards. Local public utilities also offer energy conservation tips for homeowners and renters. In addition, county extension offices have information on home energy conservation.

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AEA,BSS,CEO,V2M,V7,V8M,E3M,I4M

NHEC3801

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

February 25, 1991

Source: Larry Jacobson
612/625-9733

Writer: Joseph Kurtz
612/625-3168

TEST AIR QUALITY IN CONFINEMENT SWINE BUILDINGS

Pork producers concerned about air quality in confinement buildings should consider testing for toxic gases, suggests Larry Jacobson, extension agricultural engineer at the University of Minnesota.

He says, "Some veterinarians, farm suppliers and feed dealers have equipment for testing air quality."

According to Jacobson, acceptable upper limits for toxic gas concentrations in swine confinement buildings are: carbon dioxide, 3,000 parts per million (ppm); ammonia, 10 ppm; carbon monoxide, 30 ppm and hydrogen sulfide, 3 ppm.

Dust is another important air quality concern. "Dusty environments have not been shown to significantly affect animal performance," says Jacobson. "However, there seems to be a relationship between dust and human respiratory problems. The maximum acceptable total dust level is 3 milligrams per cubic meter."

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AEA,BSS,CEO,V2,P1

NAGR3804

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

February 28, 1991

Source: Sylvia Fuoss
612/625-5717
Writer: Pam Barnard
612/625-4730

HOW HEALTHY IS THE AIR IN YOUR HOME?

Homes with air quality problems can pose more than headaches for homeowners. Indoor pollutants can be responsible for, or can increase, a variety of health problems such as numbness, dizziness, seizures, strokes and even death.

According to Sylvia Fuoss, research assistant in the University of Minnesota's Cold Climate Housing Center, solving indoor air quality problems often requires identifying and solving layer-upon-layer of problems, and may require the help of experts.

"There can be many symptoms of poor indoor air quality," says Fuoss. "Homeowners who suspect they have a problem with their home's indoor air should ask all inhabitants several questions about the who, what, when and where of the problem." These questions include:

Who is bothered (including any pets)?

What is the effect?

When did it start (i.e., was it related to a new product, hobby, season, time of the year)?

When is it most, or least, noticeable?

Is it influenced by wind, rain, heat, etc.?

Where in the home are these effects most, or least, noticeable?

Were changes made in the house just before the problems were recognized?

The answers to these questions will be needed once an expert begins a full-blown investigation and they may lead to the source of the problem, says Fuoss.

Problems can result from a variety of situations. In her indoor air quality investigations, Fuoss looks for several things. They include looking for evidence of a combustion appliance malfunction, gas leaks or improper use of the appliance; lack of exhaust ventilation for kitchen, bath, laundry room; moisture damage to walls, windows or flooring; standing water; visible mold or slime on surfaces, in humidifiers, air conditioners, filters; and location of fresh air intakes in relation to pollution sources.

Because of the complexity of many homes' indoor air, Fuoss advises homeowners to consult with someone experienced in conducting indoor air quality investigations. Their skills may quickly identify the problem or they may recommend professional air quality testing be done to detect pollutants. These test can run as high as \$500.

If remediation and repairs are needed, an expert can also monitor the work to be sure the problems are actually fixed. In all cases, the expert should respect the homeowner's concerns and address all questions directly.

Public officials can be consulted in certain areas; however, Fuoss warns that "public officials are charged with protecting the health and safety of groups of people, and cannot often provide service to enhance the value of just a single home. They do have certain regulatory powers and should be expected to deal promptly with problems such as a suspected gasoline leak or pesticide spill."

For more information on indoor air quality, as well as home energy concerns, contact your county extension office or the Minnesota Department of Public Service (800/652-9747 or 612/296-5175).

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UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108**NEWS/
INFORMATION**

February 28, 1991

Source: Don Wyse
612/625-7064
Editor: Sam Brungardt
612/625-6797**U OF M RESEARCHERS CONTINUE WORK ON 'SMOTHER' CROP FOR CORN**

What may become known as the first biological herbicide is being developed by scientists with the Minnesota Agricultural Experiment Station.

Last summer, the University of Minnesota researchers used the natural herbicide, which they call a "smother" plant, to control weeds in corn without reducing yield.

Moreover, says weed scientist Don Wyse, using a smother crop would reduce soil erosion and avoid the pollution problems associated with some chemical herbicides.

The smother plant the scientists are working with resulted from crossing subspecies of Brassica campestris (the species that includes such crops as Chinese cabbage, pak-choi and turnip). The dwarf plants grow super fast and develop into a carpet of vegetation, smothering weeds before they have a chance to compete with the corn. After four to six weeks, they complete their life cycle and die, leaving little residue and giving the corn a relatively weed-free field in which to grow.

Wyse cautions that several more years of research with the smother plant are needed before corn and possibly soybean growers will be able to buy seed of it commercially. "What we're doing is releasing an idea,

not the plant itself," he says. "It may take five to six years before it's ready for growers to use."

The development of a plant that can be used as a smother crop will likely generate much interest. Wyse says, "As we looked at the increasing trend to reduce herbicide use, we could see the need to develop new weed control options."

Graduate student Robb De Haan, who did some of the research, says, "Dr. Wyse had the idea for a smother crop. Cover crops like alfalfa or rye have been around for a long time but many of them are perennial or have to be sprayed with a herbicide before a crop can be planted. What we wanted to develop was a short-term, spring-seeded mulch. We call it a smother plant because its primary purpose is to smother weeds." Smother plants, De Haan notes, should "work" during the critical time when weed competition can reduce crop yield.

In 1989, Wyse, De Haan and plant breeder Nancy Ehlke experimented with yellow mustard (Brassica hirta) to determine the characteristics needed in a smother plant. De Haan notes, "We wanted something that had rapid germination, didn't get too tall and did not compete very long." They chose corn as the crop, Wyse says, because it has the highest herbicide use.

After their research with yellow mustard, the researchers zeroed in on exactly what they wanted in a smother plant. They obtained a rapid-cycling B. campestris subspecies from the University of Wisconsin, which they crossed with other, locally adapted brassicas to obtain what they wanted: a short, fast-growing plant with broad leaves.

Field tests last summer at the St. Paul campus were encouraging, De Haan says, with corn yield unaffected by the smother crop. Seed of the smother plant was applied in a band over the row when the corn was planted. Several seeding rates were tested, but De Haan estimates that growers would probably need to use 4.5 pounds per acre. The plants grew about 5 inches tall, with flower spikes reaching to 12 inches. After they matured and died, a mulch remained on the soil surface, giving the corn a relatively weed-free field in which to grow.

Wyse cautions that more research must be done before the smother plant is ready for release. Additional field trials will be conducted to double-check its efficiency in smothering weeds, to ascertain that it doesn't become a weed problem the year after it is used and to verify that corn yield isn't reduced. Field trials at different locations and under different environmental conditions will also be carried out.

Ehlke will continue to develop other Brassica smother plants and do research to see how easily seed can be produced and what the approximate cost would be to growers, another key factor in the ultimate success of this technology. However, the researchers believe that the cost of seed may be less than corn growers now pay for herbicides. Smother plants could probably also be used to control weeds in other crops, such as soybeans, Wyse adds.

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AEA,BSS,CEO,V2,F1,L3,N2

NAGR3807

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 4, 1991

Source: Philip M. Raup
612/625-8241
Writer: Jack Sperbeck
612/625-1794

STUDY FINDS 12 PERCENT INCREASE IN ESTIMATED RURAL LAND PRICES

The statewide estimated value of rural real estate increased 12 percent from July 1989 to July 1990, according to the University of Minnesota's annual study.

Each of six districts appreciated in estimated value at least 10 percent, except the Northwest, which was unchanged from 1989. The statewide estimated value reached \$654 per acre, according to agricultural economists Kelly Wesemann and Philip M. Raup, who did the study for the University's Agricultural Experiment Station.

In contrast, the average per acre sales price increased only 5 percent over the previous year, reaching \$853 per acre. All districts reported increases in average per acre sales price, but increases were small in the Southeast, Southwest and West Central districts--7, 2 and 6 percent, respectively.

Total acreage in reported sales was at its second lowest point since 1980, the economists said in their report. "The market was slow in 1990. We found some buyer resistance on higher-priced land," Raup says. Two districts that usually report the highest per acre sales prices, the Southeast and Southwest, reported the smallest percentage increases in sales prices in 1990.

Retirement remained the primary reason for farmland sales, accounting for 29 percent of all sales reported for the first half of

1990. Death (20 percent), rather than financial difficulty (15 percent), was the secondary reason given for farmland sales.

Even if "left farming" (6 percent) and "reduce size" (10 percent) are included as indications of financial difficulties, the percentage of sales due to presumed financial deterioration totaled 31 percent in 1990, its lowest point since 1981.

Expansion buyers continued to dominate the rural real estate market in 1990, purchasing 80 percent of all tracts reported sold. Cash was the predominant method of financing, accounting for 38 percent of sales. Financing by contract for deed decreased from 40 percent in 1989 to 33 percent of farmland sales in 1990. Mortgages were used in financing 29 percent of farmland sales, up from 20 percent in 1989.

The report, titled "Minnesota Rural Real Estate Market in 1990," is published in the March 1991 issue of the "Minnesota Agricultural Economist". Copies are available from the Waite Library, 232 Classroom-Office Building, University of Minnesota, St. Paul, MN 55108-1011.

#

AEA,BSS,CEO,IAC,V2M,V4M,A1

NAGR3810

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 4, 1991

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

BANDING 40 TO 50 POUNDS OF POTASH RECOMMENDED FOR RIDGE-TILL

With ridge-till you can band phosphorus and potassium fertilizer near the seed at planting or in the center of existing ridges in the fall.

"Both choices produce positive results when compared to broadcast applications," says George Rehm, soil scientist with the University of Minnesota's Extension Service and Agricultural Experiment Station. Advantages of banded applications have been demonstrated in several University of Minnesota trials.

"Banded applications of potash in the fall have been especially effective," Rehm says. Positive yield increases have been produced with fall banding, even though test levels for potassium were in the high range. Yield increases have ranged from 10 to 30 bushels per acre.

Small amounts of potash applied in a starter fertilizer have not been adequate for production of optimum yields, Rehm says.

"Banded applications of phosphate and potash fertilizers in the center of existing ridges in the fall is a new idea," Rehm says. "There are many questions to answer, and more research is needed."

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AEA,BSS,CEO,V2,F1,L3

NAGR3811

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 4, 1991

Source: Philip M. Raup
612/625-8241
Writer: Jack Sperbeck
612/625-1794

STUDY FINDS 12 PERCENT INCREASE IN ESTIMATED RURAL LAND PRICES

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AEA,BSS,CEO,IAC,V2M,V4M,A1

NAGR3810

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 4, 1991

Source: Roger Jones
612/625-6290
Writer: Jack Sperbeck
612/625-1794

SMALL GRAINS INSTITUTE SET FOR MARCH 13-14 IN CROOKSTON

The first institute on producing and utilizing small grains is scheduled for March 13-14 at the Winter Shows building in Crookston, Minn.

Small grains represent a multibillion dollar industry in the region and this is the first time a program has focused on the mutual concerns of wheat, barley and oat growers, says Roger Jones, plant pathologist with the University of Minnesota's Extension Service.

The Small Grains Institute is sponsored by the Minnesota Extension Service, Minnesota Wheat Council, Minnesota Barley Council and American Oats Association. Institute activities include an educational program highlighting current issues and production topics plus exhibits of the latest small grain equipment.

The keynote address, "The 1990 Farm Bill and what it means to you," will be given by John Campbell, undersecretary of agriculture, USDA, Washington, D.C. Other speakers will be from Minnesota, North Dakota and Canada.

For information on local arrangements, contact Tom Harris at (218) 281-7617.

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AEA,BSS,CEO,V2,V4M,F1M

NAGR3809

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 5, 1991

Source: Philip M. Raup
612/625-8241
Writer: Jack Sperbeck
612/625-1794

Editors, news directors: This is the corrected version of a release with the same headline that we sent you on March 4. There were errors in the fourth paragraph of the original version, which have been corrected in this one. We regret any inconvenience this may have caused you.

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AEA,BSS,CEO,IAC,V2M,V4M,A1

NAGR3812

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 7, 1991

Source: Steve Taff
612/625-3103
Writer: Jennifer Obst
612/625-2741

COULD TAXATION PROTECT OUR GROUNDWATER?

Many economists argue that a properly levied tax is the best way to deal with pollution, says Steve Taff, agricultural economist with the University of Minnesota's Agricultural Experiment Station.

But is such a tax workable?

Taxation can be designed for two different purposes, Taff explains. A tax can be used to raise money or it can be used to try to change behavior. A tax to raise money works best on products that have "inelastic" demand (price increases don't decrease consumption all that much). A tax on pollution is usually offered as a way to change behavior, Taff says, since pollution is held to result from too much (or too little) of some action on the part of individuals or firms.

"For certain types of pollution, such as surface water contamination from a factory outlet pipe, remedial taxes are not only theoretically sound, they are administratively practical," Taff says. "It's more complicated with so-called nonpoint pollution, like groundwater contamination from farm chemical use. In these circumstances, it is often unclear who is doing the polluting, let alone how the pollution might be reduced."

If that could be determined, and a different remedial tax could be applied to each farmer dependent on the pollution load from each farm, then the tax might be more equitable. But it would probably require a

great deal of costly information gathering to set the proper level for each farm, Taff says.

How big would the tax have to be to reduce pollution to "acceptable" levels? Taff says, "The science is skimpy at this point, and the enforcement costs are likely to be imposing at any time. That's why it seems reasonable to consider other approaches to agricultural pollution control. Schemes such as government purchases of cropping rights in sensitive areas, such as the federal Conservation Reserve Program or the state Reinvest in Minnesota Reserve (RIM), might not be as efficient, in the strict economic sense, as are remedial taxes. They might also wrongly send the signal that farmers have the right to pollute and that society has to buy it back. But, in certain settings, rights purchases may have the considerable advantage of administrative practicality and financial feasibility."

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AEA,BSS,CEO,V2,A1,B2,R

NAGR3813

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 11, 1991

Source: Stan Wrzeski
612/624-7293
Writer: Pam Barnard
612/625-4730

CHECK HOME FOR ENERGY EFFICIENCY BEFORE BUYING

If you're in the market for a home, you should look for more than just the right number of bedrooms if you want to be happy with your purchase over the long run. Energy efficiency should be a major factor in your decision, according to Stan Wrzeski, housing consultant with the University of Minnesota's Cold Climate Housing Center,

"It's easy for house shoppers to fall in love with the floor plan or the neighborhood," he says. But while these factors are important, "the quality and energy efficiency of a house's design, structure and mechanical system will probably play a greater role in their comfort and satisfaction over the years," Wrzeski says.

Evaluate homes for energy efficiency and comfort by asking these questions:

--Does the building have a location and landscaping that protects the house from winter winds and summer sunshine?

--Is the house efficiently shaped to minimize heat loss? Homes with long expanses of outside walls (especially those shaped like an "L" or "T") may require more energy than simple, square structures.

--Are the majority of the windows on the south and east?

--Are doors and windows tight-fitting with double or triple panes?

--How much insulation is in the attic and frame walls?

--Are basement walls and floors insulated?

--Is the furnace at least 88 percent efficient?

--Does the home have a whole-house fan, and window locations that allow you to use outside air in the evenings?

--Are all ducts and heating system pipes located inside heated space, and are they well insulated?

--Is the water heater an efficient model? Has the tank been insulated?

--Are water flow controllers installed?

--Do large exhausting appliances, such as downdraft range ventilators, draw smoke and combustion by-products from chimneys or fireplaces into the home?

--Is there evidence of persistent condensation on windows or mold and mildew in corners during the winter?

--Are energy costs for the past year available? If it's a new home, has the builder calculated energy costs?

And an important health question Wrzeski recommends asking is whether that home has been tested for radon.

For more information on home energy conservation, contact your county extension office or the Minnesota Department of Public Service (800/652-9747 or 612/296-5175).

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AEA,BSS,CEO,V2M,V7,V8M,E3M,I4M

NHEC3814

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 11, 1991

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

PRODUCTION PER COW HAS BIG EFFECT ON DAIRY PROFITS

Earning a profit in dairying is a real challenge in the face of today's plummeting milk prices. But it's easier when production per cow is well above average, says Joe Conlin, extension dairy scientist at the University of Minnesota.

"Selling more milk per cow obviously brings in more dollars," says Conlin. "The profit on each 100 pounds is also greater because of a lower cost per hundredweight."

Conlin cites a comparison of two herds that are the same in terms of feeds used, investment and debt levels and cost of services and supplies. However, one herd produces 14,000 pounds of milk per cow per year, compared with 20,000 pounds for the other herd.

"The full economic cost of producing 100 pounds of milk is more than \$3 less for the higher-producing herd," says Conlin. "The cost decreases by about 50 cents for each additional 1,000 pounds of milk per cow."

Conlin says the most important factors influencing production, in order of importance, are somatic cell counts, amount of grain fed, identification of sires, keeping dry periods to less than 70 days, using bulls that can transmit high production ability to daughters, herd cull rates, age of heifers at first calving, percentage of heats detected, days from calving to first breeding and conception rates.

"Managing these 10 factors at high levels is the key to high milk production," he concludes.

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AEA,BSS,CEO,V2,D

NAGR3815

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 11, 1991

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

GOOD MANAGEMENT HOLDS DOWN MILK PRODUCTION COSTS

Efficient management makes a big difference in holding down the cost of producing milk.

Joe Conlin, extension dairy scientist at the University of Minnesota, has been studying the economic impact of various management factors. Conlin looked at seven factors that influence milk production costs. He calculated the effect of improving each of these factors for a 50-cow herd with an average annual production of 17,500 pounds of milk. He used a milk price of \$10.50 per hundredweight, and figured hay at \$55-70 per ton, corn at \$2.25 per bushel and soybean meal at \$240 per ton.

Conlin found that lowering the somatic cell count from 400,000 to 100,000 would increase profits for the operation \$5,391 per year. From the cost perspective, it would amount to a drop in production cost of 69 cents per hundredweight.

Lowering calving interval from 13.2 months to 12 months would increase profits \$3,224, or lower production cost 44 cents per hundredweight.

Lowering age at first calving from 28 to 24 months would raise profits \$3,224, or lower cost 37 cents per hundredweight.

Lowering calf mortality from 20 percent to zero would increase profits \$1,855, or lower costs 22 cents per hundredweight.

At a 12 percent interest rate, lowering debt per cow from \$1,000 to zero would increase profits \$6,000. The decrease in cost per hundredweight would be 22 cents.

Reducing the investment level, or equity, per cow from \$6,500 to \$5,500 would raise profits \$3,000. It would lower the cost per hundredweight 34 cents.

Finally, lowering depreciable assets from \$6,500 to \$5,500 per cow would increase profits \$5,000, or lower cost 57 cents per hundredweight.

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AEA,BSS,CEO,V2,D

NAGR3816

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 11, 1991

Source: Mike Schmitt
612/625-7017
Writer: Jack Sperbeck
612/625-1794

NITROGEN TESTS FOR CORN?

Current University of Minnesota nitrogen recommendations for corn are still the best predictive tool for fertilizer applications in central and eastern Minnesota when high amounts of residual nitrogen aren't predicted.

Mike Schmitt, soil scientist with the Minnesota Extension Service, says one would predict high residual nitrogen after droughts, repeated manure applications or excessive fertilizer nitrogen applications. He cites on-going research by the University of Minnesota's Agricultural Experiment Station that is evaluating the response of corn to fertilizer nitrogen rates and how testing soils for nitrogen can improve nitrogen recommendations.

Use realistic yield goals, account for manure and alfalfa credits for two years after the addition, and don't apply "extra" nitrogen for insurance, Schmitt advises.

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AEA, BSS, CEO, V2M, F1M

NAGR3819

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 11, 1991

Source: John Shutske
612/626-1250
Writer: Jack Sperbeck
612/625-1794

MINNESOTA'S NEW INSPECTION LAW WILL AFFECT MANY FARM TRUCKS

A new state inspection law affects many farm vehicles, says John Shutske, safety specialist with the University of Minnesota's Extension Service.

The law takes effect April 1, and enforcement will begin July 1. It applies to commercial motor vehicles or combinations of motor vehicles used to transport passengers or property. The definition of a commercial motor vehicle includes:

--Any size vehicle used to transport hazardous materials as defined by federal regulations. Many pesticides and fertilizers are "hazardous materials." Farm suppliers can tell farmers which materials are.

--Vehicles with a gross weight of more than 26,000 pounds.

--Any vehicle pulling a towed unit if the towed unit has a gross weight over 10,000 pounds.

--A bus.

Vehicles must be safety inspected, then display a valid safety inspection decal issued by an inspector certified by the commissioner of transportation. Training to become a "certified inspector" is available from the Minnesota State Patrol.

About 4,000 inspectors have already been trained in the state.

"Most facilities that service and repair commercial vehicles will have

an inspector on staff," Shutske says. Farm owners/operators with five or more motor vehicle units can do their own inspections after they receive training from the state patrol.

Costs for inspection will vary with the inspector, but by law cannot exceed \$50. Items to be inspected can be found in the "Federal Motor Carrier Safety Regulations book (part 369, Appendix G). This is available in any large truck stop.

Items subject to inspection include windshield wipers; windshield glazing; wheels and rims; tires; frame; suspension; steering mechanism; lights; fuel, exhaust and braking systems and coupling devices, such as fifth wheels, pintle hooks and towbars.

Based on questions that he and county extension agents have received, Shutske has prepared this question and answer scenario:

Q: Does my truck need to be inspected?

A: Yes, if its gross weight (actual or rated maximum) exceeds 26,000 pounds--or if it will be used to transport hazardous materials--or if you will be pulling a trailer with a gross weight exceeding 10,000 pounds.

Q: I use my tractor to pull a 300-bushel wagon. Does the tractor need to be inspected?

A: No, only licensed commercial motor vehicles must be inspected. However, since the loaded wagon's gross weight exceeds 10,000 pounds, any truck pulling the wagon must be inspected.

Q: Where can I get the inspection?

A: By an employee of the Department of Public Safety or Transportation who has been certified by the commissioner of

transportation; by another person, such as a local truck mechanic, who has been certified; or by an owner or operator with five or more commercial vehicles who has been certified.

Q: Where can you get more information on the regulation and certification of inspectors?

A: Call the Minnesota State Patrol at (800) 475-7555 and ask for Officer Bruce Peters.

Q: When does the law take effect?

A: April 1, 1991; enforcement will begin July 1, 1991.

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AEA,BSS,CEO,V2M,V4M,E4M

NAGR3817

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 13, 1991

Source: Richard Goodrich
612/624-1205
Writer: Sam Brungardt
612/625-6797

Editors, farm directors: Please notify Jeanette Williams at the Southern Experiment Station (507/835-3620) if you plan to cover the induction ceremonies and banquet at Waseca.

MLBA TO INDUCT 3 INTO LIVESTOCK HALL OF FAME

On March 21, the Minnesota Livestock Breeders' Association (MLBA) will induct James Grass of Owatonna, Donald E. Paulson of Bloomington and Harold Krause of Eagle Bend into the Livestock Hall of Fame.

The three Minnesotans will be inducted at a banquet preceding the MLBA's annual meeting at the University of Minnesota, Waseca. Their portraits will be displayed in Peters Hall on the University of Minnesota's St. Paul campus, headquarters of the university's Department of Animal Science.

Steele County hog producer Jim Grass, of Route 3, Owatonna, purchased two Spotted-bred gilts as an FFA project in 1945. From these gilts he built his Spotted herd into one of the best in the breed, showing the grand champion boar at the Minnesota State Fair in 1947. Grass has shown Spots at the fair every year since, winning 32 junior and senior championships and 17 grand championships. In 1990, he showed the junior and grand champion gilt, reserve junior and reserve champion boar and champion purebred barrow. He was also honored last year for his 50 years of participation at the fair. Grass has also shown many winners at Spotted type conferences and National Barrow Shows (where he had the Hog College boar in 1967). He has judged Spotted hog shows in Minnesota, Iowa,

Nebraska, South Dakota and Wisconsin as well as many county 4-H livestock shows.

Grass is president of the Minnesota Spotted Association, of which he has been a member for 44 years. He served as director of the National Spotted Swine Association for six years. He has been a member of the Minnesota Pork Producers Association for 42 years, serving as its director for 23 years. He was instrumental in getting swine testing started in Minnesota and the Swine Evaluation Station built at New Ulm. He was nominated to the Swine Honor Roll in 1974, and he helped start the Steele County Pork Producers, serving as the first president and a director or officer since.

For 40 years, Grass served as director or superintendent for the Steele County Fair, and he is currently swine superintendent. Named Outstanding 4-H Leader in 1971, he served as a 4-H leader and coached 4-H livestock judging teams for 25 years. He also hosted many 4-H and FFA judging sessions at his farm. The 1964 recipient of the Steele County Outstanding Young Farmers Award, Grass is now on the Minnesota Livestock Breeders Association's Executive and 4-H Auction committees and chairman of its Youth Committee.

Donald E. Paulson, of 10311 Scarborough Road, Bloomington, attended South Dakota State University, where he was a member of the livestock judging team, and the American University in Biarritz, France, with majors in education and dairy production.

For 20 years, Paulson taught vocational agriculture at Albert Lea. During that time, the Albert Lea FFA chapter grew to be the fourth largest in Minnesota and one of the first to exhibit livestock at the Minnesota State Fair, with a record in market hog championships that still stands. Paulson also coached many winning judging teams. In 1964, he received the Honorary American Farmer degree in recognition of his service to FFA.

Paulson has served as secretary-treasurer of the Minnesota State Spring Barrow Show and has won the National Pork Producers Council Distinguished Service Award. In 1970, the Canadian Department of Agriculture asked him to assist in the organization of Canada's hog producers. He has also been a speaker at hundreds of functions and banquets throughout the hog-producing states of the South and Midwest.

In 1967, Paulson joined the Minnesota Pork Producers Association (MPPA) as its first executive director, a position he held until he retired in 1987. In his first year as executive director, MPPA membership doubled and the number of county associations grew from fewer than 10 to 43. That growth led the National Pork Producers Council to name the MPPA the top state association a year later. During Paulson's directorship, MPPA membership increased 12 years in a row and Minnesota was consistently one of the highest voluntary pork checkoff states, with participation between 75 and 82 percent.

In 1946, Todd County dairyman Harold Krause of Route 2, Eagle Bend, started out with eight cows, five of which were Milking Shorthorns. He now farms in partnership with his son, Curtis, and their herd consists of 120 milk cows, mostly Milking Shorthorns, and about 200 head of replacement heifers and steers that are finished for market.

Krause began DHI testing in 1950, when he helped organize a DHI unit in Todd and Morrison Counties. He also served as a DHI board member for a number of years.

Krause Milking Shorthorns have received many national awards over the years and still hold some records. Krause has shown cattle for more than 20 years and has won championships at county fairs, the Red River Valley Fair and the Minnesota State Fair. He has exhibited cattle at the World Dairy Expo and won the J. P. Eaves award for production several times. A winner of the Kitchell-Sayre Sportsmanship award, Krause received the

Lillian Wood Rowe and John Q. Rowe American Milking Shorthorn Society Citizen of the Year award in 1990. Krause Farms have received the Progressive Breeder award for 14 years, and Krause cattle have been featured on the cover of Hoard's Dairyman.

For many years, Krause was a delegate to the Minnesota Purebred Dairy Cattle Association (MPDCA) and he has hosted the MPDCA's judging school. In 1980, he received the association's Outstanding Dairy Cattle Breeders Award. Krause has held offices in the Northern District and Minnesota Milking Shorthorn Association. He served six years as a director of the American Milking Shorthorn Society, including one year as national president. He was also a director of the local unit of the Minnesota Valley Breeders for several years. Two Krause bulls are currently in AI studs. Krause cattle have been sold to buyers in six Canadian provinces as well Ecuador and the West Indies.

Krause Farms has hosted University of Minnesota, North Dakota State University and local 4-H judging teams for many years. The Hutchinson, Minn., dairy management class has visited the farm on several occasions as have producers and others related to the Australian dairy industry.

Krause is a board member and dairy superintendent for the Todd County Fair. He was president of the Minnesota Association of Cooperatives for nine years, and was recently appointed a director of the Todd County Farmers Home Administration.

The Minnesota Livestock Breeders' Association is an umbrella organization that represents 24 livestock species and breeds. The association supports youth activities dealing with livestock and provides a voice for animal agriculture through its public relations and legislative activities.

#

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 13, 1991

Source: Richard Goodrich
612/624-1205
Editor: Sam Brungardt
612/625-6797

Editors, farm directors: Please notify Jeanette Williams at the Southern Experiment Station (507/835-3620) if you intend to attend the induction ceremonies and banquet at Waseca.

STEELE COUNTY PORK PRODUCER NAMED TO LIVESTOCK HALL OF FAME

On March 21, the Minnesota Livestock Breeders' Association (MLBA) will induct Steele County pork producer James Grass into the Livestock Hall of Fame at a banquet preceding its annual meeting at the University of Minnesota, Waseca.

Grass will be one of three Minnesotans to be so honored by the MLBA. The others are Donald E. Paulson of 10311 Scarborough Road, Bloomington, formerly a vocational agriculture instructor at Albert Lea and executive director of the Minnesota Pork Producers Association, and Todd County Milking Shorthorn breeder Harold Krause of Route 2, Eagle Bend. The inductees' portraits will be displayed in Peters Hall on the University of Minnesota's St. Paul campus, headquarters of the Department of Animal Science.

Grass, of Route 3, Owatonna, purchased two Spotted-bred gilts as an FFA project in 1945. From these gilts, he built his Spotted herd into one of the best in the breed, showing the grand champion boar at the Minnesota State Fair in 1947. Grass has shown Spots at the fair every year since, winning 32 junior and senior championships and 17 grand championships. In 1990, he showed the junior and grand champion gilt, reserve junior and reserve champion boar and champion purebred barrow.

He was also honored last year for his 50 years of participation at the fair. Grass has also shown many winners at Spotted type conferences and National Barrow Shows (where he had the Hog College boar in 1967). He has judged Spotted hog shows in Minnesota, Iowa, Nebraska, South Dakota and Wisconsin as well as many county 4-H livestock shows.

Grass is president of the Minnesota Spotted Association, of which he has been a member for 44 years. He served as director of the National Spotted Swine Association for six years. He has been a member of the Minnesota Pork Producers Association for 42 years, serving as its director for 23 years. He was instrumental in getting swine testing started in Minnesota and the Swine Evaluation Station built at New Ulm. He was nominated to the Swine Honor Roll in 1974, and he helped start the Steele County Pork Producers, serving as the first president and a director or officer since.

For 40 years, Grass served as director or superintendent for the Steele County Fair, and he is currently swine superintendent. Named Outstanding 4-H Leader in 1971, he served as a 4-H leader and coached 4-H livestock judging teams for 25 years. He also hosted many 4-H and FFA judging sessions at his farm. The 1964 recipient of the Steele County Outstanding Young Farmers Award, Grass is now on the MLBA's Executive and 4-H Auction committees and chairman of its Youth Committee.

The MLBA is an umbrella organization that represents 24 livestock species and breeds. The association supports youth activities dealing with livestock and provides a voice for animal agriculture through its public relations and legislative activities.

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 13, 1991

Source: Richard Goodrich
612/624-1205
Editor: Sam Brungardt
612/625-6797

Editors, farm directors: Please notify Jeanette Williams at the Southern Experiment Station (507/835-3620) if you plan to attend the induction ceremonies and banquet at Waseca.

TODD COUNTY DAIRY PRODUCER NAMED TO LIVESTOCK HALL OF FAME

On March 21, the Minnesota Livestock Breeders' Association (MLBA) will induct Todd County Milking Shorthorn breeder Harold Krause into the Livestock Hall of Fame at a banquet preceding its annual meeting at the University of Minnesota, Waseca.

Krause, of Route 2, Eagle Bend, will be one of three Minnesotans to be so honored by the MLBA. The others are Steele County Spotted swine breeder James Grass, Route 3, Owatonna, and Donald E. Paulson, 10311 Scarborough Road, Bloomington, formerly a vocational agriculture instructor at Albert Lea and executive director of the Minnesota Pork Producers Association. The inductees' portraits will be displayed in Peters Hall on the University of Minnesota's St. Paul campus, headquarters of the Department of Animal Science.

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Krause began DHI testing in 1950, when he helped organize a DHI unit in Todd and Morrison Counties. He also served as a DHI board member for

a number of years.

Krause Milking Shorthorns have received many national awards over the years and still hold some records. Krause has shown cattle for more than 20 years and has won championships at county fairs, the Red River Valley Fair and the Minnesota State Fair. He has exhibited cattle at the World Dairy Expo and won the J. P. Eaves award for production several times. A winner of the Kitchell-Sayre Sportsmanship award, Krause received the Lillian Wood Rowe and John Q. Rowe American Milking Shorthorn Society Citizen of the Year award in 1990. Krause Farms have received the Progressive Breeder award for 14 years, and Krause cattle have been featured on the cover of Hoard's Dairyman.

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Krause is a board member and dairy superintendent for the Todd County Fair. He was president of the Minnesota Association of Cooperatives for nine years, and was recently appointed a director of the Todd County Farmers Home Administration.

The MLBA, an umbrella organization that represents 24 livestock species and breeds, supports youth activities dealing with livestock and provides a voice for animal agriculture through its public relations and legislative activities.

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AEA,BSS,CEO,21,56,82,Se1Media

NAGR3835

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

Source: Jim Pettigrew
612/624-5340
Writer: Joseph Kurtz
612/625-3168

CHANGES IN SWINE FEED FORMULATION CAN AFFECT POLLUTANT LEVELS

It's possible to change swine feeding programs to reduce the levels of potential pollutants in manure. And such changes wouldn't necessarily reduce the growth performance of the animals, according to Jim Pettigrew, University of Minnesota swine scientist.

"Reducing the protein level in the diet reduces the amount of nitrogen in the manure," says Pettigrew, who conducts swine nutrition research for the university's Agricultural Experiment Station. "We can make this change without hurting pig performance by using crystalline amino acids extensively. Some of those now commercially available include lysine, tryptophan, threonine and methionine."

Pettigrew says the information necessary to make such a change is available. However, the change might increase feed costs at current ingredient prices.

Phosphorus in manure can be lowered slightly by reducing "safety factors" in diet formulation, especially for finishing hogs, Pettigrew says. Such safety factors, or higher-than-minimum levels, provide some margin for error in diet formulation.

"The need for large safety factors in phosphorus levels is diminishing as we learn more about phosphorus availability in various feed ingredients," says Pettigrew. "A more significant gain would be

possible if certain enzymes now being evaluated could be used to increase phosphorus availability in plant materials."

Pettigrew adds that oversupplementation of trace minerals, especially iron, is common in swine diet formulation. Decreasing such oversupplementation would likely reduce the levels of these minerals going into the manure.

"Groundwater pollution problems, to which livestock wastes contribute, are more advanced in parts of Europe than here," he says. "Therefore, we can learn from European experiences in dealing with these problems."

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AEA,BSS,CEO,V2,B2,P1,R

NAGR3827

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

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

KEEPING PHOSPHORUS OUT OF SURFACE WATERS REDUCES ALGAL GROWTH

Farmers can band phosphate fertilizer and use conservation tillage to help reduce algal growth in lakes and ponds.

"Increased algae growth is often linked to phosphorus entering the waters. And research shows the majority of phosphorus reaching lakes and ponds is attached to soil particles," says George Rehm, soil scientist with the University of Minnesota's Extension Service.

"Phosphorus loss is directly linked to soil loss, or soil erosion," Rehm says. Good soil conservation practices--usually a conservation tillage system--can help keep phosphorus out of surface waters. The residue left on the soil surface will reduce soil loss caused by water or wind erosion.

Substituting banded for broadcast phosphate applications will also help. When phosphorus is applied in a band below the soil surface, its concentration at the soil surface is decreased and less phosphorus is lost with erosion.

"The economic advantages of banding phosphate fertilizer have been recognized for some time. The environmental advantages can't be ignored," Rehm says.

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AEA,BSS,CEO,V2,B2,F1,L3

NAGR3839

NEWS/ INFORMATION

MSC/9/27P
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

Source: Patti Held
612/625-7228
Writer: Jack Sperbeck
612/625-1794

NEW MICROCOMPUTER PROGRAM HELPS MANAGE RISK

"OPTIONS," a new microcomputer program from the Minnesota Extension Service, can help you understand commodity price risks. It can also help evaluate alternative risk management strategies, says University of Minnesota agricultural economist Rob King.

Price risk is an important problem for commodity producers, first handlers and processors. Commodity futures option premiums are potentially a valuable source of information about price risk. They reflect traders' beliefs about possible price movements, and can be used to develop quantitative descriptions of price probability distributions.

OPTIONS is designed to be used regularly to monitor price risks and pricing opportunities in commodity markets. Required input data are readily available through sources like "The Wall Street Journal" and on-line data services.

The software package includes a user manual and installation disk. The cost is \$30 (\$15 for Extension Service users). Minnesota residents must add 6 percent sales tax or provide a tax-exempt number. To order the package, contact the Distribution Center, Coffey Hall, University of Minnesota, St. Paul, MN 55108-1030. Ask for item number AG-81CS-3003-S.

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AEA, BSS, CEO, V2, V7, A1, H2, IA, SD, ND, WI

NAGR3818

NEWS/ INFORMATION

March 14, 1991

Source: Tim Arlt
507/451-8040
Writer: Joseph Kurtz
612/625-3168

PROJECT HELPS FARMERS INCREASE PROFITS, PROTECT ENVIRONMENT

Crop producers in four southern Minnesota counties are learning that using less fertilizer and pesticides can go hand-in-hand with higher profits. They are seeing a demonstration of this concept through the Minnesota Extension Service's Environmental Agriculture Education Project.

One of the educators spearheading the project is Tim Arlt, Steele County extension agent for agriculture. "The struggle in agriculture has always been to stay profitable while balancing production and environmental protection," says Arlt. "Many farmers are looking for ways to reduce inputs and to become more environmentally sound managers."

In 1990, Arlt and extension agents in Freeborn, Mower and Rice counties set up demonstration plots with cooperating farmers in their counties. Their work was funded by the Minnesota Extension Service offices in the four counties and by a grant from the Minnesota Board of Water and Soil Resources.

"The purpose of the demonstrations was to show how to reduce nitrogen fertilizer and pesticide inputs without any additional equipment or investment, while maintaining profitability," says Arlt.

The project involved three demonstrations in each county--one on nitrogen rates for corn, one on reduced rates for corn rootworm

insecticides and one on mechanical-chemical weed control for corn or soybeans.

The demonstrations on nitrogen rates showed the value of nitrogen contributions from manure and from previous alfalfa or soybean crops. In plots where corn was preceded by alfalfa, alfalfa with manure application, and soybeans with manure application, there was no financial benefit in applying nitrogen fertilizer. Where soybeans preceded the corn and there was no manure application, the maximum financial return over nitrogen fertilizer cost was at a rate of 120 pounds of nitrogen per acre.

The corn rootworm insecticide plots compared the full recommended rate with three-quarter and half rates and no use of insecticides. The results showed no root injury difference among the full, three-quarter and half rates at any location. However, there was significantly more damage when no insecticide was used. The lower rates represent a savings of \$3-7 per acre for producers.

The weed control plots compared various combinations of chemical herbicides and mechanical weed control (rotary hoeing and/or cultivation). In general, results showed that when weed pressure was high, chemical control provided the highest financial returns. When weed pressure was low, mechanical control provided the highest returns.

"Over 200 farmers, business people, legislators and University of Minnesota administrators visited the demonstration sites in 1990," says Arlt. "By using results of the demonstrations, farmers can make wiser decisions on the use of fertilizers and pesticides."

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**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

Source: Richard Jones
612/625-624-3009
Writer: Dani O'Reilly
612/625-4715

RABAS NAMED SUPERINTENDENT OF NORTH CENTRAL EXPERIMENT STATION

David L. Rabas will be superintendent of the University of Minnesota's North Central Experiment Station, Grand Rapids, effective April 1.

Rabas, an agronomist, currently conducts field crop research at the Grand Rapids station. He has been on the faculty there since 1970.

In announcing the selection, Richard Jones, dean of the University of Minnesota's College of Agriculture and associate director of the Minnesota Agricultural Experiment Station, said, "Dr. Rabas' familiarity with programs at the station will enhance his ability to provide effective leadership as the North Central Experiment Station moves forward in its efforts to address the changing needs of Minnesota's agriculture and forestry industries."

Rabas holds master's and doctoral degrees in agronomy from the University of Minnesota. He is well known in the Grand Rapids area where, among other community services, he chaired the School District No. 318 Board of Education in 1989 and 1990. He is also on the School/Community Chemical Health Task Force, the Citizens League Education Study Committee and the Rapids 2000 Education Committee. He has authored more than 100 scientific, technical and extension publications, and has participated in extension activities related to forage crop production in northern and central Minnesota.

Robert F. Nyvall, the North Central Experiment Station's current superintendent, will remain at the Grand Rapids station as a research plant pathologist. Nyvall will initiate research on vegetable, small fruit and tree diseases; the biological control of weeds and wild rice disease management. He will also revise a plant disease textbook he authored.

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AEA,BSS,CEO,V2M,A1M,H3M,H4M,Z2,04,11,18,89

NAGR3834

NEWS/ INFORMATION

March 14, 1991

MSC 4/12/91
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

Source: Bob Munson
612/625-1703
Writer: Jack Sperbeck
612/625-1794

HIGH-PRECISION FARMING WILL MAKE AGRICULTURE MORE COMPETITIVE

"High-precision farming" can mean large gains in fertilizer and chemical efficiency in corn, soybeans and wheat production, says Bob Munson, soil scientist at the University of Minnesota.

Munson and C. Ford Runge, a University of Minnesota agricultural economist, are authors of a report titled "Improving Fertilizer and Chemical Efficiency Through 'High Precision Farming.'"

High-precision farming requires more intensive management and information access. It means integrated crop management, using technology from university and industry research. High-precision farming can add to our nation's competitiveness and improve soil and water quality.

A "new era" of production that protects farm efficiencies and meets environmental goals is possible if technological and policy reforms in agriculture continue, say Munson and Runge. Their report was published by the university's Center for International Food and Agricultural Policy.

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AEA,BSS,CEO,F1

NAGR3823

NEWS/ INFORMATION

M. C. G. 1991
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

Source: Vern Ruttan
612/625-4701
Writer: Jack Sperbeck
612/625-1794

CROP YIELD INCREASES ARE TAPERING OFF

U.S. corn yields have been going up about a bushel a year. But that's a much smaller percentage gain today, with average yields over 120 bushels per acre, than 50 years ago, when yields were closer to 30.

Advances in science and technology responsible for the rapid growth in productivity the last 20 years are slowing down, says Bill Larson, University of Minnesota soil scientist.

Plant breeders have developed pathogen resistance and higher yields in major crops. However, new pests or variants of older ones keep appearing. As a result, a large part of plant research now must be devoted to maintenance.

Larson's comments appeared as an editorial in "Science" magazine. He participated in a series of international dialogues on the future of world agriculture, organized by University of Minnesota Regents Professor Vern Ruttan and supported by the Rockefeller Foundation.

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AEA, BSS, CEO, F1

NAGR3825

NEWS/ INFORMATION

MSC/9/927
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

Source: Vern Ruttan
612/625-4701
Writer: Jack Sperbeck
612/625-1794

COMPUTERS IN AGRICULTURE CAN HELP REDUCE POLLUTION

Technology is apt to have a large role in reducing water pollution, says Bill Larson, soil scientist at the University of Minnesota.

Soil scientists have documented a 54-acre field with seven mappable units, and that's typical for glaciated agricultural soils of North America. Yield potential of the units varied from 112 to 162 bushels of corn per acre, and the recommended nitrogen fertilizer ranged from 88 to 132 pounds per acre per year.

Farmers usually fertilize at levels corresponding to their best soils, Larson says. If so, parts of the field may receive excessive inputs that could leak into groundwater.

However, soil surveys and production data are becoming available on floppy disks. And new models of fertilizer spreaders equipped with microprocessors that control fertilizer distribution as the machine proceeds across the field are being developed.

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AEA,BSS,CEO,F1

NAGR3824

MSC/9A27p

MINNESOTA EXTENSION SERVICE

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 14, 1991

Source: Pat Huelman
612/624-1286
Writer: Teddi Barron
612/624-2767

OUTLOOK FOR SOLAR HOMES COULD BE SUNNY

In recent years, solar energy has not been highly visible. Although solar-powered calculators flourish and solar-powered car races are highly publicized, home solar systems have all but faded from the public eye.

Despite the lack of attention, the sun remains a viable energy source for home heating, says Pat Huelman extension housing specialist and coordinator for the University of Minnesota's Cold Climate Housing Center. Passive solar remains the most promising, he says.

Solar energy systems convert sunshine into heat or electric current. Most home solar systems convert the sun's energy into heat and are either active (mechanical) or passive (no moving parts) or a combination of the two, Huelman says. Solar-electric systems, rarely used for home energy, have photovoltaic cells that change the sun's energy into electricity. A good solar system performs three functions: collecting solar energy, storing it until it's needed and distributing it to where it's needed.

During the Carter administration, home solar energy systems were almost commonplace. Roof-mounted, active solar collectors transformed sunshine to hot showers while sunroom-greenhouses sprouted from suburban houses nationwide.

But residential solar systems faded fast with the disappearance of

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government subsidies in the mid-1980s. As a result, Huelman says the solar industry lost much of its support for the research, development and training critical to its evolution into a mature, self-sustaining industry. He says, "Back then, many new products hit the market, but there was not enough support for the technology to ensure that the products would be reliable over the long haul."

Such was the case with the gadget-intensive, active solar collector systems most often used to power water heaters. High initial costs and unsolved maintenance troubles limited their longevity in the marketplace, according to Huelman. "But," he says, "active solar systems do work in Minnesota and they may become cost effective in the future if the maintenance and durability issues can be resolved."

According to Huelman, an important lesson was learned during solar's glory days: keep it simple. He says, "That's why passive solar for home heating has proven to be an effective and economical way to use the sun's energy in Minnesota.

"A passive solar system is basically part of a home's design. Large, south-facing window areas collect solar heat. Heat-storing materials--especially concrete, brick, stone or even water--absorb and store the heat to prevent overheating and to save excess heat for later use. And heat distribution is by natural means--convection, radiation and conduction.

"Solar home heating can be as simple as sun-tempering, which is basically good orientation of the home on the lot and proper window placement to take advantage of the sun's heat during winter."

Because passive solar is integrated into the design of a home,

Huelman says it is ultimately the result of conscious decisions made during subdivision planning and zoning phases through the interior design choices.

"For example," he says, "lots need to be laid out so that south-facing orientation of homes will work. And the designer or builder must understand that the amount of south glass needs to be in balance with the amount of thermal storage area so the house doesn't overheat. And floor plans need to be laid out in such a way that the rooms used the most can get maximum advantage from the sun's heat. When all of these choices and plans come together, passive solar works amazingly well in Minnesota."

More information on home energy issues is available from county offices of the Minnesota Extension Service and from the Department of Public Service (call 800/652-9747 or 612/296-5175).

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AEA,BSS,CEO,V2M,V7,V8M,E3M,I4M

NHEC3842

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 18, 1991

Source: Gary Wyckoff
218/327-4490
Writer: Larry A. Etkin
612/625-4272

Editors: Call Larry Etkin (612/625-4272) to obtain a b/w print or 35mm color slide to use with this feature.

ASPEN/LARCH PROJECT SEEKS BETTER TREES

Are we in danger of outstripping the renewability of our forest resource? Many say we're beginning to cut timber faster than it's growing back. Preserving jobs and the quality of our environment require avoiding that.

One solution is to limit the amount of forest harvested each year. Others are to develop "super trees" that grow bigger faster or to improve the way we grow trees--solutions that University of Minnesota researchers are focusing on.

Paper and flakeboard are perhaps the most important wood products made in the Minnesota region. Aspen, a major raw material, is being harvested heavily. In fact, it represents about 40 percent of the region's hardwood harvest, and virtually all of Minnesota's. Forest resource managers accept the likelihood of a "maturity gap" occurring between harvestable crops in a few decades.

A super tree could fill part of that gap, and until now, a single European aspen (Populus tremula) has been the workhorse in efforts to develop such a super tree. But that may change soon, through efforts of the Institute for Paper Chemistry, who's aspen/larch project recently relocated to the University of Minnesota's North Central Experiment

Station. The university attracted the project to Grand Rapids when the institute moved its headquarters from Appleton, Wis., to Atlanta.

That workhorse tree, discovered in a Swedish forest 60 years ago, is a tetraploid male ("tetraploid" means it has double the number of chromosomes normally found in members of its species). This tree's four sets of chromosomes are responsible for the increased fiber length of its wood and its superior growth. This tetraploid male has been crossed widely with normal, or diploid, females of related species, including P. tremuloides (our native trembling aspen), to create vigorous triploids for further selection and breeding efforts.

But, "the genetic base is a little narrow with the triploid," says Gary Wyckoff, manager of the aspen/larch project. "Not that we've got any numbers out there now that should cause any concern. But we felt to anticipate that concern, we needed to expand the number of parents involved."

That two tetraploid male trembling aspens are now reaching maturity excites Wyckoff. He says, "It gives us the opportunity to put our native tremuloides back onto tremula females."

For much of its first year in Minnesota, the project has been preparing to transfer genetic material from Wisconsin to a new, 50-acre arboretum south of Grand Rapids. Grafting the genetic material to trees in the arboretum will take about five years.

The project is also measuring silvicultural factors, soil-site relationships and individualized site management practices. "That's looking at what goes on sites, what factors are present and how they might affect the growth rate of any given species," Wyckoff explains. "A given area of land and the soil beneath it and the moisture that

reaches it create limitations. Now, that plot of land, with that moisture and that nutrient situation, can only grow so much wood. Whether you put that wood on a few trees or on a lot of trees, you are only able to produce so much wood per acre.

"You can improve on that by putting in more efficient trees; trees that are more efficient in using a lower quantity of moisture and nutrients. And you can find the optimum number of stems per acre."

The aspen-larch project has been closing in on optimum stem counts (the number of trees grown in an area). Says Wyckoff, "We've found that somewhere about 500 to 600 stems to the acre, at least from a plantation standpoint, is where we want to be."

With fewer than 600 stems per acre, a lot of sunlight hits the ground instead of leaves. But there's a reason why this waste is tolerated. Wyckoff explains: "To get larger-diameter trees, we accept wasting that sunlight at early ages, knowing that we're not going to have to come in and thin that stand at a later stage."

But the end use of other trees may differ and call for a different production strategy. That's why the project is also looking at short-rotation, intensive culture, in which relatively young trees would be harvested. For example, hybrid poplars are being grown in shorter rotations to have more leaf area on a site early. "They're converting as much of that site potential to wood as possible in a very short period of time," says Wyckoff. "They are content to harvest smaller-diameter trees, trees with a higher proportion of branches and bark."

Short-rotation research is important to paper and pulp companies. Brian Stanton, a geneticist with James River Corp., says, "We consider

the work that the project is doing very pertinent and important to our efforts to develop new species as short-rotation crops."

"One of the biggest strengths (of the institute and its project) is its history of good cooperative efforts between the industry, universities, research facilities, various government agencies," says David Karnosky, director of the Center for Intensive Forestry at Michigan Technological University, Houghton, Mich. "They've accomplished a great deal in terms of keeping people aware of the tremendous growth potential of the aspens and the hybrid poplars and the larches."

Wyckoff says the project is now moving its tree improvement efforts "into more of an operational mode, trying to get a large amount of seed into various agencies' hands for planting on a rather large scale." Trees produced by the project will be test grown by other public agencies at sites off the experiment station. Corporate members of the Aspen/Larch Genetics Cooperative may also initiate trials. These trials will provide performance data under a variety of soil and environmental conditions. "Any time you have relatively new species like we're dealing with," says Karnosky, "we need to get these out to as many sites and as many different types of soil, and moisture and fertility conditions as we can. There are still a number of unknowns out there in terms of how we best utilize these species and also how we best establish them."

Karnosky points out that not all the material is hybrid: "Some of it is single species. Nevertheless, it is all material that is relatively new from the industry use standpoint. I think their emphasis in trying to work out the practical silvicultural methods is really a

very good one. I think that the more work along those lines, the more readily acceptable each of these species will become."

Stanton says eight to nine years will be needed to tell "what kind of growth and yield figures we could expect and what would the plantation costs be for raising aspen and larch." He says, "By the year 2000, we should have the answer to the question, 'Does it make sense to grow aspen instead of cottonwood?'"

"And," says Wyckoff, "we're going to start looking at new types of hybrids. Some we've looked at looked promising, and we're going to go back and spend a little more time with those.

"True breeding is on-going," he adds. "You never really reach an end. You're upgrading, you're bringing in new genotypes, you're always trying to keep that variability present."

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AEA,BSS,CEO,H3,H4,01,09,11,16,18,31,36,38,72

NNRD3843

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 18, 1991

Source: Kent Crookston
612/625-0220
Writer: Joseph Kurtz
612/625-3168

U OF M IS INCORPORATING CASE STUDIES INTO SUSTAINABLE AG EFFORTS

Individual farmers and private organizations have a lot to offer in developing sustainable agriculture efforts in Minnesota.

Both will play key roles in future University of Minnesota work in sustainable agriculture, according to Kent Crookston, director of sustainable agriculture at the university.

Crookston, interim head of the Department of Agronomy and Plant Genetics in the College of Agriculture, says "decision case studies" are becoming increasingly important in the university's research and teaching about farming.

"Decision case studies focus on a whole-farm approach, and are particularly useful in Minnesota Extension Service work," he says.

"Decision cases effectively use a farmer's experience, which a scientist cannot duplicate. For sustainability issues, decision case research and teaching helps farmers analyze and decide among conventional and alternative farming methods."

The university is working also to develop a formal partnership with five groups involved in sustainability issues, Crookston says. These groups are the Minnesota Food Association, Land Stewardship Project, Organic Growers and Buyers Association, Minnesota Project and Minnesota Council of Churches. "We plan to expand this list to include other groups interested in sustainable agriculture issues," he adds.

The University of Minnesota is also raising funds to endow a chair for sustainable agriculture. This will be a short-term, rotating position to attract visiting scholars and experts. The university has committed \$750,000 to match private gifts for the chair, and the Minnesota Legislature has appropriated \$75,000 towards the chair.

Crookston says a unique farm in southwestern Minnesota is proving to be a valuable asset to the university's sustainable agriculture research. This is the Koch Farm, which is just south of the university's Southwest Experiment Station at Lamberton. Since 1988, the university has had access to the farm, which is operationally part of the Lamberton branch station. The Koch Farm has an extensive history of being maintained with minimal chemical inputs. Projects underway there include innovative crop rotations, research on plant uptake of nutrients in low-input systems and studies on organic farming.

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AEA,BSS,CEO,V2,F1M,L3

NAGR3845

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 21, 1991

Source: Donna Rae Scheffert
612/625-9255
Writer: Jack Sperbeck
612/625-1794

Editors, news directors: This release reports activities involving people from Barnum, Carlos, Carlton, Clarissa, Dumont, Hampton, Herman, Hoffman, Faribault, Kent, Lakefield, Lamberton, Lewiston, Nelson, New Prague, Pine Island, Red Lake Falls, West St. Paul and Worthington.

AGRICULTURAL LEADERS DISCUSS ETHICAL ISSUES AT M/I LEAD INSTITUTE

Ethical issues, such as the environment and animal rights, were topics for lively discussion by rural leaders at a recent Minnesota/Iowa Leadership (M/I LEAD) Institute in St. Paul.

M/I LEAD is the Minnesota-Iowa Leadership Empowerment for Agricultural Development program sponsored by the extension services of Minnesota and Iowa. Some 40 rural leaders from the two states attended the week-long session. They were nominated by agricultural organizations, applied and were selected to participate in four week-long sessions over two years.

Conflict management, visionary and ethical leadership, agriculture megatrends, international agriculture and food policy and multinational agribusiness initiatives were other topics explored.

Field trips included visits to the Minneapolis Grain Exchange, Cargill, the World Trade Center, Family Homeless Shelter and the Minnesota AIDS project, according to Donna Rae Scheffert, coordinator of the project for the University of Minnesota's Extension Service.

Minnesota LEAD participants included Duane Alberts, Pine Island; Timothy Backman, Herman; Rita Baer, Lewiston; Sharon Baker, Hoffman;

Barbara Downs, Nelson; Diane Felde-Finke, Carlton; Patrick Freese, Kent;
David Harwood, Lakefield; Dorothy Johnson, West St. Paul; Jay Lichtsinn,
Dumont; Patrick Lunemann, Clarissa; Linda Maus, Carlos; Debra McDermott-
Johnson, Barnum; Susan Meyer, New Prague; Jerry Perkins, Worthington;
Roger Price, Lambertton; Jeffrey Reed, Hampton; Kristine Versdahl, Red
Lake Falls and Douglas Wertish, Faribault.

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AEA,BSS,CEO,V2M,V4M,A1M,E1M

NAGR3846

NEWS/ INFORMATION

March 25, 1991

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

Source: David Bedford
612/474-6886

Writer: Sam Brungardt
612/625-6797

Editors: Call Sam Brungardt (612/625-6797) or Dave Hansen (612/625-7290) to obtain a b/w print or 35mm color slide of Honeycrisp to use with this release.

UNIVERSITY OF MINNESOTA'S NEW APPLE IS 'EXPLOSIVELY CRISP'

Home gardeners in northern states may well find it difficult to resist planting a new apple cultivar released this spring by the Minnesota Agricultural Experiment Station. One reason is that its name--Honeycrisp--is so alluringly, yet accurately, descriptive.

"It's explosively crisp," says David Bedford of Honeycrisp. Bedford, a University of Minnesota research scientist who works on the experiment station's fruit improvement effort, thinks Honeycrisp's future will be bright. He notes that consumer demand for more variety in produce is reflected in the new kinds of apples now being sold in supermarkets: Braeburn, Fuji, Gala, Granny Smith, Jonagold, Mutsu. These cultivars might not have the deep red color of Delicious, but they do have flavor.

Honeycrisp, Bedford says, deserves a place among them.

Honeycrisp fills a niche that's been vacant for Minnesota growers, who have needed a high-quality dessert apple that ripens before such late-ripening cultivars as Fireside, Haralson, Keepsake and Regent (which were all developed by the Minnesota Agricultural Experiment Station), yet stores well.

Honeycrisp's flavor is sweet and mildly aromatic. Its texture is exceptionally crisp and juicy, somewhat like that of Honeygold, another

University of Minnesota cultivar and one of its parents. The color of the skin is solid to mottled red over yellow.

Although Honeycrisp can be harvested from Sept. 15 to Oct. 10 in the St. Paul-Minneapolis area, the optimum harvest date is during the fourth week of September. Since the fruit ripens evenly and holds on the tree well, it can be picked all at once or bit by bit.

Honeycrisp keeps well in refrigerated storage until late February. In winter storage tests, it was rated equal or superior to Delicious, Haralson, Honeygold, Keepsake, McIntosh and Regent in flavor and texture.

At Excelsior, Minn., just west of the Twin Cities, trees of Honeycrisp have borne fruit annually without thinning and the fruit has been of good size--averaging 3-1/4 inches in diameter--despite heavy cropping. The trees have shown little winter injury over the past seven years, and Bedford thinks Honeycrisp will prove to be about as cold hardy as Honeygold. Honeycrisp blooms in the early-to-middle part of the apple-flowering period and produces pollen that fertilizes a number of other apple cultivars. Although apple scab and cedar apple rust lesions have been found on Honeycrisp leaves, these diseases were readily controlled with a standard spray program. Honeycrisp is also susceptible to fireblight.

Honeycrisp is patented, with propagation royalties going to support more research at the University of Minnesota. A number of nurseries and garden centers in Minnesota will sell trees of Honeycrisp this spring. Several mail order nurseries are also selling trees, and interested persons may get a list of these firms by writing to Honeycrisp, Department of Horticultural Science, 305 Alderman Hall, University of Minnesota, St. Paul, MN 55108-1011.

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NEWS/ INFORMATION

March 25, 1991

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

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

DON'T FORGET LIME FOR ALFALFA

Liming acid soils is a key management practice for successful alfalfa production in Minnesota. Yet, this practice is frequently forgotten, says George Rehm, soil scientist with the University of Minnesota's Extension Service.

Liming provides an ideal soil pH for soil bacteria. Some of these bacteria are responsible for the nodulation of the alfalfa plant. Without nodules on the roots, alfalfa cannot use the nitrogen in the air for its growth and development. Without nodulation, the alfalfa plant becomes nitrogen deficient and production is reduced. Lime applied after planting has little if any value, Rehm says. The lime needed must be incorporated into the tillage zone for best results.

Several sources of lime are available to Minnesota farmers. Some liming materials are by-products of industry and water treatment processes. These have proven to be effective materials in recent trials. The traditional ag lime remains the standard. Contrary to some claims, there is no harmful effect from the magnesium in this material. In fact, the magnesium may benefit crop production on many acid soils.

It's easy to determine whether lime is needed. A pH measurement on a soil sample will detect the need for lime and determine the rate needed. If you plan to seed alfalfa this spring, take a soil sample early and apply lime if it's needed.

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AEA,BSS,CEO,DM,F1M

NAGR3849

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 28, 1991

Source: Jerry Shurson
612/624-2764
Writer: Joseph Kurtz
612/625-3168

PIGS IN NURSERY NEED PLENTY OF WATER

It is vitally important to provide adequate water for pigs in the nursery stage. Water is too often a forgotten nutrient, says Jerry Shurson, extension swine scientist at the University of Minnesota.

"Provide one waterer for every eight early- or late-weaned nursery pigs, with a minimum of two waterers per pen," says Shurson. "Adjust the height of a nipple waterer according to the pig's growth. A rule of thumb is to set the nipple height at the top of the shoulder of the smallest pig in the pen."

Shurson notes that while nipple waterers work well, bowl waterers are an alternative for young pigs unaccustomed to nipple waterers.

"For the pigs to get enough water, adequate flow rate is important," he points out. "Research shows the minimum flow rate should be one cup per minute for 10-25-pound pigs and two cups per minute for 25-50-pound pigs. This will ensure adequate delivery of water to the pig's mouth while drinking."

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AEA,BSS,CEO,V2,P1

NAGR3851

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 28, 1991

Source: Earl Fuller
612/625-1226
Writer: Jack Sperbeck
612/625-1794

FARM MILK PRICES PROJECTED TO STAY AT ABOUT \$10.50

Some Minnesota dairy farm families are feeling personal and financial stress due to \$10 per hundred milk prices.

Thus far it's not a broad-based financial crisis of the early to mid-1980s vintage. But for the dairy farm families affected, it's a very serious affair, says Earl Fuller, economist with the University of Minnesota's Extension Service.

Fuller says county extension agents and other others who work with dairy farm families may hear comments like "What should I do with the rest of my life?" Or, "Maybe there is life after milking."

Roughly 30 percent of Minnesota dairy farmers have no or very little debt, Fuller says. But even in these cases the lower milk prices can put families in a financial crunch if they have children in college or other major financial obligations.

Fuller has sent a financial management worksheet entitled "Where am I" to county and area extension offices. Dairy farm families concerned about their future are encouraged to contact their county agent for a free, confidential assessment.

The projected average milk price over the next five years is still in the \$10.50 range, Fuller says.

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AEA, BSS, CEO, V2, V4, D

NAGR3853

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

March 28, 1991

Source: Mike Schmitt
612/625-7017
Writer: Jack Sperbeck
612/625-1794

NEW SOIL NITRATE TEST RECOMMENDED FOR MINNESOTA FARMERS

Effective this spring, a soil nitrate test is being recommended by the University of Minnesota to identify fields where no extra nitrogen fertilizer is needed.

Aside from western Minnesota, "This is the first time a soil nitrate test has been recommended for the state's corn growing area," says Mike Schmitt, agronomist with the University of Minnesota's Extension Service.

Western Minnesota has had a reliable soil nitrate test for years. But now, corn growers throughout Minnesota can identify fields with high nitrogen levels by using a soil nitrate test.

"Many people have been applying nitrogen fertilizer that wasn't needed," Schmitt says. The test establishes a threshold level of 175 pounds of nitrate-nitrogen to a two-foot depth. If total nitrate-nitrogen is greater than 175 pounds of nitrogen per acre, no additional fertilizer nitrogen is needed. However, from 15 to 30 pounds of nitrogen starter or nitrogen from a weed-and-feed program may be beneficial.

If the total nitrate-nitrogen is less than 175 pounds per acre, use the University of Minnesota nitrogen recommendations based on previous crop, yield goal, soil organic matter and manure credits.

"Not all fields will benefit from this change in deriving fertilizer nitrogen recommendations," Schmitt says. Targeted fields include those with high residual nitrogen, heavy manure histories, a crop disaster (such as a drought) the previous year, or those that have had consistent, excessive fertilizer nitrogen applied.

Before planting corn in spring, soil samples should be collected from a two-foot depth. A minimum of 15 soil cores should be composited per field. "Immediately, send the sample to a soil testing laboratory for analysis," Schmitt advises.

The test is not designed for fields coming out of alfalfa, even though fertilizer nitrogen is rarely needed on these fields. And, fields that had fall nitrogen applied should not be tested and interpreted with this system, Schmitt says.

The University of Minnesota is continuing its research work on soil N tests. "It's our goal to continually refine our soil test recommendations," Schmitt says. "As we do, we want to make sure the risk associated with new test recommendations is minimal for crop producers. We want to be sure of ourselves so recommendations are not constantly changed," he concludes.

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AEA,BSS,CEO,IAC,V2,V4,V7,F1,N2

NAGR3854

NEWS/ INFORMATION

March 28, 1991

Source: Daniel R. Brown
218/327-4490
Editor: Sam Brungardt
612/625-6797

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

Editors: Call Sam Brungardt (612/625-6797) or Dave Hansen (612/625-7290) to obtain a b/w print to use with this story.

MOHAIR PRODUCTION MIGHT NOT BE B-A-AD ENTERPRISE FOR NORTHERN MINNESOTA

Each year, the United States produces about \$20.8 million worth of mohair, the fine, silky hair of Angora goats. However, questions remain whether mohair production could be profitable for farmers in northern Minnesota. That's why the University of Minnesota's North Central Experiment Station at Grand Rapids has begun to investigate the requirements and feasibility of producing mohair.

Adult Angora goats stand 2-1/2 to 3 feet tall and weigh about 85 pounds. Because Angoras--like other goats--are browsers, they may be useful for controlling brush in northern Minnesota, says Daniel Brown, assistant scientist at the North Central Experiment Station. Range or brush-type pastures are the main source of forage for Angoras in Texas, where 90 percent of the U.S. mohair clip is produced and an average doe will shear 6 pounds of mohair twice a year.

At Grand Rapids, the quantity and quality of hair produced by goats on range or brush-type pastures will be compared to that produced by goats on improved, grass-and-legume pastures. It is already known that the amount of dietary protein influences mohair quantity and quality: goats that consume a lot of protein produce more hair, but it is of lower quality. The research at Grand Rapids will determine whether protein source also has an effect.

The Angoras involved in the research had been used in nutritional studies on the university's St. Paul campus. Brown says the nutrition research will continue, but housing, pasture management, health and marketing issues will also be investigated. Lower reproduction efficiency, parasites, coccidiosis, marketing of the males and predators are all problems that will have to be looked at before conclusions can be drawn about northern Minnesota's ability to obtain a share of the mohair market.

An extensive housing requirement has been cited as a reason why Angoras are not raised in northern Minnesota. Brown says the goats at Grand Rapids, which were kept on a maintenance diet in unheated, straw-bedded sheds, came through last winter's cold better than expected. They tended to stay inside more than usual during cold spells, going outside to eat periodically but very briefly. Because of this, there's some concern that young animals intended for the breeding flock might not eat enough for proper growth.

Brown says, "This project will expand the options for utilizing the resources available in northern Minnesota. Angora goats and other livestock not typically raised in this region can be well suited to it once we learn the nutritional requirements and management techniques needed for a profitable enterprise."

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AEA,BSS,CEO,L3,N3,Z1,Z2,Z7

NAGR3847

MSC/4/1991

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

**NEWS/
INFORMATION**

March 28, 1991

Source: Brent Woodward
612/624-4995
Writer: Joseph Kurtz
612/625-3168

BRENT WOODWARD IS NEW U OF M EXTENSION BEEF SCIENTIST

Brent Woodward has joined the University of Minnesota Department of Animal Science faculty as an assistant professor and extension beef scientist.

Woodward's main responsibility will be developing and implementing educational programs on beef cattle production for the Minnesota Extension Service. His areas of emphasis will include cow-calf production and integrated resource management (IRM), which involves a whole-farm approach to beef production. He will also work in the areas of sustainable agriculture and production of organic meat.

Woodward will also conduct research on the genetic evaluation of beef cattle. One of his projects will be to develop a genetic evaluation computer program that will run on an IBM workstation.

Woodward received a bachelor of science degree in animal science from Oklahoma State University in 1983. He added a master of science degree in animal breeding with a minor in statistics from Cornell University in New York in 1986. He also completed a Ph. D. at Cornell in 1990, focusing on animal breeding with minors in statistics and animal nutrition.

He did postdoctoral work at the University of Georgia before assuming his present position at the University of Minnesota.

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AEA, BSS, CEO, V2, A2

NAGR3852

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

April 1, 1991

Source: Dean Herzfeld
612/624-3477
Writer: Joseph Kurtz
612/625-3168

FARM BILL PESTICIDE RECORD REQUIREMENT NOT IN EFFECT THIS YEAR

Farmers will not be required by federal law to keep records on their use of Restricted Use Pesticides in 1991. Dean Herzfeld, coordinator of pesticide applicator training for the Minnesota Extension Service, says there has been some misunderstanding of the record-keeping provision of the 1990 Farm Bill.

"There have been a number of reports that farmers will have to start keeping records this spring," says Herzfeld. "The 1990 Farm Bill does require that farmers keep records on their use of Restricted Use Pesticides. However, the record-keeping provision will not be put into place until January 1992, at the earliest."

Herzfeld says the Farm Bill provision covers all users--both agricultural and non-agricultural--of Restricted Use Pesticides.

"The U.S. Department of Agriculture, the Environmental Protection Agency and others are meeting to work out what will be required for record keeping," says Herzfeld. "They will also determine how the record-keeping regulation will be put into place and who will enforce the regulation."

"The USDA hopes to publish the proposed regulation in the Federal Register for public comment sometime this summer. Then the USDA will finalize the regulation sometime in early fall at the earliest. Once this happens, state and federal agencies, extension and others will work together to provide information to growers about the new requirement. Information on the requirement will also be included in Pesticide Applicator Training programs."

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AEA, BSS, CEO, V2, V4, V5, V6, F1

NAGR3858

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 1, 1991

Source: Phil Steklenski
612/624-4230
Writer: Teddi Barron
612/624-2767

SWEDEN LEADS IN ENERGY-EFFICIENT HOME BUILDING

Although American homes are more energy efficient today than 20 years ago, they lag far behind their Swedish counterparts. Compared to homes in the U.S., the average Swedish home has fewer drafts and a higher indoor temperature, but uses considerably less energy for heating, says Phil Steklenski, research fellow for the Cold Climate Housing Center at the University of Minnesota.

"If a typical Minnesota house were built to Swedish standards, it would use about 40 to 60 percent less energy to heat and cool than it does now," Steklenski says.

Like many nations, Sweden embraced energy conservation during the energy crisis of the early 1970s, he says. When Sweden's trade balance deteriorated substantially during the late 1970s and early 1980s, the strong incentive to decrease oil imports further fueled advancements in energy conservation. Most recently, energy conservation has received support in Sweden because of growing awareness of the environmental risks from energy use, Steklenski says.

Unlike American homes, more than 90 percent of new Swedish single-family homes are built in factories. The houses are built as an integrated system of wall panels, floor panels and roof trusses. Three characteristics account for the improved energy performance, Steklenski says. "They use very high levels of insulation in the walls and roofs;

innovative framing methods decrease heat flow through wood studs; and finally, they reduce air infiltration through and around the walls by minimizing joints, using rubber gaskets and improved air-vapor retarders," he explains.

"While factory builders did not originate energy-efficient construction techniques, they were able to adapt their production processes to include principles of energy-efficient construction more rapidly and economically than on-site builders," Steklenski says.

However, he says, Sweden's energy-efficient homes did not come about simply because of the efficiency and quality of its factories. "The entire building process and Sweden's rationalization of construction, management and building policy has led to the production of economical, energy-efficient homes," Steklenski says.

For example, Sweden's national, performance-based building code has fostered innovation in the building design and construction process, he says. In addition, government financing programs have encouraged the use of energy-efficient building practices and have fostered a high level of technological innovation through interest rate subsidies and tax deductions. And, both government and private industry have invested substantial amounts of money into building research.

"Perhaps most important is the fact that the Swedish home buying public has embraced energy conservation as central to their lifestyle. For example, the public's demand for energy-efficient homes has resulted in manufacturers routinely exceeding government energy standards," Steklenski says.

More information on home energy issues is available from county offices of the Minnesota Extension Service and from the Department of Public Service (800/652-9747 or 612/296-5175).

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**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 1, 1991

Source: Brent Woodward
612/624-4995
Writer: Joseph Kurtz
612/625-3168

WEIGHING CALVES BENEFITS COW-CALF OPERATIONS

Recording the birth weights of beef calves is an important first step in keeping records on a cow-calf operation. Records are a key in evaluating the success of the operation, says Brent Woodward, extension beef cattle scientist at the University of Minnesota.

"Ideally, calves should be weighed the day they are born," says Woodward. "Birth weight information is very useful in herds that have many difficult calvings, since it's an important factor in calving difficulty. It's also necessary for calculating an accurate adjusted 205-day weight."

Woodward says various types of scales will work for weighing newborn calves. He suggests talking to other producers to get an idea of what works best in the field.

"If you have a small operation, you may prefer to use bathroom scales rather than buying scales specifically for weighing calves," he says. "If so, check the scales for accuracy before using them to weigh calves. Carry a small board with you to put the scales on. Weigh yourself and the calf at least twice. If the weights are more than one or two pounds different, weigh again. Then, put the calf down and weigh yourself at least twice. Subtract to get the calf's weight."

Woodward recommends tagging the calf after weighing it. Use a system that allows you to easily determine from a distance which calf

belongs to which cow. You may also want to put a code on the tag to indicate birth year and/or sire. The Beef Improvement Federation has adopted letter codes to designate years. These codes are available from county extension offices and breed associations.

Woodward provides a note of caution concerning weighing newborn calves. "Some cows are overly protective of their newborn calves and may be aggressive toward you," he notes. "It is important to watch the cow carefully when handling the calf. It is probably best to have someone else keep an extremely aggressive cow distracted while you weigh and tag the calf."

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AEA,BSS,CEO,V2,A2

NAGR3857

**NEWS/
 INFORMATION**

UNIVERSITY OF MINNESOTA
 EDUCATIONAL
 DEVELOPMENT SYSTEM
 405 Coffey Hall
 1420 Eckles Avenue
 St. Paul, Minnesota 55108

April 4, 1991

Source: Juanita Reed-Boniface
 612/625-9231
 Writer: Evelyn Anderson
 612/625-7057

LIVESTOCK BREEDERS' ASSOCIATION AWARDS SCHOLARSHIPS TO 4-H'ERS

The Minnesota Livestock Breeders' Association has awarded two scholarships to Minnesota 4-H members Larry Goelz of Franklin and Sara Milbrandt of Elmore.

Goelz, who received the \$500 McKerrow Scholarship, is a sophomore in agriculture and animal science at the University of Minnesota. He was a 4-H member for 10 years, with projects in sheep, beef and swine. He serves on the university's general livestock judging team and judged livestock for 4-H and FFA. He also served as president of the Minnesota 4-H Federation and is a member of the Minnesota Extension Service citizens advisory committee and several campus organizations.

Milbrandt, daughter of Irvin and Marcia Milbrandt, won the \$500 MLBA scholarship. She is a senior at Blue Earth Area High School and plans to major in diversified agriculture at the University of Minnesota. In her seven years in 4-H, she has focused on the dairy project, currently working with six animals. She was selected to represent Minnesota 4-H at the National Dairy Expo. Locally, she has served as the county livestock committee chairperson and has done dairy foods demonstrations for 4-H and FFA.

4-H Youth Development, Minnesota's largest out-of-school educational program, is part of the University of Minnesota's Extension Service. The Minnesota Livestock Breeders' Association supports youth activities dealing with livestock and provides a voice for animal agriculture through its public relations and legislative activities.

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AEA, BSS, CEO, V2M, A2M, DM, N3M, P1M

N4-H3861

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 8, 1991

Source: Steve Laursen
612/624-9298
Writer: Martin Moen
612/625-6243

CONFERENCE WILL EXPLORE VANISHING OAK PROBLEM

Countless generations of residents and visitors have lived and played beneath the sheltering branches of oak trees in southeast Minnesota, northeast Iowa and southwest Wisconsin. But that may be changing. A conference will be held in June in Winona, Minn., to look into the problem.

Red oak is one oak species that is disappearing from this area's landscape. Statistics show that harvesting and natural loss due to old age and disease annually outstrip red oak growth by as much as 30 percent.

Despite their reputation for strength, durability and long life, oaks are surprisingly difficult to regenerate. They regenerate from stump sprouts and from acorns, but neither method is consistently reliable. Large oaks are usually the first to be harvested. However, large stumps produce less vigorous sprouts. Good acorn crops occur only at two- to five-year intervals. And even in a good seed year, many acorns are destroyed by insects or eaten by wildlife. If they survive all of this, oak seedlings often do not get the sunlight they need to sustain growth because most woodlands are too shady.

Not only are oak trees dwindling in number, the overall quality of the oak resource is declining as well. Clearly, changes are needed in

the way oak woodlands are managed if this important resource is to be maintained.

A conference, "The Oak Resource in the Upper Midwest: Implications for Management," will examine the many demands made on our oak resource and the implications for forest management. It will be held June 3-6 at St. Mary's College in Winona. The conference, which will be somewhat technical in nature, is designed for people responsible for and concerned with management of the oak resource in the Upper Midwest.

The conference will include a large number of concurrent sessions covering topics such as oak forests and tourism, converting low-quality oak into high-value export products, site preparation and weed control for oak regeneration, and the use of local ordinances to protect oaks from construction damage.

There is a cap on attendance, so register early. The registration fee is \$95 if postmarked before May 15, and \$120 after that date. College students can register for \$35 with approval from their major advisor. Low-cost housing is available from St. Mary's College in Winona. There will also be a program and tours for spouses and children.

The conference will include an optional tour on June 6. Tour participants will visit a number sites that demonstrate various oak management practices. Cost of the tour is \$25.

For registration materials and more information about the conference, contact Pat Roth at (800) 367-5363. Or write to her at EDS/Registrar, 405 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108-1030.

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AEA,BSS,CEO,H3,H4,P2,R1,V7,Z4,IA,WI

NNRD3863

NEWS/ INFORMATION

MS-1729
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 8, 1991

Source: John Lawrence
612/625-1273
Writer: Jack Sperbeck
612/625-1794

HOGS SHOULD REMAIN PROFITABLE THROUGH MOST OF 1991

Hog prices should remain profitable throughout most of 1991, but will be below 1990 levels, according to John Lawrence, marketing economist with the University of Minnesota's Extension Service.

According to the March 1 "Hogs and Pigs Report", the breeding herd expanded modestly and producer efficiency continues to improve. The breeding herd was 1 percent larger than December-February 1990, farrowings were 1 percent larger than anticipated last December's report and there were a record 7.87 pigs weaned per litter during this period.

Larger market hog inventories in the March report suggest that prices will remain below 1990 levels. Hog slaughter between March 1 and the March 28 release date was up 1.5 percent.

"This lends credibility to the report, which said the number of hogs over 180 pounds was up 1 percent," Lawrence says. A 1 percent increase in the 120- to 179-pound class should support prices in the low \$50s in April, and higher through May.

"As was the case in 1990, I expect prices to top out in late May or early June in the high \$50s, with prices possibly over \$60 for a few days," Lawrence says. June-August slaughter should exceed 1990 levels by 2 to 4 percent, with prices averaging in the low- to mid-\$50s.

Lawrence says March-May farrowings will largely determine fourth quarter slaughter numbers. The December report predicted farrowing

intentions for March-May, 1991, would be 2 percent below 1990. However, the March report indicated a 1 percent increase in spring farrowings.

This means pork supplies in the fourth quarter should range from the same as in 1990 to 2 percent higher, and resulting prices should average in the high \$40s. "These price projections depend on continued strong demand for pork and relatively tight cattle supplies," Lawrence says. "Significant changes in either will impact hog prices."

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AEA,BSS,CEO,V2,A1,P1

NAGR3864

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 8, 1991

Source: Wally Nelson
507/752-7372
Writer: Jack Sperbeck
612/625-1794

PLAN SEVERAL ALTERNATIVES FOR SPRING TILLAGE, WEED CONTROL

Don't assume last year's tillage and weed control program will be the best for this spring. "Weather records tell us we have only a 40 to 50 percent chance of being in the field for tillage in early to mid-June," says Wally Nelson, superintendent of the University of Minnesota's Southwest Experiment Station at Lamberton.

"One of the biggest mistakes farmers make is reacting to something that happened recently, such as last year's cropping practices, instead of doing long-term planning." Nelson calls this "historisis."

Plan ahead and have a number of weed control options ready to go, he advises. Nelson says so many people jumping on the rotary hoe "bandwagon" scares him. "If you get a high-intensity thunderstorm shortly after rotary hoeing, you'll get sandblasting on corn and soybeans," he says.

A weed control program that leaves some clods, surface roughness and residue will help prevent wind and water erosion.

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AEA, BSS, CEO, V2M, F1M

NAGR3865

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 8, 1991

Source: Alan G. Dexter
701/237-7973
Editor: Sam Brungardt
612/625-6797

DEXTER NAMED PRESIDENT OF SUGARBEET TECHNOLOGISTS

Alan G. Dexter, extension sugarbeet weed control specialist for the University of Minnesota and the North Dakota State University, has been elected president of the American Society of Sugarbeet Technologists for 1991-93.

Dexter becomes the first president of the society who is not an employee of a sugar company. He has held many other offices and committee posts in the society.

As president, Dexter will lead a 50-member delegation to Rome in May for a joint meeting with the International Institute for Sugarbeet Research, the European technology society.

Dexter has worked for the extension services of the University of Minnesota and North Dakota State University since 1969. He is recognized internationally as an authority on weed control in sugarbeets.

In recognition of his strong educational programs for sugarbeet growers in Minnesota, North Dakota and Montana, Dexter was awarded the Distinguished Service Award of the Red River Valley Sugarbeet Growers Association. He has also received the Minn-Dak Farmers Cooperative Pioneer Award.

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NAGR3866

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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

April 11, 1991

Source: Kent Olson
612/625-7723
Writer: Jack Sperbeck
612-625-1794

Editors: Copies of the reports, which include graphs and charts, are available by calling Kent Olson or by writing to the Waite Library, Department of Agricultural and Applied Economics, 231 Classroom-Office Bldg., University of Minnesota, St. Paul, MN 55108.

1990 WAS GOOD YEAR FOR FARMERS IN MANAGEMENT ASSOCIATIONS

Most Minnesota farmers in farm business management associations had a "very good year" in 1990, says Kent Olson, farm management economist with the University of Minnesota's Extension Service.

Olson and area farm management extension agents Lorin Westman, Erlin Weness, Dary Talley and Perry Fales have just published the annual reports for the Southeastern and Southwestern Minnesota Farm Business Management Associations.

Average profits were \$65,004 for the 200 farms in the southwestern association and \$62,044 for the 65 farms in the southeastern association. The increase over 1989 was 30 percent (southwestern) and 37 percent (southeastern). Both associations had one of the highest profit years on record, Olson says.

But there are lean times in farming. "Ten years ago--in 1981--average income of farmers in the southwestern association was only \$2,272," Olson says.

Actual profit levels for individual farms in 1990 varied greatly from the overall average profits. For example, in the southeastern association, the high 20 percent of farms had an average profit of

\$176,203; the low 20 percent, an average loss of \$1,171. The high 20 percent of farms in the southwestern association had average profits of \$150,150; the low 20 percent, \$10,528.

"Profits from milk, hogs and cattle were up considerably from 1989 levels," Olson says. "However, next year (1991) will be a different story, at least for dairy farmers. Milk prices have already dropped sharply."

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AEA,BSS,CEO,V2M,A1M

NAGR3867

**NEWS/
 INFORMATION**

UNIVERSITY OF MINNESOTA
 EDUCATIONAL
 DEVELOPMENT SYSTEM
 405 Coffey Hall
 1420 Eckles Avenue
 St. Paul, Minnesota 55108

April 18, 1991

Source: Tim Larson
 612/624-3405
 Writer: Pam Barnard
 612/625-4730

HOME REMODELING PROVIDES OPPORTUNITIES TO SAVE ENERGY

Home remodeling is on the increase nationwide. It's not surprising that during times of fiscal conservatism, remodeling may be more attractive than buying new for many homeowners. Other reasons for its recent popularity may include increased concern for the environment and our limited energy resources.

In fact, according to Tim Larson, extension specialist with the University of Minnesota's Cold Climate Housing Center, building some basic energy-efficient principles into remodeling projects can more than return a homeowner's investment. In addition to the energy savings from energy-efficient remodeling, a home's "comfort can be improved by reducing drafts, distributing heat better, reducing noise from the outside and raising humidity levels," Larson says.

Certain remodeling projects lend themselves to energy-efficient upgrades more than others. Siding replacement (which may need to be done anyway) and basement finishing are primary examples of remodeling activities that can easily provide the opportunity to improve energy efficiency and comfort of the home.

Larson points out five basic areas that need to be considered in energy-efficient remodeling:

--Air flow. Eliminating air flow across exterior walls and ceilings by airtightening a structure on the warm side of the wall or ceiling can

put the control of interior moisture levels back in the hands of the homeowner. This will not only make rooms less drafty and more comfortable, but the durability of the home will also increase because condensation leads to premature deterioration of siding, structural members and roofing materials.

--**Energy flow.** By improving insulation levels of walls to R-11 or R-19, and of ceilings to R-38 or more, homeowners can save energy by reducing heat loss in winter and heat gain in summer.

--**Vapor diffusion.** Remodeling provides the opportunity to install a vapor retarder on the warm side of walls and ceilings to control water molecule movement through them. Polyethylene sheeting placed on the warm side or a vapor-retardant paint evenly applied to an interior surface will prevent vapor diffusion.

--**Moisture control.** It is very important to control moisture flows before and during remodeling, otherwise excessive ventilation and deterioration of wall and ceiling insulation can result. According to Larson, "Over 90 percent of the moisture problems in basements are due to inadequate control of surface water. Gutters, overhangs and good grading are three excellent means of controlling moisture entry from surface water into the house. In addition, vapor retarders and continuous air barriers control wintertime water vapor flows out of the house.

"Ground moisture in basements is more difficult and expensive to deal with but can be handled by installing all or a combination of capillary breaks, drain tile, sump pumps, air barriers and vapor retarders." Larson stresses that solving a basement moisture problem is critical for improving a home's indoor air quality as well as its durability after the remodeling is completed.

--**Ventilation.** An effective mechanical ventilation system is also critical for the control of indoor air quality and humidity levels. The operation of ventilation equipment, such as an exhaust fan, must not downdraft other combustion appliances in the home such as furnaces, water heaters and fireplaces.

For more information on remodeling, contact the Department of Public Service, Energy Division, at 296-5175 or (800) 652-9747. In addition, Minnesota Extension Service county offices have information on home energy issues.

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AEA,BSS,CEO,V2,V7,V8,E3,H5

NNRD3870

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

April 18, 1991

Source: Doug S. Foulk
612/624-6220
Editor: Jack Sperbeck
612/625-1794

Editors: Call Sam Brungardt (612/625-6797) or Dave Hansen (612/625-7290) to obtain a b/w print or color slide of Honeycrisp apple, St. Cloud blueberry or Nordic red raspberry.

FOR BEST CHANCE OF SUCCESS, PLANT FRUITS THAT ORIGINATED IN MINNESOTA

When selecting fruit trees or shrubs for the home garden, it makes sense to choose cultivars developed and tested by the University of Minnesota.

These cultivars have proved they can survive Minnesota's weather extremes at research stations around Minnesota. They usually outperform cultivars that originated in milder coastal or southern climates, says Doug Foulk, assistant fruit specialist with the Minnesota Extension Service. Foulk says the University of Minnesota's Agricultural Experiment Station has released many excellent fruit cultivars in the last eight years:

Honeycrisp apple (1990): Honeycrisp, an exciting new introduction, is an attractive, red apple that ripens in mid- to late September in the Twin Cities. The crisp, flavorful, high-quality fruit store well for up to six months if properly refrigerated. Honeycrisp trees should be hardy in the southern half of Minnesota.

St. Cloud (1989), Northcountry (1986), Northsky (1983) and Northblue (1983) blueberries: These half-high blueberry cultivars, with their glossy foliage, creamy white, bell-like flowers and fiery fall foliage, make excellent ornamental shrubs or hedges. As an added bonus, all four

produce nicely flavored berries which are excellent for desserts and fresh eating. Although these blueberries are winter hardy throughout Minnesota, they perform best in areas with dependable snow cover.

Nordic raspberry (1987): This summerbearing red raspberry is similar to the well-known, hardy cultivar Boyne but produces less acidic, better-tasting fruit. The berries ripen in early July in central Minnesota. Nordic is resistant to the aphid which spreads red raspberry mosaic virus.

Red Wing raspberry (1987); This fallbearing red raspberry produces fruit that ripens 10-14 days before that of Heritage, making it especially useful in colder regions where early frosts prevent Heritage from ripening reliably.

Summercrisp pear (1987): This cold-hardy, early-season pear produces crisp, high-quality fruit in cold regions where few pear cultivars grow well or fruit consistently. For best quality, Summercrisp pears should be eaten while still crisp. A second cultivar (Golden Spice is a good choice) is required for pollination.

Alderman plum (1986): This cold-hardy hybrid plum is the latest in a long line of excellent University of Minnesota plum releases. The large, sweet, juicy fruits are excellent for fresh eating and preserves. The tree is attractive, blooms profusely each spring and is a good choice for ornamental use. A pollinizer such as Toka is required.

These and other University of Minnesota introductions are available from most Minnesota nurseries. For more information, contact your county extension agent.

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AEA,BSS,CEO,GM,V4M,V7

NAGR3871

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 405 Coffey Hall
 1420 Eckles Avenue
 St. Paul, Minnesota 55108

**NEWS/
 INFORMATION**

April 18, 1991

Source: Patrick Borich
 612/624-2703
 Writer: Deedee Nagy
 612/625-0288

EXTENSION HOME ECONOMICS HEAD ACCEPTS FEDERAL POSITION

Shirley Baugher, the Minnesota Extension Service's assistant director for home economics and associate dean of the University of Minnesota's College of Human Ecology, has been appointed deputy administrator for home economics and human nutrition with the Extension Service, U.S. Department of Agriculture. She will begin her duties in Washington, D.C., on July 1.

Baugher came to the University of Minnesota in 1983. Before that, she was director of home economics education for the Missouri Department of Elementary and Secondary Education. A Missouri native, Baugher holds a Ph.D. in home economics education from the University of Missouri as well as bachelor's and master's degrees from Northeast Missouri State.

Patrick J. Borich, dean and director of the Minnesota Extension Service, expressed his thanks for Baugher's contributions to Minnesota citizens through extension home economics programs. He said, "I'm sorry she's leaving Minnesota, but pleased that she will be providing national leadership in extension home economics. Our best wishes go with her."

Borich added that an internal search will be conducted for a replacement to serve until a national search can be done.

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AEA,BSS,CEO,V2M,V4M,F1M,F2M,F7M,H2M

NHEC3869

UNIVERSITY OF MINNESOTA
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DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

April 22, 1991

Source: K. W. Easter
612/625-7728
Editor: Sam Brungardt
612/625-6797

RESTRICTING HERBICIDES WOULD RAISE GROWERS' COSTS, REDUCE POLLUTION

If Minnesota corn producers were unable to use the herbicides atrazine and alachlor, their production costs would increase, but the environment would probably benefit, according to a recent University of Minnesota study.

If atrazine were banned, it would cost producers about \$7.70 an acre more, on average, to maintain yields, due to increased costs of using a substitute herbicide and making an additional cultivation. Banning alachlor in addition to atrazine would bump the additional cost for maintaining yields to approximately \$9.50, according to University of Minnesota agricultural economist K. William Easter. Easter and a colleague, Craig Cox, made the cost and environmental projections for the university's Agricultural Experiment Station in response to concern about a possible ban on the herbicides, aimed at reducing groundwater pollution from them.

Growers who took a chance on the weather being good and used increased mechanical weed control and pendimethalin (Prowl) would lose only about 50 cents an acre if atrazine were banned, Easter says. However, their losses could jump to more than \$20 an acre if the weather proved to be bad. This scenario, Easter adds, favors farmers who are doing well. He says, "Our study shows that farmers are going to be able to make adjustments if atrazine is banned, particularly those in good financial

condition, who can afford to take the risk of bad weather."

Although the economic consequences of a ban might be costly for some farmers, they may be countered by a safer water supply, Easter says, because the most likely substitutes for atrazine, such as cyanazine and 2,4-D, leach less readily than atrazine.

Banning atrazine and alachlor might also mean increased soil erosion if growers switched from conservation tillage practices to maintain better weed control, Easter cautions.

Atrazine is used extensively for weed control nationally, usually in combination with alachlor. Minnesota corn growers use it in the sand plains north of the Twin Cities and in the southeastern part of the state, both areas where the geology makes the groundwater particularly vulnerable to pollution caused by the leaching of agricultural chemicals. Atrazine, according to Easter, is more susceptible to leaching than other similar herbicides.

There has been discussion of limiting or even banning atrazine and alachlor since tests of wells by the Minnesota Departments of Health and Agriculture in the early 1980s revealed that atrazine was present in 90 percent of the wells testing positive for herbicides and alachlor was present in 10 percent of the herbicide-contaminated wells.

Although the tests showed that levels of both herbicides were below the legal Recommended Allowable Limits, concern about pollution has prompted discussion of whether the two herbicides, already classified as restricted, should be still more restricted or banned.

Last year, Wisconsin banned atrazine in part of the sandy Lower Wisconsin River Valley west of Madison and restricted application per acre statewide to 2 pounds. Iowa has suggested similar, but voluntary, restrictions.

Minnesota, according to University of Minnesota extension weed scientist Roger Becker, is developing recommended voluntary Best Management Practices to minimize the impact of atrazine on the environment. The practices include limiting application of atrazine to 1.5 pounds per acre in sensitive areas as well as scouting fields and other traditional management practices.

Greg Buzicky, assistant director of the Minnesota Department of Agriculture's Division of Agronomy Services, said the department would follow the procedures spelled out in the Minnesota Ground Water Protection Act of 1989 and first monitor how many producers adopted the management practices and how effective they were before taking more restrictive measures, such as banning atrazine.

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AEA,BSS,CEO,V2M,V4M,C4M,F4,P1M,T2M

NAGR3873

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 22, 1991

Source: Charles Williams
612/625-4703
Writer: Deedee Nagy
612/625-0288

KRAFT/GENERAL FOODS PLEDGES \$50,000 FOR MINORITY RECRUITMENT

Kraft Foods, a division of General Foods Corp., has committed \$50,000 for the recruiting of outstanding minority students for the University of Minnesota's College of Agriculture over the next five years. An initial payment of \$20,000 made recently will go toward scholarships expected to bring 11 minority freshmen to the St. Paul campus for the 1991-92 school year.

Charles Williams, College of Agriculture minority recruitment officer, says Kraft joins five other firms as major donors to the minority scholarship program. In addition to Kraft, the companies are Cargill, DuPont, Dow, Dow-Elanco and Eli Lilly. At present, 19 minority undergraduate students are studying in the College of Agriculture with the aid of scholarships from these six companies. Although the young people are from all over the country, the largest number are from Chicago's Agricultural Science Magnet High School.

According to Williams, the university's goal is to attain a 10 percent minority student enrollment. Once the minority students have graduated or completed advanced degrees, they will be qualified to take corporate or college faculty positions and increase cultural diversity at the institutions that employ them.

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BSS,CEO,A1M,A2M,A3M,H3M,NM,V4M

NCOA3872

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 25, 1991

Source: Steve Bilitz
612/625-4774
Writer: Evelyn Anderson
612/625-7057

FAMILY FISHING EVENT PLANNED FOR PANFISH KICKOFF

Families who want to learn more about fishing can attend a free "panfish kickoff" from 8 a.m. to 12 noon on Saturday, May 11, at the Hyland Lake Park Reserve in Bloomington. The MinnAqua Urban Angling Program suggests the event as an outing for families of anglers who have left town for the opening of fishing season.

Children and parents who attend will learn about fishing and Minnesota's water resources. They can answer questions in a "quiz-a-rama" on fishing regulations, make fish prints with paint to learn about identifying fish, learn knot tying and make a reel out of an empty pop can. Parents will learn tips for cleaning and cooking fish and will receive recipes and other literature. Women can fish without a license May 11-12; men over 16 will need a Minnesota fishing license to fish at the lake.

Participants will fish for bluegills and crappies along the shoreline of Hyland Lake. People can bring their own fishing equipment and bait for small panfish. Those who don't have equipment should bring an empty pop can, which they will make into a reel and use to fish.

Door prizes will be awarded at 11:30 a.m., including fiberglass telescopic rods, tackle box kits and booklets about fishing.

MinnAqua teaches ecology, conservation and fishing ethics as well as angling skills. It is a cooperative program of the Minnesota Department

of Natural Resources, Section of Fisheries, and 4-H Youth Development, Minnesota Extension Service. It is funded by the Legislative Commission on Minnesota Resources.

Hyland Park is on East Bush Lake Road, just south of Interstate 494. Facilities, including the fishing pier, are accessible to persons with handicaps. For more information, call Barb Weckman, Minnaqua program assistant at the Hennepin County Park System, 941-7922.

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19,27,64,YM

N4-H3874

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MINNESOTA EXTENSION SERVICE

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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

**NEWS/
INFORMATION**

April 25, 1991

Source: Mel Baughman
612/624-0734
Howard Hoganson
612/624-4221
Writer: Sam Brungardt
612/625-6797

BLANDIN FOUNDATION UNDERWRITES STUDY OF PUBLIC FOREST INVESTMENT IN MINNESOTA

A \$193,000 grant from the Blandin Foundation will allow University of Minnesota researchers to study how much needs to be invested to keep public forest lands in northern Minnesota productive and to identify ways this might be achieved.

Minnesota's forest products industry has experienced unprecedented growth over the past five years. Although this has resulted in many high-paying jobs, the industry's future size and structure depends on forest regeneration and management activities undertaken today as well as the strategies followed in utilizing existing forests. Minnesotans are also demanding that public forests, which comprise more than half of the commercial forest land in Minnesota, be managed for many purposes other than providing timber for the forest products industry. Without additional investments in forest management, it is unlikely that state- and county-owned forests will be able to meet all the demands placed upon them, including sustaining additional growth of forest products industries.

Four faculty from the University of Minnesota Department of Forest Resources, Howard Hoganson, Mel Baughman, Charles Blinn and Marc McDill, will conduct the study over the next two years. Hoganson, Baughman and Blinn conduct forest resource research for the Minnesota Agricultural

Experiment Station and McDill is a research associate.

Revenue generated from sales of timber produced on public lands is a potential source of funding for forest investments. The study will document the amount of revenue generated from public timber sales in Minnesota and identify the legal and statutory basis for the distribution of such revenues.

The second goal of the study will be to identify the extent and nature of forest management investments needed to support several possible future levels of timber harvesting while maintaining a high level of environmental quality. An effort will be made to recognize the increasing nontimber demands being placed on forests and the need for additional investments to ensure that nontimber values are maintained. Needed investment levels and priorities will be compared with current management investments.

Another goal will be to evaluate the relationship between the costs of timber production, stumpage prices and the value of timber within Minnesota's economy. Ideally, management costs should be close to the value returned by these activities to the people of Minnesota. However, value is not just a matter revenue generated from timber sales; nontimber uses of public forests, such as recreation and hunting, also provide benefits of value. In addition, it may be worthwhile for Minnesota to partially subsidize its public forests because they help make possible a \$4-billion industry in northern Minnesota, where employment opportunities are few.

A fourth goal will be to identify the timber sale practices used by public timber management agencies in Minnesota, determine how stumpage

prices are established and evaluate how alternative marketing mechanisms might be used to improve the efficiency of Minnesota's stumpage markets.

A final goal will be to identify alternative timber investment funding mechanisms used by public management agencies in Minnesota and other Great Lakes states.

Baughman says, "We hope the study will help ensure that enough environmentally sound and economically efficient investments are made in Minnesota's public forest lands so it will be more likely that future timber requirements will be met."

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AEA,BSS,CEO,V2M,V4M,V8M,F8,F9

NNRD3877

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

April 29, 1991

Source: Stan Wrzeski
612/624-7293
Writer: Pam Barnard
612/625-4730

NEW VENTILATION TECHNOLOGIES CHANGE HOMES' HIDDEN SYSTEMS

A home's hidden mechanical systems, such as its ventilation system, have more to do with the home's comfort and efficiency than most homeowners realize.

According to Stan Wrzeski, housing technology consultant for the University of Minnesota's Cold Climate Housing Center, several new developments in ventilation technology have the potential to help builders and homeowners alike get the most out of their home's design.

"There are several new trends in ventilation technology that people should be aware of. One simple trend that saves energy by recovering the heat from exhausted air is the use of heat-recovery ventilators instead of individual exhaust fans," Wrzeski says.

"The air-to-air heat exchanger uses the energy in the exhausted air to temper the air drawn in to replace it. In the winter, incoming air is heated. In the summer, incoming air is cooled. With Minnesota's cold winters, it's important to pay a little more for higher quality features that will reduce the likelihood of frost blocking the core."

Wrzeski also points out a trend for people with electrically heated homes that has already caught on in Europe--the use of electric heat pump water heaters. These water heaters use the heat energy of the exhausted air to heat the home's water. In addition, a heat pump water heater can be set up to help dehumidify the home during summer.

"Both the air-to-air heat exchanger and the heat pump water heater are central ventilation systems which are installed in lieu of individual exhaust fans. So, in addition to energy savings, homeowners can save on the cost of other ventilating devices," says Wrzeski.

When considering these new technologies, Wrzeski warns homeowners to remember what should be the first step of all good ventilation systems: the removal of pollutants at their source. For example, chimneys should be in good repair so combustion products are vented outdoors; bathroom fans should be operated for about 20 minutes during showers to vent lingering moisture and kitchen stoves (especially gas) should have an exhausting, instead of recirculating, range hood.

For more home energy tips, contact the Minnesota Extension Service office in your county.

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AEA,BSS,CEO,V7,V8,E3,H5

NHEC3881

NEWS/ INFORMATION

Ms. 10427p
MINNESOTA EXTENSION SERVICE

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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

April 29, 1991

Sources: Peter Bundy
612/624-1224
Mel Baughman
612/624-0734
Writer: Dave Hansen
612/625-7290

Editors: Call Marilyn Masterman (612/625-9251) or Dave Hansen (612/625-7290) to obtain a b/w print or 35mm color slide to illustrate this story.

MINNESOTA'S OAKS, SYMBOL OF STRENGTH, ARE SHOWING THEIR WEAKNESS

Southeastern Minnesota's high-quality red oaks are being harvested at twice their rate of annual growth. The resulting decrease in oak acreage concerns landowners, foresters, environmentalists and researchers. But, a machine made for destruction--the bulldozer--can aid infant oaks struggling to establish next century's forests. University of Minnesota forest resources researcher Peter Bundy has demonstrated it.

Minnesota Agricultural Experiment Station researchers like Bundy and Minnesota Department of Natural Resource (DNR) foresters are concerned about oak harvesting because oak forests are difficult to regenerate. Young oaks need lots of sun, something that's rare under the dense canopy of mature oaks. When the large trees are harvested and light finally reaches the oak seedlings, other species usually beat them out in a height race.

So how did the oak forests of southeastern Minnesota ever get started in the first place, with nature working against the species? "Large areas were burned each year by Native Americans so the grass would green up quicker and buffalo would come to graze," says University of Minnesota forest resources researcher and extension specialist Mel Baughman.

Bundy completes the story: "Fire was common until the mid- to late 1800s.

Page 1 of 3

The oaks survived; that is, their root systems survived. The other species (elm, maple, basswood) are weaker. When the fires stopped, the oaks took off! Their root systems were so well developed, compared with the other species."

Bundy points out that European explorers didn't see lush, tree-covered hills as they traveled the Mississippi. In 1727, Father Grugnis reported that "the river extends between two chains of high, bare, very sterile mountains." In 1811, Zebulon Pike referred to the "bald hills"--the same hills where high-quality oak forests grow today.

For the past two years, Bundy has studied oak reproduction on DNR land near Hay Creek, west of Red Wing, Minn. In mid-October of 1988, a bulldozer "prepared" the site by knocking down brush and oak saplings, stirring up soil cover and just-fallen leaves. The purpose was to get acorns to germinate and grow into seedlings before the area was logged.

DNR foresters Terry Helbig and Keith Jacobson worked with Bundy on the study. Says Jacobson, "Mechanical site treatment has been tried before, but not scientifically documented."

During the 1989 growing season, Bundy inventoried the prepared site's vegetation, including the oaks, from mature trees to just-sprouted seedlings. He measured and counted everything that might affect oak regeneration: acorn crop of the big trees before logging, number and size of established oak seedlings, soil type and leaf cover. He collected the same information from an area untouched by the bulldozer.

Bundy was surprised to find more than twice as many first-year seedlings in the undisturbed area. The bulldozer prepared a nice seedbed, he says, "but without the leaf litter, the acorns were more exposed and easy picking for hungry squirrels and deer.

"An important recommendation is to time (bulldozer) treatments to occur before leaf fall," he explains. Then, the acorns will fall onto mineral soil. Shortly after, falling leaves will cover them. "This," he says, "will insure

more acorn protection from desiccation, temperature extremes and mammal predation."

After the area was logged in September 1989, Bundy counted the growth rings of the harvested northern red oaks. He found that the forest had its start 90 to 107 years ago, the same time the fires stopped.

"By the second growing season, there was no difference between treatments," Bundy says. "The prepared area made a dramatic comeback. There were a lot of sprouts from broken-off young oaks. That's where the scarification really helps out. Since these sprouts have better developed root systems and larger leaves than the acorn seedlings, they have a better chance to compete for overstory position in the regenerating stand." Bundy adds that the bulldozing simulated fire, stimulated the oaks and reduced competition from other shrubs.

By 1990, the treated area was home to twice as many well established trees. It appears the oaks will be able to beat out the competitors in the height race. The DNR plans to use carefully timed bulldozer treatments, when practical, before logging other oak stands.

Other Minnesota Agricultural Experiment Station research is also under way to help Minnesota's oaks. Baughman is investigating several methods to help establish young trees. One of those is the Tubex, a tube-like plastic shelter that protects a seedling from deer and provides a favorable microclimate around it. DNR forester Jacobson says, "The Tubex may be the way to go. It looks promising, but we don't really know until someone studies it."

The study also will compare clearcut harvesting with shelterwood cutting-- a heavy thinning--and how each affects planted oak seedlings and acorns.

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AEA,BSS,CEO,R,T2,19,Z4

NNRD3879

**NEWS/
INFORMATION**

May 2, 1991

Source: Paul Rosenblatt
612/625-3120
Editor: Sam Brungardt
612/625-6797**STUDY SHOWS CLOSE URBAN, RURAL CONNECTIONS**

Urban and rural residents have many connections with each other, resulting in resource exchanges of many types, according to a recent study of rural residents in two Minnesota counties.

This interdependence, according to University of Minnesota family social science researchers Paul Rosenblatt, Jean Bauer and Terri Karis may surprise those who think of urban and rural residents as distinct groups with little in common.

"It challenges the idea of the community," notes Rosenblatt. "We lose track sometimes of how much the community is connected to the rest of the world." The many connections between rural and urban residents may have public policy and political implications, Rosenblatt says, adding, "Politicians who appeal to urban people as being interested only in urban affairs, and vice versa, are making a big mistake."

Bauer says results of the study, which was done to show the links between the urban and rural worlds, reveal that "the connectedness is social, psychological and economic." The study, done in Norman and Rock counties in western Minnesota and part of a much larger study of rural residents in eight states, was sponsored in part by the University of Minnesota's Agricultural Experiment Station.

Results of the study show that 83 percent of those polled had family members or good friends living in one or more urban areas, with the Twin

City area mentioned most often.

About three-fourths of those with urban relatives or friends saw them at least once a year for visits, either in their rural communities or in the urban area. The urban residents are often those who migrated from the rural area, Rosenblatt explains. "Migration typically does not end the migrant's relations with the people left behind," he adds.

The exchange of resources between urban and rural residents, Rosenblatt says, is about even, with 47 percent of the rural respondents reporting gifts, with monetary values ranging from \$3 to \$25,000, from their urban connections. Rural residents reported giving to urban relatives and friends in slightly greater numbers: 52 percent of those with urban relatives or friends gave them gifts, ranging \$2 to \$20,000 in value.

This exchange of visits, money and gifts, Rosenblatt notes, is not all there is to it. The exchange may involve moral support, advice giving, child care, car repair and other important, if less quantifiable, "gifts."

The study shows that rural residents have resources available beyond their immediate community. It also suggests, Rosenblatt says, that they may be able to get their perspectives and concerns across to their urban connections, who may well keep them in mind when they go to the polls.

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AEA,BSS,CEO,V2,V4,V8,A2,F1,F2,03,14,43,51,53,54,60,61,70

NAGR3885

NEWS/ INFORMATION

MS019427p
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 2, 1991

Source: Jean Kinsey
612/625-7028
Editor: Sam Brungardt
612/625-6797

DIVERSITY OF THE ELDERLY IS REFLECTED IN THEIR FOOD HABITS

The elderly, far from being a uniform group, are very diverse and this diversity is reflected in their food habits, says University of Minnesota agricultural economist Jean Kinsey.

There are different age categories among the elderly, she notes, and many subgroups within each category. While some elderly persons are healthy and active, some are ill and dependent on others for their food needs. Some pay little attention to what they eat, others are very health-conscious and forswear junk food. Some have money worries, others don't. Some love to travel and try new foods, others would rather stay close to home.

Because of these differences, meeting the varying food needs and wants of America's growing aging population in the next century will challenge the public sector and may be a great economic opportunity for the private sector, Kinsey notes.

"By the second half of the 21st Century, almost half the people in the United States will be over age 50," says Kinsey, who conducts research for the University of Minnesota's Agricultural Experiment Station. This increase in elderly persons, she explains, will be due to improved life expectancy and to the sheer numbers of the baby boom generation.

Kinsey is one of three authors of a book on American food habits,

"Food Trends and the Changing Consumer", which will be published by Eagan Press this August. The book consolidates a variety of research on food trends and reflects on future trends and their marketing and policy implications. Kinsey wrote the chapter that deals with food trends among the elderly. She says, "We wanted to get all of these ideas in a single book because we thought it would be useful for a number of audiences."

For all their diversity, elderly persons share a declining need for calories, Kinsey notes. She says, "For every decade after 20, the calorie need decreases 2 to 8 percent, so a 65-year-old will need 15 to 20 percent fewer calories than a 35-year-old."

Most studies also show that the aging are alike in that their food expenditures decline after retirement. However, most elderly persons have more money than is popularly believed, Kinsey adds, and the poverty rate among the elderly is about the same as for the general population.

More elderly persons will probably mean a sharp increase in social services necessary, including expansion of meals-on-wheels programs, Kinsey says, and better transportation options for those who can no longer drive.

Like younger people, the elderly tend to handle food less and less and buy food for convenience. In the case of many older people who live alone, Kinsey explains, "The effort of cooking for one just isn't undertaken."

In this era of niche marketing, selling food to the elderly could be one of the niches, Kinsey asserts, saying, "Some stores are smart about it, but it's amazing how many are not."

Stores would serve the elderly well by selling smaller serving sizes, using labels with larger type, having lighter shopping carts, having products within easy reach and providing restrooms and places to sit and rest. Home delivery might also be welcome. All that, Kinsey notes, without letting the elderly realize that they have special needs. While older people may consider shopping a social experience, "they don't want to be reminded that they're old," she explains.

The need to treat the elderly with dignity is also important in social service programs, Kinsey says; older people won't use the services if they don't feel well treated.

As the population ages, Kinsey speculates that more and more people will live independently, possibly in apartments, with common dining facilities. There may also be a trend toward eating more meals out. However, food habits of individual older people will depend very much on their finances and health, she concludes.

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AEA,BSS,CEO,V4,V8,E2,F2,F6,F7,SelMed

NHEC3883

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA

MSD/gA=Er
Educational Development System

456 Coffey Hall

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Dear Friend:

Enclosed is some material that I hope you'll find useful. If you have further questions or would like more detailed information, please contact me.

Sincerely,



Samuel J. Brungardt

Experiment Station Communication Specialist

Enclosure

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 2, 1991

Source: Jody Fetzer
612/443-2460
Writer: Sam Brungardt
612/625-6797

WORKSHOPS WILL CONSIDER IPM IN PUBLIC GARDENS, INDOORS AND OUT

Workshops on using integrated pest management (IPM) indoors and out will be features of the upcoming national meeting of the American Association of Botanical Gardens and Arboreta. The workshops, which will be open to the public, will be Wednesday, June 19, at the Radisson Metrodome on the campus of the University of Minnesota in Minneapolis.

The workshops will feature speakers from around the United States who will discuss alternative pest management strategies to reduce pesticide dependence outdoors, in landscapes and public gardens, and under glass, in interiorscapes, conservatories and greenhouses.

Topics for the Integrated Pest Management Outdoors workshop will include adding IPM to existing tasks, IPM networking resources and references, monitoring techniques, alternative insecticides and using beneficial organisms in the landscape.

The Biological Pest Management Under Glass workshop will cover setting up a biological control program, predator and prey identification, descriptions by experienced conservatory and greenhouse professions of several biologically based pest management programs and a session on the future of biological pest management.

For registration details and more information, write or call IPM Workshops, American Association of Botanical Gardens and Arboreta, 786 Church Road, Wayne, PA 19087 (215/688-1120).

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AEA, BSS, CEO, H7, SelMedia

NAGR3891

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
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May 2, 1991

Source: John Moncrief
612/625-2771
Editor: Dave Hansen
612/625-7290

Editor: Call Marilyn Masterman (612/625-9251) or Dave Hansen (612/625-7290) to obtain a b/w print or 35mm color slide to illustrate this story.

MANURE MANAGEMENT IS KEY TO MAINTAINING WATER QUALITY

Animal waste provides an inexpensive source of nitrogen fertilizer for many farmers. But manure is also a potential source of pollutants of groundwater and lakes, says University of Minnesota soil scientist John Moncrief.

"If there is one message I would like to convey to farmers, it is that manure must be managed," says Moncrief, who, in his research for the university's Agricultural Experiment Station, has been monitoring the effect soil management practices have on water quality at several sites in central Minnesota. "It can be equal to fertilizer as a source of nitrogen for corn, but farmers who do not manage it properly run a real risk of losing that nitrogen to groundwater."

Many farmers, Moncrief explains, use a disposal strategy, rather than a management strategy, in applying manure to their fields. Moncrief says, "They spread it just to get rid of it." He is trying to change that attitude by demonstrating that precision application--using rates determined by the nitrogen content of the manure, the previous year's crop and yield goals--and the use of conservation tillage methods can be profitable for farmers and good for the environment.

Research shows that the nutrient content of a farm's manure does not vary much from year to year. "Once you develop a history, you can base your application rate on a historical running average," Moncrief says.

Moncrief has been studying ways to maximize utilization of manure and minimize losses of nitrogen from this source on demonstration plots in the Clearwater River watershed in Stearns and Meeker counties. Moldboard and chisel plowing, light disking and a ridge till system are being evaluated as are spring- and fall-applied manure and commercial fertilizers, checking over-winter loss of nitrogen.

Results indicate that, so long as nitrogen is adequate, the source of the nitrogen has little or no effect on yield. The method of tillage also has little effect if the row area is clean of crop residues. Since conservation tillage methods require fewer inputs, they are more cost effective.

The soils on both sites are well drained and quite sandy, with low water-holding capacity. According to Moncrief, the risk of groundwater contamination by nitrates carried from above by percolating soil water is greatest on such soils. Climate also has a major influence, since rainfall must exceed the soil's water-holding capacity for the nitrate to move into the aquifer.

Moncrief says, "Nitrates in water in greater concentrations than 10 parts per million (ppm) can be toxic, especially for babies, as they diminish the ability of the red blood cells to hold oxygen. Although nitrate can be removed from the water supply, few treatment plants do it and home water-softening systems typically do not remove it."

Nitrates do not now present a threat to the Clearwater River or to the Mississippi, from which the Twin Cities draw their water, he hastens to add. But that could change. The combination of two drought

years--during which little fertilizer was washed out of the soil-- followed by a year of very heavy rains, brought the Minnesota River to the 10 ppm nitrate level last spring. "The real danger," says Moncrief, "is to wells drawing water directly from the shallow aquifer, which may be affected by nitrate contamination from above."

Moncrief has been supervising conservation tillage and water quality demonstrations at five sites in the Clearwater River watershed, an area comprising parts of Stearns, Meeker and Wright counties, for five years. These studies are a joint effort of the Minnesota Pollution Control Agency, the Soil Conservation Service, the Minnesota Extension Service, the Clearwater River Watershed District and the Meeker, Stearns and Wright County Soil and Water Conservation Districts.

Previous years' studies on these plots have looked at ways to prevent deterioration of water quality in the Clearwater River and its chain of lakes due to phosphorus loadings, partly traceable to runoff from agricultural lands.

Historically, many farmers have broadcast phosphorus and not used adequate conservation techniques to control erosion, says Moncrief. Often sediment lost from a field carries phosphorus to lakes. Excess phosphorus encourages algal bloom which is not only smelly, but depletes the water's oxygen level, causing the disappearance of game fish.

"It is logical to conclude that water quality can be improved by reducing soil erosion," says Moncrief, "and, in fact, that is just what we found. Demonstrations conducted on sites in this watershed over the past five years have shown that, when soil erosion is controlled through conservation tillage methods and phosphorus is applied as a subsurface band instead of on the surface, entry of this pollutant into surface

waters is practically eliminated."

Moncrief says the on-going study will look at losses of nitrogen to groundwater, the residual effect of manure application on nutrient availability to following crops and the effects of tillage and crop residues on phosphorus distribution in the soil.

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AEA,BSS,CEO,V2M,Z3,91,C4M,DM,F4M,P1M,P3M,S2M,T2M

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**NEWS/
INFORMATION**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM405 Coffey Hall
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May 6, 1991

Source: Allen Levine
612/725-5000Editor: Dave Hansen
612/625-7290**TO EAT OR NOT TO EAT?**

Hold it. Before you put that next bite into your mouth, ask yourself, "Why am I eating?"

If you can come up with an answer--a complete answer, that is--you'll have solved a mystery that has intrigued nutrition researchers for years.

But your response more likely is just one tiny piece in a large and complex jigsaw puzzle that forms the total picture of how people and other animals know when--and when not--to eat.

University of Minnesota nutrition researcher Allen Levine is one person who's working to find and assemble the pieces of that puzzle. Much of his interest in the work stems from a desire to unravel the biology of the system for its own sake. However, he also notes that a better understanding of how food intake is regulated may be key to helping people with appetite disorders.

An accurate picture of how a healthy system works is the first and most important clue to what happens--and what we can do about it--when appetites falter or rage out of control.

According to Levine, the decision, "To eat, or not to eat?", is based on much more than just a growling stomach or the clock striking 12.

"There are a whole lot of neurotransmitters--chemical signals we produce that input into regulating appetite--that are involved in turning on and sometimes turning off feeding," he says.

Appetite researchers have found literally scores of chemical messengers that travel the road between brain and digestive tract, relaying information about the levels of various nutrients in the blood, how full the stomach is and other eating-related body conditions.

So far, scientists have been able to identify many chemical compounds--monoamines, peptides, amino acids, to name a few--known to have a hand in the action. Just how they fit in, however, remains in many cases a mystery. A number increase food intake. Many inhibit the urge to eat. Some inhibit the inhibition.

To complicate things further, these chemicals often operate together in a mechanism Levine refers to as a "cascade"--one chemical compound affects another affects another, just like water tumbling down a series of plunges in a cascading waterfall.

"We don't really understand how they all work," Levine admits. Like the giant jigsaw puzzle, many of the pieces are there--but they still need to be fit together before we can see the picture they form. Assembling that puzzle is Levine's research goal.

Levine gains insights into how and where a particular chemical compound fits into the overall system by giving test animals substances that block or enhance one or another aspect of the action of the chemical under scrutiny.

For instance, he found that a substance that acts like a body chemical called neuropeptide Y (NPY) increases feeding behavior in rats. When he gave the rats a chemical that blocks action of another class of feeding regulators called opioids, the NPY mimic lost its effect. From this, Levine was able to put together two tiny pieces of the puzzle, concluding that NPY depends on the opioid "cascade."

Levine also has his eye on feeding regulation at the genetic level. The genetic material in body cells contains templates that operate in assembly-line style to build the various chemicals that affect food intake.

It's not clear, however, just what it is that causes the cells to turn on or off the chemical assembly line. Levine is searching for the signal that tells the cell to make NPY so that it can be launched into the intake-regulating fray.

Levine admits that the work of assembling bits and pieces of the big picture is arduous. However, he's convinced it's worth the effort. "It's an extremely slow process, trying to find it all out," he says. "But eating is an extremely important activity. We'd like to understand how this whole system functions."

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AEA,BSS,CEO,V4,V8,F7,H2,R,T3

NHEC3886

**UNIVERSITY OF MINNESOTA
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NEWS/ INFORMATION

May 6, 1991

Source: William Boylan
 612/624-1727
 Writer: Sam Brungardt
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Editors: Call Marilyn Masterman (612/625-9251) or Sam Brungardt (612/625-6797) to obtain a b/w print or color slide to use with this story.

SHEEP DAIRYING HOLDS PROMISE AS NEW INDUSTRY

Think of dairy products, and ol' Bossy surely comes to mind. Perhaps nanny goats. But few of us would think of ewes even though about 100 million, or 10 percent, of the world's sheep, are milked, with much of that being done in Europe and the Middle East.

Actually, Americans are no strangers to products made from ewe's milk; last year, we ate about 45 million pounds of imported Pecorino and 1 million pounds of Roquefort as well as unknown quantities of other imported--and usually high-priced--sheep milk cheeses, such as Feta and Kasseri.

That we import so much is proof that a market exists for sheep milk cheese, and it may only be a while before our fledgling dairy sheep industry helps fill that demand, thanks in part to research by scientists with the Minnesota Agricultural Experiment Station.

William Boylan has been the force behind sheep dairying research at the University of Minnesota. His interest grew out of work he and fellow animal scientist Robert Jordan were doing to increase the productivity of sheep. In 1968, Boylan imported the Finnsheep, a breed that produces several lambs at a time. He says, "Although the Finn is crossed with other breeds all over the country, its impact's been

especially big here. Some Minnesota producers market a 225 percent lamb crop, compared to about 100 percent for the nation as a whole."

As the lambing rate increased with the use of Finnsheep and mortality dropped due to better nutrition and management, it became clear that ewes were having more lambs than they could provide milk for. This led Jordan to do much of the research that made possible the development of the milk replacers that producers now feed those extra lambs.

But, milk replacer isn't cheap, and Boylan wondered whether he couldn't better exploit the ewe's ability to convert forage to meat by increasing milk production. This led him to begin to research the milking ability of various breeds in 1983. That year, milk production was measured by weighing lambs before and after they nursed. Says Boylan, "We not only established the length of lactation but also found that ewes respond to demand--those nursing two lambs give substantially more milk than those nursing singles.

"But we decided, if we really want to get a handle on milk production, why not milk them? So, in 1984, we sat up a temporary milking parlor at Rosemount, which has since been replaced with a 48-stanchion parlor equipped with imported milking equipment in a building of its own."

Boylan's assessment of milking ability, lactation curves and milk composition continues, and the trials now include 14 established and synthetic breeds, including the Romanov from the Soviet Union and the Outaouais and Rideau from Canada. Variation within as well as between breeds is being measured, information that's needed if milk production

is to be increased genetically.

One finding was that the repeatability of milk production in sheep is quite high. That is, a high- (or low-) producing ewe will probably repeat that record of milk from one lactation to the next. "This is important," says Boylan, "because it means producers can raise their average milk production by simply culling the poor milkers."

Boylan yearns to import some East Friesian milk sheep, which produce up to 10 times as much milk per lactation as U.S. breeds. He says it would be easy to increase milk production by crossing the East Friesian with domestic breeds, maybe even create a dairy breed better suited to U.S. conditions than purebred East Friesians. However, USDA regulations designed to keep diseases out of the country prevent importations.

Instead, Boylan now looks to the progress that's been made with the Lacaune, the breed that produces virtually all the milk for France's famous Roquefort cheese. He says, "Originally, the Lacaune was not a good milk sheep; 15 or 20 years ago it probably produced about as much milk as our U.S. breeds do now. But they've selected for milk production to the point that I'm told the Lacaune in some cases outperforms the East Friesian. I can see no reason why we couldn't do the same with our breeds."

Boylan and Jordan have looked at aspects other than genetic improvement, such as evaluating sources of protein for lactating ewes. They also determined that producers could make about \$100 more per ewe per lactation by weaning the lambs at 30 days and then milking for 130 days. And, they point out, it doesn't cost much to get into sheep dairying, possibly around \$3,000, buildings not included.

After he began milking, Boylan asked University of Minnesota food scientist Howard Morris to see whether the milk would make good cheese. Since no one else was milking sheep, one problem was getting enough milk for a batch of cheese. It was Morris who determined that sheep milk--unlike cow milk--could be frozen without harming its cheesemaking properties. Boylan says this finding will be key to the development of the dairy sheep industry in the United States, where the few small flocks that are milked are many miles apart. Today, producers freeze the milk until they have enough to justify shipment to one of the few processors that exist.

For several years, Morris worked to adapt cheesemaking procedures for use with sheep milk, which is much higher in solids than cow milk. He developed processes for making many kinds of cheese, including Feta, Gouda, Manchego, Romano and Roquefort types. And, Boylan worked with a processor to determine that high-quality, commercially acceptable yogurt could be made from sheep milk.

What does Boylan consider his greatest contribution to the growth of the U.S. dairy sheep industry? Perhaps, he says, it was just demonstrating that sheep dairying is possible in this country and that the greatest limitation is the amount of milk that existing breeds produce, which, fortunately, can be increased over time.

Roger Steinkamp, president of the North American Dairy Sheep Association, which has about 100 members in a dozen states (with at least a third of them in Minnesota and Wisconsin), says the research has served as a focal point for the industry's development. He agrees with Boylan that marketing remains the biggest impediment to its growth.

Very few processors make sheep milk cheese because milk is not available in large quantities, and very few producers milk because so few processors buy ewe's milk.

Nonetheless, Steinkamp believes the industry will grow. The incorporation of sheep milk into the Pasteurized Milk Ordinance this year should stimulate interstate trade and facilitate the establishment of state standards for it. It will also enable Minnesota producers to be certified as Grade A dairies, the only allowable source of milk for yogurt and fluid milk. The idea of drinking sheep milk may seem odd, but it's sold in Great Britain as a dairy product for people who are allergic to cow and goat milk.

A few processors in the Northeast and Northwest already make cheese, yogurt and ice cream from sheep milk, and Steinkamp and his wife have been making sheep milk cheeses in their Hinckley, Minn., plant for three years. That the Steinkamps must buy milk from producers in Minnesota, Wisconsin and both of the Dakotas and still not be able to get all they could use is symptomatic of the challenges facing the industry.

Steinkamp appreciates the push that the research at the University of Minnesota has given the U.S. dairy sheep industry. He hopes the industry will develop with relatively small processors producing gourmet-quality products. But for processors to be able to get the milk they need, Steinkamp says research is needed that addresses the needs of the small producers who will likely be the mainstay of the industry for some time to come.

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AEA,BSS,CEO,V2,A2,D,E1,P1,S1,R,59,ND,SD,WI

NAGR3889

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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May 6, 1991

Source: Jim Orf
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NEW UNIVERSITY OF MINNESOTA SOYBEANS HONOR PIONEER SOYBEAN GROWERS

The University of Minnesota's Agricultural Experiment Station recently honored two pioneer Minnesota soybean growers when it announced the release of soybean varieties named for them.

The new soybeans are Bert, named for Renville County farmer Bert Enestvedt, and Leslie, named for the late Leslie L. Wright, who farmed in Dodge County. Both Enestvedt and Wright were instrumental in developing soybeans as a crop in Minnesota and in organizing the Minnesota Soybean Growers Association in 1962.

Bert is a Maturity Group I variety adapted to southern Minnesota. It is similar to Hardin in maturity (Bert matures about two days later), but yields more. In trials from 1985 through 1990 at Waseca, Lamberton and Fairmont, Minn., yields of Bert averaged 49.4 bushels per acre, compared to 45.6 for Corsoy 79, 44.5 for Hardin and 41.8 for Sibley. In regional tests from 1987 through 1989, Bert yielded an average of 44.6 bushels per acre, compared to 39.4 for Sibley and 43.0 for Sturdy.

Although Bert grows 3 to 5 inches taller than many of the varieties in its maturity group, it has good lodging resistance. Its other agronomic characteristics, such as protein and oil content, seed quality and weight and iron chlorosis tolerance are comparable to those of other

available varieties. Bert has the Rps1 gene, which protects it from Races 1, 2, 10, 11, 13-18 and 24 of Phytophthora.

Bert Enestvedt of Sacred Heart, the farmer for whom Bert was named, operates the oldest family-owned seed business in Minnesota. Enestvedt continues to be active in the Minnesota Soybean Growers Association. Last year, the American Soybean Association gave him its Honorary Life Membership Award in recognition of his work for the benefit of all soybean producers.

Leslie, another Maturity Group I variety adapted to southern Minnesota, also matures about two days later than Hardin. In tests at Waseca, Lamberton and Fairmont over the past six years, Leslie's yields averaged 44.4 bushels per acre. In regional tests from 1987 through 1989, Leslie posted an average yield of 44.4 bushels per acre.

Plants of Leslie are a couple of inches shorter than those of Hardin and have excellent lodging resistance. Leslie has above-average protein content and very good oil content--40.8 and 20.5 percent, respectively, in the Minnesota tests and 39.8 and 21.9 percent, respectively, in the regional tests. Leslie's resistance to Phytophthora also comes from the Rps1 gene. Other agronomic characteristics, such as seed size and iron chlorosis tolerance are equivalent to those of other available varieties.

Leslie L. Wright was the farmer for whom Leslie soybean was named. Wright, who died in 1979, farmed and operated a seed business near West Concord. In 1973, Wright won a trip to Europe for recruiting the most new members (122) for the Minnesota Soybean Growers Association. This was the most new members signed up by anyone in the United States that

year. In 1977, the American Soybean Association awarded him its Honorary Life Membership in recognition of his leadership, dedication and service to the soybean industry in Minnesota.

The Minnesota Agricultural Experiment Station has released 15 soybean varieties since 1982. Variety development has been facilitated by the Minnesota Soybean Research and Promotion Council's investment of checkoff funds in the Experiment Station's soybean breeding and genetics research program. The Minnesota Seed Producers and Promotion Association also provides support for variety development research.

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AEA, BSS, CEO, V2, F4, 12, 20, 34, 55, 67, 68, 79, 92

NAGR3895

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 7, 1991

Source: Ronald L. Phillips
612/625-1213
Writer: Sam Brungardt
612/625-6797

Editors: To obtain a b/w print to use with this release, call Marilyn Masterman at (612) 625-9251.

U OF M PLANT GENETICIST ELECTED TO NATIONAL ACADEMY OF SCIENCES

Ronald L. Phillips, a professor in the Department of Agronomy and Plant Genetics and in the Plant Molecular Genetics Institute at the University of Minnesota, has been elected to the National Academy of Sciences, an honor many consider second only to the Nobel Prize.

Phillips, who has been on the University of Minnesota faculty since 1967, teaches in his department and conducts research for the university's Agricultural Experiment Station. A pioneer in using biotechnology for crop improvement, Phillips guided the development of techniques to regenerate whole corn plants from small groups of cultured cells. He also pioneered new methods for crop improvement, including the production of corn with higher-quality protein. In addition, he has contributed significantly to the understanding of the genetic make-up of crop species.

Although he has used tissue culture to screen for genetic variants, Phillips' aim now is to understand what causes mutations to occur during tissue culture. He says, "These genetic variants can be a boon or a hindrance, depending on one's goal. We'd like to know how to control genetic variation during tissue culture, so we can induce it when we want it and suppress it when we don't. For example, mutations would be

desirable if one were trying to isolate cells resistant to a particular herbicide. But they would be undesirable if one were using tissue culture to increase the number of plants with only a single desirable genetic change."

Phillips holds a bachelor's degree in crop science and a master's in plant breeding and genetics from Purdue University and a doctorate in genetics from the University of Minnesota. In addition, he was a postdoctoral fellow at Cornell University. He is a fellow of the American Association for the Advancement of Science and a member of the Crop Science Society of America and the American Society of Agronomy. In 1988, he received the prestigious Crop Science Research Award.

The academy elected Phillips and another University of Minnesota faculty member, Daniel Joseph, a professor in the Department of Aerospace Engineering and Mechanics, to its membership at its April 30 meeting.

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AEA,BSS,CEO,V2,A2,F4

NAGR3898

NEWS/ INFORMATION

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 9, 1991

Source: Donald Wyse
612/625-7064
Editor: Sam Brungardt
612/625-6797

SPRAY-ON BIOLOGICAL CONTROL MAY CURB SPREAD OF CANADA THISTLE

Canada thistle, a persistent perennial that's on Minnesota's "10 most wanted" hit list of noxious weeds, may someday meet its match thanks to University of Minnesota weed scientists Donald Wyse and David R. Johnson. Wyse and Johnson, who have been seeking alternatives to chemical herbicides for getting rid of the pesky thistle, think they have found a biological control that might prove effective and easy to use.

The answer to the thistle problem may be a naturally occurring, bacterial disease that causes apical chlorosis in certain members of the composite family, which includes Canada thistle. The disease causes plants to turn yellow, then bleach nearly white and stop growing, thus slowly and perhaps eventually halting their spread. Diseased plants show a drop in the carbohydrate content of their roots and fail to produce seed, Johnson adds. The yellows disease had been noted in Canada thistle patches growing along Minnesota roads for many years.

This sort of biological control, Wyse says, "would reduce the need to use mowing and herbicides to control Canada thistle." Johnson's initial lucky hunch that Pseudomonas syringae pv. tagetis caused the thistle disease has been followed by months of tedious work. He had to isolate the bacterium in the thistle, culture it, reintroduce it to Canada thistle plants and replicate the disease before he could prove

that it is a valid and viable biological control.

Since a bacterial disease can only work if it can get into a plant's system, Johnson had to find an easy and effective way, other than the labor-intensive needle inoculation of individual plants, to get the bacterium into the thistle.

Spraying is normally not effective because the waxy surface of the thistle's leaves repels the water-based suspension. Johnson circumvented this problem by adding a detergent-like surfactant, organosilicone, to the bacterial suspension to break the surface tension and enable the bacteria to enter the leaves.

Johnson's research on the disease continues in the laboratory and will move outdoors this summer, to stands of thistle. Much work remains to be done before the biological control is ready to be passed along to landowners who need to control the thistle, Johnson cautions.

Canada thistle infests cropland and noncropland, especially roadsides, throughout Minnesota, according to University of Minnesota extension weed scientist Roger Becker. Because it's on the noxious weed list, he adds, landowners with thistles are required by law to get rid of it and usually resort to mowing or herbicides.

The research for a biological control for Canada thistle is funded by the University of Minnesota's Agricultural Experiment Station and the Legislative Commission on Minnesota Resources.

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AEA,BSS,CEO,V2,F4,P1,R,T2

NAGR3890

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 9, 1991

Source: Vern Packard
612/624-3611
Writer: Joseph Kurtz
612/625-3168

Editors, news directors: This release is suggested for use during June Dairy Month.

PRICE PREMIUMS, TEST PROCEDURES CONTRIBUTE TO HIGH MILK QUALITY

When you buy a gallon of milk from a store in the Twin Cities metropolitan area, the quality of the product you are getting is well above the minimum standards set by regulatory agencies. In fact, says University of Minnesota extension dairy technologist Vern Packard, "there's no milk in the country as good as that coming into the Twin Cities market."

The reason for this, he explains, is that most milk processing plants in Minnesota pay farmers a premium for producing milk that exceeds minimum quality standards.

Two important measures of milk quality are bacteria count and somatic cell count.

"Milk for drinking must have a bacteria count of no more than 100,000 per milliliter before processing," says Packard. "But in 1990, 61.3 percent of the samples of milk coming into the Minneapolis-St. Paul market had a bacteria count of less than 11,000 per milliliter."

Packard notes that milk for drinking is pasteurized before it goes on the shelf in a store. Pasteurization involves heating milk long enough at a high enough temperature to kill all disease-producing bacteria. The bacteria count must be 20,000 or less in the finished

product. The bacteria left after pasteurization are not disease-producing organisms, but can cause spoilage if the milk is not refrigerated.

Somatic cell count is a quality factor related to cow health. "Dairy plants pay a premium for milk with somatic cell counts lower than the standard set by regulatory agencies," Packard says. "They also pay a premium for low bacteria counts. As a result, there has been more significant improvement in milk quality in the last five to 10 years than in the previous 40."

Packard says the milk in the Twin Cities market also meets very high standards for freedom from drug residues. In 1990, analysis of 10,457 milk samples coming into the market showed nine positive for penicillin and one positive for a drug other than penicillin. Packard says tests now are much more sensitive than in the past, and detect residues in parts per billion. "One part per billion is the thickness of one credit card in a stack reaching from the earth to the moon," he says.

Samples of milk from individual farms are usually picked up from every shipment. These samples can be checked for quality or drug residues at any time.

"Milk receives more inspections from more agencies than any other food product," says Packard. "The dairy industry spends \$100 million per year testing milk, and this figure continues to increase. The dairy industry is more closely regulated by government agencies than any other food processing industry."

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AEA,BSS,CEO,V2M,V5,V6,V7,V8M,D,F6,F7

NAGR3897

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 9, 1991

Source: Ben Senauer
612/625-5724
Editor: Sam Brungardt
612/625-6797

HUNGER, OTHER PROBLEMS OF POOR BODE ILL FOR COUNTRY'S FUTURE

Many Americans have little contact with the poor, says University of Minnesota agricultural economist Ben Senauer. And, he adds, they'd be surprised to know that the economic future of the country may ride on curing the problems of poverty, such as hunger, lack of education and inadequate housing.

"The productivity of our economy depends on the skills and knowledge of the work force, which can be thought of as human capital," says Senauer, citing the view of Theodore W. Schultz, a Nobel Prize-winning economist, that expenditures on education, health and nutrition are investments in human capital.

"The human capital argument is particularly strong for children," Senauer adds. "A child's nutritional status can affect his or her physical and mental development and educational achievement.

"If we want to have the kind of highly productive labor force that can compete in the world economy of the 21st Century, we must be willing to make the necessary investments in the education, health and nutrition of today's children."

Senauer says easing the ills of poverty will require stepped-up federal programs, rather than more private charities, which are already at full capacity according to those who run them.

Much of Senauer's research for the University of Minnesota's

Agricultural Experiment Station deals with food stamps, and his related research into the overall issue of poverty has convinced him that the food problems of the poor, including hunger, diet-related diseases and poor nutrition, are closely connected to other problems of poverty. The fallout from poverty, in turn, he warns, could have a negative effect on the economy.

Senauer says attacking the problem of hunger needs to be accompanied by other programs. "Providing a social safety net is a public responsibility," he asserts. "That's not moralizing; that's what's in the long-term economic interests of the country."

Helping the nation's poor children overcome poverty is particularly crucial, he adds. "An increasing proportion of children are poor," he says. "We should be ashamed of the rate of poverty among children in what is one of the richest, if not the richest, countries on Earth. About one in five kids lives in poverty.

"That jumps to 39 percent for Hispanic and 45 percent for African American children. Poverty rates among children of many other minority groups, such as Native Americans, are also very high. And about half of all female-headed households with dependent children are below the poverty line. But if we set our minds to it, we can do something about it."

Observations that the rate of poverty is increasing are verified by the huge jump in applications for food stamps last year, Senauer notes, as well as the increase in the number of people using food shelves and getting meals in private, charity-run programs.

The poor have a higher rate of health problems and are more apt to

have nutritional deficiencies than those with more money, says Senauer.

Senauer cites statistics showing that poor children are more apt to have stunted growth, that poor women are more likely to be seriously overweight, that poor people in general have more nutritional deficiencies and that certain diseases, including diabetes, are more prevalent among the poor. Some of these problems, he notes, are due to a lack of food quality, not to a lack of any food.

To combat hunger and bad nutrition among the poor, federal programs such as Head Start and WIC (the special supplemental food program for women, infants and children) should be expanded to fill the increased need for them, Senauer says. The WIC program, which is run through local health clinics, has been found to be highly effective at improving the nutrition of poor mothers, infants and young children.

Although some people might object to an increase in government programs, Senauer believes they would object less if they viewed individual cases and if they understood that only a small portion of those in poverty are permanently poor. Welfare programs should offer job training opportunities and have strong work incentives, he says. The aim should be to get able-bodied adults into the work force with good jobs. The government needs to help the poor, he adds, to help ensure a sound future for the country.

Senauer discusses the food problems of the poor in "Food Trends and the Changing Consumer", a book he coauthored. The book will be published this August by Eagan Press.

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AEA,BSS,CEO,V2,V4,V8,A1,A2,A3,C1,F2,H2,H3,H5,N,T3,Y

NHEC3882

**NEWS/
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UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 9, 1991

Source: Ben Senauer
612/625-5724
Editor: Sam Brungardt
612/625-6797

FOOD STAMPS: MORE THAN JUST ADDED INCOME

If you've ever watched someone tear coupons from a food stamp book in the grocery checkout line--or perhaps torn out your own--you may have wondered, why bother?

Not that there's no merit in helping others get the nourishment they need. But why deal with the hassles and headaches of conspicuous little books, when the government could just provide money to buy food instead?

In the quarter century since the federal Food Stamp Program began, critics periodically have proposed such a change, contending that food coupons are expensive to administer and carry a stigma that limits participation. The assumption behind this argument is that money would have the same effect as food stamps in meeting the program's goal of improving nutrition in low-income households.

But research has shown that, when it comes to getting the most bang for the buck, food stamps win out over cash-only programs. "The traditional economic model predicts that the impact of food stamps on food spending will be the same as for an equal cash transfer for most households," says Ben Senauer, University of Minnesota agricultural economist who has extensively studied the economics of food consumption by America's poor for the university's Agricultural Experiment Station.

"What we have found, however, is that food stamps increase food expenditures of the recipient household more than if you simply gave

them cash."

According to Senauer, households spend an average of 25 to 35 cents more on food for each dollar's worth of food stamps they receive. (It's not a dollar-for-dollar correspondence because the added "income" allows recipients to shift some of their food money to meet other household needs.)

If support comes in the form of cash instead of coupons, that figure is more like 10 cents on the dollar. To arrive at this conclusion, Senauer and his colleagues studied data collected by the University of Michigan from some 5,000 households over several years. They analyzed patterns of food buying in low-income households to identify whether--and how--food stamps affected food purchases.

"Food stamps have a significantly greater impact on food purchases than an equal amount of cash income," they reported. This occurred even after the program's original requirement to pay a nominal amount for the stamps was eliminated--a move that many predicted would weaken the link between food stamps and increased food buying.

Why the difference between the addition of money and the addition of food stamps to a household's income?

"That's a bit of a puzzle," Senauer admits. However, the researchers offer a number of possible explanations. Most likely, Senauer says, people receiving food stamps feel a certain amount of gratitude and obligation to society that provides incentive for using the stamps for food. Also, food stamps may be controlled by a different person within the household than is cash, giving that person more

"bargaining power" in determining how much is spent on food. Or, Senauer says, it might be a reflection of the budgeting process used in households that get the stamps: if stamps are used for food toward the beginning of the month, it may be that recipients run out and have no choice but to use their own money for food until the next allotment arrives the following month, increasing overall expenditures on food.

The specific reasons behind the tendency of food stamp recipients to spend more money on food than they would had they received an equivalent amount of money await further research. But, Senauer says, the policy implications of the findings are clear: "Food stamps are more effective than increases in cash income in increasing the amount of money spent on food. If a major objective of the program is to increase recipient household food expenditures, then the food stamp program should not be cashed out."

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AEA,BSS,CEO,V2,V4,V8,A1,A2,A3,C1,F2,H2,H3,H5,N,T3,Y

NHEC3888

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 9, 1991

Source: Gerald Wagner
612/625-1978
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA PLANS DAIRY STUDY TOUR TO KENTUCKY

The University of Minnesota is planning a tour for this summer that will focus on dairy farms and other points of interest in the Lexington, Ky., area.

The annual Dairy Study Tour will be July 30-Aug. 6. It is for dairy producers, DHI technicians, extension educators and others in the dairy industry. The tour is sponsored by the Minnesota Extension Service and Department of Animal Science.

The tour will focus on 10 of the most modern dairy operations in the bluegrass area that includes Lexington, Frankfort, Paris, Louisville and Bardstown. Feeding, breeding, housing, herd improvement, herd health, calf raising, management and marketing dairy products will be topics of attention.

The tour group will visit other agricultural enterprises also, and there will be stops at the Kentucky Horse Park, Shaker Village, Makers Mark distillery and historic points of interest.

Qualifying farm operators may use the tour as a tax deduction. For more details and a tour brochure, contact Extension Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108-1030; phone (800) 367-5363 or (612) 625-1978).

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AEA,BSS,CEO,V2,V5,V6,D,WI

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**NEWS/
INFORMATION**

**UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
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May 13, 1991

Source: Jerome Hammond
612/625-2749
Writer: Joseph Kurtz
612/625-3168

Editors, news directors: This story is suggested for use during June Dairy Month.

DAIRY FARMERS ARE RECEIVING LESS OF FOOD BUYER'S DOLLAR

When you take a gallon of milk or a pound of cheese through the checkout line at the supermarket these days, the price you pay will be higher than it was 10 years ago. But the portion of the money that goes back to the dairy farmer will be smaller.

"The food marketing system took a steadily growing share of the retail sales dollar throughout the 1980s," says Jerome Hammond, University of Minnesota economist.

Hammond, who conducts research for the university's Agricultural Experiment Station, has studied retail price changes and distribution of the retail sales dollar for five key dairy products. He says retail cheese prices were almost stable throughout the 1980s. The retail prices for butter, whole fluid milk and lowfat milk increased moderately. Retail ice cream prices increased most dramatically, by almost 33 percent over the period.

Hammond calculated the dairy farm share of the retail price by multiplying the milkfat and nonfat solids components by the farm prices for those components. He did this for each of the five products. "For all products, the dairy farmer's share showed some decline during the 1980s," he says.

Hammond found that in 1980, when a retail customer spent a dollar on whole milk, 58 cents went back to the dairy farmer. By 1989, the farmer's share had dropped to 52 cents.

From a retail dollar for lowfat milk, the farmer received 49 cents in 1980, and 48 cents in 1989. From a dollar spent at the store on a pound of cheese, the farmer received 25 cents in 1980. This dropped to 23 cents in 1989.

In 1980, farmers received 29 cents of the retail dollar spent on ice cream. In 1989, this had dropped to 20 cents. For butter, farmers received 69 cents of the retail dollar in 1980, and 56 cents in 1989.

"These trends in farm share rather clearly reflect the changes that have occurred in farm milk prices since 1980," says Hammond. "Farm prices declined as the support price for milk was adjusted downward during the decade. The declining support prices were more heavily allocated to milkfat; therefore, we see greater farm share declines for butter than for dairy products containing less fat."

Hammond says several factors may account for the rise in the nonfarm share of the retail dollar. "Food marketing firms may possess market power that enables them to extract greater returns from the market," he says. "Changes may be driven by increased prices for marketing inputs such as packaging, labor, supplies and processing and handling equipment.

"On the other hand, while dairy farmers have continued to expand productivity, they have been unable to increase net returns. Instead, the gains are passed on as savings to buyers of milk and dairy products."

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AEA,BSS,CEO,V2,V8,A1,D,F7

NAGR3901

MSC 6827p

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 13, 1991

Source: Ted Labuza
612/624-9701
Editor: Dave Hansen
612/625-7290

Editors: Call Marilyn Masterman (612/625-9251) or Dave Hansen (612/625-7290) to obtain a b/w print or 35mm color slide to use with this feature story.

TRASH BASHING: THE FOOD SAFETY ANGLE

Plastic food packages: it seems you can't live with 'em, but you can't live without 'em, either.

On one hand, plastic food packaging protects food from spoilage and contamination, lengthens its shelf life, makes it easier to handle--even dresses it up a bit, enhancing the chance the product will jump out at cart-pushers maneuvering down the supermarket aisle.

On the other hand, plastic food packaging is bitterly ugly when it ends up as litter along the roadside or floating in our lakes and rivers. And it takes up hefty amounts of landfill space, an increasingly valuable commodity in our waste-full society.

As scientists and policymakers work to maximize the benefits and minimize the disadvantages of plastic food packaging, University of Minnesota food scientist Theodore Labuza and research assistant Claire Koelsch, a packaging expert, are on a mission of their own for the university's Agricultural Experiment Station. The two aim to make sure that, in the process of improving on the negative aspects of packaging, we don't undermine one of its main functions: food safety.

"A lot of people look at municipal solid waste from economic and logistics standpoints," says Labuza, an expert in the field of food

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packaging technology. Unless policymakers look at food safety issues of alternatives to conventional waste management, too, he cautions, they could just end up trading one problem for another.

Labuza and Koelsch recently reviewed the food safety implications of various means of minimizing the amount of plastic packaging that ends up in landfills. The summary they provide lends an important perspective to the waste-reduction policy fray.

The two researchers focused on the four waste management options most often offered as solutions to bulging landfills: source reduction, recycling, incineration and the use of biodegradable packaging. In each, they found some potential for compromising food safety. Whether the risk is an infinitesimal chance of introducing hazardous chemicals into the food or a drastic reduction in shelf life, Labuza and Koelsch say it's important to address the safety implications early in discussions aimed at reducing plastic packaging waste.

"Our purpose is to look at the whole area of solid waste, to see what impact new rules, regulations and directions are having on food safety issues," Labuza says.

Take the case of source reduction--industry talk for *reducing the amount of packaging used in the first place*. The volume of plastic food packaging that ends up in landfills could be substantially lessened if thinner plastics were used, if manufacturers shifted to a less bulky material or if foods were packaged in larger containers rather than in single-serving sizes.

Such modifications might seem like a can't-lose proposition. But, Labuza says, unless they're done with an eye to food safety, changing packaging to reduce the amount thrown away could spell trouble. He says, "There is a potential that, if one cuts down on the construction of the package, the protection it offers to food is decreased."

Another safety problem might occur, he adds, if manufacturers try to cut trash bulk by substituting a nonmicrowaveable package for a larger, microwaveable one: consumers who "zap" it anyway could find themselves gobbling unhealthy plastics by-products along with their quick-heated meal.

Recycling, the waste reduction option that probably has received the most attention, has food safety implications, too. "The greatest risk here is that (plastics might) be recycled back into the food stream," Labuza says. If, in their previous life or lives, the plastics had been used for food, that's probably not a problem. But if some container-conserving soul had decided to store weedkiller in the milk bottle last time around, there's a chance poisons would be taken up by the plastics and transferred to the next package made from it.

"The situation is very complex," says Labuza, "in that the environmental movement views recycling as a panacea but, in fact, it might lead to situations that might be very harmful to the consumer. Recycling has to be very carefully controlled to make sure contaminants don't enter the waste stream."

Because of the contamination potential, the U.S. Food and Drug Administration (FDA) requires that plastic food containers be made only from virgin materials. The bottom line: no matter how much we recycle, we will still need to manufacture plastics if we want to use them for food packaging.

How about incineration--burning plastic packaging with other trash--to reduce the demand on landfill space? Labuza and Koelsch say this alternative can affect food safety, too, though less directly. The major threat here comes if waste-burning facilities are sited near farmlands. Improperly operating incinerators can give off heavy metals and other poisons, which could be taken up by crops and animals that

eventually show up on our tables as food. And the ash they produce also may harbor toxins that would have to be kept out of the food chain.

Biodegradable packaging is another alternative that's been proposed. Conventional plastics have the well-earned reputation of lasting practically forever--a bonus if you're storing food in them, but not if you're trying to get them to degrade in landfills. To combat the negatives associated with this virtual immortality, packaging scientists have developed an array of plastics that fall apart when exposed to sunlight, bacteria or other degrading conditions, and they're hot on the trail of others.

Still, Labuza points out, materials scientists in search of biodegradable plastics are walking a fine line, trying to create a package that knows how to fall apart--but not until it's done its job. He says, "The FDA is concerned about the potential that it would be biodegrading while holding the food." If this were to happen, it could create an easy in for bacteria and other contaminants.

Labuza and Koelsch focus their research on what may be the ultimate in biodegradable food packages--packages that can be eaten rather than thrown away.

By testing various combinations of protein, starch, sugar and fat--all substances naturally found in food--the two hope to come up with an edible material that could be applied in a thin film directly to food without ruining its taste or looks, and protect the it from food-spoiling oxygen and moisture.

In this case, Labuza says, "the human would become the compost heap--we would degrade the package." By applying the "package" directly to food, one or more outer layers of plastics or paper could be eliminated, helping to lighten the landfill load while maintaining food safety.

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**NEWS/
INFORMATION**

May 13, 1991

Source: Cynthia Ash
612/625-7022
Editor: Jack Sperbeck
612/625-1794**BUYING PLANTS? START WITH HEALTHY ONES**

Beware the six-pack of pansies or marigolds with only four plants. Where are the other plants? Root rots, stem rots, seed decay or damping off diseases may have killed the other two.

These diseases are caused by organisms which could easily be introduced into your garden and cause problems. That's why you should check your plant purchases carefully, advises Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

Here are a few more tips to improve your gardening success:

--Avoid plants with yellow leaves and poor green color; stunted growth; missing, torn or spotted leaves and stems.

--Don't buy bulbs, tubers or corms with scabs, sunken areas or moldy growth.

--Place the plant material where it "wants" to grow. Plants placed in poorly prepared sites or the wrong location (for example, in a sunny location instead of a shady one) will be under stress and much more likely to have serious disease problems.

--Know how to maintain optimum plant health for all the plants in the garden or landscape. Water and fertilize as necessary.

--Control weeds--they can harbor diseases.

--Water at the base of the plant or at least early in the day.

Extended periods of moisture on the plant are necessary for the

development of many plant diseases. Thinning dense plantings of trees and shrubs will increase light and wind penetration and allow the area to dry more quickly. Mulching helps maintain an even supply of moisture to plants and decreases the amount of watering necessary.

--Purchase disease-resistant plant material when available.

Remember, last year's defoliation of ornamental crabapples which were not resistant to a disease called apple scab?

--Rotate the location of different types of plant materials each year. This includes patio containers.

--Develop an eye for problems. Many diseases can be controlled by early removal of the infected part of the plant.

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AEA,BSS,CEO,V8,G

NAGR3904

NEWS/ INFORMATION

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May 13, 1991

Source: Joe Conlin
612/624-4995
Writer: Joseph Kurtz
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DAIRY INDUSTRY BOOSTS MINNESOTA EMPLOYMENT, ECONOMY

The Minnesota dairy industry provides direct employment for some 40,000 people in the state. That's the total number of jobs involved in producing, processing and distributing milk and milk products, says Joe Conlin, University of Minnesota extension dairy scientist.

The industry also provides indirect employment to many others who provide dairy supplies, equipment and services, adds Conlin.

"In 1990, the sale of milk provided about \$1.2 billion in income to Minnesota farmers," says Conlin. "But that figure is likely to be lower this year because of plunging milk prices. Farmers currently receive about \$10.50 per 100 pounds of milk, or 84 cents per gallon. This is about \$3 less per hundredweight or 24 cents per gallon less than they received in 1990. It takes about 10 pounds of milk to produce 1 pound of cheese, so farmers are currently receiving \$1.05 for the milk used to produce 1 pound of cheese.

"The lower milk price has reduced the gross income from milk sales by over \$15,000 on a typical Minnesota dairy farm. Production costs typically range from \$10-15 per 100 pounds."

Conlin says milk is the largest producer of income for Minnesota's farms, accounting for about 20 percent of the total value of all farm

marketings in the state. Minnesota ranks fourth in the United States in the number of dairy cows and in pounds of milk produced.

About 18 percent of the milk produced in Minnesota goes into fluid products...the milk we drink. Most of the rest goes into cheese production, with small amounts used for other dairy products.

Average annual per capita consumption of milk and dairy products in the United States is 576 pounds, or 72 gallons. The average cow in Minnesota produces 14,093 pounds of milk per year, enough to supply milk for 25 people. The top 750 herds in the state average over 20,000 pounds of milk per cow per year. This is enough to supply milk for 35 people.

"There are about 15,500 dairy herds in Minnesota," says Conlin. "The average size of a dairy herd in the state is 50 cows. A typical dairy farm with a herd this size has \$350,000 invested and brings in \$75,000 per year from the sale of milk. Dairy farmers contribute to the economic base of Minnesota communities through the purchase of feed, machinery and other supplies and services."

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AEA,BSS,CEO,V2M,V4M,V8M,DM

NAGR3902

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 13, 1991

Source: Vern Packard
612/624-3611
Writer: Joseph Kurtz
612/625-3168

Editors, news directors: This story is suggested for use during June Dairy Month.

PROCESSING, CAREFUL STORAGE AND HANDLING HELP MILK KEEP LONGER

If you've noticed that the milk you bring home from the grocery seems to keep longer without spoiling than it once did, you're right. But it's not because of any preservatives added to the milk, says Vern Packard, extension dairy technologist at the University of Minnesota.

"All fluid milk sold in stores is pasteurized," says Packard. "This involves raising the temperature high enough and long enough to kill all disease-producing organisms. But it doesn't kill all the bacteria that cause spoilage. Processors don't add any preservatives to fluid milk. However, they have been using higher temperatures to kill more of the bacteria that cause spoilage."

Packard says the fluid milk you bring home from the store should last 14-21 days without spoiling. But that's if and only if you store and handle the milk properly.

"You need to store it in the refrigerator at 40 degrees F or below," he says. "Don't leave it out on the table for any extended period of time. It's also important to follow common-sense sanitation procedures. Keep fingers off the surface that the milk contacts. Don't cough or sneeze over the container opening, and close the opening when you aren't using the container."

Packard says consumers whose milk spoils sooner than it should or who have any other problem with quality should notify the retailer or processor. "Processors want to hear from consumers when problems exist," he says. "Their livelihood depends on the quality of their product. A problem with quality can put a processor out of business very quickly."

The pasteurization process that makes milk safe to drink has no effect on nutritional quality, says Packard. "Drinking raw milk is a health risk and does not provide any nutritional advantage," he says. "The nutrients in milk are not influenced by pasteurization."

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AEA,BSS,CEO,V8,F7,H2

NHEC3900

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 13, 1991

Source: Deborah Brown
612/624-7491
Editor: Jack Sperbeck
612/625-1794

HERE ARE SOME LAWN CARE TIPS FOR MAY

If you wish to fertilize your lawn once this spring, late May or early June is the best time, says Deb Brown, horticulturist with the University of Minnesota's Extension Service.

However, if you applied a pre-emergent herbicide and fertilizer combination in early or mid-May to prevent crabgrass seeds from sprouting, Brown says there's no need for additional fertilizer this time of year.

She adds that broadleaf weeds, such as dandelion, chickweed, plantain and creeping charlie, can be sprayed with herbicide whenever temperatures are fairly consistently in the 60s or 70s.

Brown cautions against spraying on a windy day; you don't want the material to drift onto desirable plants. Also, choose a time when no rain is forecast for a day or two. If necessary, you may repeat the application 10 to 14 days later, provided weather conditions are still favorable.

There's usually plenty of rainfall in May, but should we run into a dry spring, be sure to water the lawn thoroughly once a week. This is particularly important if you have recently sodded or sown grass seed, but it should also be done if you have fertilized.

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AEA, BSS, CEO, V8, GM

NAGR3905

NEWS/ INFORMATION

May 13, 1991

Source: Deborah Brown
612/624-7491

Editor: Jack Sperbeck
612-625-1794

PRUNE EVERGREENS SOON

Prune evergreens once you see new growth emerging, advises Deb Brown, horticulturist with the University of Minnesota's Extension Service.

In the case of pines, where new "candles" of young needles form at the tips of last year's growth, the only trimming you should do is to shorten each candle by removing one-half to two-thirds of it.

Brown says spruce can also be pruned this way, but because they have many lateral, or side, buds, they can be pruned further back, removing the new candles at the tip of a branch and actually cutting into last year's growth. She cautions, however, that this shouldn't be done too often; otherwise, you'll end up with a very unnatural-appearing tree.

Lower branches can be removed just about any time. However, Brown says it's very difficult to grow anything beneath evergreens. So, if the lower branches are healthy, leave them be.

Evergreens commonly used in foundation plantings, shrubs such as yews, junipers and arborvitae, grow differently from pines and spruces. Instead of one flush of new growth in spring, they continue to grow all spring and summer.

Brown says these evergreens can be trimmed several times over the growing season if necessary. Just be sure to wait until you see new

growth in spring...then leave some of it remain when you prune.

"And," Brown cautions. "Don't prune in late summer or fall. Pruning promotes new growth, which may not harden off well for winter, if the pruning is done too late."

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AEA,BSS,CEO,V7,V8,G

NAGR3906

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 13, 1991

Source: Cynthia Ash
612/625-7022
Editor: Jack Sperbeck
612/625-1794

IMPROPER COMPOSTING LEADS TO PLANT DISEASES

Although composting is a good way to recycle plant materials, improper or insufficient composting can allow plant diseases to persist, says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

When improper or insufficiently composted plant materials are used in the garden as incorporated organic matter or as a mulch, diseases can become a serious problem, Ash explains.

She says composting will kill plant pathogenic bacteria, fungi and nematodes if all portions of the compost pile reach temperatures of 130 to 160 degrees F for several days. To accomplish this, the pile must have a minimum volume of 1 cubic yard, be fairly moist but not wet and be turned regularly.

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AEA,BSS,CEO,V8,G,T2

NAGR3903

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 16, 1991

Source: Jeff Hahn
612/624-4977
Editor: Jack Sperbeck
612/625-1794

TAKE PRECAUTIONS AGAINST DEER TICKS, LYME DISEASE

Reduce your risk of exposure this summer to deer ticks, a potential carrier of Lyme disease.

You can be infected with Lyme disease anytime from February through November. But May, June and July are the highest risk months, says Jeff Hahn, entomologist with the University of Minnesota's Extension Service. This, he explains, is when the immature nymph stage is common and you're less likely to notice being bitten by this very small tick.

Hahn says the easiest way to avoid deer ticks is to stay away from hardwood forests and grassy fields in areas where they are known to be a problem.

If this is not possible, he urges taking precautions to protect yourself. Wear protective clothing, such as long-sleeved shirts and pants. Pants tucked into socks provides additional protection.

Hahn also has this other advice:

Walk in the middle of trails and avoid nearby grassy areas.

Apply repellents. Products that contain DEET work well and can be applied to clothing as well as the skin. Permanone, which contains permethrin, kills and repels ticks. Apply Permanone to clothes and allow to dry before wearing them; do not apply Permanone to the skin.

Periodically inspect for ticks on all parts of the body. On children, look particularly at the head and hair. Deer ticks are very

small and may be hard to see.

If an attached tick is found, carefully remove it with tweezers. Grasp it around the head as close to the skin as possible and gently, yet firmly, pull it out. Home remedies, such as covering the tick with Vaseline or touching it with a burning match, do not work.

Save any ticks found biting to be identified by an expert. Diagnosis can be difficult because of the presence of different tick species, immature ticks, male ticks and ticks engorged with blood.

The first visible sign of Lyme disease is often a red rash, although not everyone experiences this symptom. Fatigue, headaches, muscle aches, fever and other symptoms may be experienced. People who think they may have contracted Lyme disease should see a physician. Lyme disease is very treatable, especially when caught early.

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AEA,BSS,CEO,V8,G,H2,H8,T2

NNRD3907

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

May 16, 1991

Source: Jeff Reneau
612/624-4995
Writer: Joseph Kurtz
612/625-3168

HIGH MILK PRODUCTION DOES NOT COMPROMISE COW HEALTH

Dairy cows of today are as healthy as dairy cows of the 1940s, even though they produce nearly three times as much milk. A look at why cows leave dairy herds supports this conclusion, says Jeff Reneau, extension dairy scientist at the University of Minnesota.

"The University of Minnesota has records going back to 1931 on the reasons cows leave dairy herds," he says. "The life expectancy of a dairy cow today is no different than in the 1940s. If left to die of natural causes, a cow might live to be 15-20 years old or more. However, cows usually don't stay that long in the dairy herd. Their tenure in the 1940s and 1950s was six to seven years. Today's cows average about four years or 2.5 lactations before being culled from the herd."

In comparing data from 1943 and 1990, Reneau found that in 1943, six percent of the cows left the herd because they died. In 1990, seven percent died.

In 1943, 33 percent of the cows that left the herd were culled due to low production. In recent years, the cull rate due to low production has been 15-25 percent. "It has always been true that many cows leave a herd because genetically superior herd replacements can outproduce them," says Reneau. "Since individual dairy farm profitability is very dependent on improving individual cow milk production, economic pressure

has led to culling lower-producing cows."

In 1943, mastitis accounted for 15 percent of the cows leaving herds, according to Reneau. Today's figure is similar or slightly lower. Reproductive problems accounted for 10 percent of the cows culled in 1943, and 17 percent today.

In earlier years, 6 to 7 percent of the cows leaving herds were culled because of brucellosis or tuberculosis. These are diseases significant to public health that don't exist today.

"In spite of the 250-300 percent increase in average cow milk production, cows leave the herd today for basically the same reasons and at nearly the same frequency as they did years ago," says Reneau. "Although higher production increases physiological demands on cows today, improved dairy cattle genetics, feeding and management make higher production possible without compromising cow health."

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AEA,BSS,CEO,V2,V4,V7,V8,D

NAGR3909

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 16, 1991

Source: Deb Brown
612/624-7491
Editor: Jack Sperbeck
612/625-1794

GARDENING IS FOR EVERYONE

Gardeners are fully aware of the pleasure and sense of well-being they derive from coaxing seed and tiny plants into productive vegetables and colorful flowers.

But, you don't have to be a seasoned gardener to enjoy growing plants; one of the wonderful things about gardening is that just about anyone can do it. It's not even necessary to be physically fit and in the prime of life, says Deb Brown, horticulturist with the University of Minnesota's Extension Service.

She says, "With a little help and encouragement, children as young as three or four become excited about gardening when they're given their own small space to work.

"Seniors often have a long history of gardening, and they hate to give it up completely just because they move from a large house to an apartment.

"People who are physically challenged enjoy garden activities the same as everyone else, experiencing the same frustrations and rewards. Often, all that's needed to make it possible is an adaptation in equipment or gardening space."

Brown says container gardening allows many people to garden, including those who lack space for a garden or the physical ability to do the labor involved in ground beds. "A sunny balcony, deck or stoop is all that's needed," she says. "Plus, of course, containers large

enough to accommodate the plants' root development, and with drain holes so water can drain freely rather than collect and rot the roots.

"Containers may be raised to any convenient height, so people can garden standing, sitting, in a wheelchair or however they're most comfortable. And it's easier to keep an eye on plants in raised containers, both to watch for problems and to appreciate their growth."

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AEA,BSS,CEO,V4,V8,G,H1,E2,Y

NAGR3908

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 20, 1991

Source: David Smith
612/624-5369
Writer: Jennifer Obst
612/625-2741

Editors: Call Marilyn Masterman (612/625-9251) or Jennifer Obst (612/625-2741) for a b/w print or 35mm color slide to use with this story.

VISUAL DATA BASE FACILITATES DECISION MAKING AFFECTING WILDLIFE

Who knows where the tigers are? Or for that matter, the blue whales, spotted owls, wood lilies and all the diverse flora and fauna of this Earth?

In the last 12 years, while there's been increasing interest in documenting the loss of biodiversity, conservationists are still struggling to find ways to use that information, says Dave Smith, wildlife researcher with the University of Minnesota's Agricultural Experiment Station.

What would help, he believes, is a tool that would make biodiversity and habitat information visual. That belief brought him to the university's Remote Sensing Laboratory and a collaborative project which has resulted in a prototype conservation data base based on map imagery that can be used on a personal computer. It's a tool, Smith says, that can help decision makers visualize and interpret data.

"Conservation data bases have been built almost like museums. An enormous amount of data has been compiled into massive books, with pages and pages of text, but who's going to sort through all that information?" he says, adding that it has to be made meaningful and accessible to the people who need to use it.

Smith connected with the College of Natural Resources' Remote Sensing Laboratory when he began using satellite imagery as a base map to help him plan a survey strategy in his study of tigers in Nepal. He has been doing this work while stationed at a park in Nepal that has the highest density of tigers in the world. It's an old rhino sanctuary on a rich flood plain that, luckily for the rhinos and tigers, was infested with malaria. That's successfully kept people out until recently.

Smith's experience has made him very conscious of the competing needs that must be considered in conservation decisions. His surveys showed that, in Nepal, tigers extended far out of the national parks and wildlife reserves, the traditional focus of conservationists. He says, "If you look at the difference in the number of tigers, you realize that, if you are going to conserve tigers, you just can't do it with parks and reserves. So, the conclusion is, you have to begin influencing land use where you don't have jurisdiction. This is an important shift that people in conservation all over the developing world are beginning to realize."

And that requires an interaction between conservation goals, sustained development and the needs of local people, Smith says, "because if the needs of the people aren't being met, that wild land just is not going to survive."

It's in this arena that a visual data base becomes so useful. It can incorporate maps, pictures, even video of areas being discussed. Smith says, "When you try to talk about native habitat, how do you describe it in words? A picture can do it."

The Minnesota Agricultural Experiment Station project has potential applications around the world. Take, for example, conservation of tiger habitat. If pressures from local sources means some forest land needs

to be put into agricultural production, such a data base can be used to help show that, "Here is our distribution of tigers. Here's some land that can be used for development; here's some land we can't afford to lose," he says.

It's a fair distance from Nepal to Minnesota, where Smith has found the state sympathetic to his goals. "Minnesota is one of the leaders in the U.S. in being concerned about biodiversity, looking at it as a part of integrated resource management," he says.

Smith, by the way, has found that one tiger needs 20 to 40 square kilometers of good habitat, and he knows where that is. His data base, by helping decision makers visualize the diversity of a given habitat, may be an idea worth more than a thousand words or a million numbers. It can be one tool to help keep the world a rich and varied place.

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AEA,BSS,CEO,V8,F8,R,T2

NNRD3910

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 20, 1991

Source: Steve Laursen
612/624-9298
Writer: Martin Moen
612/625-6243

Editors, news directors: A press conference will be held at 3 p.m., Tuesday, June 4, in Room A of the College Center Building at St. Mary's College, Winona. Scheduled to participate are Mike Tuohy, Tuohy Wood Products Co., Chatfield, Minn.; Gerald Rose, Minnesota Department of Natural Resources; Minnesota state Representative Virgil Johnson of Caledonia; Nelson French of the Minnesota chapter of the Nature Conservancy and Mel Baughman, University of Minnesota extension forest resources specialist.

DWINDLING SUPPLY OF OAKS THREATENS ECONOMY

The loss of an abundant and healthy supply of oak trees in southeastern Minnesota, northeastern Iowa and southwestern Wisconsin could mean the loss of jobs in the forestry, wood products and tourism industries. Bringing back the oak resource is the focus of a conference scheduled for June 3-6 at St. Mary's College in Winona, Minn.

Despite their reputation for strength, durability and long life, oaks are difficult to regenerate. The conference will explore management techniques landowners can use to grow more oak trees. Experts from agencies, universities, industry and conservation groups will discuss the demand for oak and provide the latest research results on how oak forests can generate high-quality wildlife habitat, environmental quality, recreation resources and a supply of timber for wood products.

Registration will be Monday, June 3, while the opening session is scheduled to begin at 8 a.m. the next day. Most conference events are

scheduled between 8 a.m. and 5:30 p.m. An optional tour is scheduled for Thursday, June 6, from 8 a.m. until 2 p.m.

Registration for the conference is \$120 per person. Low-cost housing is available from St. Mary's College. A program and tours for spouses and children is also planned.

For registration information, contact Pat Roth at (800) 367-5363. Or write to her at EDS/Registrar, 405 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108-1030.

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AEA,BSS,CEO,V7,Z4,F8,F9,T2,IA,WI

NNRD3911

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

May 20, 1991

Source: Paul Rosenblatt
612/625-3120
Editor: Sam Brungardt
612/625-6797

STUDY SEEKS FAMILIES OF MINNESOTANS KILLED IN FARM ACCIDENTS

To help understand the long-term consequences of fatal farm accidents, University of Minnesota family social scientist Paul Rosenblatt is seeking to interview family members of those killed in farm accidents.

In recent years, about fifty Minnesotans have been killed annually on farms. "And that's 50 too many," Rosenblatt notes. "We would like to hear from family members of those killed either recently or long ago. We want to know how the accident happened, whether the family was able to stay on the farm, how the family reacted emotionally and what the family's later relations with one another and the community were."

Rosenblatt and Terri Karis, who are doing the study for university's Agricultural Experiment Station, will conduct interviews by phone or in person. Rosenblatt says he hopes that data gathered in the interviews may help families, communities and social service agencies deal with the consequences of fatal accidents in the future. Some of the information may be helpful in preventing farm accidents, he adds.

Family members who want to participate in the study may call Rosenblatt collect at (612) 625-3120 or write him at the Department of Family Social Science, 290 McNeal Hall, University of Minnesota, St. Paul, MN 55108-1011.

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AEA, BSS, CEO, V2M, A2M, F2M, F4M, DM

NAGR3912

NEWS/ INFORMATION

1400
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 23, 1991

Source: Paul Addis
612/624-7704
Writer: Phyllis Jenks
612/625-7793

EATING FISH DOES YOUR HEART GOOD

Fish knows no season when it comes to your health. Since fish is low in fat and cholesterol and high in protein, it's a naturally healthful food. But recent research shows that eating fish has even more pluses.

Paul Addis, University of Minnesota extension food scientist, says, "Eating fish with a high N-3 fatty acid content helps prevent heart disease. However, it is not because of its effect on blood cholesterol."

Addis' new publication, "Fish Oil and Your Health," disputes the common belief that lowering blood cholesterol is a panacea for good health. "Fish oil primarily helps prevent heart attacks by reducing blood clotting and, therefore, it is a moot point whether it raises or lowers blood cholesterol," states Addis.

In fact, researchers disagree on how cholesterol is affected by fish oil. "In any case," says Addis, "eating more high oil fish and less vegetable oil can go a long way toward better health."

And there's more good news: saltwater fish aren't the only fish that contain these important oils. Many Lake Superior fish have as high or higher quantities of N-3 fatty acids as do saltwater species. Addis recommends eating high-oil fish, whether it be freshwater or saltwater. Fish that are high in oil include herring, black bass, lake trout, mackerel, bluefish, salmon and whitefish.

Because cooking fish with vegetable oil diminishes health benefits, Addis advises that high-oil fish be grilled, baked or broiled; not fried. His recommendation: Two meals per week of fish high in N-3 fatty acids prepared without additional oil will do your heart good.

Two publications on fish oil, "Fish Oil and Your Health" and "Omega-3 Fatty Acid Content of Lake Superior Fish", are available from county offices of the Minnesota Extension Service. Ask for items HE-FO-5617-B and HE-FO-5618-B.

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AEA,BSS,CEO,V7,V8M,F7M,H2M

NHEC3913

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

May 23, 1991

Source: Jerry Wright
612/589-1711
Jim Anderson
612/625-8209
Editor: Sam Brungardt
612/625-6797

MINIMIZING GROUNDWATER POLLUTION TO BE TOPIC OF AUG. 1 FIELD DAY

Research on nitrogen, pesticide and water management to minimize groundwater pollution on irrigated sandy soils will be featured at a field day on Thursday, Aug. 1, at the Rosholt Water Quality Research Farm, west of Westport, Minn., in Pope County.

Wagon tours of research projects will run from 8:30 a.m. to 4 p.m. Scientists with the Minnesota Agricultural Experiment Station will share the results of their studies on herbicide movement in irrigated sandy soils and fate of nitrogen in corn grown under different tillage and crop rotation systems. Minnesota Extension Service specialists will discuss groundwater protection strategies for managing manure and selecting herbicides and site-testing tools for determining plant nitrogen needs.

Throughout the day, the public will be able to visit and ask questions at water quality-related displays by organizations, agencies and private businesses. There will also be seminars on agrichemical-groundwater quality monitoring trends and household water quality treatment options.

This is the fifth year of research at the Rosholt Farm, which is part of the University of Minnesota's Center for Agricultural Impacts on

Water Quality. The center, the Minnesota Extension Service, the WesMin RC&D Association and the soil and water conservation districts of Douglas, Kandiyohi, Pope, Stearns, Stevens and Swift counties are sponsoring the event.

For more information, contact Jerry Wright (612/589-1711) or Jim Anderson (612/625-8209).

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AEA,BSS,CEO,V2,C4M,F4M,T2M,21,34,63,78,80,81

NAGR3916

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

June 3, 1991

Source: Brent Woodward
612/624-4995
Writer: Joseph Kurtz
612/625-3168

BREED EPD AVERAGES IMPORTANT WHEN COMPARING BULLS

Beef cattle producers need to look at breed average EPDs (expected progeny differences) when comparing bulls for various traits. That is the recommendation of Brent Woodward, extension beef cattle scientist at the University of Minnesota.

"A bull with an EPD above zero for a certain trait is not necessarily above the breed average for that trait," explains Woodward. "EPDs are determined through comparison with a base population. This may be any group chosen and defined by the breed association. The base group is a genetic reference point for comparison.

"As genetic improvement occurs for a trait, and more animals become available that are genetically superior to this base population, EPD averages increase.

"A Hereford bull with a yearling weight EPD of 25 pounds might appear to be above the breed average. However, the 1990 average yearling weight EPD for proven Hereford sires is 33 pounds. Thus the bull with the EPD of 25 is eight pounds below breed average."

Most breed associations provide average EPDs for each trait, according to Woodward. They also usually include a range in EPDs for different groups. Most breed associations include these values in the preliminary pages of sire summaries. But, says Woodward, "there is a tendency to skip over them and turn directly to the sire listings."

He adds that percentile charts in the sire summaries are a good tool to use in determining where a bull ranks in the breed for a particular trait.

"Few bulls rank at the top for every trait," he notes. "You have to determine the priority of traits in your selection program based on your long-term breeding objectives."

EPDs are not useful for comparing bulls from different breeds. "The methodology to compute across-breed EPDs has not yet been perfected," says Woodward. "Until it is, comparisons of different breed bulls will continue to be subjective".

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AEA,BSS,CEO,V2,A2

NAGR3921

NEWS/ INFORMATION

140-10423p
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

June 3, 1991

Source: Jerry Schmidt
612/624-9799
Writer: Deedee Nagy
612/625-0288

ENJOY WASHINGTON, D.C., IN THE FALL

You can see the sights of Washington, D.C., in September and learn about our country's heritage and how government operates. The fall Know America Tour, sponsored and conducted by the University of Minnesota's Extension Service, will be Sept. 23 - 28.

The educational tour will include visits to the Washington Monument, Smithsonian Institution, Ford's Theater, Arlington Cemetery, the U.S. Capitol and many other landmarks of Washington, D.C., and the surrounding area.

Cost for the tour is \$850, which includes round-trip airfare, lodging for five nights, breakfasts, dinners, tours and bus transportation while in Washington. Participants stay at the National 4-H Center in a Maryland suburb of Washington, D.C.

The Minnesota Extension Service has conducted the Know America Tour for the past 16 years. When asked to evaluate a recent tour, one participant said, "I don't know how you can improve on anything as excellent as this has been."

For more information on the tour, write to Know America Tour, Earle Brown Center, 1890 Buford Ave., University of Minnesota, St. Paul, MN 55108 or phone (612) 624-9799.

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AEA,BSS,CEO,V4M,V5,E2M,SD,ND,WI

NEXT3920

**NEWS/
INFORMATION**

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

June 6, 1991

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

KEEP COWS 'IN THE STALL,' ECONOMIST ADVISES

A dairy cow "in the stall is better than no cow at all--even with \$10.50 milk." So says Earl Fuller, farm management economist with the University of Minnesota's Extension Service. "It's a poor producer that doesn't contribute something to help pay overhead costs on the dairy farm."

Before you let a stall stand empty by culling a "tail ender," estimate the sale value of the feed she would not eat if she wasn't there, he says. Then add \$100 to \$150 of annual cash expenses you wouldn't have if you didn't keep her, plus 10 percent of her value for interest on the investment you have in her. Compare that with the value of the milk she would produce.

"If those costs exceed the benefits you receive from the milk, then consider keeping the stall empty. Otherwise, keeping the barn full is a better strategy," Fuller says.

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AEA,BSS,CEO,V2,V4,D

NAGR3930

**NEWS/
INFORMATION**

**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM**
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

June 6, 1991

Sources: Don Olson
612/625-9292
Frank O'Connor
612/290-3652
Writer: Jack Sperbeck
612/625-1794**MINNESOTA FARMERS CONTINUE HIGH SIGN-UP FOR COMMODITY PROGRAMS**

Minnesota farmers enrolled over 80 percent of eligible corn and wheat in acreage reduction programs, according to a recent report by the USDA Commodity Credit Corporation.

The high 1991 sign-up continues a pattern of recent years, according to Frank O'Connor of the USDA's Agricultural Stabilization and Conservation Service Minnesota office in St. Paul.

Acreage reduction programs are "lucrative--the only game in town," says Steve Taff, public policy economist with the University of Minnesota's Extension Service. County extension agents reported over 12,000 people attended joint agency meetings on the 1990 Farm Bill, according to Don Olson, and extension service program leader.

For the corn crop, ASCS figures show 93,154 Minnesota farms, with 50,621 (54 percent) enrolled. Of Minnesota's 7.1 million base acres, 5.8 million are enrolled (81 percent).

For wheat, ASCS figures showed 42,371 farms, with 15,377 enrolled (36 percent). Of the 3.3 million base acres, farmers enrolled 2.7 million (83 percent).

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AEA,BSS,CEO,V2,V4,A2M,F4

NAGR3931

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

June 10, 1991

Source: Jerry Wagner
612/625-1978
Editor: Joseph Kurtz
612/625-3168

LEADING ANIMAL SCIENTISTS WILL TAKE PART IN NUTRITION CONFERENCE

Leading national and international scientists in the field of animal nutrition will be in Minnesota September 16-18, for the 52nd Minnesota Nutrition Conference and BASF Technical Symposium.

Conference and symposium sessions will be at the Holiday Inn--International Airport in Bloomington. Their content is designed for animal nutritionists, animal industry representatives, veterinarians, educators and livestock producers.

The BASF Technical Symposium will be Monday afternoon, Sept. 16. It will feature topics and speakers on:

"Managing Mastitis in Dairy Cattle through Nutrition," William Weiss, Ohio Agricultural Research Center;

"Managing Reproduction in Dairy Cattle through Nutrition," Jim Miller, University of Tennessee;

"Vitamin E Requirement of Beef Cattle: Influencing Factors," Cheryl Nockels, Colorado State University;

"Vitamin Stability in Premixes and Feeds: A Practical Approach," Mike Coelho, BASF; "Impact of Nutritional Factors in Enteric Bacterial Populations and Performance of the Weanling Pig," Alan Sutton, Purdue University;

"Mold-Nutrient Interactions in Grain and Feed," Mark Cook, University of Wisconsin.

Tuesday, September 17 will be devoted to ruminant nutrition. Speakers will be Nockels; Jerry Spears and Steve Rust, Michigan State University; Larry Chase, Cornell University; and Marshall Stern, Neal Martin, Jerry Olson, Hugh Chester-Jones and Pete Anderson, University of Minnesota.

The session on Wednesday morning, Sept. 18, will focus on swine nutrition. Featured speaker will be Ray King of the Animal Research Institute at Werriby, Victoria, Australia. His topic will be "Nutrition of Sows before and after Farrowing." Other speakers will be Gary Cromwell, University of Kentucky, and James Pettigrew, University of Minnesota.

The final conference session, Wednesday afternoon, will center on poultry nutrition. Speakers will be Cook; Jerry Sell, Iowa State University; Ken Koelkebeck, University of Illinois; and Paul Waibel and Craig Coon, University of Minnesota.

Pat Borich, director of the Minnesota Extension Service, will be the Tuesday luncheon speaker. He will address "The Future of Extension Livestock Education Programs at the University of Minnesota." Wednesday's luncheon speaker will be Sue Harlander, University of Minnesota food scientist. Her topic will be "Feeding the Consumer--How Safe is Biotechnology-Produced Food?"

Registration for the conference is \$50 in advance and \$65 at the door. Program and registration information is available from Extension Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108; telephone (612) 625-1214 or 1-800-367-5363.

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NAGR3932

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EDUCATIONAL
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405 Coffey Hall
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NEWS/ INFORMATION

June 13, 1991

Source: Deborah Brown
612/624-7491
Editor: Jack Sperbeck
612/625-1794

CLOVER IS TOUGH TO CONTROL IN LAWNS

Abundant rainfall in southern Minnesota has caused a bumper crop of white clover in lawns.

Even if there's no more clover than usual, it looks like more, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service. "Everything in the lawn has been growing so fast that the clover, with its larger leaves, appears bigger and more robust," she says.

Brown says most garden centers sell perennial clover seed to be mixed into the lawn; many--but not all--people like its looks and it is a tough plant. Unfortunately, it's also difficult to eradicate.

"White clover grows best in cool, moist weather, so the time to spray it with a herbicide is spring and fall," Brown says. "Temperatures should be consistently in the 60s, 70s or low 80s. You may be able to make two or three applications seven to 10 days apart in spring, then hold off during the heat of summer and resume spraying in autumn.

"Choose a broadleaf herbicide such as Trimec, a combination of 2,4-D, MCPP and dicamba. Use it when no rain is forecast for a day or two and the air is relatively calm. If it drifts onto trees, shrubs, flowers or vegetables, they'll be killed or damaged. Be careful not to soak Trimec into the soil beneath trees or near shrubbery because it can be picked up through their feeder roots."

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NEWS/ INFORMATION

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June 13, 1991

Source: Deborah Brown
612/624-7491
Editor: Jack Sperbeck
612/625-1794

PLANT FLOWERING ANNUALS FOR INSTANT COLOR

Even if you haven't had a chance to plant flower seeds outdoors this spring, you can still enjoy the beauty of colorful flowering annuals.

Most garden centers still have a reasonable selection of already blooming geraniums, begonias, marigolds, petunias and other bright summer flowers. Some will be in four- or six-packs; others will be good-sized plants potted individually.

These flowers can be transplanted immediately into the garden for instant color, or you can combine them in large containers to add interest to your main entryway, deck or patio.

Regardless of where they're growing, try to remove faded flowers before seeds develop and mature, advises Deborah Brown, horticulturist with the University of Minnesota's Extension Service. Once they set seeds, flowering annuals tend to produce fewer flowers.

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**NEWS/
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UNIVERSITY OF MINNESOTA
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405 Coffey Hall
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June 13, 1991

Source: Deb Brown
612/624-7491
Editor: Jack Sperbeck
612/625-1794

WAIT TO PRUNE SOME SHADE TREES

Many shade trees may be pruned safely in June. Their leaves are fully expanded, which means sap won't flow from pruning sites. (Sap flow isn't harmful to the trees, but it certainly alarms people!)

But not all trees should be pruned now, advises Deborah Brown, horticulturist with the University of Minnesota's Extension Service. Oaks are an important exception; they must not be pruned until July or later. Pruning in April, May or June leaves them more vulnerable to oak wilt disease.

Brown says elms should NOT be pruned during the growing season, if it's possible to avoid it. There's evidence the beetles that spread Dutch elm disease are attracted by the odor of fresh pruning wounds.

"Wait to trim paper birch until August, when the bronze birch borer is no longer active," Brown advises. "Then, prune it minimally, to remove dead or weakened branches or limbs that are too near the ground. Don't do a lot of unnecessary shaping; birch don't take kindly to heavy pruning."

Finally, although fruit trees can serve a dual purpose in the landscape, providing food and shade, Brown says they can't be pruned like ordinary shade trees. Fruit trees should be pruned in late winter or early spring: late February, March and the very beginning of April.

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**NEWS/
INFORMATION**

June 13, 1991

Source: Deborah Brown
612/624-7491Editor: Jack Sperbeck
612/625-1794**DANDELIONS POSE CHALLENGE FOR MANY HOMEOWNERS**

In spring, many people comment on the "beauty" of large expanses of blooming dandelions, their cheery golden flowers signalling that summer's on the way.

But it's a different story when dandelions are in their lawns, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service. "Call it peer pressure or the desire for an uninterrupted swath of green around the house," she says. "Most everyone wants to get rid of dandelions!"

If there aren't too many, Brown says dandelions can be removed with an old-fashioned dandelion digger. Soak the soil first with a lawn sprinkler or go out after a long, gentle rain. "You'll have better luck removing the entire root when the soil is soft and moist," Brown says. "If you leave much of the root behind, the dandelion will resprout."

Digging isn't for everybody, and Brown says it's fortunate that dandelions are quite sensitive to the herbicide 2,4-D, a growth-regulating compound that forces them to curl up and "grow themselves to death." Usually, one application takes care of them.

Spray 2,4-D in spring when temperatures are in the 60s, 70s or low 80s and no rain is forecast for a day or two, Brown advises. "Avoid windy days, when spray could drift onto other, desirable plants. Check

the lawn carefully for dandelions again next fall, and spray them when weather permits. By eliminating all dandelions in the autumn, there won't be any around to bloom next spring."

Brown says careful use of a "weed and feed" product should also prove effective against dandelions. The lawn should be moist when you spread it, so some of the granules will stick to the leaves of the weeds. If the granules wash right down to the soil, the herbicide won't have the opportunity to do its job.

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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St. Paul, Minnesota 55108

June 17, 1991

Source: Pat Huelman
612/624-1286
Writer: Pam Barnard
612/625-4730

TREES CAN HELP REDUCE HOME ENERGY BILLS

It's no surprise to Minnesotans that their homes' energy use is often directly related to the temperature outside. Public utilities know this and list the past month's average temperature to help explain higher-than-normal bills.

What many people don't realize is the influence sun and wind can have on energy use. In fact, says Pat Huelman, coordinator of the University of Minnesota's Cold Climate Housing Center, these two factors can be significant, and planting trees to intercept these natural forces before they reach the home can help conserve energy.

Planting for energy conservation in Minnesota means "achieving summer shade and winter wind protection while minimizing impact on winter solar gain and summer breezes," says Huelman. And although these basic principles may seem obvious, he says there's been only limited research on how trees can help reduce home heating and cooling.

Recent research conducted by the Cold Climate Housing Center and the university's Departments of Landscape Architecture and Forest Resources documented, with the help of computer simulation programs, the impact tree shading has on home heating and cooling. Major conclusions included:

--Trees planted west and east of a building are most effective in reducing total energy demand.

--Deciduous trees south of a home can increase winter heating costs more than they reduce summer cooling costs.

--Strategic tree planting can reduce energy demand for both homes and communities. However, the effects of tree shading on energy conservation and utility costs differ between northern and southern Minnesota.

Huelman notes, "In addition to increased tree planting, it is important to preserve existing trees and give them proper maintenance for improved growth and longer life."

For more information on home energy use, contact your county's office of the Minnesota Extension Service.

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**NEWS/
INFORMATION**

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June 20, 1991

Source: Cynthia Ash
612/625-6290
Editor: Jack Sperbeck
612/625-1794

FAIRY RINGS CAN BE PERSISTENT PROBLEM IN LAWNS

Mushrooms are common in lawns and natural areas following rains or irrigation. Cynthia Ash, assistant plant pathologist with the University of Minnesota's Extension Service, says mushrooms, which grow on organic matter (including thatch) are part of nature's recycling "workforce."

Unfortunately, she adds, some mushrooms cause dark green-to-dead arcs and circles in lawns called fairy rings. Each year, these circles or arcs grow larger.

Usually, a zone of stimulation forms where the mushrooms come up. Inside this is an area of poor grass growth or dead grass. Another zone of stimulation may occur inside the dead zone.

Fairy rings are hard to control, according to Ash. A workable, though impractical, solution is to dig the ring out of the lawn. Remove all soil to approximately 1 foot outside of the ring to a depth of 1 to 2 feet and dispose of it.

For those who decide to live with the problem, there are several ways to minimize damage to the lawn.

Do not allow thatch to become more than 1/2 inch deep.

Fertilize regularly but not excessively. Adequate nitrogen helps mask the dark green color of fairy rings.

Most of the fungal growth is in the ground under the ring, and it causes the soil to become nearly impervious to water. Use a "rootfeeder" attachment on a garden hose to punch holes at least every foot in this area and water well. Repeat frequently. Applying a wetting agent to the area prior to watering and aeration may also reduce damage.

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NEWS/ INFORMATION

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St. Paul, Minnesota 55108

June 20, 1991

Source: Cynthia Ash
612/625-6290
Editor: Jack Sperbeck
612/625-1794

ASH TREES SHOWING EFFECT OF ADVERSE WEATHER

Minnesota's ash trees have suffered from many problems in the last several years, says Cynthia Ash, assistant plant pathologist with the University of Minnesota's Extension Service.

Statewide, the most severe problems are due to adverse environmental conditions, primarily drought. Symptoms include branch dieback, smaller and fewer leaves and a light green leaf color.

Ash suggests removing dead wood and keeping ash trees well watered during dry weather. If soils are nutrient deficient or competition with other vegetation is great, a fertilizer should be applied in late fall or early spring.

If leaves are dropping, a tree may have ash anthracnose. Infected leaves have purple-to-brown spots that can range from the size of a pinhead to large brown or black blotches. There may be limited dieback of new stems. Most of the damage is found on inner and lower portions of the tree but may spread throughout the tree.

Ash says it's usually not necessary to use fungicides on healthy trees. They may be necessary, however, where anthracnose is an annual problem and the trees are unhealthy. First application of a fungicide should be made in spring, at bud break. Benomyl, mancozeb and thiophanate are currently labeled for control of ash anthracnose.

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NEWS/ INFORMATION

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St. Paul, Minnesota 55108

June 20, 1991

Source: R. M. Jordan
612/624-6784
Writer: Joseph Kurtz
612/625-3168

PUBLICATION PROVIDES BUDGETING FIGURES FOR DEER FARMING

Does raising deer have profit potential for farmers?

Information that can be helpful in answering that question is in a new Minnesota Extension Service publication.

The four-page publication, "A Deer Budget," provides estimated cost and income figures. Among the fixed costs it covers are those for breeding stock, fencing, shelter and handling facilities and debt service. Variable annual costs covered include veterinary services, fence maintenance, pasture and nonpasture feed. Income figures included are for the sale of calves for meat and breeding stock.

Author of the folder is R. M. Jordan, extension animal scientist at the University of Minnesota. "I am very enthusiastic about deer farming prospects, but also very aware of the hazards involved," he says. "Deer farming can be characterized as a high-capital, long-term venture."

"A Deer Budget" is available as item AG-FO-5644 from county extension offices in Minnesota or from the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-1030. Cost is 50 cents a copy, and Minnesota residents should include 6 percent sales tax. Checks should be made

payable to the University of Minnesota.

Another publication by Jordan, titled "Economic Potential of Domesticated Deer," is also available for 50 cents a copy as item AG-FO-3608.

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AEA,BSS,CEO,V2,A2,P1

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NEWS/ INFORMATION

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1420 Eckles Avenue
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June 20, 1991

Source: Cynthia Ash
612/625-6290
Editor: Jack Sperbeck
612/625-1794

WARM, WET WEATHER PROMOTES FIREBLIGHT

Warm weather and frequent thunderstorms can result in severe epidemics of fireblight, says Cynthia Ash, assistant plant pathologist with the University of Minnesota's Extension Service.

The name fireblight describes the symptoms this disease causes: dark brown-to-black blossoms, leaves and shoots, which curl up as though scorched by fire.

The bacterium that causes fireblight affects more than 130 species in the rose family, including varieties of apple, crabapple, pear, mountain ash, cotoneaster, hawthorne and raspberry.

Initial blighting of succulent tissues in susceptible plants is followed by movement of the bacteria into woody tissues. These infections are called cankers. New infections may occur any time during the growing season and are particularly common following thunderstorms or hail.

Ash says control is best achieved with management and resistant varieties. Avoid pruning heavily during the growing season because this stimulates excessive new growth, which is very susceptible to fireblight. Prune young trees annually in late winter or early spring and use a balanced fertilizer low in nitrogen.

Blighted twigs and branches are best removed in late winter.

Summer pruning is hazardous, but may be necessary to prevent spread of the disease in highly susceptible trees. Infected twigs and sprouts which are pruned in summer should be removed 10-12 inches below the point of visible infection with a proper pruning cut--do not leave stubs. It is extremely important that pruning shears be dipped for 5 seconds between each cut in a freshly made 10 percent bleach solution (one part household bleach to nine parts cold water).

Apples and crabapples resistant to fireblight are available; Dolgo, Haralson, Northwestern Greening, Red Baron, Sweet Sixteen, Adams, Centurion, Radiant, Red Splendor and Sargent have good resistance. Susceptibility to other diseases, especially apple scab, should also be considered when purchasing new trees.

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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June 20, 1991

Source: Jeffrey Hahn
612/624-4977
Editor: Jack Sperbeck
612/625-1794

HEAVY MAY RAINS MEAN MORE MOSQUITOES IN JUNE

The abundant rainfall last month will ensure high mosquito populations through June.

You can minimize mosquito bites by a combination of nonchemical and chemical methods, says Jeff Hahn, assistant entomologist with the University of Minnesota's Extension Service. Hahn suggests the following:

--Cut weeds and other grassy areas; they provide places where mosquitoes can hide.

--When possible, avoid outdoor activities during mornings and evenings; this is when mosquitoes are most active.

--Wear long-sleeved shirts and long pants for added protection.

--DEET, an effective repellent that can be found in a variety of products, can be sprayed on clothing or the skin. Apply only enough to lightly cover areas you wish to protect; it is important not to saturate clothing or the skin or apply repellent too often.

--Insecticides can be sprayed around homes and yards but their effects are temporary. Most pest control services can spray permethrin, which lasts up to two weeks. This insecticide is available to the public, although it may not be easy to

find. Malathion can also be used, although it lasts no more than a day or two.

Apply these insecticides at mid-day on shrubs, around buildings and other shaded areas. Mosquitoes are most likely to hide in these spots during the day and mid-day is when there is the least amount of shade. Be sure to read all label information carefully before applying pesticides.

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AEA, BSS, CEO, V7, V8M, GM

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EDUCATIONAL
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405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

NEWS/ INFORMATION

June 20, 1991

Source: Earl Fuller
612/625-1226
Writer: Jack Sperbeck
612/625-1794

ODDS LOW THAT DAIRY PROPOSALS WILL BE ADOPTED

The odds of dairy price proposals being adopted are not good due to the large federal deficit, says Earl Fuller, farm management economist with the University of Minnesota's Extension Service.

There are many proposals from legislative and industrial groups concerning changes in the 1990 Farm Bill due to low milk prices. "This will continue to be the case as long as political action committees contribute to legislative re-election funds," Fuller says.

"Dairy producers need to question the likelihood of these proposals being adopted. Most require additional governmental staff or funds, and the fiscal deficit is still an overwhelming national problem.

"Legislatures are having trouble finding funds for education and social services. Just because dairy price proposals are brought before the Congress--or even passed by one House--doesn't mean they've gone very far under these circumstances."

Fuller encourages dairy farmers to calculate benefits and costs of different management options, based on cost structure.

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AEA, BSS, CEO, D

NAGR3945

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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St. Paul, Minnesota 55108

June 24, 1991

Source: Larry Smith
218/281-6510, ext. 462
Editor: Sam Brungardt
612/625-6797

NORTHWEST EXPERIMENT STATION FIELD DAY IS RESCHEDULED TO AUG. 20

The Crops and Soils Day at the Northwest Experiment Station, Crookston, Minn., has been rescheduled due to severe hail damage to the research plots. The field day, which was to be on Wednesday, July 17, will now be on Tuesday, Aug. 20. It will be held in conjunction with a tillage clinic, which will run from 9 a.m. until 12:30 p.m.

The tillage clinic is being sponsored by 11 soil and water conservation districts, USDA's Soil Conservation Service, the Northwest and West Central Minnesota Initiative Funds and the University of Minnesota's Northwest Experiment Station and Minnesota Extension Service.

Persons desiring more information about the rescheduled field day or tillage clinic should contact the Northwest Experiment Station, Crookston, MN 56716 (phone 218/281-6510 extension 462).

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AEA, BSS, CEO, V2, F4M, Z1, Z7, ND

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**NEWS/
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June 24, 1991

Source: Pauline Boss
612/625-0291
Editor: Sam Brungardt
612/625-6797

Editors: Call Carl Walker (612/624-3708) or Sam Brungardt (612/625-6797) to obtain a b/w print or 35mm color transparency to use with this story.

REDRAWING FAMILY BOUNDARIES CAN HELP ALZHEIMER CAREGIVERS COPE

When Alzheimer's disease strikes, family members must not only deal with the devastating disease, but also with the challenges it poses to the family system, says Pauline Boss, a University of Minnesota family social scientist. Family members, she explains, may be uncertain about how the patient now fits into the family circle. Families who acknowledge and come to terms with the fact that the disease makes familiar family boundaries uncertain, or ambiguous, will deal better with the situation than those who don't.

For example, family members may agree that the Alzheimer patient is no longer able to help make decisions that affect the family and cease to expect his or her participation in decision-making. Or, they may decide that the patient is no longer able to perform a ceremonial role--say, carve the turkey at Thanksgiving. In this case, the family may agree to cancel the celebration altogether or to ask someone else to do the honors.

Boss says when caregivers and other family members feel less stress about the patient's and their own roles in the family, the patients themselves tend to be less agitated.

Realistically facing how the Alzheimer patient fits into the

family may lead to switching traditional roles. For instance, Boss says a woman who has never driven or gone anyplace alone may need to learn to drive and attend functions by herself. Or, a husband who has never prepared meals may need cooking lessons. Boss says other family members or members of the community can--and should--offer to help primary caregivers learn the new skills they need.

The uncertainty about whether an Alzheimer patient is still a part of the family, which Boss terms "boundary ambiguity," is a relatively new concept in family social science research. "Not much attention has been paid to it," Boss says. "However, I think if you want to study family health, the psychological health is as important as physical health."

Boss says boundary ambiguity can occur in many situations. In the case of Alzheimer's disease, the patient is physically present but psychologically absent. In contrast, in wartime, a family member may be physically absent but psychologically present.

How families cope with the changes imposed by Alzheimer's disease was the subject of a five-year study that Boss and research assistants Wayne Caron and Ann Garwick completed recently. The study, funded by the University of Minnesota's Agricultural Experiment Station and the National Institute on Aging, involved Alzheimer patients at the Veterans Administration Medical Center in Minneapolis and their families.

For the study, caregivers completed questionnaires that measured their level of uncertainty and their sense of being masters of their situation. Analysis of the answers plus interviews with caregivers and other family members resulted in five recommendations that may ease the psychological stress many

caregivers and other family members feel:

First, Boss says caregivers, other family members and medical personnel and other professionals who deal with Alzheimer patients must recognize that the uncertainty over whether the patient is part of the family is a major cause of stress for family members.

Second, there needs to be some sort of structure that lets families discuss their situation. "It's not therapy," Boss notes, "the family isn't sick, it's stressed." These family meetings should include all family members, not just the female members, who are the traditional caregivers.

Third, the family needs to be provided with as much information as possible about major and minor issues, ranging from options regarding primary medical care to the kinds of beds that are available.

Fourth, families should be able to choose the kind of support they need. Some will want to sit and talk with professionals, Boss explains, while others will want information only.

Fifth, Boss says family members should be encouraged to find some kind of meaning in their situation. Some may look at it as an opportunity to give something back to the patient. Or, they may feel that participating in studies such as Boss'es may help other families cope with Alzheimer's in the future. Boss says, "If they can find some meaning in it, they'll have less stress. If they think they must fix it somehow, rather than accept and find meaning in it, they'll have higher stress."

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AEA, BSS, CEO, V8, E2, F1, F2

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NEWS/ INFORMATION

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June 24, 1991

Source: Pauline Boss
612/625-0291

Editor: Sam Brungardt
612/625-6797

FLEXIBILITY IS KEY TO REINTEGRATING FAMILIES AFTER MILITARY DUTY

Flexibility is the key to a smooth reunification of families that had been temporarily separated by military service, a University of Minnesota family social scientist says.

Pauline Boss, who conducts research on family boundary ambiguity for the university's Agricultural Experiment Station, notes that most families merge again with few problems. A gradual transition from military to family and community life is the best way to get reaccustomed to civilian life, she adds.

"People think that coming home is the solution, but it can occasionally lead to problems," says Boss. These problems, she explains, are often the result of idealizing the relationship that existed before one spouse left for military duty or refusing to acknowledge that changes have taken place while they've been apart.

Persons in military service are apt to change less than those at home even though they may be thousands of miles away, Boss says, because their time-capsule world is narrow and constricted. Spouses left behind, on the other hand, have to manage on their own, and they may take on different roles and do many things they've never done before. Children, too, grow and change during

the absence.

Boss says, "Families may never again be quite the same and family members have to accept the changes that have taken place. Families that are flexible and don't insist on rigidly dividing roles will usually be able to adapt best. The people who will be in trouble are those who expect perfection."

Boss recommends that the re-entry process be gradual, starting--if possible--with the returnee spending a day or two alone, then spending a few days with the spouse. "Couples need to get to know each other again, because they're different people," says Boss. Next, parents and children should be together for a few days before other people in the family or community greet the returnee.

"People in the community should respect a military returnee's need to be alone, but they should be there if they need help," says Boss. "Most people can handle reintegrating fine on their own, but if there are problems, such as post-traumatic stress, the returnee may need to talk with peers or with counselors." Whether returnees will need additional help, Boss says, has more to do with how traumatic their experiences were rather than how long they served.

Some Persian Gulf War veterans want to talk about their experiences and others may be more reluctant, Boss notes. Spouses should be willing to let the returnees talk about their war experiences, but it may be more helpful to have them talk with peers who have been through the same thing.

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AEA, BSS, CEO, V8, F1

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**NEWS/
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405 Coffey Hall
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June 26, 1991

Source: Charles R. Blinn
612/624-3788
Writer: Richard Sherman
612/625-3154

ASPEN REGENERATION IS TOPIC OF NEW PUBLICATION

Until recently, quaking aspen, the most widely distributed timber species in North America, had little recognized commercial value. However, quaking aspen is now a valuable raw material for paper, waferboard and lumber.

A new publication from the Minnesota Extension Service tells landowners and forestry professionals how to regenerate aspen to improve future harvests. Regeneration, the re-establishment of trees on a site following a timber harvest, is an important objective in any forest management program. Aspen is particularly well suited to regeneration because harvesting activities can provide ideal conditions for re-establishment of a stand. However, there are situations where harvesting may not result in adequate regeneration.

The publication, "Regenerating Quaking Aspen: Management Recommendations", explains the regeneration process. It identifies where regeneration problems may occur and discusses harvesting and management practices that can improve regeneration. These management practices are based on past research as well as new information.

Photos in the publication show densely and poorly regenerating aspen stands in northern Minnesota, one-year-old roots emerging from a parent tree and shoot blight disease.

A photo of site disturbance caused by operating harvesting equipment on wet soils is accompanied by a diagram showing a harvesting method designed to maximize regeneration on sites that are potentially sensitive to regeneration problems.

Authors of the publication are Peter C. Bates of the University of Minnesota's Department of Soil Science and Charles R. Blinn and Alvin A. Alm of the university's Department of Forest Resources.

Cost of the publication is \$1.25 a copy. To order, send a check or money order payable to the University of Minnesota to the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-1030. Minnesota residents and businesses must add 6 percent sales tax or provide a tax exempt number. Ask for item NR-FO-5637-S.

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**NEWS/
 INFORMATION**

UNIVERSITY OF MINNESOTA
 EDUCATIONAL
 DEVELOPMENT SYSTEM
 405 Coffey Hall
 1420 Eckles Avenue
 St. Paul, Minnesota 55108

June 27, 1991

Source: Richard Goodrich
 612/624-2722
 Writer: Joseph Kurtz
 612/625-3168

ROBERT D. APPLEMAN, U OF M DAIRY SCIENTIST, DIES OF CANCER

Robert D. Appleman, 59, University of Minnesota dairy scientist, died June 21 after an extended illness with cancer.

Appleman had been at the University of Minnesota since 1973. He was internationally known for his extension and research work in milking equipment and milking procedures. He was also widely-recognized for his expertise on the subject of stray voltage in dairy operations.

Appleman was born in Kansas and held B.S., M.S. and Ph. D. degrees from Oklahoma State University. Before coming to Minnesota he spent eight years as an extension dairy specialist at the University of California--Davis and six years in teaching and research at the University of Nebraska.

He was a member of the American Dairy Science Association and the National Mastitis Council. He was named "outstanding dairy production alumnus" of Oklahoma State University in 1971. He received the Alfa-Laval Outstanding Dairy Extension Specialist award from the American Dairy Science Association in 1983. In 1985 he was named Outstanding Specialist in the University of Minnesota Extension Service.

He was co-author of a popular textbook on dairy farm

management practices, and wrote numerous technical and extension articles and publications in his field of expertise.

In 1988, he spend three months visiting public and private research institutions in Sweden, Denmark, Germany and The Netherlands. He studied recent bioengineering research and how it may become integrated into alternative dairy management systems.

In 1989 he initiated a new, interdisciplinary research project to study the influence of milking equipment on mastitis. Part of this project involved building a "Milking Equipment System Analysis" test unit, the most extensive of its kind in the world.

A memorial service was held June 25 at St. Christopher's Episcopal Church, Roseville. Appleman is survived by his wife, Rita, one son, three daughters, four grandchildren, and his mother.

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Source: Earl Fuller
 612/625-1226
 Editor: Jack Sperbeck
 612/625-1794

MODERN DAIRYING MEANS FARMING 'SMARTER'

"Dairy farmers are the hardest working group of farmers that I know of," says Earl Fuller, farm management economist with the University of Minnesota's Extension Service.

But working hard can lead to fatigue, and fatigue doesn't help you "farm smarter," Fuller says. Modern, high technology dairying requires you to farm smarter. It means using a pencil and dealing with a lot of "what if" questions, such as:

- Should I try to produce more milk?
- Should I get out of the dairy business?
- Is the ration right, or do I need changes?
- Are my costs under control?

These are questions that can be dealt with through partial budgets to project cost changes against expected returns. Or, for a complete budgeting perspective, use the FINPACK system, Fuller advises. It's available through Minnesota Extension Service offices, many vocational agriculture teachers and some creditors.

"Managing your dairy farm's financial future is a top priority when deciding whether dairying is the appropriate way to spend the rest of your life," Fuller says.

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Source: Bill Wilcke
 612/625-9733
 Writer: Jack Sperbeck
 612/625-1794

PLAN FOR WET CORN THIS FALL

The wet planting season is going to mean lots of wet corn at harvest time.

"Make early plans for handling high moisture corn," advises Bill Wilcke, agricultural engineer with the University of Minnesota Extension Service. Order special equipment or fuel early--to avoid the last minute harvest rush. You're apt to get a better price and installation service by planning ahead.

You may also avoid grain handling bottlenecks. "You're asking for trouble by putting in a grain bin on short notice without integrating it into your system," Wilcke says.

Here are some tips for handling corn that's wetter than normal:

--Harvest more silage. Beef and dairy farmers could reduce the need for drying by harvesting more whole-plant silage this year. "You may have old, unused upright silos that can be renovated," Wilcke says. Possible repairs include replastering, replacing corroded bands and missing doors, and fixing the unloader.

Another option for silage storage is to hire a custom operator who has a bag-packer to fill some silage bags. The cheapest silage storage option, but the one with greatest

spoilage losses, is to build temporary silage stacks covered with plastic.

--Store and feed high-moisture corn. Farmers who can feed high-moisture corn and have access to unused upright silos could renovate them for high-moisture corn storage. Older silos may need additional bands installed to withstand grain pressure. Corn should be harvested at 25 to 30 percent moisture for best fermentation.

--Avoid overdrying. Reducing overdrying will save energy, increase dryer capacity and reduce susceptibility to kernel breakage. Properly aerated corn that will be fed or sold by next summer can be stored at 15 percent moisture. Corn that will be fed during winter can be stored at up to 18 percent moisture.

--Use in-storage cooling or dryeration instead of in-dryer cooling. This will reduce fuel use and boost capacity of high-temperature dryers. In-storage cooling requires only a good, positive-pressure aeration system in a storage bin. Hot corn is unloaded from the dryer and cooled slowly in the storage bin. Dryer capacity is increased from 20 to 40 percent, and about one percentage point of moisture is removed from the corn during cooling.

Dyeration involves unloading hot corn into a separate cooling bin with a full-perforated floor and keeping it hot for 4 to 12 hours before cooling is started. After cooling, corn is moved to a normal, aerated storage bin.

--Use combination drying. This involves using a high-temperature dryer to dry corn from harvest moisture to 20 to 22 percent moisture, then using natural air to slowly dry it to 15

percent moisture. This takes 4 to 8 weeks.

"Unloading high-temperature dryers at 20 to 22 percent moisture boosts dryer capacity, saves gas and improves corn quality," Wilcke says. If you aren't equipped for combination drying because you have only high-temperature dryers and storage bins, you could convert some storage bins for natural air drying by adding full-perforated floors and bigger fans.

More information is available in publications AG-FO-1324, "Dryeration and In-Storage Cooling," and AG-FO-1325, "Combination High-Speed, Natural Air Corn Drying."

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