

MINNESOTA EXTENSION SERVICE

NEWS/ INFORMATION

July 2, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Jerry Schmidt
612/624-9799
Writer: Judy Keena
612/625-7047

ENJOY WASHINGTON, DC IN THE FALL

See the sights of Washington, D.C., in October! 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.

The fall's Know America Tour to Washington, D.C., sponsored and conducted by the University of Minnesota's Extension Service, will be October 15-20. The tour will feature visits to the Washington Monument, Smithsonian Institution, Ford's Theater, Arlington Cemetery, the United States Capitol and many more interesting places.

Cost of the tour is \$785, which includes round-trip airfare, lodging for five nights, breakfasts, dinners, tours and bus transportation while you are in Washington.

The Minnesota Extension Service has conducted the tour for the past 15 years.

When asked to evaluate it, one participant said: "I don't know how you can improve on anything as excellent as this has been."

"Everything was so fantastic, it's hard to criticize any part of the tour," said another.

For more information, 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,V6,E2M,SD,ND,WI

NESP3559

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

NEWS/ INFORMATION

July 2, 1990

Source: Jerry Wright
612/589-1711

Writer: Jack Sperbeck
612/625-1794

MINIMIZING GROUNDWATER POLLUTION IS FIELD DAY TOPIC

Research on nitrogen, pesticide and water management to minimize groundwater pollution from irrigated sandy soils will be featured Wednesday, Aug. 1 at the Rosholt Research Farm west of Westport, Minn.

Westport is located between Glenwood and Sauk Centre.

University of Minnesota scientists will discuss herbicide movement in irrigated sandy soils, and nitrogen rates and application timing for corn under different tillage and crop rotation systems. Other topics include manure management, chemical movement in the groundwater and land application of incinerator ash.

Wagon tours will run from 8:30 a.m. to 4 p.m. at the Rosholt farm. There will also be displays on pesticide container disposal and other water quality topics.

This is the fourth 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 is sponsoring the event, along with the Minnesota Extension Service, WesMin RC & D Association and the Pope Soil and Water Conservation District.

For more information, contact Jerry Wright (612) 589-1711 or Jim Anderson at (612) 625-8209.

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AEA,BSS,CEO,V2,V4,N2,Z3,Z7

NAGR3558

NEWS/ INFORMATION

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

July 2, 1990

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

BLACKCAPS ARE ESPECIALLY SUSCEPTIBLE TO ANTHRACNOSE

Anthracnose, a common fungal disease on red and black raspberries, is especially damaging to black raspberries. Initial symptoms appear in the spring on newly developing canes as small purple, slightly raised spots. As the lesions mature, they become ash gray, slightly sunken and may have a purple margin. Older lesions penetrate into the stem, drying and cracking the stem.

"Spots may develop on leaves during wet weather," says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service. "These are at first red or purple and about the size of a pinhead or smaller. As the lesions mature, they grow together, become light in the center and may drop out of the leaf."

How can control be achieved? Ash suggests the following:

- .planting raspberries where air movement dries foliage rapidly
- . eliminating weeds
- . using only disease-free plants when establishing new plantings
- . removing old cane stubs that have already borne fruit and
- . applying lime sulphur as a dormant spray in early spring.

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V7,V8,I2

NAGR3550

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

IS YOUR LAWN RUNNING YOU RAGGED?

It's a pleasure not to have to worry about drought killing the lawn this July, observes Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

With abundant rains falling in most of the state this May and June, grass has been growing like crazy. Says Brown, "The real problem has not been how to keep it alive, but how to keep up with it!"

Lawns need regular mowing, and watering when rainfall is insufficient. Other lawn care chores should be put on the back burner until the second half of August or early September.

Brown offers the following hot-weather lawn-care pointers:

.Don't use herbicides when temperatures are high and grass wilts easily. The herbicide will be less effective, and the grass is more likely to be damaged.

.Don't fertilize the lawn in midsummer unless you have an automatic sprinkler system or are committed to watering frequently. Fertilizing and watering will encourage more growth and lawns will require more frequent mowing.

.Sod anytime if you are willing and able to water daily. Don't seed in summer heat, though. You'll have much better results later when nights grow longer and cooler. By late August, there's less chance that weed seeds will sprout to compete with the grass seedlings.

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V7,V8M,I2M

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
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July 2, 1990

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

PROTECT YOURSELF FROM MOSQUITOES

It's going to be a good summer for mosquitoes due to above-average rainfall. Here are some ways you can avoid them.

"When possible, avoid being outside two hours before sunrise and two hours after sunset," says Jeffrey D. Hahn, entomology educator with the University of Minnesota's Extension Service. This is when mosquitoes are most active. They are more of a problem on overcast days, especially if there is little breeze.

When you share the outdoors with mosquitoes, wear long-sleeved shirts and long pants. Apply a repellent, such as DEET (N,N-diethyl-m-toluamide) to clothing.

Treat outdoor space with malathion, which lasts only a day or two. It is best applied at mid-day. Spray shaded areas, where mosquitoes are most likely to hide.

Pest control operators can apply Pramex (permethrin) to control adult mosquitoes for up to two weeks. Although this is a general-use insecticide, it is not available to the public.

Twin Cities residents who wish to temporarily eliminate mosquitoes for special occasions, can contact the Metropolitan Mosquito Control District. For a small fee they will spray Pramex if given advance notice.

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V7,V8,I2M

NAGR3546

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Source: Jean Kinsey
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Editor: Sam Brungardt
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EATING RIGHT COULD HAVE COST LESS, LOWERED SOME FARM INCOMES

Had Americans eaten what the 1977 U.S. Department of Agriculture dietary goals said they should from 1981 to 1985, they would have greatly increased the amount of wheat, rice and lentils in their diets and cut way down on eggs, pork, soft drinks, butter and other fats.

Monetarily, consumers would have spent about \$1 less a week on food in 1985, with poor people saving more proportionately than those better off. Net farm income could have fallen as much as 13 percent, and the cost for government support programs could have increased by 6 percent.

The above scenario was produced through a combination of data collection and computer simulation by agricultural economist Jean Kinsey, who conducts research for the University of Minnesota's Agricultural Experiment Station.

Kinsey says the results were not nearly as chaotic or economically devastating to commodity groups as agricultural groups had predicted in 1977, when they lobbied successfully for the USDA not to publicize the dietary goals.

Subsequently, the USDA issued nonquantitative guidelines, only to see other organizations, including the National Institute for Health and the American Heart Association, come out with diet recommendations that nearly duplicated the USDA's original goals.

"The agricultural community was concerned that demand for certain commodities would fall if these goals were publicized, so we decided to do this study to see what would have happened if people had actually followed the recommended diets," says Kinsey. "Our findings show that the fears were not well founded, although some commodity groups would not have benefited. Even if every consumer had eaten according to the recommended diet, the impact on major agricultural commodities would not have been detrimental."

Futhermore, she adds, the American diet has been changing and--except for fat consumption--these changes are congruent with the recommended dietary guidelines. That is, consumers are reducing the amount of red meats, high-cholesterol foods and sugar in their diets. "These dietary changes are taking place anyway, despite the fact that the USDA is not taking the lead in recommending them," Kinsey asserts.

For her study, Kinsey used 1977-78 USDA data on food consumption to see how food consumption would have been altered had U.S. residents eaten according to the recommended diet, with allowances made for the change in demand and price over the five-year simulation period. Next, she made projections to see what impact the dietary changes would have had on consumer prices and on commodity demand and what the economic impact would have been on various commodity groups.

Consumption of wheat and rice would have risen nearly 50 percent (45.8 and 52.8 percent, respectively), sending farm receipts for those commodities up 17.4 and 30.0 percent, respectively. Likewise, chicken and turkey operations would have increased their cash receipts by more than 10 percent.

On the other hand, egg producers would have seen a drastic decline in income of about 50 percent, and pork producers would have experienced a decline of approximately 40 percent.

There would also have been bad news for corn and soybean growers, since a reduction in corn-oil sweeteners and soybean oil were among the items proscribed by the diet; following the recommendations would have decreased soybean producers' incomes by 3 to 11 percent, while corn farmers' incomes would have declined 3.7 percent.

Dairy farmers' incomes would not have changed, because of government price supports. However, consumers following the dietary recommendations would have caused a great decrease in consumption of butter and cheese, leaving the government to buy up these items to maintain price supports.

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AEA,BSS,CEO,A1,E6,H1,I1

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UNIVERSITY OF MINNESOTA
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July 9, 1990

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

DON'T USE JUST ANY OLD WOOD IN GARDEN, YARD

It's the season when Minnesotans spend time in their yards and work in their gardens. Construction projects are often on the "to do" list, as people improve their outdoor space, building decks, terraces, planting boxes and edgings around garden borders.

Before starting such a project, Deborah Brown, horticulturist with the University of Minnesota's Extension Service says, "Give some thought to the wood that will be used. Because it's outdoors, subjected to rain and snow, you can't use just any old wood. Cedar and redwood are naturally resistant to rotting. Pressure-treated fir can also hold up well."

Brown warns that lumber treated with creosote or penta (pentachlorophenol) can be a problem in the garden. Usually no problem when used exclusively with grass and shrubs, it can be with flowers, fruits and vegetables which are more sensitive. New railroad ties can release preservative into the soil, and also give off damaging fumes in hot weather. Old, weathered ties usually pose no threat to the garden.

Brown says look for wood treated with CCA (chromated copper arsenate) or ACA (ammoniacal copper arsenate) if you plan to use treated wood in the garden or landscape. "These preservatives bind so tightly in the wood that they don't harm plants in any way. CCA is more commonly used. This treated wood often has a greenish tint, but can be found with a brown tint, too."

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V7, V8, I2

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UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
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July 9, 1990

Source: Doug S. Foulk
612/624-6220
Editor: Mary Kay O'Hearn
612/625-2728

JUNEBEARING STRAWBERRIES NEED JULY RENOVATION

Established Junebearing strawberry plants need yearly renovation to remain healthy and productive. Renovation improves plant vigor, encourages runner production and controls foliage diseases such as leaf spot and leaf scorch.

Renovation should begin after the plants have finished bearing. "Remove the foliage with a lawn mower or by hand," says Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service. "Set the mower high enough so that the crowns of the plants are not damaged. Although the plants will look devastated, it is a temporary look and they will quickly produce healthy new leaves and many runners."

One or two weeks after removing the foliage, thin the plants. The oldest plants, usually those with the tallest crowns, should be removed. The row, normally maintained 12-18 inches wide for highest quality fruit, should then be rototilled or hoed to a width of 6-10 inches. When new runner plants are produced, the rows will be the correct width.

If desired, fertilize plants at renovation time. Apply a 10-10-10 granular fertilizer at a rate of up to 2-1/2 pounds per 100 feet. "Never apply fertilizer later in the growing season as this will

increase the chances of winter injury," Foulk cautions. Everbearing and dayneutral strawberries do not require renovation. However, for best quality fruit on everbearing and dayneutral types, Foulk suggests removing all runners as they appear. Yield and fruit quality of all strawberry types decline over time, so replace the planting every three to five years.

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V7,V8,I2

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July 9, 1990

Source: William G. Olson
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Writer: Joseph Kurtz
612/625-3168

WATCH FOR BLOAT WHEN TURNING CATTLE INTO LEGUME PASTURES

Dairy and beef producers who move hungry cattle into lush legume pastures should watch the animals for bloat. Bloat can develop rapidly and kill an animal in a short time, notes William G. Olson, University of Minnesota veterinarian.

"Bloat is most likely to occur in cattle grazing alfalfa on warm, moist days when plants are growing rapidly," says Olson. "When cattle are hungry and are first turned into alfalfa, they often eat a lot, making bloat more likely."

Olson says feeding animals some dry hay or other feed to reduce their appetite before turning them into new alfalfa pasture will reduce the chance of bloat occurring. He also recommends keeping an eye on cattle first turned into new alfalfa.

"Bloat can occur within an hour after turning the cattle into the pasture," he says. "Affected animals are in distress and are fairly easy to spot. Their rumens become highly distended with gas on the left side, so you can't see the vertebrae above the ribs. The pressure from the gas can rupture blood vessels and damage internal organs. Death can ensue within an hour if there is no relief."

Olson says the worst thing to do is to let bloated animals lie down. "Get them out of the pasture," he advises. "Keep them moving. This may help them belch up gas."

Some producers may have experience treating bloat themselves. Various remedies have been used successfully. In very serious cases, it may be necessary to make an incision in the wall of the abdomen and rumen to relieve the pressure from the gas. "If you haven't treated it before, call a veterinarian," is Olson's advice.

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AEA,BSS,CEO,V2,A2,D

NAGR3560

NEWS/ INFORMATION

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Sources: Mike Murphy
612/625-8787
Christine Miller
612/463-3302
Writer: Joseph Kurtz
612/625-3168

HOARY ALYSSUM, BLISTER BEETLES IN HAY CAN HARM HORSES

Horse owners should make sure the hay they buy does not contain large amounts of hoary alyssum. This weed contains a substance that is toxic to some horses, says Mike Murphy, a veterinary toxicologist at the University of Minnesota.

Hay can also be contaminated by a toxic substance from an insect--the blister beetle. Murphy is investigating the recent deaths of two horses in Dakota County, Minnesota, and says hoary alyssum or blister beetles may have caused the deaths. He adds that populations of both the weed and the insect are on the increase this year in most of Minnesota.

Christine Miller, extension agent for agriculture in Dakota County, says the horses that died had been eating hay that contained approximately 40 percent hoary alyssum on a dry matter basis. She says this year's weather is causing the weed to grow extensively in some alfalfa and hay fields, and it seems to fill in areas of alfalfa fields damaged by winterkill.

"Persons mowing hay should mow around areas of hoary alyssum," says Miller. "Once the weeds are cut, they are not that noticeable mixed in with the alfalfa."

Miller says the toxin in hoary alyssum can cause horses to "stock up," or swell in the legs. It can also cause founder, fever, diarrhea and other symptoms.

Miller says hoary alyssum, although difficult to control, can be suppressed with herbicides.

Blister beetles have caused the death of horses in the Southwest, according to Murphy. Blister beetle populations tend to be high following years when grasshopper numbers were high, since blister beetle larvae feed on grasshopper eggs. The drought conditions of the past two years seem to have increased beetle numbers.

"Blister beetles contain a potent natural toxin, cantharidin," says Murphy. "The beetles are often harvested with the alfalfa and, depending on the type of mower or windrower, large numbers of beetles may be crushed during harvest and trapped in bales. The cantharidin can remain active in the bales indefinitely."

Miller recommends that horse owners buy hay from a local source they know and trust. "Having a trusting relationship with your hay supplier is probably your best protection from getting contaminated hay," she says. "Hay producers should be willing to let buyers assure themselves that hay is as free as possible of toxic weeds and insects."

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AEA,BSS,CEO,V2,V4,V7,F1,K

NAGR3562

Mac/9A-2-p

MINNESOTA EXTENSION SERVICE

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

Source: Dan Putnam
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Writer: Jennifer Obst
612/625-2741

U OF M RESEARCHER INVESTIGATES POTENTIAL OF ALTERNATIVE CROPS

It unusual to see canola, forage turnip, yellow mustard, flax, annual canarygrass, buckwheat, cowpea, adzuki bean, fababean, fieldpea and white lupin growing row-by-row anywhere, but especially in Minnesota.

However, visitors to the Southwest Experiment Station's Summer Field Day June 27 saw a demonstration plot of these crops. And you may eventually see more of these alternative crops in Minnesota farmers' fields if University of Minnesota research agronomist Dan Putnam has his way.

Putnam spoke at the Lamberton field day about the research he is conducting for the University's Agricultural Experiment Station to investigate the potential of these crops: "Why are we interested in these crops? Because crop diversification is important, both to decrease biological risk, to increase our options for rotation and to spread out and, therefore, hopefully reduce economic risk."

He discussed recent research on amaranth, which was a staple crop of the Aztecs. There's been increased interest in amaranth over the past 10 years, he said. It's now grown in Mexico, India and Africa, and may have a place in the Minnesota crop mix. "Markets are expanding but uncertain," Putnam said. "Amaranth makes a pretty good additive to other flours. There is an amaranth pancake mix on the market, and popped amaranth is being marketed as a snack product." Amaranth has sold for 40 to 50 cents a pound, which is a reasonable rate of return, Putnam said.

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AEA,BSS,CEO,F1M

NAGR3565

NEWS/ INFORMATION

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Source: Doug S. Foulk
612/624-6220
Editor: Mary Kay O'Hearn
612/625-2728

FRUIT PESTS CAN MEAN LESS-THAN-PERFECT RASPBERRIES

Summer-bearing raspberries are usually easy to grow, but fruit pests can occasionally upset the July harvest. Fortunately, control is possible.

Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service, cites the following:

Picnic beetles: These insects can be found feeding on the berries at picking time. Easily identified, picnic beetles are a little less than 1/4 inch long, shiny black and have two or more yellow spots on each side of the body. They are attracted to overripe fruit so control is simple: keep fruit picked as it ripens.

Fruit rots: Fruit rots may develop during warm, wet weather. Ripe berries may become soft, watery and moldy. Fruit rots, like picnic beetles, usually affect overripe fruits. So, frequent picking of ripe berries is the control here, too.

Crumbly berries: If raspberry plants appear to be thriving but the berries are small and crumbly, poor pollination may be the cause. This is usually the result of bad weather at bloom time or insecticide use during bloom.

If the plants seem stunted or have yellow, mottled, curled or puckered leaves, then it's probably virus. Raspberries are susceptible

to a number of viruses, including raspberry mosaic, raspberry leaf curl and tobacco ringspot. "Remove all raspberry plants exhibiting such symptoms, roots and all," Foulk advises. "If infection is widespread, remove the entire planting and do not establish a new planting in the same site."

When planting raspberries, always purchase new plants, virus indexed if possible, from a reputable source. Select virus-resistant cultivars when possible. Foulk says Nordic, which was developed by the University of Minnesota's Agricultural Experiment Station, and Algonquin are two cultivars resistant to the aphids that transmit mosaic virus. Other reportedly virus-resistant cultivars are Reveille, Canby and Haida.

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V7,V8,I2

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Sources: Dick Levins
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William Lazarus
612/625-8150
Mike Schmitt
612/625-7017
Writer: Jack Sperbeck
612/625-1794

FARMERS OFTEN APPLY TOO MUCH 'INSURANCE' NITROGEN TO MANURED CORN

Applying 100 pounds of nitrogen you don't need to corn doesn't just cost money; it can pollute both the ground and surface waters.

A new University of Minnesota study found that nitrogen applications to manured corn--from both manure and commercial fertilizer--were about 100 pounds higher per acre than they were on unmanured corn.

"Surveyed farmers were crediting average nitrogen from manure to be substantially below research-based estimates of manure nitrogen," the study report says. "And that's even after handling, storage, application and timing losses were considered." The University's Center for Agricultural Impacts on Water Quality financed the study, which was conducted by faculty in the Department of Agricultural and Applied Economics. Economists Thomas Legg, William Lazarus and Richard Levins headed the study. The report says, "Manure varies in its nitrogen content. As a result, farmers often apply some extra nitrogen to offset the risks associated with variable manure quality."

However, the farmers surveyed underestimated the consistency, or overestimated the variability, of the nitrogen in their manure.

"The result is more 'insurance' applications of extra nitrogen than are apparently needed," the report says.

Some of the surveyed farmers used published estimates, or research results, to estimate the nitrogen in their manure. This allows managing the manure like commercial fertilizer. "Results were good in these cases," the report says. "These examples support the published estimates of the nutrient content of manure."

The study was based on information on the karst soils area of southeastern Minnesota and southwestern Wisconsin, which has a permeable limestone bedrock with many cracks and fissures. The area consists principally of ridges, valleys, creeks, rivers and steep fields.

Because of the topography, large-scale farming is difficult. Farms are typically 300- to 500-acre mixed crop and livestock operations. The combination of geological characteristics and land use patterns has resulted in elevated nitrate levels in both ground and surface waters.

"Many farmers can save money by careful crediting of manure nutrients," says Thomas Legg, an economist who interviewed many of the farmers. "In addition to saving on nitrogen applications, there can also be substantial savings for phosphorus and potassium."

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AEA,BSS,CEO,V2,V4,A1,A2,D,B2,F1,L3,P1,WI

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NEWS/ INFORMATION

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Source: Ken McNamara
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Writer: Jennifer Obst
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RESEARCH LOOKS AT ROTATION EFFECT UNDER LOW FERTILITY

There's still no definitive explanation for the rotation effect. Nevertheless, ever more data establishes its value, and University of Minnesota agronomist Kent Crookston, who has studied the phenomenon for years, encourages farmers to exploit the rotation effect even though it's not fully understood.

A new study at the Southwest Experiment Station at Lamberton is investigating the rotation effect under low fertility. The object, according to University of Minnesota agronomist Ken McNamara, is to see whether the rotation effect can be further exploited.

The Lamberton station's Koch farm is an ideal location for this kind of research, McNamara explained, because it has never been treated with applied fertilizer. "So," he said, "we can find out if the rotation effect is even higher under low fertility, and if so, can we perhaps take better advantage of the rotation effect?"

The research is comparing several rotations, including corn-soybean, corn-soybean-oat and corn-soybean-oat-alfalfa, with continuous corn. All the comparisons are with and without fertilizer. "In the plots with fertilizer, we are using composted turkey manure so we can manage this portion of the farm over the long term using organic farming methods," McNamara said.

Other research indicates one advantage of the rotation effect is its role in helping to break the cycle of soil-borne diseases. McNamara explained that if rotations contribute to healthier crops, which are more efficient at gleaning nutrients from the soil, the crops should be able to thrive on lower soil fertility levels, thus helping farmers reduce fertilizer needs.

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AEA,BSS,CEO,F1,L3

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Source: Jeffrey D. Hahn
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Editor: Mary Kay O'Hearn
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STRAWBERRY ROOT WEEVILS CAN BECOME INDOOR NUISANCE

Now through August, strawberry root weevils, dark-colored, hard-shelled insects, may be attracted to the interior of homes. So says Jeffrey D. Hahn, entomology educator with the University of Minnesota's Extension Service.

Strawberry root weevils enter buildings through such openings as cracks in the foundation, around loose-fitting screens and doors, and under siding. As their name suggests, they are pests of strawberries in some parts of the country, but are not known to be in Minnesota, Hahn says.

Once inside, these weevils are usually found crawling on ceilings and walls. They like moisture so are often seen around sinks and bathtubs. They don't bite or cause any damage and are just a temporary nuisance.

To keep them outside, Hahn suggests caulking cracks and using tight-fitting screens and doors. Insecticides such as chlorpyrifos or diazinon can be sprayed around the foundation and other places where they enter, although the effect is temporary. Hahn says, "Pest control operators have access to newer, more effective insecticides, such as Tempo and Demon, which give long-lasting control. Always read and follow label directions when using any insecticides."

Physical removal with a vacuum cleaner or by hand can control the strawberry root weevils that do get inside.

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V7,V8M,I2M

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Source: Juanita Reed-Boniface
612/625-9231
Editor: Mary Kay O'Hearn
612/625-2728

Editors, news directors: For more information on the winners from your area, contact the 4-H agent at your county's office of the Minnesota Extension Service. Please note that there are four groups of winners, each listed by county.

MINNESOTA 4-H RECOGNIZES 61 FOR ACHIEVEMENTS

The University of Minnesota's 4-H Youth Development program recently recognized 61 4-H members and alumni from throughout Minnesota for their accomplishments. The awards were announced in June during the Minnesota 4-H Junior Leadership Conference.

Award recipients, their hometowns and project areas, are (by county): **Benton**--Sarah Zenk, Foley, sheep; **Cass**--Jeremy Rohr, Motley, leadership; **Chippewa**--Aaron Kvistero, Milan, swine; Beth Moe, Milan, needle arts; **Clay**--Ann Schroeder, Glyndon, achievement; **Douglas**--Bryan Hanson, Brandon, wildlife and fisheries; **Freeborn**--Sarah Iverson, Hayward, food conservation, preservation and safety; **Goodhue**--Casandra Schwartau, Goodhue, public speaking; **Kittson**--Todd Truedson, Kennedy, bicycle; **LeSueur**--Trudy Loewe, Henderson, dairy goat; **Lyon**--Christina Muedeking, Tracy, citizenship; Coreen Gee, Cottonwood, gardening; Aaron Banks, Lynd, food and nutrition; **Mower**--Scott Koch, Rose Creek, achievement; **Murray**--Jocile Kirchner, Dundee, child development; Naomi Schuld, Woodstock, health; **Nobles**--Jeff Weness, Worthington, photography; Sarah Haberman, Brewster, horticulture; Lance Malenke, Brewster, petroleum power; **Norman**--Neil Rockstad, Ada, agriculture; John

Brandt, Ada, plant and soil science; Olmsted--Matthew Titus, Oronco, beef; Michelle Larson, Rochester, bread; Dawn Borsheim, Rochester, creative arts; Matt Sheehan, Rochester, dairy; Otter Tail--Derek Rotz, Clitherall, aerospace; Melanie Rotz, Clitherall, citizenship; Brent Gudmundson, Fergus Falls, wood science; Polk--Darby Miller, Crookston, consumer education; Becky Strickler, Euclid, personal management; Pope--Elizabeth Morris, Glenwood, leadership; Redwood--Ralph Brown, Wanda, electric; Laura Tetrick, Lamberton, livestock; Jonathan Boerboom, Walnut Grove, safety; Renville--Susan Nicolai, Hector, clothing; Rice--Tiffany Tripp, Faribault, dairy foods; Mark Schulz, Faribault, rabbit; St. Louis--Chris Restad, Hibbing, horse; Sibley--Grant Benning, Arlington, poultry; Stevens--Jennifer Anderson, Chokio, dog; Swift--Kelsy Lin Saulsbury, Murdock, forestry; Theresa Williams, Kerkhoven, veterinary science; Waseca--Scott Nefstead, Waseca, home environment; Yellow Medicine--Betsy Danielson, Montevideo, conservation.

In addition, four 4-H alumni received statewide recognition for using 4-H philosophy successfully in their careers: Blue Earth--Dean Bartsch, Brooklyn Center; Morrison--Ellen McDonald, Pierz; Norman--Burton Rockstad, Ada; Watonwan--Ed Mays, St. James.

Six 4-H'ers won trips to the National 4-H Conference, which will be next April in Washington, D.C. Their trips will be sponsored by the Minnesota Bankers Association. They are: Carver--Jenny Enter, Watertown; Murray--Kimberly Keller, Slayton; Olmsted--Ann Wiater, Rochester; Otter Tail--Ann Erickson, Battle Lake; St. Louis--Tom Kleven, Cook; Wright--Kevin Otto, Delano.

Seven 4-H'ers have won the opportunity to compete nationally for scholarships for their accomplishments: Dodge--Tammy Lorch, Kasson, \$1,000 Guide Dog Raising/Training Scholarship from Guide Dogs for the

Blind; LeSueur--Brenda Gassman, New Prague, \$1,500 Wildlife and Fisheries Scholarship from Jeep Division, General Motors Corp.; Nobles--Julie Buntjer, Worthington, \$1,000 Dairy Goat Scholarship from American Dairy Goat Association; Pine--Sarah Anderson, Pine City, \$1,000 scholarship from Edwin T. Meredith Foundation; Polk--Suzanne Gulsvig, Crookston, \$1,000 scholarship from Gertrude L. Warren Scholarship Fund; Rice--Young, Faribault, \$1,000 Ag Careers Scholarship from DeKalb Genetics Corp.; and Kami Flom, Nerstrand, \$1,000 Food Careers Scholarship from Kerr.

4-H Youth Development is part of the University of Minnesota's Extension Service. It is Minnesota's largest out-of-school educational program, serving 228,000 young people.

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AEA,BSS,CEO,V2M,V4M,V8M,YM

N4-H3568

NEWS/ INFORMATION

July 16, 1990

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

Source: Roger Becker
612/625-5753
Mike Murphy
612/625-8787
Writer: Joseph Kurtz
612/625-3168

AVOID HIGH LEVELS OF HOARY ALYSSUM IN HAY

If you're harvesting hay, try not to get a lot of hoary alyssum mixed into it. That's particularly important if the hay is to be fed to horses, says Mike Murphy, veterinary toxicologist at the University of Minnesota.

"Hoary alyssum is a weed that contains a substance that is toxic to some horses," says Murphy. "The toxin can cause horses to 'stock up,' or swell in the legs. It can also cause fever, diarrhea and other symptoms."

Murphy doesn't know how much of the weed is needed to affect horses. "It varies a great deal among individual horses," he says. "Some animals can eat hay that's full of the weed and not be affected."

Nor is he sure what effect the weed may have on other livestock. He says, "To be on the safe side, I would recommend keeping the amount of it in hay to a minimum for any livestock."

Roger Becker, University of Minnesota extension weed scientist, says hoary alyssum is very common in Minnesota and surrounding states. It's adapted to droughty conditions and to sandy, gravelly soils. "It does best in conditions that are stressful to most other plants," Becker adds. "The drought in 1988 and 1989 increased its territory and plant

population. It tends to thrive where pastures are stressed, and this year's winterkill in alfalfa stands gave it a boost."

Hoary alyssum is a member of the mustard family. Its white flowers are about 1/2 inch in diameter and have four petals. The leaves and stems are a light grayish or powdery green. The plant develops seed pods on several stalks and 8 inches to 3 feet tall.

The weed does not normally cause problems for grazing animals, says Becker. It's not very palatable, so animals usually prefer to eat other plants.

Animals are more likely to eat hoary alyssum in hay. When a hayfield is mowed, it's easy for the weed to get mixed in with the forage plants. Hoary alyssum can be abundant without being particularly noticeable in cured hay, but its flowers are easily discernable when mowing alfalfa fields.

"If there's a dense patch of it in the field, mow around the patch," Becker suggests. "This is especially important if you plan to sell the hay to horse owners."

Becker says hoary alyssum is a perennial that's hard to manage. "If there's a lot of the weed in a field, you may need to re-establish the forage crop," he says. "The best bet is to prevent it in the first place through proper pasture and forage crop management. Select a forage species for quality, competitiveness and ease of establishment. Fertilize and lime if necessary. Harvest or graze to avoid overstressing the forage crop."

In alfalfa fields where alyssum is encroaching and stands are down to fewer than six plants per square foot after three or more years, Becker suggests rotating to a row crop or small grain. "Alyssum doesn't compete as well with row crops or small grains," he says. "It

doesn't survive well with tillage."

Becker says a mixture of 2,4-D plus Banvel will suppress, but not control, hoary alyssum in pastures. Another herbicide, Velpar, can be applied only to dormant alfalfa in the spring or fall or after first cutting. Becker says Velpar is expensive and persistent, does not provide total control, and should be used only as a last resort.

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AEA,BSS,CEO,V2,F1,K

NAGR3574

NEWS/ INFORMATION

May 1990
MINNESOTA EXTENSION SERVICE

**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM**

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

July 16, 1990

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

CULTURAL PRACTICES, FUNGICIDES HELP CONTROL BLACK SPOT

Black spot is one of the more common rose diseases. This fungal disease manifests itself with black, fibrous-looking spots about 1/16 to 1/2 inch in diameter on the leaves, after extended periods of wet weather or irrigation.

Infected leaves yellow and drop. This makes the bushes look bad and robs the plant of the leaves which are needed to produce energy for plant growth.

"Use cultural controls together with registered fungicides," says Cynthia Ash, a plant pathologist with the University of Minnesota's Extension Service. The controls include removing and destroying infected leaves. Also avoid conditions which keep rose foliage wet for long periods--crowding, shady areas, overhead irrigation, watering at night.

Registered fungicides include benomyl (Benomyl, Benlate), chlorothalonil (Ortho Multi-Purpose Fungicide, Daconil 2787), mancozeb (Fore) and triforine (Funginex). "You are responsible for reading and following all label directions and cautions," Ash reminds.

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V7,V8,I2

NAGR3552

NEWS/ INFORMATION

July 16, 1990

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

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

AMPLE RAINFALL BRINGS BACK GARDENS, LANDSCAPES

Who'd have guessed last winter that we'd be luxuriating in extra rain this summer?

It seems just weeks ago that people were singing praises for dry climate landscaping, and urging reducing or eliminating plants (including large portions of lawn) that are fairly heavy users of water.

"After our rainy spring, we find these plants growing like weeds," says Deborah Brown, horticulturist with the Minnesota Extension Service.

What effect is this moisture having on gardens and landscapes?

Trees and shrubs damaged by a combination of drought and winter cold may be benefitting most. The moisture favors root growth, which in turn renews top growth.

On the other hand, Brown points out, wet conditions have contributed to anthracnose and other fungal diseases. Fortunately, damage done by these diseases is primarily visual.

As for gardens, most plants are growing rapidly...but so are the weeds. "And you shouldn't be walking around on wet garden soil to do weeding or anything else. Wait until the soil dries enough so it can be walked on without becoming packed down, then sharpen your hoe and use it to scrape weeds off at the soil surface," Brown says.

Be sure to side-dress garden plants with fertilizer. The rainfall helps to leach nutrients deeper into the soil where many flower and

vegetable roots can't reach.

In containers or gardens where plants are too close together to hoe, fertilize around them. Use a fertilizer that can be dissolved in water, then sprinkled right over the tops of the plants. To minimize leaf damage, do this early in the morning or evening, rather than in the heat of the day.

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V7,V8M,I2M

NAGR3555

NEWS/ INFORMATION

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

July 19, 1990

Source: Robert M. Jordan
612/624-6784
Writer: Joseph Kurtz
612/625-3168

Editors: Call Carl Walker (612/624-3708) or Joseph Kurtz (612/625-3168) to obtain a b/w print to use with this feature.

JORDAN RETIREMENT CAPS LENGTHY UNIVERSITY OF MINNESOTA SERVICE

Two generations of service to the University of Minnesota and Minnesota livestock producers--service spanning 75 years in the form of a father-and-son team--came to a close June 30 with the retirement of animal scientist Robert M. Jordan.

Jordan, who continues to work part-time in the Department of Animal Science as a professor emeritus, has worn many hats since he began his career at the University in 1954. He has been active in teaching, and served as coach of the livestock judging team for 14 years. He has conducted research--mostly on the nutritional needs of sheep and horses--for the University's Agricultural Experiment Station. And, as a Minnesota Extension Service animal scientist for the past 18 years, he has carried out statewide educational programs in horses and sheep. In recent years, his work has also covered some nontraditional livestock, including Angora goats, red deer and fallow deer.

As an educator involved in the livestock industry, Jordan followed in the footsteps of his father, P. S. Jordan. Beginning in 1915, P. S. Jordan was the animal scientist at the West Central School of Agriculture at Morris, which later became the University's West Central

Experiment Station. He continued in that capacity until his death in 1956.

"My father was in charge of horses, beef cattle, dairy cattle, swine and sheep at the West Central Experiment Station," Jordan recalls. "In the early days, he also taught five to six hours a day when school was in session, which was from October through mid-March."

Jordan remembers that the Morris station had top-quality Percheron draft horses, including a stallion and a homebred mare that were grand champions at the National Percheron Show. "The station had an excellent herd of Shorthorn cattle," he adds. "It had the first Golden Certified dairy sire in the state and one of the first dairy herds to average 400 pounds of butterfat. That was in 1936. That shows how far we've come in 54 years."

Jordan says the Morris station has the oldest flock of Columbia sheep east of the Missouri River. "My father brought in the first Columbias in 1940," he says. "He collected data to show how much more productive they were than the Shropshires that were favored then. He had a lot to do with popularizing Columbia sheep in Minnesota."

Jordan calls the development of the livestock industry in Minnesota "a tribute to the stockmen who made this a great livestock state."

"They accomplished a lot with little available technical information," he adds.

He says there was little livestock research going on until after World War II. Since then, have come developments in antibiotics, fermentation products, growth promotants, muscle partitioning agents and dewormers, along with more nutritionally balanced diets and better management.

As to his own career, Jordan says he has "tried to do research and extension work that would make livestock production easier or more profitable."

He started doing extension work in the horse area in 1965 because county agents lacked information on the subject. He wrote three horse publications in the 1960s and "tried to make county agents comfortable with horses."

"There was a need; someone had to do it," he says. "If you have a certain talent and see a need for it, then go ahead and use it."

Jordan used telelectures to get out information about horses. He was the first extension specialist in the College of Agriculture to use this method. "We took telephone equipment out in a pickup truck and talked to people in nine or 10 different places at a time," he recalls. "This was mostly at night and on Saturdays."

He also began working in the sheep area because he saw a need. Much of his sheep research was carried out at Morris in cooperation with Harley Hanke, who was the animal scientist there until he retired in 1987. "We did a lot of things with sheep in the 1950s that others started doing with cattle in the 1960s," says Jordan. "There are very few feeds Hanke and I haven't fed to a sheep."

Jordan has been a prolific writer, particularly in developing extension publications. Writing, he says, is something he has really enjoyed. "If you give me a subject I know something about, I can turn out a fact sheet in a week," he says.

He has also enjoyed doing research, an activity which provides an outlet for his curiosity. "When I've wondered ,If...,' ,How come?' or ,Why not?' I've been able to search for the answers," he says. "I've been very lucky."

Jordan has fond memories of coaching the University's livestock judging team. "One of the most gratifying experiences I had was greeting a class of kids and four years later saying good-bye to a class of adults," he says.

Jordan would like to be known as a person who's not afraid to extend information to people or to reach out to seek information. He says, "I get a thrill in helping people, in teaching things they can remember and use. I've had great fun; it's been a very, very enjoyable career."

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SelMedia

NAGR3567

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

July 23, 1990

Source: Don Wyse
612/625-7064
Writer: Jennifer Obst
612/625-2741

HERBICIDE-RESISTANT CROPS OFFER OPPORTUNITIES, POSE QUESTIONS

Are herbicide-resistant crops the solution, or are they part of the problem? Minnesota Agricultural Experiment Station agronomist Don Wyse spoke on the pros and cons of herbicide-resistant crops June 26 at the Summer Field Day of the Southern Experiment Station, Waseca. Wyse is one of a team of University of Minnesota researchers who have developed a corn plant resistant to the postemergent herbicide sethoxydim (Poast).

Through tissue culture selection, the researchers found and produced a corn line that, Wyse says, "has complete field tolerance at rates that control annual weeds in corn." The mutant will allow use of a postemergent herbicide that is less persistent in the soil and, therefore, more environmentally benign than preemergent herbicides, although Wyse said it will be five to seven years before commercial, sethoxydim-resistant hybrids will be available. Meanwhile, researchers with other universities and companies are investigating other herbicide-resistant plants.

The fear of some sustainable agriculture groups, Wyse said, is that herbicide-resistant crops may allow more use of herbicides and, thus, be dangerous to the environment.

"I believe that herbicide-resistant crops have a place, but they should not be an overall philosophy," Wyse said. "If this technology results in the use of herbicides that have long soil residual, then it's

not a good idea. Anytime we increase the amount of herbicide we apply per acre, the greater the chance of moving some of it deeper into the soil and potentially to the groundwater.

"Another potential problem with the development of herbicide-resistant crops is that it may increase the possibility that growers will rely on one family of herbicides, which means some of the herbicide will always be in the soil, increasing the potential for developing resistant weeds.

"So, we are arguing for rotation of herbicides--and not just individual herbicides, but rotation of herbicide families."

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AEA,BSS,CEO,B2,F1,L3

NAGR3576

NEWS/ INFORMATION

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

July 23, 1990

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

LITTLE CAN BE DONE ABOUT SOME TOMATO DISORDERS

Tomatoes can grow abnormally because of the weather. They can develop conditions that cannot be corrected or prevented by applying chemicals.

Blossom-end rot, which appears about the time the first tomato fruits mature, is a common condition, according to Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

Ash says that end-rot is "a water-soaked spot at the blossom end of the fruit which enlarges to become brown and leathery. The discolored tissues shrink to form a flat surface which is sometimes colonized by saprophytic fungi."

Blossom-end rot can be lessened by keeping the soil uniformly moist with irrigation and soil mulches, she says. Incorporating fertilizers high in superphosphate and low in nitrogen prior to planting, and avoiding root damage during cultivation can also help.

Sunscald is also common. Initially, a light-colored spot appears where the fruit faces the sun. Then blistering occurs and a large flattened, gray-to-white spot forms with a dry, paper-like surface.

Sunscald happens when the plants lose their leaves, from disease or other causes, suddenly exposing the fruits to the sun. A disease control program to prevent foliage loss helps, Ash says.

Growth cracks of varying depths can form on the stem end of the tomato. This often happens when abundant rain and high temperatures bring on sudden growth, often following a period of drought.

Some tomato varieties are more susceptible to cracking than others. Descriptions of the varieties you are selecting often include this information, Ash suggests. Controls for blossom-end rot also may help prevent growth cracks.

Another disorder, called catface, causes puckering or distortion of the fruits. This is caused when the flower is disturbed by extreme heat, drought, low temperature or contact with 2,4-D herbicides. "Keep herbicides and mulches treated with herbicides out of the garden," Ash says. Varieties vary in susceptibility to catface, so change varieties if catface is a continual problem.

There are also other reasons to watch out for 2,4-D type weedkillers. She says, "Their vapor or direct spray drift can cause serious problems on tomatoes." Older leaves become excessively pointed, down-curved or rolled, with prominent, light-colored veins. Young leaves do not fully expand and are narrow and elongated with parallel veins. Plant stems may split and fruits become malformed. But, if damage isn't severe, the plants may recover.

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V7,V8,I2

NAGR3551

NEWS/ INFORMATION

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

July 23, 1990

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

BLUEGRASS LAWNS ARE SUSCEPTIBLE TO DOLLAR SPOT

Bluegrass lawns under stress from any number of things--lack of fertilizer, poor soil conditions, weather or maintenance--may develop dollar spot.

So named because roughly circular patches 4 to 6 inches in diameter develop on these lawns during times of high humidity and warm (60-85 degrees F) temperatures. These spots may grow together, giving the lawn a blighted appearance, says Cynthia Ash, a plant pathologist with the University of Minnesota's Extension Service. Leaf blades at the margins of the patches develop distinct tan-colored bands which may be surrounded by a reddish brown border.

Correcting the contributing conditions will reduce or eliminate dollar spot, Ash says. Bluegrass varieties differ in dollar spot susceptibility--most being moderately susceptible or moderately resistant.

Use of a fungicide may also be necessary to correct the condition. Benomyl (Benlate), chlorothalonil (Daconil 2787, Ortho Multi-Purpose Fungicide) and mancozeb (Fore) are available for use by homeowners. Commercial turf care companies have additional choices. Remember: read and follow all label directions and cautions.

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V7,V8,I2

NAGR3553

NEWS/ INFORMATION

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

July 23, 1990

Source: Jim Kurle
612/625-8232
Writer: Jennifer Obst
612/625-2741

10-YEAR STUDY EXAMINES ROTATION EFFECT

A 10-year-long corn-soybean rotation study at the Southwest Experiment Station, Lamberton, and the Southern Experiment Station, Waseca, aims to help farmers exploit the rotation effect, according to University of Minnesota agronomist Jim Kurle.

The study, which included 16 rotation sequences, found over time the patterns do not change significantly with weather differences; regardless of the weather, Kurle said, "soybean yield was the highest the first year after corn, and corn yield was the highest the first year following soybeans."

The researchers did an analysis of how the various rotations would affect a farmer's rate of return, assuming low, medium and high corn prices. Kurle said, "In all cases, corn following two years of soybeans produced the highest rate of return. Continuous corn was the lowest."

However, that analysis was done with nonsupported corn prices. When the analysis was done with supported corn prices, continuous corn provided the highest return.

The rotation experiments are continuing, with researchers adding alfalfa, sunflower, sorghum and fallow into the rotation mix.

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AEA,BSS,CEO,A1,F1,L3

NAGR3575

MINNESOTA EXTENSION SERVICE

NEWS/ INFORMATION

July 26, 1990

UNIVERSITY OF MINNESOTA
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DEVELOPMENT SYSTEM

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

Source: Norman Krause
218/894-1053
Editor: Sam Brungardt
612/625-6797

FIELD DAY AT STAPLES IRRIGATION CENTER TO BE AUG. 16

"Better management yields higher profits" will be the theme for the annual field day Aug. 16 at the Central Minnesota Demonstration Research and Irrigation Center, Staples. The irrigation center is three miles north of the stoplight in Staples.

Wagon tours will run from 9:30 a.m. until 12:30 p.m., and feature stops on tillage, fertilizer and manure management; corn, oat, alfalfa and soybean variety trials; and alternative crops, including lupins, edible beans and forage seed.

Special events will include an abandoned well program in the afternoon, a well sealing demonstration at 1:30 p.m. and an evening horticulture tour, which will begin at 5:30 p.m. with registration.

A linear irrigation system will be operating during the field day, and a natural air, grain drying bin constructed this summer will be on display as will no-till equipment for corn and soybeans. Representatives of seed and equipment companies will be available at booths also.

A hog and turkey roast, featuring farm-grown sweet corn will be available at noon.

Sponsors of the field day include the Staples Technical College, the University of Minnesota's Agricultural Experiment Station and Extension Service and the Irrigation Center.

For more information, call Norman Krause at (218) 894-1053.

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AEA,BSS,CEO,F1M,L1M,V2,Z3,Z7

NAGR3583

NEWS/ INFORMATION

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

July 26, 1990

Source: Doug Buhler
612/625-6719
Writer: Jennifer Obst
612/625-2741

RESEARCH TRACKS HERBICIDE MOVEMENT

How far down will herbicides travel? That's the critical question for researchers studying the transformation of herbicides in the soil.

Doug Buhler, a USDA Agricultural Research Service research agronomist from the University of Minnesota, reviewed research results June 26 during the Summer Field Day at the Southern Experiment Station, Waseca.

The research at Waseca is part of a larger study that includes plots at Rochester and Westport, which have soil types considered more susceptible to deep seepage of herbicides and, therefore, potential groundwater contamination. The study has been looking at the migration of atrazine and alachlor under four tillage systems.

It's too early for this year's results, Buhler said, and the previous dry years produced less-than-optimum conditions for water quality research. However, he said, researchers have so far found that "95 percent of both atrazine and alachlor never moves out of the top 6 inches of soil." On the other hand, traces of atrazine have been detected as deep as 3 feet at Waseca. "If we can keep herbicides in the top 15 to 18 inches of soil," Buhler said, "we won't have any groundwater problems."

The use of suction lysimeters allows the researchers to analyze soil water even deeper, where they have found very low levels of atrazine

(1 part per billion). "We are finding traces as deep as 7 feet," Buhler said, "but no traces of alachlor so far."

In another experiment at Waseca, a four-year study measuring the movement of herbicides in tile drainage water, the researchers found low levels of atrazine (again, in the 1 part per billion range) but no alachlor.

This study indicated that atrazine from tile drainage may be a surface water problem, but it's difficult to determine the impact on groundwater quality, and "a part per billion of atrazine in surface water is probably less of a problem than in groundwater," Buhler said.

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AEA,BSS,CEO,B2,F1

NAGR3577

NEWS/ INFORMATION

July 26, 1990

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

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

FIREBLIGHT CAN KILL SOME TREES, SHRUBS

If a woody plant looks as though it's been through a fire--with twigs, flowers and foliage blackened--it could be infected with fireblight. This bacterial disease is especially deadly to susceptible apple, pear, hawthorne, cotoneaster and mountain ash.

Initial symptoms develop at flowering, explains Cynthia Ash, plant pathologist with the Minnesota Extension Service. Blossoms are very susceptible and when infected appear water-soaked, then wilt, shrivel and turn black. The blight progresses from the flowers into young stems and larger limbs causing cankers.

The next most susceptible parts of the plant are succulent twigs and water sprouts or suckers. Blighted twigs and water sprouts often form a characteristic shepherd's crook at the tips.

During warm, wet weather droplets containing bacteria ooze from infected plant parts. In addition to bees and other insects, "rain (natural or irrigation), birds and man spread the disease when they come into contact with these droplets," Ash says. "The bacteria may enter the plant through natural openings, but more often through wounds caused by hail and wind whipping."

Too much fertilizer--especially nitrogen--produces succulent growth highly susceptible to fireblight. Temperatures between 70 and 80

degrees F favor fireblight when accompanied by high humidity or rain.

Storms with strong winds, driving rain and hail can result in fireblight epidemics.

Avoid fireblight by planting resistant trees and shrubs. Annual inspection and canker removal is recommended in late winter. Look for blackened twigs, branches and fruits, and the cankers that develop on the main stem just below these.

Cankers are areas killed by the fireblight organism. These areas dry out and appear sunken. Canker edges, called margins, pull away from the healthy tissues, making it easy to locate them. To remove a canker, locate its margin, move back into the tree 4 inches, then locate a proper site to prune.

For some plants, Ash says, Bordeaux mixture and copper fungicides are labeled and can be used as a regular spray program during the growing season. If fireblight occurs during the growing season, remove an infected area at least 12 inches below the canker margin.

Sterilize pruning shears between cuts. Household bleach is very effective but corrosive. Mix one part bleach to nine parts water (1/2 cup bleach in a gallon of water). Do not use rubbing alcohol.

Excessive pruning can cause excessive sucker growth, which is highly susceptible to fireblight. Ash emphasizes planting resistant trees and dormant pruning.

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V7,V8,I2

NAGR3554

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA

EDUCATIONAL

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

July 26, 1990

Source: Jim Bowyer
612/624-4292

Editor: Sam Brungardt
612/625-6797

STUDY SHOWS WOOD TO BE ENERGY-EFFICIENT BUILDING MATERIAL

Environmentalists who frown on timber harvesting may not realize that it's much more energy intensive and environmentally harmful to manufacture substitutes for wood building materials, says University of Minnesota wood products specialist Jim Bowyer.

"The gathering and processing of industrial raw materials tends to be energy intensive," says Bowyer, who conducts research for the University's Agricultural Experiment Station. "Energy consumption has major environmental impacts, relating to problems ranging from global warming to oil spills. And when you look at industrial materials in an energy context, the use of wood looks very environmentally acceptable in comparison to other materials."

Bowyer cites a study, done by the Society of Wood Science and Technology's committee on renewable resources for industrial materials, that compared the total energy costs (including harvesting, transportation, processing and construction) of manufacturing different kinds of walls used in buildings.

The study showed that it takes six to eight times more energy to make a wall of brick veneer over sheathing or of concrete blocks than it does to make an all-wood wall.

The two wood walls--one of plywood siding with no sheathing on a

2-by-4 frame, and the other of medium-density fiberboard with plywood sheathing on a 2-by-4 frame--required the least amount of energy for a 100-square-foot wall: 1.99 and 2.54 million Btu oil equivalents, respectively.

However, the concrete block wall (which had furring strips and gypsum board on the inside but no insulation) had an energy cost of 17.09 million Btu oil equivalents, and the brick wall scored slightly more--17.89.

Adding steel studs to a wall of medium-density fiberboard with plywood sheathing increased the energy cost to 4.79 million Btu oil equivalents, which means that substituting steel for wood studs almost doubles the energy used. Thus, Bowyer says, while using steel would result in fewer trees being harvested, the overall environmental impact would be negative.

In addition to these results showing wood is the most energy-efficient building material, Bowyer says that potential substitutes for wood are largely imported.

The United States, he notes, is a net importer of many raw materials, sometimes because the materials aren't found in this country, sometimes because domestic production isn't economical and sometimes because it is considered environmentally disruptive to produce them here when they can be obtained from countries with less stringent environmental regulations or concerns.

All the niobium (columbium), strontium and industrial diamonds used in this country are imported, Bowyer explains, along with at least 90 percent of manganese, bauxite, cobalt and chromium, 85 percent of asbestos, 81 percent of tin and 77 percent of nickel. The United States, he notes, is a net importer of almost all important industrial

raw materials, generally by a substantial margin.

"When we import these materials, we are in effect exporting our pollution problems to other countries. In 100 years, given rapidly growing populations, will these countries be willing to export these raw materials to us and, even if they are, is it morally acceptable for us to do that?" Bowyer asks. "The materials issue cannot be ignored as we seek to create a quality, sustainable environment. What we need to do is to produce raw materials to the extent we can in an environmentally acceptable way. If we choose not to consider realistically the need for materials, then our efforts to create a pristine U.S. environment will be done at the expense of the global environment." And this approach, Bowyer says, is irresponsible.

Bowyer sees the question of construction materials as part of a larger problem of coping with population growth as well as maintaining a healthy ecology. He says, "For me, global thinking means looking at the total system, yet we often talk about the environment in the absence of the population, which shows there is a certain amount of wishful thinking going on."

United Nations statistics predict that, even using conservative figures, the world population will double in the next century, to between 12 and 14 billion. "We can either hide from those numbers or learn to deal with them," Bowyer says. "Let's plan for that realistically. We need to take the requirement for materials and the need to protect the environment and come up with real solutions. When we view the world in this way, sustainable production of wood to near the biological potential of our forests looks to be a desirable environmental goal."

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AEA,BSS,CEO,E3,H3,H4,I4,R

NNRD3578

NEWS/ INFORMATION

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

July 26, 1990

Source: John Lawrence
612/625-1273
Writer: Jack Sperbeck
612/625-1794

U OF M ECONOMIST: ALBERT LEA MEATPACKING PLANT CAN BE COMPETITIVE

Lower costs obtained through restructuring existing debt will help a newly organized Farmstead Foods meatpacking plant be competitive, says a market economist with the University of Minnesota's Extension Service.

"Interest costs will be lower due to debt restructuring, so costs will be down," says John Lawrence. There are, he adds, other positive factors for the proposed reopening:

--The plant would have a well trained, experienced labor force. "This is becoming more important in the meat packing industry," Lawrence says. From 600 to 700 people would go back to work around Sept. 1 if the Albert Lea plant reopens as scheduled.

--The Farmstead brand name is an "established player" for hams and bacon. A sales force is ready to market Farmstead products within a 600-mile radius of Albert Lea. "This will help them move into the market fast, although they'll have to convince retailers to give them back their counter space," Lawrence says.

--Timing of the proposed reopening under new ownership is excellent. "Fall is when there are large hog runs," says Lawrence. "Many hogs will be available starting in late September, and the Albert Lea plant should be able to bid competitively against other plants in the area."

"The packing business is very competitive." Lawrence adds. "Success of the Albert Lea venture will depend on attracting hogs into the plant

with competitive bidding, running an efficient processing operation and competing favorably at the retail meat counter."

Lawrence says the plant's reopening will not have a big impact on prices. "There are enough packing plants in the area so there's competitive bidding. There was not a significant price drop when the plant closed, and there won't be one if they reopen," he adds.

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AEA,BSS,CEO,V2,V4,P1

NAGR3581

NEWS/ INFORMATION

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

July 30, 1990

Source: Deborah Brown
612/624-7491

Editor: Mary Kay O'Hearn
612/625-2728

TIMING IS IMPORTANT WHEN PICKING FLOWERS, VEGETABLES

You might not realize it, but timing is really important when picking flowers or vegetables. After you've gone to the trouble to grow them, you really ought to enjoy them to the maximum. That means picking flowers and vegetables at just the right stage in their development.

Some vegetables, like tomatoes or red peppers, are obviously ripe when they develop full color, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service. But cucumbers and summer squash should be picked before they get large and seedy.

"They'll be more tender and flavorful and their texture will be finer," Brown says.

Pick zucchini when it's between 6 and 8 inches, pattypan between 2 and 4 inches, and crookneck squash between 4 and 6 inches long. Ideal cucumber length varies widely by variety, but they always taste mildest and least bitter before the seeds get large.

While sugar snap peas should be allowed to develop nicely rounded pods so they'll be full of sweet, crisp peas, snapbeans should be harvested before their pods bulge with the outlines of individual beans.

"Though beets will continue to grow larger all summer, they'll be best if you pull them up when they're around 2 inches in diameter," says

Brown. "They get pretty woody and tough when they're much larger than that."

Pick flowers in the cool of the evening or early in the morning, before the sun begins to dry out their petals. Choose flowers that are almost, but not fully open. Too full blown and they won't last long; too tight and they may never open properly.

Remove faded flowers so the plants won't be able to produce ripe seed. Otherwise, the plants won't bloom as vigorously. Overmature vegetables should be removed for the same reason.

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V7,V8,I2

NAGR3556

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA

EDUCATIONAL

DEVELOPMENT SYSTEM

405 Coffey Hall

1420 Eckles Avenue

St. Paul, Minnesota 55108

July 30, 1990

Source: Bill Hutchison

612/624-1767

Writer: Joseph Kurtz

612/625-3168

BLISTER BEETLES IN HAY CAN POISON HORSES

When harvesting hay, it's a good idea to keep blister beetles out of the hay as much as possible. Blister beetles contain a substance that can be poisonous to livestock, particularly horses.

Bill Hutchison, extension entomologist at the University of Minnesota, says blister beetles are not a problem for animals grazing pastures. However, the insects can be crushed during the hay harvesting process and trapped in bales. Using a hay conditioner or crimper makes this more likely to happen.

Horses can be poisoned by eating hay contaminated with blister beetles. "There have been no documented cases of horse deaths from blister beetles in Minnesota in the last 30 years, but such deaths have occurred in the Southwest," says Hutchison. "The beetles can also be toxic to cattle and sheep, but this is usually less of a problem than with horses."

The toxin in blister beetles is called cantharidin. "Fortunately, the dominant blister beetle species in Minnesota--ash gray and black--contains only about 1 milligram of cantharidin per beetle," says Hutchison. "The lethal dosage of cantharidin for horses is estimated to be approximately 1 milligram for each 2.2 pounds of body weight. Thus,

it would probably take over 300 ash gray or black beetles in a feeding of hay to kill an adult horse."

Hutchison says the first cutting of hay will contain fewer beetles than later cuttings. Beetle numbers are also usually lower before the forage species has flowered. "It's a good idea to cut hay before flowering, in the early bud stage," says Hutchison. "Quality is also higher then."

He recommends that hay producers check their fields for blister beetles before mowing the crop. "Know what to look for," he says. "Blister beetles have a narrower thorax (the area between the head and abdomen) than other beetles. Most county extension agents can identify blister beetles.

"The beetles tend to swarm, and if you see a swarm in front of you when mowing, it would be a good idea to mow another area of the field first.

"If you have access to a standard 15-inch-diameter sweep net, and you pick up 100 beetles per 100 sweeps, you may need to consider insecticide treatment. If you use malathion, you can spray and then mow the hay the next day."

Blister beetle larvae feed on grasshopper eggs. Thus, blister beetle numbers are high this year because grasshoppers were plentiful last year. Hutchison says that with grasshopper infestations declining, blister beetle numbers should be back to more normal levels next year.

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AEA,BSS,CEO,V2,F1,K

NAGR3585

NEWS/ INFORMATION

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

August 2, 1990

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

NOW'S TIME TO DIG SPRING-FLOWERING BULBS, DIVIDE IRIS

Now's the best time to move or thin tulip, daffodil and other hardy spring-flowering bulbs.

It may be difficult to locate bulbs in their beds unless some yellowed foliage remains (as may be the case with daffodils) to give clues.

Horticulturist Deborah Brown, with the University of Minnesota's Extension Service, says tulip bulbs must be dug very carefully because the leaves will have probably disappeared.

"Sort through the bulbs and discard any small ones that won't bloom well. Keep the larger bulbs in a well ventilated place until planting time in late September or October," Brown says.

Now's also the time to divide bearded iris. Iris rhizomes should be lifted and inspected for soft rot caused by the iris borer. Prune away any rotted or old, woody area before replanting the rhizomes with the fans facing outward, toward the edge of the garden. "The rhizomes can be replanted immediately," Brown says.

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V7,V8,I2

NAGR3600

NEWS/ INFORMATION

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

August 2, 1990

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

RHUBARB PLANTS NEED SUMMER VACATION TOO

Is rhubarb poisonous after July? Should you quit using it now?

"The truth is," says Deborah Brown, extension horticulturist at the University of Minnesota, "that the leaves are always poisonous, but the stalks--the only part we ever eat--are not."

Rhubarb stalks toughen and become woodier as summer goes on, but the main reason they shouldn't be harvested beyond early July is for the health of the plant. The leaves are needed to supply the energy (through photosynthesis) for the overwintering roots. So, you quit harvesting rhubarb in the summer for the plant's sake. Not pulling stalks now gives the plant time to rest so next spring there will be lots of new, healthy growth and the plant will be off to a good start.

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V7,V8,I2

NAGR3599

NEWS/ INFORMATION

August 2, 1990

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

WET WEATHER PROMOTES TOMATO BLIGHTS

Due to nearly constant wet weather, two fungi have infected tomatoes unusually early this year, destroying leaves.

Septoria leafspot is the most common, according to Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service. Many spots form first on the lower leaves, are purple to dark brown in color, up to 1/8 inch in diameter, and will have a light center with a darker margin as the spots mature. Spores are produced in the blighted areas and quickly spread the disease during wet weather or irrigation. Numerous lesions will cause the leaves to yellow and fall off.

"Early blight is the other common leaf spot disease on tomato," says Ash. It is the dark brown to black leaf spots which often contain concentric rings. These spots are larger than those produced by Septoria leafspot and may be up to 1/2 inch in diameter. Early blight affects the foliage as well as the fruit.

Ash suggests the following control measures. Remove infected leaves as soon as noticed and begin a spray program with chlorothalonil (Ortho Multi-Purpose Fungicide, Daconil). Maneb and zineb are also effective if you have some at home or can locate a retailer stocking them. Read the entire label and observe all waiting periods. The development of the disease can be minimized by proper spacing to allow good air

circulation, watering early in the day and at the base of the plant and removing all tomato refuse from the garden in the fall.

What to do if leafspots continue to be a problem? "Try another tomato variety next season," Ash advises.

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V7,V8M,I2M

NAGR3587

NEWS/ INFORMATION

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

August 2, 1990

Source: Doug S. Foulk
612/624-6220
Editor: Mary Kay O'Hearn
612/625-2728

AUGUST KICKS OFF MINNESOTA'S APPLE SEASON

For those who just can't wait until September for a taste of marvelous Minnesota apples, several varieties ripen in August and should be available soon.

"Many area orchards open for August business with early apples," says Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service. He suggests a visit to an orchard or two as a good way to pick up locally grown fresh fruit. But, this is also an excellent way for home gardeners to sample the many cultivars (varieties) available for planting.

Mantet and Oriole are early August cultivars that are good for fresh eating, pie and sauce. Another early variety--Duchess--is generally considered a pie and sauce apple due to its tartness.

During the last half of August, State Fair, Paulared and Beacon become available. These varieties are more commonly grown than the early August types and are generally of better quality. All are excellent for fresh eating.

August-ripening apples are generally milder than later-ripening cultivars and are not as useful for cooking. "They cannot be stored for long periods; however, with the September apples on the way, it shouldn't matter. Enjoy the August apples now," Foulk advises.

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V7,V8M,I2M

NAGR3586

**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM**

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

NEWS/ INFORMATION

August 2, 1990

Source: Dan Putnam
612/624-1211
Writer: Sam Brungardt
612/625-6797

AMARANTH SYMPOSIUM TO BE AUG. 23-25 IN TWIN CITIES

The upcoming Fourth National Amaranth Symposium will give farmers, researchers, food processors, extension personnel and others the opportunity to learn about the latest developments in the production, processing and marketing of amaranth. The symposium will be Aug. 23-24 at the Minneapolis-St. Paul Airport Hilton.

In recent years, U.S. farmers and food processors have shown considerable interest in amaranth, a drought-tolerant, high-protein grain grown by the Aztecs. The tiny seeds of amaranth have a distinctive, nut-like flavor, and are showing up in food products, such as cereals, breads and cookies.

Among the topics to be presented at the symposium are amaranth's potential as a new crop, amaranth as a forage, considerations and constraints to the marketing of amaranth grain, major corporation and small business perspectives on amaranth product development and marketing, variety development and seed production, agronomic practices, insect and disease pests, and harvesting and handling amaranth.

Symposium participants will also have the opportunity to tour amaranth field plots at the University of Minnesota's Agricultural Experiment Station at Rosemount on Aug. 25.

Registration fee (which includes three meals, the proceedings and refreshments) is \$200 a person (\$170 if received before Aug. 10) and \$100 for each additional registrant from a family. To obtain a copy of the program and a registration blank, contact Judy Sunvold, Educational Development System, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108 (phone 612/625-3775). County extension offices in Minnesota also have copies of the program.

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AEA,BSS,CEO,V2,V4,F1,H2,L3,IA,ND,SD,WI

NAGR3605

NEWS/ INFORMATION

August 2, 1990

Source: Dave Halvorson

612/625-5292

Writer: Joseph Kurtz

612/625-3168

UNIVERSITY OF MINNESOTA

EDUCATIONAL

DEVELOPMENT SYSTEM

405 Coffey Hall

1420 Eckles Avenue

St. Paul, Minnesota 55108

UNIVERSITY OF MINNESOTA PLANS SEPT. 27 POULTRY SERVICE WORKSHOP

Making poultry production more profitable will be the subject of a workshop Sept. 27 at the University of Minnesota.

The Minnesota Poultry Service Workshop will be at the Earle Brown Continuing Education Center on the University's St. Paul campus.

Registration will begin at 7:45 a.m., and the program will run from 8:30 a.m. to 3 p.m.

Topics during the first morning session will be feed-related performance problems, disinfecting programs and pollution concerns on poultry farms. The respective speakers will be John Wills, Willmar, Minn.; Charles Polk, Russellville, Ark., and Randy Ellingboe, Minnesota Pollution Control Agency, St. Paul.

There will be concurrent sessions for meat and egg producers later in the morning. Topics for the meat session will be vaccine techniques and results, managing leg problems in turkey and broilers and stunting syndrome. Speakers will be Steve Davis, St. Cloud, Minn.; Mark Cook, University of Wisconsin, Madison, and Jerry Sell, Iowa State University, Ames.

Topics for the egg session will be lighting, computer management of the hen house and serum profiling. Speakers will be Larry Vint, DeKalb Corp., DeKalb, Ill.; Steve Herbruck, Saranac, Mich., and C. J. Kelleher, Gaithersburg, Md.

There will also be concurrent sessions after lunch. One afternoon session will include a presentation on osteomyelitis by Yan Ghazkhanian, Sonoma, Calif. It will also feature a panel discussing mortality during brooding, growing and load-out. The panel will include Sally Noll, University of Minnesota; M. C. Kumar, Atwater, Minn., and Les Chermak, Willmar, Minn.

The other session after lunch will be a salmonella enteridis symposium. Speakers will be Craig Hedberg, Minnesota Department of Health, Minneapolis; Irv Peterson, APHIS, Hyattsville, Md.; Dave Kradel, Penn State University, State College, and K. V. Nagaraja, University of Minnesota.

The registration fee, which includes the cost of lunch, is \$25 in advance and \$30 at the door. To register, send your name, address and registration fee to Dr. James O. Hanson, 440 Veterinary Teaching Hospital, 1365 Gortner, Ave., University of Minnesota, St. Paul, MN 55108. Make checks payable to the University of Minnesota.

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AEA,BSS,CEO,V2,N1

NAGR3601

NEWS/ INFORMATION

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

August 2, 1990

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

SUNFLOWER SEEDS MAY OFFER FEED COST SAVINGS FOR DAIRY PRODUCERS

Sunflower seeds work well as a fat and protein source for dairy cows. And, when their price is right, they can be a moneysaver, according to Jim Linn, extension dairy specialist at the University of Minnesota.

"Sunflower seeds are an excellent source of protein and fat for energy and a good source of fiber," says Linn. "Whole sunflower seeds are probably the closest natural feedstuff the Upper Midwest has to fuzzy whole cottonseed."

Linn cites research at South Dakota State University in which rolled sunflowers replaced 22 percent of the corn and soybean meal in the grain mix for lactating cows. Milk production increased almost 5 percent with no increase in dry matter intake.

"North Dakota researchers reported 15 and 7.5 percent increases in milk production when sunflowers replaced 10 and 20 percent of the corn and oats in grain mixes," says Linn. "In a trial at the University of Minnesota's Northwest Experiment Station, Crookston, growing heifers fed a ration containing 10 to 20 percent sunflower seeds gained more efficiently than those fed a conventional ration."

Linn recommends limiting sunflower seeds to about 10 percent of the total ration, or less than 20 percent of the grain mix. This would be a

maximum of 5 pounds per cow per day. "Several dairy producers are seeing good production responses with no fat test problems at feeding rates of 2 to 3 pounds per cow per day," he adds.

Linn says sunflower seeds for cows should be fed whole, rolled or slightly cracked. If they are finely ground, more of the fat is exposed to the rumen environment, which can depress fiber digestion and lower milk fat.

"Broken, damaged, cull or odd-sized sunflower seeds are often a good buy," says Linn. "However, avoid extremely damaged or moldy seeds as these may cause health problems or decrease milk production."

Linn recommends increasing the calcium level in the ration to .9 to 1 percent of the dry matter when feeding sunflower seeds or any other fat source.

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AEA,BSS,CEO,V2,D

NAGR3603

NEWS/ INFORMATION

August 2, 1990

Source: David Halvorson
612/625-5292
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA PLANS WORKSHOP ON GAMEBIRD PRODUCTION

The profitable production of gamebirds such as pheasants and mallard ducks will be the focus of a workshop at the University of Minnesota in September.

The Upper Midwest Gamebird Workshop will take place Sept. 27 at the Earle Brown Continuing Education Center on the University's St. Paul campus. Registration will begin at 7:45 a.m., and the program will run from 8:30 a.m. to 3 p.m.

Topics during the first morning session will be feed-related performance problems, disinfecting programs and pollution concerns on poultry farms. The respective speakers will be John Wills, Willmar, Minn.; Charles Polk, Russellville, Ark., and Randy Ellingboe, Minnesota Pollution Control Agency, St. Paul.

Topics during the second morning session will be raising mallards, pheasant pen management and management of pheasants indoors. Speakers will be Jeff Hughes, Hugo, Minn.; Bill McFarlane, Janesville, Wis.; and Mark Cook, University of Wisconsin, Madison.

Afternoon topics will be biosecurity for gamebird operations, mating schemes for small populations, game farm image and gamebird diseases. Speakers will be Mel Hamre, University of Minnesota; James Bitgood, University of Wisconsin; Jim Meyer, Princeton, Minn., and Dan Shaw, University of Minnesota.

The registration fee, which includes the cost of lunch, is \$25 in advance and \$30 at the door. To register, send your name, address, and registration fee to Dr. James O. Hanson, 440 Veterinary Teaching Hospital, 1365 Gortner Ave., University of Minnesota, St. Paul, MN 55108. Make checks payable to the University of Minnesota.

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AEA,BSS,CEO,V2,L3,N1

NAGR3602

NEWS/ INFORMATION

August 3, 1990

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

Source: James Bowyer
612/624-4292
Writer: Sam Brungardt
612/625-6797

U OF M SCIENTIST: TIMBER HARVESTING STUDY MUST CONSIDER GLOBAL IMPACTS

"Now's the time to think globally before formulating plans to protect the local environment," forest products researcher James Bowyer says of the Generic Environmental Impact Statement (GEIS), a study commissioned last December by the Minnesota Environmental Quality Board.

The board is currently conducting a public review of a proposal for the scope of the study, which Bowyer says will likely influence forestry in Minnesota for the next 50 years or more. It commissioned the GEIS after citizens upset with the growth of Minnesota's forest products industry voiced concerns. During the past decade, there's been a 50 percent increase in the amount of timber harvested in Minnesota, and further growth in harvest levels is expected. Existing wood-based industries have announced plans to expand, and new plants are under consideration. The intent of the GEIS is to assess the environmental, economic, and social impacts associated with current and potential future forest management and timber harvesting activity in the state.

Bowyer, who conducts research for the University of Minnesota's Agricultural Experiment Station and works with wood-based industries for the University's Extension Service, is concerned that the proposed scope of the GEIS, though quite broad, may still be too limited. Although the draft scoping document proposes that concerns ranging from harvest levels to plant and animal diversity to spiritual relationships be

addressed, issues such as the effect that the regional transfer of industrial activity has on the global environment have not been included so far.

"In an attempt to narrow the scope so the study can be done within the budget set by the legislature, there's a danger that the study will be totally inadequate as far as looking at what happens in a global context," Bowyer says. "If we are to be environmentally responsible citizens, our attempts to have a pristine environment in Minnesota must consider the impacts on the rest of the world.

"For example, a look at Minnesota in isolation might lead us to conclude that, to protect certain species of wildlife, we should allow no commercial activity in vast areas of forest--similar to the recent spotted owl decision affecting Washington and Oregon. However, we know that building materials must come from somewhere, and we need to ask whether failure to assume responsibility for producing our own raw materials, wherever possible, will mean that wildlife or general environmental quality in other states or countries will suffer. If so, this poses a serious ethical and moral dilemma."

Bowyer contends that Americans, the world's leading consumers of goods of all kinds, have lost an awareness of how much raw material it takes to sustain the economy, where raw materials come from, what the environmental impacts are of gathering and processing these materials and the environmental trade-offs involved in using one type of material instead of another.

One consequence, he says, is that environmental activists have tended in recent years to push for significant limitations on domestic production of raw materials, such as minerals and timber, and this position has gained growing favor with the U.S. public. The result has

been to increasingly place the environmental impacts of raw material gathering and processing out of sight and out of mind, usually in some other part of the world, creating an illusion of great environmental progress. In actuality, he notes, the net impact of such practices on the global environment is often negative.

Bowyer worries that the GEIS will not examine these kinds of critical issues. He says, "Without proper consideration, the GEIS could become an exercise--no matter how well intentioned--in irresponsible regional environmentalism." According to Bowyer, it's very important that the study look at impacts beyond Minnesota. He says, "People who are concerned about responsible environmentalism need to speak out now; they need to insist that the study's scope be broad enough to consider the impact of all local actions on the global environment."

The advisory committee that drafted the proposal for the GEIS is accepting public comment on the proposed scope of the study until Friday, Aug. 24. Interested persons can obtain a copy of the preliminary scoping document for the GEIS from the Minnesota Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155 (phone 612/296-1424). Public meetings to discuss the issues that should be considered in the study and alternatives that should be examined were held recently in Rochester, Blaine and Grand Rapids.

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AEA,BSS,CEO,V5,V6,V8,RM,H3M,H4M

NNRD3606

NEWS/ INFORMATION

August 9, 1990

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

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

PLAY IT SAFE: DESTROY MUSHROOMS THAT POP UP IN YARD, GARDEN

Mushrooms have been popping up overnight in lawns and gardens throughout Minnesota.

"Mushrooms are the reproductive structures of certain types of fungi," says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service. These fungi feed on organic material, such as wood chips, bark and thatch. They aid in the decomposition of organic materials and are valuable organisms when it comes to recycling.

"Most are not harmful," Ash says, "but where children or pets are involved, play it safe. Pick and discard the mushrooms as soon as they are noticed or break them up with a rake or your shoe."

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V7,V8M,I2M

NAGR3588

NEWS/ INFORMATION

August 9, 1990

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

Source: Doug S. Foulk
612/624-6220
Editor: Mary Kay O'Hearn
612/625-2728

RENOVATE RASPBERRIES TO IMPROVE YIELD, PLANT HEALTH

Raspberries need some renovation to keep producing and healthy.

Left unchecked, a summerbearing raspberry patch can become an unproductive, unattractive thicket, according to Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service. As canes become crowded, fruit quantity, quality and accessibility all are reduced.

Meanwhile, the less sunlight and air circulation within a crowded planting increases the likelihood of disease, further reducing the plants' life span and fruit quality.

The renovation Foulk speaks of needs to be done each year when the harvest is completed. "The procedure is straightforward: simply remove all canes that produced fruit (known as the floricanes) and thin all remaining canes (the primocanes) so that only seven to 10 canes remain per foot of row," Foulk says. The row should be maintained at a width of 12 inches; canes arising from outside the row should be removed through cultivation or mowing. If the raspberries have been planted in hills, each hill should contain seven to 10 canes.

Don't fertilize at renovation time; the best time to fertilize raspberries is in spring when growth begins. Fallbearing raspberries (two examples are Heritage and Redwing) can be renovated the same way after harvest is finished in October.

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V7,V8,I2

NAGR3589

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405 Coffey Hall
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St. Paul, Minnesota 55108

August 9, 1990

Source: David MacDonald
612/625-9274
Writer: Jennifer Obst
612/625-2741

CYST NEMATODE IS HIDDEN PROBLEM FOR SOME SOYBEAN GROWERS

The good news, says plant pathologist David MacDonald, is that a three-year rotation will prevent development of a soybean cyst nematode problem. But the bad news is, it won't correct an established soybean cyst nematode problem.

Once established, the nematode persists in the soil because its eggs can survive dormant in the cysts for five to nine years. "Normal agricultural practices will lead to development of a soybean cyst nematode problem," says MacDonald, who conducts research for the University of Minnesota's Agricultural Experiment Station. "The cysts and their enclosed eggs are readily spread by machines and by the wind."

More than one race of the nematode can infest a field, and as many as four races have been found on a single farm. Furthermore, MacDonald says, "All races are not created equal." Race 1, for example, can be particularly devastating. Thresholds for damage are affected not only by the race, but also by weather and soil type. "Wet weather probably favors infections," MacDonald says. "One nematode in a sandy soil is more potent than one in a silt loam soil."

"The soybean cyst nematode is mainly damaging because it changes the biochemistry of the root, making a wound which predisposes the plant to

Page 1 of 2

fungi and other infectious agents. Rotten roots can't take up water and nutrients easily."

Identifying a soybean cyst nematode problem is not difficult, even though the nematode is too small to be seen for a good portion of its life cycle, and the foliar symptoms it causes may be attributed to other causes. The enlarged, lemon-shaped, maturing females attached to infected soybean roots can be seen with the unaided eye. "The presence of their small white bodies, about 1/25th of an inch long, is all that is needed to prove that the soybean cyst nematode is there," MacDonald says.

Early identification is critical to managing the problem, he adds. Following detection, management strategies are rotation to nonhost crops and growing cyst nematode-resistant soybean varieties.

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AEA,BSS,CEO,F1

NAGR3607

NEWS/ INFORMATION

August 9, 1990

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

Sources: Bill Schafer
612/624-4793
Vincent Fritz
507/835-3620
Writer: Mary Kay O'Hearn
612/625-2728

WASH, CORE, PEEL PRODUCE TO PROTECT AGAINST SALMONELLA

Avoiding the Salmonella food poisoning that was recently linked to raw tomatoes doesn't you have to reject the tomato crop Minnesota growers and consumers are anticipating this month.

Tomatoes are high in vitamin A, low in calories (a 2-3/5-inch-diameter tomato has about 25) and moderately high in phosphorus and potassium, according to Bill Schafer, food technologist with the Minnesota Extension Service.

His advice is "wash, core and peel" to avoid possible surface contamination on any fruit or vegetable that will be eaten raw. Cooking is even better protection. This applies to homegrown food as well as grocery store purchases.

And, if you'd like to grow your own tomatoes next year (if you haven't a garden space, it only takes a large pot with soil) Vincent A. Fritz has just revised the fact sheet, Growing Tomatoes. It could get you off to a good start whether you want to start plants from seed indoors plant purchased transplants. Fritz is a commercial vegetable production specialist at the University of Minnesota's Southern Experiment Station, Waseca.

In the fact sheet, Fritz describes starting plants indoors,

transplanting, fertilizing, staking, adding mulches and row covers, watering and fruit setting. Several drawings supplement the text.

To obtain a free copy of Growing Tomatoes, ask your county extension office for item AG-FS-1132.

#

V7M,V8M,I1M,I2M

NAGR3608

MINNESOTA EXTENSION SERVICE

NEWS/ INFORMATION

August 10, 1990

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

Sources: Bill Schafer
612/624-4793
Vincent Fritz
507/835-3620
Writer: Mary Kay O'Hearn
612/625-2728

Editors, news directors: The word "mean" was omitted from the first paragraph of the version of this release that we mailed to you on Aug. 9. Please use this corrected version. We regret any inconvenience this may have caused you.

WASH, CORE, PEEL PRODUCE TO PROTECT AGAINST SALMONELLA

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production specialist at the University of Minnesota's Southern Experiment Station, Waseca.

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To obtain a free copy of Growing Tomatoes, ask your county extension office for item AG-FS-1132.

#

V7M,V8M,I1M,I2M

NAGR3608

NEWS/ INFORMATION

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

August 13, 1990

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

MARIGOLDS, CARROTS AMONG PLANTS INFECTED BY ASTER YELLOWS

If the leaves of your garden flower or vegetable plants are changing from green to clear to yellow, the problem could be aster yellows.

Marigolds are very susceptible to this disease, says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

"The organism responsible is a mycoplasma and is moved from plant to plant by certain leafhoppers," she describes. Other plants including asters, delphiniums, daisies, petunias, phlox, lettuce and carrots can also become infected.

The first symptom of the disease is a clearing or loss of the chlorophyll (green pigment) in the veins, followed by a yellowing of newly formed tissues, sporadic growth, an erect habit, stunting and greenish flowers. Marigolds often take on a purple color. Asters become stunted and have stiff, yellow growth with many secondary shoots. Carrot foliage will appear stunted, yellowed and bushy and the root will have many short, bushy, secondary roots, often arranged in several rows along its length.

Ash says, "Remove and destroy infected plants as soon as they are noticed. There are no chemicals recommended for control."

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V7,V8,I2

NAGR3590

NEWS/ INFORMATION

August 13, 1990

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

Source: George Marx
218/281-6510
Writer: Joseph Kurtz
612/625-3168

DRIED FISH WASTES ARE GOOD PROTEIN SOURCE FOR YOUNG CALVES

Young calves will grow well on a diet containing dried rough fish processing wastes, a study by a University of Minnesota animal scientist has shown. And using the fish wastes for animal feed can eliminate a substantial pollution problem that results from disposing of these wastes.

"The fish processing wastes contain about 60 percent protein and nearly 20 percent fat," says George Marx, who is stationed at the Northwest Experiment Station at Crookston. "Over half the protein is bypass protein, which is particularly useful for dairy animals."

Marx obtained from a processing plant the residue of small catfish and other rough fish from northern Minnesota lakes. He says some landfills no longer accept such wastes because of environmental concerns. An alternative is to grind and dry the wastes and feed them to livestock.

He conducted a two-part study to determine the value of the fish waste as a protein supplement for young dairy calves. In one part, he fed 20 suckling Holstein calves for four weeks. In the other part, he fed 24 weaned Holstein calves for 14 weeks. The weaned calves received as much alfalfa haylage as they wanted, and this was their only forage.

For both the unweaned and weaned calves, Marx fed one group a starter ration in which fish wastes supplied 15 percent of the protein in the ration. The starter also contained corn, barley and soybean meal. A control group received a ration formulated to 18 percent total protein, with soybean meal as the protein supplement. Both rations also contained dicalcium phosphate and trace mineral salt. The major question was whether the flavor and odor of the fish waste would affect the palatability and consumption of the feed.

Marx found that both unweaned and weaned calves consumed sufficient grain starter for their age group. There were no consumption or palatability problems when the fish wastes supplied 15 percent of the protein in the ration. Weight gains of calves fed the fish wastes were no different than the control calves. The fish wastes did not cause any health or off-feed problems. Weaned calves fed both alfalfa and grain starter free choice did not discriminate against the starter when it contained fish wastes.

"The overall performance of dairy calves fed dried fish processing wastes was satisfactory and similar to control calves," Marx concludes.

Marx reported his findings earlier this summer at the annual meeting of the American Dairy Science Association at North Carolina State University, Raleigh, N.C.

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AEA,BSS,CEO,V2,D,F2,R

NAGR3609

NEWS/ INFORMATION

August 16, 1990

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

Source: Bill Rempel
612/624-1267
Writer: Joseph Kurtz
612/625-3168

LIVESTOCK PRODUCERS NEED STRATEGY ON ANIMAL RIGHTS ISSUE

Livestock producers need to develop a strategy for dealing with the animal rights issue, because it's an issue that will affect their industry. So says Bill Rempel, professor of animal science at the University of Minnesota and a researcher with the University's Agricultural Experiment Station.

"Most farm organizations now realize that the animal rights movement is real and won't go away by itself," says Rempel. "Many commodity groups have developed educational activities and materials for use in schools, communities and the media."

Rempel says that an estimated 24,000 persons turned out for an animal rights march in Washington, D.C. on June 10. He said this number is not particularly impressive by Washington standards and is much lower than the march organizers had anticipated.

"There is considerable division among the various animal rights groups," he says. "The extreme animal rightists are a minority. But this only means they will work harder to reach their goals."

Rempel recommends that livestock producers take the following steps with regard to animal rights:

1. Above all, use and promote the best humane practices for livestock production. Support research that will provide sound information to improve farm practices.

2. Become informed. Sort out your own beliefs and be ready to stand up for them.
3. Find or develop more informed spokespersons to speak for the livestock industry.
4. Help develop and distribute more educational materials about the livestock industry.
5. Work and be proactive with media representatives.
6. Lobby state and federal legislators.
7. Form coalitions and networks with other groups that have similar goals concerning the issue.

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AEA,BSS,CEO,V2,A2,D,K,N1,N3,P1

NAGR3611

NEWS/ INFORMATION

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

August 16, 1990

Sources: Gary Fulcher
612/626-1220
Deon Stuthman
612/625-3709
Writer: Larry A. Etkin
612/625-4272

CEREAL RESEARCH GOES HIGH TECH AT UNIVERSITY OF MINNESOTA

There's more to oats these days than bran. Because food products made from oat bran are some of the most promoted, the scientists who work with the crop are also getting a lot of attention.

That includes both agronomists, who use traditional techniques to breed new varieties and improve crop management, and cereal chemists, who use the most sophisticated technologies available. It's positive attention for agronomist Deon Stuthman and laboratory scientist Gary Fulcher, who conduct research for the University of Minnesota's Agricultural Experiment Station.

Fulcher and some of the high-tech research have only recently arrived in Minnesota, bringing a new level of cereal fiber analysis technology.

"What's important at this stage is to recognize that, compared to wheat, corn, barley and other more familiar crops, oats is a relatively underdeveloped crop in terms of its food value and other characteristics," says Fulcher.

"However, many new technologies can be focused on improving the kernel and there can be a very rapid catch up.

"There is going to be a fair bit of industrial support for breeding programs and fundamental research like mine, specifically geared towards

improving the quality of the oat crop. There are going to be combinations of basic biochemistry, biotechnology, advanced genetic techniques, etc. These are coming and will expedite a more rapid development of quality in oats, at least in North America."

Agronomists like Stuthman, an oat breeder, are zeroing in on productivity. "We always look at improving productivity," he says. "I'm talking about new varieties that have greater potential for productivity than those we've had. We also want to be where we have minimal loss to hazards, like disease, lodging or weather stress, so we can realize more of the production potential."

Fulcher says the current understanding of oats is about where science was with the more popular crops in the 1950s. He says, "We have long recognized that there are certain characteristics in oats that are desirable or undesirable in the final products but we've not really done very much serious work on improving the raw material.

"We don't really understand milling quality very well. We don't understand stability problems in final products--and that usually relates to oil oxidation. And we don't understand as much as we'd like about the mixed-linkage beta-glucans. Some of the barley people are far ahead of us, in the United Kingdom, Denmark and Australia particularly."

Beta-glucans are glucose molecules similar to cellulose. They differ from cellulose in that they can dissolve and bind large amounts of water into a gel-like substance. Cellulose can only be suspended in water; it won't dissolve no matter how well stirred.

"The suggestion is that the beta-glucans aren't as digestible by gut enzymes," says Fulcher.

The basic research will improve our understanding of how oats--and, indeed, all grains--are put together. That knowledge will help breeders and processors when they begin to look for specific characteristics in oat varieties.

Armed with that knowledge, agronomists may be able to select better parent stock for breeding new varieties that meet specific product requirements. The same research should also help improve barley, wheat and other grains.

Computerized technologies not widely used in the cereal industry will focus the research at the University of Minnesota, defining the biochemistry, the structure and the organization of a grain seed.

"We ordered a couple of instruments which I have been using for a number of years elsewhere," Fulcher says. "One is an image analyzer of the sort that's used in satellite imagers, but geared towards biological materials. We will use that for mapping molecular species in different grains, tissues and products, even during the processing operations.

"We also have ordered a microspectrophotometer, which is unique in cereal research. There are only two others like it in the cereal business. It will enable us to more precisely identify biochemical constituents in cereal grains." Fulcher says the instrument can measure characteristics of samples as small as 1/2 micrometer in diameter. It would take about 8,000 samples that size to span a 1/4-inch pencil eraser.

"We can use spectral characteristics to measure the amounts of materials in different tissues and we can even map their distributions within those tissues and in whole grains," he says.

Those maps and measurements might someday give Minnesota oats and the entire U.S. cereal industry an edge in an increasingly competitive international market. "We are having pretty hot competition with Europeans and the Australians in a lot of our cereal chemistry, and they've been rather innovative in the last 15 or 20 years," Fulcher says. "North Americans have tended not to be quite as progressive, but now we are catching up."

Catching up is important because the United States imports about 70 million bushels of oats a year, mostly from Canada. Much of that could be produced in Minnesota.

"On the average, the weather here favors oat growing most years," says Ray Lottie, a manager of cereal grain operations for General Mills. "We have cooler weather than most the rest of the country, and oats are a cool-weather crop. The cool weather and long days that we have most summers favors oat quality in terms of test weight and the size and color of the kernels."

Stuthman adds, "I'd like to see us get to a point where we don't have any imports, and we have the kind of quality in the grain that we are looking for."

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AEA,BSS,CEO,F1,H2

NAGR3610

NEWS/ INFORMATION

August 16, 1990

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

Source: Bill Hutchison
612/624-1767
Writer: Mary Kay O'Hearn
612/625-2728

BLISTER BEETLE PUBLICATION AVAILABLE

A new publication from the University of Minnesota's Extension Service tells how to identify blister beetles and to watch hay, particularly alfalfa, for their appearance.

Horses fed hay containing blister beetles have died; however, there have been no instances of this yet in Minnesota. Extension entomologist Bill Hutchison, one of three authors of the publication called "Blister Beetles in Alfalfa," says blister beetles do not usually build up in large numbers until July and August. "If weather favors grasshoppers, it also enhances blister beetle survival," Hutchison says.

The toxin carried by the blister beetles is called cantharidin (kan-THER-i-din) which can also kill livestock. Its strength has been compared to cyanide and strychnine.

Four blister beetles: the black, ashgray, margined and striped, are pictured in color in the publication.

"There are no sampling techniques to assure that hay is free of blister beetles," Hutchison says. Beetles swarm through a field and may be in only a few bales in a 100-acre field. Growing your own alfalfa to control management practices and setting aside hay from the first and even the second cutting in Minnesota for horse feed is a good precaution. "If cantharidin poisoning is suspected, contact a veterinarian," Hutchison says.

"Blister Beetles in Alfalfa" (item number AG-F0-5510-D), is available from the nearest Minnesota Extension Service county extension office at \$1.50 per copy, plus 6 percent state tax for Minnesota residents. Authors of the publication, with Hutchison, are Michael J. Murphy, veterinary toxicologist with the University of Minnesota's Veterinary Diagnostic Investigation Laboratory and Greg N. Tufte, Hennepin County extension agent-agriculture.

#

V6,V7,K,SD,ND,WI

NAGR3612

NEWS/ INFORMATION

August 16, 1990

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

Source: Tom Brennan
612/625-3701
Editor: Mary Kay O'Hearn
612/625-2728

UNDER 16, OVER 65, ACCOUNT FOR MOST FARM WORK-RELATED DEATHS

The very young, under age 16, and those who are older, 65 and above, are most vulnerable to farm work-related deaths in Minnesota.

That's the way it was from 1980 to 1989, according to Tom Brennan, safety expert with the University of Minnesota's Extension Service, when 457 Minnesotans were killed in farming-related accidents. "These ages accounted for 55 percent of the deaths during the 10-year span, with 1989 especially bearing that out: 3 youngsters and 13 seniors were among the 29 farming work-related deaths," Brennan says.

The 17 farming-related fatalities for the first six months of 1990 bear out the age divisions as well with seven of the fatalities age 65 or above and five younger than 16 years. Tractors figured in 11 of those deaths.

He attributes this age trend partially to shifts in population age and farming economics. "As the farm population ages, to an average age in the mid-40s, there are fewer younger people opting for farming as a life vocation." Add to this the problem of finding responsible hired help to assist farmers and you have the very young taking on more responsibility for chores on the farm that were once handled by older siblings or farm workers. "The stage is set for both the young and old being exposed to hazardous conditions for a greater part of the work day," Brennan says.

Hot debates are now going on nationally on whether farm accident reduction rates can be achieved for young and old through voluntary compliance

or legislation, Brennan adds. "All farmers must work harder to improve their own and their family's safety and health in the face of animal, chemical and machinery hazards. A good resolve as Farm Safety Week approaches September 16-22.

"Farm injuries and deaths are tragic at whatever age they strike," Brennan concludes.

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V2,E4,E5,I1

NAGR3613

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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DEVELOPMENT SYSTEM

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

August 16, 1990

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

LAWNS NEED MORE CARE IN AUGUST

August signals the start-up of more concentrated lawn care, beyond simply mowing and watering, says Deborah Brown, horticulturist with the Minnesota Extension Service.

"Most of Minnesota got off pretty easily in terms of watering this summer," Brown says. "Lawns in the Twin Cities area and others got off to a good start with the heavy rains we had this spring. Of course, it meant having to mow more frequently, but that's a price most people are willing to pay."

If your soil is hard and compacted or heavy and clay-like, or if you've struggled with a thatch buildup, late August through most of September is the best time to try to remedy the situation. You can aerate with a machine that takes cores of soil out of the ground to allow better air and water penetration. By leaving the cores to crumble and fall back into the lawn, the soil cores, with their microbes, also help break down thatch.

When thatch accumulation becomes more than 1/2 inch deep, use a power rake--also known as a vertical mower--to cut slits in the turf and scrape some of the thatch up to the surface, where it can be raked off the lawn and put in the compost pile along with leaves and other garden debris. Aerating or power raking in early autumn is less likely to dry

out the lawn, and there is also less chance of invasion by new weeds.
(Weed seeds generally don't germinate this late.)

"In addition, late August is the time to spread the first of two fall fertilizer applications on the lawn," says Brown. "If we're in the midst of a heat wave, put it off until September. It's not a bad idea to aerate or power rake first, then fertilize and keep the lawn well watered. You can even sprinkle grass seed into thin areas at the same time."

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V7,V8M,I2M

NAGR3595

NEWS/ INFORMATION

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

August 16, 1990

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

PATCH DISEASE IS COMMON IN SODDED LAWNS

Two to three years after sodding, most lawns start to develop patch disease (formerly called Fusarium blight). The reason is simple but the cure complex, says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

"A thick thatch (that area above the soil and below the green grass blades) encourages shallow rooting, which can result in frequent periods of stress to grass plants," Ash explains. "During these stress periods, soil-borne pathogens are able to infect the plant, and the result is patch disease."

Symptoms develop first in the driest areas of the lawn--steep slopes and southern exposures. The symptoms include rings of dead grass with live grass or weeds inside and outside the rings, circular patches of dead grass or occasional streaks of dead grass. Grass blades on infected plants are usually light to dark tan, while the roots are dark chocolate brown and rotted. Usually the crown of the grass plant is completely killed.

Reducing the symptoms of patch disease and controlling it are very difficult. Conditions favoring its development must be attacked first. These include reducing and maintaining the thatch layer at less than 1/2 inch in depth; relieving soil compaction as much as possible; adjusting

fertilizing practices, including amounts and time of application; and
watering properly.

Detailed information is available in a fact sheet, Patch Diseases of
Lawns, available as item AG-FS-3034 from county extension offices
throughout Minnesota. It costs 25 cents per copy.

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V7,V8M,I2M

NAGR3593

NEWS/ INFORMATION

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EDUCATIONAL
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1420 Eckles Avenue
St. Paul, Minnesota 55108

August 16, 1990

Source: Tom Brennan
612/625-3701
Editor: Mary Kay O'Hearn
612/625-2728

FARMING 'RISKY' FROM SAFETY ANGLE

It's not circus aerialists or humans shot from cannons, but farmers, often with both feet on the ground, who are considered to have the most dangerous occupation in the United States. Something to think about as Farm Safety Week approaches September 16-22.

During the last 10 years, 457 Minnesotans have met untimely, often violent deaths while farming, according to Tom Brennan, safety expert with the University of Minnesota's Extension Service. Those yearly figures have ranged from a high of 63 in 1982 to a low of 26 in 1988. Last year there were 29 deaths attributed to performing work-related chores on the farm.

For the first six months of 1990 there have been 17 fatalities while farming.

"Fatalities are down nearly 44 percent in the last two years when compared to the 1980-1987 fatality average of 48 deaths per year. Some trends, however, remain constant throughout," Brennan says. "On average 42 percent of the farm work-related deaths over the last 10 years were tractor-related," says Brennan. (Eleven of the 17 fatalities so far in 1990 have also been tractor-related.) More than 95 percent of the operator victims involved in rollovers (either to the side or backward flips) did not have a Roll Over Protective Structure (ROPS) and a seat belt in place on the tractor. And while most new tractors have these

safety features as standard equipment, older tractors (usually pre-1976 manufacture) can be a problem. The average cost of retrofitting an older model to include these protections averages from \$750-\$1,000.

Runovers are the second most common type of tractor-related fatality--with the operator or rider falling from the moving tractor or the tractor running over a person such as a child in a farmyard who is in a blind spot of the tractor operator.

Why are tractors so often guilty? Brennan suspects it's because most farmers have more than one tractor for different uses on the farm and each machine has "a personality of its own." This covers everything from how it handles on the road to the seating position and placement of the operator controls. Some are easy to see through (the blind spots) because of their design and others are full of blind spots and demand special attention for those walking or playing around the tractor.

"Engineers call these differences 'design ergonomics' and if a farmer is moving from tractor to tractor during a day it's essential to know how to react quickly with the particular tractor in an emergency situation," Brennan says.

Because tractors are the most used piece of mechanical equipment on the farm in any given day, high level of use during long hours can lead to familiarity and complacency--two contributors to mishaps and preventable injuries or death.

Machinery-related deaths typically involve being caught in or trapped under a piece of equipment other than a self-propelled device such as a tractor or combine. Some of the equipment involved in fatalities include shop tools such as drills, saws and welders; crushing and grinding equipment such as feed mills, grinders, silage choppers; conveying equipment such as feed augers, elevators or belts and pulleys

on power-driven machinery. The Power Takeoff Shaft (PTO) can lead to a special type of machinery-related fatality. "Often the farmer gets tangled in the shaft when reaching across or stepping over a spinning shaft not properly shielded," Brennan concludes.

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V2,E4,E5,I1

NAGR3614

NEWS/ INFORMATION

August 20, 1990

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

ANNUAL GRASSY WEEDS APPEAR IN AUGUST

In August, crabgrass, foxtail, barnyardgrass and other annual weed grasses show up fairly obviously in lawns. Ideally, the use of a pre-emergent herbicide in early May would have prevented most of these weeds from sprouting, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

When hot weather sets in and the weeds are no longer young and tender, there's not much you can do to eliminate them chemically, Brown says. Organic arsenicals labeled for crabgrass control tend to brown out the lawn temporarily, and this late in the season they're not very effective against the weeds.

When annual weed grasses send out seedheads, catch lawn clippings to reduce the number of seeds that fall back into the soil, she says. Where weeds aren't too numerous, go out after a good rainfall or after you've watered the lawn thoroughly and just pull them up. Most annuals come out fairly easily because they've only had a few months to develop a root system.

"If pulling or digging weeds leaves gaps in your lawn larger than 3 or 4 inches across, work some grass seed into the bare spots," says Brown. "Surrounding grass will fill in small holes, but larger ones are an open invitation for more weeds."

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V7,V8,I2

NAGR3597

NEWS/ INFORMATION

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St. Paul, Minnesota 55108

August 20, 1990

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

HUMID WEATHER ONLY PREREQUISITE FOR POWDERY MILDEW INFECTION

The ever present powdery mildew fungi have been wrecking many gardens and landscapes this summer, producing gray-to-white, powdery-appearing structures on leaves.

Severe infections can result in leaf puckering, poor growth and fewer flowers, says Cynthia Ash, plant pathologist with the Minnesota Extension Service.

While other fungal diseases need prolonged periods of wet foliage to infect plants, mildew fungi need only occasional periods of high humidity. When this happens, the fungus grows over the surface of the leaf and sinks little structures into the leaf to derive nourishment.

"Powdery mildew seldom seriously harms the many types of plants it infects, but it can reduce photosynthesis and weaken the plant," Ash says.

To prevent problems with powdery mildew, Ash says to avoid planting susceptible plants in heavily landscaped areas. In existing landscapes, pruning or replacing plant materials to increase air circulation and sunlight penetration will help. Avoid overcrowding. Use plant materials adapted to the landscape areas present. Water early in the day and at the base of plants. Fungicides, available for some plants, are only a temporary cure.

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V7,V8,I2

NAGR3594

NEWS/ INFORMATION

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

Source: R. Ashley Robinson
612/625-7260
Writer: Joseph Kurtz
612/625-3168

SCRAPIE IS SOURCE OF CONCERN FOR SHEEP PRODUCERS

Although scrapie is a disease that very seldom occurs in Minnesota sheep flocks, its effects are felt by nearly all sheep producers. That's because the disease has caused renderers to refuse to pick up dead sheep or offal from slaughtered sheep.

"Scrapie has been linked to a cattle disease occurring in Great Britain called bovine spongiform encephalopathy, or BSE," says R. Ashley Robinson, University of Minnesota veterinary epidemiologist. "There is evidence that cows have become infected with BSE as calves by eating contaminated feed containing meat meal from scrapie-infected sheep."

Robinson says the national organization of renderers has advised its members not to pick up sheep or sheep offal. "The reason for this is the liability issue, even though BSE has never been positively diagnosed in this country," he notes. "To export meat meal to Europe, renderers have to state that it doesn't contain rendered sheep."

Minnesota Board of Animal Health regulations require that dead animals be incinerated, sent to rendering, or buried three feet deep so as not to contaminate water supplies, says Robinson. "Producers face problems in disposing of dead sheep," he points out. "In some counties, it may be possible to get permission to use the sanitary landfill. Incineration may require a permit from the Minnesota Pollution Control Agency."

Robinson says an outbreak of BSE in the U.S. is possible, but rather unlikely. This is because the U.S. has had a scrapie control program in place for a number of years. When the disease occurs in a flock, there is depopulation of bloodline relatives of infected animals, or in some cases, the whole flock. The owner receives compensation from a federal indemnity fund.

Great Britain did not have a scrapie control program until recently. The exposure risk is also higher there, with 40 million sheep in a country the size of Minnesota. The sheep population for the entire U.S. is approximately 10 million.

A committee representing various segments of the U.S. sheep industry is working with the federal government to develop a new scrapie program. Robinson is a member of this committee. "There is dissatisfaction with the present program," he says. "The committee is looking at a certification program based on demonstrating that a flock has been free of scrapie for five or six years."

The last case of scrapie reported in Minnesota was in 1988, when one case was reported. The disease was first diagnosed in the U.S. in 1947, and between then and 1989, it was diagnosed in 476 flocks throughout the U.S.

Robinson says the agent that causes scrapie and BSE has not been definitely identified. It's not a conventional virus and can't be detected by blood testing. It's also very resistant to chemical and heat treatment.

Scrapie affects the central nervous system. Signs are variable, and may include abnormality in gait; hyper-responsiveness; bizarre itchiness as evidenced by biting and chewing of the hind quarter or rubbing and

scratching against a fence; and progressive weight loss. The disease may take from a few weeks to a few months to run its course, and ultimately leads to prostration and death.

The only way to diagnose the disease is to examine brain tissue of an infected animal under a microscope.

Scrapie is transmitted from flock to flock through the movement of sheep. Infected ewes are most likely to transmit it to their lambs after the lambs are born, but apparently do not transmit it during gestation.

Robinson says the best way to prevent scrapie is to maintain a closed flock. New animals introduced into the flock should come from reliable sources known to be free of scrapie.

A disease that affects humans, Creutzfeldt-Jakob Disease (CJD), is similar to scrapie. However, there is no evidence that humans get CJD through sheep contact, according to Robinson. "The potential for human illness from handling or eating scrapie-infected animals appears to be zero," he concludes.

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AES,BSS,CEO,V2,A2,D,N3

NAGR3616

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
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August 27, 1990

Source: Jeffrey D. Hahn

612/624-4977

Editor: Mary Kay O'Hearn

612/625-2728

GROUND BEETLES MAY ENTER HOMES IN LATE SUMMER

Dark-colored, shiny ground beetles--commonly found outdoors under stones, logs or leaves--sometimes enter homes through small cracks and holes toward the end of summer.

Once indoors, they head for damp areas, particularly under boxes and other objects, says Jeffrey D. Hahn, entomology educator with the University of Minnesota's Extension Service.

"They are harmless indoors; they don't eat our food or our clothes," Hahn says. "Actually, they are insect eaters. They rarely bite people, but may pinch the skin as a defensive reaction if carelessly handled. They do not breed indoors and die soon after coming inside."

Ground beetles can be discouraged by cleaning up outside debris under which they may hide. "Move wood piles as far away from houses as possible. Caulk or seal cracks or holes in foundations to help exclude insects," Hahn suggests.

Removing ground beetles by hand is easiest if there are only a few present. If large numbers are seen, an insecticide, such as chlorpyrifos or diazinon, can be applied around the outside foundation. Read all label directions carefully before buying pesticides and again before applying them, Hahn cautions.

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V7,V8,I4

NHEC3592

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405 Coffey Hall
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August 27, 1990

Source: John Lawrence
612/625-1273

Writer: Joseph Kurtz
612/625-3168

HIGHER PRODUCTION PUSHES LAMB PRICES DOWN

Plunging lamb prices this year have sheep producers reeling. Unfortunately, there are no prospects for a big price recovery on the horizon, according to John Lawrence, extension economist at the University of Minnesota.

"The one good thing sheep producers can say about 1990 is that it makes the previous two years look pretty good," says Lawrence. "Lamb prices reached a record high in 1987, then declined in 1988, again in 1989, and are still lower this year."

South St. Paul slaughter lambs in mid-August were selling at \$52 per hundredweight, well below the price of \$63.76 for the same time a year ago. Lawrence attributes most of this drop to greater lamb production so far this year.

"Year-to-date slaughter numbers are five percent ahead of the same period in 1989," says Lawrence. "Total production is nine percent above last year due to heavier slaughter weights. Weekly average live weights have been running three to six percent heavier than the same period a year ago, due in part to more lambs and yearlings in the slaughter mix."

Lawrence says mature sheep tend to weigh slightly less at slaughter than fed lambs. The fact that the percentage of mature sheep in the slaughter mix is lower than last year also indicates producers are still looking to expand, he adds.

The increased slaughter resulted in cold storage stocks of lamb and mutton being 24 percent higher on June 30 this year than a year ago. "Imports for the first quarter of 1990 were 25 percent below the same period a year ago, and are expected to remain well below 1989 levels for the year," says Lawrence.

The Minnesota economist expects sheep and lamb production to be up three percent in the third quarter and two percent in the fourth quarter, compared with 1989. For the year, 1990 should average four to five percent above 1989. Production in the first half of 1991 should drop as lambs on feed January 1, 1991 are expected to be two to three percent below 1990.

Lawrence expects per capita consumption of lamb and mutton for 1990 to remain unchanged from the 1989 level of 1.5 pounds, retail weight basis.

Looking ahead, Lawrence predicts sheep and lamb prices this fall will weaken further. "Choice feeder lambs at South St. Paul should average \$48 to \$51 in the third quarter and \$51 to \$54 in the fourth quarter," says Lawrence. "Choice slaughter lambs for the third quarter should average near \$49 to \$50, with fourth quarter prices \$52 to \$54.

"Feeder lamb prices will increase seasonally in the first half of 1991 to average \$56 to \$60 in the first quarter and \$58 to \$62 in the second. Slaughter lamb prices should also increase and trade in the \$58 to \$63 range for the first half of 1991. Prices typically peak in April or May."

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AEA,BSS,CEO,V2,A1,N3

NAGR3618

NEWS/ INFORMATION

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405 Coffey Hall
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Writer: Jerry Wagner
612/625-1978

FARMERS TO VISIT AUSTRALIA, NEW ZEALAND

Would you like to learn about dairy farming and marketing in Australia and New Zealand? Milk producers there are the most efficient in the world.

What competition do these countries provide U.S. farmers in world markets?

What are these farmers like and how are they coping with production costs and low prices?

Would you like to live with farm families in these countries for several days to really get to know them?

If so, you'll want to join the eighth annual, 28-day agricultural tour of Australia, New Zealand and Fiji, planned and conducted by the University of Minnesota's Extension Service.

The tour, scheduled for February 1-28, 1991, has a dairy emphasis. It features visits to dairy farms, cattle and sheep ranches, agricultural colleges and research facilities, ABS centers, and dairy marketing boards, plus the beautiful scenic and recreational scheme in these countries. The highlight, of course, will be the stays with host farm families in Australia and in New Zealand for a real taste of "down under" farm life. Why not make it your winter vacation?

A University of Minnesota extension specialist will serve as an agricultural resource person on the tour.

On the return trip, there will be a scheduled three-day stopover in the beautiful tropical islands of Fiji, with additional stops in Hawaii or Los Angeles if desired.

The tour costs approximately \$3995 (\$3795 from Los Angeles). Included are all air fares, bus transportation, transfers, lodging, many meals, departure taxes, etc. The group size is limited and reservations will be taken in the order received. For a brochure about the tour, call or write Extension Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108; or call 1-800-367-5363 toll free or (612) 625-1978.

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AEA,BSS,CEO,V2,V5,V6,P2,SD,ND,WI

NAGR3617

NEWS/ INFORMATION

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St. Paul, Minnesota 55108

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

PAPERBARK BIRCH NEEDS CODDLING, BUT IS WORTH IT

Many paperbark birches around Minnesota look a bit thin and raggedy. Despite decent rainfall this year, they're still suffering the aftereffects of the past two summers' drought, observes Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

Many birches lost branches to winterkill. Others may have been attacked by the bronze birch borer, an insect that moves in when trees are under stress.

Brown says even though birch shouldn't be pruned any more than is necessary for health and safety, all dead or dying limbs should be removed or cut back to healthy tissue. "August is the best time of year to prune, regardless of what actually damaged the branches," says Brown. "Wounds will heal rapidly and the bronze birch borer is no longer active this late in summer."

Pruning paint or wound dressing is not needed. Ten years of research shows that these paints and dressings really don't help the tree--though they may offer some psychological aid to the tree owner. For paperbark birch there's another reason not to put anything over the pruning cuts: paint or dressing will contrast with the white bark and stand out like the proverbial sore thumb. Wounds will be less visible if left to heal on their own.

If the soil your birch is growing in is light, sandy or somewhat poor, plan to fertilize it next spring, Brown suggests.

"You might also wish to remove a circle of grass around the trunk, and replace it with 4 inches or so of woodchip mulch," Brown says.

"This not only helps hold moisture, but keeps the shallow roots cooler in summer. And if we go over a week without rain, by all means set a soaker hose or sprinklers under the branches and several feet beyond, to give the tree a really thorough soaking every 10 to 14 days.

"Finally, if all else fails and the tree appears doomed, have it taken down. But don't hesitate to plant a birch again. The river birch, with peeling, cinnamon-colored bark, is a tougher tree than the paperbark birch. But even the paper birch is worth replanting. It grows fast, and with some babying will usually be more than worth the effort."

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V7,V8M,I2M

NAGR3598

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

SEPTEMBER: DECISION TIME FOR SEEDING OR SODDING LAWNS

If you live in southern Minnesota, mid-September is as late as you should fall seed a lawn and farther north in Minnesota that deadline is even earlier, according to Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

"Seeds must sprout, then grow a long enough period of time to develop a good root system that will carry them through winter dormancy in decent shape," Brown says.

You could try dormant seeding in November, when the soil and air temps are too cool to allow seed to sprout, but it's a bit tricky, and probably a job best handled by professionals. Even then, you're dependent on a winter with decent snow cover--something that's been lacking in the southern part of the state the past few years.

Sodding the lawn is an attractive alternative to seeding. Sodding can be accomplished later in the season with minimal risk, certainly through the end of September, and in many instances, far beyond.

Sodding costs more than seeding; sod gives you almost instant lawn. It roots through to the soil below within two to three weeks, and can be walked on once it feels firm under foot. "Sod has been grown by turf specialists; it should be thick and healthy from the moment it's laid," Brown describes.

Sod also has the advantage of smothering out annual weed seeds. Most of these weed seeds won't be able to push through the sod next spring. "However," she cautions, "you will need to dig or kill and remove perennial weeds before laying sod. To ensure good results, soil preparation should be virtually identical, whether you start a new lawn from seed or sod."

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V7,V8,I2

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August 30, 1990

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

KEEP WATERING YOUR EVERGREENS

So many evergreen shrubs and trees were damaged by last year's unfavorable weather--little autumn rainfall, extreme cold in December without benefit of snowcover and the drying effects of sun and wind. They looked green early in the spring, but turned brown, yellow or orange rapidly once temperatures began to climb.

Deborah Brown, horticulturist with the University of Minnesota's Extension Service says there's no way to guarantee your evergreens will be okay this winter, but regular watering throughout the growing season can insure that they won't go into winter moisture-stressed.

"Laying several inches of woodchip mulch beneath each plant also helps stem moisture loss through evaporation and delays the date when the soil freezes to a little later in the season," she says.

Unless it's dreadfully hot, a good soaking every seven to 10 days should be adequate. Then, as the weather cools in autumn, that interval can be stretched to two weeks or more, depending on rainfall.

Brown cautions, "Never water evergreens if the soil is already moist. Unless they're planted in sandy soil, you run the risk of rotting their roots."

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V7, V8, I2

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

WHITE SOCK INSPECTION IS GOOD WAY TO FIND FLEAS INDOORS

Fleas are common at the end of the summer. Although they can be very persistent, it is possible to eliminate them.

If you have pets, Jeffrey D. Hahn says, they should be checked for fleas at the same time as control efforts begin in your home. A veterinarian should be consulted to ensure that your pet is treated properly. Hahn is an entomology educator with the University of Minnesota's Extension Service.

Indoor control should be concentrated where fleas are seen. A good way to find them is by walking through the house while wearing white socks. The fleas are attracted by the vibrations from the steps and the warmth from your body will move them toward you. Their dark bodies are conspicuous as they jump against the white socks.

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

Residual insecticides, such as chlorpyrifos or propoxur, should be sprayed along baseboards, under and around furniture, and other places where fleas are found.

Insect growth regulators, such as methoprene (for example, Strike FleaEnder), are very effective against immature fleas, Hahn says. They

do not affect adults and a residual insecticide should also be used (some pesticides contain both a growth regulator and a residual insecticide). Read all label directions carefully before buying pesticides and again before applying them, Hahn cautions.

Bug bombs are commonly used to control fleas. However, they are only effective on insects that are out in the open and leave little residual. Since fleas commonly live in carpets, cracks of wood floors and similar hidden places, bug bombs have little effect on them.

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

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V7,V8,I4

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NEWS/ INFORMATION

August 30, 1990

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

BEEF CALVES BENEFIT FROM PREWEANING MANAGEMENT

Some work with beef calves a few weeks before weaning time will bring dividends when the calves go to market. Pete Anderson, extension beef scientist at the University of Minnesota, has several suggestions for cow-calf operators.

"Before weaning or working calves, prepare your facilities," says Anderson. "If you need to put in corrals or working facilities, you can obtain information from your county extension office."

He recommends castrating and dehorning calves at least three weeks before weaning, if not earlier. "Performing these practices prior to weaning reduces stress on the calves and hastens recovery," he points out.

Also consider creep feeding calves three weeks before weaning. This will reduce weaning stress and will help calves start on feed more quickly, notes Anderson.

He suggests consulting with your veterinarian regarding vaccination programs for feeder calves and replacement heifers. "Many vaccinations should be given three weeks before weaning," he points out. "Remember, a calf needs immunity, not a vaccination when stress arrives."

Finally, he recommends implanting steer calves and heifers not intended for breeding, or re-implanting calves implanted as newborns.

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**UNIVERSITY OF MINNESOTA
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1420 Eckles Avenue
St. Paul, Minnesota 55108Source: John Lawrence
612/625-1273
Writer: Joseph Kurtz
612/625-3168**U.S. SHEEP NUMBERS UP, CONSUMPTION OF LAMB DECLINING**

The number of sheep on U.S. farms is slowly increasing, while consumption of lamb and mutton continues to decline. Those are the key focal points in the current economic picture of the U.S. sheep industry, according to John Lawrence, extension economist at the University of Minnesota.

"According to a recent U.S. Department of Agriculture report on the sheep industry, the U.S. stock sheep inventory on January 1, 1990 reached 9.6 million head," says Lawrence. "That's the fourth straight year numbers have increased after reaching a low in 1986 of 8.5 million head. The 1990 total is up five percent over 1989, but is still far below the 1942 record inventory of 49 million head."

Lawrence says sheep production has generally been profitable in recent years. "Cash receipts have exceeded cash expenses 17 of the last 18 years for sheep flocks, compared with only nine years for beef cow herds," he says. "Returns above all costs for sheep were positive in 14 of the last 18 years. However, these positive returns to management were not large enough to offset the additional management required for sheep. Thus, resources have left industry."

The USDA report also shows lamb feeding is becoming more consolidated, according to Lawrence. Large commercial feedlots finish over half of all lambs slaughtered. Lots in Colorado account for 20

percent of the U.S. lamb feeding industry. Other large feeding states include California, Texas, Kansas, Oregon and Wyoming.

"On the demand side, the consumption of lamb and mutton continues to decline, both in absolute and relative terms," notes Lawrence. "Per capita consumption peaked in 1945 at 6.5 pounds retail weight, which represented approximately five percent of red meat consumption. By 1989, it had dropped to 1.5 pounds and less than one percent of total red meat consumption.

"The lack of demand stems from the small consumer base--relatively few people eat lamb. The industry's challenge is to attract new consumers to a relatively expensive red meat at a time when red meats are losing market share to poultry. Because lamb is unfamiliar to most Americans, it may benefit from promoting itself as a new or specialty product to most consumers."

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AEA,BSS,CEO,V2,A1,N3

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September 6, 1990

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

BEEF SCIENTIST RECOMMENDS CULLING, CORNSTALKS FOR COW HERDS

Fall is a good time to cull beef cow herds. Cows and heifers that are open after the breeding season should be the first to go, says Pete Anderson, extension beef scientist at the University of Minnesota.

"Pregnancy check cows 40 to 60 days after you take the bulls out," he says. "In addition to open cows, good candidates for culling are those that have problems with udders, teeth or eyes, or are poor producers."

Anderson says it may be profitable to add weight to cull cows before selling them. "Thin cows have the potential for rapid, efficient gains for 30 to 60 days after weaning if they get a high-energy diet," he points out. "In addition, cull cow prices are usually at a seasonal low during October and November."

Fall is also a good time to plan a parasite control program for the cows that stay in the herd. But don't treat cows for grubs after Nov. 15 in Minnesota, cautions Anderson.

Cows staying in the herd can get low-cost feed by grazing cornstalks when pasture growth slows. "Cornstalks alone will sustain dry or late-lactation cows until they have eaten most of the grain," says Anderson. "Just after weaning, beef cows have lower nutrient requirements than at any other time during the year, and should not be overfed. Dry cows should graze cornstalks until snow prevents grazing."

If cornstalks aren't available, Anderson suggests feeding dry cows 15 to 25 pounds of medium quality legume-grass hay per head per day. Another option is 8 to 10 pounds of good quality legume hay plus 20-25 pounds of corn silage per head per day.

"Be sure to provide salt and minerals and monitor mineral intake," Anderson concludes.

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Source: Deborah Brown
612/624-4791

Editor: Mary Kay O'Hearn
612/625-2728

CLOSE LOOK COULD BE BEST FOR LEAVES

Some people head for the east coast to see them, but others saving energy and dollars just enjoy them in their Minnesota backyard.

Wherever in the state that might be the bountiful fall leaves produce a kaleidoscope of color.

Some of the colors to expect, according to Deborah Brown, a horticulturist with the University of Minnesota's Extension Service: bright red from the red maple and sumac; red-orange to yellow from the sugar maple; yellow from the boxelder, Norway maple, silver maple, paper birch, catalpa, ginkgo, honeylocust, Kentucky coffeetree, aspen, basswood and American elm; and red to brown from the oaks.

With cooler weather come stories of Jack Frost or Mother Nature painting the leaves, but it's actually a chemical process as summer fades to winter, Brown says.

In fall when temperatures drop and days grow shorter, leaves stop their food-making process. The green chlorophyll breaks down, disappears and allows other colors to emerge. "It's the green pigment known as chlorophyll that's responsible for photosynthesis--the conversion of light energy to carbohydrates needed for plant growth," says Brown.

Leaves also contain yellow or orange pigments called carotenoids which are masked by the greater mass of green coloring most of the year.

Anthocyanin is the pigment responsible for red colors that show up as chlorophyll breaks down.

Don't expect to see the same color brilliance on the same trees from year to year. Depending on weather conditions, color intensity can vary a lot. A tree that's spectacular one year can seem faded in a warm, cloudy, rainy fall. The ideal conditions for good fall color include sunny days, cool nights, and fairly dry conditions.

Sometimes people buy trees at a nursery, then are disappointed by poor fall color when they're planted in their yards. Trees vary in their genetic ability to develop color, Brown explains. For example, not all sugar maples are created equal.

Color also tends to be better in slightly poor soil than in an area that's fertilized regularly. And if the young trees are shaded by other trees or buildings, they might not receive the sunlight they need for good color until they grow taller.

"There are many routes in Minnesota to see autumn color, but if you want to save gasoline and like the benefits of walking--your own neighborhood might well be the best choice," Brown concludes.

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V7,V8,E3,I2

NAGR3619

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

MINNESOTA EXTENSION SERVICE

NEWS/ INFORMATION

September 10, 1990

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

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

MINNESOTA EXTENSION SERVICE PRODUCES GARDENING CALENDAR

Twelve months of gardening activities in Minnesota has been combined with brilliant color photography in a new calendar, Minnesota Gardening, 1991, produced by the University of Minnesota's Extension Service. Each calendar month lists Minnesota Extension Service publications that are especially suitable for that time of year.

Minnesota Gardening, 1991 includes maps that show typical frost dates in the state and USDA climate zones. And there are pages telling where gardening help may be found.

The calendar, which costs \$5, is available from county extension offices and from Master Gardeners throughout Minnesota. Mailing adds \$1 to the cost.

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V7,V8M,I2M

NAGR3628

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

SOWBUGS, MILLIPEDES ARE COMMON DUE TO WET YEAR

Above-average rainfall has made sowbugs and millipedes common this year. Unless it becomes dry this fall, we should see many of these little creatures indoors, according to Jeffrey Hahn, entomologist with the University of Minnesota's Extension Service.

Normally these insects live outside in moist conditions, hiding under leaf litter, stones, wood chips and plastic. As they seek shelter for the winter, they enter homes through cracks in the foundation, gaps under doors and other entry points.

"Really, they are harmless to people; they do not eat our clothes, food or property," Hahn explains. "Sowbugs and millipedes do not breed indoors and die shortly after coming inside because most buildings are too dry."

If consistent numbers of live sowbugs and millipedes are seen inside, it means an area is too damp. Drying out such areas with a dehumidifier or a fan often eliminates them. Caulking and sealing cracks in the foundation and other accessible openings will cut down on the number migrating indoors.

Rake leaves and remove other debris (potential hiding places) as a preventative measure to give them less opportunity to get inside, Hahn suggests. A temporary insecticide barrier (such as chlorpyrifos or

diazinon) around the foundation's exterior reduces the number of insects that may come inside. Read all label directions very carefully before using pesticides, Hahn emphasizes.

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V7,V8M,I2M

NAGR3630

MINNESOTA EXTENSION SERVICE

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September 10, 1990

Source: Jerry Wagner
612/625-1978

Writer: Joseph Kurtz
612/625-3168

DAIRY GOAT CONFERENCE AT UNIVERSITY OF MINNESOTA SET FOR NOV. 10

Dairy goats will be the center of attention Nov. 10 at the University of Minnesota's 11th Annual Dairy Goat Conference.

The conference is designed for dairy goat producers, veterinarians, 4-H'ers with dairy goat projects and persons who are considering whether to keep goats. It will be in McNeal Hall on the University's St. Paul campus, and will begin with registration at 8 a.m. and continue until 4:30 p.m.

Featured speakers at the conference will include Mary C. Smith, associate professor of veterinary medicine at Cornell University, Ithaca, N.Y., and Judy Kapture, owner and operator of a commercial goat dairy in Portage, Wis. Smith will make three presentations: on feeding the high-producing goat, on goat diseases and on mastitis control and prevention. Kapture will speak on goat product marketing and somatic cells in goat milk.

Kapture will also be on a panel that will focus on marketing dairy goat products in the Upper Midwest. Also on the panel will be Scott Erickson, Bass Lake Cheese Factory, Somerset, Wis.; Mary Doerr and Pamela Morse, Kenyon, Minn., goat cheese producers; Karyl Dronen, Minnesota Dairy Goat Association president; and Vince Maefsky, Scandia, Minn., dairy goat operator.

Selling milk on the farm will be the topic of another panel featuring Doerr, Morse and Mary Augustine of Hager City, Wis. Later, Doerr and Morse will present an overview of the newest techniques in cheesemaking.

Other topics will include ultrasound pregnancy diagnosis, skin diseases and basic management of dairy goats. The respective presenters of these topics will be Cindy Wolf, University of Minnesota extension veterinarian; Joni Scheftel, Waterton, Minn., veterinarian and dairy goat operator; and Maxine Sheldon, Scandia, Minn., dairy goat operator.

A 4-H workshop in the afternoon will focus on selecting, fitting, showing and judging dairy goats. Harris, Minn., dairy goat judge Loren Larson and Minnesota Dairy Goat Association youth coordinators will conduct the workshop.

There will also be a goat memorabilia swap coordinated by Christine Maefsky of Scandia, Minn.

The registration fee for the conference is \$12, and \$6 for each additional adult family member. There is no charge for family members under 18 years of age. The fee for veterinarians is \$25, and \$15 for veterinary technicians. The registration fee includes proceedings and refreshments, but not lunch (however, a box lunch will be available for \$4).

To register, send registration fees to Extension Special Programs, 405 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108. Make checks payable to the University of Minnesota. More information and registration forms are available from county extension offices throughout Minnesota or by calling (800) 367-5363 or (612) 625-1214.

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AEA,BSS,CEO,V2,V5,V6,D,L3,N3

NAGR3638

NEWS/ INFORMATION

September 10, 1990

Source: Bill Wilcke
612/625-8205
Writer: Jack Sperbeck
612/625-1794

CONFUSION OVER CORN DRYING COULD LEAD TO SPOILED GRAIN

Confusion between combination drying and in-storage cooling could result in some spoiled grain, says Bill Wilcke, agricultural engineer with the University of Minnesota's Extension Service.

Some farmers have been told they have more airflow than they need in their combination drying bins and should replace existing fans with smaller ones. This could lead to spoiled grain. "The University of Minnesota has not changed its recommendations on airflow requirements for combination drying," Wilcke says.

With combination drying, you use any high-temperature dryer to remove the top points of moisture quickly from wet corn. Then, the corn is transferred hot at about 20 to 22 percent moisture to a natural-air drying bin. The bin should be equipped with a fan that can provide 1 cubic foot of air per minute per bushel (1 cfm/bu) of corn. For typical drying depths of 15 to 18 feet, you need about one fan horsepower per 1,000 bushels (1 hp/1,000 bu) of corn to provide 1 cfm/bu.

In the natural-air drying bin, the corn is dried to about 15 percent moisture. One point or so is lost in initial cooling, which takes about 12 hours. The rest is removed slowly, over four to eight weeks. With in-storage cooling, you dry corn to 16 to 17 percent true moisture in a

high-temperature dryer. It's dumped hot, then cooled with a small aeration fan that delivers enough air to cool the corn within about 24 hours. One to 2 moisture points will be lost in cooling, with 3 points the maximum.

"Part of the confusion comes in measuring true moisture content. Electronic meters are not very accurate for hot, freshly dried corn," Wilcke says.

The bottom line: if corn is around 20 to 22 percent moisture when it goes into the storage bin, you'll need big fans and a good four to eight weeks to dry it to 15 percent moisture.

More detailed information is available at county offices of the Minnesota Extension Service.

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AEA,BSS,CEO,F1

NAGR3639

NEWS/ INFORMATION

September 13, 1990

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

IT'S TIME TO MOVE HOUSEPLANTS BACK INDOORS

Cooler weather means it's time to move plants that reveled in a summer outside indoors. Horticulturist Deborah Brown with the University of Minnesota's Extension Service has some tips on how to do this.

Amaryllis: These huge bulbs have zero frost tolerance, so don't wait until the last minute to bring them indoors. You can keep them growing actively by placing them in a bright, sunny window, where they'll bloom around mid-April.

Or you can put them in the basement, away from light, and stop watering. Slowly, each leaf will wither and dry. Cut off the old leaves and watch for signs of growth or simply bring the bulb back upstairs after two months or so in the dark. Water thoroughly and you'll be rewarded with new growth. They should bloom four to six weeks after new leaves appear.

Geraniums: The safest way to overwinter geraniums is to plant them in containers and keep them in a sunny location. Barring that, pot them up and place them in a cool basement, near a little light, if possible. Under these conditions, water only enough to prevent the plants from shriveling and dying.

People also try knocking the soil off geranium roots, then hanging

them by the bunch, or storing them in paper grocery bags in the basement without watering until new sprouts form in early spring. Most modern basements are too warm and dry for this to succeed, though.

Poinsettias: You can force poinsettias to bloom in time for the holiday season if you start working with them in September. Keep them growing actively in a sunny window during daylight hours, but be sure they are totally excluded from any light for at least 12 or 13 hours each night.

They won't develop as intense colors nor as large bracts at home as they had when the plants were purchased from a florist. That's to be expected, since growing conditions are far from ideal in the average home. Forcing poinsettias can be a challenging and rewarding experiment, nonetheless.

Houseplants: Inspect all houseplants, washing leaves to remove dust and dirt. As days grow shorter and light intensities lessen, it becomes increasingly important for plants to be able to make efficient use of what light is available. Dust and dirt act to filter light before it reaches the leaves' green tissue, where photosynthesis takes place.

Plants that spent the summer outdoors should be checked particularly carefully for signs of insect pests. Insect problems must be resolved before placing these plants among others that spent the summer indoors, or you might have a major outbreak on your hands, Brown cautions.

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V7,V8,I2

NAGR3627

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

September 13, 1990

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

WHY SOME FRUIT CROPS, MOSTLY BERRIES, FIZZLED IN 1990

Weather patterns combined in 1990 to produce an interesting mix of problems and success stories when it comes to fruit that's home-grown or produced locally, in orchards and U-Pick operations.

For starters, lots of strawberry plants suffered from winter injury. Some died outright, others simply failed to produce a crop this year. Those that overwintered in reasonable shape faced an adverse combination of cool, wet weather at bloom time, followed by very high temperatures while fruit ripened. The net result: a poor crop of berries, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

Many apple trees failed to make it through the winter, as well. She describes dwarf apple trees as the most vulnerable because they are grafted onto special rootstocks that keep them short. But these rootstocks are less hardy than others commonly used in this climate.

"Cooler, wetter than average weather also affected the color of local apples. Many are not as red as in a typical year," Brown says. Overall, the crop is expected to be only ten percent down from last year, though. The apples just might not be as attractive.

In dramatic contrast to the past two years' drought, most of the state received adequate rainfall, with some areas suffering from

excessive amounts. Some crops had to put up with standing water for days.

Then as soils began to dry, the skies opened up and the cycle repeated. While moisture is important to all plants, good drainage is critical where fruit is concerned, Brown points out.

"On the plus side, all the rain enabled us to grow a beautiful crop of plump, juicy raspberries," Brown says. But all the splashing resulted in a rash of bacterial and fungal leaf spotting diseases, not just on fruit plants, but on flowers, vegetables, and ornamental trees and shrubs.

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I2,V7,V8

NAGR3620

NEWS/ INFORMATION

September 13, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Doug S. Foulk
612/624-6220

Editor: Mary Kay O'Hearn
612/625-2728

WHICH MINNESOTA APPLES ARE YOUR FAVORITES?

The best Minnesota apples ripen in September and October. Whether you buy them at a local orchard or the grocery, knowing the characteristics of the available varieties can make your choice easier. These thumbnail sketches by Doug S. Foulk, assistant fruit specialist with the Minnesota Extension Service, will get you started.

Haralson: This is the most widely grown apple in Minnesota and rightfully so. The crisp, tart fruits mellow nicely in storage so that, by the holidays, they appeal to those who like a softer, sweeter apple. Haralson is an excellent all-purpose apple, useful for pies, sauce, baking and fresh eating. Two "color sports," Haralred and Red Haralson, have redder skin, but are otherwise identical.

Honeygold: A cross between Haralson and Golden Delicious, this yellow apple is juicy and flavorful. Many people prefer Honeygold to either of its parent. Although Honeygold is an excellent all-purpose apple, you'll want to save most of them for fresh eating.

Regent: This all-purpose apple is bright red, juicy and crisp. It is sweeter and more tender than Haralson. The crisp, yet tender, texture is especially pleasing for pies or baked apples.

Cortland: Similar to McIntosh in appearance and flavor, but somewhat crisper when fresh. Because the flesh is slow to brown when sliced, Cortland is an excellent choice for salads.

Fireside: This crisp, sweet apple tends to be very large; some may find it too large for one person. Connell Red, a redder-skinned sport, is otherwise identical.

Many other excellent Minnesota-grown varieties are available and perhaps the best approach is to try several until you determine your favorites. Samples are available at many pick-your-own locations throughout the state.

The adventurous may want to try the experimental and other named varieties sold at the University of Minnesota's Horticultural Research Center, where the Minnesota Agricultural Experiment Station's apple breeding work is conducted (Haralson, Honeygold and Regent are but a few of the varieties that have come out of that effort over the years). The research center's apple house is open 10 to 5 weekdays and 10 to 6 weekends. The research center is five miles west of Chanhassen on Highway 5 or one mile west of the Minnesota Landscape Arboretum. For more information, call (612) 474-9440.

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V7,V8M,H1M,I2M

NAGR3632

NEWS/ INFORMATION

September 13, 1990

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

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

TOO MUCH TLC HAS CAUSED LAWN PROBLEMS

Too much tender loving care--too much nitrogen fertilizer and too much water and the resulting thick thatch--has resulted in some of the worst-looking lawns since the drought of 1988, observes Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

Improper management stresses lawn grasses and stressed lawn grasses are much more likely to develop disease problems, she explains.

"Fortunately, this is the best time of the year to tackle these problems," Ash continues. "Lawns can be fertilized twice in the fall with a fertilizer containing approximately four parts nitrogen to one part phosphorus to two parts potassium--unless a soil test indicates otherwise. Apply 1 pound actual nitrogen per 1,000 square feet in early September and again between the end of October and Nov. 15." The size of the numbers on the fertilizer bag is not as important as the actual amount of fertilizer that is applied. The smaller the numbers--which give the actual percentage of nitrogen, phosphorus and potassium in the bag--the more you will have to apply to a given area to provide the same amount of nutrition. Slow or timed release fertilizers provide nutrient availability more evenly and result in less surface water pollution.

Review your watering practices. A well established lawn should be watered infrequently and deeply. Apply at least 1 inch of water at a

time in heavy soils or two applications of 1/2 inch each on lighter, sandy soils. Apply the water slowly so it does not run off.

It's easy to find out how long it takes to put down an inch of water. Place a coffee can or other container in the irrigated area when you water. As a rule of thumb, most lawns need an inch of water in the form of irrigation or rain per week--more during hot windy weather. Newly sodded or seeded lawns have a shallow root system and need to be watered more frequently. Don't over water. Roots need oxygen too.

Thatch is that brown layer of difficult to decompose plant parts: it is located above the soil but below the grass blades. The thatch layer must be kept less than 1/2 inch in depth. Thick thatch encourages shallow rooting which predisposes the turf to stress. The result is patch disease, formerly called Fusarium blight.

"Thatch can be reduced by aerating or power raking early this fall, making fertilizer applications at the proper time of the year and by avoiding excessive fertilization," Ash concludes.

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V7,V8M,I2M

NAGR3634

NEWS/ INFORMATION

September 17, 1990

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

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

SPIDERS LOOKING FOR WINTER HOMES

Spiders can be found in homes throughout the year, but they become more prevalent indoors during autumn as they search for protected areas to spend the winter.

While many people do not like spiders, Jeffrey Hahn, entomologist with the University of Minnesota's Extension Service, says that most spiders are unable to bite people and are harmless. "Since spiders feed on a variety of small creatures, such as flies, sowbugs and silverfish, they can even be considered beneficial and should be tolerated when possible," Hahn says.

But if you still want to keep them at a distance, control spiders by knocking down their webs and removing debris, such as brush and wood piles, where they may congregate outdoors. Also caulk and seal cracks and spaces where they may enter your home.

"The easiest control for an occasional spider found indoors is to kill it with a rolled-up newspaper, a broom or whatever is handy," Hahn says. Minimize favorable conditions by cleaning up papers, boxes and other objects that provide hiding places and remove any spider webs you find.

If you find consistent numbers of spiders in your home, it may mean another insect is present that the spiders are feeding on. Eliminating

this food supply will help control the spiders. Check the spider webs or directly underneath them to see which insects are the food source.

Chemical control of spiders is usually not effective and should be considered as a last resort, according to Hahn. "If insecticides are necessary, chlorpyrifos or propoxur (Baygon) can be applied. Be sure to read all label directions very carefully before using any insecticides," he cautions.

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V7,V8,I2

NAGR3629

NEWS/ INFORMATION

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

September 17, 1990

Source: George Marx
218/281-6510

Writer: Joseph Kurtz
612/625-3168

COW SIZE HAS LITTLE EFFECT ON DAIRY PROFITABILITY

There's little difference between large and small Holstein cows in terms of milk production or profitability, according to University of Minnesota research.

The University is conducting a long-term dairy cattle breeding study at its Northwest Experiment Station at Crookston.

"The project began in 1966," says George Marx, dairy scientist at Crookston. "Two base groups equal in size and production ability were bred either to large or small sires having high ability to transmit production to daughters. The daughters and succeeding generations of the group bred to large sires have been bred to large sires. Daughters and succeeding generations from the small sires have been bred to small sires. There are now cows in the seventh and eighth generations in the project, with 100 cows total in the two groups."

Marx says this selection process has affected cow size, although the change is slower than many people expected. In the large-cow group, first lactation animals average 1,274 pounds, 110 pounds more than their counterparts in the small-cow group. The difference increases to just over 200 pounds for older cows, and the spread in weight continues to grow as cows get older.

First-lactation cows in the large-cow group are 3 centimeters (about

1.2 inches) taller than their counterparts, and this increases to 4 centimeters in older cows.

"Production in terms of fat-corrected milk is virtually identical for the two groups," says Marx. "Small cows require 4.5 percent less feed than large cows because they have a lower maintenance requirement. However, beyond maintenance, the amount of feed needed to produce a pound of milk is similar."

Marx adds that there is no difference between small and large cows in calving ease, dystocia or retained placenta. Large cows have had more nutritional rumen problems than small cows. However, the incidence of health problems related to mammary glands, respiration, feet and legs and reproduction have been similar.

Large cows are worth more when they are culled and go to slaughter. The advantage in today's market is \$121 per head, according to Marx.

Cows in the large-cow group have larger calves. Their bull calves outweigh those of their small-cow counterparts by 7 pounds. Heifer calves of the large cows are 3 pounds heavier.

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AEA,BSS,CEO,V2,D,N2

NAGR3640

NEWS/ INFORMATION

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

September 17, 1990

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

FUNGI CAUSE SOME APPLE BLEMISHES

Two different fungi may be responsible for apple blemishes, but they don't disturb the eating quality of the fruit--just its looks.

Cloudy or smudge-like spots on the surface of apple fruits are caused by a fungus called sooty blotch. Black dots on the surface of the fruit, often along with sooty blotch, are caused by another fungus called flyspeck, explains Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

These diseases usually do not appear until late summer or early fall. Moderate temperatures (65 to 75 degrees F), high humidity and abundant moisture bring them on. The damage is superficial and does not affect the fruit itself.

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H1,I2,V8

NAGR3636

NEWS/ INFORMATION

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

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

COMPOSTING, GARDENING BELONG TOGETHER

Composting is a good way to recycle plant materials from the vegetable and flower garden. And don't forget about the summer's lawn clippings and this fall's crop of leaves, urges Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

"Composting will kill most plant pathogens (disease-causing organisms) only if the compost heats properly and the high temperature is maintained long enough," Ash says. "The compost pile must have a minimum volume of 1 cubic yard and be turned frequently to kill all the pathogens in the plant refuse. Turn the pile every two to three days to provide the aeration and mixing necessary."

Ash says adding materials such as sawdust and leaves helps to provide a mixture more likely to heat properly. Keep the pile at 65 to 75 percent moisture (fairly moist but not wet).

Most leaf diseases are destroyed rather quickly once crop refuse is in contact with soil and begins to rot. However, some soil-borne pathogens (including *Fusarium* and *Verticillium*) are not destroyed by contact with soil or by the rotting of the plant material they are on. These and other pathogens will be killed if composted and the temperature in the pile is 130 to 160 degrees F for two to three weeks. Temperatures can be checked with a candy or meat thermometer partially

buried in the pile. If the temperature is too low or turning is not frequent enough, some pathogens will survive, particularly those near the edges of the pile.

"If you doubt your composting diligence, then diseased plant material is best destroyed," Ash advises.

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V7,V8,I2

NAGR3633

NEWS/ INFORMATION

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

September 17, 1990

Source: Vince Maefsky
612/433-2684
Writer: Joseph Kurtz
612/625-3168

Editors: Call June Rogers (800/367-5363) or Tracey Benson (612/625-8147) to obtain two b/w photos to use with this feature.

'BACK-TO-THE-LAND' MOVEMENT SPARKS DAIRY GOAT ENTERPRISE

Vince Maefsky enjoys raising and milking dairy goats. He says it's not an easy path to a fortune, but provides a lifestyle in which you can be your own boss and set your own schedule. Besides, he adds, "goats are wonderful animals."

Maefsky, who operates Poplar Hill Farm near Scandia, Minn., in Washington County, is one of a handful of Minnesotans for whom goat dairying is a full-time occupation. But there are hundreds more who keep goats for supplemental income or a hobby. There were some 530 entries in goat competition at this year's Minnesota State Fair.

Maefsky says he gets many phone calls and requests for information about goats. That's one of the reasons he is active in the Minnesota Dairy Goat Association and helps plan that group's annual Dairy Goat Conference in conjunction with the University of Minnesota. "When people call us for information, it's nice to be able to say, 'Be sure and come to this conference,'" he says.

The conference, which this year will be Nov. 10 on the University's St. Paul campus, benefits both beginners and those who have had goats for some time, according to Maefsky.

He says the annual conference developed as interest in goats

increased during the 1970s, when a "back-to-the-land" movement took place. "There was a movement of people who wanted to get out of the suburbs and set up hobby farms," he says. "Most were not interested in farming full time, but wanted space for a garden and some animals. During this time, county agents with the University's Minnesota Extension Service were getting a lot of calls for information about goats.

"It was a natural for the University to get involved in putting on the conference. The Minnesota Extension Service has access to animal scientists and veterinarians, and helps us bring in nationally known speakers every year."

Maefsky himself is a product of the back-to-the-land movement, and calls his goat enterprise "a hobby that got out of hand."

He was born in Brooklyn, N.Y., and moved with his family to Tulsa, Okla., at the age of five. He grew up in the city there, and later entered a seminary to study for the priesthood. He eventually left the seminary and earned a degree in philosophy from the University of Oklahoma.

Maefsky and his wife, Christine, moved to an acreage near Wyoming, Minn. in 1970. He went into real estate and became president of his own firm. Christine, who had earned a master's degree in elementary education from Columbia University in New York, went into teaching. They also established a large organic garden and bought their first goats.

They had six goats in 1972 when they bought and moved to the farm that has become the 120-acre Poplar Hill Farm. After four years, the herd had increased to where the Maefskys were milking 32 head. That's when the Maefsky's decided they had to either sell some goats or find a

systematic way to market their milk.

"We decided to sell our milk through retail stores," says Vince. "We arranged to have North Branch Dairy at North Branch, Minn., pasteurize and containerize the milk. We designed a container and made arrangements with International Paper Co. to make containers. We contacted 20 retail stores in the Twin Cities area that agreed to sell our milk on a guaranteed sale basis. This means we would take back any milk they didn't sell."

Maefsky sold his interest in the real estate firm in 1980 to concentrate full time on goat dairying. The Poplar Hill milking herd now numbers up to 150 during the late spring peak, and the total herd, including bucks and young stock, numbers up to 300.

The Maefskys sell about a thousand quarts of milk a week to supermarket shoppers under their Poplar Hill and Nanny's Pride labels. To get the milk to the stores, they haul it from the farm to the North Branch Dairy, then transport it to distributors in the Twin Cities area.

"Through our distribution network, almost anyone in Minnesota can get our milk," says Vince. "Many adults who are allergic to, or have problems digesting cow's milk, drink it. Many infants who are allergic to cow's milk can drink goat's milk."

About 45 percent of the milk from Poplar Hill Farm goes to the retail fluid market, and about 5 percent is sold as raw milk to customers who come to the farm. The rest goes to Bass Lake Cheese Factory at nearby Somerset, Wisc. Milk sales for the farm total about \$80,000 per year.

Because the Maefskys have goats that are top producers and have won many top awards at the Minnesota State Fair and other shows, their young goats are in demand for breeding stock. Many of their animals have gone

to other countries, including Canada, Korea, Singapore, Taiwan, Puerto Rico, Columbia, Venezuela and Mexico.

There's also a market for buck kids. The Maefskys sell about 110 per year, some going for meat and some for medical research. (Antibodies important for human heart and lung transplants come from goats, Maefsky says. He adds that the goats used in research are not killed, but lead long and comfortable lives.)

All of the Maefsky children--Sarah, 18; Seth, 16; Shane, 11, and Stephen, 6--are involved with the operation. The three oldest children have had dairy goat projects in 4-H. Sarah and Seth are youth coordinators for the Minnesota Dairy Goat Association and will help conduct a 4-H workshop at the upcoming Dairy Goat Conference. Vince and Christine will also be busy at the conference. Vince will take part in a panel presentation on marketing goat products, while Christine will coordinate a goat memorabilia swap.

More information on the Dairy Goat Conference is available from county extension offices in Minnesota or by calling (800) 367-5363 or (612) 625-1214.

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AEA,BSS,CEO,V2,V5,V6,D,L3,N3

NAGR3645

NEWS/ INFORMATION

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

September 17, 1990

Source: Earl W. Morris
612/624-3628
Editor: Larry A. Etkin
612/625-4272

Editors: Call Carl Walker (612/624-3708) or Larry Etkin (612/624-3628) to obtain a b/w print or 35mm color transparency to use with this story.

RURAL HOUSING NEEDS ARE OFTEN NOT UNDERSTOOD

Rural residents and their housing needs are often misunderstood by urban-oriented social scientists and policy makers. That's the view of University of Minnesota sociologist Earl W. Morris, a view his own rural Michigan upbringing made him aware of and one supported by a recent multistate study.

Morris, who conducts research for the Minnesota Agricultural Experiment Station, says he hopes the study will help draw attention to rural housing woes and bring about action to alleviate some of those problems.

He says, "There's always been a lack of information on rural housing and we thought this might correct the balance and help people pay more attention."

Most rural dwellers are not farmers, Morris explains. Most live in small towns. Many are poor. "When people think of poor people, they generally think of the poor in cities, not in the country, and that isn't necessarily true," he says.

Morris says the study shows rural housing is generally older and of lower quality than urban housing.

However, rural housing is also usually less expensive; rural residents pay a smaller portion of their income for housing, except in lower-income ranges. But for the rural poor, housing is increasingly hard to afford. An increasing number of rural residents are homeless or having housing problems.

"An obvious solution would be subsidies for poor people's housing, but we're simply not willing to pay for that," Morris says. "The American people have sort of lost their interest in taking care of housing needs for poor people. We have about one-quarter the number of housing programs that we had 10 years ago."

Reducing standards and allowing no-frills housing to be built or rented could be an alternative. Such housing would meet all health and safety standards and would not be substandard in any sense, Morris explains. The "frills" that middle-class standards deem important--such as, extra floor space and bathrooms or the most superior, as opposed to adequate, construction materials--would just be avoided.

"If we do nothing," Morris says, "we choose the idea that homelessness is okay, that paying a high percentage of your income for housing is okay or that very substandard housing is alright."

Morris and others involved in the six-state (Minnesota, Illinois, Iowa, Missouri, Nebraska and Wisconsin) survey of rural housing will be publishing their findings in detail. They also plan to study the housing needs of specific rural groups, including the handicapped, minorities, disabled, elderly female-headed households and young families with many children.

The Farmer's Home Administration is the agency responsible for rural public housing. Morris says he hopes that agency will consider the study's results and recommendations when it makes policy decisions on rural housing needs and standards.

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AEA,BSS,CEO,V2,E2,E5,I4,J

NAGR3643

NEWS/ INFORMATION

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

September 17, 1990

Source: Ward Stienstra
612/625-6290
Writer: Mary Kay O'Hearn
612/625-2728

STALK ROT MAY CUT CORN YIELDS IN MINNESOTA

In many parts of southern Minnesota, field corn isn't filling as expected and the cause can be stalk rot, likely due to Fusarium fungi.

These observations of "widespread and significant loss of ear fill" make Ward Stienstra, plant pathologist with the University of Minnesota's Extension Service, doubt actual corn yields will be as high as earlier predictions.

The kind of stalk rot most seen in Minnesota turns infected stem tissue pink to red. It can result when the corn plant reallocates carbohydrates from the stalk to the ear. Cloudy, cool, short days and delayed maturity from late planting can reduce the photosynthetic production of carbohydrates needed for high grain yields. Disease, hail or wind damage to leaves can increase susceptibility to stalk rot, too. Weed competition, moisture stress when ears are filling and root injury from cultivation or by insects also foster stalk rot.

"This year is a good one for stalk rot," Stienstra says, explaining that many of the factors that foster the disease are present. He suggests scouting fields to determine levels of stalk rot and harvesting early to reduce yield loss from lodging. Check for stalk rot by either pinching the lower two internodes or pushing plants 6 to 8 inches from the upright. Testing 20 plants in five sites in a field should be

enough. "Check several areas if soil conditions vary in the field," Stienstra adds.

"If 10 percent of the plants show evidence of stalk rot, early harvest is recommended. Grain may require drying as many fields will be moist this year."

If stalk rot is a problem this year, he suggests, farmers consider some changes in 1991. This could mean planting hybrids that are genetically resistant to stalk rot and leaf diseases; paying close attention to recommended plant populations for hybrid, soil type and expected rainfall; and fertilizing according to soil test recommendations, avoiding low potash and high nitrogen situations. "This may be more of a problem with manure applications," Stienstra notes. Controlling rootworms and stalk borers is also important. And if stalk rot is a serious problem, rotate away from corn.

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AEA,BSS,CEO,V2,F1M

NAGR3644

NEWS/ INFORMATION

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

September 17, 1990

Source: John Nieber
612/625-6724
Editor: Larry A. Etkin
612/625-4272

MAPS, MATH IDENTIFY AREAS PRONE TO NONPOINT SOURCE POLLUTION

A landscape-sketching computer program and a batch of mathematical formulas describing land features are helping Minnesota Agricultural Experiment Station researchers pinpoint environmental trouble spots in farm fields.

The technique is based on computer-generated maps called digital elevation models, or DEMs. The researchers use the three-dimensional pictures to calculate concise mathematical descriptions of susceptibility to erosion and features such as soil wetness and amount of sun shining on an area. The descriptions predict how vulnerable specific areas are to nonpoint source pollution. Water that runs off land carries valuable topsoil, agricultural chemicals and other pollutants with it.

"It's a method for targeting critical areas," explains John Nieber, a University of Minnesota agricultural engineer. The technique lets Nieber and the other researchers integrate many parameters into a single index that identifies the parts of a watershed vulnerable to erosion.

The advantage of DEM-derived indices is their specificity. "Other criteria give a one-dimensional description," says Nieber. "DEM's give a better description of the three-dimensional landscape so we can describe these processes more accurately." In practice, this means that rather than withdrawing a whole field from production to protect water quality, only the most vulnerable spots need be kept from the plow.

"You don't want to put the whole watershed out of cultivation just because part is susceptible," Nieber says. Conventional systems "may cause you to cull out the innocent, nonsusceptible areas too," he says.

The model could be useful in targeting land for set-aside programs such as the USDA's Conservation Reserve Program, in which the federal government pays farmers to stop planting erosion-susceptible land.

The technique is an improvement over established methods for identifying set-aside land. Nieber and coworkers applied it to two Olmsted County, Minn., fields, one of which had been in the reserve program since in 1987. Under the DEM method, both areas were eligible for set-aside. However, both also had a lot of variation in susceptibility to runoff, suggesting that a wiser move would have been to set aside the most sensitive parts of each field, rather than all of one and none of the other.

Nieber says the DEM approach has a number of other potential applications, ranging from identifying the best place to plant crops to helping ecologists estimate where native plant species might be found.

The technique has been incorporated already into USDA's Agricultural Nonpoint Source Pollution Model, a system used by more than 300 agencies across the country to assess land use.

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AEA,BSS,CEO,V2,B2,F1,N2

NAGR3642

NEWS/ INFORMATION

September 20, 1990

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

Sources: David French
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Charles Burnham
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Editor: David Hansen
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Editors: To obtain a b/w print or 35mm color slide to use with this story, call Carl Walker (612/624-3708) or Dave Hansen (612/625-7290).

CHINESE COUSIN MAY MAKE AMERICAN CHESTNUT IMPORTANT FOREST TREE AGAIN

In the early 1900s, millions of American chestnut trees flourished in eastern U.S. forests. But a blight far more destructive than Dutch elm disease made the American chestnut nearly extinct as a forest tree. If it eventually survives, much of the credit will go to 86-year-old Charles Burnham, professor emeritus of agronomy and plant genetics at the University of Minnesota.

A few, widely scattered, large American chestnut trees remain. Other trees, most of which began as preblight seedlings, have been through several cycles of blight infection followed by resprouting from the roots.

Burnham, who was a corn geneticist for the Minnesota Agricultural Experiment Station, developed a chestnut breeding program in the early 1980s. His goal was to transfer blight resistance from the Chinese chestnut to the American chestnut while keeping the physical characteristics of the American species. The Chinese chestnut, though resistant to the blight, is an orchard tree that can't compete in hardwood forests like its much larger American cousin.

"The plant breeder's way of transferring resistance would be to make

a hybrid by crossing the American with the Chinese chestnut," says Burnham. When this hybrid matures, the pollen from it would then be used to fertilize American chestnuts.

"Some of the progeny would have moderate resistance and they would be selected again to backcross to the American chestnut," says Burnham. "And if you keep doing that while selecting for resistance, you will eventually get your American chestnut back."

"He is absolutely correct," says David French, a University of Minnesota plant pathologist who researches tree diseases for the Minnesota Agricultural Experiment Station. "With a decent breeding program carried out for at least three generations, we will get back to a tree that is essentially an American chestnut but is still carrying those factors for resistance.

"The fortunate thing about the chestnut is, they flower at a very early age, so you can get your crosses in very soon after each generation is started."

The fungus that caused the blight that eliminated the American chestnut as an economically important forest species originated in Asia. Once spores of the fungus, Cryphonectria parasitica, land on a wound on a chestnut tree, the chance for that tree's survival is slim. Blisters form on the branches, under which the fungus sends down fine, white tendrils. The tendrils fan out, consuming nutrients and water needed by the tree. Small chestnut trees die within months; large ones last a couple of years.

Through 1980, saving the American chestnut by spraying, clearcutting, radiating nuts and grafting had all been tried, largely

unsuccessfully.

The USDA also tried backcross breeding to Chinese parents, resulting in progeny more Chinese than American.

Burnham's interest was sparked by that effort. But he decided there'd been a tactical breeding error; things hadn't been taken far enough. So, he developed the generational backcross model that is being used today to develop a blight-resistant American chestnut.

This new approach led, in 1983, to the formation of the American Chestnut Foundation, a nonprofit organization dedicated to restoring the species. French is on the foundation's board. "We think we have some trees now that have a reasonable level of resistance," he says.

Breeding is under way in New York, Connecticut, New Jersey, Tennessee, West Virginia, Virginia and Kentucky. Last year, 30 first-generation backcrossed seedlings, grown by Burnham in Minnesota, were planted at the foundation's research farm in Meadowview, Va. Those that survive the blight will be parents for the next generation of backcrosses.

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AEA,BSS,CEO,H4,I2,N2,R

NNRD3649

NEWS/ INFORMATION

September 20, 1990

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

Source: David Lime
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U OF M SCIENTISTS CONDUCT LAKE ACCESS STUDY FOR DNR

Minnesotans have a well established love for their lakes. Almost 700,000 boats were registered in Minnesota in 1989, nearly one for every six people. But do boat owners love boating as much as the water itself? Survey responses from about 2,500 boat owners are providing insight and information on concerns ranging from boating safety to public accesses.

The comprehensive survey, conducted by scientists with the University of Minnesota's Agricultural Experiment Station and College of Natural Resources, asked boaters 45 questions. The information will help the Minnesota Department of Natural Resources (DNR), sponsor of the study, manage its water programs.

While a primary activity of the DNR is to expand public access to lakes, resources are also allocated to improve existing accesses. The University survey will help determine the emphasis of Minnesota's public water access program.

Minnesotans generally appear to be active boaters with few complaints. "If frequency and duration of use are a helpful measure of satisfaction, one would assume boat owners are satisfied," says David Lime, an outdoor recreation researcher with the Minnesota Agricultural

Experiment Station. "Yet, about 47 percent believe there are some problems." Most noted were inappropriate boating behavior, erosion, lack of enforcement and improvement needs at public access sites.

Lime says the 80 percent response rate to the lengthy questionnaire is an important message in itself: "This reflects Minnesota boat owner's strong interest in expressing their views as well as the importance they place on the state's free water accesses."

The survey revealed that more than 80 percent of Minnesota's registered boat owners use a free public water access at least once each season. But a few boat owners--some of whom launch more than 25 times a season--create a large part of the activity at public ramps.

Boat owners also use access sites for other activities, including swimming, shore fishing and wildlife observation.

The DNR manages about 1,200 access sites. Another 1,000 are maintained by other units of government. High on the list of facilities and services desired at or near access sites are, not surprisingly, toilets, docks, drinking water, security lighting, marinas and bait and tackle shops.

Lime collaborated on the survey with a diverse group of researchers including David Pitt, from the Department of Landscape Architecture, and Leo McAvoy and Curtis Schatz, from the University's Division of Recreation, Park, and Leisure Studies.

The survey also disclosed that one-third of those responding had boated on Lake Superior at least once in the previous five years. About equal numbers of these respondents were from the Twin Cities and Duluth. Most of the use was by a small number of boaters who used the lake for

more than 21 days. Nearly half of all boat owners say they would like a chance to boat on Lake Superior.

About a third of the respondents had also been on the Mississippi, downstream from the Twin Cities, one or more times during the past five years. "Forty percent said they would like to go or go more often, but many were worried about poor water quality," Lime says.

Many boat owners noted the problem of crowding, particularly on metro-area lakes. Many said they would support stricter enforcement of rules and regulations, as well as some direct controls on boats used on congested lakes and rivers.

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AEA,BSS,CEO,V8,L2M,P2M

NNRD3648

NEWS/ INFORMATION

Mike O'Leary
MINNESOTA EXTENSION SERVICE

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

September 20, 1990

Source: Mike O'Leary
612/625-2713
Writer: Jack Sperbeck
612/625-1794

F FARMS ARE BEING SELECTED FOR WATER QUALITY DEMONSTRATION PROJECT

Farms are being selected this fall to participate in the Anoka Sand Plains Demonstration Project in east central and central Minnesota. Counties involved include Anoka, Benton, Chisago, Isanti, Mille Lacs, Sherburne, Stearns, Hennepin, Ramsey, Washington and Wright.

Goal of the federally funded project is to maintain farm profits while reducing chances for water pollution. The project will stress environmental considerations in planning and in the use of fertilizer and pesticides.

However, the project won't necessarily mean a reduction in pesticide use, says Mike O'Leary, project coordinator with the University of Minnesota's Extension Service. He says some prospective participating farmers say they've already cut back considerably on pesticide use.

"We're talking about using the latest information and technology to help farmers fine tune management practices," O'Leary says. "All management decisions will be made by the farmer."

Projects like this could eliminate the need for water quality regulations for farmers. "The project is an educational effort to develop 'best management practices' that solve water quality problems without regulatory action," O'Leary says. "Solving potential water quality problems and maintaining farm profits is a challenge for farmers."

For those farmers who are chosen to participate in the demonstration project, there will be no charge for testing or consultation services.

Farmers interested in cooperating in the project should contact county offices of USDA's Soil Conservation Service (SCS), the Agricultural Stabilization and Conservation Service (ASCS) or the Minnesota Extension Service. About 30 farms will be selected for the project, which runs through 1994.

Minnesota's Soil and Water Conservation Districts are helping promote the project.

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AEA,BSS,CEO,V2M,A1M,L3M

NAGR3652

NEWS/ INFORMATION

September 20, 1990

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

Source: Jeffrey D. Hahn
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Editor: Mary Kay O'Hearn
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WHERE HAVE ALL THE BOXELDER BUGS GONE?

Two years ago, you could hardly go anywhere without being plagued by boxelder bugs. But the last two years their numbers have been much more normal, in some instances even scarce. Jeffrey Hahn, entomologist with the University of Minnesota's Extension Service, offers a weather answer to what's happened to those black-and-orange creatures who even have songs written about them.

Just because there were lots of boxelder bugs around in 1988 doesn't mean they should be abundant now. "Instead, the number of hot days during the summer determines how numerous boxelder bugs will be during autumn," Hahn says.

University of Minnesota research has shown that these insects reproduce and thrive when the temperature is above 68 degrees F.

"In 1988, our extremely hot summer allowed boxelder bugs to mature more quickly, giving rise to many extra generations--a veritable population explosion," Hahn says.

The last two years, however, summer temperatures were cooler and more average. Boxelder bugs completed a normal number of generations, about two, which kept their numbers at much lower levels.

What's the boxelder bug forecast for next year?

Page 1 of 2

"We'll have to wait until next summer to see what the weather has in store for us and the boxelder bugs," Hahn replies.

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V7,V8M,I2M,V4M

NAGR3631

NEWS/ INFORMATION

WPS 1.573 p
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UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

September 20, 1990

Source: Pete Anderson

612/624-4995

Writer: Joseph Kurtz

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CONSIDER KEY TRAITS WHEN SELECTING HEIFERS FOR BEEF COW HERD

Fall is when many beef producers decide which heifer calves to keep as herd replacements. Pete Anderson, extension beef scientist at the University of Minnesota, recommends keeping about 30 percent of the heifer crop as potential replacements at weaning time. This allows for some further selection for fertility and post-weaning growth.

Reproductive ability, growth and functional soundness of the heifers should be the key selection factors, according to Anderson.

"You can't truly assess reproductive ability until the breeding season," he says. "But selecting heifer calves born early in the calving season should improve the reproductive performance of the cow herd over time. There is some genetic transmission of reproductive ability. Also, heavier heifers tend to cycle earlier, allowing them to be bred earlier and increasing the chance they will rebreed on time for their second calf."

Anderson says heifers that lack adequate external genital development are likely to be poor breeders.

Selecting larger heifers at weaning can mean better growth performance in their offspring. But selecting the largest heifers for several years in a row can also lead to substantially bigger cows in the herd, Anderson notes.

"This may or may not be desirable," he points out. "It's difficult

to improve growth without increasing cow size. Some producers sell the 10-15 percent of the heifer calves that are the heaviest at weaning, saving the heifers slightly below the top in size. In this system, the growth performance of the herd bulls is even more crucial."

Important functional soundness traits include feet and leg correctness, pelvic size, body condition, mouth soundness, udder soundness and disposition.

"You will probably want to wait until heifers are 12 months old to measure pelvic area," says Anderson. "At that age, a heifer of a medium-size breed should have a pelvic area of at least 160 square centimeters. For a heifer of a large breed, it should be at least 180 square centimeters."

Anderson recommends selecting heifers that have fleshed out well but are not overly fat. Too much fat can hinder mammary tissue development, he notes.

Udder and structural defects are often inherited. Thus, Anderson recommends looking at a heifer's mother as well as the heifer when considering these traits.

Disposition is very heritable. "Cattle with good disposition make life easier and safer for operators, family members and hired labor," Anderson points out. "Good disposition may also enhance the sale price of calves to repeat buyers."

Anderson cites color, presence or lack of horns, muscling, eye appeal and uniformity as other factors to consider. "Uniformity of size and color adds value to a cow herd and calf crop," he points out.

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MINNESOTA EXTENSION SERVICE

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
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September 20, 1990

Source: Cynthia Ash
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Editor: Mary Kay O'Hearn
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LOOK FOR SCAB-RESISTANCE WHEN BUYING ORNAMENTAL CRABS

If you are considering planting an ornamental crabapple, check around to see the difference in the amount of foliage these trees have.

"Disease-resistant varieties have been around for years, but it's seldom a consideration when buying an ornamental tree," says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service.

Yet, disease resistance is something to consider when ample rainfall and sprinkler irrigation have favored development of many fungal diseases, including apple scab. Highly susceptible varieties have lost 90 to 95 percent of their leaves and are in a very weakened condition, according to Ash. Some homeowners have even cut down trees because they looked so bad. Damage could have been prevented by regular spraying with a fungicide, but why purchase a tree that demands this?

Take a walk through a local nursery. Make note of the crabapple varieties which have abundant, healthy foliage and good annual growth (check to be sure they haven't been sprayed). Varieties known to have resistance to apple scab include Adams, Dolgo, Harvest Gold, Prairie Fire, Red Splendor, Sargent and Sugar Tyme.

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V7,V8,I2

NAGR3637

NEWS/ INFORMATION

September 24, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Bill Lazarus
612/625-8150
Writer: Joseph Kurtz
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Editors, farm directors: This story was written for use in October during National Pork Month, but can be used any time.

PORK PRODUCTION BROUGHT \$810 MILLION TO MINNESOTA FARMS LAST YEAR

Minnesota pork producers sold more than \$810 million dollars worth of hogs in 1989, according to an extension agricultural economist at the University of Minnesota.

Bill Lazarus says October is National Pork Month, a good time to note that Minnesota ranks third in the nation in the value of hogs marketed. And the \$810 million figure at the farm level does not take into account the value added to pork products during processing.

"Minnesota pork producers sold over 1.8 billion pounds of pork last year," says Lazarus. "It came from 16,300 farms, nearly all family farms. About one of every six Minnesota farms produces hogs."

Lazarus says Minnesota is well suited for hog production because of the state's plentiful feed supply and the expertise of the state's pork producers. Also, the seasonal labor demands of hogs fit well around peak periods of crop work.

Farms producing hogs are becoming fewer, larger and more specialized, according to the Minnesota economist. "The number of swine operations in the state has decreased by about 16 percent in the past five years," Lazarus says. "However, the number of hogs on Minnesota

farms has stayed relatively constant--at 4 to 5 million head--for over 30 years."

Lazarus says Minnesota farms have about 8.2 percent of the U.S. hog inventory, and hogs accounted for 12 percent of the state's cash farm receipts a year ago.

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AEA,BSS,CEO,V2,V4M,V8,A1M,P1M

NAGR3654

NEWS/ INFORMATION

September 24, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
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Source: Jim Bowyer
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Writer: David Hansen
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Editors: Call Carl Walker (612/624-3708) or David Hansen to obtain a b/w print or 35mm color slide to use with this story.

U OF M RESEARCH IS KEY TO ACHIEVING PAPER RECYCLING GOAL

Paper recycling is a major research problem. Where do you begin with materials as different as trees, ink, glue and clay? And "how many times can paper be recycled? Twice? Eight times? Twenty?" asks Mutombo Muvundamina, a University of Minnesota forest products researcher. No one knows for sure.

How many "cycles" can paper go through? "The fiber changes each time paper is processed," Muvundamina says. "The surface of the fiber changes after the first use. The internal structure collapses when the fiber is dried. How," he asks, "do we maintain the quality of fiber to get a quality product?" Paper itself is not difficult to recycle. It's the "added extras" that complicate the process. "Each year hundreds of new adhesives are developed, hundreds of new inks. We're aiming at a moving target," says Jim Bowyer, head of the Department of Forest Products. To ease recycling, Bowyer says standards need to be developed and adhered to by paper manufacturers, printers and packaging companies.

Advising the department and the Minnesota Agricultural Experiment Station is the Paper Science and Engineering Council. Council President Gary Kaziukewicz agrees that recycling is complicated by the greater variety and increased quantity of paper products.

"Show the paper industry how laser-printed papers and gloss-coated grades can be recycled. Show us how to deal with hot melt adhesives. Or, how to more

easily recycle inks," pleads Kaziukewicz, who is corporate manager of technical services for Waldorf Corp., one of the country's largest users of recycled fiber.

"The problem is bigger than any one company," Bowyer says. Agrees Kaziukewicz, "We need an independent-based institute working with the paper industry. We need to expand the universe of what can be recycled."

The average American throws out 400 pounds of paper or paperboard each year, according to Muvundamina, who adds that it's easily possible to recycle 40 percent of the paper. The paper industry has set 40 percent as its goal for 1995.

To reach that goal will require much consumer education and vastly improved paper collection systems. Exceeding the goal will require solving technical problems like those being investigated at the University of Minnesota.

The University's Department of Forest Products is one of a dozen paper science and engineering programs in the United States. It has one of the most intensive recycling research agendas. Goals include improving processing to accommodate the glossy, clay-coated papers used for most magazines.

The University's recycling research approaches glossy paper as a challenge on two fronts. It is working to find ways to overcome the technical barriers that prevent the efficient recycling of the glossy papers that are currently in used. And, it is seeking economical ways to modify the production of quality, coated papers to make them more easily recyclable. Uses are also being sought for the clay sludge that separates out in reprocessing the paper.

Economics will remain the key condition determining the success of the research. "Minnesota is a major producer of coated paper and it is the basis for much of Minnesota's paper industry," says Bowyer. "Although all paper, including high-quality coated paper, is technically recyclable, it is currently just not economical to do so."

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NEWS/ INFORMATION

September 24, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Doug S. Foulk
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HARVEST APPLES GENTLY

There is a best way of harvesting apples to protect next year's crop: be gentle. Don't just pull at the fruit--you could damage the buds which will produce next year's crop, cautions Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service.

"To properly pick an apple, cradle it in the palm of your hand. Then, in a single motion, lift and twist the apple so it releases from the tree," Foulk advises. "This will also help prevent damage to an easily bruised variety, such as Honeygold."

Cool apples as soon after harvest as possible. Apples should be kept in a humid location at a temperature just above 32 degrees F. A covered container in the refrigerator is fine for small amounts, although, like many of our grandparents did, you may want to have a small refrigerator exclusively for fruit storage.

When preparing apples for long-term storage, sort out blemished or bruised fruits as they quickly spoil and will shorten the storage life of surrounding fruits. Properly stored, McIntosh, Cortland and Honeygold will keep three to four months and Haralson, Regent and Fireside will keep up to six months.

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V7,V8,I2

NAGR3626

NEWS/ INFORMATION

September 24, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
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Source: Don Wyse
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Editors: Call Carl Walker (612/624-3708) or Jennifer Obst to obtain a b/w print or 35mm color slide to use with this story.

MINNESOTA SCIENTISTS TRACK TRANSFORMATION OF HERBICIDES IN SOIL

Following the fate of an agricultural chemical once it is applied to a field would be difficult enough to do even if those chemicals didn't change in the process. But, unfortunately, they do.

So, Minnesota Agricultural Experiment Station scientists have been studying not only how and how far chemicals travel in the soil, but what happens to them during their travels.

"We don't know a lot about the extent of pesticide movement through soil," says University of Minnesota agronomist Don Wyse. "We know even less about the formation and movement of their metabolites as the parent compounds degrade."

Wyse, soil scientist Bill Koskinen and graduate research assistant Brent Sorenson have completed 18 months of field study and are now doing laboratory analyses to add to that understanding. The information is important because, in addition to the parent pesticide, metabolites also have a potential for contaminating groundwater. "Changes in chemical characteristics may allow the metabolites to be more readily leached through the soil, resulting in groundwater contamination," Wyse says.

To track the fate of the chemicals, 25 tons of soil were collected over the 18 months, from lysimeters installed at three Minnesota field sites, then hauled to the lab for analysis.

Sites at Rochester and Westport represent areas of Minnesota where the most pesticide contamination of groundwater has been discovered. The Westport site has coarse-textured, sandy soil and a relatively shallow water table. The Rochester site has silty soils on top of a fractured limestone layer. The third site, at Waseca, chosen for its clay soil, is considered to be less susceptible to pesticide leaching.

The researchers are looking at the fate of three herbicides: atrazine, alachlor and dicamba. "Of all the wells in which some kind of pesticide has been detected, 90 percent have atrazine," Sorenson says. "Alachlor is much less commonly found, but is the second most prevalent. It's found in about 14 percent of the wells that test positive."

Atrazine is a relatively persistent chemical, with low water solubility. Alachlor has moderate water solubility and is much less persistent. Dicamba is extremely water soluble and short lived in the soil compared to the others.

Prying the metabolites of these chemicals from the soil isn't easy. This, Sorenson explains, is because, herbicides, as they remain in the soil, become "bound residue. They get into the clay lattice; they get incorporated into soil organic matter. That's what we're working on in the lab, to find the best methods to open the lattice of the clay and extract the metabolites."

Once the best laboratory methods have been determined, the soil samples will be analyzed. The results of the metabolite studies will be compared to a computer model developed to predict herbicide movement through specific soil types. "Those computer models have already been developed--but they haven't been validated yet," Sorenson says. "We're collecting a great deal of data and we're hoping we can use that data to validate the model, so we can substitute the model for this very labor-intensive and expensive research."

The research, sponsored by the Center for Agricultural Impacts on Water Quality, is funded by the Legislative Commission on Minnesota Resources.

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NEWS/ INFORMATION

September 24, 1990

Source: John Lawrence
612/625-1273
Writer: Joseph Kurtz
612/625-3168

PORK INDUSTRY MUST MEET CHANGING CONSUMER NEEDS

America's population is changing, and pork producers need to be aware of the changes and provide the products consumers want, a University of Minnesota extension economist points out.

In the future, consumers will be older, live with fewer other people and have less time to shop for food and prepare meals, says John Lawrence.

"In 30 years, half the population will be 50 years old or older," he points out. "Older people eat less, require fewer calories and are more concerned about dietary fat and sodium. While today's pork is leaner than ever, much of it is cured, which increases the sodium level.

"Households are smaller, with 25 percent of all households consisting of one person and 50 percent having two people. Persons in such households prefer single-serving portions as opposed to large cuts of meat or family packs."

Lawrence notes that the type of product in the store and promotional efforts should not be geared solely to the housewife. More than 70 percent of women between ages 25 and 44 work outside the home, and three-quarters of these work full time. Such women spend less time shopping and preparing meals, while their husbands and children share in these activities more.

"Nutritional needs and lifestyle are becoming increasingly important when consumers choose foods," says Lawrence. "They want meals to be good tasting, safe, nutritious, low calorie, low fat, low sodium, Mexican-flavored one night and Chinese-flavored the next, convenient and in a biodegradable package. They don't care much whether the meal comes from pork, beef, chicken or tofu.

"The pork industry will continue to be challenged to efficiently produce products that consumers of the future will want. Farmers, packers, processors, wholesalers and retailers need to work together to meet this challenge. All must contribute to the research and development of new products and strive to become more efficient."

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AEA,BSS,CEO,V2,A1,H1,P1

NAGR3653

NEWS/ INFORMATION

September 25, 1990

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

Source: Patrick Borich
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Writer: Deedee Nagy
612 625-0288

FINALISTS NAMED FOR DEAN OF U OF M'S COLLEGE OF AGRICULTURE

Four finalists have been named for the position of dean of the College of Agriculture and associate director of the Minnesota Agricultural Experiment Station at the University of Minnesota.

The four candidates are Richard L. Jones, head of the University's Department of Entomology and acting associate director of the Minnesota Agricultural Experiment Station; Robert A. Kennedy, associate vice chancellor for agriculture and natural resources and director of the Maryland Agricultural Experiment Station, University of Maryland; Eldon Ortman, associate director for agricultural research and the Agricultural Experiment Station at Purdue University; and Katherine Reichelderfer, senior fellow and director for the agriculture, environment and food safety program, Natural Center for Food and Agricultural Policy, Resources for the Future, Washington, D.C.

The four finalists will visit the University during October for public interviews prior to any recommendation by the search committee, according to Patrick Borich, chair of that committee and dean and director of the Minnesota Extension Service.

The person selected for the position will succeed C. Eugene Allen as dean of the College of Agriculture. Last April, Allen was named vice president for agriculture, forestry and home economics, head of the Institute of Agriculture, Forestry and Home Economics and director of the Minnesota Agricultural Experiment Station at the University of Minnesota.

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AEA,BSS,CEO,V2M,V4M,A1M

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NEWS/ INFORMATION

September 27, 1990

UNIVERSITY OF MINNESOTA
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1420 Eckles Avenue
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Source: Doug S. Foulk
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FIRST FROST NEED NOT MEAN END TO RASPBERRIES, STRAWBERRIES

Fallbearing raspberries, such as Heritage and Redwing, and dayneutral strawberries, such as Tribute and Tristar, will continue to produce fruit as long as temperatures remain above freezing.

Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service, offers these tips on ways to keep the berries coming:

Row covers: Strawberries are easy to cover with one of the many available row covers made from spunbonded polyester. These provide excellent frost protection and may keep the harvest coming despite temperatures as low as 27 degrees F. The same method may be used to protect raspberries although they are difficult to cover unless they are grown in unstaked, foot-wide rows.

Overhead sprinklers: Commercial growers have used this method for years. If frost is predicted, watering strawberries or raspberries overnight with a regular garden sprinkler will raise the temperature several degrees. The sprinkler may be shut off the next day when temperatures again rise above 32 degrees.

Cold frames: The adventurous may want to try protecting a short row of dayneutral strawberry plants with a cold frame. Cold frames, which can be purchased or built at home, provide excellent cold weather protection. The cold frame should be ventilated during the day to

prevent excessive heat build-up. This method, depending on the severity of early cold spells, may extend the harvest season into November in the southern half of Minnesota. Dayneutral strawberries protected by a cold frame do not harden off as well as exposed plants and will not overwinter well; these plants should be grown as annuals.

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V7,V8M,I2M

NAGR3660

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

NEWS/ INFORMATION

September 27, 1990

Source: Irving Pflug
612/624-5853
Writer: Jennifer Obst
612/625-2741

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

FOR FOOD PROCESSORS, MICROORGANISMS ARE MAIN SAFETY CONCERN

Consider the ordinary tin can. It's been a reliable food package for 100 years, even when not made of tin. But it doesn't incite much loyalty among consumers, who willingly abandon it for more microwave-friendly packages of cardboard and plastic.

But food scientist Irving Pflug, who has studied food and pharmaceutical sterilization problems at the University of Minnesota for over 20 years, is willing to be its defender. "The can is rigid, strong and economical," he notes. "It can be used in canned food production lines that operate at very high speeds."

Pflug's research for the University's Agricultural Experiment Station in canning food safety is one aspect of a career involved in many different product sterilization issues. He has worked on sterilizing foods, pharmaceuticals and even a space lab. When he first arrived at the University, he worked on a project to sterilize the laboratories of the Viking Landers that NASA sent to Mars in the early '70s. For Pflug, the sterilization problems for the space program were straightforward: it was a simple matter of placing the Landers in very big cans, then heating them.

Pflug has found that sterilization issues are similar, whether for NASA Landers or for human medical implants, such as cardiac pacemakers, or for

chicken soup and ready-to-eat meals. Sterilization needs to reduce the probability of microorganism survival to near zero--to one in a million or one in a billion, depending on the microorganism.

For shelf-stable foods, understanding what that means to level of risk is critical. Risk perception research indicates that the public perceives food safety risks differently than do experts. Risk is related to probabilities, and probability statistics are poorly understood by the public.

While consumers are most concerned with pesticide residues, antibiotics, hormones, nitrates, additives and preservatives, food professionals have long recognized that pathogenic microorganisms pose the most serious hazard in America's food supply.

"The public views the same probability--for example, one chance in a billion--differently for a can of food and for a lottery ticket," says Pflug. "For the can of food, we seem to want even the small number of one in a billion to mean zero, whereas for a lottery ticket, the hope at least, is that one in a billion equals one."

Pflug is very interested in programs that help the public understand risk. He says, "When you buy frozen food, it's not sterile--it's just teeming with microorganisms. But that doesn't matter, because, while food is frozen, the microorganisms aren't going to grow."

Not so with food the consumer keeps at room temperature. One viable microorganism is all it takes to spoil the product.

Pflug has worked with the food processing industry on canning problems, specifically with low-acid foods, both liquid and solid.

First of all, the product must be made safe from a public health standpoint. Plug explains: "That means eliminating all the C. botulinum spores in all cans of food. That organism produces the toxin which causes botulism.

"Then, you begin to worry about organisms that will simply spoil the product. The group that we worry about there primarily is what we call the 'mesophilic spore-forming organisms.' These are resistant organisms that will grow at room temperatures.

"Then, there is a third set of organisms, which are heat loving. The mesophilic spore-forming organisms are more resistant than C. botulinum. And the heat-loving organisms are another order of magnitude more resistant than the mesophilic organisms." To kill those organisms without overprocessing the food has been the canning industry's challenge.

Many of today's new products are really just old products dressed up in new packages, Pflug says. With some modifications, they use basic canning and sterilization technology.

Take the microwavable container. Those plastic containers of soup, baked beans and chicken tetrazzini that are so conveniently heated in a microwave oven are really just more "canned" foods, Pflug says.

"But," he adds, "there are new problems with this kind of package. More things can go wrong with plastic. As plastic is gas permeable, for example, all plastic packages have to be sandwiches--with one layer to give it mechanical strength, another to add higher resistance to gas transmission. Metals are both strong and impermeable to gas."

Meanwhile, the can has had some technological improvements of its own. The older metal cans were made of three pieces--a top lid, a bottom lid and the body, which was a flat piece of metal folded around and soldered. "Today," says Pflug, "most three-piece cans have a welded side seam, and we have two-piece drawn cans which are even more reliably sealed."

So, it seems technological innovation in packaging and the growing interest in recyclable packages may contribute to making Pflug's sterilization research even somewhat trendy.

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NEWS/ INFORMATION

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September 27, 1990

Source: John Lawrence
612/625-1273
Writer: Jack Sperbeck
612/625-1794

Editors, farm directors: This story was written for use in October during National Pork Month, but can be used any time.

ECONOMIST: DON'T EXPAND HOG OPERATIONS BASED ON 1990 PRICES

Hog producers are urged to "use caution" before expanding production based on the unusually high 1990 prices.

"Demand factors that drove prices to record levels can disappear just as quickly as they appeared," says John Lawrence, livestock marketing economist with the University of Minnesota's Extension Service.

Hog producers are already expanding their herds. After a seasonal decline this fall, prices are expected to remain below year-earlier levels through most of 1991.

Lawrence expects third quarter prices to average in the upper \$50s. Fourth quarter prices will likely average near \$52 and possibly spend some time in the high \$40s before ending the year on a higher note.

First and second quarter 1991 prices are expected to average about \$51. Slaughter in the third and fourth quarters of 1991 depends on the breeding decisions made a year earlier. Lawrence says slaughter in the second half of 1991 will probably be up 4 to 5 percent. Prices should average in the low \$50s for the third quarter before dropping to the mid-\$40s in the fourth quarter, 1991.

"Low-cost producers benefit regardless of the price. Work to

improve production efficiency and monitor purchasing decisions closely," Lawrence advises.

"Watch for forward pricing opportunities for slaughter hogs, but have a handle on cost of gain first. Develop a marketing plan with realistic price objectives and base forward pricing decisions on them."

Several factors affecting demand for pork have changed, Lawrence says. Per capita pork consumption declined 2 percent in the first quarter of 1990 (compared to 1989), due partially to declining imports.

Consumers had an incentive to switch to pork since retail beef prices were at or near record high prices in the first quarter of 1990. And, aggressive packer competition in both the input and output market narrowed the farm-to-retail price spread. Farmers received 40 percent of retail value in 1990, compared to 36 percent for the first quarter of 1989.

Mideast problems can quickly change things. "If rising oil prices trigger a recession, all red meat prices will likely be adversely affected," Lawrence says. Short of a recession, higher home heating costs this winter could force consumers into a "heat or eat" situation, which would cause reduced meat prices.

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AEA,BSS,CEO,V2,A1,P1

NAGR3673

NEWS/ INFORMATION

September 27, 1990

Source: Donald Rasmusson
612/625-7278

Editor: Larry A. Etkin
612/625-4272

Editors: Call Carl Walker (612/624-3708) or Larry Etkin to obtain b/w prints or 35mm color slides to use with this story and the accompanying sidebar about how beer is made.

FOR MIDWESTERN FARMERS, BARLEY BREEDING PROGRAM SPELLS SUCCESS

Barley breeder Donald Rasmusson apparently never heard that "you can't please everyone." For pleasing everyone involved in growing or using barley--growers, maltsters and brewers--is what he's done for more than 30 years in his work on the Minnesota Agricultural Experiment Station's barley breeding program.

Rasmusson, a University of Minnesota plant geneticist, and colleagues, such as plant pathologist Roy Wilcoxson, have spent decades developing barley varieties with higher yields, better disease resistance and improved malting characteristics. These improvements have had an economic payoff for growers, maltsters and brewers alike.

Minnesota's barley breeding program has had an impressive string of successes. Morex, which the Agricultural Experiment Station released in 1978, is still the most favored variety for malting. Robust, released in 1983, yields 5 bushels more per acre than Morex. About two-thirds of the beer produced in the United States is made with malt made from these two varieties.

And the best may be yet to come. Excel, from a cross between Robust and a sister to Morex, was released this year. It has outstripped its predecessors in malting qualities and yield.

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Morex and Robust are not just Minnesota favorites. American Malting Barley Association (AMBA) statistics show that Robust was the leading barley grown in Minnesota, North Dakota and South Dakota in 1989. Morex was tops in Idaho.

Last year, Robust and Morex together made up about 92 percent of the barley acreage in Minnesota, 63 percent of North Dakota's and 66 percent of South Dakota's. Minnesota is the nation's fourth largest producer of barley, and the second largest producer of malting barley, from which beer is made.

Breeding barley is a cooperative venture, stresses Mike Davis, AMBA vice-president. The association funds some of the Minnesota Agricultural Experiment Station's barley research.

Davis says, "You can't make beer without malting barley, and one of the best ways to keep malting barley competitive and keep farmers producing it is to work cooperatively with barley breeding programs. The program at the University of Minnesota has been very productive. It's a good return for our money and it's a good return for the state."

The breeding program's new releases are eagerly awaited and quickly adopted by barley growers. Barley acres seeded to Robust went from 2 percent in 1983, to 29 percent in 1984 and 76 percent in 1985.

The acceptance rate pleases Rasmusson. "No other varieties in history have been so popular over a five-year period," he notes. "During the last five years, Robust has been the most popular variety in the U.S. by a large margin. Each year, it has been grown on nearly one-quarter of the 10 million acres of barley grown annually in the country."

The statistics translate into substantial additional income for U.S. barley growers, an estimated \$110 million over the past five years, according to Rasmusson.

One very pleased barley grower is Doug Peterson of East Grand Forks,

Minn. He grows registered seed to sell to other growers and foundation seed for the Minnesota Crop Improvement Association.

Peterson says, "Each time he (Rasmusson) develops a new barley, it's better yielding, stronger and malts faster. When," he asks with a chuckle, "is it going to stop?"

Peterson says Rasmussen knows what to work towards in developing new varieties because he spends time visiting growers and asking their opinions. "He usually comes right out to the farm and talks to us."

And Peterson gives a glowing report of Excel, Rasmusson's latest release: "It's fantastic! It's the barley to have!"

Before each new variety is released, there are years of making and evaluating crosses for agronomic traits and malting and brewing qualities. They are field and greenhouse grown both in the Minnesota region and at Rasmusson's winter research site in Arizona.

Rasmusson has been widely recognized for the success of his breeding program. Most recently, he received the National Council of Commercial Plant Breeders 1990 Genetics and Plant Breeding Award.

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FROM BARLEY TO BREW

Barley to beer. The cycle can take nearly a year. Follow a bushel of barley harvested this summer from field to refrigerator, and you'll be able to drink it next spring.

Barley growers plant in April and begin to harvest in late July. Some sell immediately to local grain elevators, where tests determine whether the barley qualifies for a premium malting price. Elevator prices are determined by trading, frequently on the Minneapolis Grain Exchange.

Some growers store their barley and hope for a better price later. Others grow barley under contract, for delivery whenever their contracts specify.

The barley is shipped to malthouses, where it may be malted immediately or held for several months. Prior to malting, the barley's chemical and physical attributes are tested. Most important is the test for germination, because if the grain won't sprout, it can't be converted into malt.

Malting begins, according to Bruce Sebree of Fleischmann-Kurth Malting Co. of Milwaukee, with the steeping of whole, unhulled barley kernels in water to increase the moisture content from about 12 to 45 percent. Then, the grain is germinated at about 65 degrees F for four or five days. After that, it's slowly dried to preserve enzymes and form flavor compounds. Rootlets are removed, and the resulting malt is stored for up to a year.

Each variety of barley has different processing requirements and is malted separately. When the malts are ready to be shipped, varieties are mixed to customer specifications. Most is sent to breweries, but some goes to food manufacturers.

After the malt is tested at the breweries and approved for brewing, says Frank Weber of Miller Brewing Co., it's rolled to a coarse powder and mixed with precise amounts of water. Enzyme activity started in the malt continues in the resulting mash.

Malt, Weber says, is a key ingredient in brewing. It provides material for the enzyme activity, husks which filter the brew and a base that can be toasted for different colors and foaming properties.

Cooked cornstarch or rice is added to the mash, which the enzymes break down to fermentable sugar. Wort, a clear liquid, is filtered out and boiled to develop the flavor, color and other characteristics of a particular beer.

Yeast and hops are added to the wort by the end of the first day, and fermentation takes about another two weeks, according to Weber. Then, the beer is aged three to six weeks, finished, filtered and packaged for sale.

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NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
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September 27, 1990

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

LITTLE CARE NOW WILL LIMIT NEXT YEAR'S DISEASE PROBLEMS

Several little jobs performed this fall could save time and money and prevent possible large plant loss next year. Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service, suggests as a first step: "Plan to remove all plant material including weeds from the vegetable and flower garden after harvest or the first killing frost." This removes the initial sources for disease development next spring.

Cut back perennials, rake out fallen leaves and mulch with clean straw. Apply a dormant application of liquid lime sulphur to rose bushes with a history of black spot and to raspberries with leaf spot or cane blight problems (see label for directions).

"Lastly, plan to spend some time this winter browsing through nursery catalogs. Select disease-resistant plants for your garden and landscape and be sure it is fully hardy for the area where you live," Ash says.

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V7,V8,I2

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NEWS/ INFORMATION

October 1, 1990

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

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

HORTICULTURIST OFFERS HINTS FOR STORING PRODUCE

Whether you're storing your own produce or fruits and vegetables you bought at the farmer's market, you can improve your results by following some simple guidelines, suggests Deborah Brown, horticulturist with the Minnesota Extension Service.

"First, plan to store only healthy, fully mature, late-ripening varieties," Brown urges. Produce that is bruised or immature is more prone to rotting. Always store fruits and vegetables separately.

Leave an inch or so of stem on most vegetables, Brown advises, to help reduce moisture loss and prevent infection. Many vegetables, such as squash, pumpkins, potatoes and onions, benefit from being "cured" in a warm place for a week or two before being put into cool storage for the long term.

Onions and potatoes keep the longest of common vegetables, five to eight months. Try to keep onions at 32 degrees F. However, Brown cautions: "Potatoes will taste sugary when kept that cold; they do better at 38 to 40 degrees. If temperatures are much higher, they'll sprout before you can use them up."

Winter squash can be stored three to six months, if the skin is intact and it's held between 50 and 55 degrees. Spread squash out on a shelf so there's good air circulation. Pumpkins will probably be good for two or three months, sometimes even longer.

Many late-maturing apples will keep right through the winter if they're picked when they first ripen, then put immediately into cool, humid storage. An old refrigerator set at 30 to 32 degrees works well for this. Higher temperatures reduce keeping quality quite drastically.

Brown says, "Store apples in plastic bags with some small holes punched in the bags to allow for air circulation. Over-ripe apples break down rapidly in storage and immature ones develop a number of disorders and never ripen properly.

"If you're looking for apples for fresh eating, choose Haralson, Fireside, Connell Red, Regent or Keepsake."

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V7,V8M,I2M

NAGR3662

NEWS/ INFORMATION

October 1, 1990

Source: Frank Pfleger
612/625-6290

Writer: Mary Kay O'Hearn
612/625-2728

BEDDING PLANT CONFERENCE TO BE HELD IN 3 MINNESOTA CITIES

Greenhouse owners and operators and commercial florists will have three locations to pick from to attend the 1990 Northern Minnesota Bedding Plant Conference in mid-October.

On Tuesday, Oct. 16, the conference will be held at Duluth Technical College, 2101 Trinity Road, Duluth; on Wednesday, Oct. 17, at the Brainerd Public Library, Fifth and Maple, Brainerd; and on Thursday, Oct. 18, at Bergen's Greenhouse, Detroit Lakes.

This year's conference will highlight greenhouse temperatures and insect response, soilless mixes and root rot suppression, using greenhouse temperatures to control plant height, and water quality problems.

Advance registration is necessary only for those who plan to attend the Duluth program; they should send the \$15 registration fee (for materials and lunch) to the St. Louis County Extension Office, 109a Washburn Hall, 2305 E. Fifth St., Duluth, MN 55812. There will be a \$10 registration fee for the programs at Brainerd and Detroit Lakes, for materials, rolls and coffee.

The program at each location will begin at 8:30 a.m. and conclude with a 3:45 p.m. greenhouse tour. The group at Duluth will tour Engwall's Greenhouse; at Brainerd, Landsburg's Landscape Nursery, and at Detroit Lakes, Bergen's Greenhouse.

Extension agents Bob Olen (Duluth), Jim Rabehl (Brainerd) and Lisa Axton (Detroit Lakes) will be moderators at their respective locations. Program participants will include Mark Ascerno, University of Minnesota extension entomologist; Bob Bergen, Bergen's Greenhouse; Dell Christensen, specialty crops instructor, Detroit Lakes; John Erwin, University of Minnesota extension horticulturist; Mary Ann Hartman, J.R. Johnson's Wholesale; Roger Landsburg, Landsburg's Landscape Nursery; Frank Pfleger, University of Minnesota extension plant pathologist; and Rod Saline, Engwall's Greenhouse.

Sponsors of the conference are the University of Minnesota's Extension Service and J.R. Johnson's Wholesale, St. Paul.

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AEA,BSS,CEO,L1M,L3M,Z1,Z2,Z7

NAGR3676

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NEWS/ INFORMATION

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

Source: Curtis Norenberg
612/625-1925
Editor: Sam Brungardt
612/625-6797

INCOME TAX SHORT COURSE TO BE HELD IN 8 MINNESOTA CITIES

A two-day-long short course designed to improve the skills of experienced persons who assist taxpayers in preparing and filing income tax returns will be held in eight Minnesota cities during November.

The Annual Farm and Individual Income Tax short course will be held at the Sawmill Inn in Grand Rapids on Oct. 31-Nov. 1; Detroit Lakes Technical College, Nov. 1-2; Holiday Inn Downtown, Mankato, Nov. 7-8; Kahler Hotel, Rochester, Nov. 8-9; Best Western Inn, Marshall, Nov. 13-14; Holiday Inn, Willmar, Nov. 14-15; Holiday Inn, St. Cloud, Nov. 15-16; and at the Radisson Hotel South in Bloomington on Nov. 19-20.

The short course will enumerate the new taxation issues in Minnesota and the United States and help identify processes and procedures in computing taxable income and the changes in income tax laws and regulations.

Topics that will be covered include 1990 tax legislation; the Revenue Reconciliation Act of 1989; tax issues relating to employees, expenses for travel and transportation; self-employment and other business tax issues; review of information returns; what's new and most common errors; Minnesota law changes, new forms and procedures and taxpayer rights; and farm tax management, including farm transfer issues (leasing machinery, installment sales, gifting and trusts) and Social

Security (paying vs. non-paying, qualifying for benefits and optional methods).

The short course is a cooperative effort of the Minnesota Extension Service, the Internal Revenue Service and the Minnesota Department of Revenue. Instructors will be IRS and Minnesota Department of Revenue personnel, extension farm management agents and private consultants.

Participants who complete the short course will receive a certificate for 16 hours of instruction applicable to CPA, PA, educators, enrolled agents and others for recertification in their fields. For those who need legal, real estate and insurance education, Continuing Legal Education will certify this short course for 14.75 hours.

Registration for the short courses will be the first day at each site, starting at 7 a.m., with instruction beginning at 8:30 a.m. Persons who wish a brochure about the short course should call Mark Stenzel or Judy Sunvold at (800) 367-5363 or (612) 625-2722.

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AEA,BSS,CEO,V4M,V5M,V6M,A1M

NESP3675

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

Source: Deborah Brown
612/624-7491

Editor: Mary Kay O'Hearn
612/625-2728

HORTICULTURIST OFFERS HINTS FOR STORING PRODUCE

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"If you're looking for apples for fresh eating, choose Haralson, Fireside, Connell Red, Regent or Keepsake."

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V7,V8M,I2M

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NEWS/ INFORMATION

October 4, 1990

UNIVERSITY OF MINNESOTA
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405 Coffey Hall
1420 Eckles Avenue
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Source: Jeffrey Hahn
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

COOLER, DRIER WEATHER TAKES CARE OF FOREIGN GRAIN BEETLES

More normal rainfall made foreign grain beetles abundant during September, but they should be less of a nuisance in October as temperatures cool and humidity decreases.

"We've hardly seen these reddish brown, about 1/12-inch-long beetles because of dryness the last two years. They can fly and are sometimes confused with fruit flies," says Jeffrey Hahn, entomologist with the University of Minnesota's Extension Service.

Foreign grain beetles are associated with the higher humidity that normally occurs in late summer and early fall. They feed on moldy grains and overripe fruits and vegetables.

Because of their size, foreign grain beetles enter homes easily, and there is no practical control to prevent this. Once indoors, they are usually seen around sinks and other sources of moisture. They also are attracted to newly built homes, where the walls are still wet.

Foreign grain beetles can infest dried food products, such as flour, but are not a serious problem unless the food is old and moldy. To be on the safe side, susceptible food products should be checked and safeguarded, Hahn says.

"Control these beetles by physical means, such as by hand or with a vacuum cleaner," he advises. "Large numbers can be killed with an insecticide containing pyrethrins. Before using insecticides always read the label directions very carefully." Hahn cautions. "Once the humidity falls below 60 percent, foreign grain beetles go away on their own."

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V7,V8,H1,I2

NHEC3661

NEWS/ INFORMATION

October 4, 1990

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405 Coffey Hall
1420 Eckles Avenue
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Source: Jeffrey D. Hahn
612/624-4977
Editor: Mary Kay O'Hearn
612/625-2728

OVERRIPEN PRODUCE, DIRTY BOTTLES LEAD TO FRUIT FLY PROBLEM

Fruit flies are attracted to produce, particularly overripe, fermenting fruit and vegetables. Pop, wine, beer and syrup not rinsed from containers are also potential reproduction sites for these pesky insects.

Fruit flies are small, slender insects, about 1/8 inch long, with red eyes and tannish, striped bodies. The best way to control them, according to Jeffrey Hahn, entomologist with the University of Minnesota's Extension Service, is to locate and remove the source of the infestation.

"Infested food is usually found near the area where the flies are most numerous; breeding sites may also appear to be 'wormy' from maggots," Hahn says.

Sometimes the source of the problem is easy to find. At this time of year, overripe vegetables and fruits from the garden may be the problem. Later, it may be a jack-o-lantern or a forgotten sack of onions or potatoes.

Other places to check are cans or bottles being saved for recycling, wine-making equipment, cupboards and other places where there may be food residues.

Fruit fly breeding locations may not always be obvious. Hahn says, "They can occur in small numbers and are seen occasionally when they are

attracted to uninfested food. Properly storing food prevents fruit flies from multiplying. Eventually, they will starve and die."

The use of an insecticide, such as pyrethrins, has only a temporary effect and does not prevent the flies from returning. Always read and follow label directions before using any insecticide, Hahn cautions. However, it's better to find and eliminate the breeding site.

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V7,V8,H1,I2

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

Source: Larry Jacobson
612/625-9733
Writer: Joseph Kurtz
612/625-3168

AIR QUALITY IN SWINE BUILDINGS IS CONCERN FOR PRODUCERS

Is the air inside swine confinement buildings hazardous to human health?

"Air quality in swine buildings is a concern for more and more pork producers," says Larry Jacobson, extension agricultural engineer at the University of Minnesota. "A recent informal survey showed about 20 percent of all pork producers were using some type of mask or helmet to protect their lungs when working in swine buildings. Five years ago, it was rare for anyone to do this."

Which gasses are present in swine buildings, and in what concentrations? Jacobson says there isn't much information available on this, so he's doing a study to find some answers. He is analyzing data collected during on-farm visits by a team of seven Minnesota Extension Service personnel. Each of the team members has been equipped with air quality monitoring equipment.

Jacobson's study does not include an evaluation of dust levels. He says that although dust is a critical factor in air quality, there is now no simple, repeatable, affordable way to measure dust levels.

Air quality in swine buildings is more of a concern for human health than animal health. "We are physiologically more sensitive than the pigs," Jacobson says. "Besides, the pigs are only in the building for six months or so. The producer may spend several hours a day in a

building, year in and year out."

He adds that there are large differences among individuals' ability to tolerate poor air quality, just as some people are more prone to allergies than others. "The tolerance of an individual seems to go down over time," he notes.

What can people who work in confinement buildings do to maintain their health? Jacobson recommends using some type of breathing protection. He says the best system is a helmet that blows a stream of fresh air across the face. Rubberized, canister-type masks are also effective. Even a simple, disposable mask that covers the nose and mouth is helpful. For those who experience respiratory problems, it's important to consult a doctor, he adds.

He also recommends testing if air quality is a concern. Some veterinarians, farm suppliers and feed dealers have equipment for testing air quality.

The Minnesota Extension Service has a publication, "Dangers in the Air When Handling Livestock," on this topic. It is available from county extension offices in Minnesota as item AG-F0-0778.

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AEA,BSS,CEO,V2M,E4M,P1M

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October 4, 1990

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

Source: Larry Jacobson
612/625-9733
Writer: Joseph Kurtz
612/625-3168

POOR AIR QUALITY IN BUILDINGS IS CONCERN FOR SWINE PRODUCERS

Is the air inside swine confinement buildings hazardous to human health?

"Air quality in swine buildings is a concern for more and more pork producers," says Larry Jacobson, extension agricultural engineer at the University of Minnesota. "A recent informal survey showed about 20 percent of all pork producers were using some type of mask or helmet to protect their lungs when working in swine buildings. Five years ago, it was rare for anyone to do this."

Which gasses are present in swine buildings, and in what concentrations? Jacobson says there isn't much information available on this, so he's doing a study to find some answers. He is analyzing data collected during on-farm visits by a team of seven Minnesota Extension Service personnel. Each of the team members has been equipped with air quality monitoring equipment.

Jacobson's study does not include an evaluation of dust levels. He says that although dust is a critical factor in air quality, there is now no simple, repeatable, affordable way to measure dust levels.

Air quality in swine buildings is more of a concern for human health than animal health. "We are physiologically more sensitive than the pigs," Jacobson says. "Besides, the pigs are only in the building for six months or so. The producer may spend several hours a day in a

building, year in and year out."

He adds that there are large differences among individuals' ability to tolerate poor air quality, just as some people are more prone to allergies than others. "The tolerance of an individual seems to go down over time," he notes.

What can people who work in confinement buildings do to maintain their health? Jacobson recommends using some type of breathing protection. He says the best system is a helmet that blows a stream of fresh air across the face. Rubberized, canister-type masks are also effective. Even a simple, disposable mask that covers the nose and mouth is helpful. For those who experience respiratory problems, it's important to consult a doctor, he adds.

He also recommends testing if air quality is a concern. Some veterinarians, farm suppliers and feed dealers have equipment for testing air quality.

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V20,E40,P10

NAGR3684

NEWS/ INFORMATION

October 4, 1990

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

LET COLD TAKE CARE OF WASPS; DON'T SPRAY FOR THEM NOW

The first hard freeze is going to be the best control for wasps in autumn, unlike summer, when wasp nests were easy to control with insecticides, says Jeffrey Hahn.

"As we get closer to our first hard freeze, it becomes less important to try to control them," says Hahn, a University of Minnesota extension entomologist.

Besides, Hahn cautions, spraying now can drive wasps indoors. This is especially true of nests that are hidden in houses so that all that is seen is an opening where wasps fly back and forth. "Spraying insecticide into the nest entrance during autumn risks driving wasps into the living quarters inside," Hahn says. The later in the season, the more likely this will occur.

A better strategy is to wait for freezing temperatures. Most of the colony dies after the first hard frost and subsequent freezes finish off any remaining workers. Only the newly mated queens will survive the winter. They leave the nests to search for sheltered places, such as under bark, stones, logs and siding, where they hibernate for the winter.

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V7,I4,V8

NAGR3664

NEWS/ INFORMATION

October 5, 1990

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

Source: Pat Borich
612 624-2703
Writer: Deedee Nagy
612 625-0288

PUBLIC INTERVIEWS SCHEDULED FOR AGRICULTURE DEAN CANDIDATES

The four finalists for the position of dean of the University of Minnesota's College of Agriculture and associate director of its Agricultural Experiment Station will have public interviews beginning Oct. 16. All interested persons may attend and question the candidates, says Patrick Borich, chairman of the search committee and dean and director of the Minnesota Extension Service.

Richard L. Jones, head of the University's Department of Entomology, will be interviewed Oct. 16 from 1 to 2 p.m. in room 155 Earle Brown Center (EBC) on the St. Paul campus. Robert A. Kennedy, associate vice chancellor for agriculture and natural resources at the University of Maryland, will be interviewed Oct. 18 from 1:15 to 2:15 p.m. in 156 EBC. Eldon Ortman, associate director for agricultural research and the Agricultural Experiment Station at Purdue University, will be interviewed Oct. 30 from 1:45 until 3 p.m. in 155 EBC. Katherine Reichelderfer, director for the agriculture, environment and food safety program at the Natural Center for Food and Agricultural Policy, Washington, D.C., will be interviewed Nov. 1 from 1:45 until 3 p.m. in 62 EBC.

The successful candidate will succeed C. Eugene Allen as dean of the College of Agriculture. Since April, Allen has been vice president for agriculture, forestry and home economics and head of the Institute of Agriculture, Forestry and Home Economics as well as director of the Minnesota Agricultural Experiment Station at the University of Minnesota.

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AEA,BSS,CEO,V2M,V4M,A1M

NAGR3687

NEWS/ INFORMATION

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

October 8, 1990

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

PROFESSIONAL NUTRITIONIST--SWINE COMPUTER PROGRAM IS AVAILABLE

Formulating swine diets that are nutritionally balanced and minimal in cost is the function of a computer program now available through the Minnesota Extension Service.

The program is called Professional Nutritionist--Swine. It is designed for users who have a working knowledge of the principals of nutrition, dietetics of swine feeding and procedures for formulating diets based on cost minimization. Users might include swine producers, nutritionists, veterinarians, consultants, county extension agents, vocational agriculture instructors and feed manufacturers.

The program, which was developed by the University of Minnesota's Department of Animal Science and Educational Development System, allows users to do two tasks. One is to estimate the nutrient content of diets (the analysis function); the other is to formulate swine diets using a cost-minimization procedure (the least cost function). For each of these tasks, the program incorporates recommended nutrient levels and ingredient limitations to assure a sound diet.

The program operates on IBM PCs or compatible computers with at least 256K RAM memory.

Cost of the Professional Nutritionist--Swine computer program is \$300. It can be ordered through county extension offices in Minnesota.

Or it can be ordered by sending a check for \$300 (Minnesota residents should add 6 percent sales tax) to the Distribution Center, 3 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108. Request item AG-CS-3436, and make checks payable to the University of Minnesota.

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AEA,BSS,CEO,V2,V5,V6,P1

NAGR3688

NEWS/ INFORMATION

October 8, 1990

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

Source: Lynn Field
612/625-9765
Editor: Sam Brungardt
612/625-6797

Journal editors: If your next issue will not distributed before the Dec. 1 deadline for submission of preliminary abstracts, please include this release in your organization's newsletter.

PAPERS, POSTERS BEING SOUGHT FOR LUPIN SYMPOSIUM

Papers and posters are being sought for a symposium, Prospects for Lupins in North America, which will be held March 21-22, 1990 at the Ramada Hotel in St. Paul, Minn.

The symposium is being sponsored by the University of Minnesota's Center for Alternative Plant and Animal Products and the Minnesota Extension Service. It will provide researchers, extension staff and other educators, agribusiness personnel and farmers the opportunity to share experiences, results and information. Among the topics that will be covered by scientists and others from the United States and other countries are agronomics, genetic improvement, feeding lupins to animals and other aspects of lupin utilization, economics and marketing.

Deadline for submission of preliminary abstracts from persons who wish to present a paper or poster at the symposium is Dec. 1.

Preliminary abstracts, consisting of a proposed title and a four- or five-sentence summary, should be sent to Lynn Field, 135 Crops Research, 1903 Hendon Ave., University of Minnesota, St. Paul, MN 55108. For more information, call Field at (612) 625-9765.

Persons desiring information about the symposium in general should call Extension Special Programs at (800) 367-5363 or (612) 625-2722.

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AEA,BSS,CEO,A2,D,F1,H2,L3,N1,N3,P1,SelMedia

NAGR3689

NEWS/ INFORMATION

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

October 10, 1990

Source: Pat Borich
612/624-1222
Writer: Deedee Nagy
612/625-0288

U OF M SOIL SCIENTIST REHM RECEIVES DISTINGUISHED FACULTY AWARD

George Rehm, University of Minnesota soil scientist, received the Director's Award to Distinguished Faculty at the annual staff development conference of the Minnesota Extension Service Oct. 9.

Rehm joined the Minnesota Extension Service in 1983 with responsibility for training county extension agents in soil fertility and fertilizer management. He also conducts research on fertilizer use for, and management of, the diverse crops and soils within the state for the University's Agricultural Experiment Station.

Rehm's findings on using sulfur on fields have improved yield of both corn and alfalfa on sandy soils and on corn grown on some kinds of silt loam. His other research accomplishments, along with colleagues in the agronomy and soils departments at the University, include development of a soil test for nitrogen and data on fertilizer-disease interactions in soybean fields. Rehm has also written or collaborated on about 50 scientific journal articles and more than 30 extension publications since joining the Minnesota staff.

Prior to coming to Minnesota, Rehm was on the faculty of the University of Nebraska for 14 years. He obtained his master's and Ph.D. degrees from the University of Minnesota and his bachelor's degree from Ohio State University.

In nominating Rehm for the Distinguished Faculty Award, his

colleagues cited his tireless work to train Minnesota county agents who have chosen to specialize in crops and soils. They also praised him for his relevant and timely research, which they say has made him a leading authority on fertilizer placement in North America.

The Director's Award to Distinguished Faculty is given annually to an outstanding campus-based faculty member. It carries a \$1,000 stipend through the University of Minnesota Foundation and is financed by contributions.

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AEA,BSS,CEO,V2M,F1M

NAGR3677

NEWS/ INFORMATION

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

October 10, 1990

Source: Pat Borich
612/624-1222
Writer: Deedee Nagy
612/625-0288

NICOLLET COUNTY EXTENSION AGENT IS GIVEN TOP FACULTY AWARD

Gary Hachfeld, Nicollet County extension agent and extension director, was presented the Minnesota Extension Service Director's Award to Distinguished Faculty at the annual extension staff development conference Oct. 9.

Hachfeld was cited for his outstanding work in farm financial management and marketing. He was instrumental in the early stages of Project Support, which aided farm families during the farm financial crisis of the early 1980s. He also helped with the Minnesota Extension Service's Managing Our Farm Family Future program, which was used in 14 Minnesota counties. He is a teacher of the widely used farm financial management computer package, FINPACK, to audiences, including vocational agriculture teachers across the state.

Between 1987 and 1989, Hachfeld was a member of the Minnesota Extension Service's Leadership in Extension for Agriculture Development (LEAD) program, a two-year leadership course for extension professionals that culminated in a European seminar last September. From his work with LEAD, Hachfeld and several of his colleagues tailored a leadership program for about 50 persons in Nicollet, Dakota and Waseca counties called CO-LEAD. Using grant money Hachfeld and fellow agents were able to obtain, CO-LEAD program participants have attended workshops and training sessions on community leadership.

Hachfeld joined the Minnesota Extension Service in 1971 as Nicollet County 4-H agent. Between 1978 and mid-1981, he served as McLeod County's agriculture agent and extension director.

In July 1981, he rejoined the Nicollet County extension staff as county director and agent responsible for agriculture and community and natural resource development. From July 1986 through June 1987, Hachfeld was a release time agent, developing and teaching farm management materials to agents and clientele throughout southern Minnesota.

Hachfeld has a bachelor's degree in agricultural economics and a master's degree in adult education, both from the University of Minnesota.

The Director's Award to Distinguished Faculty is given annually to an outstanding county- or area-based faculty member. It carries a \$1,000 stipend through the University of Minnesota Foundation and is financed by contributions.

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AEA,BSS,CEO,A1M,E1M,07,08,40,46,52,68,77

NAGR3678

NEWS/ INFORMATION

October 11, 1990

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

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

ACTION NOW CAN STAVE OFF SNOW MOLDS

Your lawn may not be growing as rapidly as it was last summer, but keep on mowing if you want to prevent snow molds.

"Don't put that lawnmower or rake into storage too soon," cautions Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service. She says lawns need to be mowed at their regular height as long as they continue to grow. Heavy accumulations of fallen leaves also need to be raked up. If the lawn is allowed to grow too tall, the grass will mat during wet or snowy weather. These are ideal conditions for snow mold fungi to develop. Unraked leaves mat down with the same result.

Several groups of fungi cause snow molds, according to Ash. Most common are gray and pink snow molds. They appear in the spring as the snow melts but may have been there all winter.

"Gray snow mold damage first shows up when the snow is melting," says Ash. Roughly circular patches 2 to 40 inches or more in diameter develop. They are straw colored and enlarge as long as the grass stays cold and wet from melting snow. The grass in the patches has a matted appearance and may look like gray colored mold growth on the whole patch or just the perimeter.

Pink snow mold produces yellowish patches, several inches to a foot in diameter, and also appears at snow melt. The patches keep enlarging

as long as the weather is cool and the grass is wet. The patches may appear bleached when dry or a faint pink when wet.

These two snow mold diseases do not appear annually, but are most apt to occur in a year when an early and deep snow cover prevents the ground from freezing. "A cold, open winter like last year," Ash says, "will not promote snow mold but may cause winter injury, with patches of grass dying because the crowns are killed by freezing or drying."

Proper lawn care this fall can reduce the danger of snow molds. As well as keeping the lawn mowed and the leaves raked, Ash advises avoiding excess lawn fertilization. Next spring you can lightly rake areas where snow molds have encouraged drying, she suggests. No chemicals are necessary.

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V7,V8,I2

NAGR3665

NEWS/ INFORMATION

October 11, 1990

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

Source: Steve Laursen
612/624-9298
Writer: Richard Sherman
612/625-3154

3 SWIFT COUNTY AGENTS RECOGNIZED FOR ENVIRONMENTAL QUALITY EDUCATION

Three Swift County extension agents were recognized Oct. 10 for their accomplishments in interdisciplinary environmental quality education.

4-H agent Randee L. Hokanson, agriculture agent Pat J. Maher and home economics agent Dorothy M. Rosemeier received the 1989-90 Certificate of Recognition for the Minnesota Extension Service's Natural Resources Program. State program leader Steve Laursen presented the award during extension's annual staff development conference. The award is given each year for dedicated and distinguished service to the people of Minnesota through extension education in natural resources development.

In presenting the certificates, Laursen said, "This team of agents has displayed strong and consistent leadership in the planning and implementation of educational programming on waste management in Swift County. Their innovative, dedicated teamwork on a pilot study of waste issues and in the development of educational materials has provided direct benefits for policymakers, local citizen groups, youth, homeowners, businesses and extension staff throughout Minnesota and the region who face difficult decisions relating to waste management."

Hokanson, Maher and Rosemeier led the implementation of a waste sort analysis to determine the potential for recycling in Swift County. The

results helped the county board and engineers determine facility needs, helped waste haulers determine staff and equipment needs, and provided educators with guidance on curriculum development.

The agents' role as educators continues as they work to help members of the public understand their role in the implementation of a county recycling management program. To accomplish this, the three have initiated a volunteer educator program in the county. They have also developed educational materials, including a video and several publications, for use in schools and with community groups. These materials have been used extensively throughout Swift County and by extension staff in other Minnesota counties and in other states. Hokanson, Maher and Rosemeier have also developed a household medical waste plan and have educated the public by writing releases for use by the news media.

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AEA,BSS,CEO,RM,06,12,34,37,63,80,81

NNRD3690

NEWS/ INFORMATION

October 11, 1990

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

Source: Jeff Reneau
612/624-4995
Writer: Joseph Kurtz
612/625-3168

VIDEOCONFERENCE WILL FOCUS ON SAFE USE OF DRUGS ON DAIRY FARMS

Dairy producers know that the market for their milk depends on consumer confidence in the safety and quality of the product.

Responsible use of drugs on dairy farms is key to maintaining that consumer confidence, notes a University of Minnesota extension dairy scientist.

"Using drugs for cows responsibly will prevent residues in milk," says Jeff Reneau. "Producers can learn more about this topic by attending a live videoconference Tuesday, Oct. 30, at one of nine locations in the Minnesota technical college system."

The nine locations are the technical colleges in Alexandria, Faribault, Granite Falls, Hutchinson, Pine City, St. Cloud, Thief River Falls, Wadena and Winona.

Persons with satellite receiver dishes can pick up the conference on Weststar 4, Transponder 14.

The conference, titled "Food Safety Impacts Your Milk Market: Responsible Use of Drugs on Dairy Farms," will be broadcast from 12 noon until 2 p.m. Central Standard Time. The broadcast will be followed by a discussion and question-and-answer session. Participants for this part of the program may include a local county extension agent, Minnesota Department of Agriculture milk inspector, a veterinarian and a milk processor milk quality staff member.

Washington State University is producing the videoconference.

Topics and speakers will be:

* Who is concerned about food residues?--Val Hillers, extension food specialist, Washington State University

* Federal and state regulations and their enforcement--Gerald Guest, director of the Food and Drug Administration's Center for Veterinary Medicine, and Al Placel, director of dairy for the New York Department of Agriculture and Markets and chairman of the Interstate Milk Shippers Commission.

* A quality assurance program for the dairy industry--John Adams, director of milk safety and animal health for the National Milk Producers Federation, and Bill Van Dresser, director of legislative affairs for the American Veterinary Medical Association.

* Producing safe dairy products--a joint responsibility--Chuck Emerick, Emer-Isle Dairy, Cathlamet, Wash.

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AEA,BSS,CEO,V2,V5,V6,D,H2

NAGR3691

NEWS/ INFORMATION

October 15, 1990

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

Source: Doug S. Foulk
612/624-6220
Editor: Mary Kay O'Hearn
612/625-2728

MOWING FALLBEARING RASPBERRIES NOW PREVENTS CANE DISEASES

Each year, after the raspberry harvest is over, fallbearing varieties, such as Heritage and Redwing, should be renovated.

This isn't hard to do, says Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service.

"Simply mow off all canes at or slightly above ground level," he says.

Although this prevents the production of an additional summer crop, total yield is actually greater than if the canes are allowed to produce a summer crop. A bonus is that mowing the canes and removing the cuttings controls all fungal cane diseases, allowing raspberries to be grown without fungicides.

Falk says that if both summer and fall crops are preferred, the canes should not be removed until the summer crop is harvested. If using the two-harvest method, the planting should be renovated after summer harvest as summerbearing raspberries are. However, a better solution, Foulk says, is to plant a variety of each type in separate, small plantings.

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V7,V8,I2

NAGR3666

NEWS/ INFORMATION

MOCHA 12/1
MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

October 15, 1990

Source: Deborah Brown
612/ 624-7491

Editor: Mary Kay O'Hearn
612/625-2728

FERTILIZE LAWN IN LATE OCTOBER OR EARLY NOVEMBER

Late October or early November is an excellent time to put down that final application of lawn fertilizer, says Deborah Brown, horticulturist with the University of Minnesota's Extension Service. It's a particularly good idea if you've had problems with patch diseases.

Fertilizer applied this late doesn't result in a flush of new topgrowth; temperatures are too cool for that. Instead, it benefits the roots and rhizomes that are protected by the soil and still growing actively.

She says to use either a standard lawn fertilizer that has no added weedkiller or one that's meant specifically for late fall use. "When you put down a second application in fall, you needn't fertilize first thing next spring. Instead, wait until early May, when you'll probably need to apply a fertilizer containing pre-emergent herbicide to prevent crabgrass," she says.

Lawnmowing should continue as long as topgrowth continues. Rake leaves so they won't mat down and eliminate air circulation. Water thoroughly in dry weather, but less frequently as temperatures drop.

A little extra care now, Brown says, should result in a healthier, more attractive lawn next spring.

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V7M, V8M, I2M

NAGR3670

NEWS/ INFORMATION

October 18, 1990

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

Source: Doug S. Foulk
612/624-6220
Editor: Mary Kay O'Hearn
612/625-2728

LATE-RIPENING APPLES CAN STAND SOME FROST

Some years, early autumn frosts may catch later-ripening apple varieties, such as Haralson, Regent and Fireside, before the crop can be harvested.

Maturing apples tolerate temperatures as low as 29 degrees F before internal freezing occurs. Little damage should occur when temperatures remain above this, says Doug S. Foulk, assistant fruit specialist with the University of Minnesota's Extension Service.

At temperatures below 29 degrees, however, freezing is likely. The flesh of damaged fruits may exhibit symptoms ranging from slight discoloration and a water-soaked appearance to complete browning and a spongy texture.

"If freezing does occur," says Foulk, "allow the frozen apples to thaw before harvesting to prevent severe bruising. Apples which have frozen have diminished storage life and should be used promptly."

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V7,V8,H1,I2

NAGR3668

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MINNESOTA EXTENSION SERVICE

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

NEWS/ INFORMATION

October 18, 1990

Source: John Lawrence
612/625-1273
Writer: Jack Sperbeck
612/625-1794

SELLING CALVES THIS FALL MAY BE LESS RISKY

High calf prices and an uncertain economy make a strong case for selling calves this fall.

"Expected returns for holding calves range from small profits to large losses," says John Lawrence, University of Minnesota livestock marketing economist. Overcapacity in feedlots and low corn prices have turned cattle feeders into aggressive bidders. "This makes the feeder cattle producer's decision easier," Lawrence says.

To help producers decide whether to sell at weaning or later, at heavier weights, Lawrence has developed projected costs and returns for four alternative steer calf marketing programs. Details are available from county offices of the Minnesota Extension Service.

"Many calf producers may prefer to forgo the risk of holding cattle and count their money while they decide if they made the right decision," Lawrence says.

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AEA,BSS,CEO,A2M,V2M

NAGR3694

NEWS/ INFORMATION

October 18, 1990

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

Source: John Lawrence
612/625-1273
Editor: Jack Sperbeck
612/625-1794

WEIGH RISKS IN FALL CALF MARKETING DECISIONS

Each fall cow-calf producers must decide whether to sell their calves at weaning or later, at a heavier weight.

Overcapacity in the feedlot industry and low corn prices have turned cattle feeders into aggressive bidders. "This makes the feeder cattle producer's decision easier," says John Lawrence, livestock marketing economist with the University of Minnesota's Extension Service.

This year, high calf prices and uncertainty about the economy may favor selling calves. Given the market outlook for next spring and backgrounding and finishing budgets, expected returns from holding calves range from small profits to large losses in four scenarios that Lawrence developed.

There's a lot of risk associated with strategies that involve backgrounding. Two fairly common strategies are to sell a 600-pounder in January or a 750-pounder in March. Over the past 17 years, both strategies have provided a positive return: \$6.25 and \$15.26 per head, respectively.

However, in seven of the 17 years, each of these strategies produced a loss. Returns ranged from -\$40.37 to \$62.37 for 600-pound steers and -\$66.37 to \$149.09 for 750-pound steers. "Producers need to weigh the risk of a marketing strategy as well as the expected returns," Lawrence says.

While history is helpful, information is also needed about the present and the future when making marketing decisions. "I look for 400- to 500-pound calves to drop into the mid-\$90s at many Minnesota auctions this fall," Lawrence says. Prices for heavier calves should trade about \$4 to \$5 lower for each 100-pound increase in live weight. The first quarter of '91 should see prices strengthen slightly with prices for 400- to 500-pound calves in the high \$90s-low \$100s range, 600- to 700-pound cattle in the low \$90s, and 700- to 800-pounders in the upper \$80s. Prices are expected to weaken in the second quarter of '91 with 600- to 700-pound cattle near \$90, 700- to 800-pounders in the mid-\$80s and fed cattle in the mid- to upper \$70s. The third quarter will likely see 700- to 800-pound calves in the low \$80s and fed cattle in the low \$70s.

The outlook prices reported above should correspond to most marketing strategies for spring-calving producers in Minnesota. Although every producer's budgeted returns will differ, the examples below offer some insight to profitable alternatives. The alternative is more profitable than selling this fall if the calf cannot be sold for the breakeven price.

Note that the net is a return to operator labor, management and facilities. More importantly, the budgets only calculate return based on the expected price at market time and expected animal performance; they do not reflect the risk associated with each alternative. The "bird in the hand versus two in the bush" rule may apply, Lawrence says.

The first thing to notice is that only one of the examples, the fourth, shows a potential return substantially higher than selling steer calves this fall. This strategy--retaining ownership, starting the calves on feed this fall and selling in June--has an expected return of \$39.10 per head. If the calves are finished in a commercial feedlot, a labor and facility charge would have to be subtracted.

Costs & Returns from Alternative Steer Calf Marketing Strategies

Strategy ¹	#1	#2	#3	#4
Days on feed	167	125	300	250
Target ADG (lbs.)	1.50	2.00	1.08	2.60
Payweight, 3% shrink (lbs.)	728	728	825	1,116
Payweight gain (lbs.)	228	228	325	616
Cost of feeder	\$487.50	\$487.50	\$487.50	\$487.50
Cost of gain ²	\$161.71	\$125.07	\$173.10	\$310.03
Cost per cwt. gain	\$70.93	\$54.98	\$53.26	\$50.37
Breakeven selling price	\$89.18	\$84.20	\$80.17	\$71.49
Expected market price	\$81.00	\$85.00	\$80.00	\$75.00
Expected return to LMFR ³	-\$59.55	\$5.61	-\$1.37	\$39.10
Breakeven fall price	\$86.21	\$98.58	\$97.39	\$104.73

¹Strategies: (#1) Winter @ 1.5 pounds ADG, sell mid-April; (#2) Winter @ 2.0 pounds ADG, sell early March; (#3) Winter @ 1.0 pound ADG until spring, pasture until late August; (#4) Put in feedlot, sell mid-June.

²2% death loss, 12% interest, \$2.15/bu. corn, \$50/ton hay, \$250/ton supplement.

³Expected return to labor, management, facilities and risk.

The second most profitable alternative is the second strategy, backgrounding at a 2-pound average daily gain (ADG) and selling in March. A bid this fall over \$98.58 per hundredweight would tip the scales in favor of selling.

The alternative with the least loss per head is a combination winter feeding and summer grazing program, strategy 3. This strategy relies on low-cost gains on summer pasture to reduce the overall cost of gain. The price risk associated with the longer feeding period is one weakness of this program.

Comparing strategies 1 and 2 highlights the importance of performance and management in a backgrounding program. The higher ADG in strategy 2 reduced the cost of gain and increased returns from a \$60 loss to a \$5 gain. However, there is a trade-off between fast gains and

discounts for heavy or fleshy cattle. Strategies 1, 2 and 3 all require selling yearlings to a feedlot. It's important to match cattle type with the appropriate rate of gain to achieve maximum returns, not necessarily maximum gain, maximum price or minimum cost.

Before considering either of the two profitable alternatives, consider the probability of price changes and the resulting impact on returns. Given the market environment in early October, strategy 2 had a 20 percent chance of returns under -\$4.70 and a 20 percent chance over \$31.50. Strategy 4 had a 20 percent chance of returns under -\$44.25 and 20 percent chance of returns over \$112.00.

"Many producers may prefer to forgo the risk of holding the cattle and count their money while they decide if they made the right decision," Lawrence says.

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AEA,BSS,CEO,A2

NAGR3695

NEWS/ INFORMATION

October 22, 1990

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

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

NEW FEEDLOT CATTLE NEED QUICK PROCESSING

Quick, careful processing of newly arriving feedlot cattle will minimize stress on the animals and make them more profitable. Pete Anderson, extension beef scientist at the University of Minnesota, recommends processing animals within 24 hours of arrival.

"If the cattle have shrunk less than four percent, process them right off the truck, if possible," Anderson suggests. "The sickness rate will go up 1 percent for each 24-hour period that passes before the cattle are processed."

Anderson says careful handling of cattle helps reduce stress for both animals and people. "Logical facility design is important," he says. "Avoid excessive noise and excitement. Don't use electric cattle prods, and minimize use of sticks and whips. Solid panels made of wood or cardboard are more effective when sorting cattle."

"Work cattle in small enough groups that none are in a holding area more than 45 minutes. Use care in operating head gates and squeeze chutes, as these are sites where operator negligence often produces injury."

Anderson recommends identifying all cattle with eartags. Using tags of various colors to identify cattle from different sources will make it easier to spot health differences related to source.

For incoming feeder calves, Anderson recommends a vaccination

program that includes IBR modified live vaccine, PI3 live vaccine, BVD killed vaccine, Haemophilus somnus killed vaccine, clostridial seven-way killed vaccine and BRSV modified live vaccine.

Anderson suggests consulting a veterinarian concerning a parasite control program. Grub and lice control and deworming are items to consider.

He also recommends implanting all cattle with a hormonal growth promotant, castrating any bulls, tipping horns and bobbing tails. Pregnancy exams may be necessary for yearling heifers.

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AES,BSS,CEO,V2,A2

NAGR3697

NEWS/ INFORMATION

October 22, 1990

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

Source: Pete Anderson
612/624-4995

Editor: Joseph Kurtz
612/625-3168

ANIMAL SCIENTIST OFFERS TIPS FOR STARTING NEW CATTLE ON FEED

One of the keys to profitable cattle feeding is to get new animals started on feed quickly and safely. Typically, it takes about three weeks to do this, says Pete Anderson, University of Minnesota extension beef scientist.

Anderson says incoming cattle should have immediate and constant access to clean, fresh water and high-quality grass or grass-legume hay. "Many cattle feeders provide silage to incoming cattle, but some calves won't eat silage because of its unfamiliar acid taste," he points out.

One strategy for starting cattle on feed is to put the starter diet on top of hay. This makes the animals eat through the starter to get to the hay. The amount of hay is gradually reduced. Once the cattle are eating the starting diet well, they are rapidly switched to a finishing diet.

Some operators start their cattle on feed without using hay. Anderson outlines two common strategies for doing this:

"One is to switch the cattle incrementally from a high silage diet to a high corn finishing diet. The silage content of the diet is reduced from 80 percent (dry matter basis) to 10 to 15 percent over a period of 20 to 30 days through a reduction of 10 percentage units every third day. A variation of this is to make the conversion in two or three much larger steps.

"Another strategy is to put the cattle on the finishing diet immediately, but restrict intake. The first few days, the animals get enough feed to meet maintenance requirements. Then they are stepped up to full feed rapidly. This is a more risky approach and requires greater management skills. However, if it's carried out correctly, cattle will be on full feed much faster. Cattle feeders should not try to use this strategy unless they can closely monitor the health and feed intake of the animals.

"A key to making this strategy work is to include recommended levels of an ionophore (Rumensin or Bovatec). The ionophore will greatly reduce the chance cattle will overeat and have digestive disorders."

Bunks should be kept free of stale feed, manure, mud and silage trash. "Don't expect calves to clean up leftover feed or to eat through or around waste," says Anderson.

He also suggests feeding at the same time each day to maximize feed intake and reduce the chance for digestive disorders.

"Including AS-700 during the first 21 days on feed has been shown to improve gains and reduce disease problems," he says. "If coccidiosis is likely to be a problem, add a coccidiostat to the diet."

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AEA,BSS,CEO,V2,A2

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

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

MONITOR HEALTH OF NEW FEEDLOT CATTLE

Cattle feeders who bring new animals into their lots should check the animals for sickness at least twice a day. Finding sickness early is a key to cutting death losses, says Pete Anderson, University of Minnesota extension beef scientist.

"Watch cattle for loss of appetite," says Anderson. "Sick calves will stand apart and will not approach the feedbunk. Also, watch for increased water consumption, which is a sign of fever. Reduced water consumption may signal some other problem."

Anderson says other signs of a sick animal to watch for are drooping ears; lowered head; slow movement; knuckling over of fetlocks; dry, red nose; nasal discharge; and increased respiratory rate or heavy breathing.

He recommends removing sick animals from the feedlot immediately for isolation and treatment.

"A predetermined plan to deal with sick calves should be in place, and all feedlot employees or involved family members should be familiar with it," says Anderson.

He suggests the following procedures and considerations for inclusion in such a plan:

--Record rectal temperature. Treat and isolate calves with a temperature of 104 degrees F or more.

--Follow label directions when using a medication or treatment.
--Switch antibiotics if the animal doesn't improve within 48 hours.

--Treat a sick animal for at least three, but not more than nine days.

--Don't put an animal back into the feedlot until its temperature and feed intake are normal for at least 24 hours.

--Consider a vitamin B12 injection for cattle with poor feed intake for seven days or more.

--Consider mass medication of all calves if the sickness rate is high.

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AEA,BSS,CEO,V2,A2

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NEWS/ INFORMATION

October 22, 1990

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

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

GOOD RECEIVING PROCEDURES HELP NEW FEEDER CATTLE

This is the time of year when many cattle feeders are bringing new animals into their lots. Some thoughtful receiving procedures will help incoming cattle get off to a good start, says Pete Anderson, extension beef scientist at the University of Minnesota.

"When possible, receive cattle during daylight hours," says Anderson. "Inspect the cattle on arrival for sickness and injury."

Anderson recommends having enough receiving pens to avoid mixing groups of cattle on arrival. Mixing new cattle with old increases stress and makes respiratory disease more likely.

"To minimize respiratory problems, house cattle outside, on a dry, but not dusty, surface with some bedding," says Anderson. "Try to minimize the amount of dust in the air by such steps as driving slowly, watering roadways or properly placing windbreaks."

Anderson emphasizes the importance of providing cattle with immediate, constant access to clean, fresh water. "Running water, such as from a hose dumping into a tank or trough, is best," he says. "It allows cattle to hear and smell water. Calves coming directly off ranches may never have seen water in a tank before."

Anderson also suggests giving new cattle access to medium-quality hay right away.

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AEA,BSS,CEO,V2,A2

NAGR3698

NEWS/ INFORMATION

October 22, 1990

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

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

MINNESOTA'S SWINE INDUSTRY IS COMPETITIVE, ECONOMIST SAYS

Minnesota's swine industry is competing well in the national scene. "When you compare national and state figures, Minnesota competes well against other major hog-producing areas," says Bill Lazarus, economist with the University of Minnesota's Extension Service.

Hog numbers in the state are relatively stable and the number of farms with hogs has remained relatively constant over the past two years, after declining rapidly in the early 1980s.

But the Minnesota swine industry faces a continual challenge to keep up with innovators elsewhere. "There's concern about what will happen as many of our facilities wear out and operators reach retirement age," Lazarus says. "We must avoid a 'defeatist attitude' and look for ways to remain competitive."

Lazarus says Minnesota's future competitive position will be greatly affected by our attitudes and policies regarding size of swine operations. An analysis of U.S. Census of Agriculture figures back to 1959 shows the trend toward larger operations.

The number of farms selling 1,000 or more hogs a year is growing, while the number of smaller operations is declining. The fastest percentage growth is in operations selling more than 5,000 hogs a year.

"If Minnesota is to share in this industry growth, we will need to foster a business climate that permits larger sized operations to evolve," Lazarus says.

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AEA,BSS,CEO,P1M

NAGR3701

NEWS/ INFORMATION

October 22, 1990

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

Source: Sherri Gahring
612/624-1708
Writer: Pam Barnard
612/625-4730

FOSTER SAFE TRICK-OR-TREATING FOR YOUR HALLOWEEN SPOOKS

This year, make Halloween successful for your trick-or-treaters by keeping their safety in mind when planning their costumes.

"Instead of buying a mask, consider using face paint," suggests Sherri Gahring, extension textiles and apparel specialist at the University of Minnesota. "Masks often block children's vision and face paint is more fun to wear."

In addition, Gahring suggests using light-colored fabrics for costumes because they show up better in the dark. "But, if Dracula insists on a black cape," she says, "you can decorate the costume with reflective tape or ribbon for better visibility.

"Avoid clothing that is too long or baggy to prevent garments from dragging on the ground or catching on fences or bushes." Also, loose or floppy footwear can cause kids to trip and fall. Store-bought garments, masks, beards and wigs should be flameproof.

Parents can make rayon or resin-treated cotton costumes flame-retardant (but not fireproof) by treating the cloth with a solution of 7 ounces of regular laundry borax, 3 ounces of boric acid and 2 quarts of hot water.

Dissolve the boric acid in a small amount of water to make a paste, says Gahring. Add the paste and the borax to the rest of the water, and stir until the solution is clear.

Saturate the costume with the solution and let it drip dry.

If you decide to press the costume, use a moderately hot iron and do not redampen the fabric with water.

This process will not work to make blends or synthetics flame-retardant, only rayon or resin-treated cotton fabrics. In addition, warns Gahring, the treatment does wear off. So, if you plan to use the costume next year, also plan to retreat it.

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AEA,BSS,CEO,A3,A4,V7,V8

NHEC3703

NEWS/ INFORMATION

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

October 25, 1990

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

EXPANSION OF DAIRY OPERATIONS WILL BE FOCUS OF CONFERENCE

Dairy producers need to rely on sound information, not guesses, when they make decisions about expanding their operations. Providing sound information about dairy expansion is the purpose of a three-day University of Minnesota conference in January.

The Dairy Expansion Conference will be at the Ramada Hotel, I-94 and White Bear Avenue, in St. Paul, Minn. It will begin with registration at 8 a.m. on Tuesday, Jan. 22, and will end at 12:40 p.m. on Thursday, Jan. 24.

"The conference will focus on a specific topic for a specific audience," says Bob Appleman, University of Minnesota extension dairy specialist. "It's designed to assist progressive dairy managers in the colder climates who are planning an expansion and may be building, managing and operating a free stall/milking parlor facility."

Appleman says the conference should also be of interest to suppliers of farm credit, consultants and planners, building and equipment suppliers, extension personnel, technical college and other adult program instructors, and others involved in the decision-making process.

"Many topics should be of interest to those producers who have expanded recently and are still learning how best to manage the expanded herd," says Appleman. He adds that, for some participants, the wisest decision resulting from attending the conference may be to not invest in

an expanded herd.

Conference subjects will include factors to consider in the transition from a stall barn to a free-stall/milking parlor unit. The conference will focus on three main areas. One is dairy facility layout and design, including waste handling, ventilation, milking center design, feeding systems, traffic flow, and contracting requirements and concerns. A second is business management, including dairying as a business, personnel management, communication with co-managers and employees, use of computers, financing alternatives and investment choices. A third is herd and farm management, including transition management, feeding, grouping of cows, management of replacements and free-stall management.

Instructors and speakers for the conference 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 conference 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 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

NAGR3704

NEWS/ INFORMATION

October 25, 1990

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

Sources: Jean W. Bauer
612/625-1763
Sharon M. Danes
612/625-9273
Writer: Larry A. Etkin
612/625-4272

RESEARCHERS FIND SOME GOOD CAME FROM FARM ECONOMIC CRISIS

The past few years have been hard on much of rural Minnesota. An uncertain farm economy and drought combined to force many farmers into bankruptcy and others to the very brink of it. These problems came atop economic and population trends that were already straining rural lifestyles.

With many farmers being forced out of business and some off land that had been in their families for generations, Minnesota put the nationally acclaimed Farm Credit Mediation Program into effect in 1986. Although the program helped many farm families stay in business, these families encountered enormous stress.

Could those families have emerged from the process unscathed? And what about the families who were forced to leave farming?

The Minnesota Agricultural Experiment Station has published an evaluation of the "family" facet of the aftermath of Farm Credit Mediation, Adjustments of Farm Families to Economic Stress: A Two-Year Study. The publication reports the economic, social, psychological and physical effects of the crisis on farm families who participated in the program. The study is unique; the team of University of Minnesota researchers who conducted it is the only group that has looked at the family impacts of the farm crisis.

The families who participated in the study saw a wide range of effects resulting from their situations. These ranged from changing patterns of communication between family members to deterioration of physical health. And, they expressed intense feelings that community resources had been totally inadequate and mostly unhelpful during their crises.

But the researchers, family social scientists Kathryn Rettig, Jean Bauer and Sharon Danes, also found positive effects. Families who participated in the study felt they had substantially improved their abilities to clarify family and financial goals and to set priorities. They reported also that communication within their families had improved, along with the ability of individuals to provide emotional support for other family members.

Adjustments of Farm Families to Economic Stress: A Two-Year Study was produced to improve extension agents', farm credit mediators' and local community and statewide leaders' understanding of some of the non-economic effects of severe economic stress on farm families. It was produced in cooperation with the Farm Credit Mediation Program and the Minnesota Extension Service.

Copies are available for \$2 prepaid (plus 6 percent sales tax for shipment to Minnesota addresses) from the Distribution Center, 3 Coffey Hall, University of Minnesota St. Paul, MN 55108-1030. Ask for item AD-MR-3994, and make your check payable to the University of Minnesota.

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AEA,BSS,CEO,V2,A1,E5,E7,N2

NAGR3706

NEWS/ INFORMATION

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

October 25, 1990

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

HUNKS OF BARK FALLING FROM TREES MAY BE CAUSED BY FUNGUS

Squirrels, even children, may be blamed when patches of the outer, rough bark of a tree fall off leaving smooth, somewhat depressed areas.

Actually the condition, called smooth patch, is caused by the fungus Aleurodiscus, which colonizes the dead outer layers of bark on living trees, causing it to slough off. The kids and squirrels are innocent.

Smooth patch, caused by various species of the fungus, invades both hardwoods and conifers. In Minnesota, smooth patch is most common on white oak.

"The smooth, light-colored depression left is usually irregular in shape, a few inches to more than a foot across, and may form a band around the tree," says Cynthia Ash, plant pathologist with the University of Minnesota's Extension Service. Since the fungus does not attack living tissue (the rough, outer bark of a tree is dead), smooth patch is not harmful to the tree.

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V7,V8M,I2M

NAGR3667

NEWS/ INFORMATION

October 29, 1990

10/29/90
UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM
405 Coffey Hall
1420 Eckles Avenue
St. Paul, Minnesota 55108

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

EVERYONE NEEDS A CALENDAR

As we shift into the holidays and gift-giving time, keep the new Minnesota Extension Service calendar, Minnesota Gardening 1991, in mind, suggests Deborah Brown, horticulturist with the Minnesota Extension Service.

It would make a lovely hostess gift at Thanksgiving as well as a great, reasonably priced Christmas or Chanukah present for all the gardening friends and relatives on your list, she says.

The calendar has monthly gardening tips as well as lists of suggested extension publications. It can prove useful for youngsters just getting involved with gardening activities as well as more experienced gardeners. The color photos are so attractive that even a shut-in who is no longer able to garden would appreciate it.

The calendar retails for \$5, and can be ordered from any Minnesota county extension office (postage is \$1 extra). Ask for item AG-MI-5521, Minnesota Gardening 1991.

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V7,V8M,I2M

NAGR3669

NEWS/ INFORMATION

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

October 29, 1990

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

PRUNE TREES WHILE THEY'RE DORMANT

Pruning is safer and easier once trees go dormant. Deborah Brown, horticulturist with the University of Minnesota's Extension Service, suggests you remove branches that are dead, diseased or growing too low on the trunk. Branches that rub across other, larger branches should also be pruned according to Brown.

"No pruning paint or wound dress is needed or desired. 'Bleeding' or sap loss from pruning sites which may occur next spring, won't hurt the tree. Pruning paint does not prevent sap loss," Brown points out.

Wait until the end of February or sometime in March to prune any fruit trees, Brown says. Try to complete the job by early April. Wounds will heal quickly once growth resumes in spring. Pruning fruit trees too early in winter may cause them to die back from the pruning sites.

With the exception of small trees, it's best to hire a competent tree service to handle your pruning. Make sure the company is licensed, bonded and fully insured for both personal injury and injury to your property should an accident occur. "Tree limbs are much heavier than you might imagine, Brown says. Removing them safely requires both training and experience. Leave such work to the pros!"

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V7,V8M,I2M

NAGR3671

NEWS/ INFORMATION

October 29, 1990

Source: Bruce Giebink

612/624-2738

Writer: Jack Sperbeck

612/625-1794

CROP PEST MANAGEMENT COURSE SET FOR NOV. 15-16

The 10th annual Crop Pest Management course is scheduled Nov. 15-16 at the Earle Brown Center on the University of Minnesota's St. Paul campus.

Designed for those who advise farmers on crop pest problems, the course will include:

--Managing soybean cyst nematode and corn stalk rot.

--Managing problem weeds.

--Alternatives in insect control.

--Nitrogen management in the '90s.

The Minnesota Independent Crop Consultants will hold their banquet and annual meeting in conjunction with the short course on Thursday, Nov. 15.

For more information, contact Bruce Giebink, 232 Hodson Hall, University of Minnesota, St. Paul, MN 55108. Telephone (612) 624-2738.

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AEA,BSS,CEO,V2,V4,F1

NAGR3710

NEWS/ INFORMATION

October 31, 1990

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

Source: C. Eugene Allen
612/624-4777

Writer: Deedee Nagy
612/625-0288

INSTITUTE ADVISORY COUNCIL HONORS NEWSPAPERMAN EGERSTROM

The advisory council for the University of Minnesota's Institute of Agriculture, Forestry and Home Economics has awarded St. Paul Pioneer Press reporter Lee Egerstrom its 1991 Media Award.

Egerstrom covers agribusiness, general business and international trade for the Pioneer Press. He is a Kerkhoven, Minn., native and a graduate of St. Cloud State University. After working for three years on the St. Cloud Daily Times in the late 1960s, he became a Washington, D.C., correspondent for the Knight Ridder newspapers. He has covered agribusiness and agricultural trade since joining the St. Paul paper in 1980.

The presentation was made on Tuesday, Oct. 30, at the Minnesota Agri-Growth Council's annual meeting in Bloomington. Robert Moraczewski, chairman of the marketing/public relations committee of the Institute Advisory Council presented the award.

The 35-member advisory council advises the vice president and deans of the Institute of Agriculture, Forestry and Home Economics, which includes the University's St. Paul-campus based colleges, the Minnesota Agricultural Experiment Station, the Minnesota Extension Service and the technical colleges in Crookston and Waseca.

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AEA,CEO,BSS,IAC,V2M,A1M,Se1Media

NAGR3717

NEWS/ INFORMATION

November 1, 1990

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

Source: Craig Sheaffer
612/625-7224

Writer: Larry A. Etkin
612/625-4272

NEW BULLETIN DEBUNKS BAD REPUTATION OF REED CANARYGRASS

Reed canarygrass' reputation as a low-quality forage is unjustified, says Craig Sheaffer, a University of Minnesota research agronomist.

The bum rap on quality and lack of palatability comes from the high alkaloid content of older varieties, according to Sheaffer. He says the problem has been overcome in newer varieties bred for low alkaloid concentration. Pioneering work on developing low-alkaloid reed canarygrass germplasm was initiated by University of Minnesota scientists.

The new, low-alkaloid varieties, which include Venture and Palaton, provide the same--and sometimes better--yield and quality than other cool-season forage grasses harvested at a similar stage of maturity.

Furthermore, reed canarygrass is better adapted to diverse uses and a wide range of environmental conditions than most other commonly grown perennial forage grasses. It's particularly well adapted to wet soils, but is equal or superior to other cool-season grasses under conditions of moisture deficit.

Reed canarygrass can be planted in dense, pure stands or in a mixture with legumes. It can be pastured or harvested as silage or hay. But, says Sheaffer, care must be taken in managing reed canarygrass. The crop germinates and emerges relatively slowly. This requires careful early attention to establishment. And especially when reed canarygrass is used for pasture, grazing must start when the grass is 6 to 12 inches

tall to minimize steminess.

A new Minnesota Agricultural Experiment Station bulletin, Reed Canarygrass, describes the characteristics of the modern, palatable varieties of reed canarygrass in greater detail. The 8-page publication covers pasture establishment and the plant's growth habits and fertility needs. It recommends management practices, including grazing and harvest recommendations. It also compares yield and quality for commercial reed canarygrass varieties, and between reed canarygrass and other forage grasses.

Copies of Reed Canarygrass are available for \$1 each, prepaid, from county extension offices throughout Minnesota or from the Distribution Center, 3 Coffey Hall, University of Minnesota, St. Paul, MN 55108-1030. Request publication AD-SB-5533. Checks should be made payable to the University of Minnesota, and 6 percent sales tax should be included on Minnesota orders.

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AEA,BSS,CEO,V2,A2,D,F1,N3

NAGR3718

NEWS/ INFORMATION

November 1, 1990

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

Source: Wanda Sieben
612/624-3751
Writer: Sam Brungardt
612/625-6797

WHEN IT COMES TO JEANS, WHAT YOU SEE IS OFTEN NOT WHAT YOU GET

It can be a hassle. How many of us are brave--or naively foolish--enough to buy jeans without first trying them on?

"Try telling a 15-year-old to take three pairs of jeans of different sizes into the dressingroom when he doesn't want to be there in the first place," says Wanda Sieben, a University of Minnesota apparel quality researcher. "Worse yet, try buying jeans for someone who isn't along."

Sieben recently conducted a study for the university's Agricultural Experiment Station to evaluate the accuracy of information on garment size labels. What she found, after measuring 240 pairs of men's five-pocket, prewashed jeans and comparing those measurements with the dimensions on the labels, would probably surprise few people: the stated inseam and waist dimensions often differed significantly from the actual dimensions.

The study involved nine brands of straight-leg, natural-waist jeans--two national brands and one private label brand in each of three price ranges, low (\$24.99 or less), medium (\$25.00-39.99), and high (\$40.00 or more). Sieben considered the actual dimension to be the same as the stated dimension if the two did not differ by more than 1/2 inch.

How did the jeans measure up?

"In some instances," says Sieben, "there was quite a bit of difference between the size on the label and the actual size; a waist labeled 32 inches might actually measure 34." The greatest discrepancy Sieben found at the waist was 2-1/2 inches; at the inseam, 4 inches. When waist, right inseam,

and left inseam measurements were taken into consideration, only 18--or about 8 percent--of the 240 pairs met the plus-or-minus-1/2-inch tolerance at all three locations.

The data also revealed that paying more for jeans doesn't necessarily mean they'll be the size stated on the label. Sieben found that, while higher-priced jeans were more likely to be the stated inseam size than lower-priced jeans, they were less likely to be the stated waist size. Also, private label jeans were more likely to have size discrepancies at the inseams than national brand jeans.

"Many factors," says Sieben, "can affect the final dimensions. But in the final analysis, the size labels on the jeans we measured would not have served as useful guides for making an informed buying decision.

"Consumers just seem to assume that jeans manufacturers use the best techniques for optimal quality control, which is, in reality, rarely the case. Consumers are the ones who find out that the sizes on the labels often don't reflect reality. Unfortunately, they're also the ones who most often pay the price--in dollars, time, frustration and inconvenience--for this poor quality control. And, as any efficiency expert will tell you, the most expensive time to catch a mistake is at the very end.

"I hope this research helps validate consumers' experiences and leads them to act on their own behalf. One defense that manufacturers fall back on is a lack of feedback from consumers regarding the quality of their products. Inaccurate labeling persists partly because consumers do not complain enough about it."

Sieben also hopes her study will convince jeans manufacturers to improve their quality control. She says they have everything to gain by accurately labeling for size. Doing so can only increase consumer confidence in--and demand for--their product.

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AEA,BSS,CEO,V4,V7,V8,A4,E6,SelMedia

NHEC3716

NEWS/ INFORMATION

November 1, 1990

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

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

MANY CONFUSE ANIMAL RIGHTS, ANIMAL WELFARE

Persons forming their attitudes about the issue of how to use or treat animals should understand the difference between animal rights and animal welfare. Each is a separate concept, says Charles Christians, extension animal scientist at the University of Minnesota.

"Much of the public support for animal rights arises from individuals who do not know or distinguish between animal rights and animal welfare," says Christians.

"The basic concept of the animal rights movement is that humans and animals have equal rights. The goal of many animal rightists is to stop all use of animals by humans. The most active militant organization in this movement has been People for the Ethical Treatment of Animals (PETA). Ingrid Newkirk, one of the founders of the group, has popularized the phrase 'a rat is a pig is a dog is a boy.'"

Christians says the basic philosophy of the animal welfare movement is that people have a responsibility to use and treat animals humanely. "The main goal of animal welfare is to prevent cruelty to animals and needless suffering by animals," he points out. "Few would argue against animal welfare. In fact, animal husbandry is the term used for the scientific control and management of domestic animals."

Christians says that historically, livestock producers have been among the most ardent animal welfarists. The livelihood of a producer

depends on the animals' productivity, which requires animal husbandry practices that foster healthy animals, he notes.

"If livestock care were not adequate, costs would rise and livestock producers would lose money," says Christians. "Practices that neglect, cause severe stress to, or abuse animals are clearly counterproductive to good husbandry. Animal agriculture is a lifetime career for many farmers because they have a genuine desire to work with and care for animals."

Christians believes continued research is necessary to improve livestock management and to develop more humane production techniques.

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AEA,BSS,CEO,V2,V5,V6,V7,V8,A2,D,K,N1,N3,P1

NAGR3713

NEWS/ INFORMATION

Mac Gregor
MINNESOTA EXTENSION SERVICE

**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM**

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

November 12, 1990

Source: Peter Scheffert
612/388-8261
Writer: Jack Sperbeck
612/625-1794

FARM COMPUTER FAIR WILL BE HELD IN 3 CITIES DURING DECEMBER

A Farm Computer Fair will be held in three Minnesota cities during December.

The fair, sponsored by the University of Minnesota's Extension Service, will include workshops and vendor displays. Dates and locations are Tuesday, Dec. 4, at the VFW in Luverne; Wednesday, Dec. 5, at the downtown Holiday Inn in Mankato and Thursday, Dec. 6, at Hoffman House in Rochester.

"We've expanded this year," says Kent Thiesse, Blue Earth County extension agent. Last year, the event was in Mankato and attracted about 1,000 people.

"The computer fair is aimed at the entire family," adds Peter Scheffert, Goodhue County extension agent. "It won't make you an expert, but you'll get valuable background information to make buying and computer use decisions."

Workshops are scheduled on these topics:

- Do I need a computer?
- A computer as part of the family.
- Software and hardware decisions.
- Computer applications.
- Advanced users forum.

There is no admission fee. Details are available from county extension offices.

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AEA,BSS,CEO,V2M,V4M,A1M

NAGR3720

NEWS/ INFORMATION

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

November 12, 1990

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

U OF M CATTLE FEEDERS' DAYS WILL TAKE PLACE IN DECEMBER

Current information and research results on cattle feeding will be the subject of programs at three locations in Minnesota in early December.

The Minnesota Extension Service is sponsoring the 1990 Cattle Feeders' Days. They will be Dec. 4 at the Northwest Experiment Station, Crookston; Dec. 5 at the West Central Experiment Station, Morris; and Dec. 6 at the VFW in Slayton. The programs will begin at 10 a.m. and conclude at 3 p.m.

Topics and speakers will be:

--Marketing strategies for 1991, John Lawrence, extension livestock marketing specialist, University of Minnesota;

--Feed bunk management for maximum intake, Pete Anderson, extension beef scientist, University of Minnesota;

--Feedlot runoff and waste management regulations, Randy Ellingboe, Regulatory Compliance Section, Division of Water Quality, Minnesota Pollution Control Agency;

--Report on beef cattle research by Minnesota Agricultural Experiment Station scientists, various speakers;

--Proper use of Finaplix implants, Anderson;

--1990-91 cattle feeding budgets and breakevens, local farm management personnel.

A question-and-answer session will conclude the program.

The registration fee for each program will be \$10-12 (depending on food service cost), payable at the door. The fee will cover lunch and refreshments, handouts and a copy of the 1991 Minnesota Beef Cattle Research Report.

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AEA,BSS,CEO,V2M,V5,V6,A2

NAGR3721

NEWS/ INFORMATION

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

November 15, 1990

Source: James Hanson
612/624-1711
Writer: Joseph Kurtz
612/625-3168

AUSTIN, NEW ULM TO HOST MINNESOTA SWINE HEALTH CLINICS

Profitable pork production will be the focus at two Minnesota Swine Health Clinics in mid-December.

The first clinic will be Thursday, Dec. 13, in Austin at the Holiday Inn, near the junction of I-90 and Highway 218. The second will be Friday, December 14 in New Ulm at the Holiday Inn on Highway 14, three-quarters of a mile east of the downtown business district. Registration on both days will begin at 8 a.m. The program will get under way at 9 a.m. and adjourn at 5 p.m.

The program will be the same each day. Topics during the first session will be keeping the Minnesota swine industry competitive, coordinating producer groups, construction of new facilities and invigorating a region's swine industry. The speakers, respectively, will be Gary Dial, University of Minnesota extension veterinarian; James Lewis, producer from Welcome, Minn.; Robert Christensen, producer from Sleepy Eye, Minn.; and Gordon D. Spronk, veterinarian from Pipestone, Minn.

Topics for the second morning session will be the Minnesota swine slaughter monitoring program, the status of swine diseases in Minnesota and high health strategies. Respective speakers will be Dial; Paul Yeske, veterinarian from Nicollet, Minn.; and Joe Connor, veterinarian from Carthage, Ill.

During the first afternoon session, the topics will be biological and financial targets for the breeding and finishing herds, how to use records, use of the PigCHAMP record system, marketing from a packer's perspective and an overview of recent findings on pneumonia. Presenting these topics will be Brian Caldwell, veterinarian from Mapleton, Minn.; Daniel Little, veterinarian from Spring Valley, Minn.; Robert Morrison, University of Minnesota veterinarian; Jerry Adwell, Hormel, Austin, Minn.; and Carlos Pijoan, University of Minnesota veterinarian.

The final session will be on building design. Connor will discuss innovations in ventilation and waste management design. Tim Loula, veterinarian from Nicollet, Minn., will cover innovations in equipment design.

A number of swine product manufacturers will have exhibits at the clinics.

Advance registration is encouraged, but registrations will be accepted at the door. The registration fee is \$20 and \$15 for additional family members or students accompanied by a parent or instructor. The fee includes the cost of lunch and a proceedings booklet.

Checks for the registration fee should be made payable to the University of Minnesota and mailed to James O. Hanson, College of Veterinary Medicine, 1365 Gortner Ave., University of Minnesota, St. Paul, MN 55108. For more information, call (612) 624-3434.

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AEA,BSS,CEO,V2,P1,Z3,Z4,Z5,Z6

NAGR3722

NEWS/ INFORMATION

Marvin Fazef
MINNESOTA EXTENSION SERVICE

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

November 15, 1990

Sources: Jim Bowyer
612/624-4292
Pat Huelman
612/624-1286
Writer: Pam Barnard
612/625-4730

Editors, program directors: This is the first release in a series on energy conservation from the University of Minnesota's Cold Climate Housing Center. Look for one or two new topics each week over the next two months.

WHEN IT COMES TO ENERGY, CONSERVE'S THE WORD

"The United States, which accounts for only 5.2 percent of the world's population, is using over one-third of the total energy consumed in the world each year," says Jim Bowyer, director of the University of Minnesota's Cold Climate Housing Center (CCHC).

Bowyer, who's also head of the Department of Forest Products in the College of Natural Resources, says Americans are paying a very high and needless price for excess energy consumption. Energy conservation, he says, must become a national priority.

About the problems Americans have created for themselves, Bowyer says: "We continue to consume extreme quantities of what we all know is a finite resource. This consumption, moreover, is a major contribution to our continuing trade deficit and is the root cause of several of today's most serious environmental problems, such as acid deposition and the build-up of atmospheric carbon--problems that will ultimately cost untold billions of dollars to correct."

Bowyer contends that many of the problems Americans face could be greatly reduced by simply conserving energy. After the oil crisis in

the early 1970s, conservation practices had a phenomenal effect on energy consumption in the United States. Adoption of improved technologies, along with many small adjustments to daily lifestyles, significantly reduced energy use. In fact, Americans today use only about three-fourths as much energy per unit of gross national product as they did in 1973.

Although these figures are impressive, reducing per capita energy consumption to the same levels as western Europe would result in the United States using only about 60 percent as much energy as it does now.

Both Bowyer and Pat Huelman, extension housing specialist and CCHC coordinator, point out that household use accounts for about one-fourth of total U.S. energy consumption. They say homeowners can do many things to conserve energy through application of proven practices and technologies.

The Cold Climate Housing Center, which is funded partly by the Minnesota Extension Service and the Minnesota Agricultural Experiment Station, is helping home builders and homeowners alike understand more about how homes work as systems and about how they can interact with them most efficiently. Says Huelman of the center's contributions, "We know how to conserve responsibly...we're promoting energy conservation measures that will improve comfort and provide a healthy living environment.

"For example, if you airtighten your home properly, you not only stop warm air from leaking out but you keep damaging moisture from getting in the walls and ceilings."

And, in the furnace upgrade area, CCHC specialists are recommending sealed combustion systems, which provide both improved efficiency and less chance of dangerous backdrafting, or infiltration of combustion gases back into the home environment.

Huelman adds, "There is an economic multiplier effect that is in operation when a person in a community conserves energy...we need to emphasize the economic benefits to Minnesota and its communities...2 percent of the state's total products and services sold is residential energy use. When we import energy, we export dollars. If we could just recapture some of those dollars that get sent out of the community to purchase energy, we can improve our bottom line and strengthen the economic vitality of our communities."

Bowyer urges Minnesotans to watch for the energy conservation tips that the Cold Climate Housing Center will be putting out over the next few weeks to learn how they can act responsibly, save money and improve their health just by saving energy. Or, he says, people may contact the center at (612) 624-9219 or their local county extension office for more information.

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

NHEC3724

NEWS/ INFORMATION

November 15, 1990

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

Source: Joe Zulovich
612/625-3701
Writer: Teddi Barron
612/624-2767

Editors, program directors: This is the second in a series of releases on energy conservation from the Cold Climate Housing Center that you will receive before the end of the year.

PLAY IT SAFE: KEEP FURNACE CLEAN, TUNED

An annual furnace tune-up and regular cleaning can help ensure safe and efficient heating this winter.

"Without an annual safety check, you could run the risk of asphyxiation or fire if a cracked heat exchanger or defective exhaust system goes unnoticed," says Joe Zulovich, extension specialist for the University of Minnesota's Cold Climate Housing Center. "And regular cleaning keeps the furnace operating efficiently. A 5 percent decrease in overall furnace efficiency results in at least a 5 percent increase in heating bills."

Homeowners can do simple cleaning and inspections of both the furnace and the distribution system. A qualified service technician should perform the annual tune-up and safety check, which should include inspection of the heat exchanger and a test for backdrafting.

Maintenance by the homeowner should begin with monthly cleaning or replacement of the furnace filter. "Don't underestimate the importance of a clean filter. Dirty or clogged filters reduce the amount of air supplied to the registers in the house. Some rooms could be cold while others are warm. And because of reduced air flow, the blower works harder and longer and the furnace runs longer and less efficiently. It all adds

up to higher utility bills," Zulovich says.

At the beginning of the heating season, make a visual inspection of the furnace ductwork. "Make sure everything is connected," advises Zulovich. "If it isn't, that could indicate other problems with the distribution system and a professional may be needed to reconnect and balance the system. You also should check for ductwork cleanliness. Make sure that the vents or registers are not blocked."

Homeowners can also inspect the heat distribution. "If warm air is not coming out of all of the registers where you want heat, there's something wrong with the duct distribution system," he says.

The yearly professional service check also should include a cleaning of the forced air blower. "Dirt and grime can accumulate on blower surfaces during normal operation. When that happens, air has trouble passing through the blower and won't get distributed. That reduces furnace efficiency and increases the cost of operation," Zulovich says.

In addition, furnace systems more than about 10 years old may need to have their bearings lubricated. "A system with sealed bearings doesn't require lubrication, but needs inspection," Zulovich says. "During the annual tune up, a service person can tell you whether your furnace needs regular lubrication and show you how to do it."

Be sure the service technician checks for proper operation of the exhaust system. If the furnace, flue damper or chimney are not functioning properly, dangerous by-products of combustion could spill back into the furnace and be circulated through the house.

For more information on furnace maintenance and home energy conservation, contact your local county extension office or the Department of Public Service Energy Information Center.

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NEWS/ INFORMATION

November 15, 1990

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

Source: William Breene
612/624-4959
Writer: Sam Brungardt
612/625-6797

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

WHEAT, SOYBEAN PRODUCTS WORK WELL IN AQUACULTURE RATIONS, RESEARCH SHOWS

In the future, wheat and soybean growers may help feed the world's burgeoning population in a rather surprising way: by providing relatively inexpensive feed ingredients for farm-raised fish and crustaceans.

Research by University of Minnesota food scientist William Breene and cereal chemist Yousria Ibrahim has shown that flour and gluten made from hard red spring wheat work well as binders and sources of nutrients in aquaculture rations. The research also shows that soybean meal can be partially substituted for more expensive fish meal in the rations.

In Minnesota, sales of farm-raised fish (including fish for bait and stocking) exceed \$51.1 million a year. But, the size of the state's aquaculture industry pales in comparison to the industry nationwide and worldwide.

Cereals are used in aquaculture rations because they are cheap, and the U.S. aquaculture industry now uses about 1.3 billion pounds of domestic grain products yearly. But if the industry continues to expand at the current rate, it could use 4.5 billion pounds annually by the year 2000. And, just consider the potential market for U.S. grain products in aquaculture worldwide.

"Using wheat flour, wheat gluten and soybean meal in aquaculture

rations could create larger markets for the hard red spring wheat and soybeans we grow in Minnesota," observes Breene, who conducts research for the University of Minnesota's Agricultural Experiment Station.

Flour made from hard red spring wheat is high in both protein and gluten, making it well suited for use as a binder in aquaculture rations. Wheat gluten's adhesive properties provide the binding needed for the pelleted or extruded rations commonly fed to fish. Gluten is water insoluble, which reduces pellet breakdown, and its viscoelastic properties give pellets the chewy texture that fish prefer. Moreover, gluten lends itself to expansion and air incorporation, which is important if the fish being raised are surface feeders.

Using twin-screw extrusion, Ibrahim and Breene formulated 10 high-density (sinking) experimental diets containing various amounts (17-45 percent by weight) of different grades (patent, first clear and second clear) of hard red spring wheat flour. Four of the diets also contained 1 or 5 percent wheat gluten. In addition, all of the diets contained 15 percent soybean meal and 40 percent menhaden fish meal as sources of protein.

Water stability is very important in fish feed; if the pellets do not hold together until they are eaten, the feed is wasted. So, the researchers tested the stability of the 10 experimental diets. Pellets made from all but two of the diets retained their shape and could be handled without disintegrating after 24 hours in water. The most stable diet contained 45 percent patent flour (the most expensive grade).

In trials at Miltona Fisheries at Garfield, Minn., channel catfish were fed the 10 high-density experimental diets as well as a commercial feed. "The feed conversion rate with the experimental diets compared favorably to that obtained with the more expensive commercial ration," says Breene.

The researchers also formulated an eleventh, "local, cheap" diet, that

contained 42 percent second clear flour (which is the cheapest, yet highest in protein, of the three grades of flour), 35 percent soybean meal and 15 percent carp meal by weight. Their goal was to produce a feed as cheaply as possible using locally produced ingredients.

"Our preliminary investigations showed that soybean meal can be substituted for part of the fish meal," Breene says. "That's good news, because it's another use for oilseed meal and because it's possible to effect some cost savings. The 48 percent protein soybean meal we used costs only about half as much as menhaden meal."

Ibrahim adds, "This local, cheap diet performed quite well despite the fact that it not quite as stable and it had a slightly lower feed conversion rate than the other 10 diets."

Although the carp meal used in the "local, cheap" diet costs more than menhaden meal, it would be cheaper if it were to be produced in Minnesota on a large scale, Ibrahim says. Feeding carp, which plague Minnesota's sports fishery, to more valuable fish, such as walleyed pike, could be a way to utilize this now underutilized "trash" fish. Or, carp could be raised in ponds for fish meal production if the demand were great enough.

This research was a good example of how government, farmers and industry can work together to expand the markets for commodities. It was supported by the Greater Minnesota Corporation's Agricultural Utilization and Research Institute, the Minnesota Wheat Research and Promotion Council and Buhler, Inc., a Minneapolis, Minn., manufacturer of extruders.

In future research, Breene and Ibrahim plan to evaluate still other oilseed and cereal sources of protein for aquaculture rations.

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AEA,BSS,CEO,V2,F1,F2,L3,N2,R

NAGR3725

NEWS/ INFORMATION

November 16, 1990

Source: Fred Bergsrud
612/625-9733
Writer: Jack Sperbeck
612/625-1794

HAVE WELL WATER TESTED REGULARLY

Well water should be tested at least once every three years, says Fred Bergsrud, water quality coordinator with the University of Minnesota's Extension Service.

A national study released Nov. 13 by the Environmental Protection Agency showed that 4 percent of rural domestic drinking water wells have detectable residues of at least one pesticide. Less than 1 percent of the wells tested have pesticide residues considered unsafe for human consumption.

"The vast majority of Minnesota wells have safe drinking water. Don't draw conclusions about your own well based on this national study," Bergsrud advises.

However, Bergsrud says all private water wells should be tested every three years. And some, depending on construction and location, should be tested yearly.

County extension offices in Minnesota have guidelines on water testing, including how to collect samples, where to send them and interpretation of results.

The EPA report said that, although the study results revealed no cause for alarm, there is cause for concern over the nitrate levels that were detected. The survey also detected a higher presence of atrazine and DPCA.

The EPA stressed that, although the percentage of wells with detectable levels of pesticides is small, the absolute number of wells is high.

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AEA,BSS,CEO,V2,V7,V8,A1M,E5M,RM

NAGR3727

NEWS/ INFORMATION

MINNESOTA EXTENSION SERVICE

**UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM**

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

November 19, 1990

Source: Fred Hoefer
612/625-4757
Writer: Joseph Kurtz
612/625-3168

U OF M OFFERS SWINE MANAGEMENT CORRESPONDENCE COURSE

A correspondence course in profitable swine management is available to Minnesota pork producers again this winter. The Minnesota Extension Service has developed the course, which includes a new set of topics for 1991.

The course includes seven lessons which course participants receive in the mail at the rate of one each week beginning in late January. The lessons this year will cover saving baby pigs, herd health guidelines, issues in swine production, reduction of pneumonia and other respiratory diseases, waste management, marketing and high health strategies.

Each week's lesson includes a set of questions. Answers to the questions are mailed the following week with the next lesson. Thus, course participants do their own evaluation of their answers to the questions.

The lessons were developed by University of Minnesota extension specialists in animal science, veterinary medicine, ag economics, ag engineering and agronomy.

The course is administered through county extension offices. Fee for the course is \$15. Those who wish to enroll in the course should contact their local extension office.

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V2M,P1M

NAGR3727

NEWS/ INFORMATION

November 26, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Pat Huelman
612/624-1286

Writer: Teddi Barron
612/624-2767

Editors, program directors: This is the third release in a series on energy conservation from the Cold Climate Housing Center. Look for a new topic each week over the next two months.

SEAL HIDDEN AIR LEAKS TO STOP FLOW OF HEAT TO OUTDOORS

Despite all our efforts to improve the energy efficiency of our homes, most households still waste about half the energy they consume. While extra insulation and tight storm windows and doors are certain to save energy, sealing hidden air leaks may be more critical.

Inside a typical house, air leak passages, cracks and gaps total an area the size of an open window. Air leaks can account for 25 to 40 percent of the heat lost from a house, according to Pat Huelman, extension specialist for the University of Minnesota's Cold Climate Housing Center. He says, "Warm indoor air rises and leaves the house through any hole in the ceiling. Then, colder, outdoor air enters through foundation holes and cracks. Although the flow through any crack may seem slight, it is continuous. It's like having a window open all winter."

To stop warm air escape and cold air entry, seal with caulk, expanding foam and insulation materials according to manufacturers' recommendations. Huelman recommends starting with air leaks to the attic. Known as attic bypasses, these cracks and openings are major sources of heat loss. They also provide an entry for moisture which could damage the insulation and the roof structure.

Common attic bypasses include the chimney chase, plumbing soil stack, electrical wiring, attic hatch, ceiling fixtures (such as recessed lights and exhaust fans) and dropped ceilings above kitchen cabinets, bathtubs or stairwells.

"Some are easier to seal than others," Huelman says. "The attic hatch, for example, should be treated like a door to the outdoors and can be insulated, weatherstripped and secured fairly easily." For more complicated projects, Huelman recommends the Department of Public Service's publication on attic bypasses (to get a copy, call 612/296-5175 or 800/652-9747).

Other common air leak passageways are in the basement. "Seal around pipes, electrical and phone lines, faucets and other penetrations to the outside. And seal openings to unheated spaces such as a vented crawl space, garage or walkout door," Huelman says.

One of the leakiest areas in the basement is at the intersection of the upstairs floor and the exterior wall. Cracks can circle the house perimeter at four places--the band joist top and bottom, the sill plate and the floor-wall joint. These four cracks can create an air leakage area of more than 100 square inches, according to the Oregon State University Extension Service.

After sealing air leaks, be sure to conduct a simple backdraft test. "Air infiltrating into the house may have provided the air required for proper combustion and venting of a fuel-fired furnace, water heater and dryer. Without adequate air for these appliances, dangerous combustion byproducts, such as carbon monoxide, can escape into the house. A backdraft test will tell you if there's any problem," Huelman says.

Because indoor relative humidity may increase as a result of air sealing activities, additional ventilation in the home may be necessary.

Information on how to conduct the simple backdraft test and 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

NHEC3736

NEWS/ INFORMATION

November 29, 1990

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

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

Editors, program directors: This is the fourth release in a series on energy conservation from the University of Minnesota's Cold Climate Housing Center. Look for a new topic each week through the second week in January.

LOOK TO WINDOWS FOR LOST HEAT

In even the most energy efficient house, windows are the weakest link. Each 3-by-4-foot, double-pane window loses about \$10 worth of heat each winter in a gas heated house, and as much as \$25 with electric heat.

Whether you upgrade existing windows or buy replacements, energy efficiency should be your top priority, recommends Pat Huelman, extension specialist for the University of Minnesota's Cold Climate Housing Center.

"If the window is badly deteriorated and structurally unsound, then it's generally cost effective to buy the most energy efficient replacement window available," he says. Huelman recommends a low-emissivity, gas-filled window, preferably with insulated frames of wood or vinyl.

"If the windows are structurally sound, it's probably better to upgrade than to purchase new ones. In terms of energy savings, storm windows, weatherstripping, caulking and plastic films are more cost effective," he says.

If adding storm windows, select tight fitting, well-sealed units.

"A good storm window will cut heat loss by half for a single-pane window, and by a third for a double-pane," he says.

Caulk windows indoors using clear or paintable caulk according to manufacturers' recommendations. Caulk between the trim and wall, and between the trim and frame. Windows with nonoperable sashes should be caulked between the sash and the frame. If the window has a movable sash, use weatherstrip between the sash and the frame, Huelman recommends.

In addition to stopping drafts, caulking and weatherstripping windows helps prevent moisture movement into the wall cavity and behind the frame's edge. A tight seal at the sash also reduces moisture movement to the storm window which can cause condensation or frost.

To reduce heat loss and improve your comfort near drafty windows, Huelman recommends plastic films as a cost-effective wintertime window upgrade. They cost about \$2 per window, but save about \$3 per window in one heating season. A track system can be installed so the plastic can be reused.

When installing films, be sure the window frame and finish are in good shape and not susceptible to damage. Follow the manufacturers' installation recommendations carefully.

"Because plastic films and storms reduce moisture condensation on windows, you may think it's okay to raise relative humidity inside the house. That could cause moisture problems elsewhere. Watch for mold and mildew in corners against outer walls, and for signs of moisture in the attic. Additional house ventilation may be needed," Huelman says.

Air infiltrating into the house may have provided the air required

for proper combustion and venting of a fuel-fired furnace, water heater or dryer. Without adequate air for these appliances, dangerous combustion byproducts such as carbon monoxide can escape into the house. After sealing windows, be sure to conduct a simple backdraft test to guard against this problem.

Additional information on home energy conservation and appliance backdrafting 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

NHEC3737

NEWS/ INFORMATION

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

December 3, 1990

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

USE SAND, NOT FERTILIZER, ON ICY DRIVES, WALKS

Have you heard that it may be less damaging to the environment to use fertilizer instead of salt or ice-biting products to melt ice from sidewalks and driveways?

"While urea fertilizer is less damaging than the ice bite-type products, there is still a better choice," says Deborah Brown, horticulturist with the University of Minnesota's Extension Service.

"Sand is the best choice," says Brown. Anything applied to your driveway or sidewalks is going to run off into the streets eventually and get into the water supply. That's why she cautions that although fertilizers sound like a good idea in winter, sand is equally effective and it's the most environmentally safe alternative.

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AEA,BSS,CEO,V7,V8,I2,R

NAGR3742

NEWS/ INFORMATION

December 6, 1990

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

Source: Wanda Olson
612/624-3780
Writer: Pam Barnard
612/625-4730

Editors, program directors: This is the fifth in a series of releases on energy conservation from the University of Minnesota's Cold Climate Housing Center. Look for one each week through the second week in January 1991.

APPLIANCES ACCOUNT FOR SIGNIFICANT PORTION OF HOME ENERGY USE

Imagine if utility bills would specify the amount of energy each of our appliances used each month--waterbed heater, \$3; toaster, 50 cents. Would it affect our daily habits?

According to Wanda Olson, extension household technology specialist with the University of Minnesota's Cold Climate Housing Center, most people don't think about all the ways they use energy.

She says, "Families who want to make significant savings in their household energy bill typically concentrate on reducing home heating and water heating costs. And while these account for the largest single amounts of energy, according to studies at the Lawrence Berkeley Laboratories, an estimated 17 percent of the residential electricity consumed is used by 'miscellaneous' appliances."

Some of the common miscellaneous appliances that consume large amounts of energy include electric spas/hot tubs, waterbed heaters, color televisions and dehumidifiers.

In other cases, says Olson, it isn't the cost of the energy, but the cost of manufacturing a product. "We need to watch what we're consuming."

One example involves the slow cooker that was so popular a few years ago. "Everybody had to have one even though they probably had 10 other appliances to cook with," says Olson. "Not all of those appliances were portable and allowed you to cook for 10 hours without burning the food, but many people using slow cookers didn't really need both those features anyway."

If consumers do need to replace those major household appliances, such as refrigerators/freezers or water heaters, most manufacturers display energy labels on their products, making it easy to compare energy efficiency between models. However, the energy costs given are based on national averages. That's why consumers should take the time to figure out the costs according to what they pay for energy in their region.

Fixing rather than replacing appliances may be the way to go. However, if you have a refrigerator 8 to 10 years old and in need of major repair, you may want to seriously consider replacing it, says Olson. Newer models are substantially more energy efficient.

When replacing your refrigerator, find out how used appliances are disposed of in your community. After July 1, 1991 old refrigerators will no longer be accepted at solid waste disposal facilities. Some metropolitan areas have one or more companies that specialize in hauling away old refrigerators. They then repair or strip them of dangerous PCBs and CFCs. And the metal parts may be able to be scrapped. Some retail outlets require that the old refrigerator be turned in when a new one is purchased.

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

NHEC3744

NEWS/ INFORMATION

December 6, 1990

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

Source: C. J. Christians
612/294-0766
Writer: Joseph Kurtz
612/625-3168

UNIVERSITY OF MINNESOTA SETS SWINE DAY PROGRAMS

Innovations to make pork production more profitable will be the focus at three Minnesota Swine Day programs in January.

The programs will be Jan. 8 at the Southern Experiment Station, Waseca; Jan. 9 at the VFW in Slayton and Jan. 10 at the West Central Experiment Station, Morris.

The program will be the same at each site. Registration will begin at 9 a.m., with the first presentation at 10 a.m. and the last one at 2:30 p.m.

Topics and speakers will be:

--Design principles for nursery facilities, Larry Jacobson, extension agricultural engineer, University of Minnesota;

--Meeting the environmental needs of the early-weaned pig, Gerald Shurson, extension swine specialist, University of Minnesota;

--Swine nutrition and management research at the University of Minnesota, Lee Johnston, extension swine specialist, West Central Experiment Station;

--How can changes in the pork industry work for you? Linden Olson, pork producer, Worthington, Minn.;

--Feeding programs for the '90s, Jim Pettigrew, associate professor, Department of Animal Science, University of Minnesota;

--Providing additional B vitamins to weanling pigs, Mark Wilson,

associate professor, Southern Experiment Station;
--New information on starter diets to maximize profit, Mike Tokach,
research assistant, Department of Animal Science, University of
Minnesota;
--High health strategies, Gary Dial, extension veterinarian,
University of Minnesota.

Persons desiring more information on the 1991 Minnesota Swine Days,
should contact their county extension offices.

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AEA,BSS,CEO,Z4,Z5,Z6,Z7,P1M

NAGR3743

NEWS/ INFORMATION

December 6, 1990

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

Source: Sharon Danes
612/625-9273
Editor: Sam Brungardt
612/625-6797

RESEARCHER ADVISES AGAINST USING CREDIT CARDS FOR INSTALLMENT PURCHASES

Giving gifts helps make the holidays happy, but think twice before you use a credit card to buy an expensive gift.

Consumers who believe credit cards can be used as instant installment loans, even though they are fully aware of interest costs, should reexamine that belief, says Sharon Danes. Those who believe it's okay to use credit cards for installment purchases could get in financial trouble, especially during shaky economic times, warns Danes, a family social scientist at the University of Minnesota.

Danes advises consumers to start believing that credit cards should be used as a convenience, with the amount charged paid in full each month, rather than as an installment loan.

Alternatives to using credit cards as instant loans could include paying cash, postponing purchases, buying cheaper items or investigating bank or credit union loans, which may have lower interest rates than credit cards.

In any case, Danes says all family members--even very young children--should take part in financial decision-making, at a level appropriate to their ages.

Danes, who did a study that analyzed the relationship between knowledge, beliefs and practices in the use of credit cards for the Minnesota Agricultural Experiment Station, says knowing the facts about

credit card interest and consumer rights doesn't always make consumers cautious about overusing credit cards. Results of the 1982 study of 198 household money managers in a midwestern town showed that those who knew the most about credit cards were more likely to use the cards for installments and pay interest monthly rather than use them for convenience and pay the balance monthly.

Respondents with high incomes, good educations or large families had more credit cards and said they believed credit cards should be used for installment purchases, while older and poorer respondents believed cards should be used for convenience.

Although the results may seem surprising at first, Danes explains, they are logical. She says, "When people have more resources, they aren't as careful. They think they're more secure and they are betting on their future income. But that can be a false sense of security because, if the economy goes sour and they lose their jobs, they won't have the money to pay off their credit card debts. Those with fewer resources are much more careful about using credit."

Danes adds, "More and more people are becoming installment users of credit. That's because resources have been plentiful in the past. But in today's economy, incomes don't stretch to cover all wants and needs anymore and one way many people believe they can extend their income or money available is by using credit cards."

Family conferences, Danes says, are good ways for parents to teach children a sense of financial responsibility by teaching them the connections between needs and wants, resources available and the consequences of various choices. "The process of making decisions is the same no matter how young the children are," Danes says.

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AEA,BSS,CEO,E6,N2

NHEC3745

NEWS/ INFORMATION

December 10, 1990

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

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

Editors, program directors: This is the sixth release in a series on energy conservation from the University of Minnesota's Cold Climate Housing Center. Look for a new topic each week through the second week in January.

SETTING BACK THERMOSTAT CUTS HEATING COSTS

Turning down the thermostat 10 degrees each night could lower your heating bill by 10 percent.

"The amount of heat lost from your house depends on the difference between indoor and outdoor temperatures. The smaller the difference, the less heat lost. By lowering your thermostat, you are reducing the indoor-outdoor temperature difference. Less heat escapes from the house so the furnace runs less," says Pat Huelman, extension specialist with the Cold Climate Housing Center at the University of Minnesota.

Lowering the thermostat 1 degree for eight hours cuts about 1 percent from a home's heating costs, Huelman says. "So, if you lower it 10 degrees at night, you'll save 10 percent. If you're away during the day, an additional thermostat setback will save even more. And warming up the house 10 degrees costs much less than maintaining the higher temperature all night or during the workday," he says.

Because of the great energy savings from thermostat setbacks, automatic thermostats with built-in timers are widely available now. "But," Huelman says, "adjusting the standard thermostat yourself works just as well--as long as you remember to turn it down at night or when

you're away from home for several hours."

For more information on how to save energy at home, contact the Minnesota Extension Service office in your county or the Department of Public Service Energy Information Center (call 800/652-9747 or 612/296-5175).

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

NHEC3739

NEWS/ INFORMATION

December 10, 1990

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

Source: Mary Duncomb
612/463-3302
Writer: Tim Busse
612/625-7271

DAKOTA COUNTY EXTENSION WINS ALCOHOL ABUSE PREVENTION AWARD

A Dakota County Extension Service program that uses high school students to warn elementary school students about the dangers of alcohol has won the National Commission Against Drunk Driving (NCADD) Distinguished Service Award.

The Alcohol Decisions Program was one of 33 programs to be honored in the nationwide competition. Dakota County received the Distinguished Service Award in Prevention Dec. 10 at the annual NCADD award luncheon in Washington, D.C.

The innovative design and implementation of the Alcohol Decisions Program has been used as a model by other counties across the country. In the program, teenagers go into classrooms to teach fourth graders about the dangers of drinking and driving. The teenage teachers receive intensive training before going into the classroom. There, they use a combination of discussion, videos and games to help younger students make decisions about using alcohol.

"Older students talking to fourth graders is a very effective way to get across the message about the dangers of alcohol," said Mary Duncomb, Dakota County extension agent. "Studies show that kids are experimenting with alcohol at very young ages. This program is able to provide them with positive role models and helps them think about what it means to be grown up."

The program, now in its fourth year, has about 200 teenagers who have completed the training. They have presented the program to more than 2,000 fourth graders in Dakota County.

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AEA,BSS,CEO,V7,YM,19

N4-H3748

NEWS/ INFORMATION

December 13, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Leonard Hertz
612 624-3665
Writer: Mary Kay O'Hearn
612 625-2728

STUDY FINDS LOWER RATE OF HERBICIDE EFFECTIVE ON POTATOES

Potato growers can save on herbicides without sacrificing yield, thanks to research done last summer at the University of Minnesota.

Reducing herbicide rates by two-thirds gave excellent weed control and high potato yields, says Leonard B. Hertz, research and extension horticulturist. Hertz and research scientist Edith Lurvey did the study, which Hertz reported on during the annual meeting of the North Central Weed Science Society, Dec. 11-13 in Des Moines, Iowa.

"Metribuzin (trade names: Sencor and Lexone) was the herbicide we applied postemergence when potato plants were about 6-8 inches tall and weeds were about 5-8 inches tall," Hertz says. "We were able to reduce the rates drastically to only .25 pound metribuzin per acre for 90 percent or better weed control."

The key word is postemergence. When metribuzin was applied preemergence (to the soil surface before the potato plants and weeds had emerged), .75 to 1 pound of the herbicide was required per acre to give 90 percent or better weed control. (One pound per acre is the maximum label rate for metribuzin determined by the Environmental Protection Agency.)

Russet Burbank was the variety grown in the study, which was conducted at the university's Sand Plain Research Farm at Becker, about 50 miles northwest of the Twin Cities. The weeds to be controlled

included green foxtail, common ragweed, wild buckwheat and carpetweed.

Combining the herbicide with a spray additive, such as Crop Oil Concentrate, increased weed control and potato yields to what would have been achieved with .75 pound per acre of metribuzin, according to Hertz. He says that adding a second herbicide, Poast, in very small quantities (.18 pound or "a few tablespoonsful in 40 gallons of water" per acre) "significantly increased grass control."

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AEA,BSS,CEO,V2,F1,L1,L3

NAGR3747

MAC/ACT

MINNESOTA EXTENSION SERVICE

NEWS/ INFORMATION

December 13, 1990

UNIVERSITY OF MINNESOTA
EDUCATIONAL
DEVELOPMENT SYSTEM

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

Source: Tom Milton
612/624-5307

Writer: Richard Sherman
612/625-3154

NEW DIRECTORY OF MINNESOTA FOREST PRODUCTS BUSINESSES IS AVAILABLE

The "Who's Who of Minnesota's wood product business," the "Minnesota Forest Products Directory" for 1990-92, is now available.

Tom Milton, extension forest products specialist, says the 238-page directory is an ideal reference for equipment dealers as well as anyone who buys or sells lumber products or manufactured wood products. Published by the Minnesota Department of Natural Resources and the University of Minnesota, the directory encourages the use of native species, promotes Minnesota wood products, facilitates the development of new products and helps generate greater public awareness of Minnesota's wood-based industries.

It includes an alphabetical index, a product index, sawmills and other primary processors by county, secondary wood product manufacturers by county, industries purchasing pulpwood in Minnesota, a list of veneer log buyers, a list of dry kiln facilities, a list of wholesale lumber dealers and a list of forestry consultants, agencies and organizations.

The directory costs \$13.95 (Minnesota residents should add 6 percent sales tax), and orders of 10 or more copies receive a 10 percent discount. Make checks payable to the University of Minnesota, and ask for the "Minnesota Forest Products Directory," item NR-BU-1390-S. Send orders to the Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108. Purchase orders may be mailed to the same address or be faxed to (612) 625-2207.

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AEA,BSS,CEO,H3

NNRD3750

NEWS/ INFORMATION

December 13, 1990

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

Source: Mike Boehlje
612/624-3713
Writer: Jack Sperbeck
612/625-1794

RECORD FARM INCOME IS EXPECTED TO DROP NEXT YEAR

The bubble is apt to burst on record high farm incomes by the end of 1991.

"Grain farmers will probably see a 10 percent or more drop in net farm income in 1991. And income for livestock farmers may drop 5 to 10 percent," says Mike Boehlje, economist with the University of Minnesota's Extension Service.

"But, we will not have a return to the farm crisis days of the early 1980s."

Boehlje expects 1990 farm income to set another record high. This will temper lower incomes in 1991.

In addition, farmers have more capacity to service debt loads. "Farm debt is now almost 30 percent less than it was in 1982-84. So, farm income may be down, but there will be fewer credit demands on that income," Boehlje says.

The debt-to-income ratio is less than half what it was a decade ago. In 1981, farm debt averaged \$5.50 for every dollar of income. The figure was \$2.25 in 1990, and it could go up to about \$2.50 in 1991.

Boehlje says three factors will play a large role in how much farm income drops: severity of the recession, energy costs and the new farm bill.

He says, "I expect a relatively short, shallow recession. It could

be over by the third quarter of 1991. But if oil prices go up substantially or there's a prolonged war in the Persian Gulf, the recession could be deeper."

Boehlje says a general recession will reduce demand for higher-priced cuts of red meats and for fruits and vegetables. A short recession won't have much of an impact on grain prices.

A short recession may also cause interest rates to be reduced from 0.5 to 1 percent. A longer and deeper world recession will cause reduced exports because middle-income countries will be pinched for income.

Higher energy costs mean higher costs for fertilizer, fuel and chemicals. "I've seen figures predicting a \$15 increase in per acre costs for raising corn," Boehlje says. In addition to higher input costs, expensive energy will also cause a reduction in exports.

There is a positive side to higher energy costs: they encourage conservation, increase the potential for ethanol products and reduce chemical and fertilizer use. However, unless oil goes to \$50-60 a barrel, ethanol requires tax subsidies to be economically viable.

Although the new farm bill will reduce subsidy payments by about 25 percent, it does give farmers more flexibility to plant alternative crops.

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AEA,BSS,CEO,V2,V4,V8,A1

NAGR3751

NEWS/ INFORMATION

December 14, 1990

Source: Leonard Hertz
612/624-3665
Writer: Mary Kay O'Hearn
612/625-2728

Editors, broadcasters: The version of this release dated Dec. 13, 1990 which you received contained an error in the third paragraph. This version has been corrected. Please discard the version you originally received and use this version instead. We regret any inconvenience this may have caused you.

STUDY FINDS LOWER RATE OF HERBICIDE EFFECTIVE ON POTATOES

Potato growers can save on herbicides without sacrificing yield, thanks to research done last summer at the University of Minnesota.

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"Metribuzin (trade names: Sencor and Lexone) was the herbicide we applied postemergence when potato plants were about 6-8 inches tall and weeds were about 1-4 inches tall," Hertz says. "We were able to reduce the rates drastically to only .25 pound metribuzin per acre for 90 percent or better weed control."

The key word is postemergence. When metribuzin was applied preemergence (to the soil surface before the potato plants and weeds had emerged), .75 to 1 pound of the herbicide was required per acre to give 90 percent or better weed control. (One pound per acre is the maximum label rate for metribuzin determined by the Environmental Protection Agency.)

Russet Burbank was the variety grown in the study, which was conducted at the university's Sand Plain Research Farm at Becker, about 50 miles northwest of the Twin Cities. The weeds to be controlled included green foxtail, common ragweed, wild buckwheat and carpetweed.

Combining the herbicide with a spray additive, such as Crop Oil Concentrate, increased weed control and potato yields to what would have been achieved with .75 pound per acre of metribuzin, according to Hertz. He says that adding a second herbicide, Poast, in very small quantities (.18 pound or "a few tablespoonsful in 40 gallons of water" per acre) "significantly increased grass control."

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AEA,BSS,CEO,V2,F1,L1,L3

NAGR3747

NEWS/ INFORMATION

December 17, 1990

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

Source: Bill Wilcke
612/625-9733
Writer: Jack Sperbeck
612/625-1794

NEW HOME STUDY COURSE AIMS TO HELP FARMERS MAINTAIN CORN QUALITY

A new home study course on drying, storing and marketing quality corn is available through the University of Minnesota.

The course covers drying and storage techniques to preserve corn quality and gives marketing tips for corn with unique quality factors. The objective of the course is to improve the quality of Minnesota's corn and help producers get better prices, says Bill Wilcke, agricultural engineer with the Minnesota Extension Service.

The course's six lessons, each 10 to 12 pages long, include a discussion of corn quality; natural-air drying; reducing breakage from high-temperature drying; maintaining quality in storage; selecting fans for corn drying, cooling and storage; and marketing high-quality grain.

The course materials were written by Wilcke and other Minnesota Extension Service educators and by researchers with the Minnesota Agricultural Experiment Station.

Persons interested in taking the course should check with their county extension agents. Or, they can contact Fred Hoefer, 405 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108 (phone 612/625-2787).

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V2M,V4M,F1M

NAGR3753

NEWS/ INFORMATION

December 17, 1990

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

Source: John Shutske
612/625-9733
Editor: Mary Kay O'Hearn
612/625-2728

USE WINTER SLACK TIME TO BUILD SAFETY INTO FARM EQUIPMENT

Investing some time this winter in making your farm equipment safer could save your life or that of a loved one.

That's one of John Shutske's suggestions to keep the number of farm fatalities from growing. Shutske, an agricultural safety specialist with the Minnesota Extension Service, says there were about 450 farm fatalities in Minnesota during the last 10 years. He says many of these deaths might have been prevented had farmers paid more attention to making their equipment safe to operate.

"Most people don't realize how quickly a moving shaft, gear or other aggressive machine component can entangle a person," says Shutske. "A typical, 1,000-revolution-per-minute power take-off can 'wrap' clothing, a shoelace, a string from a hooded sweatshirt or even part of your body at a rate of 5 to 6 feet per second. Speed and power like that is unforgiving."

Machinery that is tended to before the busy season starts will work more effectively and efficiently. "This translates into increased safety, since many accidents are caused by the hurry and frustration associated with breakdowns," Shutske says.

One place to start is by retrofitting older tractors with a rollover protective structure (ROPS) and a seatbelt. This will reduce the chance that the operator will be crushed in a rollover.

"Check with your dealer about the availability of a high-quality retrofit ROPS," suggests Shutske. "A ROPS retrofit should meet standards set by the American Society of Agricultural Engineers."

Another safety measure is replacing or repairing shields that have been removed or damaged. One recent university study found nearly half of the power take-off "master shields" missing on older tractors.

"These often are removed to accommodate sprayer pumps or other devices which may interfere with shield usage," Shutske says. "Other machinery shields are taken off for various reasons and never get replaced."

Finally, consider replacing slow-moving vehicle emblems. If equipment is stored outside, an emblem two or three years old is likely to be faded enough to warrant replacement. "If you are in doubt, buy one replacement kit and compare its color with that of all the emblems on your machinery," Shutske suggests. "Most people are shocked to discover how much the visibility of their emblems has deteriorated."

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AEA,BSS,CEO,V2,A1,E4

NAGR3755

NEWS/ INFORMATION

December 20, 1990

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

Source: Joe Zulovich
612/625-3701
Writer: Teddi Barron
612/624-2767

Editors, program directors: This is the seventh release in a series on energy conservation from the Cold Climate Housing Center. Look for a new topic each week through the second week of January.

ELECTRIC SPACE HEATER CAN HELP REDUCE HEATING BILL

When properly used, an electric space heater can be a good option for increasing comfort while decreasing heating bills.

"If you spend several hours a day in one room, using a portable electric space heater could enable you to lower the thermostat for the whole house and still be comfortable," says Joe Zulovich, extension specialist with the University of Minnesota's Cold Climate Housing Center.

For example, if a 500-watt electric heater is used to heat 300 square feet of a well insulated 1,500-square-foot house to the regular indoor temperature for 8 hours daily for the heating season while the house thermostat is lowered 10 degrees, the heating energy use will be reduced by about 10 percent.

If you are using electric baseboard as your primary heating source, your heating bill will be reduced by 10 percent. However, if a 90 percent efficient gas furnace is your primary heating source, your total heating bill (both gas and electric) may not be significantly reduced because electricity can be three times more expensive a heating source than a high-efficiency gas appliance.

There are three types of portable electric space heaters, according to Zulovich. Convective space heaters warm the air before it is circulated

into the room. This type is recommended for heating entire rooms. Radiant space heaters warm nearby objects or people and are recommended for spot heating. A third type combines both methods of heating.

Safety should be of primary concern when selecting and using an electric space heater. Features to look for include an Underwriters Laboratories (U.L.) listing label, tip-over switch, temperature control, on-off signal lights and a grill cover on the heating element. The electrical wiring must be adequate for the size of heater. Zulovich recommends checking with the utility company or an electrician to be sure house circuits and wiring are adequate.

Because portable heaters are generally placed close to the floor when they are being used, it's important to protect children and pets from the heating element. Precautions should also be taken to keep furniture and draperies away from the heater.

Moisture condensation on windows and walls can be a problem when the thermostat is lowered for extended periods or when the warm air register in a room is closed. Zulovich recommends limiting the humidity or controlling it with extra ventilation. Should excessive condensation or dampness continue, he says the heat should be restored.

Zulovich also warns against using unvented, combustion space heaters, such as kerosene heaters. "Unvented combustion heaters should not be used in the home because of the serious health risks from carbon monoxide and other combustion contaminants," he says.

For more information on home energy issues, contact your county's office of the Minnesota Extension Service or the Department of Public Service's Energy Information Center (call 800/652-9747 or 612/296-5175).

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V2,V7,V8,E3,I4

NHEC3741

NEWS/ INFORMATION

December 20, 1990

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

Source: Dean Herzfeld
612/624-3477
Writer: Jack Sperbeck
612/625-1794

ATRAZINE IS NEW ON RESTRICTED PESTICIDE LIST

Make sure your certification is up to date if you intend to apply atrazine and Lasso in 1991. These weedkillers are now on the restricted use list, along with a number of other herbicides, insecticides and fungicides.

You need to be certified before you can buy and apply restricted use chemicals, says Dean Herzfeld, pesticide applicator training coordinator with the University of Minnesota's Extension Service.

"Contact your county extension office to find out when and where pesticide applicator training sessions will be held in your area," Herzfeld advises.

Don't procrastinate if your certification needs to be renewed; sign up for a training session now. "Same-day, temporary permits for certification will no longer be available," Herzfeld says.

Major topics covered in Minnesota Extension Service training sessions are applicator safety, protecting the environment, proper pesticide application and effective pest management. Herzfeld says, "It's your responsibility to avoid all unnecessary pesticide use. But if you do use pesticides, it's essential to know how to use them safely and effectively."

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AEA,BSS,CEO,V2M,A1M,F1M,L1M

NAGR3752

NEWS/ INFORMATION

December 27, 1990

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

Source: Jerry Hammond
612/625-2749
Writer: Jack Sperbeck
612/625-1794

DAIRY FARMERS WHO 'UP' MILK PRODUCTION FACE RISING ASSESSMENTS

Dairy farmers who expand production face assessments of between 18 and 40 cents per hundred weight of milk by the end of 1995, according to calculations by University of Minnesota agricultural economists.

The calculations are based on proposals in the 1990 farm and budget bills, according to economists Jerry Hammond, Steve Taff and Earl Fuller. The precise assessment will be based on the national proportion of dairy farmers who expand or contract production.

Two major features in the proposed legislation are the support price and producer assessments. The support price is not to fall below \$10.10 for 3.67 percent milk for several years. But producer assessments, while only 5 cents per hundred the first year, could rise substantially in future years for producers who expand production. Producers will be assessed 5 cents per hundred of milk sales for the calendar year 1991 and at least 11.25 cents per hundred for 1992 through 1995.

Assessments will be fully refunded for producers whose marketings do not increase over the previous year. However, the deductions for the assessments will affect cash flow, Hammond says.

For 1992 through 1995, the assessment will be increased beyond 11.25 cents to cover total costs of any refunds for the preceding calendar year, plus surplus handling costs.

Don't base management planning decisions too heavily on production assessments. Dairy farmers thinking of expanding who have already arranged financing, have a sound economic base and are good managers should not be deterred by the production assessments, the economists say. However, they caution rushing into expansion plans to get a bigger base.

A short summary of the proposed dairy policy is available from county and area extension offices. Or, write to Jerry Hammond, Agricultural and Applied Economics, University of Minnesota, St. Paul, Minn. 55108.

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AEA,BSS,CEO,V2,V4,D,WI

NAGR3758

NEWS/ INFORMATION

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

December 27, 1990

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

NATIONAL ALFALFA SYMPOSIUM SET FEB. 14-16

The National Alfalfa Symposium is scheduled Feb. 14-16, 1991 at the Kahler Hotel, Rochester, Minn.

All sessions are open to everyone interested in alfalfa, says Neal Martin, agronomist with the University of Minnesota Extension Service. A national alfalfa leadership forum is scheduled on Thursday, Feb. 14.

Friday, Feb. 15 is national alfalfa producers' day. Topics include:

--Turning alfalfa production up a notch (producer panel).

--A look at the untapped potential for the future dairy farm in the Midwest.

--Establishing alfalfa, with and without small grains.

--How to minimize yield and quality losses from weather.

--What will alfalfa varieties be like in the 1990s?

A special clinic for horse owners will be held Saturday, Feb. 16.

Speakers will include outstanding farmers, forage producers, university and private industry professionals.

Registration fees are \$15 in advance and \$20 at the door. The Feb. 16 horse clinic is \$20 (\$10 if registered for Feb. 14 or 15). For further information contact Neal Martin, Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN 55108. Phone 612-625-3747. For room reservations,

call the Kahler Hotel (1-800-533-1655) by Jan. 31. Mention attending the alfalfa symposium for a special rate.

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AEA,BSS,CEO,V2,D,F1,K

NAGR3757

NEWS/ INFORMATION

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

December 27, 1990

Source: Wanda Olson
612/624-3780
Writer: Pam Barnard
612/625-4730

Editors, program directors: This is the eighth in a series of releases on energy conservation from the University of Minnesota's Cold Climate Housing Center. Look for one each week through the second week in January 1991.

GETTING INTO HOT WATER

The average household uses more energy heating water than for any other function aside from keeping warm.

According to Wanda Olson, housing technology specialist with the University of Minnesota's Cold Climate Housing Center, the best way to get your water heating costs under control is "to study the amount of heated water you use for specific household activities and look at equipment options, low-cost adjustments to existing equipment and/or purchase of a new water heater."

Olson notes that household use of hot water varies greatly with family size and age of family members. To reduce hot water use, "families may need to restrict or even eliminate some activities, use lower temperature water, reuse water whenever possible and repair leaky faucets which can waste 15 to 20 gallons of water per week."

Here are several additional routes that families can follow to reduce water usage:

--For showers, reduce the rate of flow by installing a water-conserving shower head, ranging from \$15 to \$30, or a flow restrictor which can be added to an existing shower head, costing

less than \$2. You can also install a volume control in the shower head to shut off (not completely) the water without altering the hot and cold water mix. This would make it convenient to shut off the shower while lathering up.

--For baths, use a lower fill. Typical usage is 30 gallons of water at 105 degrees Fahrenheit for a 1/2-filled standard bath tub.

--For sinks, don't leave the faucet running when you are washing your hands or face, brushing your teeth, or washing dishes.

--For clothes washers, use only full loads and reduced water levels or suds savers. Use hot water setting only as needed, such as for heavily soiled clothes.

Aside from conserving water, which helps preserve a precious resource, households can save energy by improving the efficiency of their standard water heating system, says Olson.

The efficiency of electric water heaters can be improved by installing an insulation jacket around the sides and top of the heater; in gas water heaters, only the sides should be covered. Potential average energy savings could be from 4 to 8 percent (based on electric water heating only).

Insulating wrap applied to hot water pipes could produce an average energy savings of 2.5 to 5 percent (again, based on electric water heating only).

Finally, says Olson, "thermal traps in the cold and hot water pipes at the water heater will prevent the convection-driven circulation of hot water during standby periods and could produce an average savings of 0.5 to 3 percent."

One word of caution when buying a new gas water heater--select combustion water heaters that are sealed combustion or power-vented to eliminate the potential of backdrafting of dangerous combustion gases.

For more information on water heating and energy conservation, contact your local county extension office or the Cold Climate Housing Center directly at (612) 624-9219.

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

NHEC3759