

Department of Information  
and Agricultural Journalism  
Agricultural Extension Service  
University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
October 6, 1980

HIGH EAR DROPPAGE MAKES  
EARLY CORN HARVEST PROFITABLE

High ear droppage in Minnesota corn fields means that early corn harvest will be profitable.

"This is the year when it's a good trade-off to harvest earlier, at a higher moisture content," says Dale Hicks, agronomist with the University of Minnesota's Agricultural Extension Service. Corn prices are high compared to drying costs and early combining will minimize harvest losses.

"Some people chopping corn for silage told me the ears were dropping off as soon as the sickle hit the stalk," Hicks says. "Shanks are very weak--the smallest vibration makes the ear fall off."

"It doesn't seem to make much difference which hybrids we're talking about. Hybrids that usually held their ears well are dropping them this year," he adds.

Hicks thinks the high ear droppage is related to last summer's drought stress. "The shank was developing when plants were under drought stress. Pollination and ear development was good, so we wound up with big, heavy ears hanging on shanks that developed during the drought stress," he says.

The physiological relationship that caused the ear droppage problem isn't clear, he adds. But the node where the ear hooks on to the shank is where the ear breaks off most easily, Hicks adds.

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September 6, 1980

FAMILY TO  
BE HONORED AT  
HARVEST BOWL

The \_\_\_\_\_ family, \_\_\_\_\_ will be  
(name) (address)  
honored as \_\_\_\_\_ County's Outstanding Farm Family at Harvest  
Bowl ceremonies Nov. 14-15.

Harvest Bowl will be held on the University of Minnesota's St. Paul Campus.

(add a paragraph or two on the family and why they were selected, etc.)

The purpose of Harvest Bowl is to recognize agriculture and outstanding farm families in Minnesota. It also provides a forum to discuss agricultural issues.

Outstanding farm families from about 40 Minnesota counties will be recognized at the Nov. 14 banquet. The keynote speaker will be Pat Leimbach, Ohio farm wife and syndicated columnist.

The Nov. 15 morning program will feature Minnesota's food industry. The Minnesota-Michigan State football game on Saturday afternoon will conclude Harvest Bowl activities.

Everyone is welcome to attend Harvest Bowl. For more information, contact your county extension office or the Office of Special Programs, University of Minnesota, St. Paul 55108. Telephone (612) 373-0715.

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4-H SHOOTING SPORTS  
PARTICIPANTS COMPETE  
FOR TEAM, INDIVIDUAL HONORS

The first annual Minnesota Sport Shooting Match was held in Anoka County on National Hunting and Fishing Day Sept. 27 with 74 4-H'ers from nine counties competing for team and individual awards.

The top team trap shooting award went to Ramsey County with 172 points out of a possible 250. Keith Meronuck led the team with a score of 43. Meronuck also won the individual award for trap shooting.

Watonwan County placed second with 160 and Rice County was third with a 154 total.

In the small bore event, Beltrami took first in the senior division with 414 of 600 possible points. Rick Moe led the team and had an overall individual high score of 159. Watonwan County finished second with 395. Aitkin County took third place honors with 368. In the junior division, the rankings were Isanti County 149, Dakota County 119 and Anoka County 94.

Team competition was tight in the air gun category with only one point separating the two top teams. Ramsey County was first with 476 followed by Anoka County at 475. Third place went to Watonwan County with 410. High individual senior shooter was Julie Bergum of Anoka. Tim Carroll of Anoka captured high individual junior honors.

Following are the participants and their totals for the team events.

Trap: 1st Ramsey County: Keith Meronuck (43), Tim Tekautz (38), Rick Slomkowaski (37), Bob Wulf (31), Jeff Martin (23). 2nd Watonwan County: Scott Helling (35), Darron Gersch (34), Terry Bloomquist (31), Dennis Orr (30), Tim Clipperton (30). 3rd Rice County: Dale Willie (42), Steve Rolf (42), Gary Reuvers (31), Ed Becker (22), Troy Johnson (17).

add one--Shooting Sports

Rifle: Senior Division

1st Beltrami County: Rick Moe (159), Scott Sorenson (131), Joe Nipp (124).

2nd Watonwan County: Dennis Orr (141), Darron Gersch (130) Tim Clipperton

(124). 3rd Aitkin County: Todd McGuire (143), Kevin Flowers (118),

Gretchen Chambers (107).

Junior Division

1st Isanti County: Carl Westberg (71), Chris Harveaux (43), Jay Nelson

(35). 2nd Dakota County: Michael Hammasch (51), Mike Leifield (40),

James Miotke (28). 3rd Anoka County: John Padeszwa (57), John Bush

(19), Tim Carroll (18).

Air Gun:

1st Ramsey County: Randy Stulken (159), Jeff Martin (159), Pat Faklin

(158). 2nd Anoka County: Tim Carroll (166), Varina Leak (162), Bruce

Hanson (147). 3rd Watonwan County: Eric Pierson (143), Brad Carlson (138),

Jason Froehling (129).

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Consumer Briefs. . .

How good is your health insurance?-- If you have health insurance as an employee benefit, you're fortunate, suggests Edna Jordahl, extension family resource management specialist. Terms of such a policy are likely to be good. If you buy a family or individual policy, however, it is a good idea to check how comprehensive the coverage is.

- \* Does it exclude pre-existing conditions? Be leery if it excludes coverage for more than a year.
- \* Does it specify any medical conditions that are not covered?
- \* Are both illness and accident covered?
- \* Is there a waiting period during which no new illnesses will be covered? This should be as short as possible, preferably 30 days or less.
- \* Does the policy offer full coverage or only coverage up to a set dollar amount? If the latter is true, will this cover a major amount or the surgeon's charge or hospital bill if those are needed?
- \* Under what conditions can the insurance company cancel the policy?
- \* Does a family coverage plan automatically cover infants from date of birth? A good policy should.

\* \* \*

Comments on Availability of Specials-- It can be frustrating to find that grocery store specials have run out when you go to buy them, and it can also be against the law. The Federal Trade Commission has ruled that food stores must have advertised specials in stock and readily available.

The FTC is seeking comments from both consumers and retailers on this rule. It is asking:

- \* Are federal regulations adequate to deal with unavailability?

add one--Consumer Briefs

\* What costs or burdens does this impose on the store owner?

\* Should the rule be eliminated, modified or broadened to include other types of stores -- drugstores, department stores etc.

If you wish to comment on the FTC questions or if you would like to examine the rules that govern availability of advertised specials, write to Richard C. Donahue, Room 272, Federal Trade Commission, Sixth Street and Pennsylvania Avenue N.W., Washington, D.C. 20580.

\* \* \*

Consumer Grab Bag -- The Better Business Bureau handled nearly 7.5 million service requests last year. About half involved requests for information on the reliability of various businesses and organizations. Fourteen percent of all contacts were complaints with complaints about mail order firms topping the list.

\* How reliable are the claims made in advertising? According to a recent study by the National Advertising Review Board, out of 1,714 advertisements studied, the claims in 652 were found to be substantiated. In 690 instances, advertising claims were either modified or discontinued. Fourteen claims were referred to the Board for adjudication and 315 cases were closed for administrative reasons.

\* An official of the National Association of Credit Managers was quoted in the July 10 Wall Street Journal as saying that the economy is so bad "that even those who don't pay aren't buying."

\* \* \*

More on Metrics --The United States Metric Board has issued final guidelines for metric conversion within private industry. According to Louis Polk, chairman of the U.S. Metric Board, the guidelines "provide a set of systematic steps that organizations, individuals and companies can use in preparing conversion plans for submission to the Metric Board."

add two--Consumer Briefs

The guidelines can be found in the Sept. 16 issue of the Federal Register.

Polk adds, "The decision whether or not to make the change to metrics is completely voluntary. There is no compulsion for any person or group in the U.S. to convert to the metric system. But if they choose to convert, we encourage a deliberate and planned approach that involves the widest group of affected businesses, organizations and interested parties so that costs and confusion will be minimized."

\* \* \*

Conference on Aging Countdown -- Regional conferences are going on this month throughout Minnesota in preparation for the state Conference on Aging May 27-28 in St. Cloud and the White House Conference on Aging late in 1981.

Conferences have already been held in Crookston, Fergus Falls, Mankato, Rochester and Staples. Additional conferences will be in Slayton (Oct. 16); Bemidji (Oct. 16); Virginia (Oct. 17); Appleton (Oct. 17); and St. Paul (Oct. 31). A final regional conference will be Nov. 7 at Becker.

Recommendations from the regional gatherings will be studied and many will be discussed at the state conference. Although only elected delegates will travel to the White House Conference in Washington, D.C., the regional and state conferences are open to all interested persons.

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#### UM SPONSORED MEETINGS CANCELLED DUE TO BUDGET CUT

About 525 educational meetings for farmers and consumers that were scheduled for this fall and winter have been cancelled or altered due to the state budget cutback.

The meetings were to have been sponsored by the University of Minnesota's Agricultural Extension Service and Agricultural Experiment Station. The two units had a combined budget reduction of \$778,000.

About 40 area-wide meetings on swine, beef, dairy, sheep and crop production that were sponsored jointly by the two units have been cancelled. The reason is lack of travel funds for St. Paul Campus based extension specialists who were scheduled to teach at many of the outstate meetings.

"These meetings were scheduled to bring the latest research results to farmers and agricultural business representatives," said Richard Sauer, experiment station director.

The funding cutback also means that research reports and other publications that would have been printed and distributed to farmers attending the livestock and crops days will not be published since printing funds had to be cut. Other publications normally available through county extension offices will be in short supply.

"We hope that state funding will be restored beginning July 1, 1981 so these programs can continue," said Norman Brown, extension service director.

In addition to the 40 livestock and crops meetings that were cancelled, another 485 extension sponsored meetings on agriculture, 4-H, resource development and home economics will be either cancelled or altered. And more cancellations will be forthcoming due to low travel budgets.

(more)

Add one--meetings cancelled

If St. Paul-based faculty members were scheduled to teach at the meetings, some sessions may still be held through teleconference--where the specialist speaks to an assembled group from St. Paul via telephone.

In other cases, county extension agents may teach at some meetings where state specialists were scheduled by using detailed lesson plans prepared by St. Paul based faculty.

In addition, 11 regional commercial pesticide applicator training sessions that had originally been scheduled throughout the state have been cancelled. Due to shortage of travel funds, about 1500 commercial pesticide applicators who need to be licensed will either have to travel to the St. Paul Campus for a meeting or pass the licensing requirement through a test or correspondence course.

"If you have questions about cancellations of meetings in your area, check with your county extension office," Brown suggests.

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BUY FEEDERS NOW,  
AG. ECONOMIST SAYS

Low choice steer prices, high interest rates and relatively strong harvest time corn prices have taken \$5 - \$8 off feeder cattle in recent weeks. "Current conditions are favorable for cattle feeders to make some relatively good buys," suggests Paul Hasbargen, University of Minnesota agricultural economist.

Large losses sustained by many cattle feeders during the past feeding year have made them more cautious buyers this fall. This has helped push feeder cattle prices \$10 - \$15 below levels of a year ago even though choice steers are slightly higher than last year.

"High interest rates and grain prices tend to affect light-weight feeder prices more than heavy weight feeders" explained Hasbargen in noting the narrowing margin between calf and yearling prices. "If feedgrain prices decline after harvest--as might happen later this fall--and the expected decline in interest rates materializes, calf prices could be significantly higher by the end of the year."

He adds that retail prices currently make beef an excellent consumer buy. It is at about the same price level as a year ago. Also, the marketing margin on cattle have been increasing while those on hogs have been decreasing the past six weeks. This suggests that retailers may push beef sales, thus improving the demand for live cattle. Improved choice steer prices tend to pull feeder prices higher.

Hasbargen concludes that cattle feeders might profitably take some time during this harvest to price in some new feeders.

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LAND USE CONTROL  
SHORT COURSE SET

An eight-session series on the control of land development in Minnesota will begin November 6 on the St. Paul campus of the University of Minnesota. The classes are designed primarily for city, township and county officials as well as realtors, developers, landowners and attorneys dealing with land use controls as individuals or as members of appointed or elected commissions.

The course will be taught by Robert W. Snyder, land economist with the Agricultural Extension Service at the University. He is the author of a number of publications on land use and zoning in Minnesota and is a member of the American Planning Association and the federal, state and American Bar Associations.

Fee for the sessions, which will be held on successive Thursday evenings in November and December and Wednesday evenings in early January, is \$25 if registration is received by Oct. 27 or \$30 if registration is later. Fee adjustments may be made later if enrollment is less than 20 participants or more than 30. Deadline for registration is November 3.

Topics to be covered during the course include sources of land use planning law, legal processes, zoning authority and amendments, subdivision controls, planned development, variances, conditional use permits and growth controls.

To register, contact Carol Fisher, Department of Agricultural and Applied Economics, 248 Classroom Office Building, University of Minnesota, St. Paul, MN 55108.

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FOOD BRIEFS ---

The Orange Season Begins . . . . Citrus fruits pick up when many of the typically summer fruits leave off at the produce counter. Valencia oranges are reported to be in good supply this fall. The California fruit growers association reminds consumers that the greenish tinge sometimes seen on citrus is not an indication of immaturity. The oranges are fully ripe, but they have undergone what is known as regreening. Warm weather causes the orange skin on ripe fruit to reabsorb some chlorophyll when the fruit remains on the tree.

\* \* \*

Food: At Home and Away . . . . The food-away-from home market is quick to respond to any slowdown in the economy, and the 1979-80 slump is no exception. According to statisticians with the U.S. Department of Agriculture, disposable personal income per person has been dropping steadily since early 1979 when figured in terms of the buying power of a dollar in 1972. The sums spent for food away from home dropped during each quarter of last year while the bill for our at-home meals rose.

\* \* \*

What's New on Grocery Shelves? . . . . What's "new" in food products varies enormously according to who is reporting. Manufacturers, retailers and consumers have differing views on what is meant by "new." Some items are distinctly new products while others are extensions of existing lines -- new flavors, shapes or packaging, for example. Still others proclaim themselves "new" when they have undergone minor formula changes.

(more)

Food Briefs--Add one

According to an estimate by New Product News, a trade publication for retail and wholesale grocers, nearly 3,000 new grocery-type items are introduced in a typical year. Nearly half of these are in only four of 18 food categories: frozen foods, candy, beverages and snacks. For the average supermarket with 15,000 items, the store manager or chain buyer may consider as many as 100 new items a week. If consumers examined each new item in the store, they would have to evaluate 50 or more nearly every week.

\* \* \*

Rich Man, Poor Man . . . . Regardless of income, nearly all Americans spent about the same amount per capita on food at home, according to data gathered by the Economics, Statistics and Cooperatives Service of the agriculture department. Last year, the poorest Americans spent an average of \$622 per person on food at home while the wealthiest Americans spent a little more than \$648, a difference of only about four percent.

Food-away-from-home is more directly affected by income. Last year, a person in the lowest income group (\$2,500 a year average) spent about \$240 for meals away from home while someone in the highest group (About \$10,000 a year income) spent close to \$320.

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CRIME IS NO STRANGER  
TO RURAL AREAS

Crime is increasing at a faster rate in rural Minnesota than in metropolitan areas, according to Edna Jordahl, extension family resource management specialist at the University of Minnesota.

"The distance between families and farms may permit criminals to work undetected," she said. "This, together with the increased response time for police or sheriff departments, makes rural areas attractive to criminals."

She advises farmers to be as careful about protecting their homes and belongings as city dwellers. Good locks are a must. Deadbolt locks are an improvement over spring-latch types, and if there's a window in the door or nearby, a double cylinder deadbolt offers added protection.

Guns are among the most commonly stolen items in rural Minnesota so keep them locked up, she suggests. Don't depend on a gun or other weapon for protection. A weapon used against an intruder can be turned against the property owner.

Here are some other crime prevention tips for rural Minnesotans:

- \* Make your home and property look occupied. Never leave barn, shed or other doors open. Be selective about who you tell that you're going on vacation.

- \* Mark your animals and post signs on your property indicating that animals are permanently branded. Livestock rustling is big business in Minnesota. Experienced cattle thieves, for example, can earn several thousand dollars for one night's work.

- \* Report missing stock immediately. As many as 40 percent of livestock thefts are believed never reported and less than half are reported promptly.

(more)

Add one--Crime

Rustlers move stolen property fast, so notify authorities whenever stock is missing, even if animals may only have strayed.

\* Lock up vehicles, preferably in a lighted area close to the house.

\* If you must store boats, snowmobiles, bikes and other small vehicles outdoors, secure them to a stationary object with a thick steel chain and a sturdy padlock.

\* Gas pumps, gas tanks, storage bins and grain elevators should be secured with a strong padlock.

Mrs. Jordahl reminds rural residents, "All it takes to protect your property is good sense. Light up. Lock up. And look out."

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Source: Clifton Halsey  
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Editor: Jack Sperbeck  
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### EXCESSIVE EROSION IN SOUTHEASTERN MINNESOTA

"There's excessive soil erosion in southeastern Minnesota," says Clifton Halsey, conservationist with the Agricultural Extension Service, University of Minnesota. "There is no 'maybe' about it," he stresses.

Halsey calculated soil losses based on the cropping system and soils for a typical farm in Wabasha County. Average soil losses of 21 tons per acre per year were estimated for a field of Fayette silt loam being straight-line farmed without regard for slope direction.

The average slope of the field is eight percent and the slope length is about 225 feet. The crops between 1976 and 1980 were oats, corn, corn, corn, and soybeans. A recommended conservation tillage system could have reduced the average annual soil losses to about eight tons per acre.

"This is still too much" Halsey says. The annual soil loss that can be tolerated on Fayette silt loams and still maintain soil productivity is considered to be five tons per acre. In addition, contour strips, terraces, and/or a rotation including two or three years of hay out of every five years are needed on this field.

Another area of the farm with similar soil and slopes is contour-stripped. However, hay does not alternate with row crops in the strips. Two adjacent strips have been in corn and soybeans and the estimated annual soil losses are more than eight tons per acre.

more

add one-- (excessive erosion)

Contour strips on another part of the farm have hay in alternating strips. There the estimated erosion is three tons per acre annually, less than the 5 ton soil loss tolerance.

The Chaseburg silt loams at the foot of the slopes and along the drainage-ways on this farm can tolerate chopping sequences which include primarily row crops. The slopes are shorter and less steep than those of the Fayette soils. Here annual soil losses averaged one to four tons per acre.

Several other soils in southeastern Minnesota have erosion characteristics similar to those of the Fayette soils. They include the Seatons, Tamas, Downs, Mount Carrolls, and Port Byrons. Farmers can assume that potential erosion on their own land having these soils will be similar to that which is occurring on the example Wabasha County farm.

The procedures used to estimate soil erosion by water are explained in Extension Folder 546, "The Universal Soil Loss Equation and Its Use in Agriculture." The folder may be obtained at county extension offices.

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HAZARDOUS CANNING METHODS  
CONTINUE TO FLOURISH

Death and taxes are not the only certainties of life. Add dangerous home canning practices to that short list, suggests, Isabel Wolf, extension food and nutrition specialist at the University of Minnesota.

She reports that a potentially dangerous green bean canning recipe is circulating in the state. The method calls for cooking the beans with a small amount of salt and vinegar added to the water. The beans are then sealed in hot sterilized jars. The recipe directs consumers to rinse and boil the beans in fresh water for 20 minutes before serving.

Mrs. Wolf emphasizes that this is an open kettle canning method without any heat processing and is an invitation to botulism food poisoning. "These beans are 'non-acid' and must be processed in a pressure canner. The vinegar and salt are not sufficient to treat the beans as pickled products. Eating beans that have been canned by this technique could be very dangerous, even deadly," she said.

The open kettle canning method is safe only for jelly and jam. Low acid products such as green beans must be canned in a pressure canner. That is the only way that the temperature will rise high enough to kill spores that can cause deadly botulism food poisoning, she adds.

Another dangerous canning method that seems to be tempting some consumers this fall is oven canning. Mrs. Wolf says this is dangerous for several reasons. Jars can explode, causing injury and possible oven damage. Also, the rate of heat penetration is different in an oven than it is in a boiling water bath or pressure canner. The food will not reach a high enough

Add one--Hazardous Canning Methods

temperature to insure the destruction of Clostridium botulinum spores.

She advises home canning enthusiasts who are tempted by a new or unusual canning recommendation to contact the home economist in their local Agricultural Extension Service. These extension agents have the latest information on proper canning and freezing procedures.

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DYING EVERGREENS?  
IT'S PROBABLY ONLY  
NATURAL BROWNING

Have you noticed a problem with your evergreens lately? The outer foliage is lush and green, but all the inner foliage is turning brown and falling off. You've never noticed this before, so you frantically rush to the phone to get help for your sick tree before the rest of it dies.

Take heart, your tree is not dying, it's probably not even sick, says Richard Rideout, Extension Horticulturist at the University of Minnesota. The browning foliage is a natural phenomenon that occurs every year at this time. Individual evergreen needles have a lifetime of two to ten years. They then turn brown and fall just like deciduous leaves. So each autumn all the oldest needles fall off leaving the younger ones to carry on the green tradition. This natural drop is most noticeable on the pines and arborvitae, but it occurs on all evergreens, Rideout adds.

He cautions, however, "If the youngest foliage at the tips of the branches is turning brown, there is something wrong with your tree and you should seek help. There is one exception to this rule too. The larch or tamarack, common in Minnesota's bogs and sometimes found in the landscape, is a deciduous conifer and drops all its needles every year after they turn a brilliant yellow in the fall."

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### PROPERTY VALUATION COURSE SCHEDULED

New state laws relating to property assessment will be one of the topics at a property valuation short course scheduled for \_\_\_\_\_ (location) on \_\_\_\_\_ (date).

The University of Minnesota sponsors the Property Valuation Short Course. This year the course will also cover the role of communication in property valuation, the assessment of mobile homes and mobile home courts, and the soils of Minnesota.

The course is open to the public. The fee for attending the first day of the course is \$11. Succeeding second and third day programs are scheduled for assessors and deputy assessors.

The three-day program is approved for continuing education credit for assessors and realtors.

More information is available from the local county extension office or county assessor.

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#### Locations and Dates:

HIBBING - Community College, November 12  
THIEF RIVER FALLS - American Legion, November 13  
FERGUS FALLS - Holiday Inn, November 14  
WILLMAR - Community college, November 17

MARSHALL - Best Western Motel, November 18  
ST. CLOUD - Holiday Inn, November 19  
ROCHESTER - Holiday Inn South, November 20  
EDEN PRAIRIE - So. Hennepin AVTI, November 21

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Source: Gyles Randall  
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Writer: Jack Sperbeck  
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#### CAUTION ADVISED WHEN APPLYING N SOLUTIONS TO GROWING CORN

Farmers should be "extremely careful" when applying urea-ammonium nitrate (UAN) solutions to a growing corn crop, according to research at the University of Minnesota's Agricultural Experiment Station.

Applying UAN at the 8-leaf stage caused severe leaf burn at higher nitrogen rates in trials at the University's Southern Experiment Station at Waseca.

However, when the UAN was applied "over the top" at the four-leaf stage, plants recovered well, according to Gyles Randall, Soils scientist who conducted the trials. The plants did not show depressed yields unless rates of 120 lbs of nitrogen plus two lbs of atrazine per acre or 150 lbs of straight nitrogen were applied.

Lower dry matter and grain yields resulted when more than 60 lbs of nitrogen per acre was applied.

If you've lost nitrogen applied earlier in the season, Randall advises applying the UAN with sidedress applications as opposed to over the crop canopy. "This will help eliminate toxicity to the corn plants," he says.

"In our study we got excellent yields when the UAN was applied with a sidedress treatment at the 12-leaf stage," Randall says. "This treatment has the added advantage of supplying the plant with nitrogen at a stage closest to maximum nitrogen uptake. This reduces chances of nitrogen loss," Randall says.

UAN solutions are rapidly gaining popularity in the Midwest as preemergence or postemergence nitrogen sources. When applied preemergence or early postemergence, they give you the advantage of early planting without waiting to apply nitrogen.

Add one--UAN solutions

After planting, the UAN can be applied to the soil surface quickly with large "floater" application equipment that doesn't damage the recently planted or emerged crop.

"With the nitrogen solutions, you also have the flexibility of combining the herbicide with the nitrogen in a 'one-pass' operation. This saves time and fuel," Randall says.

Randall says another advantage of the nitrogen solutions is that they give you an option to apply nitrogen later in the season. This may be the only nitrogen application, or it may be a "rescue" treatment if you've noticed severe losses of previously applied nitrogen.

CA, IA, 4-FC

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Source: Scott Sederstrom  
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#### NEW SUNFLOWER DISEASE DISCOVERED IN MINNESOTA

A new seedling blight disease on sunflowers has been identified in western Minnesota through the University of Minnesota's Crop Pest Management (CPM) program.

"This is probably another reason for farmers to avoid planting sunflowers on the same field two years in a row," says Scott Sederstrom, area extension agent for the CPM program, which is administered by the University's Agricultural Extension Service. Sederstrom is headquartered at Morris, Minn.

This was the first time in the world that seedling blight caused by the Alternaria helianthi organism has been positively identified on sunflowers. The fungus disease was first found near Morris by Lindy Ekola, a field scout for the University's CPM program.

Affected seedlings from the 1980 crop have been positively identified by Jim Baumer, plant pathologist researcher with the University's Agricultural Experiment Station.

The disease killed or stunted 700 acres of sunflowers on 15 farms in western Minnesota during 1980. "We thought we'd found something like this during the 1979 growing season, but it wasn't positively identified in the laboratory," Sederstrom says.

The disease has been found in Wisconsin and Mississippi. But in those areas it caused leaf spots, marks on stems and lesions on back of heads. It didn't affect sunflower seedlings.

add one--sunflower disease

The disease was found only in fields planted to sunflowers the previous year, Sederstrom says. It destroyed or severely stunted entire fields.

Disease symptoms appeared immediately after week-long heavy rains in early June. "It had been dry, then we had seven to eight inches of rain. One or two days after it quit raining, sunflower plants that emerged in the wet period started to die," Sederstrom says.

The wet conditions just when seedlings were emerging appeared to be a factor. Some fields, also planted to sunflowers the previous year, but planted earlier or later and on drier soils, looked "beautiful," Sederstrom says.

"We noticed it on some fields of farmers who were enrolled in our scouting program. We also had some calls from farmers who weren't in the program," Sederstrom says.

"Seedlings were yellow and severely stunted. Most of them died, and farmers replanted the fields. None of the replanted fields were affected by the disease. A few fields weren't replanted, and they were stunted. These plants grew only 3-4 feet tall and had small heads. They also bloomed a week to 10 days later than healthy plants in adjoining fields.

"What's ironic is that the disease turned out to be a great weed killer on some volunteer sunflowers," Sederstrom says. "On one farm, corn was planted on a field that had been in sunflowers last year. The disease killed the volunteer sunflowers in the corn field. The disease did such a good job of weed control that the farmer didn't have to spray for volunteer sunflower control," Sederstrom says. The same thing happened to another farmer with a small grain field.

"In another case a farmer had an 80-acre field in sunflowers this year. The previous year half of it was in sunflowers and half in soybeans. When the seedling blight disease hit, you could see within a few feet of where the dividing line was on last year's crop."

add two--sunflower disease

### Rotate Crops

The new sunflower blight is probably another reason for crop rotation. "We recommend that farmers grow sunflowers on a field only once every four or five years, or every three years at most," says Howard Bissonnette, extension plant pathologist at the University.

There are about five diseases that are apt to build up and cause problems in sunflowers if you don't rotate crops, Bissonnette says. Fungus spores of most diseases survive on old debris left on the soil surface. The closer this spore-infested debris is to a "target" or "host" plant, odds improve that the crop will be infected.

Some diseases are soilborne--they live in the soil and build up unless crops are rotated. Once fungus levels build up, they may persist for a long time and create continuing disease problems.

Weather is the big variable in predicting crop losses due to disease, Bissonnette says. "Farmers tend to blame bad weather for low yields, but many times disease reduces yields more than bad weather," he says.

This happens with other crops too. "Where wheat is grown following wheat, we have serious disease buildups compared to where wheat is rotated," he says.

University CPM field scouts like Lindy Ekola, who found the seedling disease, monitor fields of participating farmers weekly or more often, depending on the pest situation. Scouts were in the field from May 1 through Sept. 1. If pest problems develop, back-up scouts are available and problem fields get a second weekly visit.

Pest control recommendations are made by area extension agents like Sederstrom in cooperation with a state technical support group located on the University's St. Paul Campus.

Federal funds administered by the USDA's Science and Education Administration paid for staffing and operation of the CPM program. Participating farmers pay for scouting costs.

# # #

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Source: Clif Halsey  
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Editor: Jack Sperbeck  
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## FALL TILLAGE AFTER SOYBEANS INCREASES EROSION

Soybeans make fields more susceptible to wind and water erosion than corn or small grains do, says Clif Halsey, conservationist with the University of Minnesota's Agricultural Extension Service. Fall tillage that covers the soybean stalks makes erosion hazards even worse.

Halsey recommends that fields planted to soybeans in 1980 not be tilled this fall. Research in south central and western Minnesota shows that reducing tillage operations after soybeans does not generally reduce yields in the common soils of the area.

Soybeans leave less protective crop residue on the surface than most major crops--about one ton of plant matter per 40 bushels of beans. Corn yielding 120 bushels leaves three tons of residue. An 80-bushel small grain crop produces four tons of leaves and stems.

Plant material covers only about 60 percent of the ground after soybean harvest, compared to 85-95 percent of the ground covered after corn. On erosion-prone fields, all available soybean residue cover is needed to break the force of raindrops, slow water runoff and shield the soil from wind.

One pass of a tandem disk will reduce ground cover by soybeans stalks to about 20 percent. Soybean stems and leaves also seem to decay faster than other residues.

For protection against wind erosion, either no fall tillage or a light disking is recommended. To control water erosion on sloping land, there should be no fall tillage of soybean fields.

Weed control is a serious problem in many fields after soybeans. However, soybeans don't usually produce enough residues to greatly inhibit herbicide action.

(more)

Add one--Fall tillage

For details on conservation tillage systems, see Extension Folder 491, "Tillage Systems in Southwest or West Central Minnesota", or Extension Folder 492, "Tillage Practices in South Central Minnesota". For more information about wind erosion control, see Extension Soils Fact Sheet 33, "Wind Erosion Control Methods".

Agricultural Chemicals Fact Sheet 12, "Weed Control for Corn and Soybeans in Reduced Tillage Systems", is also valuable. These publications are available through county extension offices.

# # #

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### SCHOOL LUNCHES CHANGE TO FIT KIDS' NEEDS, TASTES

If you're hearing less grumbling from your youngsters about the school cafeteria fare this year, there's a reason. The regulations have changed and Louis Mullan, extension food service management specialist at the University of Minnesota, says the changes are intended to decrease waste and bring meals into line with children's eating habits.

Starting this year, school lunches must offer a choice of milk. Low fat or skim milk must be available daily. Charges that school lunches were too starchy are also being answered. Bread is no longer a daily requirement in the menu. Instead, schools must serve bread or a substitute eight times a week. These substitutes include rice and pasta so lunches of spaghetti, noodle casseroles or chow mein with rice would not necessarily include bread or a roll as well.

Portion sizes can now vary according to children's ages. Mullan says the previous guideline that lunches include two ounces of cooked protein have changed. This can be lowered to 1½ ounces of cooked protein for elementary school children and raised to more than two ounces for teenagers. Or, if schools prefer, they can offer seconds on some items to older students.

In addition to making lunch menus more appealing to school children, the regulations try to encourage youngsters to eat school lunches or the lunches they have brought from home by eliminating the temptations of foods with minimal nutrition until the lunch hour is past. Foods that contribute less than five percent of the recommended daily allowance of certain nutrients are banned from vending machines or ala carte line sales from the opening of school in the morning until all lunch periods are over according to Mullan.

(more)

## Add one--School lunches change

The foods that fall into this restricted category include soda pop, water ices, chewing gum and many types of candy. Once the lunch hours are over, sales of these items can resume. Foods that contain higher levels of nutrition such as sandwiches, fruit and yogurt can still be sold during lunch periods.

"The idea behind the ruling is to encourage children to eat nutritious foods during the school day," Mullan said. "Of course, schools can't dictate children's or parent's food choices so children are still free to bring lunches from home with whatever foods they wish, and they are never forced to eat everything on the hot lunch menu. We hope, however, that having good food available, appealing and in appropriate sized servings will lead to good food habits."

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### NEW BANKING REGULATIONS AFFECT CONSUMERS

Did you know that a variety of new banking regulations can benefit you as a consumer? Edna Jordahl, extension family resource management specialist at the University of Minnesota, says one of the biggest changes is that beginning on Dec. 31, federally insured savings institutions will be able to offer interest-bearing checking accounts.

In addition, federal insured savings and loan associations can now issue credit cards and make unsecured and second mortgage loans. Mrs. Jordahl says that this change in the law makes it possible for these institutions to compete with commercial banks for several types of business.

As a saver, your deposits are now insured up to larger amounts through the Federal Deposit Insurance Corporation. The insurance limit was raised from \$40,000 to \$100,000 effective this spring. The interest rate ceiling for savings accounts is also being phased out gradually so that within a few years, rates will be openly competitive among financial institutions, according to Mrs. Jordahl.

There's good news for potential home buyers, too. The Federal Home Loan Bank Board that regulates many savings and loan associations has approved renegotiable-rate mortgages. Mrs. Jordahl explains that these "rollover" mortgages are refinanced every three to five years, at which time the interest rate is adjusted up or down to reflect current market conditions.

She adds that the maximum increase or decrease allowable is 0.5 percent per year, or up to five percent during the life of the mortgage. Lenders must notify homeowners 90 days in advance of the renewal to allow them to seek other financing if they wish.

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BANKRUPTCIES ON THE RISE;  
ALL CONSUMERS MAY SUFFER

This year may prove to be a record-setter in one financial sense -- bankruptcies have increased 24 percent over an earlier record set in 1975. Edna Jordahl, extension family resource management specialist at the University of Minnesota, says that during the fiscal year that ended in June, nearly 315,000 persons filed for bankruptcy.

"High inflation, rising unemployment and the overuse of credit have made it hard for many people to meet their financial obligations," Mrs. Jordahl says. "Because of more liberal provisions of the new bankruptcy law, many consumers now see bankruptcy as a way out."

The rise in bankruptcies is alarming, Mrs. Jordahl says. "If the trend continues, lenders may tighten the qualifications needed to obtain credit or they may raise the cost of credit. As a result, those who use credit wisely will end up paying for those who don't. That's an important point for all consumers to remember," she adds.

How does bankruptcy work? Under the Bankruptcy Law of 1978, once the court judges a debtor unable to meet obligations, all assets except those exempted by law are sold by the court. Proceeds are distributed to creditors and any remaining debt is discharged. Mrs. Jordahl adds that there are some exceptions to the discharging of debts -- child support, alimony, back taxes and, in some cases, government-backed student loans.

Under bankruptcy law, a debtor can retain up to \$7,500 equity in a home (or an equivalent amount is allowed for renters) provided there aren't other liens against the property. Also exempted is up to \$1,200 equity in a vehicle and smaller amounts for some household goods, implements, jewelry and books or tools of a person's trade. For a husband and wife filing jointly, the dollar amounts are doubled.

Mrs. Jordahl says that for some financially-strapped consumers, a favorable alternative to bankruptcy is outlined in Chapter 13 of the bankruptcy law. This allows debtors to pay off all or a portion of their debts while protected and supervised by the court. The repayment plan may take up to three years but because creditors receive at least partial payment, there is less stigma attached to the plan than to bankruptcy. In addition, the debtor usually keeps all personal possessions.

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## FOOD BRIEFS

### Farmers' Dollar Return On Commodities Varies

The percent of each dollar spent on food that goes to the farmer who produced the commodity varies from year to year. \_\_\_\_\_, \_\_\_\_\_ County extension agent reports the following 1979 USDA estimates.

Egg producers get the largest percentage (68 percent) of the dollars spent on their product. The farmer gets 52 percent of the dollars spent on dairy products and poultry, and 54 percent of the money spent on meat.

Fresh fruits return 30 percent of the retail cost while fresh vegetables return 25 percent. The farmer's portion of the market value of fats and oils is 31 percent.

Only 19 percent of the cost of processed fruits and vegetables is returned to the farmer, and the lowest return to the farmer is 15 percent of the dollars spent on cereals and bakery products.

\* \* \*

### Some Foods Make Good On-The-Go Breakfasts

No time for breakfast? Food that can be eaten on the way may mean the difference between breakfast or no breakfast. Add one or two extras to your lunch bag which can either be nibbled on the way or soon after you arrive at school or work.

\_\_\_\_\_, \_\_\_\_\_ County extension agent suggests the following foods you can eat on the go:

- Fresh fruits such as apples, bananas, oranges, strawberries
- Celery stuffed with peanut butter or a meat or cheese spread
- Cherry tomatoes, strips of carrots, celery and green pepper
- Canned fruit or vegetable juices
- Hard-cooked or deviled eggs
- Cheese and crackers
- Cold sliced meat loaf
- Left-over chicken or turkey
- Milk
- Sandwiches

\* \* \*

-more-

add one--food briefs

### USDA Estimates On Average Individual Food Consumption

What does the average person eat per year? "Here are some interesting estimates from the U.S. Department of Agriculture, 1979," says \_\_\_\_\_, \_\_\_\_\_ County extension agent. Look at the foods according to the food groups:

- Vegetables and Fruits: 97 pounds of fresh vegetables (except potatoes), 55 pounds of canned vegetables, 11 pounds of frozen vegetables, 123 pounds of potatoes, 80 pounds of fresh fruit, 19 pounds of canned fruit, 17 pounds of canned fruit juices, 12 pounds of frozen fruits and fruit juices, 2 pounds of dried fruits.
- Breads and Cereals: 112 pounds of wheat flour, 94 pounds of corn, 7 pounds of oats, 9 pounds of rice, 2 pounds of barley.
- Milk Foods: 18 pounds of cheese, 173 pounds of whole milk, 105 pounds of low-fat milk, 27 pounds of ice cream and frozen dessert.
- Meats and Meat Alternates: 80 pounds of beef, 65 pounds of pork, 62 pounds of poultry, 14 pounds of fish, 36 pounds of eggs, 6 pounds of dried beans, 6½ pounds of peanuts.
- Fats, Sweets, and Alcohol: 91 pounds of sugar (sucrose), 4½ pounds butter, 11½ pounds margarine, 19 pounds shortening, 25 pounds other fats and oils.

\* \* \*

### Casseroles Are Great For Busy People

"Meal-in-a-dish casseroles are great for today's busy people," says \_\_\_\_\_, \_\_\_\_\_ County extension agent. "Such casseroles can usually be made in one pan using any tasty combination of canned, fresh or left-over foods that are on hand."

There are no exact rules for creating a one-dish meal but here are a few suggestions:

- Begin with a protein rich food. Choose one or a combination of two foods such as meat, poultry, fish, cheese or cottage cheese, eggs, dried peas, beans or lentils.
- Add an extender such as a cereal product. Choose rice, macaroni, spaghetti, noodles, cornmeal, potatoes, bread, biscuits or pie crust.
- Add vegetables. These add color, texture, flavor and nutrition.
- Stir in a sauce. Sauce holds it all together, blends the flavors and adds moisture. Plan about ¼ to ½ cup sauce per cup serving. A sauce may consist of canned soups, gravy, white sauce or a tomato-based sauce.
- Finally add seasonings to bring out the flavor. Choose one or two additional seasonings besides salt and pepper.

-more-

add two--food briefs

All casserole ingredients should be pre-cooked and then mixed together and poured into the casserole dish if the casserole is to be oven-cooked. Casseroles made of precooked foods need to bake about 30 minutes at 350° to heat and blend flavors.

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FINANCIAL FILLERS. . .

The cost of staying afloat -- The Bureau of Labor Statistics says that the cost of maintaining an average urban family (husband, wife and two school-age children) living on an intermediate budget was \$20,518 at the end of 1979. This is more than ten percent higher than the figure for a year earlier. Costs for a high budget were \$30,317 and a lower budget, \$12,585. Both figures are up between nine and ten percent over 1978.

\$ \$ \$

To your credit -- According to one recent estimate, credit card holders in the U.S. charged approximately \$875 per credit card in 1979. Based on the number of credit cards outstanding, the average number of cards per person was 6.2.

\$ \$ \$

Where you eat your meals -- Americans are spending somewhat less of their household food dollar on meals eaten at home. According to a recent USDA survey, they spend 76 cents of every food dollar on meals inside the home, 19 cents on meals outside the home and 5 cents on snacks. A study done in 1965 showed 83 cents of every food dollar was spent on meals at home, 13 cents on food outside the home and 4 cents on snacks.

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Note to home economists: Although originally researched as Consumer Education Week material, these briefs may be useful to you for columns and newsletters throughout the year. Edna Jordahl, family resource management specialist, has supplied the material from her consumer files.

## CONSUMER BRIEFS...

### For your car --

- \* Choose an auto mechanic or repair facility carefully. Call your local consumer office or Better Business Bureau to see if the shop is reputable. Ask friends or neighbors for references.
- \* Check to see if the mechanic is licensed or certified. Although most states do not require mechanics to be licensed, some states, auto manufacturers, oil companies, and other industry-related groups do test mechanics' proficiency and skill and will certify competency.
- \* Go to the facility and look around--check to see if it is orderly and the proper tools are available to do a number of jobs. Ask if the firm will guarantee its work.
- \* When you take your vehicle in for repair or tune-up, ask for a written, itemized estimate. Ask if the work is guaranteed and what is covered. Always note on the repair order that you want to be called if additional work is necessary. Ask for a bill including all parts and labor.
- \* If you're not satisfied with the work, complain immediately to the shop. If you can't agree, contact your state or local consumer office.
- \* If your complaint involves an automobile dealer, you can turn to an Automobile Consumer Action Panel (AutoCAP). AutoCAPs are boards set up around the country to resolve consumer complaints. They should be contacted only when efforts to resolve the problem with the dealer have failed.
- \* Automobile dealer associations have established about 20 AutoCAPs, across the United States. Approximately 20 auto dealer associations also handle car complaints although they do not have formal or regular panels of decisionmakers.
- \* To find out if there is an AutoCAP in your area, contact the National Automobile Dealers Association (NADA), 8400 West Park Dr., McLean, Virginia 22101; phone (703) 821-7070. Or contact your local Chamber of Commerce or Better Business Bureau for the name of the local or state automobile dealers association which sponsors AutoCAPs.

add one--consumer briefs

How's your credit? --

\* It is illegal for a company to send out credit cards unless the consumer has specifically requested or applied for one. A company may, however, send renewal and substitute cards without the consumer's permission.

\* If a credit card is lost or stolen and the card is used after the consumer has reported it as lost or stolen, the consumer is not liable for any purchases made by the unauthorized user.

\* If a credit card is lost or stolen and the card is used before the consumer reports it as lost or stolen, the maximum amount for which a consumer is liable is \$50.00.

\* \* \*

The following are a number of important consumer credit laws. It is important to note that there are many additional provisions and exemptions to these laws.

\* Denied credit because of a bad credit report? The Fair Credit Reporting Act sets up a procedure for correcting mistakes on your credit record. This law lets you review the information contained in the report and, if there is a mistake, lets you challenge the information.

\* Billing mistake? The Fair Credit Billing Act sets up a procedure for promptly correcting billing mistakes without damage to your credit rating. If you think your bill is wrong, or want more information about it, notify the creditor in writing within 60 days after the bill was mailed. Be sure to write to the address the creditor lists for billing inquiries.

\* Did you charge defective goods or services? The Fair Credit Billing Act also provides that you may withhold payment on any damaged or shoddy goods or poor quality services purchased with a credit card, as long as you have made a real attempt to solve the problem. Purchases must be over \$50.00 and must have been made in the same state or within 100 miles of the account mailing address.

\* How much does credit cost? Truth-in-Lending requires creditors to give you certain basic information about the cost of buying on credit. The creditor must tell you--in writing and before you sign a contract--the finance charge and the Annual Percentage Rate (APR). The finance charge is the total dollar amount you pay to use the credit, including interest charges and any other fees; the APR is the percentage cost of credit on a yearly basis.

\* Do you have a bank card (EFT card) which lets you deposit, withdraw and transfer funds? If your card was lost or stolen, for how much would you be liable? The Electronic Funds Transfer Act establishes the basic rights, liabilities and responsibilities of consumers who use electronic fund transfer (EFT) services and

add two--consumer briefs

of the financial institutions that offer these services. Generally, if a consumer finds that an EFT card is missing, the financial institution must be notified within two days and consumer liability is limited to \$50.00. It is best to make notification by phone or in person. After two days the liability is limited to \$500.00. If a consumer finds an error on a statement, the bank must be notified within 60 days or consumer liability is unlimited.

Be a wise housing consumer --

While landlord/tenant laws and regulations vary, there are a number of general consumer guidelines and precautions that apply almost anywhere.

\* Thoroughly check out rentals. Look for dirt, grease, broken windows and doors, and other damage. Check the appliances and heating/cooling system to make sure it is in good working order. Make a list of all problems, date it and have it signed by the landlord. This may seem like a time-consuming task, but it may help you get back all of your security deposit.

\* Investigate the length of time and terms of the rental agreement or lease offered. Many landlords require leases, which are written and dated legal contracts. A tenant agrees to rent the unit for the amount of time specified and to follow all the conditions in the lease. If rent is paid and conditions are followed, tenants have the right to live in the dwelling. Question and bargain over any clauses in the lease that do not seem reasonable.

The following are a few provisions that may be included in a lease and may be illegal. Find out from your state or local consumer or housing office if they are legal, and if not, tell the landlord; do not sign the lease and report the discrepancies to the authorities.

\* A clause which makes the tenant accept the blame in any dispute with the landlord and even pay the landlord's legal expenses.

\* A clause which permits the landlord to take personal property for unpaid rent.

\* A clause which lets the landlord retaliate (evict, shut off utilities) if tenants report housing code violations and make other complaints.

\* A clause which forces tenants to continue paying rent if the dwelling has been severely damaged by a disaster.

Many consumer offices and local housing authorities have renters' guides which list tenant rights and responsibilities. If available, pick one up and study it before signing a lease.

\* \* \*

-more-

add three--consumer briefs

Complaints with home improvement contractors are among the top five consumer problems reported. Although the Federal Government has little control over the conduct of local housing contractors, here are a few helpful tips:

- \* Get written estimates from two or three reliable contractors to determine total costs. Beware of high pressure sales techniques.

- \* Review a contract carefully before signing.

- \* Beware of people who want full payment in advance. Should the contractor fail to do the work, the ability to withhold payment has been lost.

- \* Check a contractor's reliability and performance with the Better Business Bureau or the local consumer protection office.

- \* Plumbers, electricians, carpenters and general contractors are usually licensed by state licensing boards. Ask to see their licenses.

\* \* \*

When shopping for a mobile home, remember that the price usually includes only the unit itself and not the cost of a place to put it. These costs vary greatly, depending on the site and whether you buy or rent it.

Other pointers:

- \* Make sure you know all the costs. Transportation to the location plus the full cost of the initial "setup," including water, sewage and electric power hook-up, may all be extra costs.

- \* Check with your local Better Business Bureau or consumer affairs office to see if there have been complaints about your mobile home firm. Also, ask the firm transporting and setting up your home for references. Check them out.

- \* Ask the dealer for installation instructions, a consumer manual and purchase record cards.

- \* Check the data plate in the unit to be sure that the unit is designed for the weather conditions where you live.

- \* Shop around for insurance and financing even though they may be offered through your dealer. Compare rates with banks, savings and loans, other credit lenders and insurance companies.

- \* Be sure the manufacturer provides a warranty--look it over carefully. How long does it last? Does it cover parts and labor? Will local warranty service be available?

# # #

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## ADZUKI BEANS STILL LOOK PROMISING

Despite a fungus disease that attacked a small portion of Minnesota's 1980 adzuki bean crop, it's premature to say the crop's future is in jeopardy, according to specialists with the University of Minnesota's Agricultural Extension Service.

About 1,000 acres of adzuki beans were grown in Minnesota this year, with only 62 acres known or suspected to be affected by a fungus disease called Fusarium yellows. The fungus that caused the disease, Fusarium oxysporum, was identified by University of Minnesota plant pathologists. In addition, other root rotting fungi may have been involved, the plant pathologists say. Apparently, the disease caused serious problems only in farmers' fields planted to Minoka, a new adzuki bean variety.

Peculiar weather conditions including wet soils, high humidity and stress due to hail and wind may have contributed to the problem.

The disease devastated a 20-acre adzuki bean field plus a few smaller fields owned by farmers in south central Minnesota. In addition, it showed up on a small field of Minoka used for seed increase by the Minnesota Crop Improvement Association on the University's St. Paul Campus and in a few other University variety test plots. However, about 700 acres of the Takara variety grown by Minnesota farmers showed no symptoms of the disease, says Lee Hardman, extension agronomist at the University.

"Edible bean growers have learned to live with other diseases that come and go," Hardman says. "They can be devastating when they hit, but that's no reason to get out of the edible bean business," he says.

(more)

Add one--Adzuki beans

Researchers with the University's Agricultural Experiment Station have been testing adzuki bean varieties for about 15 years. In addition, the University is finishing a three-year study of adzuki bean production, processing and marketing with a grant from the Governor's Rural Development Commission. This project has evaluated yields of different varieties, planting date response, harvesting techniques and disease tolerance.

Disease tolerance readings were based on whether disease organisms that attack other edible bean crops such as navies, pintos, pinks and small reds also would attack adzuki beans. Trials showed that adzuki beans had little or no susceptibility to diseases that commonly attack other edible beans.

The adzuki bean crop was introduced three years ago to commercial growers and is a specialty crop grown for export to Japan. Adzuki beans are used to make a high protein paste considered a delicacy in Southeast Asia.

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CA, IA, 4FC, TCO

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### HIGHER INTEREST RATES REQUIRED ON CONTRACT SALES

A recent announcement by the Internal Revenue Service (IRS) could mean millions of dollars in extra interest charges for Minnesota farm families.

The IRS announced that contract sales closed after Sept. 28, 1980 that don't show interest rates of at least nine percent will be taxed as though the interest rate was 10 percent. A contract on which the deal was completed prior to Sept. 29 will not be affected. The old IRS ruling, dating back to 1975, was that parties to a contract showing less than a six percent interest rate were taxed as though the interest rate were seven percent.

A second ruling requires even higher interest rates on loans between "related parties". On loans between related parties, IRS wants to see rates between 11 percent and 13 percent, or else they will recalculate it at 12 percent. They are making this ruling retroactive to Aug. 28.

Written complaints on these new rulings by IRS had to be postmarked by Oct. 28. Complaints from farmers and farm organizations may cause IRS to make changes. In addition, IRS may hold hearings on the proposals.

"I see a legitimate concern that farmers might want to express on the ruling raising interest on contracts," says Paul Hasbargen, extension economist at the University of Minnesota. "The ruling will require sellers of farm land to pay higher federal and state income taxes." A high percentage of the contract sales in Minnesota have been for less than nine percent--and contract-for-deed sales constitute over one-half of all sales in Minnesota each year.

Requiring a higher interest rate prevents the seller from getting a relatively greater portion of his annual contract payment as principal payments which are subject to the lower capital gains taxes compared with the interest payments which constitute ordinary income.

add one--higher interest rates

According to Hasbargen's calculations, a two percentage point increase in interest rates will knock \$200 per acre off of a \$2,000 per acre transaction price on a 20 year contract-for-deed. "Each one percent change in interest should change the purchase price about five percent in the opposite direction on a 20 year loan, about four percent on a 10 year loan, and about six percent on a 30 year loan," he says.

Implications of the ruling on loans between related parties should also be explored, Hasbargen says. It is aimed primarily at corporations, but may have significant implications for family loans and dealings between a father-son partnership and one of the parties. It could also apply to a family farm corporation and one of the stockholders.

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## USE SWINE FEED ADDITIVES SELECTIVELY TO INCREASE PROFITS

There's lots of money to be made on hog farms by using feed additives selectively, a University of Minnesota veterinarian says.

"Make a simple chart to help keep track of what additives are in the ration, the reason for including them and their cost," advises Al Lemman, researcher and extension swine specialist at the University.

"These additives are not as good as we're led to believe from advertisements. We've been led to believe they're always good, always effective. But you can make a lot of money by making selective use of these products," Lemman says.

"What you put in the ration should more than pay for itself. However, it's hard to know which additives are best since few research trials are done on a head to head basis," Lemman says.

"But there's no evidence from a rate of gain or feed efficiency standpoint that more than approved levels is better. And there's no evidence that putting in two or three different additives in the starter or grower ration will pay for itself.

"Illegal combinations don't bother me too much since they probably won't do any harm--except that the producer is probably wasting money," Lemman says. One of the main problems with additives is redundancies--more additives put in the ration to do the same thing.

He's developed a simple chart that he encourages producers to use (it's attached to the end of the article). His example comes from a recent on-farm example. The \$1.69 per pig is on the low edge of the scale.

"You can easily get above the \$1.50 per pig level," Lemman says. "Some producers put in twice the approved level of ASP 250 at the starter and nursery stages plus extra additives later on."

(more)

Add one--use swine feed

Harvey Hilley, Leman's co-worker who does swine health research with Minnesota Agricultural Experiment Station funding, says records of one case showed an additive bill of \$4.50 per pig.

Leman says keeping good records should tell you exactly what you're putting in and what it's costing you. Then try to calculate how it's paying off.

If records show you're on the high end of these figures, ask yourself if it's "smart" money. You need to do more than just return your investment from additives.

Also consider your feeding system when choosing antibiotics. You don't want to get a withdrawal antibiotic in with feed that's not being withdrawn.

"Producers who are at the 100-sow level or higher are the ones who are more apt to have problems," Leman says. They are more likely to be mixing their own feed and that's where you can easily get into a redundancy problem.

"Smaller producers probably have fewer problems since they're buying prepared feed and feed manufacturers are very tightly controlled. Larger producers either get a mixing license or buy raw ingredients and put them in the ration. There's not as much control over these situations."

#### Additives Not Therapeutic

Many times feed additives don't work very well for disease control since levels are too low for good therapeutic action. "Most feed additives should be considered strictly to promote growth and improve feed efficiency," Hilley says.

"You need to know whether the additive is systemic or enteric," Hilley says. For example, if it's enteric (stays in the gut), it shouldn't be in the ration to treat pneumonia. Tylan, for example, is not absorbed from the gut so it's probably not effective for treating pneumonia.

"If you need to treat for something, treat 'hard and heavy' to get rid of it. You need higher levels than what you get from additives used for growth promotion and feed efficiency," Hilley says.

(more)

Add two--use swine feed

The main value of feed additives is to improve gains and feed efficiency up to 120 lbs. Previous University of Minnesota research concluded there wasn't much value after pigs reached 120 lbs.

Spend Dollars Wisely

Even at the minimum of \$1.69 per pig in Leman's example, this amounts to 77¢ a hundred weight, or about 2% of cost of production. "This is on the low end--many producers spend 4 to 5% of total production costs on additives," Leman says.

"This may sound a bit self-serving since I'm a veterinarian, but I think spending more of these dollars on veterinary diagnostic work would be a better investment," he concludes.

# # #

CA, IA, 4-L

(Example feed additive chart enclosed)

Example-- FEED ADDITIVE CHART

Ration	Additive	Reason for Including	Approximate Cost per Ton	Estimated Cost per Pig	Required Withdrawal
Starter	ASP-250	Growth promotion & disease control	\$12	\$ .07	15 days
Nursery	ASP-250	Growth promotion & disease control	12	.36	15 says
Grower	Tylan 40	Growth promotion	5.60	.49	none
Finisher	Tylan 20	Growth promotion	2.80	.70	none
Breeding	400 gms chlorotetracycline	Improve reproductive performance	8.00	.07	
Gestation	none				
Lactation	none				
				TOTAL = \$1.69	

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October 27, 1980

Source: Clif Halsey  
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Editor: Deedee Nagy  
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## COUNTOURING ALONE HAS LIMITED VALUE

Some farmers who formerly had contour strips with alternate strips in hay are combining or widening the strips, notes Clif Halsey, extension conservationist at the University of Minnesota. Others now have corn in one strip and soybeans in an adjoining one; in effect, doubling the width of the row-crop strips.

Contouring conserves soil because the small channels left by tillage implements and wheels hold water so it soaks into the soil rather than running off. Contouring alone is most effective during rains of low to moderate intensity. During heavy rainstorms the runoff may overflow the contour ridges and erode channels from row to row down the hill.

Halsey says contouring alone is most effective on slopes with a steepness between 3 to 8 percent. As slopes become steeper, the capacity of the channels to hold water decreases because the downhill side of the channels is lower.

The maximum slope lengths for simple contouring are 300 feet on a 3 to 5 percent slope, 200 feet on a 6 to 8 percent slope, 120 feet on a 9 to 12 percent slope, and 80 feet on a 13 to 16 percent slope, according to Halsey.

Slope lengths may be 25 percent longer if 50 percent of the ground is still evenly covered with residues after the crop is planted--a benefit of conservation tillage.

Hay in contour strips slows down the water that runs off the rowcrop strip above so that soil in the runoff is deposited in the hay strip rather than being carried to the bottom of the slope. The maximum recommended widths of contour strips are 100 feet for slopes of 3 to 8 percent and 80 feet for slopes from 9 to 16 percent. Strip widths may be adjusted slightly to accommodate farm equipment, he adds.

(more)

Add one--contouring alone

"If you don't want hay, consider terraces and conservation tillage which leave crop residues on the land after planting," Halsey suggests. "Terraces are effective because they reduce the length of the slope from which water can accumulate and run down the hill. Conservation tillage residues protect the soil from the pounding of raindrops and slow runoff so that less soil is carried away."

He cites the example of a field having 8 percent slopes with lengths of 225 feet and a sequence of continuous row crops. Soil may erode from it at an average annual rate of 20 tons per acre if it is farmed "straight-line". Contouring will reduce the loss to about 14 tons; terracing with contouring will cut that to about 10 tons. An intensive conservation tillage program used with the contouring and terracing can reduce erosion to less than 4 tons per acre annually. This is less than the currently accepted tolerance rate for most deep loam soils of 5 tons per acre annually.

More information about contouring, terraces, and conservation tillage is available at county extension and soil conservation offices.

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October 27, 1980

Contact: Gene Anderson  
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#### PESTICIDE APPLICATOR TRAINING SESSIONS SET

A training session in St. Paul has been scheduled for both commercial and non-commercial pesticide applicators licensed in herbicide, insecticide-fungicide and roadside and utility right-of-way categories.

Identical sessions are scheduled on Jan. 22 and Jan. 26 from 9 a.m. to 4 p.m. at the Prom Center, 1190 University Ave., St. Paul. Pesticide applicators can come either day.

The sessions will give pesticide applicators credit towards their 1982 license and re-certification requirements.

The herbicide group will meet at 9 a.m. At 11:30 there will be a discussion of state and federal laws and regulations for all applicators. The insecticide-fungicide and rights-of-way groups will meet from 1 to 4 p.m.

The training will be conducted by University of Minnesota Agricultural Extension Service specialists in agronomy, plant pathology and entomology and Minnesota Department of Agriculture specialists.

The registration fee is \$7. For more information, contact the Office of Special Programs, University of Minnesota, 405 Coffey Hall, St. Paul, MN 55108. Tel. (612) 373-0725.

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DOG OWNERS: BE ALERT  
TO PARVO VIRUS SYMPTOMS

A potentially fatal disease in dogs is spreading in Minnesota, according to extension veterinarian Michael Pullen at the University of Minnesota. Canine parvo virus need not be fatal, however, if pet owners know the symptoms of the disease and contact their veterinarian.

Vomiting, diarrhea and depression are the signs to look for, Dr. Pullen says. If left untreated, the disease often kills its victims. If a dog owner suspects his pet has parvo, he or she should consult a veterinarian immediately.

Parvo virus is transmitted through fecal material. One way to protect dogs from the disease is to avoid areas frequented by many dogs. These include kennels, parks, animal hospitals and dog shows.

Dr. Pullen adds that parvo virus is not a public health hazard because it is "species specific" therefore dog owners need not fear that their families might become infected if their pets contract it.

There are vaccines available to protect healthy dogs from canine parvo virus. You should contact your veterinarian for his vaccination recommendations.

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October 27, 1980

ARE YOU A SHARP CONSUMER?

TEST YOUR KNOWLEDGE HERE

How much do you know about your consumer rights? Maybe not enough suggests Dottie Goss, extension family resource management specialist at the University of Minnesota. The following quiz, prepared by the Federal Trade Commission, lets you measure your savvy on some common consumer problems.

1. Your month-old dining room table has a wobbly leg. You check your sales contract and discover you bought the table "as is." Does this mean the seller won't have to fix the leg?

Yes. When you buy anything "as is," the seller is not legally responsible for repairs needed later. To protect yourself, read contracts with an eye for "as is" clauses or other warranty disclaimers. If you want warranty protection, make the seller put it in writing.

2. Your new washing machine spills water on the floor. The dealer's mechanics have repaired it several times under the warranty, but it still isn't working right. Your warranty runs out, and two weeks later it spills water again. Do you have to pay for the repairs now?

No. If you complained about the problem during the warranty period and it was not fixed properly, you're entitled to get it repaired. Your warranty rights do not run out for the problems you complained about during the warranty coverage.

3. Your credit card is stolen without your realizing it so you don't report it missing. You get a bill for \$1000 worth of goods you never bought. How much do you owe?

(more)

Add one--Sharp Consumer

\$50. If a credit card is stolen or lost and used before you report it missing, the maximum you owe is \$50. After you report the card missing, you aren't liable for any purchases made by the unauthorized user.

4. A debt collection agency keeps pestering you about a bill you owe. You want to pay the bill but are currently unemployed. Can you stop the collector from calling you?

Yes. If you write the debt collector a letter saying "Stop bothering me," the collector must stop calling. Of course, this doesn't erase your debt. You still owe the money.

5. Your monthly credit card bill has an error. Should you write or call the company to correct the billing mistake?

Write a letter. While a phone call can resolve problems swiftly, you are not protected under the law unless you send the company written notice of the error. Protect yourself with a phone call and a letter.

6. Today a salesperson came to your door and sold you \$200 worth of encyclopedias. Now you've decided you don't need the books. Can you cancel the contract?

Yes. There is a three-day cooling off or cancellation period on most door-to-door transactions totaling \$25 or more. You can cancel by signing the cancellation form the seller is required to give you. Mail it to the address given for cancellation any time before midnight of the third business day of the sale.

7. You signed a health spa contract at the local spa and now, a day later, decide you aren't interested. Do you have three days to cancel?

No. You usually do not get an automatic three-day cooling off period for sales made at a merchant's regular place of business.

8. To buy a new car you will need to borrow money. What's the most important question to ask when dealing with credit officers?

Ask what the annual percentage rate (APR) is. The rates banks charge for loans vary greatly. The lowest APR is usually the best credit buy, but take into consideration the amount borrowed and the time allowed for repayment.

9. You were recently divorced. Your credit cards are all in your ex-husband's name. Will it be difficult to establish your own credit rating?

No, not according to credit laws. Just contact all present and past creditors and tell them you want the accounts reported in your name.

Creditors must then carry accounts which you were permitted to use or for which you are liable under your name as well as under your ex-husband's.

10. Your neighbor claims his car gets 25 percent better gas mileage with a new fuel line attachment and oil additives. Do these products actually save much gas?

Of the fuel tank devices and oil and gas additives that have been tested so far by the Environmental Protection Agency, none has reduced fuel consumption significantly.





Add one--Governor's Council

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November 3, 1980

Contact: Fred Hoefer  
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INTERNATIONAL AGRICULTURE STUDENTS  
TO TRAIN WITH FARM FAMILIES

Farm and ranch families in Minnesota, the Dakotas and Wisconsin are needed to host international agricultural student-trainees for eight months of practical training and work experience from March to November 1981.

Nearly 100 student-trainees from ten European countries as well as Africa, South America, Australia, New Zealand and India are expected to participate in the 1981 exchange program.

Students are sponsored by the Minnesota International Student-Trainee Agricultural Exchange Program, which has provided training for nearly 1300 international student-trainees since 1949. The program is administered through the Office of Special Programs, a unit of the Agricultural Extension Service at the University of Minnesota.

Student-trainees live with a farm or ranch family to learn about American agriculture, rural community life and the kinds of agricultural operations related to their career interests. Student-trainees work the same hours as their host-producer families.

After the eight month training program with a farm or ranch family, the student-trainees study at the University of Minnesota during winter quarter.

Student-trainees have completed high school. They average 23 years of age, have finished three years of agricultural college and have two years of post high school farm work experience. All have basic ability in English.

Farm families wishing to host a student-trainee must:

- \* Accept the student-trainee as a family member.
- \* Be interested in the student-trainee as a person and as a representative from another culture.

(more)

Add one--Students to train

- \* Provide the student-trainee with practical on-the-job agricultural training and work experience.
- \* Be able to pay the student-trainee \$400 to \$425 a month and provide room, board and laundry.
- \* Introduce the student-trainee to other members of the community.

If you are interested in hosting an exchange student, you can obtain further information and an application from Fred Hoefer, Office of Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108, telephone (612) 373-0725. Applications are due by December 31.

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Contact: Fred Hoefer  
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INTERNATIONAL AGRICULTURAL  
TRAINING AVAILABLE

An exchange program for U.S. residents involved in production agriculture or horticulture is available with Australia, Denmark, Finland, France, Germany, the Netherlands, and the United Kingdom. The program is administered through the Minnesota International Student-Trainee Agricultural Exchange Program at the University of Minnesota.

Interested individuals may apply for training and work experience with a host farm or horticulture family in any of the participating countries.

Applicants pay their transportation to and from their host family. In addition, participants will need hospital, medical surgical and accident insurance. Candidates for the program should be between 21 and 26 years old. At least one year of agriculture schooling and two years of farm or horticulture experience after the age of 18 is required.

Candidates for Finland, France and Germany must have a working use of the host family's language. Preferably, trainees going to Denmark or the Netherlands will have language training also.

Applications for the exchange program are due December 31. Participation in the nine-to-twelve-month programs usually begins in March or April. The training program in France begins in June for three months.

Trainees are usually paid an allowance plus room and board. As time permits, students will attend field days, seminars, short courses, or they may travel during training.

For additional information, contact: Fred D. Hoefer, Office of Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108, telephone: (612) 373-0725.

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November 10, 1980

Contact: Isabel D. Wolf  
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U. OF M. FOOD SCIENTIST TERMS  
MSG "USEFUL FLAVOR ENHANCER"

Monosodium glutamate (MSG) is a "useful flavor enhancer" that "occurs naturally in a wide variety of foods," according to Isabel D. Wolf, extension food and nutrition specialist at the University of Minnesota. She cites a recent Scientific Status Summary released by the Institute of Food Technologists.

The use of MSG in cooking dates back to the ancient Orient, Mrs. Wolf says. These cooks used a local seaweed to make a stock which enhanced the flavor of most meat and vegetable dishes. In 1908, the component of the seaweed responsible for this enhancement was found to be MSG. In its purified form, MSG has been used by cooks and food processors ever since. It is produced from sugar beet molasses, in a fermentation process similar to that used to make sauerkraut.

Various forms of glutamate occur naturally in foods, both in their "free form" and "bound" in protein as one of the essential amino acids. In fact, the presence of free glutamate in tomatoes and mushrooms may be responsible for the flavor-enhancing properties of these foods. It is also a part of the human body, both bound in protein and free in the blood and other body fluids, Mrs. Wolf adds.

All ingredients added to foods are subject to safety scrutiny, and MSG is no exception. Its toxicity is low. The dose at which half the test animals were killed was equivalent to three pounds for a 156 pound man, and it had to be force fed through a stomach tube. Long-term feeding studies on animals showed no adverse effects at levels up to 10 percent of the diet.

In the late 1960's, laboratory studies indicated that "large doses and high concentrations not common to foods" could be toxic to the central nervous system of laboratory animals, and that this effect was more pronounced on younger animals. Although other laboratories failed to confirm these findings, manufacturers of infant foods removed MSG from their recipes.

(more)

Add one--cooks of antiquity

In other studies to determine whether MSG consumption might affect a fetus in the womb, researchers found that the placenta forms "a virtually impregnable barrier, apparently capable of metabolizing large amounts of glutamate," the Status Summary said. They had to inject MSG directly into the mother's blood stream. Blood levels weren't raised substantially by simply feeding the compound.

Similar results were found when studying glutamate in mother's milk. Increases of MSG in the blood level were not reflected by increases in its concentration in the milk.

A few individuals do react to MSG, according to Mrs. Wolf. These individuals should read labels carefully on pre-packaged foods, to avoid any temporary problems. For most adults, however, MSG is a "useful food additive" to enhance flavor. In many cases, added MSG simply replaces natural glutamate lost in processing or cooking.

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November 10, 1980

### MASTITIS STEALS MONEY

An "average" Minnesota dairy farmer with a 50-cow herd is losing over \$8,000 a year from mastitis.

This averages \$161 per cow, says University of Minnesota extension dairy specialists Jeff Reneau and Bob Appleman. From 65 to 70 percent of that is due to lost milk production from subclinical mastitis--the kind you can't see.

This means that for every \$3 you spend to treat clinical mastitis--the kind you can see--you're losing another \$7 due to subclinical mastitis. This is mastitis that you can't see, but which can be measured indirectly by a test called the somatic cell count (SCC).

The new SCC testing program is available through the Minnesota Dairy Herd Improvement (DHI) program. "So far, over 1200 dairy farmers are signed up for the SCC program," Reneau says. "Some dairy farmers are interested in joining DHI to get on the SCC testing program," he adds.

The SCC program costs an additional 15 cents a month and can be run on the same sample that's used for butterfat test. There's no extra effort required by either you or the DHI supervisor.

SCC programs have been well accepted by dairy farmers in other states, Appleman says. SCC testing should be regarded as part of an overall mastitis control program of teat dipping, dry cow therapy, treatment of clinical flare-ups, good milking practices and maintenance of milking equipment.

A good control program will average about \$20 per cow per year. "The cost-benefit ratio will vary between herds, but research shows you can expect a \$10 return for each \$1 invested," Appleman says.

See your county extension agent or DHI supervisor for more information.

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SOILS, FERTILIZER  
AND PESTICIDES  
COURSE DECEMBER 10

The latest research results on agricultural pesticides and fertilizers will be presented at a Soils, Fertilizer, and Agricultural Pesticides Short Course Dec. 10 at the Minneapolis auditorium.

An exhibition of fertilizer and pesticide products and application equipment will be held during the short course. Producers and distributors of agricultural pesticides, fertilizers and application equipment will explain use of their products and equipment.

The short course topics will be presented in two concurrent sessions beginning at 9 a.m. on Wednesday, Dec. 10. One session will feature soils and fertilizer topics, the other will deal with pests and pesticides. Speakers will include specialists from the University of Minnesota.

Farmers, agricultural teachers, agricultural extension personnel, and persons interested in the soils, fertilizer and pesticides areas are invited to attend the short course.

The University of Minnesota's Institute of Agriculture, Forestry and Home Economics is sponsoring the short course. Exhibits open and registration begins at 8 a.m. on Wednesday, Dec. 10 at the auditorium.

The Minnesota Plant Food and Chemical Association, the Minnesota Certified Applicator's Association, the Minnesota Agricultural Aircraft Association and the Minnesota Department of Agriculture are also contributing sponsors of the course.

Registration fees for the short course are \$7 per person. The fee includes admission to the short course and exposition plus an abstract of the presentations by speakers.

For further information contact the University's Office of Special Programs at (612) 373-0725 or write:

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### EATING LESS MEAT NEEDN'T BE TICKET TO WEIGHT GAIN

Most shoppers know that they could stretch their grocery budgets by serving less meat. But however thrifty, meals heavy on bread and beans breathe fear into dieters.

Mary Darling, extension nutritionist at the University of Minnesota, says a diet exphasizing more whole grains, beans and vegetables doesn't have to be high in calories. In fact, a responsible diet that is low or even devoid of meat, could actually aid in weight loss or maintenance.

"A low meat diet that is well thought-out diminishes the fat intake that usually accompanies the use of large amounts of meat" Darling adds. "North Americans already eat more protein than needed. We can choose lower calorie protein foods to fill protein requirements."

If you are limiting your animal protein, Darling suggests using lean meats, poultry and seafood, which have about half the calories that some cuts of beef, pork and lamb have per gram of protein.

Bread or cereal products made with soy flour contain more protein than those made of white or whole wheat flour. Soybeans also contain fewer calories than common white beans per gram of protein.

Among dairy products, a cup of whole milk adds 162 calories to the diet while a cup of skim milk adds only 88. Both deliver about the same amount of protein. A half cup of cottage cheese and an ounce of cheddar cheese have similar calorie counts, but the cottage cheese delivers about twice as much protein for the single serving.

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INCREASE YOUR NUTRITION  
BY AVOIDING ULTRA PROCESSING

The term "food processing" has gotten a bad reputation when, in most cases, it shouldn't, says Mary Darling, extension nutritionist at the University of Minnesota. Many basic foods are processed. Grains are dried and ground into flour. Processing turns peanuts into peanut butter and milk into cheese.

For some foods, however, processing goes farther than it needs to, she adds. "We don't need a factory to mix jelly or bananas with our peanut butter for us, and we can make our own puddings and gelatin desserts from eggs, milk, fruit juices and unflavored gelatin."

Canned soup is another processed food that has become basic to many casserole and sauce recipes. Darling says a basic white sauce made from fat, flour, milk and a few seasonings can serve as well. In addition, it is cheaper to prepare and can be healthier, particularly for persons who should avoid high levels of sodium found in canned soups.

"Powdered beverage mixes and gelatin dessert powder are two of our earliest convenience foods. Now they are so much a part of most people's food supply that we forget how easy it is to prepare alternatives that provide more nutrition without much more effort," Darling suggests. Powdered beverage mix, when mixed according to directions, provides six teaspoons of sugar in each cup. Gelatin salads and desserts can be made with unflavored gelatin, real fruit and a minimum of sugar for more nutritious dishes, she adds.

If you decide to drop powdered drink mixes from your shopping list, Darling says frozen concentrated orange juice is the most economical alternative. One ounce of orange juice provides about the same amount of vitamin C as an ounce of the widely advertised "high vitamin C" drink, and you get many additional nutrients for your money.

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BEWARE OF CURE-ALLS  
FOR IMPROVED MILEAGE

"Pays for itself by the third fill-up." "Install one today -- guaranteed savings."

If you are seeing more claims like these and are tempted to install a so-called "fuel saving" device on your car, go slow. This is the advice of Charles Eldridge, extension transportation specialist at the University of Minnesota.

Instead of spending money on a gadget that probably won't boost your mileage and could even damage your car, Eldridge suggests changing your driving and auto maintenance habits first.

"Changing old habits isn't as easy as adding on some new device, but until you become a more energy-aware driver, you won't really know whether the device is working or whether you just think it is," Eldridge says.

He offers these simple car care tips.

\* Check tire pressure regularly. You can improve your mileage one percent for every two pounds of pressure needed to bring your tires up to standard.

\* When you need to buy new tires, buy radials. Radials can give three to five percent mileage improvement in the city and up to ten percent improvement on the highway. Never mix radials with conventional tires, however.

\* Align wheels properly. Improper alignment increases fuel use and tire wear.

\* Have your brakes adjusted. If they drag or grab, they rob you of gasoline.

\* Use gasoline with the proper octane rating.

\* Check and change your oil filter at recommended intervals. Dirty or low oil causes friction and wear that cuts your mileage.

\* Use good quality SE multi-grade (multi-viscosity) oil. Never use oil of higher viscosity than your owner's manual recommends. Lower viscosity oil such as 5W-30 is sometimes recommended for winter driving. Consider using the super oils. They increase fuel economy and give better protection against engine wear.

\* Don't overfill your gas tank. You risk spilling expensive fuel.

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Agricultural Extension Service  
University of Minnesota

SOURCE: Michael Pullen  
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BUYING A PUPPY REQUIRES A LOT OF THOUGHT VET SAYS

If you're thinking of making an addition to your family--in this case, the four-legged variety--you're in good company. About one-third of all American households include at least one pooch, although two-Fido homes are not unusual.

It's hard to resist the cute innocence of a small puppy, but buying the first one that grabs your heart can lead to anything from disappointment to disaster; after all, even the most adorable puppy can grow into a man-eating adult you hadn't anticipated.

"All too often, families will buy a breed of dog solely upon the recommendation of a friend," says Dr. Michael Pullen, an extension veterinarian at the University of Minnesota. "The American Kennel Club recognizes at least 125 breeds, each with its own characteristics. Not every breed will be right for you. Before you buy your dog, honestly evaluate your family's needs and circumstances. Just because your friend is wild about her Toy Poodle doesn't mean this breed is right for your family."

add one

Before you make a final decision, here are some questions and answers to consider:

SHOULD I BUY A MONGREL OR A PUREBRED DOG?

"Since a purebred dog can cost as much as \$500 or more, many people are tempted to accept a free mongrel from a neighbor or a dog pound," Pullen says. "A mongrel from a well-tended, healthy litter may grow into a healthy, loyal, bright obedient dog, but you've no guarantee of its final size and disposition. When you buy a purebred, you're buying a degree of predictability. Each breed has its established characteristics which most members of the breed display. For instance, it's an atypical collie that isn't gentle."

SHOULD I BUY A MALE OR A FEMALE?

"There's a standing argument about which gender makes a better pet and I suspect no one will ever end the controversy," Pullen says. "Some breeders claim the female is more docile and lovable while others swear males are more loyal and protective. Females tend to be protective of children, sometimes too much so. Some are harder to housebreak than males, and are more likely to wet when excited. If they're not spayed their estrus, which occurs twice a year 21 days at a time, can cause problems. Some females bleed quite heavily and females in heat will attract males from blocks around.

"Males, on the other hand, have been know to be very aggressive and tend to pick fights with other males, so that walking them can be a headache. It's hard to make reliable generalizations about which gender will be best for a given family.

WHAT ABOUT SIZE?

"It probably goes without saying that if you live in a small city apartment, a large dog such as a German Shepherd or a St. Bernard is not

add one--beware of cure-alls

\* Don't carry unnecessary weight. 100 extra pounds lowers mileage as much as 4/10 mile per gallon.

\* Have your engine tuned up. Depending on your engine's condition a tune-up could save 12 percent on gas. Have spark plugs and ignition points cleaned and adjusted, check timing and replace air and fuel filters.

# # #

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EFFICIENT DRIVING  
CAN EASE POCKETBOOK PAINS

Gasoline is currently down slightly in price, but most families' transportation bills are still hefty items. Charles Eldridge, extension transportation specialist at the University of Minnesota, suggests that driving more efficiently may help stretch those dollars that you're leaving at the gas pump.

Limiting speed is most important, Eldridge says. Most cars get 20 percent better mileage at 55 miles per hour than they do at 70. A smooth, steady pace is best. Unnecessary accelerating and braking waste gasoline.

He also suggests maintaining 2 to 3 seconds of "buffer" space between your car and others. This provides the needed time and space to use your engine efficiently.

Don't idle your motor for longer than 30 seconds, Eldridge recommends. "Driving slowly for the first few minutes is a more efficient way to warm the motor, even in the morning. Turn off the ignition when you expect to be standing longer than 30 seconds. It takes more gas to idle than to restart."

Keeping your windows closed when driving at highway speeds helps prevent drag that cuts mileage. Combining short trips into one longer one also uses gasoline more efficiently. Eldridge says during the first mile or two in a cold car, you get only 30 to 40 percent of the mileage you get when your engine is warm.

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\* \* \*



add two

the right dog for you," Pullen says. "Unless they're well-trained, large dogs require a strong arm and a strong will at the other end of the leash. However, large dogs tend to be rather lethargic and can, if they must, learn to live in cramped quarters. Many of the smaller breeds are quite active indoors and may seem constantly underfoot in a small house or apartment.

"Large or small, some breeds have more energy than others and require vigorous daily exercise. This is true for breeds such as the Irish Setter, Standard Poodle, Boxer, Great Dane, Golden Retriever, Doberman Pincher and the German Sheperd."

WILL MY DOG EAT ME OUT OF HOUSE AND HOME?

You can safely figure a grown dog will eat about an ounce of food per day for every two pounds it weighs Pullen says. "The largest breeds, such as the Great Dane or the St. Bernard, can eat up to five or more pounds per day, while a 30-pound dog, such as a medium-sized Poodle or a hefty Cocker Spaniel, will eat about a pound of food a day. Even if you buy an economy size 25-pound bag of dry food, your daily cost for a big dog can be about \$1.45, or about \$530 a year, depending on the cost of the dog food."

IS THERE A BREED THAT DOESN'T SHED?

The Bricon Frise, Poodle, Kerry Blue Terrier, Bedlington Terrier and Irish Water Spaniel are good choices if shedding turns you off, Pullen says. "Even allergy sufferers can live with these breeds, although you may find an occasional hair or two. All of these breeds require skillful grooming which most people leave to the professionals. Trips to the doggie beauty

add three

salon can cost anywhere from \$10 to \$15, depending on the groomer, the dog and the job to be done.

"Some dogs are guaranteed to shed and require daily attention. Many people fall in love with the exotic looks of an Afghan, Old English Sheepdog or Shih Tzu, but grow weary of the grooming needs of the pet. As the old saying goes, if you got it, flaunt it, but also groom it or your pet will quickly become a matted ball of fur."

#### WHICH DOGS MAKE THE BEST WATCH DOGS?

"Most dogs are protective by nature and will bark at strangers, friend or foe," Pullen says. "Certain breeds have been traditionally used as watch dogs: German Shepherd, Doberman Pincher, Belgian Sheepdog, Bouvier des Flandres, Belgian Terrier and Bernese Mountain Dog. Except for the German Shepherd and Doberman, most of these dogs are fairly uncommon in the United States and all are large animals. Smaller protective breeds include the Norwegian Elkhound, Boxer, Puli, Standard Schnauzer, Bulldog and Chow Chow. Welsh Corgis act like guard dogs, but are too small to really do much good in confrontation situations."

#### WHICH BREEDS LIVE THE LONGEST?

"Longevity is more a reflection of size than breed," Pullen says. "Larger dogs are usually outdoor dogs and are therefore more prone to contracting illness or suffering injuries, as a result of a dog fight or an auto accident. The smaller breeds are usually kept inside and are thus protected from bad weather and hazardous situations. The very large breeds rarely live beyond age 10."

add four

#### WHICH BREEDS ARE BEST WITH CHILDREN?

Out of fear, anger or confusion, any dog can be driven to bite, but some breeds need a little more persuasion than others, Pullen says. "It's very important to teach children that a dog has no other way to say it's being hurt than to growl and-or bite. In fact, if your child is less than six years old, you might consider holding off a year or two before buying a dog. In any case, the gentle breeds include the Golden Retriever, Labrador Retriever, Shetland Sheepdog, Collie, Collie-Shepherd mix, Poodles, Basset Hound, English Cocker Spaniel, Cockapoo, Newfoundland and the Bichon Frise. The toy varieties may seem cute and harmless, but only the Pug will put up with a moderate amount of tugging, pulling and squeezing from children."

#### WHERE SHOULD I BUY MY DOG?

"A pedigreed dog should always be purchased from a reputable dealer," Pullen says. "The breeder will ensure that the puppy has been wormed and vaccinated and will also provide a certificate of registration and pedigree. In addition, most will guarantee the health of a puppy for up to two weeks after the purchase."

For more information on buying a dog, write to the Minnesota Purebred Dog Breeders Association, P.O. Box 642, Minneapolis, MN 55440, or the American Kennel Club, 51 Madison Ave., N.Y., N.Y. 10010."

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MILEAGE BOOSTING DEVICES  
DO LITTLE GOOD, MAY HARM

Don't be taken in by many of the claims made for mileage-boosting gadgets and products. There are several hundred such products on the market and few do any good at all. Some may actually harm your car.

This is the advice of Charles Eldridge, extension transportation specialist at the University of Minnesota. He says four types of products are being promoted heavily.

Air bleed devices are installed between the PCV valve and the engine intake system. They are supposed to introduce more air below the carburetor and thus save gasoline under certain conditions. Unfortunately, the devices often increase engine wear and clog carburetor passages.

Vapor injectors are similar to air bleed devices except the air is bubbled through a mixture of water and antifreeze.

Fuel additives claim to clean the fuel system for better combustion, but tests show that emission levels are seldom affected and the products have little merit.

Lubricants and crankcase additives do not test out any more satisfactorily than fuel additives. They are supposed to clean the engine and improve performance by reducing engine friction.

Eldridge says manufacturers of these products often use consumer testimonials in their advertisements. "The person may honestly believe that such a device or product boosted his or her mileage ratings, but there are many variables that affect mileage and cannot be controlled by driving conditions," Eldridge adds. "Government agencies don't endorse these devices and neither do the Environmental Protection Agency nor the California Air Resources Board."

If you just can't resist buying one of these devices, Eldridge suggests you keep the money-back guarantees in mind. If you aren't satisfied, you then have some protection.

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## GIFTS TO BUY? PLANNING CAN STRETCH BUDGET, PLEASURE

Heavy gift giving months lie just ahead, but it may be that birthdays and anniversaries stretch the gift season throughout the year for you.

Dottie Goss, extension family resource management specialist at the University of Minnesota, suggests keeping family resources firmly in mind when planning gift buying. "Looking across a year of occasions when you plan to give gifts is a good place to start. There are always some gifts you can't anticipate -- showers and weddings, for example -- but you can plan for most occasions and set a budget for each."

"Remember, there are regular family needs such as clothing or home furnishings that can be timed to serve as gifts," she adds. "This just requires foresight, not additional money resources."

Once you know how your gift-buying schedule goes, Goss suggests budgeting for it. Some months may call for heavier purchases than others so a small nest egg could help get you through costly periods.

She stresses that many hard-to-buy-for persons on your list might appreciate services or homemade items more than purchased gifts. "Try substituting time for money when you plan your gifts," Goss says. "You might want to pledge a certain number of visits or times out to eat for a person in a nursing home, so many babysitting hours for a family with young children or so many blueberry pies for the pie lover."

There are ways to economize on special occasions. If a family or group is large, consider drawing names instead of buying gifts for everyone. Potluck or round robin meals for birthdays or other holidays save expense and preparation time.

For occasions when you send numerous cards, consider postcards as one way to save, Goss suggests. Wrapping papers can also be recycled. And don't overlook unusual (and cheap) gift wrappings in the form of Sunday comic sections in the newspaper, used aluminum foil, road maps or tag ends of wallpaper or yard goods.

add one-- GIFTS TO BUY?

If you have the time and skills, consider buying a used item at a garage sale or second hand store and restoring it to gift-condition. Or you may want to economize by buying a family gift such as a game or restaurant gift certificate rather than individual items for each person, Goss adds.

"Make gift giving a joyful occasion for the giver and receiver," Goss recommends. "Don't kill the pleasure by deflating the family budget in the process."

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U. OF M. FOOD SCIENTIST TERMS  
MSG "USEFUL FLAVOR ENHANCER"

Monosodium glutamate (MSG) is a "useful flavor enhancer" that "occurs naturally in a wide variety of foods," according to Isabel D. Wolf, extension food and nutrition specialist at the University of Minnesota. She cites a recent Scientific Status Summary released by the Institute of Food Technologists.

The use of MSG in cooking dates back to the ancient Orient, Mrs. Wolf says. These cooks used a local seaweed to make a stock which enhanced the flavor of most meat and vegetable dishes. In 1908, the component of the seaweed responsible for this enhancement was found to be MSG. In its purified form, MSG has been used by cooks and food processors ever since. It is produced from sugar beet molasses, in a fermentation process similar to that used to make sauerkraut.

Various forms of glutamate occur naturally in foods, both in their "free form" and "bound" in protein as one of the essential amino acids. In fact, the presence of free glutamate in tomatoes and mushrooms may be responsible for the flavor-enhancing properties of these foods. It is also a part of the human body, both bound in protein and free in the blood and other body fluids, Mrs. Wolf adds.

All ingredients added to foods are subject to safety scrutiny, and MSG is no exception. Its toxicity is low. The dose at which half the test animals were killed was equivalent to three pounds for a 156 pound man, and it had to be force fed through a stomach tube. Long-term feeding studies on animals showed no adverse effects at levels up to 10 percent of the diet.

In the late 1960's, laboratory studies indicated that "large doses and high concentrations not common to foods" could be toxic to the central nervous system of laboratory animals, and that this effect was more pronounced on younger animals. Although other laboratories failed to confirm these findings, manufacturers of infant foods removed MSG from their recipes.

Add one--cooks of antiquity

In other studies to determine whether MSG consumption might affect a fetus in the womb, researchers found that the placenta forms "a virtually impregnable barrier, apparently capable of metabolizing large amounts of glutamate," the Status Summary said. They had to inject MSG directly into the mother's blood stream. Blood levels weren't raised substantially by simply feeding the compound.

Similar results were found when studying glutamate in mother's milk. Increases of MSG in the blood level were not reflected by increases in its concentration in the milk.

A few individuals do react to MSG, according to Mrs. Wolf. These individuals should read labels carefully on pre-packaged foods, to avoid any temporary problems. For most adults, however, MSG is a "useful food additive" to enhance flavor. In many cases, added MSG simply replaces natural glutamate lost in processing or cooking.

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PSEUDORABIES TO  
BE DISCUSSED AT  
SWINE HEALTH CLINIC

Swine producers, veterinarians and industry people are invited to the Minnesota Swine Health Clinic Dec. 4, 1980 in Mankato.

The event is scheduled for the Kato Entertainment Center beginning at 9 a.m. The program goes until 5 p.m. Pseudorabies is one of the most controversial topics for southern Minnesota hog producers. A large segment of the program will be devoted to discussions of state regulations and costs of managing a herd outbreak of pseudorabies. Other topics include herd health preventable medicine programs, swine respiratory diseases such as pneumonia and atrophic rhinitis, and routine disease monitoring and diagnosis.

Speakers will include Dr. Kirk Clark, a practicing swine veterinarian at the University of Minnesota; Dr. Tim Loula of the Nicollet, Minn. Veterinary Clinic; Dr. Donald Hicks, state veterinarian; and Dr. David Blahna, practitioner from Dodge Center, Minnesota.

Advanced registration is encouraged. The fee is \$20, which includes the 10 percent surcharge imposed by the University of Minnesota on Continuing Education courses to compensate for retrenchment of state funds.

Checks should be made payable to the University of Minnesota and mailed to Dr. James O. Hanson, 243 Veterinary Science, University of Minnesota, St. Paul 55108. More information is available from county extension offices.

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Source: Curt Overdahl  
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### LIQUID LIME NOT A "BREAKTHROUGH"

The place for liquid lime is in maintaining soil pH rather than raising it, a University of Minnesota extension soils specialist says.

"Lime's lasting ability depends on rate," says Curt Overdahl, "and acid soils with a pH of 5.5 can't be made neutral by a few hundred pounds of lime, no matter how fine it is."

Lime spread with water is the same material that's spread dry, except for fineness. Finely ground lime materials are quick acting and give some benefit for new alfalfa seedings.

With regular dolomitic or calcitic limestone, a thumb rule for lasting ability is about three years per ton. A four ton per acre treatment should last about 12 years. But 700 pounds (one-third ton) applied as liquid lime is good only for one year.

Overdahl says a Missouri trial on very acid soil (ph 4.6) had poor alfalfa stands three years after one ton of a very fine lime was applied. Where eight tons of the same fineness (200 mesh) was applied, there was a beautiful, lush alfalfa growth. Even eight tons of 8 to 20 mesh size lime had very good alfalfa.

A cubic inch block of limestone crushed to 20 mesh will have 8,000 particles and 100 mesh will have one million. A limestone particle must be in contact with the soil. The finer the particle, the more lime surface is exposed to the soil and the lime acts faster. But there's no advantage to particles finer than 100 mesh, Overdahl says.

He summarizes advantages and disadvantages of liquid lime suspensions like this:

(more)

Add one--liquid lime

### Advantages

- There's a quick initial change of pH in acid soils.
- It mixes well with nitrogen, potassium, magnesium and sulfur.
- If you first bring pH to neutral with regular dry lime, liquid lime can be used to maintain pH on sandy soils. Since nitrogen slowly reduces pH, a liquid lime nitrogen mix can be used with no decline in pH.
- Liquid lime can be put on uniformly and with less drift than dry lime.

### Disadvantages

- Low rates won't raise acid soil pH enough to maintain alfalfa stands.
- On fine-textured soils high in organic matter, the buffering capacity is so great that low rates, no matter how fine the lime, will not change the pH.
- Benefits from low rates like 700 pounds per acre of lime last only about one year.
- Liquid lime can't be mixed with fertilizers containing phosphorus. Even urea may present a problem.
- Liquid lime costs more unless your lime source is from a waste product.

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Source: Jim Linn  
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BALANCE RATIONS  
CAREFULLY IF  
FORAGE IS SHORT

A relatively good third alfalfa cutting saved many Minnesota dairy farmers from a severe forage shortage this year. But many farmers will still be short of forage and should consider substituting some grain for forage, says Jim Linn, extension dairy specialist at the University of Minnesota.

"You can replace a considerable portion of forage with grain," Linn says. However, you need a minimum amount of forage to supply fiber. Rations with excessive amounts of grain will lower milk fat and cause digestive problems.

Lactating cows need a minimum forage dry matter intake of one and one-half percent of body weight. This means 20 pounds of forage dry matter for a 1300-pound cow. Or, 40 percent of the total ration's dry matter should be from forage. At minimum levels, some long dry forages in the ration are preferred to maintain rumen function. And if you're feeding a minimum amount of forage, feeding forages in smaller amounts three times a day instead of once or twice will help maintain milk fat tests, Linn says.

Dry cows should be fed forage dry matter at 1.5 percent of body weight (higher if fine chopped silages are fed). Dry cow rations should contain a minimum of 65 percent forage dry matter.

Heifers older than four months should get a minimum of one percent body weight as forage dry matter. Heifers should be fed to gain about 1.5 pounds a day, but don't let them get too fat.

"Try not to sacrifice optimum milk production," Linn advises. He lists these management tips:

(more)

Add one--balance rations

--Carefully plan and formulate the feeding program. This includes selecting the best buys for energy and protein, locating adequate forage supplies and testing all forages for nutritive content. Rations must be balanced for protein and minerals. As feedstuffs change, you need to continually re-evaluate and reformulate rations. Ask your county extension agent about the Minnesota Dairy Ration Balancer program.

--Cull older, marginally productive animals. But don't cull replacement animals unnecessarily to save feed since this could damage the future of your dairy herd.

--Cows should be gradually adjusted to high grain, low forage rations. Additives may help correct problems of low fat tests and digestive upsets frequently encountered with high grain rations. Recommended additives include sodium bicarbonate (baking soda), bentonite, magnesium oxide, methionine hydroxy analog, and dried whey.

More detailed information on additives for maintaining milk fat test is available from county extension offices. County extension agents also have detailed information on alternative forages and substituting grain for forage in the dairy ration.

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Source: Jim Linn  
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FORAGE TESTING  
CAN SAVE MONEY  
ON FEED COSTS

Minnesota dairy farmers who are short on forages this year can save some money on supplement costs by investing in forage testing, says Jim Linn, extension dairy specialist at the University of Minnesota.

"Many dairy farmers have told me forages harvested during the dry period tested lower in protein than a visual inspection would have predicted," Linn says.

Usually protein content is higher and fiber is lower during dry periods. "But this doesn't appear to be the case this year," Linn says. Visual indicators of leafiness, color and stem diameter appear to be misleading as to nutrient content.

You need an accurate reading of the nutrient contribution of forages to get the correct formulation of grain mixtures to complement and supplement forage nutrients. Forage quality is also important in establishing amounts of grain to be fed in conventional rations where forage and grain is fed separately.

Forages are usually the lowest cost nutrients in the rations, so maximizing top quality forage in a well balanced ration will reduce feed costs while maintaining top production.

County extension agents have information on sampling and availability of commercial testing laboratories. In addition, the Minnesota Dairy Ration Balancer program is available through county extension offices. It's a computerized method of calculating a nutritionally balanced ration for your dairy cows and growing heifers based on forage quality, amount of various forages fed and available grains.

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## FIELD SLOPE AFFECTS EROSION

The most serious water erosion on cropland is on moderately to strongly sloping fields. Both length and steepness of the slope have a lot to do with a field's erosion hazard, says Clif Halsey, extension conservationist at the University of Minnesota.

The longer the slope, the more runoff there is toward the lower portion of the slope to erode soil. Take a field with a six percent slope. (A six percent slope means there's a six foot change in elevation for 100 feet of distance.)

When all other factors are equal, seven tons of soil per acre will erode from a slope 100 feet long. But 10 tons per acre will erode from a slope 200 feet long, and 14 tons per acre from a slope 400 feet long. Nearly two-thirds of the soil eroded will come from the lower half of these slopes.

And the steeper the slope, the greater the rate of erosion, Halsey says. Assume a 300 foot slope length with all other factors being equal. If three tons per acre erode from a field with a two percent slope, six tons per acre will erode from a four percent slope and 17 tons from an eight percent slope.

Halsey says terraces can be used to divide the long, even slopes into shorter ones about 120 feet long. Contouring also will hold much of the water that would otherwise run down the hills.

Alternate strips of hay in contour strips slows the speed of runoff so that eroded soil is filtered out and the water has more time to infiltrate the soil.

Conservation tillage controls erosion very effectively where terraces or contouring are not practical, Halsey says.

Slope lengths and steepness are among the factors considered in estimating soil erosion and designing soil conserving cropping systems. Extension Folder 546, "The Universal Soil Loss Equation and Its Use in Agriculture," contains more information about estimating soil erosion by water. The folder is available at county extension offices in Minnesota.

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#### ORGANIC GARDENING MORE ATTRACTIVE THAN ORGANIC FARMING

Organic gardening is more attractive and feasible than organic farming, a University of Minnesota soil scientist says.

"It's easy to supplement organic matter grown in the garden with organic matter from other sources," says William P. Martin, head of the University's Soil Science Department.

Martin and Richard Behrens, University of Minnesota weed scientist, recently served on a task force that compared organic farming to conventional farming. The task force included 24 university and government scientists from the Council for Agricultural Science and Technology (CAST), an organization of 25 food and agricultural science societies.

The task force put most of their emphasis on organic farming rather than organic gardening since commercial agriculture produces most of the nation's food and fiber, says Samuel R. Aldrich, assistant director of the Illinois Agricultural Experiment Station, who chaired the task force.

"But we considered organic gardening since so many people are interested in it," Aldrich says. "In farming, there isn't enough organic matter to go around. Farmers can't grow enough on their own farms. To meet the nutrient needs of their crops, they would need to bring in the organic matter from several other farms," Aldrich says.

Organic gardeners operate on a small scale and can usually apply grass clippings and leaves from their own land. And sometimes they can get additional organic matter from neighbors, nearby farms, municipal sewage treatment plants or nearby garden supply retail stores.

The extra organic matter may not cost the organic gardener anything. But even if it does, cost isn't as important as it is in organic farming, Martin says. Many organic gardeners view their gardens largely as recreation and relaxation and don't worry about costs.

It's also easier to garden without using herbicides to control weeds than it is to farm without herbicides. "Hand weeding presents a problem on organic farms because of the large areas that must be weeded, but it's feasible in home gardens," Martin says.

(more)

add one--organic gardening

Organic gardeners also have greater freedom of choice than organic farmers do in the fruits, vegetables and ornamental they grow. Organic gardeners can select the plants they can grow satisfactorily without pesticides. Some fruits and vegetables can't be grown without pesticides.

And if yields are poor or the garden is destroyed by pests, organic gardeners can go to the store and purchase what they need. Gardeners haven't suffered a financial disaster since organic gardening is a hobby, not their bread and butter.

The supply of available nitrogen is often marginal or deficient in organic home gardens unless outside sources are used. "Unless you use adequate amounts of well-rotted plant residues and kitchen wastes or animal manures, garden yields are apt to be disappointing without commercial fertilizer," Martin says.

Compost is the primary source of home-grown nitrogen. However, most instructions for preparing compost suggest that nitrogen fertilizer be added to hasten decomposition of the residues.

Making compost lets you avoid the tie-up of available nitrogen in the garden while the organic residues are decaying. The residues decay outside the garden soil and are incorporated after the initial period of nitrogen tie-up.

Single copies of the CAST report, entitled "Organic and Conventional Farming Compared," are available free of charge from CAST, 250 Memorial Union, Ames, Iowa 50011.

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AS ELECTRONIC BANKING ARRIVES,  
CONSUMERS NEED NEW TECHNIQUES

There's a new way to bank -- the EFT. EFTs (electronic fund transfers) use computer and electronic technology as a substitute for checks and other paper forms of banking. Although EFT banking is a convenience for consumers, Dottie Goss, extension family resource management specialist at the University of Minnesota, says using EFT without learning some new techniques can cause problems.

She says, for example, that if you use EFT to make money transfers via an EFT outlet at a retail store or for pay-by-phone convenience, you have no way to stop payment. "If your purchase is defective or if your order isn't delivered, it's up to you to resolve the problem and get your money back just as if you had paid cash," Goss says. "With EFTs, you have no check to stop nor do you have the option of refusing to make payment as you sometimes do with credit card bills."

The only situation where you can stop payment is when you have arranged in advance for bills to be paid regularly out of your account. This is sometimes done for insurance premiums or other regular, unvarying bills. Such payments can be cancelled by notifying the bank three days ahead of the scheduled transfer. Under EFT law, only bills you owe your bank, such as loan payments, are exempt from this cancellation privilege, Goss adds.

Correcting errors also involves new techniques, Goss says. Each time you initiate a funds transfer at an automated teller machine or use a point-of-sale transfer machine, you can get a written receipt. In addition, periodic statements must also be issued for all EFTs. You then have 60 days from the date a problem or error appears on your statement to notify the bank.

(more)

## Add one--Electronic Banking

The bank is allowed ten days to investigate any error and report the results. If the bank needs more time, it may take up to 45 days but only if the money in dispute is returned to your account while the investigation goes on, according to Goss.

If your EFT card is lost or stolen, notify the bank within two business days after discovering the disappearance, she advises. You will then lose no more than \$50 if someone else uses your card. If you fail to notify the bank within two days and your card is used, you could lose as much as \$400. If unauthorized payments show up on your statement, notify the bank within 60 days or you may lose the money that was transferred improperly.

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MICROWAVE OVEN HEIGHT  
AFFECTS SAFETY, CONVENIENCE

Microwave ovens are going to great heights. In fact, says Wanda Olson, extension household equipment specialist at the University of Minnesota, microwave ovens are being permanently installed at widely varying heights, often with little thought to the user's safety or convenience.

Mrs. Olson and Becky Love Yust, instructor in the household equipment area in the University's College of Home Economics, recently completed studies of microwave oven placement and its effect on the user.

By simulating the most common kinds of household uses for the ovens, 30 users of varying heights and ages rated tasks for convenience and safety in ovens set at countertop level (36 inches off the floor) as well as at heights 18 inches lower and 6 inches, 12 inches, 15 inches, 18 inches, 21 inches and 24 inches above standard counter height.

Based on ratings by the participants, it appeared that for most convenient use, the ovens should be placed so that the shelf or rack is between two inches below the elbow and ten inches above it. For most ovens, this would be achieved by placing the oven on a surface or countertop at about elbow height, plus or minus six inches, the specialists report.

By way of users' ratings for the most hazardous task (heating soup in a bowl without handles), Mrs. Olson and Mrs. Yust found that the oven's shelves or racks should never be higher than the user's shoulder height. For built-in ovens or those installed as the upper oven in a free standing range, this would mean that the height of the surface on which the oven is placed should be no higher than three inches below the shoulder. If the oven will be used by persons age 55 or older, the oven should be placed so that the shelf or rack is at or at least three inches below the user's shoulder.

They add that for most appliance users about 5 foot, 6 inches in height, the best placement height for both safety and convenience is somewhere between countertop level and 12 inches above countertop (48 inches off the floor).

# # #

Department of Information  
and Agricultural Journalism  
Agricultural Extension Service  
University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
November 24, 1980

CONSIDERING CONVECTION?  
SOME POINTS TO REMEMBER

Portable convection ovens are being widely advertised this holiday season. If you are tempted to buy one for yourself or as a gift, Wanda Olson, extension household equipment specialist at the University of Minnesota, offers some consumer tips.

The ovens operate on 110-120 volts so they can be used on a general household circuit. No other heating appliances can be used on the same circuit at the same time, however.

Convection ovens offer faster cooking than conventional ovens because a fan forces heated air to move around the food. Most foods will cook in less time and at a 25° to 50° F. lower temperature.

Mrs. Olson adds that despite their small size, portable convection ovens often can nearly replace conventional ovens because food can be heated successfully on more than one rack at a time. The ovens take about 20 inches of counter space and can be used at any height. They cost between \$125 and \$200.

In deciding which oven to buy, insulation might be one factor to consider, Mrs. Olson suggests. Adequate insulation reduces heat loss and makes the oven more efficient. It also helps keep the exterior surface from becoming dangerously hot to the touch.

Ease of using is another factor to weigh. Mrs. Olson suggests that the prospective user try setting the controls and opening the door. One model features an unhinged door, for example, and this requires some nearby workspace to set the hot door when placing and removing food.

add one--considering convection?

Also consider oven size. Will your commonly used pans fit? Do you need such special features as an automatic shut-off based on time or temperature? Do you intend to dry foods in your convection oven? If you do, you will need special dehydrator racks. Drying foods ties up an oven for six to eight hours or more at a time.

Energy savings in dollars and cents would seldom justify the purchase price of a convection oven, Mrs. Olson says. "It's doubtful that any energy savings would be large enough to pay for the appliance," she says. "In the average home, only about 25 percent of the cooking is done in the oven. If one kilowatt hour is used each day for oven cooking and if the convection oven saved 20 percent of that energy, the savings would amount to only about one penny a day."

A further, and more costly, refinement of the convection oven is the new convection-microwave oven now available from several manufacturers. These are available as portable electric appliances or as gas ovens in free standing ranges. A counter top gas convection-microwave combination oven will be introduced in 1981. Mrs. Olson adds that such ovens may be more versatile than standard convection ovens, but they also will cost \$650 - \$800.

# # #

CA - 4HE I & II

Department of Information  
and Agricultural Journalism  
Agricultural Extension Service  
University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
December 1, 1980

Source: Frank Oberg  
376-3535

Writer: Deedee Nagy

KEEPING YOUR COOL CAN  
RAISE YOUR ODDS IN HOTEL FIRE

If you can curb your panic and have done some preliminary research on escape routes, your chances are greatly improved for surviving a hotel fire such as the one that claimed more than 80 lives in Las Vegas last week.

Frank Oberg, associate director of the University of Minnesota's Fire Information Research and Education Center, says that gas, smoke and panic are more dangerous killers than flames themselves.

"When you check into any hotel room, immediately check your escape route," Oberg advises. "You should never use an elevator in a fire, so locate an exit sign leading to an enclosed stairwell as soon as you check into your room. Make a mental note on whether the exit is on your right or your left. Will you have to turn a corner? Will you need to go through one door or two to reach the stairs?"

As you return to your room, count the doors between the exit and your room. This information could be crucial if the hall fills with smoke. Note, too, how your windows open. Is there a balcony outside? Does the room face the street or an interior court?

Oberg says some cautious people refuse to stay in a hotel that doesn't have sprinklers and room smoke alarms. Smoke alarms are mandatory in Minnesota. He also says that most fire department ladders will not reach beyond the ninth floor, so some wary persons request rooms below that level.

If you do awaken to smell smoke or hear an alarm, take it seriously, Oberg advises. Begin emergency procedures immediately.

add one--keeping cool

- \* Soak towels or sheets and hold them over your nose and mouth.

- \* Crawl to the door. The air five feet from the floor could already contain odorless carbon monoxide. Feel the door for heat. If the door or knob is hot, don't open it.

- \* If the hallway is passable, follow your escape route, closing the door behind you. Take your key in case you have to return to the room.

- \* If the stairs below are impassable, attempt to go to the roof instead.

- \* If both hallway and stairwell are impassable, return to your room and close the door. If the room is free of smoke, keep the window closed and try to alert outsiders to your predicament.

Flip on the bathroom vent if smoke is coming in. Wet towels or sheets pressed against the door cracks will keep smoke out. Open or break a window only if the room becomes quite smokey. Smoke and gases may be even thicker outside.

- \* If the walls become hot, use an ice bucket to drench the door and walls.

Oberg stresses that if you are above the third floor, the chances of surviving or of escaping serious injury in a jump are small. He adds, "Panic causes people to jump. In a Brazil fire a few years ago, 40 people jumped from windows and all of them died. Ironically, 36 of the 40 jumped after the fire was out."

# # #

4-FC, IA, CA

Department of Information  
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Tel. (612) 373-0710  
December 1, 1980

Source: Curt Overdahl  
(612) 373-1060

Writer: Jack Sperbeck  
(612) 373-0715

### USE SOIL TEST TO MAKE YOU A SMART INVESTOR

Your interest rate return from fertilizer purchases can be as high as 200 to 300 percent if you get a large yield increase.

"You can get \$3 or \$4 back for every dollar you invest in fertilizer," says Curt Overdahl, extension soils specialist at the University of Minnesota.

But if you're surprised at the low fertilizer recommendations coming back with your soil test results, chances are you can write it off as a pleasant surprise.

"Probabilities of a response from fertilizer are small if soil tests are very high from liberal fertilizer applications and good soil management in previous years," says Overdahl. "If you broadcast fertilizer on highly fertile land where it isn't needed your decision was wrong and you're wasting money," he says.

A soil test is the first thing you need to help decide how to invest in fertilizer. "The answer is not pouring on several hundred pounds per acre annually without investigating soil needs," Overdahl emphasizes.

"Many farmers do this because they've seen large yield increases in the past. But soil fertility gradually builds and eventually high fertilizer investments no longer pay dividends," he says.

Soil tests are linked to soil fertility research. A good set of "response probabilities" is available from years of soil fertility experiments. The following table comes from Purdue University research, but Overdahl says results apply in Minnesota.

TABLE I - BROADCAST PROBABILITIES

<u>Soil Test P or K</u>	<u>Probability of Profitable P or K Response</u>
very low	96 - 100%
low	70 - 95%
medium	40 - 70%
high	10 - 40%
very high	0 - 10%

add one--Soil Test

The figures above are for broadcast applications. Row applied fertilizer on crops like corn or small grain has a different set of probabilities. Minnesota research shows you can expect approximately these responses:

TABLE II - ROW PROBABILITIES

<u>Soil Test P or K</u>	<u>Probability of Row P or K Response</u>
low	95 - 100%
medium	65 - 95%
high	30 - 65%
very high	10 - 30%

"You'll note that row applications have higher probabilities than broadcast applications," Overdahl says. Row response usually occurs in the plant's early growth stages when its root system is limited. If soils are abnormally wet responses are usually higher than with dry soils.

"And wet in a Minnesota spring means cold. Under cold conditions plant root growth is restricted and fertilizer applied near the seed will give early benefits," Overdahl says.

You may think that response from row applications doesn't relate well to the soil test if you get a fertilizer response when the soil test was very high. Overdahl answers this way: "Probabilities are not great with these high tests, but weather conditions such as coldness upset the usual pattern of little or no response probabilities.

"In addition, every spring isn't cold. Some years soils are dry and warm up rapidly. Or temperatures may be very high and soils warm up even if they're wet.

"Drainage is related to the situation. Limited drainage can cause a soil to be quite cold in spring. Even some tilled land has this problem," Overdahl says.

add two--Soil Test

Here are two examples of what happens with potash applied on soils with a low vs. a very high K test. Note the net profit column:

TABLE III - IRRIGATED PLOTS

1. Very Low Soil Test K, 36 lb/A  
(Becker, Minnesota 1980)

<u>K<sub>2</sub>O lbs/A Applied</u>	<u>Increase Over Check Plot bu/A</u>	<u>Net Profit*/A From K</u>
60	29	\$73
120	37	89
180	36	78
480	36	45

2. Very High Soil Test K, 260 lbs/A  
(Waseca, Minnesota 1980)

<u>K<sub>2</sub>O lbs/A Applied</u>	<u>Increase Over Check Plot bu/A</u>	<u>Net Profit*/A From K</u>
50	2	\$ 0
100	6	5
200	8	0

\* K<sub>2</sub>O = 11 cents/lb, corn \$2.75/bu.

Overdahl suggests looking at fertilizer as an investment--the same as buying stock or investing in a business. "The intent of University of Minnesota soil test recommendations is to efficiently use all nutrients that are needed," he says.

# # #

CA, IA, 4-FC

Department of Information  
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December 3, 1980

Source: Neal Martin  
(612) 373-1181  
Writer: Gail McClure  
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#### DALAPON, GLYPHOSATE BETTER THAN PARAQUAT FOR SOD SEEDED ALFALFA

"The planting date, herbicide and herbicide rate are tremendously important to the successful establishment of alfalfa via sod seeding," said N. P. Martin, University of Minnesota agronomist, at the American Society of Agronomy Annual Meeting Dec. 3.

Legume introduction into pastures can increase the carrying capacity and improve animal performance. Sod seeding is a new method of incorporating the legumes into grass pastures using only one or two operations. The potential for soil loss by erosion is minimized with this method.

Martin and colleagues Craig Sheaffer and Don Wyse conducted a two-year study in which alfalfa was sod seeded into a smooth bromegrass-quackgrass pasture on four planting dates -- April 20, May 7, May 18 and June 2. Three herbicides (paraquat, glyphosate, and dalapon) were broadcast prior to seeding at four rates.

Successful alfalfa establishment occurred on the first three planting dates each year. Dalapon and glyphosate were more effective than paraquat in establishing alfalfa. The rate varied with the year and the herbicide.

Presently, only paraquat is cleared by the Environmental Protection Agency for use in sod seeding of legumes into grass pastures. Clearance has been requested for use of glyphosate.

# # #

Department of Information  
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Tel. (612) 373-0710  
December 3, 1980

Source: Francis Pierce  
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Writer: Gail McClure  
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#### SOIL METAL LEVELS COULD HELP DETERMINE SLUDGE APPLICATION SITES

Detroit, Mich. -- "High concentrations of metals, especially cadmium, may limit sludge application as a nitrogen source to agricultural land," said Francis J. Pierce of the University of Minnesota at the American Society of Agronomy Annual Meeting Wednesday, Dec. 3.

Pierce and other researchers at the University of Minnesota have established base-line levels of six metals (cadmium, chromium, copper, lead, nickel and zinc) in 16 major soils throughout Minnesota. This baseline data will prove valuable in assessing present as well as future land quality.

The U. S. Department of Agriculture has suggested upper limits to the amount of sludge-borne metals that should be allowed on cropped agricultural soils. However, the suggested limits fail to consider the metal content in the soil.

This oversight could lead to serious problems since certain soils contain metal levels which should eliminate them from consideration as land application sites. Land in the vicinity of industrialized areas and mining operations is one example.

Pierce said it's the amount of metals in the applied sludge plus the metal content of the soil that will determine the lifetime of any particular application site. Since the metal content of soils at potential application sites has been assumed to be a national or regional average, the base-line data from his study should prove helpful in assessing application sites.

# # #

Department of Information  
and Agricultural Journalism  
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December 3, 1980

## SCIENTISTS STUDY VISUAL INDICATORS OF WHEAT MATURITY

Detroit, Michigan--"Field experiments conducted the last two years have helped identify some possible visual indicators of the physiological maturity of hard red spring wheat", said Jonathan M. Hanft, University of Minnesota at the American Society of Agronomy Annual Meeting December 3. Results suggested that the external appearance of a red-brown spot on the embryo, and loss of green color from the flag leaf are potential visual indicators. "Physiological maturity" refers to the stage of grain development corresponding to the attainment of maximum seed dry weight.

Effective visual indicators have been identified for corn and sorghum, soybeans and oats, but no satisfactory indicators of physiological maturity in hard red spring wheat have been available. As a result, researchers have had to rely on successive grain dry weight measurements to determine the end of the grain filling period or the date of maturity. Reliable visual indicators would facilitate the identification of varieties with higher rates of kernel growth and/or a longer grain filling period.

Growers could also make use of visual indicators to plan harvesting operations to avoid field losses after the maximum grain yield has been reached. Seed producers would use the indicators to ensure maximum yields of highest quality wheat seed.

# # #

CA, IA, 4-FC

Department of Information  
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St. Paul, Minnesota 55108  
December 4, 1980

Source: Ed Schneider  
(612) 373-1066  
  
Writer: Gail McClure  
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## REMOVING EXCESSIVE RESIDUES ON ZERO-TILLED CORN GIVES HIGHER YIELDS

Detroit, Michigan--Depressed soil temperatures due to heavy crop residue cover is the major reason why corn yields are lower under zero tillage, University of Minnesota researchers say. But the problem can be partially remedied by removing some of the excessive residues.

"Zero tillage for corn is good for soil and energy conservation. But it's been seen as an undesirable management practice in the northern corn belt due to yield reductions relative to those under conventional fall plowing," said Ed Schneider of the University of Minnesota, at the American Society of Agronomy Annual Meeting Thursday, Dec. 4.

Schneider and co-workers suggest that management practices could result in higher yields for zero-tilled corn. In the past, yield reduction has been attributed mainly to (1) reduced soil temperatures under heavy surface crop residues and (2) increased soil density and mechanical resistance to penetration.

However, it has not been clear which of those factors was the most important. Schneider, Jim Bauder and other Minnesota researchers carried out an experiment to assess the relative contribution of these two factors to differences in corn yields between zero-tilled and fall moldboard plowed fields. Soil temperature and crop growth were monitored throughout the growing season.

On zero-tilled plots where less residue was applied, temperature depression of surface soil was diminished. Apparently temperature depression under heavy residue cover is the major factor responsible for reduced yields under zero tillage.

Reduced-temperature accounted for as much as 80% of the yield reduction in no till. By removing crop residues beyond that needed for erosion control, favorable soil temperatures can be achieved, resulting in higher yields.

Department of Information  
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December 8, 1980

HARKNESS HONORED  
BY FARM BUREAU

Leonard Harkness, program director for 4-H Youth Development in Minnesota for 31 years until his retirement this fall, was awarded Minnesota Farm Bureau's Outstanding Service to Agriculture Award Thursday at the group's annual meeting in Bloomington, Minn.

He was cited for his outstanding and distinguished service to agricultural education in the state. The award was presented by Merlyn Lokensgard of St. Peter, Farm Bureau president.

Harkness joined the University of Minnesota 4-H staff as its program director in 1949 after serving as Blue Earth County agricultural extension agent at Mankato.

During his years as 4-H program director, he served on the board of trustees of the National 4-H Foundation and as a member and chairman of the Extension Committee on Organization and Policy's Subcommittee on 4-H. He also represented the U.S. at an international seminar on rural youth programs in Germany and chaired the Governor's Steering Committee on the 1970 White House Conference on Children and Youth.

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KNOW THE UNSUGARED FACTS  
BEFORE OPTING FOR FRUCTOSE

The ads for fructose make it sound almost like a miracle sweetener. They claim it is "natural", it can help the weight conscious, and it may even be safe for diabetics.

Unfortunately, the facts about fructose just don't bear these claims out, according to Isabel Wolf, extension food and nutrition specialist at the University of Minnesota. Fructose is being used more widely now, primarily in soft drinks, canned goods and baked products, but the reason is economic. Fructose syrup, which is derived from corn, is currently cheaper than regular sugar, (sucrose).

The fructose advertised for consumer use, however, is more expensive than ordinary sugar, and it offers few, if any, advantages, Mrs. Wolf says. Advertising claims to the contrary, fructose is no more "natural" than regular sugar. Both are highly processed products, one made from corn and the other from sugar cane or beets.

Fructose is sweeter than table sugar so some users use less to achieve the same sweetness, but "fructose contains exactly the same number of calories, gram for gram, that sucrose does," Mrs. Wolf says.

A highly publicized "fructose diet" caught the attention of calorie counters recently. Mrs. Wolf says this diet called for low carbohydrate meals but it also included 120 to 160 calories from fructose daily with meals and as snacks. The diet's developer, Dr. J.T. Cooper, claimed that because fructose is absorbed more slowly from the intestines than sucrose, it keeps that energy level up and avoids drops in blood sugar that lead to hunger pangs.

Mrs. Wolf points out that the diet provides only 700 to 1,000 calories a day and most people would lose weight anyway under such a diet. Although it is probably a safe diet for short term use, Mrs. Wolf cautions that its calorie content is below the 1,200 considered necessary to meet vitamin and mineral requirements. It is also unbalanced in the proportion of calories supplied from protein, fat and carbohydrates. Some of the apparent weight loss is due to the low carbohydrate content of the diet. The dieter is in

add one--unsugared facts (continued)

a Ketosis, an abnormal metabolic state and loses lots of body water in the initial phase of the diet.

It is the slow absorption of fructose that has prompted some physicians to permit fructose for some diabetic patients. Fructose doesn't cause the pancreas to release insulin. Because fructose absorption takes time and is without the ups and downs of blood sugar levels common to sucrose, doctors in Europe have often allowed diabetic patients with ample natural insulin to sweeten their foods with fructose.

Mrs. Wolf adds, however, that physicians in this country are less enthusiastic about fructose. It is difficult to get obese adult diabetics to cut calories, and because fructose is calorie-rich, some diabetics mistakenly load up on it and worsen their weight problems. The American Diabetes Association is reserving judgment on fructose until long term studies are completed with patients using substantial amounts of the substance with meals.

The dental profession is similarly reserved in its affection for fructose, Mrs. Wolf says. Research indicates that it may lower the risk of tooth decay slightly, but not dramatically enough to merit widespread conversion to fructose.

Health issues aside, Mrs. Wolf says most consumers will reject fructose use because of its cost. Even if you use less fructose because of its greater sweetness, you currently will pay close to \$5 a pound for tabletop fructose. By contrast, a five pound sack of ordinary sugar sells for about \$2.50.

# # #

CA, 4HE I & II

Department of Information  
and Agricultural Journalism  
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University of Minnesota  
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Tel. (612) 373-0710  
December 22, 1980

Source: Charles Christians  
(612) 373-1166  
Editor: Jack Sperbeck  
(612) 373-0715

#### BEEF PERFORMANCE TESTING CAN BRING DRAMATIC CHANGES

Performance testing has helped some Minnesota beef producers make dramatic improvements in average herd weaning weight.

"Performance testing is becoming 'the thing to do' in beef cattle circles," says Chuck Christians, extension livestock specialist at the University of Minnesota.

Post weaning gain in the feedlot and yearling weight are highly heritable traits and among the fastest to change genetically. Economically, growth rates are important for cow-calf producers and feedlot operators.

Initially, performance testing can lead to dramatic changes through culling and improved herd management practices. "But some producers get discouraged since progress is slow after this initial improvement," Christians says.

Collection of calf weaning weights has demonstrated genetic differences to cow-calf producers. Through a culling program, unproductive females have been removed from herds and replaced by heifers with superior weaning weights.

"Genetic improvement made through female selection won't change your herd average much. But over a number of years, herd sire selection gives greater genetic change," he says.

The bull's own adjusted yearling weight is a measurement that combines weaning weight and feedlot gain. To improve this trait, bulls must score above the herd average.

"You can easily identify these bulls in a herd by simply weighing all bulls and comparing them to the herd average," Christians says. "But the problem a producer has is selecting the herd from which to buy the bull."

add one--Beef Performance (continued)

Central Bull Test Stations like the Minnesota Bull Test Station at Truman, Minn., can be used to evaluate bulls from different farms. All bulls are managed and fed under the same conditions to reduce environmental factors that influence feedlot growth. This means that genetics accounts for most of the measured growth difference.

On Dec. 1, 127 bulls were placed on official gain test. After 140 days they will be taken off test and offered for sale on April 25, 1981. Breeds represented in the test include Angus, Red Angus, Charolais, Poled Charolais, Hereford, Polled Hereford, Shorthorn, Polled Shorthorn, Simmental, Polled Simmental, Limousin, Southe Devon and Galbvieh.

For advice about your herd selection program contact C.J.Christians, Animal Science Department, University of Minnesota, St. Paul, Minn., 55108.

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CA, IA, 4-L

Department of Information  
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Source: Charles Christians  
(612)373-1166

Editor: Jack Sperbeck  
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## VOSSEN IS NEW EXECUTIVE OF BEEF ASSOCIATION

Herman Vossen has been hired for the new position of executive vice president of the Minnesota Beef Cattle Improvement Association (MBCIA).

Vossen is from Windom, Minn., and recently retired as an area livestock specialist with the University of Minnesota's Agricultural Extension Service. The MBCIA board of directors approved the new position at a meeting held in conjunction with the Minnesota State Cattlemen Association Conference.

Vossen will administer MBCIA activities at the Minnesota Central Bull Test Station. Bulls are weighed every 28 days during the official 140-day test. Results are computed and reported after each weighing. At the end of the test period, the top two-thirds of the bulls are offered for sale.

Vossen will advise the test station manager on management of the station, which has 127 bulls on test. Breeds represented include Angus, Red Angus, Charolais, Polled Charolais, Simmental, Polled Simmental, Hereford, Polled Hereford, Shorthorn, Polled Shorthorn, Limousin, South Devon and Gelbvieh.

"The Central Test Station is a good way to help evaluate beef cattle performance," says Chuck Christians, livestock specialist with the University of Minnesota's Agricultural Extension Service. Christians is also supervisor of the Minnesota Beef Performance Program.

An extensive on-farm record system is available to beef producers. Records on herd reproduction, calf weaning weight, calf and yearling structure, composition scoring, feedlot gain and carcass evaluation can be collected and used in a herd selection program.

Vossen--Add one

Interested producers may enroll in the program through their county extension agent or Extension Animal Science, University of Minnesota, St. Paul, Minn., 55108. The MBCIA cooperates with the University of Minnesota to make central computer record processing of herd records available.

The University of Minnesota's Agricultural Extension Service also coordinates the State Beef Carcass Evaluation Program with the USDA Meat Grading Service and MBCIA. USDA carcass tags are available to producers and beef carcass show officials.

The program has been curtailed due to lack of beef packers in the state, Christians says. The USDA Meat Grading Service will make complete carcass data available if the ear tags are transferred from the animal to the carcass.

CA, IA, 4-L

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Source: Winston Grant  
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Editor: Jack Sperbeck  
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BY EDWARD D. LOTTERMAN AND JOHN J. WAELTI\*

GROUNDWATER IRRIGATION AND WELL-INTERFERENCE POLICY: A Three-State Comparison

During the 1970's, well-interference emerged as a highly volatile policy issue in the allocation of groundwater in states bordering the humid East and the arid West.

Well-interference is the lowering of water levels in wells adjacent to or neighboring a high capacity well during and shortly after the time the high capacity well is being pumped. It is generally a temporary hydraulic phenomenon, as distinguished from long term overall lowering of the water level in an aquifer caused by pumping exceeding recharge.

States such as Iowa, Minnesota, and South Dakota have experienced dramatically increased groundwater irrigation since 1970. Although the actual number of cases of interference in these states is relatively small, significant political impact resulted largely from widespread public unease about the adequacy of water supplies during the drought period of 1974-76.

New irrigation wells interfering with existing domestic wells caused most conflicts. The drought and rapidly increasing groundwater irrigation, caused all three states to review and revise groundwater allocation policies. The revised rules have not received much attention by the public, in practice or court. This kind of attention awaits another drought like that of 1974-76.

Because of the lack of public attention and the policies' potential importance, we examined Minnesota's well interference policy compared to South Dakota and Iowa policies, in light of their likely economic effect.

MINNESOTA POLICY

Groundwater use in Minnesota is regulated by its Department of Natural Resources (DNR). About 20 percent of the text of DNR's agency rules governing water appropriation deal with procedures to avoid or abate the problem of well-interference.

\* Lotterman is a research assistant and Waelti a professor and extension economist in the Department of Agricultural & Applied Economics at the University of Minnesota.

add one--groundwater irrigation continued

The basic intent of Minnesota's policy appears to be to force large users to compensate for damages caused by their pumping.

Applicants for permits to pump groundwater for irrigation must detail the location of their well. When DNR does not have "adequate" information to estimate drawdown and effect on existing wells, the applicant must conduct a test by pumping the well for at least 24 hours while observing drawdown and recovery in one or more observation wells.

Test information is used to predict interference effects in nearby wells. If any neighbor will likely be deprived of water for any period of time, DNR may not issue a permit until the applicant provides an acceptable plan for abatement or compensation of all potentially damaged parties.

Even though a new irrigator has a permit, any affected party can file a complaint with DNR which must investigate all complaints. Substantiated complaints require restriction or suspension of the permit by DNR until the permittee reaches an agreement with the affected parties.

#### Efficiency and Equity of Minnesota's Policy?

Several aspects of the law contribute to its equitable and efficient administration:

(1) Irrigators who must compensate neighbors for damages to their wells have the incentive to consider these "external costs."

(2) Increased production from irrigation is allowed to occur because the irrigator may negotiate compensation with damaged neighboring well owners. In some states a person suffering damage can stop irrigation completely.

(3) The usually difficult task of estimating damages from well interference is left to the affected parties on the basis of approximately equal bargaining power; no party has monopoly or veto power; and the party who feels his/her opponents are unreasonable may appeal to impartial arbitration.

#### Criticisms of Minnesota Policy

The policy does little to reduce uncertainty on the part of the irrigating producer. Irrigators must incur most investment costs as part of the application process and issuance of a permit does not guarantee that problems will not result in its suspension. However, pumping tests may permit anticipation of problems. Furthermore, these costs are very likely much cheaper than those that would result from litigation in the courts under other policies.

add two--groundwater irrigation continued

### South Dakota Policy

South Dakota's procedures are similar to Minnesota's. Applicants for high capacity well permits must submit locational and geological information on their proposed wells to the Department of Water and Natural Resources (DWNR).

DWNR evaluates the application on several grounds, including the likelihood of well interference. The information and analysis are not as detailed as in Minnesota because South Dakota's existing hydrologic information is more extensive. DWNR recommends approval or disapproval to the state Water Management Board (WMB).

If an "adequate," domestic well will likely be interfered with, the Commission will not approve the application. The key question is what constitutes an adequate well. While Minnesota protects all existing wells, South Dakota protects only "adequate" wells. Generally, an adequate well must fully penetrate the aquifer and have its pump set just above the screen. Many existing wells do not meet the legal standard of adequacy since good well construction practice did not require full penetration of the aquifer before irrigation became widespread.

The owner of a damaged well not meeting the adequacy standards has no protection and must bear all the costs of interference. If an adequate well would be interfered with, a permit is not issued to the high capacity well owner who then has no recourse. The WMB may issue the permit to the owner of an interfering well if he reaches an agreement with the other party. However, South Dakota law does not encourage or require bargaining. Adequate domestic well owners hold a near absolute veto power. High capacity wells remain shut down unless domestic well owners are satisfied with an offer of compensation. Similar procedures apply to interferences not predicted during permit application but which materialize later.

### Efficiency and Equity of South Dakota Policy?

This policy more likely results in an "all or nothing situation." Interference with an affected "adequate" well may prevent use of water for irrigation. In that case, the South Dakota policy results in loss of agricultural production that could have been produced with irrigation. However, interference with a "non-adequate" well results in a transfer of income from the owner of the affected well to the irrigator.

add three--groundwater irrigation continued

### Iowa Policy

Public concern about groundwater development in Iowa led to a three year near-moratorium on the issuance of new permits in the mid 1970's. New permits issued are now for only one year. Nevertheless, Iowa has no formal well interference policy. The problem is not specifically mentioned in any Iowa statute or agency rule.

The Iowa Natural Resources Council (INRC) gets well interference cases on an ad hoc basis. Where well interference from irrigation may occur, permit applications can be denied because of inadequate water supply. A formal assessment of well interference by a regulated user through aquifer tests is made in only a small number of cases. When parties to a well interference complaint cannot reach a private agreement, the INRC investigates but the extent of the investigation depends on the nature of the facts in the complaints and upon substantiation of a complaint it may terminate the permit.

Iowa has no formal mechanism for arbitration or bargaining for compensation. The INRC can terminate the permit or not, but it cannot order abatement procedures or compensation. If either party to the dispute is dissatisfied with INRC actions, the only recourse is the state courts under common law rules. This is viable but costly for the damaged party. The high capacity user (irrigator) may be denied access to water on grounds that he feels are unreasonable.

Avoidance of well interference disputes may also have been a factor in Iowa's ban on groundwater irrigation from an aquifer from which there was a lack of basic hydrologic information.

### Efficiency and Equity of Iowa's Policy?

(1) Iowa doesn't have a defined policy and this uncertainty could act as a disincentive to irrigation development.

(2) The cost of settling disputes in court is much greater than the costs of settlement by arbitration or private bargaining. This extra cost is simply a loss to society.

From an equity standpoint, damaged parties may settle for substantially less than the actual amount of loss to avoid the hassle and high cost of court action. On the other hand, when interference by an irrigator is substantiated by the INRC, and permit suspension is threatened, the party who's well is damaged holds a virtual "veto power" and may force the irrigator to pay more than actual damages to obtain consent for the use of the well.

add four--groundwater irrigation continued

The Bottom Line

Minnesota, South Dakota and Iowa policies distinctly differ in their approaches to the volatile problem of well-interference by irrigation. It is economically desirable to obtain increased crop production from irrigation. And we believe, as a result of our study, that the Minnesota policy is the most efficient and equitable of the three to the extent that it simultaneously encourages irrigation and protects non-irrigation groundwater users. Minnesota's administrative regulations are preferable to costly, time consuming court settlements. We also favor that aspect of the Minnesota policy that limits the dollar damages the aggrieved party can extract from an interfering irrigator to an approximation of the actual damages.

This series is provided by the University of Minnesota Agricultural Extension Service as a public service. It is not intended to replace the advice of legal counsel on individual matters. Opinions expressed are those of the authors and not the Agricultural Extension Service.

CA, IA

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Source: Jim Baumer  
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Writer: Jack Sperbeck  
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#### CURRENT TRENDS MAY AGGRAVATE WHEAT SCAB DISEASE

Wheat scab disease problems may be aggravated by minimum tillage and by following corn with wheat, says a plant pathologist with the University of Minnesota's Agricultural Experiment Station.

Crop disease problems become more serious with shorter crop rotations and fewer crops in the rotation, says researcher Jim Baumer. Wheat following wheat can lead to more wheat scab problems, but wheat following corn is even worse.

Fusarium graminearum, the fungus that causes wheat scab, also causes stalk rot of corn. "The fungus spores are airborne. Spores from last year's corn stalks will move to the heads of wheat if corn stalks are left on the surface," he says.

Crop rotations with at least a year's break between cereals or grasses are recommended. Deep plowing of residue also helps, says Baumer. There are no spring wheat varieties resistant to scab.

Chemical control might be feasible if infection periods could be accurately determined, Baumer says. Key components of the infection period include presence of the inoculum (spores) and moist, warm weather.

Objectives of Baumer's research are to identify sources and types of the fungus spores, weather and other environmental conditions favorable for infection, and to develop ways to identify resistant varieties. The research is partially funded by the Minnesota Wheat Research and Promotion Council.

The fungus primarily affects heads, although leaf spots and root rot may occur. Individual spikelets or whole heads may be killed, resulting in yield losses.

Although large yield losses have not been widespread in Minnesota and North Dakota, losses on individual fields can be very high if there are moist, warm conditions at flowering time.

In addition, wheat affected by scab is apt to be of lower baking quality. Mycotoxin and storage problems may further reduce quality of scabby wheat. Harvested seed has reduced germination and seedling blight problems.

add one--current trends (continued)

Baumer is developing a scab disease nursery on the University's St. Paul Campus, where researchers will "artificially" infect plants with spores by spraying them. Sprinklers will be used to maintain wet conditions favorable to wheat scab disease. Several varieties are included in the trial.

In addition, a scab survey will be conducted throughout the wheat growing area. Weekly disease surveys will be made and plants will be sent to Baumer's laboratory for fungus isolation and identification. This information will be correlated with local weather conditions and cropping histories in each field. At the end of the season, yield and quality measurements will be made.

Another part of Baumer's research is being done at the University's Rosemount, Morris and Crookston research stations. Fungicide experiments are being used to monitor scab. Several "highly effective" experimental systemic fungicides will be used to provide information on timing of infection and yield loss.

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Source: Craig Sheaffer  
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Editor: Jack Sperbeck  
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#### FORAGE DAY SET FOR FEB.26

Growing and conserving more energy is the theme of sixth annual Forage Day sponsored by the Minnesota Forage and Grassland Council Feb. 26, 1981.

The event is scheduled for the Earle Brown Center on the University of Minnesota's St. Paul Campus. Speakers include Allen Rider from Sperry New Holland; Gary Allen, dairy farmer who was Minnesota's Premier Forage Producer in 1980; and specialists and researchers from the University of Minnesota's Agricultural Extension Service and Agricultural Experiment Station. University of Minnesota speakers and topics include:

- Animal scientist Dick Goodrich, preserving energy by silage preservation.
- Agronomist Gary Heichel, nitrogen fixation by forage legumes and benefits to the cropping system.
- Animal scientist Ray Arthaud, growth promoting implants and rumensin for cattle on pasture
- Agronomist Neal Martin, maximizing animal performance on pastures.
- Soil conservationist Clif Halsey, forage for soil conservation.
- Animal scientist George Marx, alternative methods of temporary silage storage
- Soil scientist Sam Evans, application of manure to forages and row crops.
- Art Skauge from Northrup King will speak on forage seed production.

Outstanding forage producers for 1981 will receive awards at the noon banquet.

More detailed information is available from the Minnesota Forage and Grassland Council, 303 Agronomy, University of Minnesota, St. Paul, MN 55108.

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Source: Paul Hasbargen

Editor: Jack Sperbeck

### DEFER INCOME UNTIL 65

Are you approaching 65? If so, and you are self employed as a farmer or other small businessman, you may want to postpone some of your earnings until you are 65.

Paul Hasbargen, economist with the University of Minnesota's Agricultural Extension Service, says this can save taxes in several ways.

First, it can save paying social security taxes on any earning cut-back below \$25,900 in 1980. A deferral of \$10,000 in earnings until retirement would save \$810 since the self-employed rate is 8.1 percent in 1980. (In 1981 it will be 9.3%.) And, the reduction in this tax payment is likely to have no influence on retirement benefits for people now 62 or older.

Second, there will be a deferral of the payment of several thousand dollars in federal and state income taxes if \$10,000 in receipts is delayed. And since annual earnings will likely decrease after retirement, the actual tax payment due at that time might be considerably less. (In projecting taxable earnings, remember that social security benefits are not taxable.)

Finally, even if taxable earnings are the same after age 65, tax savings are likely from two sources--the extra personal exemption allowed at age 65 and the reduction in tax rates expected from the new congress.

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TEACHING MONEY MANAGEMENT  
VIA A CHILD'S ALLOWANCE

You can't control, or even predict, what kind of economy your child will live in as an adult, but you can provide him or her with an early edge in good money management.

This is the opinion of Edna Jordahl, extension family resource management specialist at the University of Minnesota. Most of what children know about money comes from their parents, so parents should first agree on an allowance policy for their children.

Mrs. Jordahl says a good way to start is to let children practice using money at an early age. "Give a pre-schooler some change when you're in a store and let the child pay for crayons or a toy. That begins the lesson," she says.

Once the child understands a little about numbers, he or she is ready to make choices and begin simple budgeting. Mrs. Jordahl says that many children under five or six are still too young for weekly allowances, but they can learn the importance of choices. "If your child buys ice cream and then is sorry he or she didn't buy a toy, for example, don't be critical. Just remind the child that he or she made the choice and the money is gone."

Once children are in school they are probably ready for a regular allowance. The casual handout system doesn't encourage budgeting and saving, Mrs. Jordahl adds. "Children on an allowance tend to spend more carefully," she says. "They have less feeling of 'easy come, easy go,' and an allowance may actually cost you less than handing out money every time the need arises."

How big should an allowance be? Before deciding, Mrs. Jordahl suggests you make a list of the items on which your child spends money each week -- lunches, bus fare, a movie, bowling, etc. Then add a little for some extras the child might

Money management--Add one

want. She says it's important to include this extra amount because no one learns money management from an allowance tied completely to "musts."

Add money for these extra expenses in stages, Mrs. Jordahl suggests. A child of eight or nine would need only enough extra to cover occasional treats, inexpensive toys and other small things. Once the child is older and has proved responsible, you may want to raise the allowance to cover more.

She tells parents not to expect wise money handling in the beginning. "Most children start by spending money on junk, but don't scold them for it. Like all of us, children learn lessons from their own mistakes," she says.

She doesn't think parents should use an allowance to bribe, reward, punish or discipline. "An allowance should be kept on a businesslike basis with no strings attached," she says. "Granted, it's hard for parents to coolly hand over money to a child who is having tantrums or causing problems at home or school, but if the allowance is a tool to teach money management it should be regular and in an amount the child can count on."

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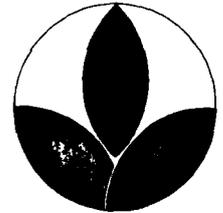
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Source: Dottie Goss  
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Writer: Deedee Nagy  
373-1781

CLOTHING PRICES TO RISE,  
BUT NOT AS FAST AS FOOD

OUTLOOK '81



You probably will pay more for clothing in 1981 than you did in 1980, but chances are that the jump will be less than the one most consumers will feel in their food budgets.

At the recent 1981 Agricultural Outlook Conference in Washington, D.C., Joan Courtless, family economist with the U.S. Department of Agriculture, reported annual spending for clothing and shoes is expected to be about \$473 per person when all figures are in for 1980. This is up \$23 over the figure for 1979, but nearly all of this is attributed to higher prices rather than to increased buying.

The number of actual clothing items purchased may be down, however, despite a rising tab for clothing, Courtless said, "Because Americans are beset by rising prices in all directions and are concerned about the recession, clothing purchases have been declining since the end of 1979. Items purchased are chosen for quality and are expected to last for several years."

She added that from September 1979 to September 1980, all items measured on the Consumer Price Index averaged 12.6 percent higher in price. During the same time, prices for apparel and its upkeep rose only about seven percent.

Retailers worry about this trend and are changing their own merchandising styles to compensate, Courtless said. Many are keeping closer controls over inventories, cutting back on the number of designer lines, promoting their own labels and reducing the range of variety of merchandise offered.

add one--clothing prices (continued)

She added, "Consumer shopping patterns are also in transition. Retailers report that more shopping is being done on lunch hours in stores near places of work. Some are predicting that the market share of stores in large regional malls will decline in the 1980s, supplemented by those in neighborhood centers and downtown stores. Sales from mail order catalogues are also expected to increase."

As consumers turn to traditional and classic looks in the clothing they buy, some types of clothing are expected to sell particularly well. Courtless said wool and cotton will remain popular. In addition, quilted outerwear of down, although relatively expensive, will continue to intrigue consumers because of its warmth and value. The market for active sportswear, including swimwear and clothing for tennis, golf and running, probably will increase by more than 20 percent in 1981.

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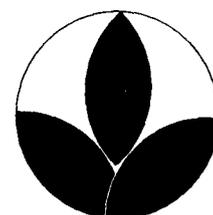
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GROCERY PRICES TO RISE EVEN  
FASTER IN '81 THAN '80

OUTLOOK '81



Expect to dig a little deeper into your family's budget to bring home groceries during 1981. This is the prediction of J. Dawson Ahalt, chairman of the World Food and Agricultural Outlook and Situation Board, who spoke at the recent 1981 Agricultural Outlook Conference in Washington D.C.

He forecasts retail food price increases in the range of 10 to 15 percent during 1981, and this could go even higher if severe weather damages crops globally.

This 10 to 15 percent rise expected in 1981 contrasts with the nine percent increase we will probably show when all figures are compiled for 1980. Ahalt points out that the nine percent figure is below the general rate of inflation so consumers have reaped some temporary benefits from recent record meat output and depressed meat prices.

This pattern of food prices lagging behind the general inflation rate is ending, Ahalt said. "Livestock producers' reaction to the low prices, coupled with the effects of the summer's drought, have changed the retail food price picture for the rest of 1980 and the first half of 1981."

Ahalt points to the 13 percent annual rate of increase in retail food prices shown in July-September 1980 as evidence that prices are already escalating beyond the rate to which consumers have become accustomed. In addition to meat and poultry, consumers will pay considerably more for sugar and many grain products.

"The way that livestock producers adjust their production the remainder of 1980 and next year will be a major determinant of retail food price movement on 1981," Ahalt added. "It is likely that meat production will be off next year and prices up with much lower pork output more than offsetting slight increases for beef and poultry."

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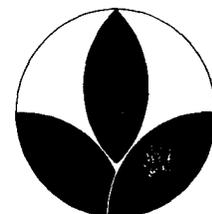
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Writer: Deedee Nagy  
373-1781

DESPITE ALL THE 'IFS' HIGHER  
FOOD PRICES ARE CERTAIN

OUTLOOK '81



Weather, worldwide politics and the availability of petroleum from the troubled Middle East are all major "ifs" in any projection of food prices for 1981, says Paul C. Westcott of the Economics and Statistics Service of the U.S. Department of Agriculture.

Speaking at the recent Agricultural Outlook Conference in Washington, D.C., Westcott said he anticipates food price increases in the 10 to 15 percent range, with a rate of slightly more than 12 percent the most likely mark for 1981.

Meat, poultry and egg price rises will lead the list of foods with escalating prices, he predicted. Producer losses in 1980 mean that fewer hogs will be produced next year. There may be slightly more beef and broilers produced in 1981, but supplies could still fall short of demand, increasing prices. As consumers try to substitute eggs for costlier meat, prices will rise about 17 percent over 1980's relatively low egg rates, according to Westcott.

The fruit and vegetable supply is heavily dependent on weather and is thus the most tricky component to predict. Westcott said, however, that low farm level prices for much produce over the past two years has led to reduced acreages and production.

The global demand for sugar is high so sugar and products heavily dependent on it will rise in price, possibly as much as 20 percent, according to Westcott.

Although all food is expected to rise more than 12 percent, the components for food at home and food away from home vary. Westcott thinks food at home will jump about 13 percent in cost while food away from home will lag slightly, rising about 10½ percent in 1981. This contrasts with 1980 when costs for food away from home outpaced costs for food at home.

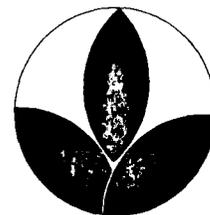
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Source: Dottie Goss  
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Writer: Deedee Nagy  
373-1781

OUTLOOK '81

RECOVERY FROM RECESSION WILL  
BE SLOW, INFLATION TO STAY



The recession of 1980 may go down in history as one of the shortest ever, but that doesn't necessarily mean that the economy will rebound quickly, according to Stephen M. Goldfeld of the Council of Economic Advisers.

Speaking at the recent 1981 Agricultural Outlook Conference, in Washington, D.C., Goldfeld cautioned consumers not to expect an inflation cure, however. "We are coming out of the 1980 recession with an unacceptably high rate of inflation," he said. "It is this rate of inflation . . . that may dictate the nature of the recovery."

Unlike the early recovery periods of past recessions, the 1980-81 recovery cycle is likely to show only modest gains in the gross national product, he added. Consumer spending may remain sluggish, reflecting "The effect of fiscal policy and oil drag on consumer incomes," Goldfeld said.

Among the brakes on consumer spending will be a scheduled Social Security Tax increase, inflation induced tax bracket creep and a program to permit larger quantities of oil to be sold at world market prices.

He added, "Higher food prices are also likely to serve as an additional source of drag on consumer incomes. Also, the personal saving rate is currently reported to be quite low and this suggests that there is little room for a burst of consumer spending fueled by a decline in the savings rate."

Although his forecasts for recovery from recession are rather gloomy through 1981, Goldfeld thinks the economy will begin to move at a healthier clip late in the year and in 1982. This will be particularly true if governmental policies encourage businesses and individuals to invest money saved when the anticipated tax cut goes into effect.

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Source: Mary Darling  
376-4663

Writer: DeeDee Nagy  
373-1781

TIPS FOR GETTING  
MORE PROTEIN INTO  
A LOW MEAT DIET

Many households are trying to use less meat. To accomplish this without sacrificing important protein in their diets, Mary Darling, extension nutritionist at the University of Minnesota, offers these pointers.

\* When baking, add dry milk powder to many baking recipes or use soy flour. To do this, replace two or more tablespoons per cup of all purpose flour with soy flour.

\* Vegetables, casseroles, soups and main dishes can have their protein contribution boosted by adding cheese, a sauce made with milk or extra dry milk powder. Soybeans or ground soybeans are also nutritious extenders. Eggs and nuts also increase a dish's protein content.

\* In salads, add cheese or cottage cheese or whip cottage cheese or yogurt into dressings. Sprinkle salads with sunflower seeds or nuts or add hard cooked eggs.

\* For dessert, concentrate on yogurt, milk, egg or cottage cheese recepies. Or add extra dry milk powder, soy flour, nuts or a granola topping to old family favorites.

\* When you buy meat, remember that cheaper grades contain just as much and often more protein than expensive marbled grades. Meat graded "good" is acceptable for braised and stewed dishes. It is appearing more frequently on meat counters. Variety meats such as liver, kidneys, tongue and heart also provide good protein at relatively low cost.

\* Buy meat by calculating the cost per serving, not the cost per pound. Cuts with a lot of bone or fat have only 1 or 2 servings per pound. Fish, ground beef, and cuts such as the round have 4-5 servings per pound.

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Writer: DeeDee Nagy  
373-1781

FOR 'MORE ON LESS' DIET  
LOOK AT PROTEIN FIRST

Despite thriftiness in many areas of their food buying, most Americans continue to eat more meat than they need to obtain necessary protein.

Mary Darling, extension nutritionist at the University of Minnesota, reminds budget-conscious consumers that less costly alternatives to meat -- eggs, dairy products, dried beans and peas and nuts -- aren't necessarily "second best" nutritionally. Eggs and many dairy products are excellent protein sources. Combinations of grain products or grains with legumes (beans, peas, lentils) complement each other to deliver complete protein.

The National Academy of Sciences, which sets the U.S. recommended daily allowances for nutrients, recommends 56 grams of protein daily for men and 44 grams for women. Physically active people need no more protein per ounce of body weight than do the sedentary. A very active person needs more calories, but carbohydrates provide these more efficiently than do proteins.

Darling says that inactive people who eat very little are one of the only groups who should obtain their protein from high quality protein foods. Like all of us, they need the components of protein, called amino acids, for tissue repair and growth. They eat so little food, however, that they would seldom get all the essential amino acids from the small quantities of plant proteins that would appease their appetites.

She adds, "All the essential amino acids must be present simultaneously and in the proper proportions for our bodies to use them. If even one is missing, the body's ability to use protein will fall. Eggs, milk and meat provide all eight amino acids in the proportions our bodies need. Plant protein sources all lack at least one essential acid, but by eating several plant proteins in the same meal or combining grains with legumes, we take in all that our bodies need."

We apply this principle, she says, when we eat cereal with milk, cheese with bread or crackers and pasta with cheese. If you decide to cut down or eliminate your meat consumption, she suggests you keep these combinations in mind.

Add one--protein first

Serve milk products with grains

cereal with milk  
bread and milk  
cheese sandwiches  
macaroni with cheese  
rice-cheese casserole  
lasagne (pasta and cheese)  
pizza (crust and cheese)  
cheese fondue  
baked goods containing milk  
rice pudding (rice and milk)

Serve legumes with grains

peanut-butter sandwiches  
soybean salad with bread  
bread containing soy flour  
lentil soup and muffins  
rice-bean casserole  
Boston baked beans with brown bread  
beans and tortillas  
refried beans and rice  
beans and corn bread  
bean soup and bread  
lentils or split peas (dhal) with rice

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KNOW THE UNSUGARED FACTS  
BEFORE OPTING FOR FRUCTOSE

The ads for fructose make it sound almost like a miracle sweetener. They claim it is "natural", it can help the weight conscious, and it may even be safe for diabetics.

Unfortunately, the facts about fructose just don't bear these claims out, according to Isabel Wolf, extension food and nutrition specialist at the University of Minnesota. Fructose is being used more widely now, primarily in soft drinks, canned goods and baked products, but the reason is economic. Fructose syrup, which is derived from corn, is currently cheaper than regular sugar, (sucrose).

The fructose advertised for consumer use, however, is more expensive than ordinary sugar, and it offers few, if any, advantages, Mrs. Wolf says. Advertising claims to the contrary, fructose is no more "natural" than regular sugar. Both are highly processed products, one made from corn and the other from sugar cane or beets.

Fructose is sweeter than table sugar so some users use less to achieve the same sweetness, but "fructose contains exactly the same number of calories, gram for gram, that sucrose does," Mrs. Wolf says.

A highly publicized "fructose diet" caught the attention of calorie counters recently. Mrs. Wolf says this diet called for low carbohydrate meals but it also included 120 to 160 calories from fructose daily with meals and as snacks. The diet's developer, Dr. J.T. Cooper, claimed that because fructose is absorbed more slowly from the intestines than sucrose, it keeps that energy level up and avoids drops in blood sugar that lead to hunger pangs.

Mrs. Wolf points out that the diet provides only 700 to 1,000 calories a day and most people would lose weight anyway under such a diet. Although it is probably a safe diet for short term use, Mrs. Wolf cautions that its calorie content is below the 1,200 considered necessary to meet vitamin and mineral requirements. It is also unbalanced in the proportion of calories supplied from protein, fat and carbohydrates. Some of the apparent weight loss is due to the low carbohydrate content of the diet. The dieter is in

add one--unsugared facts (continued)

a Ketosis, an abnormal metabolic state and loses lots of body water in the initial phase of the diet.

It is the slow absorption of fructose that has prompted some physicians to permit fructose for some diabetic patients. Fructose doesn't cause the pancreas to release insulin. Because fructose absorption takes time and is without the ups and downs of blood sugar levels common to sucrose, doctors in Europe have often allowed diabetic patients with ample natural insulin to sweeten their foods with fructose.

Mrs. Wolf adds, however, that physicians in this country are less enthusiastic about fructose. It is difficult to get obese adult diabetics to cut calories, and because fructose is calorie-rich, some diabetics mistakenly load up on it and worsen their weight problems. The American Diabetes Association is reserving judgment on fructose until long term studies are completed with patients using substantial amounts of the substance with meals.

The dental profession is similarly reserved in its affection for fructose, Mrs. Wolf says. Research indicates that it may lower the risk of tooth decay slightly, but not dramatically enough to merit widespread conversion to fructose.

Health issues aside, Mrs. Wolf says most consumers will reject fructose use because of its cost. Even if you use less fructose because of its greater sweetness, you currently will pay close to \$5 a pound for tabletop fructose. By contrast, a five pound sack of ordinary sugar sells for about \$2.50.

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Home economics briefs ---

Gift Giver's Guide -- Always be a consumer-minded gift giver. Choose items that won't be costly to use or repair. In addition, the Federal Trade Commission offers these suggestions:

\* Shop for good warranties. The law gives you the right to compare warranties on products that cost more than \$15. Is the warranty full or limited? A full warranty means the product will be repaired within a reasonable time period and if it hasn't been fixed after a reasonable number of tries, you can get a replacement or a refund. A limited warranty implies less protection so read the warranty document carefully. Also, compare how long the warranty periods last for similar products and what is covered under the warranty.

\* Compare energy labels on appliances. New federal rulings require seven types of major appliances manufactured after May 1980 to bear energy-cost labels to help comparison shoppers. Freezers, water heaters and refrigerators have labels that tell what the average energy cost of that model will be. The label also compares average costs with other models of the same size. Dishwashers and clothes washers include similar information but energy prices are also based on whether a gas or electric water heater is used. Room air conditioners and furnaces use energy efficiency ratings (EER). The higher the EER, the more energy efficient the product.

\* Save your receipts. Warranties require proof of ownership and a receipt is the quickest way to establish this. Refund policies should appear on your receipt, and the receipt may also be necessary to make any needed gift exchanges.

\* \* \*

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Kitchen Ventilation Systems -- Opening windows will remove odors and smoke from range top cooking, but kitchen ventilation systems are becoming increasingly popular for their ability to clear kitchen air.

Wanda Olson, extension household equipment specialist at the University of Minnesota, says barbecue or grilling units require high capacity ventilation systems that are ducted to the outside. Mechanical ventilation systems (kitchen fans) use filters to remove odors and smoke. Such systems remove heat and moisture and can be helpful in controlling moisture levels in well insulated and weather-stripped homes. Some new ducted systems have a fresh air intake and a heat exchanger so that little heat is lost.

Surface or down draft systems are located on the range top or they may fit along the back of the range top. Hood fans may be of the traditional shape or the new shelf shape, installed over the cooking surface. Hood fans can also be combined with an oven. The height at which the hood is placed depends upon the depth of the hood. Clearance space between the bottom of the hood and the surface units or burners must be sufficient so that the user can easily use the back units or burners and any controls on the back of the range.

Hoods 18 inches or more in depth should be placed 24 inches above the surface units or burners. Cook top heights are often 36 inches but can be lowered for built-in or drop-in ranges. If the intended user is short, lower the cook top. This is particularly important if the user plans to use a hood shelf fan with a microwave oven on the shelf.

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Induction Range Tops are Cooking News -- Although microwave cooking is a notable exception, most cooking involves the transfer of heat from an electric element or a gas burner. Now induction range tops provide a new variation, according to Wanda Olson, extension household equipment specialist

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at the University of Minnesota. Such range tops have induction coils located under a glass ceramic surface. When this unit is on, heat is created in the cooking pan rather than on the range surface. Pans must be of steel or iron. Steel pans with aluminum or copper bottoms will not heat well, but those with aluminum or copper cores will heat. Iron or steel pans may have an exterior finish such as porcelain or a non-stick interior without interfering with heating.

Mrs. Olson says induction heating is fast and even, but pans become very hot so low settings are sometimes needed to prevent scorching of sensitive foods.

How does induction work? Alternating current flows through the induction coils and the changing magnetic field over the coil induces a current in the bottom of the pan. Copper and aluminum pans don't work well because these metals are such good conductors of electricity. No heating occurs in glass or ceramic pans because these materials have such a high resistance to current that very little or no current flows.

The glass ceramic surface on induction range tops is easy to clean because the surface doesn't reach the same high temperature as in conventional smooth-top ranges. It will become hot, however, as heat is transferred from the hot cooking pan to the glass ceramic surface.

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#### CHRISTMAS GIFT IDEA FOR A PORK PRODUCER

Are you stumped for Christmas gift ideas for a hog producing friend or relative? The "perfect gift" for your husband or father could be the Pork Industry Handbook, says Chuck Christians, animal scientist with the University of Minnesota's Agricultural Extension Service.

"This book has the latest research information in a practical format for hog producers" says Christians. It has sections on production systems, breeding and genetics, reproduction, nutrition, management, housing, waste management, marketing, pork and pork quality.

The book is available from the Bulletin Room, University of Minnesota, St. Paul 55108. Cost is \$18.72, which includes sales tax. Make checks payable to the University of Minnesota.

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