

news

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

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MEDIA NEWS PACKET

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Joanne L. Slavin, 612/376-8748
Writer: Louise Jones, 612/373-1785

DIETING? DON'T IGNORE DAIRY FOODS

Dairy foods can be an important ally in the battle to lose weight, but they could also undermine your efforts. It all depends on which dairy foods you use, according to Joanne Slavin, extension nutritionist with the University of Minnesota's Agricultural Extension Service.

"If you're trying to lose weight, it's important to cut out fat and to avoid empty calories," Slavin points out. "You can do both if you eat low fat dairy products."

Slavin cites skim milk as an excellent diet food. "It has a high nutrient density, which means that for 90 calories per cup you get a lot of nutrients, particularly calcium, vitamins A and D, and protein."

Other recommended dairy foods for people on diets include yogurt, cottage cheese and buttermilk. But when using yogurt or cottage cheese, make sure they're made from low fat milk. "Foods high in fat will be high in calories," Slavin warns. She also recommends buying unsweetened yogurt, which has about 85 fewer calories per cup than the fruit-flavored kind. "You can add your own fruit or a little sugar to the yogurt and still save on calories," Slavin notes.

One of the most popular dairy foods, especially in the summer, is ice cream. But, because of the high fat content, Slavin does not recommend it for dieters.

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add one--dieting?

"Ice milk would be a suitable substitute," she says. "A half-cup serving of ice milk contains 100 calories, compared with 160 calories for ice cream. It has the same calcium and protein as ice cream, but less fat."

When buying cheese, look for cheeses made from partially skimmed milk. One ounce of cheddar contains 114 calories, whereas one ounce of mozzarella made from partially skimmed milk contains only 72 calories, about one-third less than cheddar.

Certain dairy foods should be avoided if you're on a diet, Slavin advises. These include sour cream, cream cheese and butter. "Their high fat content and low nutrient value make them poor choices for a diet," she explains. "In fact, even if you're not on a diet, it's a good idea to cut back on your intake of saturated fats. That means cutting back on butter, whole milk and most cheeses."

One of the dangers of dieting is going on a "fad" diet that eliminates certain categories of food entirely. "If you completely eliminate dairy products, you are cutting off a major source of calcium," Slavin warns. Fad diets usually don't work, according to Slavin, because they are temporary and don't change basic eating habits. "It would be better to get in the habit of cutting out fats and eating nutrient-rich foods such as low fat milk products," she says.

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St. Paul, Minnesota 55108

May 7, 1982

Contact: Mary Darling, 612/376-4663
Writer: Lisa Ringhofer, 612/373-1686

AMERICANS AVOIDING MILK AT PERIL TO HEALTH

It's noon and you're getting ready to eat lunch. What are you going to drink with your meal? Some type of juice, a soft drink or milk? Chances are you're going to choose something other than milk. . . . Americans are steadily decreasing the amount of milk they consume.

This gradual decline probably results from competition with other beverages. Citrus juice consumption has nearly doubled, soft drink consumption nearly tripled, since 1960, according to Food Situation and Review magazine.

Milk provides generous amounts of nutrients for which there are recommended dietary allowances (RDA). Milk contains calcium, riboflavin, protein, vitamins A, B₆, B₁₂ and is fortified with vitamin D," says Mary Darling, extension nutritionist at the University of Minnesota.

Soft drink consumption has increased rapidly from 13.6 gallons per person in 1960 to 37.5 gallons per person in 1979, the most recent year for which data are available.

Darling contributes this increase mainly to the convenience of carbonated and canned beverages. Soft drinks can be stored at room temperature until drinking, she says. This isn't true of the highly perishable nature of milk, she adds.

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add one--milk

This trend is reinforced by an advertising age that portrays soft drink consumers as young, happy and healthy.

The shift to carbonated beverages probably isn't due to the amount of calories in milk, explains Darling. "Twelve ounces of skim milk is quite comparable to a 12-ounce soft drink caloriewise," she adds.

"There is an attitude that prevails among adults that they don't need milk because they're done growing," says Darling. This just isn't true. "We need calcium and vitamin D to maintain the density of our bones." In addition, a small amount of calcium is used for nerve/muscle regulation. Our bodies will leach this nutrient out of our bones if we don't maintain sufficient calcium intake, she cautions. The result is the weakening of bones, known as osteoporosis.

Milk is an excellent source of two essential nutrients, calcium and riboflavin, says Darling. The adult RDAs for calcium and riboflavin are 800 milligrams calcium and 1.2-1.6 milligrams riboflavin for women and men, respectively. For children, the RDA for calcium is 800 milligrams and 1,200 milligrams for teenagers. The RDA for riboflavin for children and teenagers ranges from 0.8 to 1.7 milligrams each day.

Although the amounts of cheese and yogurt we eat has risen at a trend rate of 4.3 percent per year since 1960, this does not compensate for decreased milk consumption, says Darling. "Milk is the best source of calcium and the only food fortified with vitamin D," she says . . . essential for the normal formation of bones and teeth. Vitamin D prevents rickets in children and plays a role in the retardation of osteoporosis in adults.

But calcium and riboflavin can be found in other dairy products such as lowfat milk, skim milk, evaporated milk, buttermilk, yogurt, ice cream, ice milk, cottage cheese and other cheese products. Skim, nonfat and low fat milk

add two--milk

and milk products provide these important nutrients and keep fat intake down. They are recommended in the USDA-HHS dietary guidelines to keep fat content minimal.

One serving of food from the dairy group averages .4 milligrams riboflavin and 288 milligrams calcium. One serving is equivalent to one cup (8 ounces) milk, one cup yogurt, 1 1/3 ounces cheddar or Swiss cheese, 2 ounces processed cheese food, 1 1/2 cups ice cream or ice milk and two cups cottage cheese.

Adults, especially women, should have at least two servings per day. Children under nine years old, 2-3 per day; children 9-12 years and pregnant women, 3 per day; and teens and nursing mothers, 4 per day.

"Some researchers feel that older women need 1,200-1,500 milligrams of calcium per day to retard development of osteoporosis," says Darling. They don't usually consume enough milk to get that much calcium, but any amount helps, she adds.

"It isn't true that you don't need milk when you're an adult," says Darling. We need its nutrients to keep our bones and teeth from premature aging, weakening, and spontaneous fractures.

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May 7, 1982

Source: Vern Packard, 612/373-1075
Writer: Jennifer Obst, 612/373-1579

GETTING A TASTE FOR CHEESE

Over half the milk produced in Minnesota goes into cheese production. In 1980, Minnesota produced 9½ billion pounds of milk. Five billion pounds of it went into cheese production. That is an indication of how much we are acquiring a taste for cheese.

But in keeping with sensible, conservative midwestern traditions, we do not favor a large number of fancy varieties. No Gruyere or Limburger here; although Minnesota processors produce some blue cheese, some Camembert and Gouda, the bulk of Minnesota cheese is cheddar or cheese for processing--great for cheeseburgers and macaroni and cheese.

In 1980 Minnesota produced over 333 million pounds of cheddar, says Vern Packard, dairy products specialist with the University of Minnesota's Agricultural Extension Service. "Our other main effort is processed cheese," he says. We also produced 21 million pounds of mozzarella--enough to top a lot of pizzas.

Our tastes in cheeses may not be fancy, but our appetites are improving. "In 1960 each person was consuming 5.3 pounds of cheese. By 1970 that amount had grown to 6.8 pounds. That's not a great leap, but it is an indication of a steady trend. By 1980 each person was consuming 9.1 pounds of cheese," Packard says.

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add one--cheese

And what is the reason for this growth in popularity? "Cheeses are sold because people get a taste for them," he says.

Higher prices of other protein sources may also contribute. "To some extent, if meat prices are high, people find cheese is a good substitute for meat. So any condition that puts meat products in a price range that makes consumers have to think twice about buying would tend to increase cheese consumption," he says.

But he adds, "Of course, cheese prices aren't that low either." However, cheese is quite filling, so a little bit goes a long way.

"There is a consumers' trend now toward preferring low fat milk and dairy products," Packard says. This increased diet-consciousness attracts more interest in new cheese products such as low fat and low sodium cheese. "I would say that as time goes by and new technology improves, you will probably see a larger amount of low fat cheese being made," he says.

For the same reason, Packard sees the increasing popularity of processed cheeses. "Because they have a higher moisture content than hard cheese they also have a lower fat content."

Another reason for processed cheeses' increasing popularity is the fact that they are a little easier to handle. "They're easier for the processor because a long curing process is not needed to get a highly flavorful product," he says. And consumers like them because they come in good consumer-size units and will last a long time in the refrigerator.

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May 7, 1982

Source: Vern Packard, 612/373-1075
Writer: Jennifer Obst, 612/373-1579

FOR EVERY POUND OF CHEESE . . .

Ten pounds of milk yield one pound of cheese and nine pounds of whey. This simple math is of great importance to the cheese producer. Since more than five billion pounds of milk go into cheese production in Minnesota each year, that all adds up to a lot of whey. The cheese producer's challenge is to use both the curds and the whey.

"So anything that enhances whey utilization is of value to the industry," says Vern Packard, dairy products specialist with the University of Minnesota's Agricultural Extension Service. "There is a lot of research going on right now to develop new uses."

According to Packard, whey has a lot of potential. "Whey is a source of excellent quality protein," he says. "There are two major categories of protein in milk--casein and whey proteins--and of the two, whey is higher in nutritional quality."

Whey is used like skim milk as an ingredient in foods, such as cake mixes. "The uses of whey are really many when you think of all the products that are processed with some kind of milk solids," Packard says.

"Lactose which is extracted from whey is used to coat pills. Some lactose is also being converted to alcohol and then used to make gasohol," he says.

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add one--pound of cheese

Whey is also being converted to a concentrated form by means of a new technology--a process called ultrafiltration.

"Ultrafiltration is nothing more than passing the whey through a membrane system which permits the removal of lactose and certain mineral components but retains the protein, so the end product is a concentrate of the protein," he says.

"These proteins then can be processed to exhibit certain properties that might be valuable. For example, one could substitute some whey protein for egg albumin in a product requiring its whipping qualities, he says.

"All of whey's potential has not yet been tapped," Packard believes. "Right now there is more whey than the market can bear. That which is not used in food for humans becomes animal feed," he says. The whey may be dried and processed for that specific use, or farmers who are close to a cheese plant may feed the liquid whey to livestock. A lot of whey goes into calf-feeding replacers.

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St. Paul, Minnesota 55108

May 7, 1982

Source: Martin Christiansen, 612/376-3436
Writer: Mary Kay O'Hearn, 612/373-1786

U.S. FOOD, MILK COSTS LOWER THAN MOST

Based on today's \$3.35 minimum wage, it takes just about 20 minutes to earn the cost of a half gallon of Grade A whole milk (\$1.13, according to U.S. Department of Agriculture figures).

Food costs in the United States still take a smaller toll of the earning working dollar when compared with other countries. Dairy products have not risen in percentage costs as much as all food costs, according to Martin Christiansen, agricultural economist with the University of Minnesota's Agricultural Extension Service.

Referring to 1982 figures in the Dairy Outlook and Situation of the USDA, Christiansen points out that when the Consumer Price Index rose 182 percent (from 1967 to January 1982) the increase for all foods was 181 percent and for dairy products, 145 percent.

Fresh whole milk increased from a retail price of \$1.10 a half gallon in January 1981 to \$1.13 average in January 1982. The retail price of the half gallon rose nearly 92 percent from 1972 to 1981 (from 58 cents to \$1.13). During the same time, the farmer received 110 percent more for the half gallon--up from 29 cents to nearly 62 cents.

In 1960, U.S. consumers spent 20 cents of every earned dollar on food. In 1978 that figure was 14 cents and by 1981 it had risen to 16 cents. Foreign cost

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add one--milk costs

comparisons, according to the latest (1978) figures in USDA's 1981 Chart Book reveal that when the U.S. consumer was spending that 14 cents, Canada was spending 16 cents, the Netherlands 18 cents, United Kingdom 19 cents, Denmark and France and Switzerland 20 cents each, and West Germany 22 cents. During the same year, Koreans spent 45 cents of each dollar on food and residents of the Philippine Islands spent 59 cents.

U.S. dairying has not operated in a free market situation (supply and demand affecting the price) since 1949 when the United States began its price supports, Christiansen explains. Right now dairying is probably the most profitable phase of farming largely due to the government price support program. "It is less volatile than any farming commodity," he says when comparing milk prices with the shifting farm prices in many commodities.

Commodity Credit Corporation (the government agency that buys butter, nonfat dry milk and cheese to implement the price support program) made nearly \$2 billion in purchases of 12 billion milk equivalent pounds in 1981. This was a 50 percent increase over 1980. USDA estimates it may pick up the bill for between 11 and 16 billion milk equivalent pounds in 1982.

The support price has varied between 75 and 90 percent of parity, parity referring to the calculated price given to a commodity such as milk, so that 100 pounds has the same purchasing power in today's terms as it did in the 1910-14 base period. It will be 73 percent of parity until September 30, 1982, and future price supports are expected to be decided on a year-to-year basis.

Minnesota is one of the top five milk producing states--together with Wisconsin, California, New York and Pennsylvania. Wisconsin is first and has 44,000 dairy operations and Minnesota is fourth with 26,000.

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May 7, 1982

Source: Vern Packard, 612/373-1075
Writer: Lisa Ringhofer, 612/373-1686

DAIRY PRODUCTS HIGHLY PERISHABLE

Proper storage of dairy products is essential to maintain their high quality and prevent unnecessary waste. They won't retain their original textural appeal and flavor unless consumed within a specified time. In addition, dairy products are highly susceptible to absorbing off-flavors and odors from other foods during refrigeration.

"Certain storage particulars must be followed to keep dairy products uncontaminated and fresh-tasting," says Vern Packard, extension dairy scientist at the University of Minnesota.

MILK

Milk readily absorbs odors and flavors from other foods, so keep milk containers closed and in a clean, odor-free compartment of your refrigerator, says Packard. Refrigerate milk immediately after purchase and after each use, he adds.

Around 36 degrees F is good, but the closer you come to freezing (without actually freezing), the longer the shelf life of the milk. This is simply because the bacteria that cause milk to sour grow slower at cooler temperatures.

If milk accidentally freezes, you don't have to throw it out, says Packard. You'll see little flecks on the side of the glass, but that's just the result

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add one--perishables

of some protein clumping. The milk is still healthful to drink. Packard recommends thawing frozen milk quickly by immersing the container in 100 degrees F water.

But don't buy large quantities of milk for freezing. It just isn't necessary in this dairy region, says Packard.

"If you need to keep considerable quantities of milk on hand, I suggest purchasing non-fat dry milk," says Packard. Some object to the "cooked-flavor" of powdered milk. If this is a problem, mix up the dry milk and add an equal amount of fresh milk, he advises. Non-fat dry milk can be stored up to a year under cool, dry conditions without any loss of flavor.

And don't pour unused milk from drinking glasses back into the container, cautions Packard. "This spreads bacteria from mouths to the remaining milk," he adds. Store evaporated and condensed milk at room temperatures until opened, then cover tightly and refrigerate like fresh fluid milk.

Since all milk should be used within two weeks after purchase, stock only a two-week supply.

ICE CREAM

"Most home freezer compartments aren't cold enough for prolonged ice cream storage," says Packard. Since home freezers are generally about minus 10 degrees F, ice cream can be held only for normal periods of usage, usually one to two weeks without major loss of textural characteristics. Ice crystallization may result from longer storage times. So buy only those size lots of ice cream that your family can consume in two weeks or less.

If you have a large chest-type freezer, you can keep ice cream for one to two months at minus 20 to 30 degrees F with little or no textural loss. If your ice cream isn't "brick" hard right out of the freezer, your temperature is probably above the recommended level to keep ice cream for these longer periods of time.

add two--perishables

CHEESE

"Simply refrigerating cheese at 35-40 degrees F will maintain the good condition of this dairy product for about two to three weeks," says Packard. Cheese will dry out if the original overwrap is removed and you don't keep it tightly covered in a moisture-resistant wrap, he adds. Purchase only what you can consume in about three weeks unless you plan to freeze some.

Cheddar, Gouda, and Swiss cheeses can be frozen. "They will lose something in texture, but will not deteriorate in flavor," says Packard. For example, thawed cheese may be slightly drier and crumbly, but doesn't lose meltability. Don't freeze soft cheeses, advises Packard. They will deteriorate rapidly in texture and whey will separate out.

Some cheese may become moldy as a result of contamination. "The risk that lightly moldy cheese isn't safe to eat is exceedingly small," says Packard. Just scrape the mold off . . . it doesn't penetrate the cheese to any great extent.

BUTTER

Although butter is best kept at refrigeration temperatures, it will keep up to nine months or longer in the freezer.

Only pound lots should be purchased for ordinary home use. Store at 40 degrees F or less if possible.

If you want some butter spreadable, allow only a one to two day supply to become soft at room temperature. Make sure this butter is always covered. "Off-flavors may develop if large amounts are allowed to stand for more than a couple of days," Packard says.

Yogurt, cottage cheese, buttermilk and sour cream should be kept no more than two to three weeks after the original seal is broken, says Packard.

"Code dates on containers are reasonable time frames," says Packard. Most dairy products will still be usable about four to five days beyond that time, he adds. It's a good idea to sniff products as most off-flavors are readily detectable by off-odors. If it looks and smells good, it will likely taste good.

Just remember the three C's of dairy product care--keep things clean, covered and cold.

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May 7, 1982

Source: James L. Bowyer. 612/373-1210
Writer: Jennifer Obst, 612/373-1579

RESEARCH SUGGESTS BETTER USE FOR THE BALSAM FIR

The spruce budworm may not be as notorious a tree pest as the Dutch elm beetle, but potentially, it's every bit as dangerous. Its favorite target is the balsam fir.

Since 1979 University of Minnesota forest products scientists have been looking at the problem to see if there isn't a way to make better use of balsam fir, one of our least used softwood species, and at the same time stymie the spread of the spruce budworm.

Research has shown that balsam fir has potential for dimensional lumber. As a homegrown source, it could help reduce Minnesota's reliance on Canadian softwoods, Douglas fir from the Pacific Northwest and the southern pine.

"Despite the fact that balsam fir has long found wide usage in Canada and the northeastern U.S., it basically isn't being used locally and there are a couple of reasons why," says James L. Bowyer, forest products researcher. "One is that the diameter of Lake States fir is relatively small. Another is the amount of pitch in balsam fir, resulting in sawmill operators' preference for other species. And I suppose another thing going against balsam fir is just tradition. Local people haven't used it, and there is a reluctance to change."

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add one--balsam fir

To see if there was good reason for those prejudices to change, the scientists first examined more than 2,500 logs in a log concentration yard that were from trees that had been felled for pulpwood. "We figured that what was in the log yard was a good representation of what was in the forest," Bowyer says.

More than 50 percent of the pulpwood logs were found to be of sawlog size and quality. More than half the volume in log diameter classes of eight inches and larger, and about two-thirds the volume of randomly selected logs were completely free of defects.

A representative sample of logs were sawed into two-dimensional lumber sizes--two-by-fours and two-by-sixes--then graded by a certified lumber grader. They were then tested for strength.

The tests revealed that the old published strength values for wood had been underestimated, and that may be part of the reason why balsam fir has not been used to its full potential. "The original strength values were based on tests of a very small number of trees," Bowyer says. "We're finding these values need to be upgraded."

The intent of the research was not just to find a way to use healthy balsam fir, but also to find if budworm-infected, or even budworm-killed trees might also be usable. "Our data indicate that one-year dead trees can still be converted to lumber. But anything dead over two years generally has deteriorated too much to be usable," Bowyer says.

Right now the northeastern portion of the continent, including Minnesota, is experiencing an epidemic of the budworm. In Minnesota, more than 100,000 acres of spruce-fir forest types were defoliated each year between 1968 and 1976, and the budworm shows no sign of stopping.

add two--balsam fir

As the budworm feeds on the foliage of balsam firs, the crowns of the trees become gray, grow thin and eventually the trees die. After that comes decay. "But there is a lot of time with this disease; the trees don't die overnight," Bowyer says. "The best thing to do to control the budworm is to harvest any stand with lumber potential that becomes infected or is threatened with immediate attack."

Right now, only 10 million cubic feet of balsam fir is harvested each year in Minnesota, and most of that is for pulpwood. Since more than half of the state's commercial forest land is publicly owned, this under-utilization represents a large loss in potential public revenue.

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May 7, 1982

Source: Jonathan E. Wheaton, 612/376-5674
Writer: Sam Brungardt, 612/376-8182

RESEARCHER FINDS WAY TO GET EWES TO BREED OUT OF SEASON

For greater profit, sheep producers would like nothing more than to wean more lambs per ewe. Incorporating Finnsheep blood into the ewe flock can increase the number of lambs per lambing, but another way to get more lambs per ewe might be to shorten the interval between lambings, says Jon Wheaton, a reproductive physiologist with the University of Minnesota Agricultural Experiment Station.

Wheaton has found a way to bring ewes of breeds that normally come into estrus (heat) from mid-August to mid-February into heat out of season, increasing the likelihood that producers will someday be able to take advantage of the superior meat qualities of these breeds and still wean more lambs.

Normally, ewes of popular meat breeds such as the Suffolk, Hampshire and Columbia come into estrus only when short days stimulate the complex chain of nervous and hormonal reactions that leads to ovulation. Without a way to bypass this photoperiod requirement, producers must be content with only one lamb crop per year.

Wheaton has found that he can get Suffolk ewes to cycle out of season by treating them with hormones that occur naturally in sheep. The problem now, he says, is an engineering one--developing an inexpensive mechanism to replace the

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add one--ewes

time- and labor-consuming method he currently must use.

Wheaton's method consists of pretreating ewes with progesterone (applied either subcutaneously by a rubber implant or by a pessary, a piece of sponge soaked in a solution containing progesterone that is inserted in the vagina). This is followed by a series of injections of gonadotropin-releasing hormone (GnRH), which causes the pituitary to release luteinizing hormone in a series of pulses.

"Animals we treated with the right dose and at the right intervals came into heat, ovulated, and produced a corpus luteum," Wheaton says. "We have learned a lot about the endocrinology of the ewe, and perhaps this same information could be applied to other species."

But the drawback, he says, is that the ewes must be given a series of injections of GnRH without interruption every three hours for two days. While this can be done experimentally, it is impractical commercially.

Wheaton says that one way to eliminate the labor-intensive injections would be to develop a hormone-carrying device that could be implanted under a ewe's skin. This might be made, he speculates, of layers of semipermeable material coated with GnRH. As each layer of semipermeable material would dissolve, a pulse of GnRH would be released into the animal's bloodstream.

Wheaton intends to use the same treatment on cattle and swine. Cows undergo postparturition anestrus and sows, lactational anestrus.

"When you apply the method to cows or sows, which produce either more valuable offspring or many more offspring than ewes, then treatment might be feasible," he says.

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May 7, 1982

Source: Jim Linn, 612/373-1014
Writer: Jack Sperbeck, 612/373-0715

FORAGE QUALITY WILL BECOME MORE IMPORTANT

Growing and harvesting top quality forage will become even more important for dairy farmers. The reason is the ever-familiar cost squeeze, says Jim Linn, dairy specialist with the University of Minnesota's Agricultural Extension Service.

"As world population continues to grow, demand for American grain for food will grow," Linn says. "Exports and processing of grain into sugar and other products will increase grain prices. This means that tomorrow's dairy producer will rely more on forages to supply the nutrients necessary for milk production," Linn says.

Early cut forages can sustain 45 to 50 pounds of milk production with little or no grain. But late cut, mature forages require 25 percent to 35 percent grain in the diet. "This means feed costs increase by 40 percent or more to achieve the same production level," Linn says.

"In many diets--especially with high producing cows--grain can't substitute for the detrimental effects of low quality forages," he adds.

Getting maximum use of forage in dairy cattle rations involves two main factors--intake and digestibility. With alfalfa or grasses, both of these factors are directly related to forage maturity at harvest.

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add one--forage quality

As you delay harvest and maturity increases, intake and digestibility decline and ability of alfalfa or grasses to support milk production is reduced. And the same problem results with corn silage when harvest is delayed beyond physiological maturity.

Intake of a forage is directly related to its cell wall content, Linn says. Alfalfa and other legumes are lower in cell walls and have a higher intake potential than grasses or corn silage.

Two things happen as cell wall contents of forages decrease:

--You can substitute more forage for grain in the ration.

--Forage dry matter digestibility increases.

"As grain and other production costs increase, forage quality becomes more important," Linn says. "This means you can't afford to lose dollar value of forages by delaying harvest," he adds.

"It costs little if any more to harvest top quality forages compared to low quality forages. Low quality forage means extra costs for grains and other feeds to compensate for nutrient loss.

"The most economical route is to test forages so you know what the nutrient content is. Then purchase feeds to supplement any deficiencies," Linn says.

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May 7, 1982

Sources: George Marx, 218/281-6510
John Donker, 612/373-1110
Writer: Sam Brungardt, 612/376-8182

MINNESOTA RESEARCH FINDS SMALLER DAIRY COWS MORE EFFICIENT

Bigger isn't necessarily better when it comes to dairy cows, researchers with the University of Minnesota Agricultural Experiment Station have found. In fact, data collected from a Holstein herd in which two lines--one of large animals, the other of small--have been developed at the Northwest Experiment Station, Crookston, show that smaller cows are, on the average, 4.5 percent more efficient in producing milk.

Animal scientist George Marx, who manages the Crookston herd, says the two lines were developed over the past 16 years by using small and large sires on the herd's cows, which were originally medium size. Each year, he has mated small sires with small cows and large sires with large cows.

"Sires are selected on the basis of their size, particularly their stature, and their ability to transmit their size to their offspring," Marx says. "We also pick bulls with a high predicted difference for milk production. There are now about 30 sires from studs throughout the United States represented in the 68 cows in our herd."

Animals of the two lines have become progressively smaller or larger with each generation. Last year, male and female calves from small sires averaged 92.6 and 82.2 pounds at birth, respectively, while those from large sires weighed an

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add one--small dairy cows

average of 95.2 and 89.3 pounds. Cows of the small line weighed an average of 1,157 pounds at the beginning of their second lactation; those of the large line, 1,257 pounds.

Marx and fellow animal scientist John Donker have measured the feed conversions of the cows in the two size groups over 248 lactations. They have obtained feed conversion data for three feeding ratios of grain--a pound of grain for every 5 pounds, 3 pounds, or 1.5 pounds of milk produced daily in excess of 20 pounds.

Each cow remained on the same grain-to-milk ratio for both of her first two lactations and all cows received the same feedstuffs, rolled or coarse-ground grain and corn silage or haylage. Forage was fed to appetite, and forage and grain were weighed individually for each cow at every feeding.

Donker and Marx report that the small cows consumed an average of about 39 pounds of feed daily, or 3.4 percent of their body weight. On the average, the large cows ate almost 41 pounds of feed per day, 3.2 percent of their body weight. Cows of both size groups ate less forage and produced more milk as more grain was fed.

The average proportion of grain in the dry matter fed for the low-, medium- and high-grain groups was 12.2, 20.3 and 37.1 percent. The dry matter consumed for the same feeding regimens was 39.2, 40.1 and 40.1 pounds per cow per day. Total digestible nutrient (TDN) content of the dry matter in the total ration was 60.7, 62.5 and 66.2 percent for the low-, medium- and high-grain treatments.

With both large and small cows, milk yield showed the effect of diminishing returns. The average increase in fat-corrected milk (FCM) per pound of added grain was 0.90 pound for the change from low- to medium-grain levels, and 0.22 pound between the medium- and high-grain levels. Cows fed the medium level of grain have been the most efficient in the use of net energy for milk.

add two--small cows

The researchers report that the average daily production for the small and large cows was 43.9 and 44.1 pounds of milk or 43.9 and 43.4 pounds FCM, respectively. This is 3.8 pounds FCM per 100 pounds of body weight for the small cows and 3.5 pounds for the large cows.

On the average, the small cows used 0.58 pounds TDN to produce a pound of FCM, compared to 0.60 pounds TDN for the large cows. So far, the small cows have been 4.5 percent more efficient than the large cows in converting feedstuffs to milk, the researchers calculate.

Marx theorizes that most of the difference in efficiency of feed conversion is due to the large cows' need for more feed for growth and body maintenance.

"There are some good, highly efficient large cows and some good, highly efficient small cows in our herd," he says, "and there's quite a bit of variation among cows in each size group as far as efficiency is concerned."

Marx points out that smaller cows can have some disadvantages--lower salvage values, for example, as well as problems in keeping stalls designed for larger animals clean. And, he has noticed quite a difference in how steers from the two size groups finish.

"Steers from our herd's large cows usually finish at about 1,300 pounds, while those from the small cows finish at about 1,100 pounds," he says. "And, it takes about two months longer to feed the large steers to finish."

Donker says one of the long-term objectives of the research is to compare the useful productive life of small and large cows. "We ultimately would like to find out how well cows of each size wear," he says. "It may be that a more efficient small cow will not remain in good health and productive as long as a larger cow."

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Sources: Jim Kitts, 612/373-1016
Deborah Brown, 612/376-7574
Writer: Deedee Nagy, 612/373-1781

BEWARE OF CLAIMS FOR WONDER PLANTS SUCH AS GOPHER PURGE

If you have been tempted by recent advertisements for a plant known as Gopher Purge (Euphorbia lathyris), remember that claims for plants that seem too good to be true, often aren't true.

This is the advice of Jim Kitts, extension wildlife and fisheries specialist, and Deborah Brown, extension horticulturist, both at the University of Minnesota. They say the plant has been promoted as something that will keep burrowing rodents such as moles and pocket gophers from disturbing the garden or yard.

They note that there is no research that documents any relationship between Euphorbia lathyris and burrowing rodents. They do not recommend the plant either as an ornamental or a rodent repeller.

Some animals will ignore certain types of plants either because of the animals' feeding habits or the toxic nature of the plants. Kitts and Brown add, however, "We know of no research where animals are actually repelled from an area merely by the presence of toxic plants. Furthermore, moles are basically insect eaters and consume only about 2 percent plant material. Of that 2 percent, most of it is incidental to their capture of prey. Since moles are not herbivores there is little likelihood that this plant would repel them."

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add one--gopher purge

They caution homeowners that most startling claims made for plants bear a closer look. Usually such performance, if it occurs at all, is not possible in our climate. Other commonly promoted wonder plants that have little merit include climbing strawberries, zoysia grass plugs, vine peaches, tree tomatoes and various rapid-growth trees.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

COUNTY NEWS PACKET

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University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Ron Pitzer, 612/376-3851
Writer: Deedee Nagy, 612/373-1781

CAN'T AFFORD A VACATION? MAYBE YOU CAN'T AFFORD NOT TO TAKE ONE

Vacations aren't luxuries. In these fast-paced and stressful times, they may be necessary investments in our mental health and general well-being.

Ronald Pitzer, extension family life specialist at the University of Minnesota, says vacations provide more than a chance to visit relatives or catch a few fish. Vacations allow us to recharge both mentally and physically.

He lists a number of reasons why vacations should be "musts" on the list for families and individuals.

* To live longer and enjoy better health. Pitzer says, "How often have you heard 'He just worked himself too hard' as a final tribute to someone? Think how much better it would be if the person had known how to pace himself or herself. There's a time when we all need to retreat from work and give irritated nerves a chance to settle down."

* To provide a change of pace. Whether vacations involve elaborate trips or simple stay-at-home periods, Pitzer says they should be a complete break from the routine. He suggests for the person whose job requires mental activity, something physical; for the person who deals with people daily, some solitude; for the person constantly ruled by deadlines and the calendar, some unstructured days.

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add one--can't afford vacations

* To do a better job upon return. As many as one-sixth of the persons entitled to vacations from their jobs never take them. Pitzer says vacation skippers are more likely to make errors, to be irritable with co-workers or to feel self-righteous about staying on the job while others were off. "Sometimes such a person forgets that productivity isn't measured by hours on the job," Pitzer adds.

* To maintain closeness among family members. "Some vacation time with the whole family strengthens family unity, but equally important is the chance for husband and wife to have time alone together," Pitzer says. "During the busy child-rearing years, their time together is often spent in details of managing a household. Yet most married couples can expect to spend 20 years together after the last child leaves home."

* To prepare for leisure time to come. Pitzer says that for the work addict, the idea of retirement is often frightening. "Yet, for those whose vacations have been rich in experiences, who know how to live a full life outside the world of work, these will be good years, perhaps the very best."

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University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Ron Pitzer, 612/376-3851
Writer: Deedee Nagy, 612/373-1781

THERE ARE WAYS TO AVOID COMMON VACATION PITFALLS

Fatigue, expenses and unrealistically high expectations can turn a seemingly ideal vacation into a nightmare, but these are avoidable says Ronald Pitzer, extension family life specialist at the University of Minnesota.

He says one of the first steps is to be sure that everyone is happy with the vacation plans. "It's important to resist the spouse or child who says, 'you decide where to go.'" Pitzer says. "If only one person is seen as responsible for the decision, that person will get blamed for the weather, the mosquitoes, bad meals and noisy motels. Make everyone responsible for the trip -- and equally to blame."

He suggests staging rehearsals if the vacation will involve new duties. If you are going camping, pitch a tent in the backyard and sleep in it. Cook some meals over a campfire. "Be sure that every member of the family has chores to perform and understands what he or she is getting into," Pitzer urges.

He also recommends making a trip seem as much like home as possible, particularly for children. Take along some familiar and comforting objects and try to keep daily routines for meals, naps and bedtimes.

Sadly, Pitzer says, some vacations fail because people try too hard. They may go at vacations with the same intensity they devote to their jobs.

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add one--vacation pitfalls

To avoid this kind of tension, Pitzer suggests planning shorter trips, driving fewer miles and making the trip less taxing. "Above all, preplan your stops so you know each day where you will stay. Is there anything more discouraging than a fruitless search for a motel room when everyone is exhausted after a long day's drive?"

He says it's important to know what people are seeking for their vacation days. One spouse may be fed up with cooking. If that's the case, the other spouse should be prepared to pitch in or to plan restaurant meals.

A person who is tired of daily commuting may opt to sit on the beach, reading and dozing. If this is the situation, other family members should be prepared to go sightseeing without that person along, Pitzer suggests.

Vacations at home can be among the most relaxing and creative, he adds. "The trick is to fill your days with new activities. Ask yourself, 'If we lived far away and came here for a vacation, what would we most want to see and do?' Then go see them and do them."

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May 7, 1982

Source: Ronald Pitzer, 612/376-3851

Editor: Deedee Nagy, 612/373-1781

SUMMER SUN BRIEFS

The outdoor play season is now in full swing. Swings, in fact, are a concern for Ronald Pitzer, extension family life specialist at the University of Minnesota. He suggests checking out outdoor play equipment to be certain that nuts and bolts are in place. Have they rusted to the point of breaking off? A little oil now could save big problems later. Your children are bigger and heavier this summer than last, so check to be sure the swing set is anchored so it won't topple with its weightier users.

If you don't have a swing set, consider using a tree or a car port roof beam for anchoring a swing. Many stores sell swings and chains or seats and rope. Fasten the chain or rope securely to the tree or roof beam. Check for obstacles that the child might hit as the swing goes higher and higher, Pitzer urges.

* * *

Hot weather calls out backyard wading pools. For all the cool fun that these provide, they can be dangerous. Ronald Pitzer, extension family life specialist at the University of Minnesota, cautions parents never to leave water in a small pool. Even a half-inch of water is enough for a small child to drown in. No child under six or seven should be left alone in a pool no matter how small the pool or how experienced the child is around water.

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* * *

Summer is the time to turn off the TV and put away the board games that have helped amuse children through the long winter. For young children, a sure favorite is a sandbox. Ronald Pitzer, extension family life specialist at the University of Minnesota, says that ready made sand boxes are often too small for an older preschooler. For a few dollars and the investment of a few hours of time, he suggests that you can make a sturdy one that will last longer than store-bought boxes. He says that two ten by ten boards will make a nice five foot square box. Service clubs sometimes sell sand to raise money or a contractor or hauler could also be a good source. A piece of plastic stretched over the box at night will keep the sand fairly dry, but he cautions parents to keep the plastic out of the reach of children to prevent accidents.

* * *

Children can share the fun and excitement of gardening. Ronald Pitzer, extension family life specialist at the University of Minnesota, suggests giving a junior gardener a few rapidly growing seeds such as radishes and lettuce. Mark off the child's garden space with stakes and a piece of string. "Make it clear that this is Susy's or Johnny's garden and that only Mommy and Daddy go into the other part of the garden," he says. "This is one way of avoiding the situation where a child pulls up vegetable sets, bedding plants or larger seeds, claiming to have 'found' what the parents 'lost' the night before in the garden."

He adds that gardeners who have young children around should be particularly certain to keep sprays, dusts and chemicals under lock and key. A young child might think that a caustic dust is nothing more than talcum powder.

* * *

It's maintenance time for tricycles and bicycles. Ronald Pitzer, extension family life specialist at the University of Minnesota, urges parents to check chains and pedals for wear and rust. Seats on both tricycles and bicycles may

add one--summer briefs

need adjusting if children have had a spurt of growth over the winter.

If you are planning to buy a tricycle or bicycle, check around the neighborhood or in newspaper ads first. Many people find good second hand tricycles and bicycles. Cleaned up and given a fresh coat of paint, many of them will serve as nicely as a new one that cost two or three times the amount.

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May 7, 1982

Source: Dottie Goss, 612/373-0914

Writer: Deedee Nagy, 612/373-1781

IRAs: BUILDING A NEST EGG FOR THE FUTURE

It's unusual to get through a day lately without hearing or reading at least one advertisement promoting the Individual Retirement Account (IRA). Dottie Goss, extension family resource management specialist at the University of Minnesota, reports that IRAs are big news and can be a big break for consumers. Anyone who earns income may contribute to an IRA without paying federal income taxes on the contribution until retirement, when most people are in a lower tax bracket.

Under the IRA act, you may invest in an IRA a maximum of \$2,000 or 100 percent of your taxable compensation for the year, whichever is less. If you have a nonworking spouse, the limit is raised to \$2,250. If both husband and wife are wage earners, each may contribute every year up to \$2,000 or 100 percent of their own compensation for the year, whichever is less.

Goss says if you are considering an IRA account, these are good points to keep in mind:

* Don't pin all your hopes for retirement on the promise that an IRA will make you a millionaire in 20 or 30 years. Goss says, "Many of those ads fail to mention that their millionaire predictions may be based on unrealistic assumptions. You would have to make maximum contributions consistently for a period of at least 30 years, while interest remained high. Even if the millionaire status materializes, \$1 million wouldn't be worth as much as it is today."

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add one--IRAs

* Many institutions offer IRA plans and they vary widely in interest rates, minimum deposit requirements, annual charges, transfer fees and withdrawal penalties. Investigate all the options carefully before opening an account. Generally, financial institutions offer government insurance while brokerage firms, which can provide greater flexibility and variety in investments, tend to be riskier.

* Your IRA investment may range from as little as \$5 (in some cases) up to \$2,000, and you do not have to make regular payments. You may wait until you file your 1982 tax return in 1983 before opening an IRA and still qualify for a 1982 tax deduction.

* If you take any money from your IRA before reaching age 59½, you must pay a 10 percent penalty on the amount you withdraw as well as taxes on the sum. If you become disabled, you may withdraw without penalty. If you die, the money will be distributed to your beneficiaries.

* You may begin collecting on your IRA as soon as you reach age 59½, but you may continue to contribute until you reach age 70½, at which time you must begin collecting.

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May 7, 1982

Source: Dottie Goss, 612/373-0914

Writer: Deedee Nagy, 612/373-1781

BUYING A USED CAR? DO YOUR HOMEWORK BEFORE CHOOSING

Most drivers have owned at least one used car, and for many these provide years of reliable, economical service. Dottie Goss, extension family resource management specialist at the University of Minnesota, says your chances of getting a bargain on the used car lot are greater if you first learn as much as you can about the car selection and buying process.

She suggests buying from recognized new car dealers who will give a warranty or from car rental companies that sell their cars, often with a warranty. Friends are also good sources for reliable used cars, but beware of the fly-by-night corner lot dealer, Goss cautions. If the dealer leaves town, you will have no one to complain to.

Look beyond the mileage figures and the savings you expect to get that way. Goss says many consumers don't realize that in spite of gaining a few extra miles to a gallon, it may take years to make up for the higher prices of particularly fuel-efficient cars. "A less gas-efficient but otherwise economical car can, in some cases, be a better buy.

Here are some other things to watch out for when shopping for a used car:

- * A heavy load of accessories can spell trouble because there are more things to go wrong.

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add one--used car

* Look for rust and corrosion throughout the car and check for new paint spray on hinges, chrome and gaskets. This could mean that the car has been extensively repainted after a collision.

* Water stains under the dash or in the glove compartment could mean leaks or that the car was damaged in a flood.

* Check for frayed wiring under the hood and look at the insulation for signs of fire.

* Check the inside for signs of wear such as well-worn brake and accelerator pedals or carpeting. These can be replaced easily to mask wear so Goss also recommends looking at the wear on the steering wheel and the knobs on the dash and window cranks. These are seldom replaced on a used car lot and may give a truer indication of a car's wear and tear.

* Are the tires evenly worn? If not, this could mean bad wheel alignment.

* Is the automatic transmission fluid reddish pink in color? If it's dark and smelly the transmission could need service.

* Get all agreements in writing and avoid buying a car "as is." This could mean that you would be stuck with all the bills if a major repair is needed.

Probably the most important advice for the potential buyer is to proceed slowly. "No matter how desperately you may need a car and no matter how attractive an offer seems, it is better to rent a low cost car for a few days than to rush into a purchase that you may regret. The days of \$25 repair jobs are long gone," she adds.

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Source: Dottie Goss, 612/373-0914
Writer: Deedee Nagy, 612/373-1781

ARE YOU A SHARP FOOD SHOPPER? HERE ARE SOME TIPS

Food is a basic human need, but sometimes finding what you want at a price that seems reasonable can challenge even the ablest consumer. Dottie Goss, extension family resource management specialist at the University of Minnesota, offers a variety of tips for stretching the food budget.

* Learn to read ads. Not everything in an ad is on sale, but try to stock up on nonperishable products that are on special.

* Buy by the calendar. Fresh produce is cheapest in summer, apples in the fall, turkeys at holiday time. If you plan ahead you can shift your purchases to save money, Goss notes.

* Watch for coupons, but only use them if you were planning to buy that item (or a similar one) anyway. Even with a coupon, a national brand may still cost more than store brands or generic products.

* Use unit pricing labels when they are on display. Also think "cost per serving" when comparing meat and poultry buys. Bone-in roasts and chops yield two to three servings per pound while boneless cuts yield three to four servings. A higher price per pound may actually mean a lower cost per serving.

* Use open dating to get the freshest food. Make sure you don't buy food bearing a "sell by" date that has already passed.

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add one--sharp food shopper

* Cut up your own poultry and chops. Your labor costs you nothing, but you usually have to pay for the butcher's time.

* Compare the costs of canned, fresh and frozen produce and juice. Generally fresh carrots are a better buy than canned or frozen. Bottled lemon juice costs about a third as much as fresh, for example.

* Refrigerate perishables promptly. Although most canned goods keep well on shelves for a year, cans of high-acid foods such as tomatoes and pineapple should be used within six months of purchase.

* If you have bought a large quantity of meat or chicken, repackage it in containers to suit your needs. Try to avoid buying a grocer's individual serving-sized packages. You'll save by creating your own small portion-sized packages.

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May 7, 1982

Source: Dottie Goss, 612/373-0914
Writer: Deedee Nagy, 612/373-1781

WHERE TO TURN WHEN YOU CAN'T PAY YOUR BILLS

Without credit most of us wouldn't be able to buy a house or own a car, but sometimes we get into financial trouble because we spend more than we should.

Dottie Goss, extension family resource management specialist at the University of Minnesota, says that the way you handle financial difficulties can affect your future credit standing as well as your present well-being.

She advises that as soon as you know you won't be able to make a payment, get in touch with your creditor. You may be able to make special arrangements that will protect your credit standing.

If your financial situation worsens further, Goss says you may want to consider other alternatives such as consumer credit counseling, commercial financial counseling or, as a last resort, bankruptcy. She advises getting professional advice to help decide upon the best course to follow.

* Consumer Credit Counseling Services (CCCS) -- Here a credit counselor works with you to develop a budget and a debt repayment program. CCCS is supported by retail merchants, banks, credit card companies and other financial institutions. Goss cautions against becoming locked into inflexible repayment schedules with high interest payments through CCCS.

* Commercial financial counselors -- Their services are similar to those provided by the CCCS plan, but they charge a fee. Make sure you know the costs involved

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add one--can't pay your bills

before signing, Goss warns.

* Other credit counseling organizations -- These include churches, family service centers, labor unions and credit unions.

* Bankruptcy -- This is a very serious matter and its effects remain with you for 10 years or more. Bankruptcy can hamper your ability to obtain future credit. Goss says that chapter 7 of the Bankruptcy Act can free you of most ordinary debts while chapter 13 lets the courts set up a full or partial repayment plan. She adds, "While filing for bankruptcy should be considered only as a last resort, in some cases it can give you a fresh start with your financial life."

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Agricultural Extension Service
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University of Minnesota
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May 7, 1982

Source: Wanda Olson, 612/373-0913
Writer: Deedee Nagy, 612/373-1781

GOOD KITCHEN PLAN BALANCES DESIGN, COSTS, STRUCTURE

Developing a good kitchen plan requires many decisions and a willingness to balance family needs with good design, costs and structural limitations. Wanda Olson, extension household equipment specialist at the University of Minnesota, says many kitchen planning reference books and publications are available at libraries and at kitchen planning and remodeling businesses.

She offers some general guidelines for persons considering a change in their kitchens:

- * Arrange the work center to reduce the amount of walking and to allow easy traffic flow. Olson says, "Normally the largest number of trips during meal preparation occur between the sink and the range top. Many trips also occur between the mix center and the sink and between the mix center and the refrigerator." In some homes, a microwave oven is used instead of the range top for a lot of cooking and, if this is the case in your home, the microwave oven should be convenient to the mix center.

- * Crowded plans are generally unsafe. A good kitchen design provides adequate work and storage space and the necessary clearance so cabinets and appliances can be opened and are accessible.

- * Keep room size in mind. For large rooms, the kitchen work space may be utilized better if limited to only a portion of the room. For small spaces,

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add one--good kitchen plan

smaller sized appliances may be efficient. Olson says that appliances are available in widths as narrow as 18 inches for dishwashers, 18 to 20 inches for ranges and 24 inches for refrigerators.

Olson says that rearranging or adding cabinets and appliances requires changes in wiring, lighting and plumbing. Moving a sink is a major consideration because it must be near a vent stack and drainpipe. Adding a dishwasher may call for changes in both the plumbing and electrical systems.

If plans require enlarging a kitchen by removing a wall, Olson says consideration will need to be given to whether the wall is a load-bearing one and whether it contains plumbing, gas lines, wiring or heating duct work.

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May 7, 1982

Source: Wanda Olson, 612/373-0913
Writer: Deedee Nagy, 612/373-1781

KITCHEN REMODELING HAS BENEFITS, PITFALLS

Thinking about remodeling your kitchen? Wanda Olson, extension household equipment specialist at the University of Minnesota, says that a good kitchen plan is your best investment in time and will save you money over time.

"You will have fewer problems if you plan the entire kitchen before work begins, even if you plan to do the work in stages," Olson says. "Expensive cabinets and appliances won't improve a poor plan."

She says that most homeowners begin kitchen remodeling projects to improve the arrangement of the room, to improve storage and counter space or to improve and modernize such mechanical systems as plumbing, wiring and lighting.

Because all remodeling involves inconvenience and messy conditions, Olson suggests having a plan and some goals firmly in mind. Before beginning, ask yourself these questions:

- * How many people cook? How tall are they? What type of cooking do they do?
- * Where do you plan to eat your meals? What type of entertaining do you plan to do?
- * What special space or storage needs must be built into the kitchen design?

- more -

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add one--kitchen remodeling

In addition to food preparation needs, Olson recommends considering all the other family activities that the room must accommodate as well as the family's preferences for color and design.

For those planning a major kitchen remodeling project, Olson says it is helpful to know the general order of work. Most projects proceed in approximately this sequence, although Olson cautions homeowners that nearly all remodeling takes longer and is more expensive than expected. Installations usually come in this order:

- * plumbing and wiring
- * plasterboard and subflooring
- * cabinets and appliances
- * floor covering
- * countertops
- * sinks
- * wall coverings (A few types such as paneling may be completed before the cabinets.)

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CP

news

for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Note to agents: You will want to localize this story by adding names of delegates and adult advisors from your county.

Source: Dave Pace, 612/373-1675
Writer: Deedee Nagy, 612/373-1781

JUNIOR LEADER CONFERENCE TO DRAW OVER 600 4-H'ERS

Between 600 and 700 outstanding 4-H members from throughout Minnesota will gather June 14-18 on the state fairgrounds in St. Paul for the annual Junior Leader Conference. Theme for the five-day event is "Dare to Be" and speakers will include Gerry Spiess, White Bear Lake sailor who recently completed a California-to-Australia voyage on his 10-foot boat, Yankee Girl.

According to Dave Pace, 4-H youth development specialist at the University of Minnesota, Junior Leader Conference is an opportunity for 4-H teens to learn more about themselves and to become better leaders. He adds, "It is a chance to improve upon communication skills and to help others. Also, it is an opportunity to be motivated to explore new ideas and to discover how to be a more useful member of society."

In addition to speakers and discussion sessions, conference participants will be treated to a variety of evening entertainment activities, a picnic, tours of the Twin Cities and a talent show produced by the delegates.

The annual election of Minnesota 4-H Federation officer for the coming year is also held during the conference.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: National 4-H Council
(301) 656-9000

Editor: Deedee Nagy, (612) 373-1781

4-H'ERS LEARN PRACTICAL TRACTOR SKILLS

Community involvement is the key to the success of the 4-H program. Business people, educators, homemakers, senior citizens and others give of their time and talents to help young people. Many contribute financial resources to 4-H as well.

Youth in the national 4-H agricultural program, conducted by the Agricultural Extension Service and supported by International Harvester Co. (IH) have received such support through local IH dealers.

Each spring, IH works with 40 Nebraska 4-H'ers for 10-20 hours to certify them for tractor operation outside the family farm, at the age of 14 or 15. Their participation in this project is in line with the Hazardous Occupation in Agriculture Act. While older 4-H'ers are involved in this training, younger members practice the same types of tractor maneuvers on lawn tractors provided by the dealer.

Nationwide, International Harvester Co. provides incentives and awards, arranged by National 4-H Council, for members who excel in the agricultural program. Medals of honor are presented to four members in each county; one 4-H'er from each state earns an expense-paid trip to National Congress in Chicago. During Congress, six outstanding 4-H members, named as national winners, receive \$1,000 scholarships.

Boys and girls ages nine to 19 can obtain more information on 4-H programs from their county Extension office.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: National 4-H Council
301/656-9000

Editor: Deedee Nagy, 612/373-1781

4-H'ERS COMBINE NUTRITION AND PHYSICAL FITNESS

Even teen-agers sometimes have trouble staying physically fit. And, since they're still growing, the combination of improper diet and lack of exercise can produce extra pounds and the beginning of a life-long weight problem.

4-H'ers across the land are learning how to combine fitness and nutrition through programs conducted by the Agricultural Extension Service. They learn to select foods with the necessary nutrients and calories to balance their daily physical fitness activities, whether they be aerobic dance, jogging, tennis, swimming or hiking. Nutritious snacks are planned along with meals as an important part of the daily food plan.

One favorite of 4-H'ers is this pizza recipe.

BROWN 'N' SERVE PIZZA

1 cup warm water (105-115 degrees F)	1 teaspoon salt
1 package dry yeast	2 tablespoons oil
1 tablespoon sugar	2 3/4 to 3 1/4 cups unsifted flour

Measure warm water into large warm bowl. Sprinkle in yeast; stir until dissolved. Stir in sugar, salt, oil and 1½ cups flour; beat until smooth. Add enough additional flour to make a stiff dough. Turn out onto a lightly floured board; knead about five minutes. Place in greased bowl, turning to grease top. Cover; let rise in warm place for about 45 minutes. Punch dough down; divide in half. (recipe continues on next page)

- more -

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add one--4-H'ers fitness

Roll each half into a 13" circle. Place in two ungreased 12" pizza pans, pressing around edge to form a standing rim of dough. Bake at 350 degrees for 10 minutes. When cool, wrap tightly and store in refrigerator up to six days, or freeze. To serve, unwrap and place on ungreased pizza pan. Add tomato cheese topping, bake at 425 degrees for 20-25 minutes.

Tomato Cheese Topping: Combine 1/3 cup tomato paste, 1/4 cup water, 1/2 teaspoon crushed oregano leaves, 1/4 teaspoon salt, and dash of pepper. Spread over one crust. Sprinkle with 2 tablespoons grated Parmesan cheese, then top with 1/4 pound thinly sliced Mozzarella or other hard cheese.

Two supporters of the program, Standard Brands and Carnation Company provide incentives and awards to boys and girls who excel in the program. Medals of honor are available to four members in each county and some 4-H'ers earn an expense-paid trip to the National 4-H Congress in Chicago, where national winners receive \$1,000 scholarships.

Contact your county extension office for more information on 4-H programs.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Clifton Halsey, 612/373-1060
Editor: Deedee Nagy, 612/373-1781

SPRING, SUMMER RAINS WILL TEST CONSERVATION TILLAGE

Heavy spring and early summer rains will be the real test of conservation tillage, according to Clifton Halsey, soils specialist with the University of Minnesota's Agricultural Extension Service. About 45 percent of Minnesota's rainfall erosion occurs between May 1 and July 15. That's when the newly planted crop fields are most vulnerable to erosion. Another 45 percent occurs between July 15 and October 1, but by then most fields are well protected by the leaves and stalks of crops.

"There is still a chance to use conservation tillage this spring on land that is covered by residue, land that wasn't plowed or otherwise tilled much last fall," Halsey says. "Most fields that were in soybeans last year need very little, if any, tillage. The old stalks disintegrate easily and any tillage destroys the protection provided by the residues on the surface."

Halsey explains that soil scientists use the term mulch factor to account for the reduction in erosion that occurs as a result of surface crop residues. The mulch factor is the ratio of (a) the amount of soil eroded from the surface having a given proportion of the area covered by mulch to (b) the corresponding amount of soil eroded from the same surface when it is bare. He says, "Assume that a certain field, when bare, would lose 10 tons of soil per acre by erosion.

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add--conservation tillage

Also assume that the field had cornstalks and leaves evenly spread so that 50 percent of the surface was covered. The mulch factor would be about 0.3 and the soil loss would be three tons per acre, a 70 percent reduction. The mulch factor for 30 percent of the ground covered by residue is 0.5; erosion would be reduced by 50 percent, from 10 tons to five tons."

Crop residues on the surface soften the blows of the raindrops and slow the speed of the water that is running off the field. The pieces of stalks, stems and leaves act like miniature dams, and eroded soil that is in the run-off water settles out and stays there. Also, with slower velocity, the run-off has much less power to erode the soil.

"Some farmers chisel and disk their fields several times rather than plow, but by the time the next crop is planted, there is little residue left on the surface to control erosion. This is NOT conservation tillage." Halsey adds.

Crops vary in the amount of residue they produce. A 120-bushel corn crop will produce more than three tons of stalks and leaves. An 80-bushel small grain crop can produce nearly four tons of straw. A 30-bushel soybean crop makes about 2/3 ton of stalks. Also, pound for pound, small grain straw is about twice as effective in reducing soil erosion as cornstalks.

Many types of machines are useful for conservation tillage, including several types of disks and chisels with combination disk-chisels. The amount of residue they cover or leave depends on implement design, traveling speed of the machine, tillage depth, soil moisture, soil texture and the kind and amount of residue present.

"One-disking will bury between 15 and 65 percent of the residue left on the surface depending on these characteristics," Halsey adds. "Chisel plows also have a wide variety of features including shovel sizes and shapes. One pass of the chisel plow can cover from 20 to 50 percent of the residue."

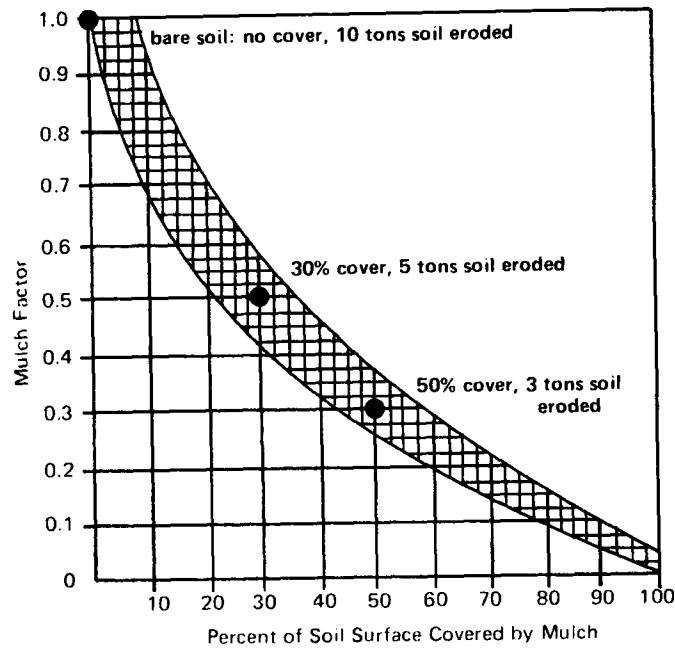
Several implement companies sell row-crop planters and small grain drills

add--conservation tillage

designed for planting in crop residues. They are engineered for accurate control of planting depth, opening planter furrows through surface residues, and moving residues aside. All of these planters must be properly adjusted and carefully operated to be successful in planting through crop residues, Halsey concludes.

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Range of Mulch Factors for Field Crops



This graph illustrates the effect of various percentages of surface covered by residue on the related amount of soil erosion by water.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Clifton Halsey, 612/373-1060
Editor: Deedee Nagy, 612/373-1781

TRUE CONSERVATION TILLAGE CONTROLS WIND EROSION

Farmers who joined the "untillage bunch" last fall and did not till after their soybeans were harvested will be keeping that soil on the farm this spring, says Clifton Halsey, extension soils specialist. "True conservation tillage means having enough stalks or straw still on the surface of the fields after spring planting to protect them from erosion by wind and water."

Halsey adds that conservation tillage is easy to recognize. "The fields will have 25 percent or more of the surface evenly covered by last year's crop residues - stalks or straw. To traditional farmers they may even look 'trashy.' Surface residues slow the wind. The amount of wind-blown soil in roadside ditches and drainage ditches is evidence of that."

Several conditions affect the degree of wind erosion hazard:

1) Wind erosion happens where bare, dry soil and strong winds occur at the same time. In Minnesota, this combination is most likely during March, April and May. Plowing or other tillage which leaves the surface bare is a major factor in wind erosion.

2) The amount and kind of vegetative cover is also important. Upright or standing stalks or straw such as grain stubble reduce wind speed on the ground. Close-sown fall cover crops such as rye or winter wheat, three to

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add one--conservation tillage

four inches tall, also provide good protection. Conservation tillage which leaves enough residue on the surface eliminates the need for cover crops. Where the season permits, cover crops of winter wheat or rye may be planted and then harvested or plowed under the next year. They may be left and chemically killed before the no-till planting of a row crop. This is a type of conservation tillage.

Field strips of hay or other close-sown crops, 10-20 rods wide, alternating with row crops and oriented at right angles to the wind direction will trap soil particles moving from eroding strips. This is called wind strip cropping. True conservation tillage reduces the need for wind strips.

3) The nearness and location of wind barriers with respect to fields are important. Large wide fields are readily eroded. Barriers are most protective if they are on the windward side of the field. Most erosive winds in Minnesota come from between north and west.

Field shelterbelts or rows of trees or other barriers such as rows of tall grasses at regular intervals at right angles to the prevailing winds are used to control wind erosion. Halsey says that many farmers are destroying their shelterbelts so they can use pivot irrigation systems. Conservation tillage can be a good substitute for field shelterbelts.

4) Soils vary from place to place in their natural erodibility by wind. Sandy soils and calcareous (limy) finer-textured soils are more erodible than non-calcareous loams, silt loams, and clay loams.

5) The roughness of the field surface is also a factor, but its effectiveness in reducing wind erosion depends on the soil texture and structure. Rough plowed loam and clay loam soils will resist erosion more than the same fields if they are also disked or chiseled after plowing.

add two--conservation tillage

Chisels or field cultivators are sometimes used during strong winds to roughen fields. Conservation tillage makes such emergency tillage unnecessary.

"Conservation tillage is an excellent way to control wind erosion. A 30 percent cover of residues on loam soils or a 40 percent cover on sandy soils should be adequate on most fields," Halsey says.

County extension and soil conservation offices have information and technical assistance available on wind erosion control. Some County Agricultural Stabilization and Conservation Service offices and Soil Conservation offices also offer cost sharing for establishing wind erosion control practices.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Mark Ascerno. 612/373-1059
Editor: Deedee Nagy, 612/373-1781

MAY IS PRUNING, SPRAYING TIME FOR SOME SHRUBS

May is a good time to get out your pruning shears and garden sprayer for some common shrub problems, according to Mark Ascerno, entomologist with the Agricultural Extension Service at the University of Minnesota.

"If you have Zabel's or Tartarian Honeysuckle shrubs that have developed strange tufts of foliage and distorted blooms at the ends of twigs, this is the time to attack the problem," he says. A newly discovered honeysuckle aphid is the cause of the so-called witch's broom.

He advises pruning out distorted tips and doing any additional shaping necessary to keep the plant symmetrical. As soon as the leaves are about three-fourths expanded, spray with Orthene according to label directions. He adds, "Since Orthene is a systemic insecticide, we hope that one spray will be sufficient. We are interested in reports that homeowners have about the effectiveness of this treatment. Please report your success or failure against this new pest to your local county extension office."

He reminds gardeners that May is also the time to spray shrubs infested with oyster shell scale. Malathion should be used at the time that crawlers hatch. Ascerno suggests examining plants carefully about the time of lilac bloom. Two sprayings are recommended, about 10 days apart. After scales have hardened, spraying is ineffective. Hedge Cotoneaster is commonly infested with oyster shell scale and the pest spreads to lilacs and other shrubs as well.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

for County Agents

May 7, 1982

Source: Deborah Brown, 612/376-7574
Writer: Deedee Nagy, 612/373-1781

PINCH YOUR PETUNIAS -- THEY'LL LOVE YOU FOR IT

Petunias probably offer more subtlety in color shadings than any other summer flowers. Deborah Brown, extension horticulturist at the University of Minnesota, suggests petunias for the color and variety they can add to your garden and landscape throughout the summer.

Whether you buy petunias from the garden center or start your own, Brown suggests pinching out the first flower bud. This allows side shoots to develop, forming a denser, more flower-laden plant. This will delay first flowering by seven to ten days, but the results will be worth the wait.

Because petunias are so common, they are too often taken for granted. Brown says that some petunias are particularly fragrant and nearly all types attract beautiful moths at night.

Petunias grow in well-drained, light, sandy soil in full sun. The single varieties will tolerate heavier, more alkaline soils, Brown adds. Space petunias 12 inches apart in beds although they can be spaced more closely when mixed with other plants in containers or hanging baskets.

Fertilize your petunias once a month or use a diluted fertilizer every time you water. A slow-release fertilizer worked into the soil at planting time also works well. Petunias will reward your care with showy blossoms into the fall even though they won't survive our harsh winters, Brown adds.

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St. Paul, Minnesota 55108

May 7, 1982

Source: Deborah Brown, 612/376-7574
Writer: Deedee Nagy, 612/373-1781

STUNNING VICTORIAN BOUQUETS CAN GROW IN CONTAINERS

The Victorians loved large formal gardens ablaze with many colors and varieties of flowers. Today we can take their fondness for flower mixtures to heart and plant attractive Victorian bouquets in patio and deck containers.

Deborah Brown, extension horticulturist at the University of Minnesota, says that beautiful living bouquets usually combine different shapes, sizes and flower forms. She suggests using plants that grow tall surrounded by lower flowers as well as some to tumble over the sides of hanging baskets of planters.

She recommends a container with ample volume to support 10 to 12 plants of four or five varieties. To keep them growing vigorously, you may need to water them daily and you will need to apply fertilizer often. An easy way to fertilize is to mix a slow-release fertilizer at the manufacturer's recommended level into the potting mix.

Good plants to include in your Victorian bouquet container garden include:

- * Pansies -- the blue, purple and white shades of the new heat-tolerant Universal series
- * Browalia -- blue and white
- * Verbena
- * Lobelia -- in white, blue or soft red

- more -

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add one--Victorian bouquets

- * Dianthus
- * Zinnias
- * Begonias
- * Ageratum
- * Marigolds
- * Snapdragons, torenia, petunias, impatiens or coleus.

For height, choose from among snapdragons, geraniums or the taller marigold varieties.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: Deborah Brown, 612/376-7574

Writer: Deedee Nagy, 612/373-1781

LET YOUR GARDEN HELP YOU TO THINK COOL

Some people celebrate hot weather while others want to cool it by surrounding themselves with reminders of less torrid times -- trickling water, pools and summer flowers in soothing pastel shades.

Deborah Brown, extension horticulturist at the University of Minnesota, says that flowers in blues, purples, lavenders, pinks and rose help temper the fire of summer. Coupled with white, these cool colors make a garden a comfortable place even when temperatures and humidity are high.

The choice in the cool-colored summer-blooming annuals is wide, says Brown. Petunias provide the best variety selection in soft pastels and they like to grow in full sunlight. For shade, impatiens are attractive. Fibrous begonias are versatile and can thrive in either sun or shade.

Another cool-colored flower is alyssum, which is great for edging, and browalia, which works nicely in beds, planters or hanging baskets.

Brown adds that pansies are also colorful. The new Universal pansies are more heat tolerant than other pansies and they are available in several shades of blue for summer gardens that are easy on the eyes and soothing to heat-jangled nerves.

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May 7, 1982

Editor: Deedee Nagy, 612/373-1781

ANIMAL SCIENCE HEAD ACCEPTS CALIFORNIA POST

Robert W. Touchberry, professor and head of the Department of Animal Science at the University of Minnesota, has accepted the position of Sesnon Professor of Animal Science, an endowed chair, and chairperson of the Department of Animal Science next July at the University of California, Davis.

Touchberry began his career at the University of Illinois in 1948 as a research assistant, advancing to professor of genetics in 1959. In 1970 he accepted the position of professor and head of the Department of Animal Science at Minnesota.

He obtained a bachelor of science degree in animal husbandry at Clemson University in 1945 after winning many honors and awards for scholarship and leadership. Touchberry earned his master's degree in animal breeding at Iowa State University, where he also completed his Ph.D. work in animal genetics.

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Agricultural Extension Service
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St. Paul, Minnesota 55108

May 7, 1982

Source: Robert Jordan, 612/373-0974
Editor: Deedee Nagy, 612/373-1781

MINNESOTA EXCELS WITH SHEEP

Minnesota has 8,000 sheep producers. Only Iowa and Texas have more sheep, according to R. M. Jordan, University of Minnesota sheep specialist with the Agricultural Extension Service. Most of the nation's sheep are in Texas and the western states though South Dakota ranks fourth in the nation, he adds. Among the Corn Belt states, South Dakota with 730,000 sheep, Iowa with 400,000 and Minnesota with 275,000 are the leaders.

"Nationally, Minnesota ranks twelfth in number of stock sheep and third in number of farms that raise sheep," Jordan says.

"Producers recognize that well managed, productive sheep are a financial asset. Minnesota increased lamb production 20 percent last year over 1980, ranked second nationally in lambing percentage with 131 percent, and has increased the size of its flocks by 10 percent," he concludes.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 7, 1982

Source: D. W. Bates, 612/373-0764
Editor: Deedee Nagy, 612/373-1781

REVISED HANDBOOK EXPANDS SHEEP HOUSING INFORMATION

Up-to-date information on sheep facility management, new building layouts, and expanded feeding, treating and handling facility chapters are included in the revised edition of Midwest Plan Service's Sheep Housing and Equipment Handbook, MWPS-3

The 116-page third edition is a useful guide to planning an efficient sheep system based on operation size, system choice, building needs and locations, feeding location and method, and manure handling method, according to Donald Bates, extension agricultural engineer at the University of Minnesota.

MWPS-3 features 47 pages of sheep facility layouts and equipment plans. These plans include feeders, bunks, squeezes, corrals, lambing pens, sorting gates, shearing pens, working chutes and blocking stands. Ideas for portable facilities are discussed, such as building a lamb feeding unit on a mobile home trailer frame.

The Sheep Housing and Equipment Handbook, MWPS-3, costs \$5.00 plus \$.20 sales tax and is available from Extension Agricultural Engineering, 201 Agricultural Engineering Building, University of Minnesota, St. Paul, MN 55108.

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May 7, 1982

Source: D. W. Bates, 612/373-0764
Editor: Deedee Nagy, 612/373-1781

NEW SWINE GESTATION BUILDING PLAN AVAILABLE

The low cost advantages of group pens and natural ventilation are featured in a new 48-sow gestation building plan available from the Midwest Plan Service.

The plan, MWPS 72696, is for a 24 by 54-foot pole frame building which houses 48 gestating sows in four group pens divided by a center alley. The floor plan also shows two 8 by 10-foot treatment pens which can be used to isolate sick sows. Sows are fed individually from stub feed stalls off the center alley in the group pens.

Other pen layouts can be used in the building, allowing the producer to vary group size. Options A and B show six pens of eight sows and eight pens of six sows each, respectively.

The plan gives construction details for feed troughs, vent doors, open ridge vents, insulated walls and roof panels, endwalls, framing, walk doors, concrete partitions, sumps, gate connections, and self-dumping flush tanks. Gestation unit sizing and housing cycles information is included, along with lumber specifications and a 24-foot truss guide.

The 9-page gestation building plan, MWPS 72696, costs \$2.50 plus tax and is available from Extension Agricultural Engineering, 201 Agricultural Engineering, University of Minnesota, St. Paul, MN 55108.

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May 7, 1982

Source: D. W. Bates, 612/373-0764
Editor: Deedee Nagy, 612/373-1781

NEW 48-, 120- AND 192-SOW GESTATION BUILDING PLANS AVAILABLE

Three new swine gestation building plans are available to pork producers who want the tight breeding program management environmentally controlled gestation housing can offer. The plans are available from the Midwest Plan Service.

Plan MWPS 72694 is for a 24 by 54-foot or 56-foot stud frame building which houses 48 gestating sows in individual stalls. The 33 by 92- or 94-foot stud frame building in plan MWPS 72601 holds 120 gestating sows. And plan MWPS 72697 shows a 42 by 108- or 110-foot stud frame building with room for 192 sows. Sows are fed individually in each building.

The plans give fan, pit, heat and lumber specifications, along with floor and foundation plans, cross sections, and perspectives. Construction details for pits, sidewalls, endwalls, eave and slot inlets, beams, pit fan annexes, feed troughs, and siphon-flush tanks are also shown. Truss guides are included.

Gestation building plans MWPS 72694, 72601 and 72697 have 10 pages each and cost \$2.50 plus tax each. The plans are available from Extension Agricultural Engineering, 201 Agricultural Engineering, University of Minnesota, St. Paul, MN 55108. Also available for \$1.50 plus tax is 3-inch 150-gal Siphon-Flush Tank, AED-17, a digest explaining siphon-flush tank construction and operation.

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news

MSC/9A27P
Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 12, 1982

Sources: Glenn Nelson, 612/376-3433
Thomas Stinson, 612/373-0951
Writer: Jack Sperbeck, 612/373-0715

NEW FEDERALISM COULD HELP STATE GOVERNMENT, BUT NOT ALL MINNESOTANS

Minnesota's financial savings could total more than \$1.8 billion over the first 10 years if President Reagan's New Federalism program is enacted.

But the program may not benefit all Minnesotans and could create hardships for some local governments, according to a University of Minnesota study.

The Minnesota state government savings would occur only if White House assumptions on program costs are accurate. Under another set of assumptions, benefits to state government would be only \$201 million by 1993.

The study, called "The New Federalism: What It Means for Minnesotans," was prepared by a task force in the Department of Agricultural and Applied Economics.

The report said the President's plan has two interrelated parts. The first is called the "swap" component. States would administer the Food Stamp and Aid to Families with Dependent Children (AFDC) programs. In return, the federal government would take over the Medicaid program.

Second is the "turnback" component. It would give states responsibility for 44 programs currently funded by the federal government. Revenue to support those programs continued by the state could come from two sources--the savings accruing from the swap program and from new state taxes replacing existing federal excise taxes.

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add one--federalism

"Minnesota's benefits could be largely illusory," the report said.

"Under some assumptions the President's program could simply shift expenditures away from both the federal and state government and onto local governments and private citizens currently receiving Medicaid, AFDC or food stamp benefits.

"The assumption that the federal Medicaid program will maintain the current benefit structure for Minnesotans is crucial," the report said. Medicaid benefits in Minnesota are second-highest in the nation.

The Reagan administration must solve two separate problems to prevent New Federalism from taking funds away from the less fortunate.

The first is finding a way to insure that states maintain minimum standards for public assistance programs. Cutting program benefits could save money for state government at the expense of public assistance recipients.

The second, and most serious, is finding a way to resolve interstate differences in Medicaid benefits to prevent states from being penalized by the federal takeover of Medicaid.

"This is a serious problem since full federal assumption of Medicaid costs is what frees up most funds that states are to use to pay for AFDC, food stamp and turnback programs. If the Medicaid problem can't be solved, the President's entire proposal is doomed to failure," the report said.

New Federalism may also create hardships for some local governments. States may force portions of their newly acquired responsibilities onto local governments without appropriating funds. Some funds now passed directly from the federal to local governments may be given to and held up by state governments.

Free single copies of the report are available by writing the Department of Agricultural and Applied Economics, University of Minnesota, St. Paul 55108.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

MEDIA NEWS PACKET

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news

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Contact: Wanda Olson, 612/373-0913
Editor: Lisa Ringhofer, 612/373-1686

CANNING, FREEZING OR DRYING. . . How Do You Make the Choice?

Savings in money and energy are of increasing importance due to continuing inflation and fuel shortages. In addition, the consumer must also consider palatability, appearance and nutritive value when preserving foods, says Wanda Olson, Agricultural Extension Service specialist in household equipment at the University of Minnesota.

A study by Drew and Rhee at Texas A & M University reported in the Journal of Food Science, considered taste, appearance and nutritional aspects of home food preservation as well as the cost-effectiveness of canning, freezing and drying.

The report revealed that canning is the cheapest method of food preservation when we need to hold foods for long terms. Vegetables were found to be more palatable, with better color, when frozen rather than canned or dehydrated. Vitamins are lost to some degree from vegetables during all types of processing. Generally, losses are least when vegetables are frozen and greatest when they are dehydrated.

Frozen products have the highest sensory quality, well above minimum acceptability. Canned and dehydrated products were just barely acceptable as rated by Texas A & M University.

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add one--canning, freezing

The sensory qualities of canned and dehydrated products may improve as they are prepared with other seasonings and/or incorporated in mixed dishes such as soups or casseroles.

In general, more ascorbic acid (vitamin C) was found in canned products than frozen ones when the values of the drained solids and liquid were combined. However, the drained solids alone contain less of the vitamin than the adequately blanched frozen product because about 40 percent of the ascorbic acid is found in the liquid portion. For freezing, ascorbic acid content was much lower in the unblanched than blanched product, as expected. Nearly all ascorbic acid was lost in dehydration.

After six months of storage, frozen and canned vegetables had good retention of carotene (vitamin A). In contrast, nearly half of the carotene in dehydration products was lost during storage. All canned and dehydrated products should be stored in a cool, dry, dark place for maximum maintenance of quality.

Steam-blanching and dehydration in an electric dehydrator require 1.6 to 2.1 times as much energy as canning in a pressure canner. Using an electric oven for dehydration uses about five times as much electricity as canning, says Olson.

Various conditions affect the amount of energy used when foods are frozen. Major factors affecting energy use are size and type of freezer, freezer load and length of storage.

A frostless freezer will use about 1.5 times as much energy as a conventional type of the same size and the amount of energy to operate increases with the size of the unit, she says.

The cost of freezing is highly dependent on how long the food is stored and how much the freezer is used. By keeping the freezer as full as possible, the cost/pound of freezing vegetables can be kept as low as the cost for other preservation methods.

add two--canning, freezing

It is estimated that 50 pounds of vegetables can be blanched, frozen and held at minus 18 degrees Celsius about one month before energy consumption exceeds the amount of electricity used for canning the same quantity of vegetables and about three months before exceeding that used for dehydration, when the freezer is filled to capacity.

"But since we usually deal with storage periods in excess of three months," says Olson, "canning continues to be the most economical food preservation method."

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June 4, 1982

Source: Wanda Olson, 612/373-0913
Writer: Mary Kay O'Hearn, 612/373-1786

COMPARING COSTS OF FOOD PRESERVATION

Canning is still the least expensive method of food preservation, according to Wanda Olson, household equipment specialist with the Agricultural Extension Service at the University of Minnesota.

Comparing drying and freezing, she says if food is to be kept frozen longer than three months, then freezing is usually more expensive.

In food drying experiments conducted at the University of Minnesota, the drying process per load varied from five to 23 hours. "It averaged out to 2.9 hours per pound of fresh food. Many foods take from six to eight hours, but require little attention," she says.

Food dehydrators are generally low wattage, cycling on and off. "When you are talking about a 300-to 500-watt appliance, it is not tying up an electric circuit that you might want to use for other things," she says. The least expensive food dehydrators cost around \$80. Some are clear plastic with five or six trays (really screenlike shelves) to hold food. Stainless steel replaces plastic in the more expensive versions. Each comes with recipes and directions.

Higher wattage--1,400- to 1,600-watt portable convection ovens--can tie up a kitchen electric circuit all day. "You might want to transfer food drying to a circuit serving another area such as a utility room, instead of disrupting other kitchen activities," she suggests. Convection ovens, which have both a

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add one--comparing costs

fan and heating element, range in cost from about \$100 to \$250.

Drying food in a conventional oven is not very satisfactory--and it's expensive, she points out. It is hard to maintain the low temperature needed to have foods turn out either as brittle dry or leatherlike as they should. You are using much higher wattage than in either the food dehydrator or convection oven. The oven door has to be kept partially open so moisture can be drawn out, and a fan should really be used to facilitate this.

A convection oven can be used for other things besides food drying. Possibly its only limitation is broiling--that can't be accomplished as well as in a conventional oven, she says.

One caution: don't store dried foods in the sun. They will darken and look unappetizing. Put dried foods in a covered jar or in "boil-in-bag" freezer bags. Freezing dried foods is the best practice for longer storage.

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University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: Ted Labuza, 612/373-1077
Editor: Mary Kay O'Hearn, 612/373-1786

FOOD DRYING--NOT AN EASY TASK

Thinking about drying foods at home instead of canning or freezing them?

It's being discussed more in recent years, but as far as value for time and money expended, the approval nod still goes to canning and freezing as the best ways of preserving food.

"For the price of the food and the amount of time it takes to do a small amount of food, it is just not economical," says Ted Labuza, food scientist at the University of Minnesota.

"Drying probably works best for herbs and spices and novelty foods such as fruit leathers," he remarks.

Labuza teaches a course on freezing and drying of foods and is one of the authors of "Drying Foods at Home," the Agricultural Extension Service Folder 554. (Request it from county extension offices.) The publication replies to people who are considering drying food as a preservation technique and it cautions against incorrect methods. Freezing and canning produce the better products, Labuza insists.

For instance, when is food dry enough? Vegetables must be dried to about 5 percent water content and fruits to 15 percent to 20 percent. The shelf life of home-dried vegetables and fruits stored at 60° F is four to six months. Storing at 70° F shortens shelf life by two to three months.

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add one--food drying

Commercially freeze-dried products usually have a much longer shelf life-- six to 12 months. After flash freezing at minus 40° F, food is placed in a chamber connected to a vacuum pump. Heat is applied to the frozen food after the air is pumped out of the chamber and the ice evaporates directly into vapor. Because food is frozen and at a low temperature during drying, there is little nutrient loss or quality damage. The food is then vacuum-packaged to keep out oxygen which causes deterioration. Because this process requires elaborate and expensive equipment, it makes freeze-drying too expensive to do at home.

Safe drying temperatures at home for most vegetables and fruits are between 140° F and 145° F. Using a higher drying temperature often means that the outer portion of the food dries more quickly while the inside remains moist. This is called case hardening and it slows down drying significantly. It can also quicken microbial growth and food spoilage if the product is not dried long enough.

Sun drying and smoking of food was common in Biblical days so the process is hardly new. Colonial Americans ate dried corn. In World Wars I and II dehydrated foods were developed to provide lightweight, nutritious stable foods for the military. Today, aside from success with herbs and spices, home drying is most successful when preparing small quantities of food for camping or backpacking trips.

What about sun drying foods? It won't work well in Minnesota, Labuza says. For one thing it can take from three to four days and if the humidity is high, as it often is here, food will mold before it dries. Sun drying requires lots of space and subjects food to dirt, insects, rodents and bird wastes. Because complete drying isn't assured, food quality is questionable. Home food dehydrators and portable convection ovens fitted with drying trays are more satisfactory than conventional oven drying. This is due to a fan that circulates the air around the food while it is drying. This promotes drying by carrying off the water vapor which collects in the space around the food.

add two--food drying

Home drying should absolutely not be attempted for some foods. These include fish, eggs, poultry and meat (except beef jerky). Salmonella and staphylococcus bacteria grow very quickly in these foods and have caused food poisoning outbreaks in home dried foods.

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June 4, 1982

Source: Mary Darling, 612/376-4663
Writer: Laurie Gardner, 612/373-1297

CANNING AND FREEZING FRUIT FOR LOWEST CALORIES

"You can lower the calorie count of home-preserved fruits by canning and freezing with little or no sugar," says Mary Darling, Agricultural Extension Service nutritionist at the University of Minnesota.

"Only the best quality fruit will hold its flavor and texture when packed in water," she cautions. Water-packed fruits are low in calories, but unless they are at their peak of ripeness, canning them is not recommended.

"Try freezing the fruit in its own juice," she suggests. Peaches, for example, can be packed in a peach puree with ascorbic acid added, or even packed in orange juice.

"Another way to save calories is by canning fruits in a light syrup instead of a heavy syrup," she adds. Fruit packed in light syrup can have from one-third to one-half as many calories as fruit packed in heavy syrup. This also applies to purchased canned fruit in the supermarket.

Some fruits such as blueberries, raspberries or strawberries can be frozen without sugar. Freeze the washed and drained berries on a cookie sheet or shallow tray. As soon as they are frozen, pack the berries into a freezer bag or air-tight container.

"Substituting artificial sweeteners for sugar is not always a good idea," she advises. Artificial sweeteners may develop "off flavors" when heated for

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add one--canning and freezing

canning. A much better alternative, she says, is to add sweetener at the time of use.

She points out that most canned and frozen fruits will maintain their quality for up to 12 months. However, it is a good idea to use your home-preserved fruits before the next year's crop is ready for freezing.

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St. Paul, Minnesota 55108

June 4, 1982

Source: Shirley Munson, 612/373-1561
Writer: Richard Sherman, 612/373-1944

HOME FREEZING FOR SUMMER PRODUCE

With fresh fruits and vegetables ripening in the garden, it's time to think about home freezing.

First of all, use quality produce. Select items that are at their peak of flavor and texture. Freezing will not improve fruits and vegetables, but if done correctly, it can preserve quality.

Speed is essential in getting vegetables from the garden to the freezer, according to Shirley Munson, horticulturist for the University of Minnesota's Agricultural Extension Service. "If a bushel of beans is picked in hot weather and then sits around, heat of respiration will build up. Spread them out, perhaps on a tray in the refrigerator, or plunge them into cold water," she recommends. After the vegetables are picked, blanching and cooling are necessary for success in home freezing.

With fruits, pick those that are fully ripe but not yet mushy. "Pick them at their peak," says Munson. "What you take out of your freezer will be no better than what you put into it," she cautions.

When freezing, use proper containers. "Polyethylene film or bags are acceptable for freezing fruits but are not as sturdy or leakproof as many other available containers," notes Munson. "The most important point to keep in mind is that

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add one--home freezing

whatever you use should be clean and suitable for the product," she says.

"Correct temperature is the most important part of freezing," says Munson. "Keep freezer temperatures at zero or below, and when possible, keep packages in contact with a freezer surface to assure proper temperature," she adds. If frozen correctly, most fruits and vegetables can be stored with good results for 12 to 18 months.

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Agricultural Extension Service
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June 4, 1982

Source: Shirley Munson, 612/373-1561
Writer: Richard Sherman, 612/373-1944

PREPARING FRUITS AND VEGETABLES FOR THE FREEZER

To keep that fresh-from-the-garden flavor in your fruits and vegetables this summer, you'll need to prepare them before putting them in the freezer. For vegetables this involves blanching and cooling, and for fruits it often means use of a sweetener.

"Blanching is extremely important for vegetables," says Shirley Munson, horticulturist for the University of Minnesota's Agricultural Extension Service. Start your blanching with a large kettle of water and bring it to a rolling boil. Use one gallon of water per pound of vegetables, two gallons for leafy vegetables. Clean and prepare the vegetable. Place it in a wire basket or cheesecloth bag and submerge in boiling water. Keep the kettle covered during blanching and keep the heat high. Each vegetable has a different blanching time, but the goal is to achieve good heat penetration quickly. Start counting blanching time as soon as the vegetable enters the water.

Cooling, like blanching, needs to be done quickly. Immediately following blanching, submerge the vegetable in ice or under cold running water. If you use ice, you'll need about one pound of ice for each pound of vegetable.

Remember, blanching and cooling are essential to your success in home freezing of vegetables. Not only does blanching preserve the vitamin content, but it is necessary to inactivate enzymes that would produce "off" flavors.

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Quickly chilling the vegetable after blanching is necessary to preserve water-soluble vitamins. The three keys to correct preparation of a vegetable follow: bring water to a boil quickly, keep the blanching period as short as possible, and chill the vegetable quickly and remove from cold water promptly.

When freezing fruits, you can sort, wash and prepare them as for table use. Although fruits such as rhubarb and blueberries can be frozen without added sweetening, sweeteners are definitely recommended, according to Munson. "Sweeteners act as preservatives. Sugar and ascorbic acid are often used together to preserve quality and maintain color," she says. "Commercial preservatives are also available on the market. If you use those, be sure to follow the directions," she adds.

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June 4, 1982

Source: G. Edward Schuh, 612/373-0945
Writer: Jack Sperbeck, 612/373-0715

FARM COMMODITY PROGRAMS OUTDATED, ECONOMIST SAYS

"The world's economy has changed drastically, and agriculture's problems must be solved in the international arena," says G. Edward Schuh, head of the University of Minnesota's Department of Agricultural and Applied Economics. He's also a policy specialist with the University's Agricultural Extension Service. Schuh recently told the joint economic committee of the Congress that farm commodity programs miss the boat.

Two developments in the international economy have affected U.S. farm commodity markets, Schuh says.

--Emergence of a well integrated international capital market.

--A shift from fixed to flexible exchange rates.

"Countries ranging from the poorest to the most developed now use international capital markets. These capital markets link countries of the world very effectively. We're used to thinking of trade as the main linkage among countries, but the international capital market is just as important," Schuh said.

"When the U.S. devalued the dollar in 1971 and 1973 it made our agricultural products more competitive in international markets. This contributed to the commodity boom of the 1970s," he said.

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add one--farm commodity

"What's often neglected is that the U.S. dollar was overvalued during the 1950s and 1960s. An overvalued currency is equivalent to an export tax. This export tax caused us to resort to export subsidies to compete in international markets.

"Ironically, most people believe agriculture was the most subsidized sector of the economy during the 1950s and 1960s. But this neglects the sizable tax from the overvalued currency.

"Our devaluations in 1971 and 1973 eliminated this tax and helped U.S. agriculture to realize its competitive advantage in international markets. Most of us are familiar with the export boom that followed."

Flexible exchange rates now mean that agriculture is no longer isolated from monetary and fiscal policy. "When the Federal Reserve Bank pursues tight monetary policies, it attracts international capital to the United States. This bids up the value of the dollar and makes our exports less competitive in international markets, which is reflected immediately in lower prices at home. Eventually this leads to a decline in exports.

"When the Federal Reserve tries to stimulate the economy, we get the opposite effect. Declining interest rates in the domestic economy cause an outflow of capital. This causes the value of the dollar to fall and makes our exports more competitive. Again, this is reflected immediately in a price rise at home. Eventually it leads to an increase in exports."

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Communication Resources
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June 4, 1982

Source: G. Edward Schuh, 612/373-0945
Writer: Jack Sperbeck, 612/373-0715

AG POLICY PLAGUED BY WEAK DOLLAR, UNSTABLE COMMODITIES

Our new agricultural policies will need to come to grips with two old issues, according to G. Edward Schuh, head of the University of Minnesota's Department of Agricultural and Applied Economics. He is also a policy specialist with the Agricultural Extension Service.

First, the weak dollar of the mid and late 1970s contributed to an export boom that encouraged people and capital into agriculture. "If the dollar remains strong, as I expect, some resources will have to be shifted out of agriculture. Without assistance from the government, this adjustment will be painful and may take from three to five years. A farmer who's just invested in new buildings or equipment isn't going to give up quickly," he says.

"Low prices and low farm incomes are one way to encourage the resource flow. But it requires a painful and sustained time period to bring about such adjustments by free market forces alone.

"Policy measures that focus on symptoms and not the underlying causes can be counterproductive. They can bid up costs and land values and make agriculture even less competitive than it otherwise would be.

"Instead we need well-targeted programs for those farmers who are in difficulty. Some farmers will need help to liquidate their agricultural

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add one--ag policy plagued

holdings without taking big losses. Others will need help to survive temporary cash flow problems.

"We need more off-farm employment opportunities," Schuh says. Policies that reduce unemployment can help. So can policies that subsidize labor, such as formal schooling, training in manual and vocational skills, and policies that contribute to the consolidation of farm units.

"The second set of issues has to do with instability in commodity markets due to monetary disturbances. We need an end to the stop-and-go monetary policies that have characterized our economy over the last decade," Schuh says.

"Farmers and those concerned about the welfare of farmers should direct more of their efforts to getting more stable monetary policy than to fine-tuning commodity programs. Commodity programs are not capable of dealing with these monetary disturbances at costs to the government that will be politically acceptable," Schuh says.

He advocates major reform of international monetary arrangements by establishing an International Central Bank. "This could be accomplished by giving the International Monetary Fund the responsibility for regulating the rate at which international monetary reserves grow.

"Opponents to such an international bank argue that creating such an institution makes us give up too much sovereignty over our own economic policy," Schuh says. "My response is that we can't give up what we don't have," he says.

"Our world has become too well integrated, both through trade and international capital markets, to have much 'sovereignty' over our economies. We should stop pretending and recognize the problems we face.

"Whether we like it or not, we're essentially acting as the world's central banker again, just as we did during the 1950s and 1960s. We are not just bringing inflation under control here at home--we're squeezing it out of the world economy too. But we do it at a high cost to our export and import competing sectors. And we do it at a time when we're much more dependent on trade for our own resources needs."

news

Agricultural Extension Service
Communication Resources
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June 4, 1982

Source: David K. Wildung, 218/327-1790
Writer: Sam Brungardt, 612/376-8182

NEW UNIVERSITY OF MINNESOTA STRAWBERRY EXCELS IN HARDINESS, PRODUCTIVITY

While Minnesota gardeners and commercial growers eagerly anticipate this summer's strawberry season, a few are already looking forward to 1983, when they will be picking berries of a new cultivar, Northland, released recently by the University of Minnesota Agricultural Experiment Station.

Although plants of Northland were not widely available this spring, many Minnesota nurseries and garden centers should have them for sale in the spring of 1983, according to Dave Wildung, horticultural scientist at the North Central Experiment Station, Grand Rapids.

Northland was released for commercial and home garden use, especially for northern and western Minnesota, Wildung reports. "Interest in it continued at the West Central (Morris) and North Central Experiment Stations," he says, "because it proved to be quite adaptable to the northern and western parts of the state. The primary reasons for its release were its extreme hardiness--as good as any variety tested--and productivity."

Northland has been evaluated extensively in Minnesota as Minn. 1868 since 1969. Wildung says it has ranked at or near the top in yield at Grand Rapids, Morris, Excelsior and Staples. Reports from Duluth, Detroit Lakes, and Fargo, North Dakota indicate that it's done well at those locations also.

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add one--new strawberry

The plants of Northland are vigorous, produce runners freely and are moderately to lightly susceptible to leaf spot. The fruit ripens in midseason, about the same time as that of Trumpeter and Redcoat. It is large to medium in size; conic; bright red, both inside and out; and very attractive. Fresh, it is of good quality and rather mild in flavor. Frozen, it has been rated good at Grand Rapids, ranking fifth of 16 cultivars evaluated.

"Its biggest fault is probably its softness; it's not well suited to shipping," Wildung says, "but it's probably no worse in that respect than Trumpeter."

Adds the horticultural scientist, "One commercial strawberry plant grower near Buffalo, Minnesota thinks Northland would be an excellent choice for the home garden because of its productivity, winter hardiness and desirable fruit characteristics.

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June 4, 1982

Source: Richard D. Goodrich, 612/373-1110
Writer: Sam Brungardt, 612/373-8182

STEERS FED THIN STILLAGE INSTEAD OF WATER POST EXCELLENT GAINS AT MORRIS STATION

The first groups of beef steers fed stillage by-products from the University of Minnesota's fuel ethanol demonstration plant at the West Central Experiment Station, Morris, have been sent to market. It appears that excellent gains are possible when steers are fed thin stillage in lieu of regular drinking water. Less impressive, however, were the gains of steers fed pressed stillage solids as a partial substitute for corn and protein supplement.

When ground corn is run through an ethanol plant, roughly one-third of the dry matter of the feedstock ends up in the stillage by-products. Analyses of the Morris plant's screw-pressed stillage solids and thin stillage--the liquid and suspended solids obtained when the solids were removed in a screw press--showed them to have 27.6 and 30.2 percent crude protein, respectively, on a dry-matter basis.

The crossbred steers averaged 950 pounds at the start of the 107-day feeding trials. Control groups received corn silage, high-moisture corn, and a urea-based protein supplement, averaging about 2.6 pounds of crude protein per animal per day. The steers fed the thin stillage also received corn silage and high-moisture corn and a low-protein supplement. They had an average intake of about 2.4 pounds of crude protein per day. Those fed pressed stillage solids

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add one--stillage

(about 3.5 pounds per animal daily on a dry-matter basis) received about 2.8 pounds of crude protein each day.

The steers fed the thin stillage gained an average of 3.55 pounds per day, in contrast to a control group's average daily gain (ADG) of 3.48 pounds. The group fed the pressed stillage solids posted an ADG of 3.29 pounds, versus 3.53 pounds for its control group.

University of Minnesota animal scientist Richard Goodrich and Harley Hanke, the animal scientist who directed the feeding trials at the Morris station, analyzed the results. Says Goodrich, "The crude protein requirement for those steers should have been about 2.1 pounds per day. The improved rate of gain for those fed the thin stillage apparently is not due to protein, because we fed all groups more protein than they required. Some unknown benefit caused the improved performance."

Goodrich speculates that it might have been differences in vitamin or mineral contents of the feed; he says it can't all be explained by protein and energy differences.

"Whatever the cause, every pound of stillage dry matter consumed saved about 0.5 pound of corn silage and 2.1 pounds of grain on a dry-matter basis," he says.

Goodrich doesn't know exactly why the steers fed the pressed solids didn't gain as well as the other groups, but he suspects the reason is reduced feed intake due to the ration's high water content or poor palatability. "But while feeding stillage solids significantly lowered rate of gain, it did not influence the efficiency of feed conversion," he observes, "nor did feeding stillage result in any important effects on carcass traits in either case."

add two--stillage

Hanke says more feeding trials repeating the thin stillage feeding test are under way at the West Central Experiment Station. And work is continuing to determine the composition of the pressed stillage and to measure its net energy value.

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MP, 4-L

news

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St. Paul, Minnesota 55108

June 4, 1982

Source: William Phillipsen, 612/373-1038
Writer: Louise Jones, 612/373-1785

INSECTICIDE FOR CUT ELM WOOD APPROVED

One of the toughest problems related to Dutch elm disease has been what to do with the wood after the tree has been cut down. Until recently, ways of using the wood were limited because of the danger of elm bark beetle infestation. The beetles, which spread the Dutch elm disease fungus, use dead elm wood for breeding.

Now, thanks to research at the University of Minnesota, the possibility of utilizing elm wood has been increased, according to William Phillipsen, entomologist with the Agricultural Extension Service. The Minnesota Department of Agriculture has approved a special local need label for the insecticide Dursban 2E to be used on cut elm logs with bark attached. This method is for use only in Minnesota. It is based on research done by Phillipsen, Val Landwehr and Mark Ascerno, University of Minnesota entomologists.

The new label is available only to municipalities and is not to be used by individual homeowners.

It is illegal to store elm wood with bark intact in disease control zones between April 1 and September 15 because that is when the beetles lay their eggs beneath the bark. However, with the new label, municipalities can spray the insecticide on the logs at wood utilization sites, protecting them from the beetles during the crucial egg-laying period.

- more -

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add one--elm wood

The label gives municipalities an alternative or a supplement to chipping and debarking elm logs. Both these processes render the elm wood safe from beetles. But if chipping or debarking operations fall behind schedule or prove unfeasible, spraying insecticide on the cut wood can provide a back-up system.

The insecticide is to be used only at waste wood utilization-disposal facilities operated by municipalities conducting a shade tree management program.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108



June 4, 1982

Editor: Deedee Nagy, 612/373-1781

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*This series is provided by the University of Minnesota
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not intended to replace the advice of legal counsel on
individual matters*

FARM FINANCIAL DISTRESS: THE ALTERNATIVE REMEDIES

A significant number of upper Midwest farmers are suffering serious financial distress. This is not just a problem of the "small" farmer; rather, large farms with annual sales of more than \$500,000 are also being struck.

Some of the reasons for this situation are obvious and well understood; others are neither. However, some underlying causes include--

--production in excess of demand, and the resulting severely low prices for many farm products;

- more -

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add one--farm financial

--Very large amounts of government borrowing and the resulting record high interest rates;

--farmers' increased dependence on borrowed operating capital at interest rates as high as 16 percent to 24 percent;

--land values which seem to have been escalated to artificially high levels by lenders attempting to justify enormous extensions of farm credit over the past several years; and

--situations resulting where the slightest disruption of farm cash flows can cause many farmers to default on huge operating and capital loans.

Many farmers caught up in this dilemma are not receiving adequate advice from their regular advisors on what recourse they may have when threatened with financial failure. Some are unjustifiably afraid of certain remedies or simply do not understand them. Therefore, this edition of Ag Law News presents the basics of the following alternative remedies available to those facing impending farm financial failure:

--farm foreclosure;

--ordinary sale of farm assets;

--Chapter 7 Bankruptcy in farm liquidation; and

--Chapter 11 Bankruptcy in farm reorganization.

If the individual wants to stay in farming, the first three courses of action should be viewed as "last ditch" efforts. Unfortunately, we are hearing of many cases in which farm advisors are encouraging the "last ditch" without exploring alternatives. Also, the farmers' skillful presentation of feasible operating plans to lenders may be an additional alternative.

Farm foreclosure may take place when the farmer is delinquent on loan or mortgage payments and the major lender claims farm or other property used to secure debt. A foreclosure notice will be served on the debtor/farmer, giving a brief period to become current on the debt. At the end of that period, if the farmer

add two--farm financial

cannot come up with funds to make the loan current, the farm or other security property is sold at a public sale to the highest bidder. If, by chance, the sale proceeds exceed the amount(s) outstanding on the debt(s), the farmer may receive the difference.

Remember, however, that creditors in this situation are primarily interested in recovering the outstanding debt. Hence, the proceeds are not likely to exceed what is owed; instead, the two amounts are often equal! Also, land which has been overvalued on net worth statements will not likely bring those values when sold.

The farmer whose property has been sold at foreclosure has a one-year redemption period in which to pay the selling price at the sale, plus interest, and redeem the property. The farmer remains in possession of the property during the redemption period. Obviously, this course of action is not attractive to the farmer who will continue to hear from unpaid creditors after the property is gone.

Ordinary sale of the farm assets by the farmer is another alternative. If the farmer has decided to give up on farming, this course of action may be the attractive one. There are situations in which the farmer may simply want to sell out, pay the bills and walk away with any excess equity.

Two important types of voluntary bankruptcy are also available to the farmer on the brink of foreclosure. Farmers and their advisors should by all means reject the stigma which is often attached to this form of financial remedy. When appropriate, it is a remedy that is used by nonfarm business without dread. Farmers cannot be forced involuntarily into bankruptcy. Under the United States Bankruptcy Code, farmers are specifically exempt from involuntary bankruptcy.

Chapter 7 Bankruptcy in farm liquidation involves a sale of the farm assets. But, unlike the foreclosure sale, this one is governed by provisions of the United States Bankruptcy Code. Under the Chapter 7 Liquidation, you turn your assets over to the Bankruptcy Court. The court appoints a trustee

add three--farm financial

and the trustee liquidates your estate. This trustee then pays what he/she can on debts that are adequately proved to the court. Any claims which cannot be paid are discharged. Unpaid creditors can no longer harass you about those claims. However, if you later agree, with the Bankruptcy Court's approval, to pay a creditor for a debt that was discharged in bankruptcy, you are again fully obligated to pay that debt. Under this remedy, you lose everything that is not exempt. There are exemptions provided in the U.S. Bankruptcy Code. And while bankruptcy is exclusively federal (states cannot pass bankruptcy laws), some states require that you use the state's exemptions. Other states (including Minnesota) let you choose between federal and state exemptions. And in some states only federal exemptions are available. The farmer's exemptions are very generous. For example, in Minnesota a farmer may exempt a parcel of land of up to 80 acres. This parcel must be outside an incorporated town. And, while the exempt parcel can be subject to a mortgage or security interest, only the equity will be exempt -- not the unpaid mortgage or security interest. There is, however, no value limit on this exempt parcel. It contains the homestead and may be the site of many of the farm buildings.

Chapter 11 Bankruptcy in farm business reorganization may be approved if it is likely that the reorganized business can successfully recover from financial distress in a reasonable period of time. As debtor/farmer, you remain in possession of all your property and there are no limiting constraints on the amounts of secured and unsecured debt existing at the time a petition is filed. Under this alternative, you file a Chapter 11 petition and schedules for bankruptcy with the U.S. Bankruptcy Court and then you have 120 days in which you exclusively can file a plan of reorganization. Within that time, no one else can file the plan other than the farmer/debtor. After the 120 days, if a "Creditors Committee" has been appointed, either that committee or any other interested party, including the U.S. Trustee or a court-appointed trustee, can file a plan. You, as farmer/debtor still have the

add four--farm financial

right to file a plan after the 120-day period has ended, but it is no longer your exclusive right. During this period when the plan-filing is pending, you remain in possession of your assets and you continue to operate your farm business. However, you cannot obtain new debts or pay existing creditors without court approval.

Once your Chapter 11 plan, including your proposal for paying creditors, is approved by the creditors with the guidance of your attorney and the court, you administer the plan, you pay the creditors and you operate your farm. There is no standing trustee unless the court deems one necessary because of past acts or problems. The farmer is discharged of debts in accordance with and upon confirmation of the plan by the court. Your pay-out period will generally be more than three years. Also, taxes may be extended if necessary. Though there is no trustee assigned to you, you must make monthly reports to the United States Trustee.

When the bankruptcy petition is filed, all proceedings against you are "stayed" or suspended. For example, a foreclosure proceeding against you would be stopped at this point. Creditors should note that if the farmer has equity in the farm property, the mortgage holder is protected. The creditor is temporarily not getting current payments, but there's enough property to protect the creditor's security interest. If the creditor is not adequately protected, the court may let a foreclosure proceed. The bankruptcy "stay" may also temporarily stop the running of the one-year foreclosure redemption period after the property has been sold under foreclosure. That is, the debtor has a longer period in which to redeem the property. Creditors may also fare better under the Chapter 11 plan. For example, if the property is simply sold or foreclosed, the proceeds may not yield as much value to be applied to the debt as can be generated by the farm operating under the reorganization plan. Further, the plan will not be approved if there is not a reasonable likelihood of success and if the creditor is not adequately protected.

add five--farm financial

Any time you, as a farmer, are threatened with foreclosure, you should talk to your attorney. This doesn't necessarily mean you'll want to file a bankruptcy petition. You may want to sell out, pay the bills and walk away with your equity. Or you may be able to negotiate a workable arrangement with your creditor. This all depends on your individual situation. However, when it seems that bankruptcy is your best alternative, you should seek the advice of an attorney who specializes in bankruptcy, who is familiar with Chapter 11 procedures and who is familiar with the farm business situation generally.

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University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

for County Agents

COUNTY NEWS PACKET

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NOTE TO AGENTS AND COUNTY DIRECTORS: In the media packet this month (tan paper) you will find Ag Law News. It is being sent directly to daily newspapers, farm broadcasters and regional and statewide agricultural periodicals. The timely and important subject, farm bankruptcy, should be useful to you in columns and newsletters as well as in answering questions from local persons.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Reference: E. A. Zottola
(612) 373-1082

Writer: Deedee Nagy, 612/373-1781

DOES CANNING FOOD SAVE MONEY? CONSIDER EQUIPMENT COSTS

To can or not to can: to many home gardeners and home canning enthusiasts, the answer is obvious. The satisfaction they get from putting up the summer's bounty for enjoyment during winter's depths overrules any dollar-and-cents considerations.

And, indeed, if you grow your own produce to be canned, the savings can be substantial, agrees (name), (county name) County agent with the Agricultural Extension Service. The more difficult question arises when home canners must buy produce and compare its home canned cost with canned fruits and vegetables at the grocery store.

The economy of home canning will hinge on the cost of the produce as well as your investment in a water bath or steam pressure canner, jars and lids, labor and energy. Some essential canning equipment is reusable, but anyone investing in this expensive equipment will need to can for several years before they will get a return on their investment, (name) adds.

For example, a pressure canner, which is a must for safely canning low-acid vegetables, can cost between \$35 and \$75. According to figures from extension specialists at Purdue University, if the home canner puts up 100 jars of food each year for 10 years, the cost of the canner spread over that many years and jars will still add between 3½ and 7½ cents to each jar canned.

Similarly a \$10 to \$15 water bath canner will add one to one-and-one-half

-more-

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add one--does canning food save

cents per jar to home canning costs when the homemaker uses it for 10 years to can an average of 100 jars of fruit or tomatoes a year. Used each year for 10 years, jar costs would add about two to three cents to the cost of each jar of home-canned food.

Even if these costs seem high, home canners shouldn't cut corners on equipment. "A pressure canner is absolutely essential for canning low-acid vegetables," (name) says. "Botulism food poisoning is a real risk for anyone attempting to can such vegetables without a pressure canner, and funerals cost much more than pressure canners."

Home canning enthusiasts sometimes buy jars at garage or rummage sales. This can be a savings if you check them carefully for nicks and chips. Old blue canning jars are too old for canning and should be used only for decoration or as canisters.

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St. Paul, Minnesota 55108

June 4, 1982

Writer: Louise Jones, 612/373-1785
Reference: Edmund A. Zottola
612/373-1082

PROPER CANNING METHODS PREVENT BOTULISM

Canning your own vegetables may be a very satisfying experience, but it may also be very dangerous, unless you use proper canning methods.

Botulism, a deadly disease caused by toxins occurring in improperly preserved foods, can be prevented by carefully following the proper steps, says (name of agent), (name of county) County Agricultural Extension Service agent.

There are two basic methods of canning. The boiling water bath can be used with high-acid foods such as fruit, tomatoes and sauerkraut. Low-acid foods, which include most vegetables, meat and fish, must be canned in a pressure canner.

When using the boiling-water-bath method, immerse the sealed jars in a deep container of boiling water so at least an inch of water covers the jar lids. Consult a home-canning chart for the proper time the food should be boiled. Add more boiling water as it evaporates.

When the processing time is up, remove the jars. Don't disturb the lids on self-seal jars, but tighten closures on all other types. When the jars are cool, test the seals, label and store in a cool, dry place.

The boiling water bath is not safe to use with low-acid foods. In high-acid foods, the acid inhibits the growth of botulism-producing bacteria, and the boiling water bath destroys other yeasts, molds and bacteria. But low-acid

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add one--proper canning

foods will permit the germination of the bacteria that produce botulism unless they are canned at temperatures of 240°F or higher. This can only be done by using a pressure canner.

Low-acid foods must be canned at pressures of under 10 pounds (240°F) or 15 pounds (250°F) in a pressure canner to reach the proper temperature to destroy the botulism-producing bacteria. The amount of time this takes depends on the vegetable involved and the size of the container used. Follow the recommendations in a home-canning guide. Make sure that the pressure gauge on your canner is in good condition.

Home canning should never be done in the oven, (name of agent) cautions. Jars may explode and the temperatures are not high enough to destroy the botulism-producing bacteria or bacteria that cause spoilage.

Never use canned food that shows any signs of spoilage. Boil low-acid home-canned foods for 10 minutes before tasting (20 minutes for corn and spinach). If you do dispose of any home-canned products, be certain that they won't be eaten by humans or animals after you have thrown them out.

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June 4, 1982

Writer: Louise Jones, 612/373-1785
Reference: Edmund A. Zottola
612/373-1082

HOME-CANNED FOODS: BOIL FIRST, TASTE LATER

You've finished all your home canning, being very careful to follow all the proper canning procedures. Now you're looking forward to enjoying the fruits of your labors. You visualize yourself opening one of the jars, sniffing the aroma and taking a little taste. Stop right there! That little taste could kill you.

Home-canned meats and vegetables must be boiled for 10 minutes (20 minutes for corn and spinach) before being eaten, to prevent the risk of botulism poisoning, says (name of agent), (name of county) County Agricultural Extension Service agent.

"Even one small taste of home-canned food directly from the jar could cost you your life," (name of agent) warns. The deadly Clostridium botulinum toxin may not have been completely destroyed during the canning process, and even the tiniest amount of toxin can be fatal.

According to food scientists at the University of Minnesota, even food that has been processed in a pressure canner can be dangerous. The temperatures recommended for pressure canning (240° F, or 10 pounds pressure) should destroy all C. botulinum spores, but there is always a risk that some of the spores will survive because of variations in equipment accuracy or fluctuations in pressure

- more -

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add one--boil first

and temperature. If the spores survive, they can produce the deadly toxin. Boiling for 10 to 20 minutes will destroy all remaining toxin.

The only home-canned foods that do not need to be boiled before eating are fruit, tomatoes and sauerkraut, because their high-acid content kills botulism spores. However, if tomatoes and sauerkraut have been mixed with other vegetables before canning, the acid content will no longer be high enough, and they should be boiled 10 minutes before serving.

The additional boiling time will not subtract appreciably from the nutritional value of the food, (name of agent) points out, because the greatest nutrient loss has already occurred during the canning process.

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University of Minnesota
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June 4, 1982

Writer: Louise Jones, 612/373-1785
Reference: Edmund A. Zottola
612/373-1082

CANNING DO'S AND DON'TS

Better safe than sorry. Nowhere is this saying more applicable than when canning home-grown foods. It is essential to use proper and up-to-date canning procedures to protect your family against the deadly botulism toxin, warns (name of agent), (name of county) County Agricultural Extension Service agent.

Here is a list of some do's and don'ts to safeguard against botulism and other spoilage bacteria.

DO follow only current, tested methods such as those given in publications available from the Agricultural Extension Service, the U.S. Department of Agriculture and manufacturers of canning supplies.

DO follow recommended times and temperatures.

DO use a properly functioning pressure canner for canning all low-acid foods. Low-acid foods include all vegetables except tomatoes, and meats, poultry, milk, seafood and combination products such as soups.

DO use the boiling-water method only for fruits, tomatoes, sauerkraut and pickles in vinegar.

DO thoroughly wash or peel any fruits or vegetables that have been sprayed with pesticides.

DO boil home-canned products for 10 minutes (20 minutes for corn and spinach) before serving. The heat will destroy any toxin that may have formed

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add one--canning do's

in spite of all precautions. High-acid foods do not need to be boiled.

DO select processing times and temperatures for combination foods based on the ingredient with the lowest acid rating. Other vegetables mixed with tomatoes will lower the acidity and require pressure canning.

DON'T can overripe fruits and vegetables, especially tomatoes.

DON'T re-use sealing lids or cracked, chipped jars.

DON'T use jars that aren't designed for canning.

DON'T overpack jars. Allow adequate "head space" above the food.

NEVER use canned foods that show any signs of spoilage. Never taste doubtful food; the tiniest amount of botulism toxin could be fatal.

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June 4, 1982

Writer: Louise Jones, 612/373-1785
Reference: Edmund A. Zottola
612/373-1082

TOMATO-VEGETABLE RECIPE IS SAFE FOR WATER BATH CANNING

A canning recipe for a tomato-vegetable mixture that may be used with the boiling-water-bath process has been developed by researchers at the University of Minnesota.

Generally, when tomatoes are mixed with other vegetables, they cannot be canned using the boiling-water-bath method because of the risk of botulism poisoning, according to (name of agent), (name of county) County Agricultural Extension Service agent. Tomatoes without other vegetables added contain enough acid to kill the botulism-producing bacteria, Clostridium botulinum, and they do not require pressure canning. But the addition of other vegetables may reduce the acidity, requiring the use of a pressure canner to ensure safety.

The recipe that has been developed by food scientists at the University should be followed carefully, (name of agent) says. Do not add any more pepper, onion or celery than called for in the recipe.

Minnesota Tomato Mixture

12 cups tomatoes, peeled and quartered
1 cup chopped celery
 $\frac{1}{2}$ cup chopped onion
 $\frac{1}{2}$ cup chopped green pepper
3 teaspoons salt

Simmer the vegetables for 10 minutes. Pack into clean, hot canning jars and process. Makes seven pints. For seven quarts, double the recipe.

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add one--tomato-vegetable

In the water bath method, place the filled jars in the canner and add water until it is one inch above the top of the jars. Begin timing when the water boils. Boil 50 minutes for quarts; 40 minutes for pints.

The tomato mixture may also be canned using a pressure canner. The advantage of a pressure canner, (name of agent) notes, is that it takes less time, uses less energy and limits the amount of steam in the kitchen.

In pressure canning, the tomato mixture is packed in jars as it is for water bath processing. Place the jars in a pressure canner containing two or three inches of boiling water. Lock the lid, turn the burner on high and when a steady column of steam escapes from the vent, place the pressure regulator or weighted gauge in position. When the dial gauge or weighted gauge indicates the pressure has reached 15 pounds, turn off the heat and allow the pressure to return to zero pounds.

If you have an electric range, remove the canner from the burner. If you are using a gas range, you can leave the canner where it is after the heat is turned off, (name of agent) notes.

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June 4, 1982

Writer: Louise Jones, 612/373-1849
Reference: Edmund A. Zottola
612/373-1082

A SAFE RECIPE FOR FAKE PINEAPPLE

A recipe for fake pineapple made from zucchini squash has been tested and found safe. However, it must be followed exactly, food scientists at the University of Minnesota Agricultural Extension Service caution.

Last year home canners were advised to discard any jars of the pineapple/zucchini mixture made from recipes that were circulating throughout Minnesota and other midwestern states. At that time, research at Michigan State University indicated that the mock pineapple could become a medium for growth of bacteria that produces the deadly botulism toxin.

At Purdue University, researchers tested several recipes and found that the amount of lemon juice in the mixture and the recommended processing time were important factors in the safety of the product. They found one recipe that maintained its high acidity after three months of storage. The acid inhibits the botulism-producing bacteria.

Based on the Purdue study, food specialists at the University of Minnesota recommend the following recipe.

FAKE PINEAPPLE

4 quarts grated or diced zucchini
1½ cups "Real Lemon" juice
1 can (46 oz) unsweetened pineapple juice
3 cups sugar

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add one--safe recipe

Remove peeling and seeds from zucchini. Grate or dice. Mix all ingredients thoroughly and simmer for 20 minutes. Stir frequently. Pour hot zucchini mixture into clean, hot jars, leaving $\frac{1}{2}$ -inch head space. Process 30 minutes in boiling water bath.

NOTE: The information given in this publication is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Minnesota Agricultural Extension Service is implied.

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June 4, 1982

Source: Ed Zottola, 612/373-1082
Writer: Mary Kay O'Hearn, 612/373-1786

FRESH PACK PICKLES ARE EASIEST

If you are a newcomer to pickle making, perhaps starting with fresh pack pickles should be your route.

Fresh pack dills, bread and butters, pickled fruit and relishes can easily be tackled by the novice pickle maker. Just follow a good recipe and take a few precautions. Brined pickles or fermented dills, sweet gherkins and sauerkraut take more time and greater skill.

Fresh pack or quick process pickles like whole cucumber dills, cross-cut cucumber slices or bread and butter pickles are brined or soaked in a salt solution several hours (or overnight), then drained and combined with boiling hot vinegar, spices and other seasonings. The tart flavor is due to the acetic acid in vinegar.

All recipes recommended by food scientists at the Agricultural Extension Service, University of Minnesota, are based on the use of 4 percent to 6 percent acetic acid vinegar. Although this is what most commercially bottled vinegar is, you should check the label to be sure (40-60 grain acetic acid means the same thing). Either cider vinegar or white distilled vinegar may be used in pickle recipes. Cider vinegar has a mellow taste, but may discolor certain vegetables. White vinegar has a sharp taste; it is not imitation or synthetic vinegar. Food scientists advise using white distilled vinegar if a light color is important.

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add one--fresh pack pickles

Some old-time recipes are based on 3 percent acidity vinegars. This is why some of grandma's pickle recipes don't turn out today. Using homemade vinegar or barrel vinegar of unknown acidity or acidity below 4 percent can make pickles spoil.

Always work with fresh products. Be ready to start pickling immediately after you pick or buy the cucumbers you intend to use.

Use standard canning jars free of chips, cracks or nicks which could prevent the airtight seal. Widemouth jars are easiest to fill. Never use empty mayonnaise, peanut butter or other packers' jars. They may not be heat-tempered and can easily break in processing.

Have jars clean and hot when packing them prior to heat processing.

In water bath canning all pickle products should be heat processed in a boiling water bath canner to destroy yeast, molds and bacteria that can cause spoilage and to inactivate enzymes that may affect color, flavor and texture of the pickles.

Canning salt should not contain any iodine or anticaking agents which can cause darkening and cloudiness in pickles. Avoid water with high iron content; soft water is best if available. Brown sugar may darken the liquid somewhat though either white or brown is all right. If using non-nutritive saccharin type sweeteners, use recipes that come with these products.

In some fermented pickle products like sauerkraut and half dills, no vinegar or acetic acid is used. Lactic acid is produced in these products during fermentation. Fermentation in half dill pickles is halted by refrigeration. This type of pickle should never be heat-processed.

Pickles, stored in the darkness of a cool cellar, should be good for a couple of years. Pickles stored in a light place may change color and not be as attractive for eating, food scientists at the university conclude.

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Agricultural Extension Service
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St. Paul, Minnesota 55108

June 4, 1982

Source: Shirley Munson, 612/373-1561

Writer: Deedee Nagy, 612/373-1787

IT'S TIME AGAIN TO PREPARE FREEZER FOR NEW FOODS

Defrosting the home freezer is one of those jobs most homemakers put off as long as possible--but it's quality insurance for the vegetables and fruits you plan to freeze from your garden this summer.

Allowing too thick a layer of frost to accumulate reduces the efficiency of operation and takes up space, according to Shirley Munson, food scientist in the University of Minnesota Department of Horticultural Science.

Another reason for defrosting and cleaning out the freezer in spring is to take inventory of foods that are stored, use those that have been stored longest and organize the freezer for the new crops of vegetables and fruits. It's always surprising to find certain foods tucked away where you hadn't noticed them.

Mrs. Munson gives these directions for defrosting your freezer:

Shut off the electricity, remove the food and leave the lid or door open. To hasten thawing, direct an electric fan into the open freezer and scrape off the ice as it loosens. Or put pans of hot water in the freezer and close the lid or door for half an hour or so. Use towels on the bottom of the chest freezer or the shelves of an upright freezer to collect ice and soak up water.

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add one--it's time again

After all the ice is removed, wash the interior of the freezer with a warm detergent or soda solution, using 3 tablespoons of baking soda to a quart of water. Wipe walls and floor dry and turn on the electricity. After the remaining moisture inside has frozen, check the thermometer to see that the temperature is dropping to zero and replace the food.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: Shirley Munson (612) 373-1561
Writer: Richard Sherman (612) 373-1944

WHAT TO DO IF YOUR FREEZER FAILS

"With tornado season approaching, you might want to give some thought to power failures," says Shirley Munson, horticulturist for the University of Minnesota's Agricultural Extension Service. "If the power goes out on your freezer, the single most important thing you can do is keep the door shut," she says.

Estimate how long the freezer will be off. If it's only a few hours, don't worry about it. If it's longer than that, estimate how long the food will keep. A fully loaded freezer with the door shut will keep food frozen about two days. If it is half-full or less, food will probably begin thawing in less than a day. The colder your freezer was when the power failed, the longer it will take to thaw. A chest freezer will generally stay cold longer than an upright, and a freezer in a warm location, such as a garage, won't stay as cold as one in a basement. Also, judge the quality of your freezer and the amount of insulation. A well-insulated freezer will keep food colder much longer than one with poor insulation.

Even with the door closed and the freezer packed to capacity, if the power outage is going to be for several days, your best option is probably to move your food to another freezer. One possibility is a local locker plant. If you do need to use a plant, call first to make sure that space is available.

"Dry Ice is another possibility, but it's hard to find," says Munson. "If you are able to find it, spread it out evenly throughout the freezer using gloves to protect your hands," she says. You will need about 25 pounds of it to hold

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add one--what to do if your freezer fails

the temperature of a half-full, 10-cubic-foot cabinet below freezing for two to three days. Be sure to use only Dry Ice! "Ordinary ice won't really do much good," says Munson. "It won't have much effect on the temperature and it will leave a mess as it melts," she adds.

Before any of this happens, you have time to prepare. Preparation is the key to dealing with power failures, not waiting for them to happen. Here are some suggestions on what to do before the power goes out:

- * Locate a source of Dry Ice.
- * When buying a freezer, choose a well-insulated one.
- * Use care in preparing, packaging and freezing food.
- * Keep canning supplies on hand as a way to save food that has thawed.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: Shirley Munson, 612/373-1561
Writer: Deedee Nagy, 612/373-1781

HOME FREEZING BRIEFS

How Much Unfrozen Food in the Freezer?

The amount of unfrozen food it's safe to put into a home freezer chest will vary with the load already in the box and the size of the freezer. Don't try to freeze too many packages at one time though. A good rule of thumb is to put in no more than two pounds of unfrozen food per cubic foot of freezer space. In other words, if you have a 12-foot freezer, you can freeze from 24 to 36 pounds. If the packages are spread out so they cool rapidly, another two pounds per cubic foot of space can be frozen in the next 12-hour period.

Stagger the unfrozen packages along the bottom and outside walls of a chest freezer and the shelves of an upright freezer, placing them in close contact with the coils, if possible. Be sure to allow air space between packages so they will freeze as quickly as possible, and try not to place unfrozen packages on top of those already frozen, University of Minnesota Agricultural Extension Service specialists advise.

* * *

Freeze Muskmelon for Fruit Cup

A few packages of muskmelon balls tucked away in your freezer will be the makings of delicious fruit cups next winter, specialists at the University of Minnesota Agricultural Extension Service suggest.

- more -

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add one--home freezing briefs

Freezing muskmelon is simple. Just cut the flesh into balls or cubes and pack in a sugar syrup using two cups of sugar to one quart of cold water. Freeze. Be sure to serve the muskmelon partially frozen; never thaw it out completely.

* * *

Ascorbic Acid Prevents Peaches from Darkening

If you've had trouble keeping your frozen peaches from darkening, ascorbic acid (vitamin C) may solve your problem. Ascorbic acid added to the sugar syrup in which peaches are frozen will prevent the fruit from darkening and at the same time help preserve the natural flavor of the fruit, say specialists at the University of Minnesota Agricultural Extension Service.

Don't use vitamin C tablets, though. They're too expensive. If you use commercial ascorbic acid preparations, be sure to follow directions on the package.

Speed is important in preparing peaches for freezing, because delay may cause darkening of the fruit. Dissolve three cups of sugar in a quart of cold water and let the syrup stand until clear. Mix one-half teaspoonful of pure ascorbic acid in a small quantity of water and add it to the syrup, mixing thoroughly. However, don't add the ascorbic acid until you're ready to prepare the fruit. Prepare only a few peaches at a time and pack the halves or slices directly into the prepared syrup to which the ascorbic acid has been added. A generous wad of waxed paper under the cover of the container will hold down the top slices and help prevent browning. Be sure the fruit is covered completely with syrup.

July (Early) Elberta, Elberta and J. H. Hale varieties are excellent for freezing. Of course, the fruit should be well ripened for best flavor.

* * *

Speed Important in Freezing Corn

Speed from garden to freezer is one of the most important rules to remember when it comes to freezing sweet corn. Corn quickly loses flavor when it is held for any length of time after picking, unless it is refrigerated.

add two--home freezing briefs

For top quality, corn must also be at just the right stage of maturity for best eating. Tests at the University of Minnesota Agricultural Extension Service indicate that Golden Bantam types are best for freezing.

Blanching is the most important step in preparing sweet corn for freezing. By inactivating enzymes, blanching preserves the fresh quality of corn as well as its color and vitamin content. It also helps lengthen storage life.

Be sure to use plenty of water for blanching. A large kettle that will hold at least 12 to 15 quarts of boiling water is best.

The timetable for scalding is given in Extension Folder 156, "Freezing Fruits and Vegetables." Request a copy from your county extension office.

* * *

Cobby Taste, Strong Smell of Corn

Some homemakers complain that their frozen corn has a cobby taste. Others say they don't like the strong smell of corn in their freezers.

The cobby taste of corn is due to insufficient blanching. Be sure to follow the timetables for scalding given in University of Minnesota Agricultural Extension Service Folder 156, "Freezing Fruits and Vegetables."

Poor cooling after blanching is responsible for the strong smell of corn in the freezer. Chill the corn in cold running water or iced water for at least the same length of time as given for blanching. Insufficiently cooled corn is not harmful, however.

* * *

Bing Cherries Freeze, Too

Sweet cherries are a practical fruit to add to the freezer if they can be purchased at a reasonable price. Remove the pits before freezing. Then make a syrup in the proportion of two cups sugar to one quart water. Add one-half teaspoonful of ascorbic acid for each quart of water used. Cover the cherries with this mixture, leaving space at the top to allow for expansion. The fruit will have a more pronounced cherry flavor if you add four teaspoons of lemon juice

add three--home freezing
for each quart of water.

Frozen cherries are excellent as a dessert or added to gelatin or other salads or to fruit cups. Since they go a long way, it's wise to freeze them in small containers, say specialists at the University of Minnesota Agricultural Extension Service.

* * *

Fryers in the Freezer

Take advantage of a buy in broiler-fryer chickens by putting some in the home freezer.

Cut-up chicken takes the least freezer space because it can be packaged flat. Pack the meaty pieces--breasts and legs, separately from the bony parts--backs, necks and wings. Wrap livers and gizzards separately from the rest of the chicken because they don't keep as well.

These young birds may also be frozen whole to be used for quick roasting. But whether you freeze these tender birds whole or cut-up, be sure to wrap them closely and seal tightly, using moisture-vapor-resistant wrapping. Freeze fast at below-zero temperature, then hold at zero F, specialists at the University of Minnesota Agricultural Extension Service recommend.

* * *

Blanching Is a Must

Many consumers ask if they can omit the blanching process when they prepare such vegetables as beans and corn for freezing. The answer is still "No!"

Experiments at the University of Minnesota Agricultural Extension Service show that vegetables not blanched lose much of their original color and flavor and take on an unpleasant, strawlike taste. Unblanched vegetables also lose ascorbic acid—or vitamin C—much more rapidly during storage than the blanched ones. So, if you want your frozen vegetables to be edible next winter, better blanch them before freezing.

add four--home freezing

Always use a gallon of water for each pound of vegetable. Using a large kettle, bring the water to a full rolling boil. Place the prepared vegetable in a wire basket or large loose cheesecloth bag and submerge in the boiling water. Start counting blanching time as soon as the vegetable is put into the boiling water. Keep the kettle covered during the blanching and keep the heat on high. Immediately after blanching the required time, cool the blanched vegetables in cold running or ice water.

* * *

Why Are Frozen Green Beans Tough?

One of the problems consumers encounter in freezing green beans is that they toughen. There's no one answer to that toughness. It may be caused by climatic conditions, soil conditions, variety, temperature at time of picking or maturity of the bean. Kentucky Wonder (pole bean), Tendergreen, Topcrop, Tendercrop and Tidal Wave are varieties that freeze well, according to University of Minnesota Agricultural Extension Service specialists.

* * *

If You Freeze Potatoes

If you have potatoes in your home garden, have no storage space for them and feel you want to freeze a few, follow this procedure: Cut them into one-half-inch cubes and blanch them for five minutes. Cool them and then drain, package and freeze. Follow directions for blanching vegetables, say University of Minnesota Agricultural Extension Service specialists.

* * *

Getting the Most Out of Your Freezer

You'll get the greatest satisfaction from your freezer if you have a rapid turnover of the food that's in it. Studies show that the higher the rate of turnover the lower the cost per pound of frozen food. In other words, a freezer that's filled only once a year will not give as much satisfaction as a freezer that's kept nearly full the year round. Moreover, a half-empty freezer uses as

add five--home freezing

much electricity as one that's full.

Plan how much of the various meats, fruits and vegetables you'll need during the year and then budget the freezer space accordingly. Budgeting your freezer space allows for a greater variety of frozen food. And there's less chance that you'll freeze extra amounts of food that may have to be held for so long that the quality will deteriorate.

* * *

Slice Strawberries for Best Flavor

For the best flavor in frozen strawberries, slice them and pack them in sugar. More of the full strawberry flavor is retained in sliced berries because there is more sugar penetration. Use one pound of sugar to four or five pounds of fruit, depending on the sweetness of the berries. That's equivalent to one cup sugar to seven or eight cups of hulled berries. If you prefer to freeze strawberries whole, use medium-size berries and pack them in sugar syrup, using three cups of sugar to one quart of water. Be sure to select firm, ripe, bright red berries.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: Mary Darling, 612/376-4663
Writer: Deedee Nagy, 612/373-1781

STORE VEGGIES PROPERLY

It would be ideal to go to your garden for whatever vegetable you wanted to serve your family any time of the year. However, science has made it possible for us to have vegetables--dried, canned, frozen--almost any time of the year.

During the growing and harvesting season, use fresh vegetables whenever possible, suggests Mary Darling, Agricultural Extension Service nutritionist at the University of Minnesota. The added cleaning, cutting and cooking time is a small price to pay for the added flavor and goodness. Let children help harvest and prepare vegetables, especially those new to them.

Store vegetables properly to maintain garden freshness. Even with ideal storage conditions--the right temperature and humidity--most fresh vegetables retain top quality only for a few days. So plan to use them promptly.

Green, leafy vegetables quickly wilt and change flavor as water evaporates. Corn, beans and peas lose sweetness within a short time as the sugar converts to starch.

Most fresh green vegetables keep well and stay crisp if put in covered containers or plastic bags and stored in the refrigerator. If you wash lettuce, celery and other leafy vegetables before storing, drain thoroughly since too much water hastens decay. Remove the tops from beets, carrots and radishes before storing.

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add one--store veggies

Always sort vegetables before storing. Discard or use at once any bruised or soft vegetables. Do not store them with the sound, firm vegetables. Here are special directions for certain vegetables:

Corn--store unhusked and uncovered in refrigerator for one or two days.

Green peas--store uncovered in refrigerator for one or two days.

Cauliflower, celery, cucumbers, green or wax beans, peppers--store in plastic bags or crisper of refrigerator and use within one week.

Beets, cabbage, carrots, parsnips and radishes--store in plastic bags or crisper of refrigerator and use within two weeks.

Tomatoes--store ripe tomatoes uncovered in the refrigerator. Keep unripe tomatoes at room temperature away from direct sunlight until ripe and then refrigerate. Too much sunlight prevents development of even color.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: R. J. Epley, 612/373-0977
Writer: Deedee Nagy, 612/373-1781

MEAT TENDERNESS IS KEY TO OUTDOOR COOKERY

When buying beef to cook on an outdoor grill, make tenderness your first consideration suggests Richard Epley, Agricultural Extension Service meats specialist at the University of Minnesota.

Pork and lamb pose less of a tenderness problem because they come from younger animals. The dry heat of a barbecue grill, however, produces its best results on beef cuts from the rib and loin.

Epley says some cuts from the chuck and round can be cooked successfully on a grill if they are moderately marbled (specks of fat in the lean) or if they are tenderized with a marinade. Beef round top round steak is an example of a less tender cut that can be cooked on a grill with special precautions in selection and marinating.

In addition to marbling, Epley suggests the outdoor chef should look for a fine, velvety texture and bright color to insure tenderness and juiciness.

He also offers these tips:

* Cook the meat, don't burn it. This means the coals should be gray, not red.

* Don't overcook. Meat that is burned and dried out will lack tenderness and, of course, juiciness.

* Serve meat hot. Keep guests waiting, but never keep the meat waiting for the guests.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: Cherilyn Nelson, 612/376-1536
Writer: Deedee Nagy, 612/373-1781

SUMMER STAINS POSE SPECIAL WOES

Summer weather and outdoor activities can lead to several common but stubborn fabric stains. Cherilyn Nelson, textiles and clothing specialist with the Agricultural Extension Service at the University of Minnesota, tells consumers to tackle stains while they're fresh. The longer they stay on the fabric, the more difficult they may be to remove.

She also suggests identifying both the garment's fiber type and the stain involved, before trying to treat it. Washing sometimes sets stains permanently, so look for stains and pretreat them.

Before using any stain remover, test for color change and fabric damage on a hem or some other inconspicuous place. In general, avoid hot water on a stain of unknown origin, Nelson cautions. Also, work on a stain from the wrong side of a garment, pushing it out rather than further in.

Here are some typical summer stains and tips on their removal:

* Grass Stain - On fabrics such as cotton, cotton/polyester, linen, nylon spandex, work detergent into the stain and rinse well with water. An enzyme presoak product can be tried if any stain remains. Rinse thoroughly and launder as soon as possible. If any stain still remains, use a bleach, but check dye fastness first.

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add one--stains

* Tar - Take the following steps in order as needed: Sponge on dry cleaning fluid (grease solvent) until no more stain is removed. Rub on detergent, launder in hot water if fabric can be laundered.

* Mildew - "Dry clean only" articles should be taken to the cleaner or treated with dry cleaning solvent as soon as possible before the mold has a chance to weaken the fabric. Usually most mildew stains can be removed during laundry if they are moistened beforehand. Rinse well and dry. If stain remains, treat with a bleach; check for colorfastness.

* Fruit, Berry Stains - Soak in cool water. If stain remains, work detergent into it and rinse. Or, if safe for the fabric, pour boiling water through the spot from a height of 1 - 3 feet. Bleach which is safe for the fabric and finish can be used on any remaining stain.

* Perspiration - For a fresh stain, soak in detergent and warm water to which one tablespoon ammonia has been added. If stain is old, try the same procedure using vinegar instead. Rinse and allow to dry.

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Agricultural Extension Service
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University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Sources: Wanda Olson, 612/373-0913
Becky Yust, 612/376-8133
Writer: Gail Tischler Marko,
612/373-1782

SAFER, MORE CONVENIENT MICROWAVE OVEN USE UNDER STUDY

Do you have a microwave oven in your kitchen? Whether you installed it on the counter top, as a built-in, or over the range, did you consider the safety and convenience of its placement?

Wanda W. Olson, a specialist on household equipment with the University of Minnesota's Agricultural Extension Service and one of the researchers who recently completed an Experiment Station study on microwave oven placement, suggests that people planning to install a microwave oven think of the height of family members.

"It's nice if the microwave is safe and most convenient for the major user, but it should be safe for all users," says Olson. "The location of a microwave is important because of the danger of spilling hot foods, especially liquids, and the fact that the microwave is used by everyone in the family."

The research done by Olson and Becky Love Yust, an instructor in the department of family social science, establishes guidelines for safe use and the most convenient location of a microwave oven in the home.

In the first phase of their research, Olson and Yust tested various placement heights for safety and convenience. Thirty people varying in age and height rated 10 tasks for safety and convenience. The tasks included

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add one--microwave ovens

heating a bowl of soup, baking a cake or casserole, and cooking meat on a rack.

In the laboratory, the researchers positioned microwave ovens at the eight heights at which these appliances are commonly installed as counter top, built-in or over-the-range units. The research showed that for safe use, the microwave oven should be located so the cooking surface--the oven shelf or rack--is no higher than the user's shoulder.

"When you reach above your shoulder level, you don't have good control," Olson explains. "And when food is no higher than your shoulder, you can see inside the casserole to see if the food is bubbly and also can see the food when lifting the dish out."

For maximum convenience when loading the oven, looking at the food or cleaning the oven, the research showed that the oven shelf or rack should be at a height between 2 inches below and 10 inches above the elbow.

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Agricultural Extension Service
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University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Sources: Wanda Olson, 612/373-0913
Becky Yust, 612/376-8133
Writer: Gail Tischler Marko,
612/373-1782

WHERE YOU PLACE MICROWAVE CAN SAVE STEPS

Where you place a microwave oven in your kitchen may change your work patterns and add or subtract steps from your daily chores.

Wanda Olson, household equipment specialist with the University of Minnesota's Agricultural Extension Service, and Becky Love Yust, instructor of family social science, researched kitchen plans that include microwave ovens. They found that a microwave oven often changes the ways a person works in the kitchen.

The lines between the sink, range and refrigerator define the area commonly called the work triangle. Adding a microwave oven to a kitchen can create another work center or replace the range in the usual sink-range-refrigerator work triangle.

To study this, Olson and Yust had 24 randomly selected microwave oven owners prepare a meal in a laboratory kitchen. Some participants cooked the meal on a range. Others cooked with a range and a microwave oven. The microwave was located in one of three places—near the mix center, near the range center or outside the work triangle.

The participants were videotaped as they cooked spaghetti, browned hamburger, prepared a meat sauce, heated bread and prepared a frozen vegetable.

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add one--microwave placement

Olson and Yust were interested in the number and sequence of trips made between the work centers while preparing the meal. They also noted the time spent at each center.

Their research showed that, with the introduction of a microwave oven, the mix center became the most-used center. The most trips were made between the sink and mix centers. Next in frequency were trips between the microwave and the mix centers.

Says Olson, "The microwave oven may take the place of the range in a kitchen. It is critical to locate it so someone just walking through does not cross the traffic patterns of the person cooking."

Microwave manufacturers, cabinetmakers and kitchen planners have expressed interest in the results of Olson and Yust's research. The researchers plan to study work patterns in home kitchens before making final recommendations for microwave oven placement.

"This research provides some concrete information for consumers that should be useful in their dealings with kitchen planners and microwave dealers," Olson says.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

May 4, 1982

Writer: Lisa Ringhofer
(612) 373-1686

VOLUNTEERS MAKE THE DIFFERENCE!

Over half of all American adults and an almost equal proportion of the teenage population engaged in some type of volunteer activity between March 1980 and March 1981, according to a 1981 Gallup survey of volunteerism.

"The scope and intensity of our programming would be significantly reduced without volunteers," says Dr. Norman Brown, director of the Agricultural Extension Service at the University of Minnesota.

The leader-teacher mode has become the predominant volunteer role within the university's extension service. These volunteers are trained by county agents, specialists, or community resource persons and they, in turn, teach acquired skills to community groups. To this effect, volunteers are the vital link in the delivery of timely, informative programs from the university specialist to the state residents.

In 1981 volunteers contributed six and a half million dollars (\$6,500,000) worth of time to the University's Agricultural Extension Service. This monetary value was obtained by carefully estimating the "volunteer power hours" contributed and placing a conservative \$3.35-\$4.00/hour value on each hour of volunteer time devoted to extension work.

Because of the eminent volunteer success in the out state counties, the Agricultural Extension Service is currently experimenting with a pilot volunteer

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add one--volunteers

project on the St. Paul Campus.

The extension service's "volunteer internship program" offers four volunteers the opportunity to work 2-4 hours/week for a three month period. The volunteers obtain on-the-job experience and a letter of verification for their service to extension. This documentation of their resumes is an invaluable plus for potential future employment, says Brown.

"Our staff is willing to change some roles and responsibilities so we can accept volunteers as teammates and contributors to our program. We are consciously using some of our energy to take care of and nurture our volunteers. We want them to know they are an integral part of the extension service," he adds.

This creative use of volunteers is working on campus, just as it has for years out in the counties, says Brown. We're now going beyond clerical volunteer work on campus. We've advertised and have started interviewing for an "Administrative Intern Position." This will give a qualified college graduate the opportunity to gain experience in an administrative office. "I feel confident it's going to work," says Brown, "because volunteers have worked out so well in every other area of extension."

"Learning through volunteering is much greater than in the normal classroom setting," says Brown. The self-esteem and personal development acquired from volunteering are just not attainable in the typical college learning environment, he adds.

"We realize that the most important recognition that volunteers receive is the satisfaction from seeing the difference they make in peoples' lives," says Brown. "But we in extension add our sincere thanks to each volunteer across the state. . . you contribute so much to the quality of life in Minnesota."

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Agricultural Extension Service
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University of Minnesota
St. Paul, Minnesota 55108

June 4, 1982

Source: Deborah Brown, 612/376-7574
Writer: Deedee Nagy, 612/373-1781

COMPUTERS TELL US HOW OUR GARDENS GROW

How average is your backyard garden? Computerized garden plans compiled by a local seed company indicate that the average garden plot for a person using the computer service in 1981 (or last year) was about 1,000 square feet.

According to Deborah Brown, horticulturist at the University of Minnesota's Agricultural Extension Service. "This is a rather large garden by most back yard standards, but it probably shows that persons using the computer service are dedicated, large scale gardeners."

She adds that the computer service gardeners typically planted 16 different vegetables. Tomatoes were the most popular.

Nearly 90 percent of the gardeners using the computer plan reported growing enough produce to freeze and can as well as eat fresh. In addition to tomatoes, the gardeners list their other favorites as carrots, onions, peppers, slicing cucumbers, bush beans, radishes, leaf lettuce, beets and peas.

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St. Paul, Minnesota 55108

June 4, 1982

Source: Deborah Brown, 612/376-7574
Editor: Deedee Nagy, 612/373-1781

HOME GARDENERS: PLANT YOUR BEANS IN BANDS

Gardeners, don't despair that you're too late if you don't have your planting done yet. You can plant bush snap beans—green beans or wax beans—right up to the beginning of July, according to Deborah Brown, horticulturist at the University of Minnesota's Agricultural Extension Service. To get the most return for your effort, plant those bush beans in broad bands, not in rows.

"Unless you have unlimited garden space, the old 'row' system is wasteful," Brown says. Beans should be sown four inches apart in rows only six inches apart within a broad band, three to four feet across. The band should be no more than four feet wide so that weeding and harvesting may be done with ease, from paths on either side.

To succeed with this intensive method of growing beans, they must be planted in full sunlight all day. Take care to fertilize adequately and water regularly, Brown adds. This is particularly important because the plants are close together and will compete for available light, water and nutrients.

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June 4, 1982

Source: G. Edward Schuh, 612/373-0945
Writer: Jack Sperbeck, 612/373-0715

AG POLICY BRIEFS

Russians Are Good Customers

Don't blame the Russian grain embargo for low farm prices this year. They're buying lots of grain. "Most people expect the Soviets to take a total of about 18 million tons of grain from us this marketing year," says G. Edward Schuh, head of the University of Minnesota's Department of Agricultural and Applied Economics.

The Soviets will be importing grain from all sources to the limit of their port and handling capacity, Schuh adds. The international grain economy is well integrated--meaning it doesn't matter whether the Soviets import from us or from somebody else. The important thing is the total import of grain.

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International Solutions Needed

"Our agricultural problems came from the international arena, and that's where we need to go to solve them," says G. Edward Schuh. "We need to reform the international system instead of working with out-dated commodity programs that aren't going to work anyway," advises Schuh, head of the University of Minnesota's Department of Agricultural and Applied Economics.

- more -

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add one--ag policy

"Commodity programs were not capable of stabilizing farm prices or farm incomes during the 1970s. And they will not be capable of dealing with such instability now or in the future at expenditure levels we are willing to accept. The basic problem is that these programs don't address fundamental problems like international monetary disturbances. And they don't recognize that agriculture is no longer a closed economy--it's part of an international economy.

"New farm policy measures will need to recognize the new economic environment," he says.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

MEDIA NEWS PACKET

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Note to editors: This month's packet from the Agricultural Extension Service is intended for your use in special back-to-school supplements or sections that you may be planning in late July or August. If these stories are useful in your back-to-school promotion, I would appreciate receiving clippings or tear sheets. Thank you! Deedee Nagy, Extension Communicator. My address is 433 Coffey Hall, University of Minnesota, St. Paul, MN 55108.

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news

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

Source: Diane Hedin,
612/376-7624
Writer: Deedee Nagy,
612/373-1781

Students View Schools' Problems, Plusses Differently Than Their Parents

Students running wild in classrooms. Teachers intimidated by unruly youths. Communities forced to pay the bill for vandalism against schools.

These are some of the widespread impressions about our nation's schools revealed in national surveys of adults. Seldom, however, are the consumers of public education -- the students themselves -- asked what they think about their schools. A recent Minnesota Youth Poll done by the University of Minnesota's Center for Youth Development and Research (CYDR) tackled the question of how students feel about school.

Their concerns differed considerably from those of adults, according to Diane Hedin, associate professor at CYDR and Youth Poll coordinator. Gallup and other surveys show that adults consider discipline to be the major problem in schools today. Two-thirds of the 850 Minnesota teens surveyed said that lack of discipline isn't as big a problem as adults think it is. Instead, their dominant concerns about both teachers and students included boredom and lack of excitement about learning.

"Surprisingly, the students accepted at least part of the blame for this boredom with school," Hedin said. "They mentioned their own attitudes -- not caring, lack of enthusiasm and lack of respect for others -- as factors. But they also indicted teachers' and parents' attitudes as adding to the problem."

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add one--students' view

Despite this disenchantment with school, students see it as an essential steppingstone to success in life. They argued that competition for jobs makes the person with more years of schooling a more promising job prospect. A few were more cynical about education's role in securing a good job, but 73 percent of the students agreed with the need for compulsory education laws.

"A surprising 34 percent even suggested that the age limit for compulsory schooling be raised to 17 or 18," Hedin added. "Young people clearly think that earning a diploma is so crucial that they favor requiring people to do what is good for them."

How do young Minnesotans view the quality of their schools? The Youth Poll asked students to assign letter grades of A through F to their schools. Forty-three percent of the youths gave their schools A's or B's, 33 percent rated their schools at C and about another 20 percent gave D's or F's.

"The common reason that students gave for rating their schools at A or B was a good relationship existing between students and teachers, a mutual respect and concern," Hedin said. Although about one-third of the students polled were rural, one-third urban, and one-third suburban, rural young people rated their schools highest. Sixty-five percent of rural youths gave their schools A's or B's while only 37 percent of suburban students were so complimentary. Half of the city students thought their schools were doing A or B work.

Hedin says school size may affect how satisfied students are. Suburban schools tend to be the state's largest and students there may feel they have less direct contact and attention from teachers. Smaller rural schools with their more intimate atmospheres may foster more respect for school and teachers.

She hopes that information gathered through the poll may help school administrators and community decision-makers improve schools so that adults and young people are more satisfied with the quality of education.

The Minnesota Youth Poll is funded by the Agricultural Experiment Station at the University of Minnesota.

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St. Paul, Minnesota 55108

July 2, 1982

Source: Sherri Johnson,
612/373-1537

Editor: Mary Kay O'Hearn,
612/373-1786

SCHOOL CLOTHES GATHERING IS ON HORIZON

Summer can't last forever and school clothes gathering is on the horizon. Surely, July and August are the shortest months of the year; just ask any child.

As clothes prices rise, so should wise shoppers spend more time looking for signs of quality in the school clothes they purchase for their families.

Well-made clothing lasts longer, is usually worth the investment, and will be around to serve more than one family member, says Sherri Johnson, textiles and clothing specialist with the Agricultural Extension Service at the University of Minnesota.

Not all clothing will pass the test on the following points, but these are ones she recommends:

- * True grainlines--do the threads in the fabric run straight? If they do, the garment will hang straight and keep shape longer.

- * Smooth plain seams--they should be at least 1/2 inch wide and finished to prevent raveling.

- * Flat felled seams on play clothes--this type of seam encloses raw edges and is secured by two rows of top stitching applied to the outside of the seam. These seams offer strength to hard wearing items. It's the kind of seam often found on denim jeans and skirts.

- * Good stitching--about 12 stitches per inch provides a good seam. If

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add one--school clothes

threads are not fastened at ends of seams, knot them and cut off the loose ends before the garment is washed for the first time.

* Reinforcement at points of strain--these can be patches on knees and elbows, metal rivets, extra rows of stitching and bar tacks at ends of button holes, pockets and plackets.

* Wide, even hems.

For more information on shopping for children's clothing, request from your county extension office: Extension Folder 608, Shopping Suggestions; Extension Folder 609, By Size Not Age; and Extension Folder 610, Shoes.

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July 2, 1982

Source: Sherri Johnson,
612/373-1537
Editor: Mary Kay O'Hearn,
612/373-1786

LET YOUNGSTERS HELP IN CLOTHES SELECTION

Let youngsters help in their clothes selection to be sure what you buy is something they will wear. This advice is from Sherri Johnson, textiles and clothing specialist with the Agricultural Extension Service at the University of Minnesota.

This may not just be newly purchased clothing, but the same holds true for hand-me-downs from older brothers or sisters, or bargains from neighborhood garage sales.

"What one wears is pretty personal and a youngster sees clothes as part of him or herself," Johnson says. As a parent, you may want to make the first selection of several equally satisfactory garments, but let your young person give the final yes nod to it.

Youngsters will want to wear clothing enough like their friends so they will not feel out of place.

Because children grow rapidly, keep the number of clothes in use at any one time to a minimum, she advises. "This is where coordinated separates can play a major role. A few garments can be used in many different combinations."

Begin to ask some basic questions before beginning back-to-school shopping.

- * Check the clothes closet to see which clothes still fit.
- * Are these clothes ones the youngster will wear? Are they like what your youngster's friends are wearing?

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add one--let youngsters help

- * What colors does he or she enjoy wearing?

- * Is new clothing needed or is the closet overflowing with too many of one type of garment?

- * Can some old favorites be recycled or repaired for added service?

- * Could the trimming on current clothing be replaced to either update or make an unusable garment usable?

Buying fewer, more serviceable pieces of clothing should be a shopping goal. It will save shoe leather and dollars.

For more information on shopping for children's clothing, request from your county extension office: Extension Folder 608, Shopping Suggestions; Extension Folder 609, By Size Not Age; and Extension Folder 610, Shoes.

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July 2, 1982

Source: Sherri Johnson,
612/373-1537

Editor: Mary Kay O'Hearn
612/373-1786

SHOES TO WEAR--NOT STASH IN CLOSET

New shoes, at today's prices, must be to wear, not to stuff away in closets.

Parents need to buy as good a pair of shoes as they can afford for their back-to-schoolers, advises Sherri Johnson, textiles and clothing specialist with the Agricultural Extension Service at the University of Minnesota.

Quality of materials and construction vary with price, but do some comparison shopping before buying, she recommends.

Don't ask for the size you think they wear, when shopping for children's shoes. "Have both feet measured while the child is standing. There should be a 1/2- to 3/4-inch space between the end of the longest toe and the tip of the shoe. A good fitting shoe will protect and hold the foot, allow space for growth and 'wiggle' room while allowing the foot to breathe."

Check the inside of the shoe for wrinkles, ridges, rough surfaces, bulky seams or tack ends poking through to tear socks and make feet uncomfortable. Never buy new shoes that need to be broken in. This means a poor fit--with the feet, rather than the shoes, having to make the adjustment.

Most children outgrow their shoes before they wear them out. Check your elementary age youngsters' feet about every three months to see whether shoes are getting too small. Don't wait until the child stops wearing them because they pinch or hurt.

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add one--shoes to wear

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St. Paul, Minnesota 55108

July 2, 1982

Source: Mary Darling, 612/376-4663
Writer: Linda Dietz, 612/373-1294

BREAKFAST ON-THE-RUN CAN BE NUTRITIOUS

Planning ahead is the key to starting the day with a quick, easy, and portable breakfast, even for family members who don't have time to sit down for the meal. It may take some ingenuity to coax chronic breakfast skippers into forming new habits. Mary Darling, University of Minnesota Agricultural Extension Service nutrition specialist has these suggestions for foresighted grocery shoppers faced with this challenge.

Try to think of nutrition value as well as convenience when purchasing breakfast foods for the morning rush hour. Eat-and-run menu ideas could include crackers, bread, or toast topped with cheese or peanut butter. A piece of fruit that is easy to peel or is presliced can wake up sleepy appetites. For variety, you might try banana bread, muffins, or bagels with cream cheese. Flavored yogurt is available in portable containers. Cups of coffee or cans of soda pop are common among commuters, but it's just as easy to balance any other beverage. Why not substitute fruit juice or milk instead? A variety of juice choices is available in six-packs of single-serving-sized cans for easy refrigerator stocking.

"Regular meals are an old nutrition stand-by, but today's fast-paced lifestyles make 'fasting and feasting' habits quite common among adults," notes Mary Darling. "For kids to go 18 hours without eating is too big a challenge, and even adults may not get all their basic needs in one or two meals."

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July 2, 1982

Source: Mary Darling, 612/376-4663
Writer: Linda Dietz, 612/373-1294

BAG LUNCHES CAN HARBOR FOOD POISONING HAZARDS

Back to school means back to packing bag lunches for many households. Higher restaurant and vending machine prices testify to an increasing number of brown baggers in the work force too. An awareness of potential food poisoning hazards is a critical aspect of planning a bag lunch menu. University of Minnesota Agricultural Extension Service nutrition specialist Mary Darling has these words of caution.

If you can't arrange to refrigerate a bag lunch at 45 degrees F or less, only cheese or peanut butter are safe sandwich fillers. Avoid packing any others, particularly those containing food mixtures, such as tuna salad. Remember that food poisoning can't be seen or smelled or tasted. "Try some and see if it tastes OK," is not only bad advice, but can also be very dangerous. Because there is no definite method to identify suspect foods, a better rule might be "when in doubt, throw it out."

Because refrigeration of bag lunches is so important, Mary Darling encourages people to look around and find refrigerators where they work or go to school. If that's not possible, at least choose a cooler place to store lunches until noon, and avoid leaving them in the sun or near a hot radiator. Another option might be to prepare sandwiches for the week and freeze them. Put a frozen sandwich in your brown bag, and it should be thawed by lunchtime.

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add one--poisoning hazards

Ingenious brown baggers might add a pre-frozen sealed ice pack or container of water or another beverage as a portable refrigerant. Insulated thermoses or lunch pails can be good investments too.

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July 2, 1982

Source: Ron Pitzer, 612/376-3851
Writer: Dave McAllister,
612/373-1686

CHILDREN NEED STRUCTURE AFTER SCHOOL, EVEN IF ALONE

Children who come home after school earlier than their working parents can be affected by the emptiness of the house. But there are ways that absent parent can help structure this time alone.

"By the time a child is eight or nine, he or she may feel too old for a sitter but still have a need for human contact," says Ronald Pitzer, Agricultural Extension Service family life specialist at the University of Minnesota.

"If one or both parents can get to a phone and establish a connection each day with the child, it helps," Pitzer says. "A simple phone call can make children feel less alone."

The child should also, especially if young, have a neighbor he or she can go to after school to "check in."

Establishing some ground rules is also important, Pitzer says. The child should know where he or she is allowed to go after school, how much television is all right to watch, what snacks may be consumed, and what chores should be done.

"Even if you can't be there to enforce the rules you set up, at least the child knows what your expectations are," Pitzer says.

"You should probably expect fewer chores to be done in the fall than in the summer, but continue in the fall to expect at least some chores to be done after school."

"But be flexible about your expectations if special school assignments or extracurricular activities come up," he adds.

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Agricultural Extension Service
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University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Sources: Harold Alexander,
612/373-0931
Wanda Olson,
612/373-0913
Writer: Laurie Gardner,
612/373-1297

EFFECTIVE STUDY SPACE IN THE HOME

"Homework for the students in your family can be made a more pleasant and rewarding task if the study space is comfortable and has sufficient lighting," says Harold Alexander, Agricultural Extension Service specialist in interior design at the University of Minnesota.

Good study habits can begin with doing homework at the same time of day and at the same study space. This space should be in a quiet part of the home away from distractions such as television, radio and siblings.

A horizontal work surface is needed for studying. This is usually a desk located in the child's bedroom. "A white or light-colored blotter on a dark or shiny desk top will reduce glare and lessen eye strain," he adds. In larger families, the study space may have to be shared, but it's a good idea to have a special homework storage space for each child in order to keep books and papers safe from pets, younger siblings and accidental spills.

"Straight-backed chairs offer the most back support," says Alexander. They promote better posture and, therefore, less stress and fatigue.

"Choose a good study lamp," says Wanda Olson, Agricultural Extension Service specialist in household equipment at the University of Minnesota. Try to pick one that gives wide light distribution over the study area without glare and

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add one--effective study

with upward as well as outward light. The lampshade should have a bottom diameter of 15 to 16 inches to insure adequate light distribution. "Avoid gooseneck, bullet and pole lamps," she warns, "as they do not provide the wide distribution of light needed."

"A 150-watt incandescent bulb is the minimum amount of light needed for study," says Olson. One 150-watt bulb will give more light than several totaling the same wattage. A three-way bulb with 50/200/250 wattage would be desirable. General room lighting should also be provided to help reduce the contrast between lighted and unlighted areas of the room.

Height and placement of the study lamp are important." The bottom edge of the lampshade should be at eye level when sitting--approximately 15 inches above the desk top," she suggests.

For writing or drawing, the light should come from the side opposite the working hand to prevent shadows. For reading and study, the lamp should be placed at the left of the study area.

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July 2, 1982

Source: Ron Pitzer, 612/376-3851
Writer: Dave McAllister, 612/373-1686

PARENTS CAN HELP PREPARE CHILDREN FOR NEW SCHOOL EXPERIENCES

Do you have children starting school for the first time or switching to a new school this fall? There are ways parents can help make this a smooth transition, according to Ronald Pitzer, Agricultural Extension Service family life specialist at the University of Minnesota.

"The first time in a new school is an ominous experience for a child," Pitzer says. "This is especially true for younger children, but it applies to all ages.

"Do you remember how it felt to you to move to a new community or start a new job in unfamiliar surroundings? That's how it feels for children to go to a new school. It's demanding and takes energy and effort--even if they view it as a positive step."

Parents can help by encouraging their children in their ability to cope, Pitzer says. "Let them know it will be different for them but that you know they can handle it. Be sure they know you'll support them and that you're available to talk to about it."

Children may be bored by the end of the summer and excited about going to school," he says. "But they may also be anxious about what teachers they will have, who their friends will be, and how much homework they'll have."

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add one--parents can help

There are concrete ways for parents to help, according to Pitzer. Take them to their new school, show them what door to use, introduce them to their new teachers, show them where to board the bus and where to get off.

"But you can also go overboard if you tell them how much fun they're going to have, especially younger children. If you overstress the fun, they may get disillusioned when they find they have to work, too.

"Be positive but stress the importance of school to children," he adds. "Let them know there will be rough spots, but encourage them in their ability to handle them.

"Above all, be sure you prepare them for the school experience. Lack of preparation or ill preparation creates unnecessary anxiety."

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Ron Pitzer, 612/376-3851
Writer: Dave McAllister, 612/373-1686

PARENTS CAN HELP BUILD POSITIVE ATTITUDES ABOUT SCHOOL

Parents' general attitudes toward education have a lot to do with how their children feel about going to school, says Ronald Pitzer, Agricultural Extension Service family life specialist at the University of Minnesota.

"Anti-intellectual comments that parents make are picked up by their children," Pitzer says. "Parents should watch what they say around their children about education, schools and teachers.

"If we complain about the taxes we're paying to schools, about the inconvenience of changes in the school system, or about the shortcomings of teachers, we can dampen our children's enthusiasm and commitment to the learning process."

Pitzer also suggests that parents regard their children's hours in school and at after-school activities as their full-time job. Parents need to remember, he says, that children have feelings of stress and fatigue because of school and that these feelings should be taken as seriously as the stresses and fatigues that adults experience on their jobs.

"We ought to convey to our children that we feel that school is their full-time job--that it has as much significance as the full-time jobs of parents," says Pitzer.

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add one--positive attitudes

"Belittling the time they spend in school can have the same effect on children as if someone 'knocked' our jobs or devalued our efforts. Children should feel that their parents appreciate the time and effort they spend in school and in extracurricular activities."

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Agricultural Extension Service
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University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Leland Schultz,
612/373-0764

Writer: Deedee Nagy,
612/373-1781

TRACTOR ACCIDENTS LEAD FARM FATALITY LIST

Tractor accidents led the list last year for the number of accidental farm fatalities, claiming 26 lives in Minnesota. Tractor mishaps killed eight more people in 1981 than the previous year and ten more than in 1979, according to Leland D. Schultz, assistant safety specialist with the University of Minnesota's Agricultural Extension Service.

Accidental deaths on farms from both work and nonwork causes numbered 69 last year. This is seven more deaths than in 1980, but it marks a general downward trend from a recent high of 100 accidental deaths in 1971. Mishaps on agricultural machinery other than tractors were the second most common cause of accidental death on farms. Machinery mishaps killed 11 Minnesotans in 1981.

Other types of fatal farm accidents last year included falls, fires, electrocutions, grain bin suffocations, and mishaps with animals, recreational vehicles or lawn and garden equipment. Among the tractor fatalities, turnovers were the most common type in both 1981 and 1980, Schultz reports.

The data for 1981 were compiled from the Minnesota Department of Health, the Minnesota Department of Public Safety and from news clippings from throughout the state.

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University of Minnesota
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July 2, 1982

Source: Arnold Flikke,
612/373-1305

Writer: Sam Brungardt,
612/376-8182

PUBLICATION LISTS INFORMATION SOURCES

ON FARM-SCALE FUEL ETHANOL PRODUCTION

The University of Minnesota Agricultural Experiment Station has just published a four-page publication about on-the-farm ethanol production. It is Minnesota Report 181, Building a Farm-Scale Fuel Ethanol Plant, available from county Agricultural Extension offices in Minnesota or the Bulletin Room, 3 Coffey Hall, University of Minnesota, St. Paul, MN 55108.

Says Arnold Flikke, head of the Department of Agricultural Engineering at the university, "I'd urge anyone thinking about building an on-the-farm fuel ethanol plant to consult the literature sources listed in this publication before doing so."

Minnesota Report 181 briefly discusses considerations to be taken into account in planning such an endeavor. It also describes the farm-scale fuel ethanol plant at the West Central Experiment Station, Morris, which was constructed with a special appropriation from the Minnesota legislature.

Flikke says that blueprints for a farm-scale fuel ethanol plant are also available by writing to Extension Agricultural Engineering, 1390 Eckles Ave., University of Minnesota, St. Paul, MN 55108. Minnesota residents may obtain one free copy of the plans. Additional copies are available to Minnesotans and nonresidents for \$7.50 each. Checks should be made payable to the University of Minnesota.

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for County Agents

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Agricultural Extension Service
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July 2, 1982

COUNTY NEWS PACKET

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- List of 1982 Minnesota county fairs
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Note to agents: This month's media packet (tan pages) is a back-to-school kit for daily newspapers to use in special sections and supplements during late July and August. Although daily newspapers will already have received the articles, they have not gone to most weeklies or to other news outlets. Feel free to use them in your columns for these newspapers as well as in newsletters and radio programs.

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University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Joanne Slavin,
612/376-8748

Editor: Deedee Nagy,
612/373-1781

USE AND MISUSE OF NUTRITIONAL SUPPLEMENTS ON THE RISE

Slick, persuasive advertisements for nutritional supplements aim to convince all of us that we should start taking such products "just to be sure." They suggest that because of our hectic lifestyles, poor eating habits and nutrient-devoid food supply, we may not be getting enough vitamins and minerals in our foods.

Joanne Slavin, nutritionist at the University of Minnesota's Agricultural Extension Service, says that the nutrient supplement business is a big one and it's growing rapidly. About one-third of our adults are regular vitamin users. The supplement industry is currently worth about \$1.5 billion each year and this is expected to at least double within about five years.

Slavin suggests that nutritional supplements may not be needed. "Before you consider taking a supplement, determine whether your diet is really deficient in some nutrients. If you're eating a variety of foods from the four food groups, you're probably already getting an adequate intake of nutrients."

She says a dietitian can do a detailed, nutritional analysis of your diet and compare it to the Recommended Dietary Allowances (RDA). Each RDA is set by noting the range of normal needs, selecting the number at the high end of that range and adding a safety factor. RDAs aren't requirements, but rather, they are liberal allowances, Slavin reminds consumers. Companies selling

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add one--use and misuse

nutritional supplements may claim that "biochemical individuality" requires higher nutritional levels for some people, but this is not true. Slavin says that the range of individual requirements is already figured into the RDA.

Physicians can also run detailed biochemical tests to determine if you have adequate body stores of nutrients. Slavin adds, however, that these tests are expensive and are usually performed only if a person has a nutrition-related health problem.

She cautions against tests on hair samples that supposedly measure nutritional deficiencies. Hair analysis can spot mineral toxicity, but it is useless for diagnosing mineral deficiencies. She adds, "Normal values of minerals in hair have not been established so such tests reveal little. Be skeptical of practitioners who use hair analysis to make nutritional assessment."

Nutritional deficiencies are more common in certain groups. Iron and folic acid supplements are routinely recommended for pregnant women. Drugs affect nutrient metabolism and people on some medications may require supplements. In addition, women on low-calorie diets may need supplemental iron, and the elderly and alcoholics often have inadequate diets and may need supplements, Slavin adds.

Poisoning has occurred in children because of overdoses of supplements. Slavin warns that several recent books on children's nutrition recommend high doses of supplements for childhood diseases ranging from cradle cap to crossed eyes. "These supplements are generally useless and can even be harmful," Slavin says. "Don't give supplements to infants and children unless your

add two--use and misuse
physician prescribes them."

In general, be wary of sales people who recommend nutritional supplements for everyone, Slavin says. Sales descriptions such as "stress formula," "natural" and "energized" aren't scientific. If a medical exam shows that you are deficient in some nutrients, an improved diet is generally the best solution. She concludes, "If you are unable or unwilling to improve your diet, you should choose the least expensive supplement that contains the needed nutrients."

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July 2, 1982

Contact: Ron Pitzer, 612/376-3851
Writer: Lisa Ringhofer, 612/373-1686

ATTITUDES TOWARD MONEY INFLUENCE CHILDREN

Your own attitudes toward money will likely be the single most influential factor in developing your childrens' attitudes toward money. You can teach children to wisely manage money by providing them opportunities to practice, says Ron Pitzer, extension family life specialist at the University of Minnesota.

When children are about five or six, a weekly allowance is advisable. The amount should be small, but it should have no strings attached so long as it is not spent for something harmful, says Pitzer.

A child will learn how to value money properly only when allowed to squander it, he says. The things a child will spend money on are largely determined by his immediate feelings for which he receives emotional rewards. "Call this the 'pre-budget' learning period," says Pitzer.

When the allowance has been spent, that will be the end of their discretionary money until the next allowance is due. Remorse over previous purchase decisions will begin to alter the manner in which money is spent and a little will be saved for later. Thus, informal budgeting begins to emerge as plans for deferred spending develop, he says.

By the time children are eight or nine, begin to offer them chances to earn additional money only for irregular and seasonal work that you would have to hire out for. These "extraordinary" chores might include stacking firewood,

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add one--attitudes

cleaning the garage, spading the garden, etc. These should not include routine tasks normally performed as part of a child's daily or weekly duties, reminds Pitzer.

Money and chores should be unrelated and failure to carry out duties should not be punishable by withholding allowances. Children should learn to do chores because it's their contribution and obligation to the family, not because they get paid for it. Find other disciplinary measures to deal with forgetful and unreliable children.

By the time they are 11 and 12, children's allowances might be increased to include amounts for school expenses and church donations.

Requirement of a pocket-sized record book is highly recommended for those children entrusted with monies for these special purposes. Suggest that it would be good training in money management to begin keeping a weekly record of purchases. If you decide to do this, you must expect some inaccuracies or failures in recording specific purchases at first, says Pitzer. "Increase your insistence on proper accounting slowly and carefully," he reminds.

If considerable coaching and supervision have been provided earlier, a clothing allowance may be given when the adolescent is 12 to 14. This type of allowance provides training in money management as well as clothing selection and maintenance, he says.

Eventually you can allow your adolescent to write and record checks to pay monthly bills. By allowing participation in this essential task, you teach him monthly budgeting and payment skills while entrusting him with private family financial information. What better way for a son or daughter to learn the cost of utilities, auto insurance and mortgage payments?

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news

for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Contact: Ron Pitzer, 612/376-3851

Writer: Lisa Ringhofer, 612/373-1686

TEACHING CHILDREN ABOUT MONEY

Involvement in family decision-making teaches children the value of money in their lives as well as management skills, says Ron Pitzer, extension family life specialist at the University of Minnesota.

Including your children in family budgeting makes them more appreciative of what monetary requests are legitimate. Informed adolescents won't have to be told not to ask for something the family cannot afford if they are aware of their parents' salaries, monthly expenses, mortgage and insurance payments, etc.

Pitzer suggests that allowances include money that parents would spend anyway on school expenses, bus fare, haircuts, entertainment, and then some discretionary personal money.

Parents should advise and consult with their children concerning the wise use of this discretionary money. "Teach them the values of saving and sharing money in addition to thoughtful, well-planned spending," he says. Just let your opinions be known and then grant your children the freedom to decide.

"Don't hang on to the image of the dollar that existed when you were a child," advises Pitzer. Children are victims of inflation too and an allowance that doesn't keep pace with the economy buys little, teaches little and frustrates your children, he says. Youngsters may become discouraged when

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add one--teaching children

they find themselves with no money left to manage. . . it may be better to give a child nothing than not enough, he adds.

Parents need to realize that allowances are dependent on other criteria than simply their income. A child's age, needs, desires and abilities should all be considered when deciding how much money each child should be given, says Pitzer.

Children may seek part-time work outside the home if they feel their allowance isn't sufficiently meeting their needs, says Pitzer. "But parents should carefully weigh out the job with other extra curricular activities that the job may take away from," he cautions.

"It may be a much greater contribution to a youth's development to pursue areas of talent and scholastic ability than to take on a part-time job," he says. If the children are sacrificing development and practice in these areas, it may be wise to advise children not to work and then attempt to meet their monetary needs with an increase in allowance.

Often an adolescent gains a feeling of significance and contribution from a part-time job and if they have no other outside interests, it may be beneficial for them to work, he adds.

"Education should be viewed as a full-time job in itself," he says. Children should be made to feel that going to school is a demanding and rewarding job and that they aren't required to do any more than household duties to contribute to the family unit, he concludes.

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news

for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Mary Darling,
612/376-4663

Writer: Linda Dietz,
612/373-1294

DIETERS CAN ECONOMIZE ON LOW-CAL PORTABLE LUNCHES

Packing lunches can be thought of as something less than a creative task. However, if you have a dieter in the family, careful thought can make a real difference in cutting calories as well as dollars from this menu. University of Minnesota Agricultural Extension Service nutrition specialist Mary Darling offers these suggestions for inexpensive, low calorie, portable meals.

Plastic containers with covers can be used to carry salad ingredients neatly. Build your salad "upside-down," starting with low-calorie dressing at the bottom of the container. Layer hard-cooked eggs, chopped vegetables or fruit, and cheese over the dressing. Put leafy greens on top. You may want to use water-packed tuna or chopped, thin-sliced meats as an alternative to fatty, processed lunch meats. When you have cold, leftover, lean meats or chicken on hand, there's also nothing wrong with setting aside individual portions for adding protein to lunchtime menus. Although low-calorie dressing should add only 100 calories per tablespoonful, yogurt flavored with a little honey or mustard can be substituted. Be sure to include a fork, because this salad can be tossed right before eating.

Chewy additions to this portable diet platter might include plain breads, rolls, crackers, pocket bread, bagels or a piece of fruit.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Juanita Reed,
612/373-1108

Writer: Deedee Nagy,
612/373-1781

CHOOSE AFTER SCHOOL ACTIVITIES WITH EYE TO LEARNING, GROWING

The start of school brings with it appealing member drives for many worthwhile after school and community clubs and activities. Juanita Reed, 4-H youth development specialist at the University of Minnesota's Agricultural Extension Service, says these activities can be important supplements to classroom and family life.

When choosing which clubs or organizations to join, Reed suggests children and their parents examine the values and benefits they expect to get from participation. With our fast-paced lives and numerous time demands, time together and strong roles for parents are important to many families.

Reed cites 4-H as one activity that is a total family opportunity. Parents take an active role in helping 4-H'ers select projects, set goals and pursue their interests. "Nearly all 4-H projects are done in the home rather than in a school or club setting. This provides a structure and discipline for parents to strengthen their roles as models and teachers for sons and daughters," she adds.

Nationwide, 4-H is the largest out-of-school program for youth. In Minnesota, 4-H has more than 62,000 members ranging in age from 9 to 19. In addition, 16,000 adult Minnesotans are 4-H leaders and every county offers 4-H participation to both urban and rural young people.

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add one--choose after school

4-H members pursue projects that interest them in a variety of areas, including natural and mechanical sciences, creative arts, horticulture, home economics and animal science. Teen 4-H members learn leadership skills and are able to practice and apply them in club work as well as countywide and statewide 4-H activities.

Reed adds that 4-H can help young people learn the rewards and satisfaction that come from working hard on a project and carrying it through from beginning to end.

She stresses the importance of teaching high standards and individual responsibility in any activity involving young people.

Parents advising children on after school activities should steer them toward ones that develop attitudes and skills that will prove helpful in the years ahead, Reed adds. "Look for activities that encourage standards of excellence, and stress the dignity of hard work and accomplishment. Often this is what young people need, to learn to choose a difficult 'right' rather than an easier 'wrong' as they become adults."

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news

for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Minnesota State Fair

612/642-2251

Editor: Deedee Nagy, 612/373-1781

STATE FAIR PLANS SPECIAL OBSERVANCES

With county fairs just days away, the State Fair can't be far behind. As in past years, the Minnesota State Fair's association with the Minnesota Federation of County Fairs will offer a number of special programs at the 1982 State Fair, Aug. 26 through Labor Day, Sept. 6.

The Outstanding Senior Citizens program and the tenth annual State Fair Amateur Talent Contest are among programs that begin at the county fair level and culminate at the State Fair.

Based on service to their communities, senior citizens will be selected by county fair boards to participate in special recognition ceremonies Sept. 2 at the State Fair Bandshell. From this group, two persons will be named Minnesota's outstanding senior citizens.

Amateur entertainers who won talent contests at county fairs will advance to the State Fair competition, where they will compete with semi-finalists chosen during late summer auditions. Semi-finals of the State Fair talent contest will be held Aug. 26 through Sept. 5 with finals Labor Day, Sept. 6.

In addition, county fair secretaries will be recognized at the State Fair Sept. 2 along with legislators, mayors, secretaries of the state's chambers of commerce and members of the media.

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County agents see attached list.

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Note to Agents: For your information, a list of 1982 Minnesota county fairs follows:

Aitkin, Aug. 16-18; Anoka, Aug. 3-8; Becker, Aug. 12-15; Beltrami, July 23-25; Benton, Aug. 3-9; Big Stone, July 16-18; Blue Earth, Aug. 12-15; Brown, Aug. 16-22; Cannon Valley Fair Association (Goodhue County), July 2-4; Carlton, Aug. 19-22; Carver, Aug. 11-15; Cass (Pillager), July 15-17; Cass (Pine River), July 26-28; Chippewa, Aug. 11-14; Chisago, July 22-25; Clay, July 7-10; Clearwater, Aug. 19-22; Cook, Aug. 17-20; Cottonwood, Aug. 6-9; Crow Wing, Aug. 2-6; Dakota, Aug. 9-15; Dodge, July 14-18; Douglas, Aug. 19-22; Faribault, July 27-31; Fillmore, July 20-24; Freeborn, Aug. 3-7; Goodhue, Aug. 10-14; Grant, July 9-11; Hennepin, July 29-31; Houston, Aug. 18-22; Isanti, July 22-25; Itasca, Aug. 18-22; Jackson, July 20-25; Kanabec, July 29-Aug. 1; Kandiyohi, Aug. 11-14; Kittson, July 7-11; Koochiching, Aug. 13-15; Lac Qui Parle, Sept. 9-12; Lake, Aug. 26-29; Lake Of The Woods, July 8-11; LeSueur, Aug. 19-22; Lincoln, July 29- Aug. 1; Lyon, Aug. 12-15.

Mahnomen, July 11-13; Marshall, July 15-18; Martin, Aug. 14-18; McLeod, Aug. 20-24; Meeker, Aug. 9-12; Mille Lacs, July 26-29; Morrison (Little Falls), Aug. 12-15; Morrison (Motley), July 19-21; Mower, Aug. 9-15; Murray, Aug. 18-21; Nicollet, Aug. 5-8; Nobles, Aug. 10-13; Norman, July 5-8; Northern Minnesota District Fair Association (Koochiching), July 29-Aug. 1; Northwest Minnesota Agricultural Association (Polk), July 8-11; Olmstead, Aug. 2-8; Ottertail, July 14-17; Pennington, July 22-25; Perhan, July 29-Aug. 1; Pine, Aug. 5-8; Pipestone, Aug. 10-13; Polk, July 22-25; Pope, Aug. 5-8; Ramsey, July 21-25; Red Lake, July 19-21; Redwood, Aug. 2-4; Renville, Aug. 16-18; Rice, July 20-25; Rock, July 27-30; Roseau, July 27-30.

Scott, July 29-Aug. 1; Shell Prairie Agricultural Society (Hubbard County), Aug. 2-4; Sherburne, July 15-18; Sibley, Aug. 5-8; South St. Louis, Aug. 5-8; St. Louis, July 27- Aug.1; Stearns, July 30- Aug. 2; Steele, Aug. 17-22; Stevens, Aug. 4-7; Swift, Aug. 19-22; Todd, Aug. 2-4; Traverse, Sept. 9-12; Wabasha, July 29- Aug. 1; Wadena, July 22-25; Waseca, July 14-18; Washington, July 29-Aug. 1; Watonwan, July 22-25; Wilkin, July 15-18; Winona, July 14-18; Wright, July 28-Aug. 1; Yellow Medicine, July 19-21.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Source: Food News for Consumer, USDA,
May, 1982
Editor: Deedee Nagy 612-373-1781

CONSUMER BRIEFS

Changes in Food Buying Habits

The difference between food shopping habits today and those of yesterday lies more in kind of food purchased than in the amount purchased. The average American buys about 1400 pounds of food each year, about the same amount the average American bought 20 years ago.

What has changed, however, are some of the items in the shopping cart. Twenty years ago, cheese consumption was eight pounds per person per year. Currently it is about 18 pounds per year. Pork and chicken consumption are up. Fresh potatoes, coffee, and whole milk consumption are on the decline.

Why the changes? Price is often a reason for consumer trends. Increasing numbers of employed women and two-income households have also had an effect on what we eat.

* * *

Summertime Food Safety

Warm summer weather creates the perfect conditions for food poisoning organisms to grow. It contributes tremendously to the two million cases of food poisoning that occur every year in the United States.

According to the U. S. Department of Agriculture publication Summertime Food Safety there are three simple ways to eliminate food poisoning:

* Keep hot food hot. Once food is cooked, keep it hot (above 140⁰) until served, and refrigerate leftovers immediately.

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add one--consumer briefs

* Keep cold food cold. Refrigerate perishable foods promptly. Keep refrigerator temperature set at 35⁰ to 40⁰F.

* Keep food clean. Avoid unsanitary practices that contaminate food.

In addition, USDA food scientists point out that using disposable plates and utensils for summertime outings helps avoid cross-contamination between cooked and uncooked food. To assure that cross-contamination doesn't occur, all utensils and platters should be washed with soap and hot water after they are used to hold raw meat and before they are used to serve cooked food.

Free copies of "Summertime Food Safety" are available by writing: USDA, FSIS, Room 1163-S, Washington, D.C. 20250. Other available publications on food safety include: Food Safety for the Family, Safe Brown Bag Lunches and Holiday Food Safety.

* * *

Income Spent on Groceries Dips

Americans spend a much smaller portion of their income on groceries, clothing and tobacco than they did in 1960. But they spend more on medical care, housing and gas and oil.

The percentage of disposable personal income spent on groceries declined to 12.2 percent in 1980, down from 16 percent in 1960. Meanwhile, the percentage of income spent on food away from home increased from 4 percent to 4.4 percent.

After food, the sharpest drop in spending came from clothing and shoes, which fell from 7.5 percent to 1960 to 6 percent in 1980. Money spent on tobacco dropped from 2 percent to 1 percent. The income share for alcoholic beverages decreased from 1.8 percent to 1.5 percent. The share of income spent on health care jumped from 4.4 percent in 1960 to nearly 8 percent currently. Housing costs jumped from 13.7 percent to 14.9 percent. Oil and gas accounted for 4.9 percent of personal income in 1980 compared to 3.4 percent in 1960.

* * *

-more-

add two--consumer briefs

Poultry Frankfurters Gaining Popularity

Until recently, consumers had basically only two types of frankfurters to choose from--those made with beef and those made with a combination of pork and red meats. But in the 1970s, food producers introduced poultry franks made from minced turkey and chicken.

Consumers seem to be developing an appetite for poultry franks. They captured 10.1 percent of the frankfurter market in 1980, up from 5.2 percent in 1978. They gained at the expense of beef frankfurters, whose share declined from 38.8 to 28.9 percent. The market share of franks made from pork and other red meats increased from 55.9 to 61 percent.

* * *

Supermarket Scanners Becoming More Common

Item pricing--labeling prices on each supermarket item--is losing ground to code symbols that can be read by electronic scanners. Today, more than one-fifth of the nation's supermarkets use scanners at the check-out counter. While the machines can reduce costs to the retailers, supermarkets report some resistance from consumers. The use of code symbols usually eliminates the primary source of price information for most shoppers.

Although a few stores still mark prices on items after switching to a scanning system, most do not. They rely instead on shelf tags to inform customers of prices.

Many chain supermarkets find an economic incentive to the scanning systems. Industry and U.S. Department of Agriculture studies estimate that dollar savings from eliminating price markings on each item range from 0.2 to 0.5 percent of store sales.

* * *

It's a Blueberry Explosion

Blueberries may one day appear at produce counters all year if fruit

-more-

add three--consumer briefs

processors decide a new "explosion drying" technique is practical. Processors heat the berries in a high pressure dryer where the berries explode and expel their water. This leave a porous berry that can be eaten as a snack or restored surprisingly close to its original form with the addition of boiling water.

U.S. Department of Agriculture scientists say that this drying technique may be the best way to store and ship commercial blueberries. Freezing hasn't proved successful. Frozen blueberries last only about six months. Fresh blueberries are available for only about six weeks at harvest time.

The scientists say that explosion-dried berries are cheaper to produce and of higher quality than either canned or frozen blueberries. They can be stored for over a year and still retain their quality

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news

for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 2, 1982

Contact: Jerry Hawton,
612/373-1166
Writer: Jack Sperbeck,
612/373-0715

AVOID FADS WHEN EYEBALLING PIGS

Don't pay much attention to fads like "tough little skeletons" plus head and tail size, advises Jerry Hawton, swine specialist with the University of Minnesota's Agricultural Extension Service.

"We've always seen fads and fantasies in the purebred business," Hawton says. "But the important thing is to select larger framed pigs that can convert feed to red meat fast and efficiently. Traits like head, tail, and foot size aren't necessarily the answer."

With more interest in marketing at heavier weights, Hawton says the industry needs more flexible pigs. "We need pigs that are lean and efficient at 200 pounds as well as 250 to 300 pounds," he says.

The industry needs pigs that can stand up to the demands of confinement, breed without assistance, conceive and farrow with ease, milk heavily and convert feed to red meat fast and efficiently.

Hawton has these tips when making visual appraisals:

* Look for length of side. This may be the most important body characteristic to get bigger framed, more flexible pigs in terms of maturity.

To get a more accurate impression of height, first look at the top or point of the shoulder, rather than how long the legs are or how high the top sets.

- more -

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add one--avoid fads

"Shallow bodied or high topped pigs may only appear to be taller," Hawton says. "On the other hand, a pig that stands tall at the shoulder point but is shallow bodied offers very little."

* Select for larger framed, more rugged pigs. "Before the body parts of a pig can be long, the skeleton has to be there first."

* We need leaner hogs. "We still have too many fat hogs," Hawton says. "Consumers won't tolerate this fat, and it's not very efficient for you to produce it."

Hawton says emphasis on muscle is not decreasing, but we need to change the shape of the muscle structure in many pigs. "There are still too many tight, bunched muscled pigs with grooved tops. They have more farrowing problems, grow slower and may be more stress prone.

"With larger framed pigs, the quantity of muscle is greater--or at least the same. It's just spread over a larger skeleton, resulting in a longer, flatter, less bulgy muscle structure."

* Sound leg structure is a must--especially for hogs raised in confinement. Some larger framed, fast growing pigs "bust up" or become unsound on their legs when fed a high energy ration.

"The ideal way to select pigs is with performance testing, which includes sow productivity records. That way the pigs tell you which ones are the best," Hawton adds. But only a small percentage of breeding stock offered for sale has been performance tested.

"I suspect we'll always be judging hogs. But if all seedstock producers constructively tested there would be little concern for trends in eyeballing hogs."

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news

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

for County Agents

July 2, 1982

Source: Bert T. Swanson and Larry Shuman
(from an article in North Central
Nurserymen, Vol. 4, No. 6, June
1982)

Editor: Deedee Nagy, 612/373-1781

Note to agents:

Although this article was written primarily for nursery operators, the findings may be significant to persons living in areas where Roundup is used on nearby farm fields or where Kleen-up, another glyphosate product, is used for clearing land for yard or garden use.

EFFECTS OF ROUNDUP ON SOME DECIDUOUS AND EVERGREEN PLANTS

Glyphosate (Roundup) is a non-selective broad spectrum, systemic herbicide. The isopropylamine salt of glyphosate is rapidly degraded in the soil but is quite resistant to decomposition in higher plants.

The use of herbicides in the commercial production of landscape plants is essential to a good cultural management program. High costs of operation and production require new and improved methods for reducing weed populations which ultimately compete with these high-value crops for water and fertilizer.

In recent years, Roundup has been used to control weeds under trees. Roundup is very effective when used as a directed spray. Because of the interest in using Roundup as an over-the-top spray on some evergreens in late summer or fall, we treated some landscape tree and shrub species to determine injury to foliage and bark.

Seven species of container-grown nursery stock were tested: Apple, Pfitzer juniper, euonymus, Russian olive, Andorra juniper, Tam juniper and Colorado

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add one--roundup

blue spruce. All plants were growing in one gallon containers and were sprayed outdoors with a hand pump sprayer. Rates of application included one-half the recommended rate, the recommended rate and twice the recommended rate. In general, the deciduous species were more sensitive to glyphosate than the evergreen species.

At one-half recommended rate of Roundup (2.33 oz/gal of water), apple was extremely sensitive. It was completely defoliated by the fifth week. No stem injury was observed. Euonymus also had severe damage to the foliage, but new chlorotic growth was occurring after five weeks. The Russian olive dropped 60 percent of its leaves by the fifth week, but there was no damage to the stem. Cupping and yellowing of the leaves were the most common symptoms before the leaves dropped. The Pfitzer juniper sustained less injury from the glyphosate; however, 35 percent of the bottom needles were chlorotic and dying.

The Andorra juniper showed 20 percent of the bottom needles chlorotic and dying by the fourth week. However, it took three weeks for any results to show on the Andorra and the Tam juniper. The needles stiffened up after five weeks, but the total damage to the Tam juniper was about 10 percent. The spruce sustained little damage.

At the recommended rate (4.66 oz Roundup per gallon of water) the glyphosate toxicity resulted in immediate leaf chlorosis and necrosis on the terminals and trunks of apple trees. Euonymus lost 95 percent of its foliage, but new chlorotic growth was occurring during the fifth week. Russian olive again lost 50 percent of its foliage. Chlorosis of more than 50 percent occurred on the Pfitzer juniper and the Andorra juniper. About 25 percent of the Tam juniper was affected.

At twice the recommended rate of Roundup, damage was severe and, generally, swift on all the plants.

add two--roundup

Although new growth appeared on some species, the deciduous plants were all basically killed or rendered unusable by levels of treatments. Apple trees were the most sensitive, including bark injury, even though they were past the green bark stage. Pfitzer juniper responded quicker than other evergreens, but all sustained severe injury.

In summary, this study found that glyphosate is damaging to the foliage and young bark of deciduous plants, but somewhat less injurious to the evergreen species. Symptoms include chlorosis, defoliation, twig dieback, malformed growth, and death. Injury during the most active growing period of June-August would impart even greater damage than observed on plants which were sprayed in September.

When spraying around nursery and landscape trees ^{or} shrubs and perennials, use extreme caution to prevent any drifts or drops from contact with non-target plants. An inverted plastic dish pan, funnel or shield on the end of the sprayer nozzle may help. Keep this shield close to the ground during spraying.

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CP

news

MSC/9A27P
Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

July 21, 1982

Source: Whitney Cranshaw
612-373-1704

Writer: Jack Sperbeck
612-373-0715

CHECK FIELDS FOR CORN ROOTWORM BEETLES

Minnesota corn growers should check fields in late July and August for adult rootworm beetles.

Farmers planning to plant corn on the same fields next year can predict need for a corn rootworm insecticide by scouting the field when eggs are being laid, says Whitney Cranshaw, entomologist with the University of Minnesota's Agricultural Extension Service.

"If few beetles are present, not many eggs will be laid and there will be low numbers of larvae to damage the plants next year," says Cranshaw. "Using a corn rootworm insecticide is not economically justified in this case," he adds.

"Using a rootworm insecticide is warranted only if there are high populations of the adult beetles in the field the year before planting corn," Cranshaw says.

"The only time you may need a corn rootworm insecticide is if corn follows corn. This is because eggs are laid around the base of corn plants in the previous season. Rotating crops is an effective way to control corn rootworms," he says.

About 1.8 million acres of corn are treated annually in Minnesota at a cost of \$6 to \$9 an acre.

- more -

add one--check fields for corn rootworms

Cranshaw advises checking at least five locations that are representative of the field. Make a count of the rootworm adults on 10 plants at each site. If the beetle count averages one or more plant at any time, plan to treat the field next year.

If the count is less than one per plant on the first count, make another count one week later. If the count never reaches one per plant, it probably won't pay to treat that field the following year.

"But if the field isn't scouted, assume that it should be treated if you're going to replant corn," Cranshaw says.

Corn rootworms are the most damaging corn insect in Minnesota. Two species are important--northern and western rootworms. The northern adult beetles are green and western beetles are yellow with black stripes.

Larvae feed on corn roots and cause damage from mid-June through mid-July. When full grown in mid July, the worms enter the pupal stage in the soil and transform to adult beetles. Beetles feed on silks and lay eggs from late July through first frost.

More information is available from county offices of the University's Agricultural Extension Service.

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DPMP, PII-P, 1A, FB

news

MSC/9A07p
Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

MEDIA NEWS PACKET

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- Caulking provides best return on investment
- Solar hot water heater can help some homeowners
- Caution is the word with kerosene heaters
- Decorating tips to make your home warmer in winter
- Researchers find U.S. grain export system competitive
- Minnesota researchers investigate desirability of determinant soybeans
- As fertilizer costs rise, alfalfa becomes more attractive nitrogen source
- New oat varieties under evaluation in Minnesota
- Tillage day set for Sept. 15 at Lambertton
- Don't let stored grain spoil
- Grassed waterways prevent gullies
- More feed or fuel for young piglets
- State farmers express interest in alcohol fuels

Note to specialists: If you would like a copy of any of the above news releases, check them and send this cover sheet, with your name and room number, to Evie Schield, 453 Coffey Hall.

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news

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Roger A. Peterson
612/373-0911

Writer: Laurie Gardner
612/373-1297

PLANNING FOR RISING HOME ENERGY COSTS

Saving energy has become increasingly important to the homeowner due to inflation and the rising costs of heating and cooling. Many homeowners are now considering energy improvements in order to keep those heating and cooling bills manageable.

"Most homeowners who have made energy improvements started with a simple four-step strategy," says Roger Peterson, residential energy specialist at the University of Minnesota Agricultural Extension Service. "Step one is to insure that the home is airtight. This is a test done by a professional technician for a nominal fee, but because of a possible conflict of interest, have the air leaks sealed by another expert."

Once you have improved the airtightness of your home, indoor air management is required. "Airtight homes require a system to remove moisture, dust and odors but at the same time supply fresh air in a manner that conserves energy. The best system includes an air exchanger device that recovers the heat from stale air before being expelled." The air exchanger brings in fresh air at a temperature of 40 degrees to 60 degrees rather than below zero, the temperature of winter winds leaking into drafty homes, Peterson says.

"Step two in your home energy improvement strategy," says Peterson, "is to add ceiling insulation with an R value, that is thermal resistance, of 40 or more." If remodeling the attic area, it would be wise to add up to 2 inches of

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add one--planning for rising

cellular plastic insulation as a sublayer to the R 40 insulation before sheetrocking, he adds. "Keep in mind," he cautions, "that fire codes require all plastic-based Styrofoam and urethane insulation to be covered by at least 1/2-inch thick sheetrock."

"The third step in your strategy," says Peterson, "is to insulate the exterior of your cement basement blocks. Much heat is lost through those blocks in the winter months. Installing 2 inches of cellular plastic insulation on the exterior of the blocks will create the barrier needed to save precious heat." Lap the insulation over the rim joist so that the top of the insulation is even with the first floor. If a 4-foot wide roll of cellular plastic insulation is used and one edge is placed even with the first floor, the insulation will probably enter the ground from 1 to 2 feet, Peterson says. "Cellular plastic insulation," warns Peterson, "must be protected from insects and especially sunlight. If exposed to sunlight over a period of time, it will literally crumble away and so will your investment." The insulation can be covered by stucco, specially treated plywood or fiberglass. There is also a variety of products similar to stucco that are easy to apply.

"The fourth and final step in your energy-saving strategy," says Peterson, "is to fill the inside of your frame walls with blown insulation." There has been a lot of publicity about the banned wall insulation called urea formaldehyde, but there are other approved insulations such as cellulose, mineral wool, fiberglass and polystyrene beads. He cautions that this type of insulating should only be attempted by a skilled home repair amateur or experienced contractor.

"Don't go out and try to do all four steps at once," cautions Peterson. "The majority of homeowners do their home energy improvements as they have the cash." Low-income homeowners may be eligible for a federal home energy improvement grant. The utility company offers an attractive financing plan, but not many homeowners take advantage of it. Most opt to plan their strategy, save and do it when they can afford it.

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St. Paul, Minnesota 55108

August 6, 1982

Source: Roger Peterson
612/373-0911
Writer: Dave McAllister
612/373-1686

CAULKING PROVIDES BEST RETURN ON INVESTMENT

The economics of insulation is confusing for many homeowners. One way to find out which insulation method to start with is to calculate which will yield the best return on your investment.

Caulking is recommended as the method to start with by a University of Minnesota Agricultural Extension Service housing specialist. Money invested in caulking materials will return to the homeowner 50 percent to 100 percent of an investment in only one year, says Roger Peterson.

"If you invest \$50 in a savings program at 13 percent interest, you'll earn \$6.50 in one year," Peterson says. "If you invest \$50 in caulking your home, you'll earn up to \$50 in one year in energy savings."

Warm air leaking out of a home can cost the homeowner \$300 to \$400 a year, Peterson points out. "You can feel cold air entering your home, but when warm air leaks out, there's no telltale draft. Inside caulking is just as important as exterior caulking."

Where should homeowners begin caulking? It's a fine art, Peterson says, and not all sources of leakage are evident.

He recommends a new procedure called a pressurization test, which is now available from a few remodeling companies at a cost of \$100 to \$150.

The pressurization test generally shows that common points of air leakage include gaps around the chimney where it enters the attic, gaps next to

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add one--caulking

pipes entering the attic, attic access doors, tops of wall cavities, electrical wall switches and outlets, cracks where window and door casings have separated from the plaster, and cracks near the baseboard between the plaster wall or the floor.

Peterson says that upper levels of homes should be caulked first, because of the fact that warm air rises.

"If you caulk the access door to your attic, you can always cut it later if you need to open it," he says.

Tops of wall cavities entering the attic -- more common in older homes -- should be boarded off and sealed with caulking. Electrical wall switches and outlets can be sealed with pre-cut foam gaskets, available from hardware stores.

"Window casing cracks can be caulked with a latex caulk and then painted," Peterson says. "If the woodwork is natural wood, seal any cracks with a clear silicone caulk."

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August 6, 1982

Source: Roger Peterson
612/373-0911

Writer: Dave McAllister
612/373-1686

SOLAR HOT WATER HEATER CAN HELP SOME HOMEOWNERS

It's not too soon for some homeowners to investigate using solar energy, says Roger Peterson, extension housing specialist with the University of Minnesota's Agricultural Extension Service.

"For homeowners currently heating with natural gas, solar energy would be a marginal investment now," Peterson says. "But a homeowner who heats a house or shower or laundry water electrically gains a better payoff by adding solar."

Such homeowners may spend \$350 to \$400 a year on electricity to heat their water, he says. A solar water heater can reduce these costs by 50 percent to 60 percent.

Peterson sees solar energy being in widespread use for these homeowners within five years. For natural gas households, he says, solar may catch on "a bit more slowly."

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August 6, 1982

Source: Bill Angell
612/373-0910

Writer: Laurie Gardner
612/373-1297

SELECTING A CONTRACTOR

"Because of the state of the economy and the residential construction market, competition for your business is extremely intense and you should be very careful when selecting a contractor to do your home improvements," says Bill Angell, extension housing specialist at the University of Minnesota Agricultural Extension Service. "Because of this intense competition, there appears to be an increasing temptation on the part of homeowners to take the lowest bid."

Angell warns homeowners not to select a contractor based primarily on their bid. "Commonly, a low bid indicates lower quality materials, less-skilled labor or a less-complete scope of work. Unethical or inexperienced contractors frequently use low bids to get up-front payments with no intention of completing the work," he cautions. "In contrast, a high bid may indicate a contractor places a premium on the job, or in the case of an unethical contractor, one who may be including unnecessary materials or labor," Angell notes. The most important thing to remember when selecting a contractor's bid is to get detailed specifications of the work and materials to be provided.

Do not rely solely on Better Business Bureau records for a recommendation. "Unethical contractors can manipulate their Better Business Bureau records relatively easily," he says. "Be suspicious when someone offers to perform a free energy audit of your home or other diagnostic assistance to specify work

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add one--selecting

that they will eventually be doing," he warns. "Due to a potential conflict of interest, have the audit performed by an independent expert," he adds.

"Select a contractor who is an active member in a professional or trade association such as the Insulation Contractors Association, the Twin Cities Remodelers Council or your local homebuilders association," Angell says. References and suggestions from local building officials and material suppliers are much more valuable than a list of the contractor's former customers. "The contractor should also provide evidence of being insured and bonded," he adds.

Finally, Angell advises homeowners to insist that contractors get the necessary building permits in the contractor's name. "The individual who obtains the building permit," he says, "has the legal liability to complete the work in compliance with building code regulations."

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August 6, 1982

Sources: Wanda Olson (612) 373-09
612/373-0913
Robert Aherin
612/373-0764
Writer: Richard Sherman
612/373-9110

CAUTION IS THE WORD WITH KEROSENE HEATERS

With the cost of keeping warm always on the rise, millions of kerosene-fueled heaters have been sold and that number seems to be growing. But actual savings are questionable and careless use can be hazardous, according to Wanda Olson, extension household specialist and Robert Aherin, extension safety specialist with the University of Minnesota's Agricultural Extension Service.

One danger in using kerosene heaters is fire. Though many are UL (Underwriter's Laboratories) listed and most newer ones have a flame "snuffer" that retracts the wick when the heater is tipped over, caution must be observed. According to Olson and Aherin, the heater must be at least three feet away from all combustible surfaces. Combustible surfaces include draperies, clothing, wall surfaces, furnishings and newspapers. In addition to maintaining this distance from combustible surfaces, Olson and Aherin caution that the heater must be kept away from traffic areas--a requirement difficult to meet in some homes.

UL listing means only that people and property will be reasonably safe from fire when the heater is used properly, but does not concern itself with other safety factors. In addition to fire hazards, the Department of Health has recently concerned itself with the effect these heaters have on home air supply. Even a properly cared for heater using the correct fuel will give off some pollutants, and it is critical that the size of your heater be based on

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add one--kerosene heaters

the room it will be used in. About one square inch opening of a window or door for each BTU heat rating is a good rule of thumb. If that same heater is later moved to a smaller room, additional ventilation will then be needed. The fuel usually specified by the manufacturers is 1-K kerosene, but 2-K is also water-clear and the consumer cannot tell the difference. If 2-K is used, sulfur and other contaminants can be released into the air.

Manufacturers usually give explicit directions to prevent fire and protect air quality, but the difficulty, according to Olson, is that the instructions are often not convenient to follow. Filling the heater, for instance, must be done outdoors. Also, the kerosene must always be stored outdoors. "In cold weather, or if the consumer is an apartment dweller, this can be particularly troublesome," says Olson. Following directions will promote safety, but in practice it is likely that many people don't bother, and thereby increase the risk.

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August 6, 1982

Source: Harold H. Alexander
612/373-0931

Writer: Louise Jones
612/373-1785

DECORATING TIPS TO MAKE YOUR HOME WARMER IN WINTER

The way you decorate your home and arrange your furniture can make a difference in how cold you'll feel this winter, according to Harold H. Alexander, extension interior design/furnishings specialist at the University of Minnesota Agricultural Extension Service.

"Often the color of a room or the lighting can create a feeling of warmth despite lowered thermostats," Alexander points out.

The "warm" colors--reds, yellows, browns--actually do create a feeling of warmth, Alexander says. A room painted a rust color, for example, will feel warmer to most people than one with blue walls even though both have the same physical temperature.

The kinds of lighting you use can also affect the "visual" temperature of a room. Incandescent lights emit more warm-colored light rays than "daylight" fluorescents. A "warm-white" fluorescent that provides more color balance is now available at many stores.

Incandescent lights also give off radiant heat, and so an incandescent lamp placed nearby can make you feel warmer on a chilly winter night.

Don't forget about the warmest light source of all--the sun. On sunny days open draperies wide on south windows and close them at night to keep the heat in. Draperies with east and west exposures should be open whenever the sun shines in.

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add one--decorating tips

Place seating furniture close to the heat source--a sunny window, an incandescent lamp, or a heat register. But be careful not to block circulation of air around heat registers. Take advantage of the fact that heat rises by concentrating quiet activities--reading, sewing, television--on the upper levels of the house.

Texture of walls and fabrics also affects feelings about temperature, Alexander notes. Slick and shiny surfaces appear cooler regardless of the colors or the actual temperature. Velvets, tweeds and homespun weaves look warmer and actually feel warmer to the touch. Quarry tiles, natural wood surfaces, brick and stone will look warmer than many plastics, glass, metals and glazed tiles. If your furniture has smooth surfaces, you can make it seem warmer by slipcovering with a textured fabric.

As winter approaches, bringing with it increased heating and lighting bills, now might be a good time to start thinking about ways to change the interior of your home to create a sense of warmth and comfort during the cold months to come.

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August 6, 1982

Source: Reynold Dahl
612/376-3436

Editor: Sam Brungardt
612/376-8182

RESEARCHERS FIND U.S. GRAIN EXPORT SYSTEM COMPETITIVE

The U.S. grain exporting system is more competitive than is commonly believed and prices of grain futures efficiently reflect grain export sales information.

These are the conclusions of University of Minnesota agricultural economists Reynold P. Dahl and Neilson C. Conklin, who are analyzing the U.S. grain exporting system for the university's Agricultural Experiment Station.

Dahl says the market structure of the U.S. grain export system can be broken down into four groups: major multinational corporations; Japanese-owned or -affiliated firms, farmer-owned cooperatives, and all other grain exporting firms.

"Concentration, or the percentage of grain export sales held by the largest firms in the industry, is not as high as is commonly believed," he says.

"Furthermore, concentration decreased from 1974-75 to 1980-81. Japanese-owned or -affiliated firms and farmer-owned co-ops increased their shares of grain exports largely at the expense of the five major multinational corporations."

Dahl says the changing market structure of the U.S. grain export industry is inconsistent with the static makeup one would expect in a monopolized industry. He points out that new firms, both large and small, have entered the industry while other firms have gotten out of the grain exporting business.

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add one--researchers find U.S.

The composition and market shares of firms in the industry have changed significantly in recent years," Dahl says, "as have patterns of export elevator ownership. These changes indicate competitive forces at work."

Dahl says the system provides more than the logistics of moving billions of dollars' worth of grain from U.S. farms to ocean-going vessels. He says it also transforms production, climatic, sales and other information into prices. These prices, in turn, efficiently allocate production resources--land, labor and capital--and distribute income worldwide.

He says, "As policymakers consider proposed changes such as a grain marketing board, grain export cartels or export levies, they should carefully consider the full impact of such changes on the total U.S. grain export system."

Single free copies of the May 1982 Minnesota Agricultural Economist, in which a summary of Dahl's and Conklin's research was published, are available from the Department of Agricultural and Applied Economics, 231 Classroom-Office Bldg., University of Minnesota, St. Paul, MN 55108.

Single copies of an earlier report on the economists' research, Technical Bulletin 325, The Economic Performance of the U.S. Grain Export Industry, may be obtained free from your county extension office.

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University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Jim Orf
612/373-0861
Writer: Sam Brungardt
612/376-8182

MINNESOTA RESEARCHERS INVESTIGATE DESIRABILITY OF DETERMINATE SOYBEANS

University of Minnesota researchers are evaluating determinate soybean varieties and breeding lines to see if they can contribute anything to the development of varieties for Minnesota.

Jim Orf, who is in charge of the soybean breeding program for the university's Agricultural Experiment Station, says it's too early to tell whether determinate varieties would be desirable in Minnesota.

"When we speak about a determinate variety of soybean, we're talking about one that stops further growth in height soon after it begins to flower," Orf says. "In contrast, the varieties currently grown in Minnesota are of the indeterminate type and continue to grow and increase in height for three to four weeks after the onset of flowering."

Orf says the determinate varieties recently released by the USDA and the Ohio experiment station mature too late for Minnesota. "Some research done on indeterminate varieties of the same maturity group as the determinate Ohio varieties indicates that there's no consistent yield advantage for one type or the other," he says, "except under conditions where lodging becomes a problem with the indeterminate varieties."

Development of soybeans in many areas of Minnesota this year is behind normal. This points up a problem that farmers might encounter with determinate varieties.

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add one--Minnesota researchers

"When we have a cold spring like this year's or a stretch of dry conditions as we've had this year at Lamberton, determinate varieties may not have enough time before growth stops to make up for poor early growth," Orf explains. "They may get only 12 to 15 inches tall under unfavorable growing conditions, and when that happens, the plants just don't have enough superstructure on which to carry the pods that contribute to yield. Also, they may be so short that all the pods can't be picked up with presently available harvesting equipment.

"So far, researchers in other states haven't seen much difference in yield between the two types, although some research has shown that determinate varieties do better under narrow-row or solid-seeded conditions where lodging might be a problem with indeterminate varieties.

"Overall," he concludes, "we just don't have the data to say yet whether determinate soybeans have a place on Minnesota farms or not."

The information Orf is getting on determinate soybeans is from a graduate student's thesis research. The student is evaluating about 75 indeterminate and 75 determinate lines at the Lamberton, Waseca and Rosemount stations for yield and other agronomic characteristics. The lines were random selections from three populations resulting from crosses between determinate and indeterminate parents.

Orf is working with other graduate students whose thesis research could ultimately help soybean growers. One student is looking at the potential for improving breeding materials' ability to germinate under cool conditions. Another is looking to see whether a Rhizobium strain specially selected for its efficiency in fixing nitrogen can be used successfully to nodulate lines of soybeans. If so, this might be one way to increase soybean yields.

"Although our primary objective in the soybean breeding program is to produce high-yielding varieties adapted to the various maturity zones of the state, our research also provides training for graduate students who will become plant breeders for private companies and public institutions in the United States and other countries," Orf says.

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August 6, 1982

Source: Craig Sheaffer
612/373-1677

Writer: Sam Brungardt
612/376-8182

AS FERTILIZER COSTS RISE, ALFALFA BECOMES MORE ATTRACTIVE NITROGEN SOURCE

Growing green manure legume crops, once common in Minnesota, may someday be less costly than fertilizing solely with inorganic fertilizers, according to Craig Sheaffer, forage management researcher with the University of Minnesota Agricultural Experiment Station.

Sheaffer says the advent of cheap nitrogen fertilizers, such as anhydrous ammonia, made growing green manure crops economically unattractive in the 1960s and '70s. It became more profitable for farmers to buy nitrogen fertilizer produced from natural gas and to use land formerly planted to green manure crops for continuous row crops.

"Now, with higher natural gas prices, farmers are faced with much higher nitrogen fertilizer costs," Sheaffer says. "In 1974, a ton of anhydrous ammonia cost about \$300. With the deregulation of natural gas, there's been a substantial increase, and the cost may be as high as \$500 a ton by 1985 or 1986."

Growing legumes for green manure may be an attractive alternative to buying so much nitrogen fertilizer in the future, the forage management researcher says. Legumes such as alfalfa have the ability to "fix" atmospheric nitrogen, he explains. Rhizobium bacteria in the nodules on the roots of legumes produce ammonia which the plants use to manufacture proteins, the nitrogen-rich compounds for which legumes are so famous. In turn, the bacteria are nourished by sugars produced by the legumes in photosynthesis.

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add one--as fertilizer costs

"Alfalfa is capable of fixing more nitrogen per acre than other commonly grown legumes," Sheaffer says. "An acre of alfalfa can fix 177 pounds of nitrogen in a single year. It would take 11,144 cubic feet of natural gas to provide an equivalent amount of fertilizer nitrogen. In contrast, an acre of peas fixes only 59 pounds of nitrogen per year; soybeans, 92 pounds; and clover, 163 pounds."

University of Minnesota scientists are working with USDA plant breeders to develop alfalfa varieties that are more efficient at fixing nitrogen. Two synthetic varieties, Mn UC Cargo and Mn BIC-7, have been developed at the university from UC Cargo and BIC-7.

In tests at the Rosemount Agricultural Experiment Station, plots of these synthetic varieties and the varieties from which they were developed were established, plowed down in the fall and planted to corn the following spring. Grain yields were 2 percent and 11 percent higher for the plots that had been planted to Mn UC Cargo and Mn BIC-7 than for the parent varieties, and stover yields were 11 percent and 7 percent higher, respectively.

Shaeffer says an experiment is being started at the Southwest Experiment Station Lamberton, in which a synthetic variety with a high nitrogen root yield and Saranac will be tested to determine their ability to provide nitrogen for future crops. "The plots of the synthetic variety and Saranac will be harvested once or twice in this, their seedling year," he says. "Then, we'll plow under whatever regrowth there is this fall. Next spring, we'll plant corn on the plots and fertilize it with various rates of inorganic nitrogen and compare the productivity with that of corn grown on plots that were planted to soybeans or left fallow this year."

It's necessary to plow down alfalfa regrowth in the fall to avoid mining soil nitrogen reserves when growing alfalfa as a green manure crop, Sheaffer says. Although much of the nitrogen produced by the alfalfa will be tied up in lignin and won't be decomposed and available for three to five years, the extra organic matter will improve soil tilth, reduce the chance of soil erosion with row crops and help break the disease cycles that result from growing continuous row crops.

add two--as fertilizer costs

Harvesting alfalfa grown as a green manure crop once or twice in its seedling year will make the practice much more economically attractive, he adds. This will provide some income from the land while the alfalfa is fixing nitrogen that can be used by future crops. Cuttings were usually not taken during the seeding year when alfalfa was grown for green manure in the past.

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University of Minnesota
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August 6, 1982

Source: Deon Stuthman
612/373-0860

Writer: Sam Brungardt
612/376-8182

NEW OAT VARIETIES UNDER EVALUATION IN MINNESOTA

Farmers attending the recent summer field days in late June and early July at the Southern Experiment Station, the Southwest Experiment Station and the West Central Experiment Station had an opportunity to compare plots of some of the newer oat varieties with plots of Noble, Benson, Lyon and Moore varieties currently recommended by the University of Minnesota.

Deon Stuthman, oat breeder for the university's experiment station, commented on the relative merits of some of the newer varieties under test, including Ogle, Larry and Porter.

He said he was favorably impressed with Ogle, which has so far posted very good yields in Minnesota as well as farther to the south and east, from Iowa to Pennsylvania. "This variety has very good lodging resistance," Stuthman observed, "but unfortunately it doesn't have the rust and smut resistance we'd like to see."

Stuthman was less enthusiastic about Larry, which like Ogle, was developed at the University of Illinois. He said that although Larry was an early variety, it has not displayed Ogle's yield potential and is susceptible to rust and smut too.

Porter, developed by the Purdue Agricultural Experiment Station, had not yet headed out in the plots at Waseca, Lamberton and Morris in time for the field days. Stuthman said it would be too late a variety for southern Minnesota, with lower

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add one--new oat

yields to be expected because heading and grain fill would occur during warmer summer weather.

He also discussed Preston, which was released this spring as a recommended variety by the Minnesota Agricultural Experiment Station. "Seed growers in Minnesota have planted about 2,500 bushels of Preston this year, so there should be a fair amount of seed available in 1983," Stuthman said. "Preston is early and relatively short with good lodging resistance. We released it primarily for use as a nurse crop variety that could be used in establishing forages."

"Preston is a variety a farmer can use for forage or grain," the oat breeder said. "It will run approximately 20 percent protein on a groat basis, and 15 percent protein on a kernel basis."

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Agricultural Extension Service
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University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: John Moncrief, 612/373-1060
Writer: Jack Sperbeck, 612/373-0715

TILLAGE DAY SET FOR SEPT. 15 AT LAMBERTON

A conservation tillage day with demonstrations of tillage and cultivating equipment and row-crop planters is scheduled for Wednesday, Sept. 15 at the University of Minnesota's Southwest Experiment Station, Lamberton.

The tillage demonstration is part of the Lamberton station's annual fall field day and begins at 9 a.m.

There will be residues from oats, corn and soybeans. The tillage field plots at Lamberton were planted to 85-day corn and will be harvested before Sept. 15.

Tillage equipment that will be demonstrated includes a disk chisel with twisted shovels, chisel with twisted shovels, disk chisel and a variable width plow.

In addition, several row-crop planters and cultivating equipment will be demonstrated.

Each machine will be demonstrated three times during the field day. Implement dealers and representatives will provide equipment and tractors for the demonstration.

The tillage field day is sponsored by the University of Minnesota's Agricultural Extension Service and Agricultural Experiment Stations.

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University of Minnesota
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August 6, 1982

Source: Curt Overdahl (612) 373-1060
Writer: Jack Sperbeck (612) 373-0715

NITROGEN "RESCUE" EFFORT MAY PAY IN LOW SPOTS

Supplemental nitrogen applied to nitrogen deficient low spots in corn fields may give significant yield and economic returns, says Curt Overdahl, soils specialist with the University of Minnesota's Agricultural Extension Service.

Overdahl says research at Southern Illinois University showed economic benefits when the supplemental nitrogen was applied only to low spots, not the entire field.

"It's hard to apply nitrogen only in low spots in the field," Overdahl says. "But from an economic standpoint, you probably won't come out ahead by applying supplemental nitrogen to the entire field if only scattered low spots are nitrogen deficient due to excessive moisture."

In the Illinois study, most of the pre-plant nitrogen was probably lost from low spots through denitrification. Urea and ammonium nitrate gave equal responses in improving the yield of the stunted corn. Yield benefits were higher when the "rescue" efforts were applied to younger, less developed corn.

The Illinois research was done in 1981. Many farmers in southeastern Minnesota had the same problem in the spring of 1982 (nitrogen applied before planting was lost to denitrification caused by heavy rains).

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August 6, 1982

Source: Dick Meronuck
(612) 373-0937
Writer: Jack Sperbeck
(612) 373-0715

DON'T LET STORED GRAIN SPOIL

More on-farm grain storage means more grain that's susceptible to storage losses from microorganisms.

"Good storage management is important to prevent this valuable commodity from deteriorating," says Dick Meronuck, plant pathologist with the University of Minnesota's Agricultural Extension Service.

He advises using an aeration system to warm bins up to 55 degrees F for summer storage. Run fans periodically through the summer during cool spells to cool off the grain samples and equalize temperatures in the bin. This eliminates moisture transfers, which can speed up mold development.

Keep the grain temperature within 20 degrees F of the average outside temperature. Check the bins regularly, smell for musty grain and probe to check moisture and temperature throughout the bin.

Molds in stored grain begin growing rapidly when moisture tops 14 percent and temperatures climb past 70 degrees F., Meronuck says. Corn stored under these conditions can develop visible mold in three to six weeks.

"As moisture content and temperature increase, so does mold growth, which in turn creates its own heat and further increases the growth rate," he says. If corn is in good condition, it will store well during the summer at 13

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add one--stored grain

percent moisture with little attention. But as moisture content increases, you need more storage management.

There's been a rapid increase in on-farm storage capacity the past five years. The estimated figure is 9.6 billion bushels, or 63 percent of the total U.S. storage capacity of 16.8 billion bushels. Six states--Iowa, Minnesota, Nebraska, Kansas, Illinois and Texas--each have over one billion bushels of storage capacity. The six states hold 61 percent of on-farm storage capacity.

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MP

news

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Clifton Halsey
612/373-1060

Editor: Deedee Nagy

NOTE TO EDITORS:

Black and white photos are
available upon request.

Phone 612/373-1791

GRASSED WATERWAYS PREVENT GULLIES

Protect waterways on sloping land from erosion with thick grass sod, advises Clifton Halsey, conservation specialist with the University of Minnesota's Agricultural Extension Service. Soil eroded from unprotected waterways buries young crops, fills roadside ditches and may add to the pollution and sedimentation of trout streams, reservoirs and river channels.

Halsey adds that gullies in waterways are hazardous to machinery and operators and they divide fields into small parcels. Good grassed waterways, however, provide for run-off of snowmelt and rainwater without damage by erosion, siltation or flooding. They make farming easier, preserve the land, prevent gullies, and enhance the quality of run-off water flowing into lakes and streams.

He suggests these steps to maintain good waterways:

- Inspect waterways after heavy rains and run-off. Repair damage right away using fill, reshaping, keeping sod staked down, reseeding and mulching as appropriate.

- Mow waterways and remove the mowed grass. This will help to maintain thick sod and reduce sediment accumulation on waterways. Sediment reduces the

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add one--grassed waterways

effectiveness of waterways and it indicates that erosion is occurring in adjoining fields. Waiting until after July 15 to mow will provide nesting cover for wildlife. Close-clipped sod is also less attractive to stalk borers.

- Control weeds with herbicides that do not harm the waterway sod.
- Control gophers, moles, badgers and woodchucks. They start gullies.

- Raise tillage machinery and applicators such as plows, disks, chisels, cultivators, anhydrous ammonia applicators and manure injectors before crossing waterways.

- Shut off grass herbicide applicators when crossing waterways. Grass herbicides washed from the surrounding land can also damage waterways. Use soil conserving practices that reduce run-off from the surrounding land to avoid herbicide damage to waterways.

- Avoid leaving open furrows along the edge parallel to waterways.

- Avoid using the waterways as field roads. If occasional travel is necessary, drive only along the edges of the waterways. Do not concentrate travel that will kill the sod or form ruts. Stay out of waterways when the ground is saturated.

- Do not graze waterways when the ground is soft. Keep hogs out at all times.

If sediment accumulates in a waterway, it means other soil conservation practices are needed. These may include conservation tillage, contour farming, terraces, contour strips or crop rotations with more hay. If sediment seriously reduces the capacity of a waterway, rebuilding it is the only solution and the investment in the previous waterway is lost, Halsey says.

Professional soil conservationists at soil conservation offices can provide excellent technical assistance for the construction or rebuilding of grassed waterways.

add two--grassed waterways

He adds that cost-sharing assistance is available from the soil conservation district or the Agricultural Stabilization and Conservation Service (ASCS). Both agencies should be consulted about proper application and approval procedures well in advance of waterway construction. Designs and specifications, as well as completed construction, must be approved by the Soil Conservation Service before cost-share payments are made.

Minnesota Extension Folder 480, Grassed Waterways-Construction and Maintenance, illustrates construction and maintenance of grassed waterways. It is available at county extension offices.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Larry D. Jacobson
612/373-0764

Writer: Mary Kay O'Hearn
612/373-1786

MORE FEED OR FUEL FOR YOUNG PIGLETS

More feed, rather than more fuel could be needed ingredient in bringing early weaned piglets through the critical second stage of life toward full growth.

The piglets' body heat (generated by the feed) appears to keep them as healthy and growing as raising the thermostat.

The feed vs. fuel theory is described in a paper, "Heat Production of Nursery Piglets," which Larry D. Jacobson, Kenneth A. Jordan and Steven G. Cornelius of the University of Minnesota presented recently at the summer meeting of the American Society of Agricultural Engineers, University of Wisconsin-Madison.

The paper deals with those 4 weeks when the piglets leave the mother sow and switch from a liquid to a solid diet--a transition that can result in high mortality rates. With the economic trend toward more litters and early weaning (at 3 to 4 instead of 6 weeks old) this postweaning stage becomes crucial.

"Pigs are highly social animals, establish a pecking order right away and often are grouped with other litters--with a dozen or more piglets," Jacobson says.

The three researchers wanted to have a better understanding of the pig's response to environmental factors. Could fuel be conserved while maintaining acceptable growth at this critical stage of life?

- more -

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add one--feed/fuel young piglets

Four animal chambers were built to control air temperature, measure feed consumption and record animal weights--all without disturbing the piglets. Groups of four nursery-age piglets, weaned at 4 weeks, were raised to 8 weeks at temperatures ranging from 60° to 90°F.

At low temperatures the piglets ate more, but produced more body heat. Weight gains were similar despite the great differences in temperature.

Daily heat production was determined by measuring oxygen consumed and carbon dioxide produced in the animal chambers. Results, in this continuing study, will be used to validate a mathematical model of energy needs for swine.

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Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Arnold Flikke
612/373-1305

Writer: Mary Kay O'Hearn
612/373-1786

STATE FARMERS EXPRESS INTEREST IN ALCOHOL FUELS

More than half of the 265 Minnesota farmers responding to a University of Minnesota survey said they would use alcohol fuels (produced from agricultural materials such as corn) if costs in time, equipment and cash compared with petroleum fuels.

County agents with the Agricultural Extension Service selected the farmers for the survey. Most said they used between 1,000 and 5,000 gallons of gasoline (in addition to their diesel fuel) in their farming operation the previous year.

The two-year study resulted in a farm-scale ethanol plant at the West Central Experiment Station, Morris. Researchers at the University of Minnesota who were involved in studying the plant included David P. Thimsen, research fellow in agricultural engineering; Leslie K. Lindor, associate professor at the Morris Station; and Fred J. Benson, professor, agricultural and applied economics.

To have the ethanol production break even or show a profit, there needs to be a switch in the relationship between corn and liquid fuels. The value of ethanol has to be greater than the feedstock value by enough to pay for the rest of the production costs, according to the economic analysis paper.

The ethanol plant has been operating continuously since October 1981 and is producing 4.8 gallons of 172 proof alcohol per hour. Actual costs of producing a gallon of alcohol are estimated to be about \$2.50 (this assumes a 37 cent

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add one--alcohol fuels

value of the by-product and 40 cent tax credit per gallon).

Two nutrition trials conducted, one using solids obtained by passing the beer mixture through a screw press and the other feeding the spent beer as drinking water (called stillage), show that the by-products of the fermentation process are competitive with conventional sources of protein for animal feed.

Farmer interest in producing alternate fuel began in 1979 when diesel oil shot up from 55 cents a gallon during spring planting to 85 cents a gallon by harvest. Yet, prices farmers received for feed grains had not budged.

Although there was a certain mystique about brewing up a batch of alcohol to use as engine fuel, it was obvious a "moonshiner" approach at ethanol production would not meet needs or capabilities of commercial farmers. The University of Minnesota, in an earlier paper, urged farmers to investigate further before plunging money into such projects. Yet 60 percent of the farmers responding to the university's survey looked to universities to take the lead in research and development of fuel ethanol production and use.

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750/94-27p
Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

for County Agents

August 6, 1982

COUNTY NEWS PACKET

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Note to agents: Enclosed in this month's news packet is a special report compiled by the Minnesota Agricultural Statistics Service. Data specific to your county or region of the state should be useful in preparing columns, newsletters and radio programs for local audiences.

Note to specialists: If you would like a copy of any of the above news releases, check them and send this cover sheet, with your name and room number, to Evie Schield, 453 Coffey Hall.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Roger Peterson
612/373-0911

Writer: Dave McAllister
612/373-1686

WEATHERSTRIPPING YIELDS GOOD RETURN ON INVESTMENT

Leakage of warm air can cost a homeowner \$300 to \$400 a year. Proper weatherstripping can go a long way toward cutting that cost, according to Roger Peterson, extension housing specialist at the University of Minnesota Agricultural Extension Service.

"Weatherstripping generally yields a 30 percent to 50 percent return on your investment," Peterson says. "For every dollar you spend on weatherstripping materials, you'll get back 30 percent to 50 percent of that amount each year in energy savings."

Weatherstripping is a changing field, he says. The trend is toward more permanent tight-sealing methods.

Double-hung sliding windows, for example, can be sealed by installing aluminum or plastic side-channels to prevent air leaks around the edges.

"It's also a good idea to install two window locks because this will hold the center bars together more tightly than one lock," Peterson says.

In some cases, it may be advisable to replace the window or the entire window unit. If purchasing new windows, consider buying thermopane glass, he recommends. Together with storm windows, you will then have triple panes.

"Weatherstripping for doors needs to be durable because of the wear and tear it receives," Peterson says. "The key to weatherstripping doors is to

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add one--weatherstripping

have the weatherstripping meet the surface of the door firmly but still allow the door lock to catch hold.

"There's a new type of magnetized weatherstripping for doors that makes firm contact without causing the door to shut with difficulty. It's hard to find it in Minnesota, but a hardware dealer may be able to order it from suppliers in the Northeast."

The threshold is an important part of the door to weatherstrip, but a difficult one, Peterson says. Some people use a "draft dodger" (a cloth tube filled with sand) to block drafts and insulate the threshold.

Weatherstripping for thresholds includes the sweep style. This mounts to the door and makes contact with the floor or threshold. Another style, the vinyl bulb, is part of the threshold. The third style -- metal interlock -- has pieces on the threshold and on the bottom of the door. Proper alignment of these pieces is critical.

"Weatherstripping a storm door, if you have one, is also useful," Peterson says.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Roger Peterson
612/373-0911

Writer: Dave McAllister
612/373-1686

SEAL WARM AIR LEAKS BEFORE INSULATING ATTIC

Attic insulation works only if you've stopped the flow of air through the attic first, says an extension housing specialist at the University of Minnesota Agricultural Extension Service.

"Before you add insulation to your attic, be sure to seal any escape routes for warm air from the rooms below," says Roger Peterson. "Escaping warm air can bypass insulation on its way out of your house."

Peterson says that common air escape points include recessed light fixtures, spaces alongside chimneys, space around pipes and vents, attic access doors, and areas that have a dropped ceiling in the room below.

The best treatment for recessed light fixtures is to remove them, plaster the ceiling and then install a surface-mount fixture. Recessed fixtures can be a fire hazard in a well-insulated attic.

"Finished attics are a special challenge," he says. "The sloped ceilings in many finished attics are built such that only a 4-inch space exists under the roof. With such limited space, it may be necessary to use insulation with a higher R value per inch."

"R value" is a term used to indicate the heat-stopping power of insulation, Peterson says. The greater the R value, the more effective is the heat retention.

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add one--seal warm air leaks

"Attic ceilings should have a minimum R value of 20, but an R value of 40 to 60 is desirable. An R value of 20 in a sloped ceiling could be obtained with three inches of urethane sheet insulation."

If plastic-based insulation is used in a finished attic, for example between rafters or under them, it must be covered with 1/2-inch-thick sheet rock, Peterson says. Common plastic-board insulation is polystyrene and urethane.

"If flat ceilings in rooms under an unheated attic are being remodeled, plastic-based sheet insulation can be added before sheet rock is installed. This is particularly helpful to prevent a cold perimeter around the ceiling, which can cause mildew and moisture problems," he says.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Wanda Olson
612/373-0913
Writer: Denise A. Bonebright
612/376-1686

ENERGY LABELS CAN BE MONEY-SAVING TIP

As the cost of energy rises, the efficiency of household appliances becomes more and more important. Current legislation has made it mandatory for manufacturers of certain types of appliances to label new equipment with energy efficiency information. "These labels can be a big help in shopping for appliances," says Wanda Olson, extension household equipment specialist with the University of Minnesota's Agricultural Extension Service. Knowing how to choose efficient appliances can make a great difference in the lifetime cost of the purchase."

In addition to information specific to that type of appliance, the labels list the annual operating cost of the appliance (based on a national average cost of electricity), and the annual operating costs of the most and least expensive models of the same size and type of appliance. The label also lists annual operating costs at various costs per kilowatt hour of electricity, so it is a good idea to know your rate.

This information is especially useful in water heaters and appliances such as refrigerators and freezers which are purchased to last 15-20 years. "These appliances will have operating costs much greater than the initial purchase price over the lifetime of the product," says Olson. "Because of this, one needs to carefully consider the energy efficiency of new appliances. Less efficient ones often have lower initial purchase prices, but these can

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add one--energy labels

be considerably more expensive to operate, resulting in higher overall expenditures."

One thing the labels don't list is the relative proportion of models which are efficient. This makes comparison shopping even more important. For example, in one size of freezer, almost all of the models are fairly efficient, but a few are up to three times more expensive to operate. "Overall, a significant number of models for the common sizes of refrigerators and freezers are on the most efficient end of the scale," says Olson. "A person planning to buy a model that's on the least efficient end should consider the decision carefully."

The operating costs on labels are based on standardized tests, so the actual operating costs will vary depending on the owner's habits. Using minimal heat/cold or power settings, operating the appliances with a full load, and following the manufacturer's recommendations for operation will all help to keep energy costs down.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Wanda Olson
612/373-0913

Writer: Denise A. Bonebright
612/376-1686

CAREFUL USE OF HOT WATER CAN SAVE MONEY

Next to home heating, water heating uses more household energy than any other single energy use in Minnesota homes. "I don't think people are aware of the importance of water heating in their energy bills," says Wanda Olson, extension household equipment specialist with the University of Minnesota's Agricultural Extension Service. "People tend to be more aware of energy use in cooking, refrigeration and lighting; but in fact in typical households water heating uses more energy than all of these things combined."

The amount of energy used in heating water depends on the efficiency of the water heating system, the temperature setting of the water heater, the temperature of the street or well water, the number of people in the house and their water use habits.

"Some of these factors can't be changed," says Olson, "but some fairly simple changes in water use habits can have a major effect on a household's monthly energy bill."

Here are some tips for conserving energy used in water heating:

--Baths and showers offer many possibilities for saving energy. Each half-filled bath or 6- to 10-minute shower uses about 25 cents worth of heated water. Adding a flow restrictor could cut in half the energy used for showers. Cutting the shower down to 1 or 1½ minutes will save nearly 20 cents per shower.

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add one--hot water

--The major energy usage in laundry is for water heating. Changing one laundry load from hot to warm water would save about 12 cents per load. Using a suds saver device to recycle hot water will also help save energy costs in doing laundry.

--Cold water washing uses the least energy, but it does not remove soil as well. You may also find yourself using more detergent and other laundry products in cold water.

--In most cases, clothes can be rinsed in cold water, saving a considerable amount of energy. Clothes rinsed in cold water take slightly more time and energy to dry, but the added drying energy use is minimal compared to the overall energy savings.

--A dishwasher should only be run with a full load. Most of the energy used by dishwashers is also for water heating. Dishwashers with the option to eliminate one cycle on lightly soiled dishes will also help save hot water. A dishwasher needs water at 130°- 140° for efficient operation, so you shouldn't try to save by turning down the temperature setting of your water heater unless your dishwasher has a water heater builtin.

Olson recommends making sure that your hot water heater and hot water pipes are well insulated. This will reduce the heat loss and improve efficiency. If your heater is not one of the energy-saver models, you might consider covering the top and sides of an electric water heater with an insulation jacket, but jackets can only be used safely on the sides of gas water heaters, and directions must be followed very carefully. Special pipe-wrap insulation makes it easy to cover any exposed hot water pipes.

add two--hot water

One other possibility for saving energy in water heating is to lower the temperature setting on the water heater. "There are some cautions about doing this, though," says Olson. "Lowering the temperature will mean that more gallons of hot water are needed for mixed uses such as baths and showers. This could cause shortages of hot water if you use a lot of hot water in a short amount of time, or if your electric water heater operates only on off-peak hours."

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Harold H. Alexander
612/373-0931

Writer: Louise Jones
612/373-1785

ENERGY-SAVING WINDOW TREATMENTS NEED NOT BE COSTLY

It's not necessary to buy expensive window treatments to save on heating bills. Some minor adjustments to your present treatment may be all that you need to reduce heat loss, according to Harold H. Alexander, interior design/furnishings specialist of the University of Minnesota Agricultural Extension Service.

"When manufacturers or sales people promote thermal shades, quilted draperies or insulating shutters, they often make claims about the product's energy-conservation features," Alexander says. "The claims may very well be true, but they may not recognize the energy-saving qualities of your present window treatment."

You may not need all that they're selling if you already have storm windows, draperies, blinds or other window treatments. "One layer of glass cuts out 50 percent of the heat loss, a second layer cuts out another 25 percent, and a third layer cuts out only 12.5 percent, Alexander explains. "The amount of energy saved by each additional layer of glass or other window covering keeps decreasing. It may not pay to invest a lot of money for only a small increment in energy savings."

Instead, Alexander recommends looking at inexpensive ways to improve your present window treatment. All windows should be weatherstripped and caulked. Make sure your present window treatments are tight fitting.

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add one--energy-saving

Air circulation around windows causes heat loss through the glass and creates drafts. To prevent air circulation, block off the top and sides of draperies. Use double-faced tape or staples to fasten the outer edges of draperies to the wall. Even if the tape pulls some of the paint away, it will not be visible behind the draperies. Add a closed-top valance to your draperies, or, if you already have an open valance, add an insulated board to close off the top. Make sure draperies do not block any heat registers.

Plastic sheeting attached to inside window frames can create an insulating air space and also act as a vapor barrier. Plastic sheeting can also prevent heat loss if fastened to the backs of blinds or shutters.

Thin layers of cloth can provide more insulation than a single thickness of heavy fabric. A layered treatment might include storm windows, a tight-fitting shade and draperies. The optimum air space between layers is 3/4 to 1 1/4 inches.

To insulate windows at night or when the sun is not shining, try using removable panels made of Styrofoam or corrugated cardboard. Consider also whether you really need all the windows you now have. Some windows--or parts of windows--can be permanently blocked off. An inexpensive way to do this is to use sheets of corrugated cardboard glued together so they are about an inch thick. Make sure that the cardboard fits tightly inside the window frame. It may not look pretty, but it won't show if the window already has draperies or cafe curtains. The cardboard should be removed periodically to prevent moisture buildup.

Whatever simple improvements you decide to make, keep in mind this simple rule of thumb: the closer-fitting and more layered the window treatment, the more energy-efficient it will be.

news

for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Joanne Slavin
612/376-8748

Writer: Deedee Nagy
612/373-1781

HYPOGLYCEMIA IS TRENDY BUT ALSO RARE AND MISUNDERSTOOD

Pick up almost any magazine at the grocery store check-out counter and you'll probably find an article about hypoglycemia. Joanne Slavin, extension nutritionist at the University of Minnesota Agricultural Extension Service says that books and magazines has convinced many people that they are suffering from this "in" disease and they use it to explain anxiety, obesity, fatigue, headaches and even alcoholism.

"Actually, hypoglycemia (low glucose -- sugar -- in the blood) is rare and doesn't deserve all the attention it gets," Slavin says. "Popular books often recommend that you diagnose hypoglycemia yourself on the basis of vague symptoms or sugar cravings. Some recommend huge dose of vitamins and adrenal cortex extract injections to treat hypoglycemia, but there's no scientific basis for these recommended treatments."

She says physicians do not agree on how to detect reactive hypoglycemia, which is caused by release of too much insulin or an abnormal sensitivity to insulin in the body. A glucose tolerance test is commonly used to detect reactive hypoglycemia. After an overnight fast, patients drink a sugary solution and then have their blood glucose measured periodically.

Slavin says that problems arise in interpreting the findings from such a test. Physicians often disagree on the minimum normal glucose level. Also, even

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add one--hypoglycemia

normal, non-hypoglycemia sufferers will show a hypoglycemia response after drinking a glucose solution on an empty stomach.

She adds that low levels of blood glucose should be accompanied by trembling or sweating before a diagnosis of hypoglycemia can be made. In addition, an accurate diagnosis should be based on a low blood glucose level and other symptoms after the person eats an average meal.

She cautions that hypoglycemia is not a disease itself but may be a symptom of a serious condition such as a tumor or liver condition. "Before you change your diet because you think you have the 'sugar blues', consult your physician," Slavin warns. "True hypoglycemia is a serious problem and deserves prompt medical attention."

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CA

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Sherri Johnson
612/376-1537

Writer: Deedee Nagy
612/373-1781

MAIL ORDER SHOPPING GAINING POPULARITY

After working and juggling household duties, increasing numbers of women are finding that mail order shopping saves time and simplifies life.

Sherri Johnson, extension textiles and clothing specialist at the University of Minnesota Agricultural Extension Service says that mail order firms are enjoying booming sales largely because of the convenience they offer to busy customers.

She adds, "Perhaps our values have changed a bit, too. Working women have limited leisure time and they may not be as willing to spend a whole Saturday shopping for family clothing."

She says catalog shopping can be a good way to buy staple items for the wardrobe. These include basic sportswear, undergarments and children's clothing. She cautions mail order shoppers that exact colors and fabric textures aren't easy to determine by a catalog photo or color chart.

"Garments that are of a basic or neutral color may be the best bet for catalog orders," she says. "Don't assume that two garments will match or blend well just because they appear that way in the catalog."

Quality determination can be another pitfall for the catalog shopper. Johnson says, "If you are looking for a specific construction quality or a special garment, you might be better off to invest time in an actual shopping trip. How flexible are you in your expectations? You might expect higher

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add one--mail order

standards in a tailored jacket for work than in something more seasonal and sporty."

She cautions mail orderers to check the catalog's size charts carefully. Even so, the sizing information is a guide and may not always be foolproof. Shoes can be tricky to order particularly if you have fitting problems due to high arches or one foot slightly larger, Johnson adds.

She offers these tips for catalog shoppers:

* Plan ahead. If you need a specific garment to wear in two weeks, catalog shopping is risky.

* Study the catalog instructions and policies for ordering and returning items. There may be different requirements for mail orders than for phone orders.

* If you are charging items on a credit card, remember that the actual cost of the garment may include financing. Some catalog companies do not require use of a credit card but you must pick up the merchandise at a nearby service center.

* Catalog items ordered from major retailers usually can be delivered directly to your home but you may pay extra handling and mailing charges. Read the catalog ordering information to find out if this is the case.

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Sherri Johnson
612/376-1537

Writer: Deedee Nagy
612/373-1781

1980s BABY BOOM IS BOON TO MATERNITY WEAR INDUSTRY

Having babies seems to be back in vogue. After producing as few as 3.1 million babies yearly in the early 1970s, we're now up to nearly 3.8 million new arrivals each year.

This means that the maternity wear business is booming, according to Sherri Johnson, extension textiles and clothing specialist at the University of Minnesota Agricultural Extension Service. "In addition, most women in their childbearing years are employed through their pregnancies so they need more extensive and versatile maternity wardrobes," she adds.

Johnson says that although pregnancy is a short-term condition, pregnant women shouldn't forsake quality or good looks in their clothing selections.

"For a working woman, I would suggest investing in a few basic styles that can be mixed and matched. For example, a jumper in a basic color will combine with many blouses, jackets and scarves for many occasions," she suggests.

She advises expectant mothers to look for styles that can be adapted for use after the baby arrives. Taking in side seams or adding a belt may make a jumper usable later, but empire waistline styles are less versatile.

In the early months of pregnancy, regular clothing that has some fullness in the design is often best. "Maternity patterns as well as ready-to-wear often have a great deal of fullness, more than you want in early months.

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add one--1980s baby boom

Some styles are expandable to keep you comfortable and fashionable as you grow," she says. "Keep thinking ahead as you shop. True maternity styles with expansion front panels aren't adaptable to your needs after baby arrives, so buy as few garments like that as possible."

She says that many pregnant women find jumpers particularly comfortable and adaptable. Other favorites include wrap dresses and tops and garments that fit comfortably through the shoulders and armholes without tight, high necklines. "Avoid fabrics that tend to cling. Instead, choose maternity fashions in fabrics that have some body and fall slightly away from your body."

Above all, Johnson advises, approach the months in maternity wear as a special time. "Your appearance, including your hair style and make-up, are important during pregnancy, perhaps even more so than before and after your nine-month waiting period."

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for County Agents

Agricultural Extension Service
Communication Resources
University of Minnesota
St. Paul, Minnesota 55108

August 6, 1982

Source: Sherri Johnson
612/376-1537

Writer: Deedee Nagy
612/373-1781

MATERNITY WARDROBE NEEDN'T BE MAJOR INVESTMENT

If you are planning a maternity wardrobe, think of it as an investment in comfort and good looks but not a big investment in dollars. Sherri Johnson, extension textiles and clothing specialist at the University of Minnesota's Agricultural Extension Service says that with a little creativity, you can beat the high cost of a new wardrobe for only a few months wear.

First, she suggests, look at your present, nonmaternity wardrobe. Shirts and blouses will usually be usable under maternity jumpers even if you have to leave bottom buttons open.

Tunic style dresses can be hemmed up into tunic tops. Remember to leave the front hem slightly longer to look even as you grow, she advises.

"Don't make the mistake of buying maternity tops several sizes larger than your regular size," she cautions. "They won't fit properly through the shoulders and you'll feel uncomfortable and unattractive."

You can add maternity stretch panels to your regular slacks, but this will probably limit their use after the baby arrives. "It may be worth it, however," Johnson says. "While you're pregnant, comfort is very important so adding panels to several pairs of slacks may be a good idea if you will be wearing them a lot."

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add one--maternity wardrobe

If you sew, there are many maternity patterns to choose from. Some patterns are geared to fit women in their final months of pregnancy and may seem uncomfortably large in earlier months. Johnson advises those who sew to look for other full styles in the pattern books. Many of these are adaptable to maternity use. Check the stated width at the lower edge. She says 65 inches is a minimum circumference for comfort during pregnancy.

Resale shops and newspaper ads are other things to check when getting a maternity wardrobe together. Johnson says with many women now having fewer children, used maternity clothing can often be obtained that is in good or excellent condition.

Catalog outlets and specialized maternity shops offer many attractive fashions, but Johnson says these are often the most expensive places to buy your maternity wear.

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Source: John Moncrief
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Writer: Jack Sperbeck
612/373-0715

NITROGEN FIXATION IN SOYBEANS STAYS HIGH WITH NO-TILL

Don't worry about lack of nitrogen fixation in soybeans due to cooler soil temperatures from conservation tillage methods.

That's the message from a research project at the University of Minnesota's Southern Experiment Station, Waseca. The research was done by soil scientist Gyles Randall and graduate student Edward L. Carter.

"Yields and nitrogen fixation weren't affected by tillage systems," says John Moncrief, a tillage specialist with the University's Agricultural Extension Service. Reduced tillage operations included combinations of chisel plowing, disking and no-tillage, in addition to conventional fall moldboard plowing followed by a field cultivator.

"Even the no-till operation--planting soybeans following corn with no tillage--showed no reductions in yields or nitrogen fixation," Moncrief says. With the no tillage treatment, root nodule mass roughly doubled, compared to moldboard plowing. And the nodules were concentrated closer to the surface--most in the top three inches. The moldboard system had substantial nodule mass in the three- to six-inch layer.

The soybean plant overcame lower soil temperatures by concentrating at more shallow depths where temperatures were warmer, and by doubling the total nodule mass. "This means that if the nodules fix nitrogen at even half the rate

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add one--nitrogen fixation

expected with moldboard plowing, you break even since there's twice the nodular mass," Moncrief adds.

Moncrief says conservation tillage is well adapted to corn-soybean rotations. "Aside from no-till, you have at least three or four conservation tillage systems available where you can incorporate the same herbicides you'd use with conventional moldboard plowing. These systems will leave residue on the surface to help prevent erosion.

"With the complete no-till system, yields will be just as high as with any other tillage system if you control weeds," he says. "And if you look ahead, new herbicides will help control weeds on steep slopes where no-till will help prevent erosion."

A new herbicide called Poast is an excellent postemergence grass control herbicide, says Gerald R. Miller, agronomist with the university's Agricultural Extension Service. Poast was available in limited quantities for 1982, but supplies of this and similar herbicides should be adequate in future years. And Basagran or Blaze plus other postemergence herbicides control most broadleaf weeds in soybeans, Miller says.

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CORN-SOYBEAN ROTATIONS SENSIBLE FOR CONSERVATION TILLAGE

Effects of soil temperature from crop residue make corn-soybean rotations look good for conservation tillage operations, says John Moncrief, tillage specialist with the University of Minnesota's Agricultural Extension Service. "If you're cash crop farming, corn-soybean rotations make sense for at least two reasons. First, it's well documented that corn or soybean yields are higher when you rotate, opposed to continuous cropping of either. Second, corn-soybean rotations complement each other due to soil temperature effects under reduced tillage."

A corn-soybean rotation has these characteristics that make it well suited to reduce tillage:

1. Soybeans result in less residue, which decomposes more rapidly and is fragile (affecting the succeeding corn crop less).

2. Reduced soil temperatures associated with conservation tillage affect bean growth less. Moncrief lists these reasons:

--The growing point of soybeans is above the soil surface, which means the plant is less affected by lower early soil temperatures. But corn's growing point is below the soil surface until the seven- to eight-leaf stage.

--Soybeans grown in Minnesota have "indeterminant" growth. That means they can continue to produce vegetative growth after the reproductive, or flowering

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add one--corn-soybean

stage begins. On the other hand, corn stops vegetative growth soon after it tassels and silks. "If beans are set back by early corn temperatures, they're affected less and can make up for it later," Moncrief says.

--Soybeans are planted later, when soil temperatures are warmer.

--The roots and nodules are at a more shallow depth where it's warmer.

--You get more nodule mass under reduced tillage systems. This means that nitrogen fixation remains high.

--Soybean roots are more efficient at taking up P and K. In addition, most uptake of P and K occurs later in the season.

3. Soybean yields are the same--regardless of the tillage system you use.

"If you're going out of corn to soybeans, you have almost three times the stover you have with beans. With minimum tillage, temperatures in the soil are more severely depressed going to soybeans," Moncrief says. But beans can compensate for it.

"And if you're going out of beans to corn, there's little residue so soil temperatures are reduced less. Corn-soybean rotations complement each other in terms of minimizing soil temperature effects with reduced tillage, compared to continuous corn."

If you use the right management options, yields with conservation tillage systems will be equal to or better than conventional systems. "Conservation tillage helps prevent soil erosion and saves energy," Moncrief says. And more effective chemical weed control is making it possible for more farmers to use conservation tillage on soybeans.

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August 6, 1982

Source: Harold A. Cloud
612/373-0764

Writer: Mary Kay O'Hearn
612/373-1786

CORN DRYING CONSTANTLY IMPROVING

Methods of heat recovery and procedures for extending natural air drying of corn with anhydrous ammonia are two probable topics for Minnesota's summer grain drying and storage meetings, according to Harold A. Cloud.

Cloud is an agricultural engineer with the Agricultural Extension Service at the University of Minnesota. He has just completed dealer workshops on grain driers at Lamberton, Montevideo and Fairmont for equipment dealers who influence the design and marketing of the drying systems farmers buy. Cost and energy efficient improvements are a constant goal.

It is estimated 80 percent of the grain corn in Minnesota is field shelled and dried. Cloud says, "Back in the late 1960s when propane for drying cost from 12 to 15 cents a gallon, it was easier to pay for the propane than to have companies spend money redesigning the systems. Today when gallon prices are from 60 to 70 cents, it pays for the farmer to look at alternative ways of accomplishing the same thing. High speed, high temperature drying is being modified with various options being used by farmers."

Minnesota has a higher percentage of its corn dried on the farm than many other corn producing states, such as Illinois. Commercial facilities (grain elevators) just haven't matched the farmers' needs. Minnesota farmers have had to manage their corn drying operations as economically as possible, he explains.

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add one--corn drying

Microwave drying is a hot topic. Cloud has some basic questions about it and would like to see it proven before farmers go headlong into it. "I don't feel it has reached the stage where it is economically feasible," he says.

Dryeration and in-storage cooling is one system that has taken hold during the last few years, according to Cloud. It means high speed drying is modified by transferring the corn hot to a cooling bin. This eliminates in-dryer cooling. Hot corn "steeps or tempers" in the cooling bin at least 4 to 6 hours before being cooled slowly. After cooling, the grain goes to storage. Dryeration offers three advantages over high-speed drying: increased dryer capacity, reduced fuel consumption and better corn quality.

The use of natural air is another means of saving energy in grain drying. Air is forced up through the bin, in which corn depth is less than 20 feet. Water is evaporated and carried off by the air. Drying takes place in a drying zone which advances upward through the bin. Grain at the top of the bin is the last to dry. The fan is operated continuously until the drying zone moves through the top of the bin. The moisture content of the grain in and below the drying zone changes with the temperature and humidity of the outside air. This process can take up to seven weeks. Drying may have to be completed the next spring--after keeping the corn cold all winter.

The main disadvantage with natural air drying is the moisture content limitation. Corn with up to 21 percent to 22 percent moisture can be dried with natural air in Minnesota with a standard high air flow drying bin. Shelled corn with up to 25 percent moisture can be dried if the bin is layer-filled over a period of several weeks.

Combination drying is another modification of the high temperature dryer. With this method, the corn is dried to 21 percent to 22 percent moisture and then delivered to a drying bin where it is cooled and drying is completed with natural air.

add two--corn drying

Cloud cautions against overdrying corn. Drying to 11 percent or 12 percent moisture is totally unnecessary in Minnesota if proper aeration is provided for the stored corn. Shelled corn can be kept 12 months at 14 percent moisture content in well-managed, aerated storage. Moisture content as high as 15.5 percent is satisfactory if corn is being kept from harvest through June. Moisture can be 16 percent to 17 percent if corn is kept from harvest through March.

Corn used for feed throughout the winter months can be stored at 16 percent to 18 percent moisture. Additional drying may not be needed. If the grain is to be sold throughout the winter, it can be sold with little or no penalty because it exceeds the 15.5 percent level. Penalty for marketing at 1 percent to 1.5 percent over that level would not be enough to justify the additional drying.

Use of anhydrous ammonia is being experimented with to extend natural air drying. Bleeding in anhydrous ammonia (the same kind used as liquid fertilizer) retards spoilage. This means using a total of about a quarter of a pound of anhydrous ammonia per bushel of corn, spread over 10 weekly applications. This is called the trickle ammonia process (TAP). It is for specialized drying and the corn can only be used for livestock feed. With high-moisture corn, with 26 percent moisture, for instance, Cloud says drying will take longer, but it may be done without danger of the corn spoiling first.

As with other applications of anhydrous ammonia, necessary safety precautions must be taken, Cloud reminds.

Recovering waste heat from the dryer is another practice that is being used to reduce fuel costs. Once thought too costly, the fuel costs mentioned earlier have changed that thinking. Manufacturers of high speed driers are designing and installing systems to recover waste heat economically.

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Source: National 4-H Council
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Editor: Deedee Nagy
612/373-1781

Note to agents: adapt this item to spotlight your local county program. Incorporate local names, enrollment figures or club activities, if possible.

4-H'ERS PRESERVE WHAT THEY GROW

Growing a garden can be fun and productive whether you live in the country or the city. One of the most adaptable plants for growing in a large garden, a small plot or a window box is the tomato. It has great potential not only as a fresh vegetable but for preserving, as well.

4-H members in the 4-H gardening and food preservation programs, conducted by the Agricultural Extension Service, are discovering this versatility.

If your plot is small -- or just a window box or a barrel -- choose a variety that is most appropriate, like cherry or pear tomatoes, rather than larger varieties. 4-H members in the national 4-H gardening program, sponsored by the Ortho Consumer Products Division, Chevron Chemical Company, have learned that an apartment terrace or back yard garden needs plenty of sun. Use aluminum foil, chrome reflectors or mirrors to make sure that your crop gets the equivalent of six hours of sun a day, whether direct or reflected. If you have room, put your crop on wheels, and roll it to the sun as it moves.

Once the tomatoes are ripe, 4-H members in the food preservation program have lots of ideas for using them effectively. Soup, pickles, preserves, sauces and relish are a few favorites. If you have more than you can eat fresh, try this recipe to use later on pizza or in spaghetti:

(See following page for recipe) - more -

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add one--4-H'ers preserve

Tomato Sauce

Select fully ripe, firm tomatoes, free from bruises and decay. Carefully wash, trim, peel and quarter tomatoes. Simmer until softened. Put through sieve or food mill. In a large enameled kettle, bring the juice to boiling, and boil gently until thickened but not as stiff as tomato paste; about one hour or longer. Stir often to prevent sticking. Pour sauce into clean, scalded 1/2 pint or pint jars, leaving 1/4 inch head room in 1/2 pints and 1/2 inch in pints. Add 1/2 tsp. salt and 1/4 tsp. ascorbic acid (or 1 tsp. white vinegar) per pint. Use half this amount for 1/2 pints. Remove air bubble by inserting narrow spatula. Wipe top sealing edge of jar with clean, damp paper towel. Add and adjust lids according to manufacturer's instructions. Process in boiling water bath (212 degrees F) for 30 minutes. Remove jars without disturbing lids or bands. Do not tighten bands. Test for seal next day. Reseal if necessary by using original instructions, new lid and full processing time. Contact your county extension agent for more information on processing foods.

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4-H'ERS USE COMMUNICATIONS SKILLS

Using communication skills in one area to help develop skills in another area is one way learn-by-doing activities play an important role in the 4-H public speaking and photography programs conducted by the Agricultural Extension Service.

In the national public speaking program, 4-H'ers learn how to speak in front of large groups, at informal meetings, and on an interpersonal basis. Meanwhile, participants in the national 4-H photography program learn to express themselves visually. Many 4-H'ers are using photographic and public speaking skills to enhance the learning process. For example, a budding public speaker might ask a fellow 4-H photographer to take pictures of the speaker and the audience. Later, speakers can study their own appearance, gestures and facial expression and note how the audience reacts to their speeches.

While the speaker is using the photographer as a resource for measuring progress, the photographer also gains experience. Working to capture the real mood of the speaker, studying audience reaction, portraying the overall

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add one--4-H'ers use

atmosphere of a speech situation -- all help a 4-H photographer develop creative skills, sharpen awareness of surroundings and refine technical abilities.

Incentives to excel in the photography and public speaking programs are provided by Eastman Kodak and Union Oil through National 4-H Council. These incentives include four medals of honor to county winners and a trip for one state winner in each program to National 4-H Congress in Chicago, in November.

For information about these and other 4-H programs, contact your county extension office.

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