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Department of Information  
and Agricultural Journalism  
Agricultural Extension Service  
University of Minnesota  
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No. 1--INFLATION SERIES

### INFLATION: WHAT IS IT?

What exactly is the beast we call inflation?

It has been defined as simply the rising cost of goods and services, usually at a rate of 3 percent or more, says Edna Jordahl, extension specialist in home management at the University of Minnesota. But compared to reality, that might be a mild definition.

It is true that some people can benefit from inflation, she points out. They include debtors (who can pay off a debt with dollars actually worth less than the dollars they borrowed), real estate owners whose property jumps in price, and persons with large stored inventories.

But most people are hurt by inflation, Mrs. Jordahl says. They include older and retired persons on fixed incomes, low income persons hit with high prices in commodities they can't avoid buying, working people whose salary increases don't keep pace with rising prices, and people with savings.

"Inflation can make a mockery of savings," she adds.

Two terms consumers hear often are consumer price index and wholesale price index. The consumer price index is a comparison of prices of 400 selected goods and services during a given month with the prices of the same items at the same time in 1967.

The wholesale price index covers such items as farm product prices and the price of processed foods. To the consumer, it means that if the index goes up, higher prices will likely be passed along.

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add 1--inflation: what is it?

The government can do some things to wrestle with inflation, Mrs. Jordahl explains. It can control prices, control the amount of money in use and, to some degree, control interest rates.

But, she adds, taking such action hardly can solve the entire problem. Inflation is a local, national and international problem.

"So we need to be efficient," says Mrs. Jordahl. "We must make efficient use of all our resources."

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No. 2--INFLATION SERIES

BUYING FOR NUTRITION  
GUARDS FOOD DOLLARS

The best thing consumers can do to guard their food dollars is buy the most nutrition possible for those dollars and then plan meals along nutritional guidelines.

That is the advice of Muriel Brink, extension nutritionist at the University of Minnesota.

"We need to think more about the nutrient content and watch those empty calories," she says.

There are three basic food plans consumers can use as guidelines to food costs, Miss Brink says, although costs are dependent on a great many variables.

Those plans are low cost, moderate cost and liberal. In each, consideration is given to nutritional adequacy, nutritional economy and the satisfaction a food gives.

The low cost plan leans more on dried peas and beans, potatoes, breads and cereals with a minimum of fresh fruits and meat. It requires astute buying and much comparison pricing.

Persons using a moderate plan can use more fresh meats and some out-of-season fruits and vegetables as well as some convenience foods.

The liberal plan allows persons all the fresh meat, fruits and vegetables they want. It also includes the option of eating out.

What might the cost difference be among the three? According to Miss Brink, a family of four (with two elementary school youngsters) might spend \$44 a week under the low cost plan, \$55 for the moderate plan and \$67 under the liberal plan.

add 1--buying for nutrition

A family of six (with a teenage boy and girl, a 10-year-old and a seven-year-old) could expect to spend \$68 weekly under the low cost plan, \$85 under the moderate plan and \$102 on the liberal plan.

An elderly couple might spend \$21 a week under the low cost plan, \$27 for the moderate plan and \$32 for the liberal plan.

(All prices are based on September 1974 prices.)

But, Miss Brink adds, the dollars you spend might not always relate to nutritional value. You can be well-nourished without expensive items.

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No. 3--INFLATION SERIES

CAREFUL BUYING CAN HELP  
TAKE STING FROM CLOTHING PRICES

Is there any way for a family to beat the rising cost of clothing?

Women's clothing prices, for example, have risen nearly 10 percent in the past year due to such factors as fiber shortages, the petroleum crunch, wage increases in the garment industry and legislation requiring flame retardant fabrics for children's sleepwear.

There is no way to make expensive clothes cheaper, but there is some advice that can help take the sting out of prices, says Lois A. Ingels, extension specialist in textiles and clothing at the University of Minnesota.

First, she points out, we could get by with many fewer garments than we often have. We can wear things more often and wash them more often.

Second, watch for clothing sales and when going to a clothing sale, make a shopping list first and don't get carried away with unnecessary extras.

Third, buy clothing styles that are least likely to change--those without an aura of extreme fashion. For example, Miss Ingels says, buy a longer garment, not a shorter one as the fashion trend is to slightly longer skirts.

Fourth, make simple style changes in older garments to update them. You can get ideas from pattern catalogues and fashion magazines.

Fifth, buy for durability.

It would be false economy, Miss Ingels says, to buy and hoard fabrics for use later as a hedge against rising prices. Such action would only increase shortages. And color and print preferences may change in the meantime.

"We should buy just what we need," she says.

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No. 4--INFLATION SERIES

RECYCLING, RESTYLING OLD  
CLOTHES CAN SAVE YOU MONEY

With clothing prices rising and many people having closets full of unworn clothes, clothing recycling can become a hedge against inflation.

Recycled clothing has become almost high fashion, says Lois A. Ingels, extension specialist in textiles and clothing at the University of Minnesota. Recycling started with college students and has become popular among all income groups.

Three things can be done with old clothes that are still in good condition, she says. They can be given away; the fabric can be used to make another item of clothing, or the original piece can be altered by making simple design changes.

How can fabric be reused? One way is to cut an adult's garment into a child's size. Another might be to make hats, purses and even skirts from old blue jeans. It doesn't matter if they're not all faded the same.

Still another idea is to save old sock tops to use for ribbing or for wristlets for mittens and sleeves.

Restyling an old garment is another matter. Stick to the more classic styles which are not likely to change quickly, advises Miss Ingels. And look through catalogues and magazines to find something close to the old garment you have.

Also, evaluate the old garment carefully. Is the fabric nearly worn out? Can you make the changes without leaving needle marks and press marks? And if you are combining the old garment with another fabric, are the care requirements for both of them the same?

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add 1--recycling, restyling

Nevertheless, Miss Ingels points out, you don't have to be an expert to restyle old garments. Here are some examples:

--turn an old T-shirt into a tank top by cutting out the neckline and armholes and adding ribbing.

--take a too-tight pullover sweater, split it down the front and turn it into a cardigan. Or leave it as a pullover but add a strip of fabric for width or length. The new strip doesn't have to be the same color.

--cut off a pant leg and add flare.

--use a variety of patches attractively appliqued on to cover holes in old garments.

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No. 5--INFLATION SERIES

PROPER APPLIANCE CARE  
CAN SAVE YOU DOLLARS

Take proper care of your appliances and you can extend their life and avoid--or at least postpone--purchasing expensive replacements, says Wanda Olson, extension specialist in household equipment at the University of Minnesota.

Parts are expensive, she points out, and problems can mean your appliance is out of operation for a period of time.

Appliances need care both for their outward appearance and their proper operation.

Outward care can mean applying protective wax, but it can also mean refinishing. Appliances can be repainted or they can be decorated with such things as vinyl wallpaper you can replace a door front with wood or plastic laminates.

The most popular type of refinishing, Mrs. Olson says, is spray painting refrigerators. Freezers, washers and dryers can also be done with special paints.

Ranges present a different problem. Because of the heat factor, they must be reporcelainized--and that can become expensive.

There are also sound practices for operating appliances. Among them:

--operate all motor appliances, especially washers and dryers, on the level.

--don't overheat units. Motors and heating elements can be burned out.

For example, don't overheat toaster wires by toasting a lot of food with frosting; keep the well of your coffee percolator clean; don't leave the coffee maker plugged in with only a small amount of coffee in the pot; and when lining drip pans on ranges, follow the shape of the pan and allow air to get to the unit.

add 1--proper appliance care

--don't overwork appliances unnecessarily. Give refrigerators proper breathing space, clean refrigerator condenser coil, clean lint filters on dryers, empty vacuum cleaner bags, check rotating beater bars on vacuums for long hair which may get wound up, and don't use light duty electric mixes on heavy doughs.

--be careful when using special products like oven cleaners or spray fabric softeners in dryers. Follow directions carefully.

--replace gaskets around doors of refrigerators and freezers when they become brittle and cracked.

--be more careful about covering foods and wiping up spills quickly in refrigerators that have plastic interiors.

--use distilled water in irons.

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No. 6--INFLATION SERIES

REFINISHED FURNITURE  
CAN BE GOOD AS NEW

One way to save money and fight inflation can be refinishing, recycling and repairing old furniture, says Linda Reece, extension specialist in interior design and furnishings at the University of Minnesota.

But, she adds, if you are going to refinish an old piece of furniture, be sure it is of good design, in good condition and that it is within your capability to redo it.

Sometimes, she points out, simple cleaning will do the job. In a glass container prepare a mixture of one-fourth gum turpentine and three-fourths commercially-prepared boiled linseed oil.

Shake the mixture and pour it on top of hot water in a cup. Then dip a cloth into the oily layer and rub the furniture surface with it. Discard liquid in cup as it becomes cold. Use sparingly on shellac surfaces. Dip clean cloth in clean warm water, wring, and wipe surface. Wipe again with dry cloth.

Covering scratches need not be difficult either. According to Miss Reece, liquid shoe dye or a brown coloring crayon might be used to cover up a scratch on walnut furniture.

Or you might actually take a Brazil nut, black walnut or butternut, cut it in half and rub the nut meat on a scratch, depending on what kind of furniture you have.

New iodine will cover scratches in red mahogany; iodine dark with age will work for brown or cherry mahogany. Scratches in maple furniture can be covered with a mixture of half denatured alcohol and half iodine.

Stains can be another problem--especially perfume, beverages and medicines which contain alcohol. Alcohol can dissolve varnish.

add 1--refinished furniture

Wipe spills up immediately, Miss Reece advises. Then rub the spot with wax, silver polish, linseed oil or moistened cigar ash before rewaxing.

Finally, there is the burn problem. Try rubbing a burn with a cotton swab dipped in paint remover, Miss Reece suggests. You may have to scrape the area some and then gradually fill in the hole with clear fingernail polish.

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No. 7--INFLATION SERIES

SHOP CAREFULLY WHEN  
SPENDING FURNITURE DOLLARS

Careful selection and proper care can add to the lifetime of your furniture and save you money in the long run.

Begin by shopping at several stores, advises Linda Reece, extension specialist in interior design and furnishings at the University of Minnesota. Then buy what you need in the best quality you can afford.

When shopping, look for pieces that can do double duty, Miss Reece says. For example, consider a chest that can be used as an end table in the living room and then can be switched to the bedroom or hallway.

Here are some other suggestions:

--buy a chair or sofa with loose cushions rather than upholstered (tight) seat or back.

--order extra arm covers or sleeves of the same material.

--avoid T-shaped cushions on a sofa since they must always be used on the ends and can't be shifted to the middle for extra mileage.

--buy a fabric that will take heavy use. Hold it up to the light to check the tightness of the weave. Remember, tightly twisted yarns wear better. And, if the fabric has a latex backing, make sure the backing isn't holding the yarns together.

--remember that welt cording will make cushions wear longer.

--quilting also gives longer life to lightweight materials like cotton and linen.

--avoid placing any upholstered piece where it will block either heat vents or cold air ducts.

-more-

add 1--shop carefully

--avoid placing upholstered furniture in direct sunlight. Wool, silk and nylon are particularly susceptible to fading and deterioration.

--if you are on a tight budget, avoid unusual styles which can quickly go out of fashion and date your room.

--consider using some occasional chairs rather than all upholstered chairs in the same room.

--consider using inexpensive bean bag chairs. They can blend with every decor.

--consider items made of plastic for a change of pace in decorating.

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No. 8--INFLATION SERIES

PLANNING IS KEY TO  
SOUND FOOD BUDGETING

If you want to make the best use of your food budget, planning is the key, says Muriel Brink, extension nutritionist at the University of Minnesota.

That involves knowing relative nutritional values, knowing when you will be using the food you buy, knowing how to store food correctly at home, and knowing how to prepare food to retain nutritional value.

There are several ways to discover the relative nutritional values of foods. You can check reference books. And you can select food according to its color, going on the general rule that if meals include a variety of colors they will be fairly well-balanced nutritionally.

Food labels can help. Some products have nutritional labels, but ingredient lists can help too. The ingredient listed first is that present in the greatest quantity.

Finally, know how to use the Daily Food Guide which groups foods of similar nutritive values together and pay special attention to providing enough fruits and vegetables.

Planning when food will be used can help avoid the problem of discarded food, Miss Brink says. That means planning for snacks as well as for meals.

You should consider your family's preferences and nutritional needs, the amount and type of food you have on hand, the amount of time it takes to prepare the food, and foods which are on special at the market.

-more-

add 1--planning is key

"Become familiar with food prices so you can recognize sale prices and know when a sale is really a sale," she urges. But remember too that more frequent trips to the supermarket usually means spending more money.

Knowing how to store food properly at home can help you minimize spoilage and save the money that is wasted when food is thrown away. Proper storage can also increase nutrient retention.

When you get to the food preparation stage, Miss Brink says, there are some general guidelines for saving nutritive value. If, for example, you are preparing a food containing protein, use low to moderate temperatures.

Vitamins can be best retained in fruits and vegetables if you peel or chop them just before cooking or serving--not too soon--and if you cook them just to the crisp-tender stage.

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No. 9--INFLATION SERIES

#### SUGAR: WHO NEEDS IT?

One of the most obvious examples of inflation in food is the skyrocketing price of sugar. Yet, according to a University of Minnesota specialist, sugar is one food we could easily do without.

We could do without sugar entirely and still be very well nourished, says Isabel Wolf, extension specialist in foods and nutrition, because sugar's only food value is empty calories.

And, she adds, since Americans' number one nutrition-related problem is obesity, it might not be so bad if high prices discourage sugar usage.

Calories can be obtained from other and less-costly carbohydrate sources which also contain other valuable nutrients. For example, whole grains and enriched wheat flour provide protein, B-vitamins and iron along with carbohydrates, Mrs. Wolf says. Dry beans and rice--both of which seem to be coming down in price--are also good protein and carbohydrate sources.

One of the sources of confusion about the body's need for sugar, she suggests, is a misunderstanding involving the term "blood sugar." Blood sugar, however, is glucose; table sugar is sucrose. The body must synthesize glucose and can do so from any number of compounds not just table sugar.

Nevertheless, for the price-conscious consumer who doesn't want to quit baking and eating sweets but hates to pay for sugar, there are some alternatives.

Among them, Mrs. Wolf says, are honey, sorghum, corn syrup, maple syrup and artificial sweeteners.

-more-

add 1--sugar: who needs it?

Corn syrup can be substituted for sugar on a one-for-one basis so long as the liquid in the recipe is reduced by one-fourth cup for each cup of corn syrup used.

Three-fourths cup of honey can be substituted for one cup of sugar if the amount of liquid in the recipe is reduced by one-fourth cup.

What about artificial sweeteners? Cyclamates were banned as a food additive five years ago. Since then, saccharin has been the major artificial sweetener.

But now, Mrs. Wolf points out, saccharin has been removed from the generally-recognized-as-safe list and put on interim clearance as a food additive while further study is done. Consequently, consumers might be wise not to use great quantities of saccharin-based sweeteners for general family use until the question is settled.

A federal Food and Drug Administration nutritionist recommends cutting your intake of sugar rather than substituting saccharin-based sweeteners.

All saccharin-based sweeteners now carry a legend saying the product is "a non-nutritive artificial sweetener which should be used only by persons who must restrict their intake of ordinary sweets."

How then is the sweet tooth to be most cheaply and nutritiously assuaged? Try fruit, Mrs. Wolf says.

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No. 10--INFLATION SERIES

USED APPLIANCE  
MAY BE GOOD BUY

There is at least one way to avoid the expense of a new appliance: buy a used one instead.

Used appliances can be excellent bargains so long as the shopper keeps a few basic principles in mind, says Wanda Olson, extension specialist in household equipment at the University of Minnesota.

First, there is always a risk in buying used items. Generally, there are no guarantees, she points out. However, service manuals can be purchased from manufacturers--usually for about \$3--and can help in making any repairs easier.

Second, what about price? According to Mrs. Olson, a general guideline is that the price of a used item should be no more than half the price of a similar new item.

One exception is the price of a used appliance which, when new, was unusually expensive because it may have been the first in the line with a particular new feature. In such a case, paying half price for a used appliance may be far too much, she says.

Salvage shops, want ads, garage sales and auctions are all sources of used appliances. In all cases, the shopper ought to try out the item immediately or as soon as possible to see how--and if--it works.

The best situation, of course, is when the buyer has a chance to see the appliance in operation before it is sold.

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add 1--used appliance

For example, if the item is an electric range, be sure all the heating units work at all settings and the oven unit cycles on and off. If it is a dryer, be sure the drum rotates and the unit heats. And if it is a washer, be sure it will fill, agitate and spin.

And there are other considerations. Has the appliance been operated on the level? If not, extra strain may have been placed on the motor.

Does a used washer or dryer have nicks inside? If so, clothing may snag on the nicks.

Is the plastic liner in the refrigerator in good condition? A replacement can be expensive. Has the refrigerator been given adequate breathing space and been placed away from heat sources? If not, its motor has probably gotten extra heavy use, Mrs. Olson says.

Being alert to such considerations can help a shopper be more sure that the used appliance is indeed a bargain.

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ATT: Extension Home Economists

Immediate release

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IT'S TRUE: YOU  
ARE WHAT YOU EAT

The old cliché, "You are what you eat," is true.

That observation is made by Muriel Brink, extension nutritionist at the University of Minnesota. The cliché reiterates the most basic of facts: that the foods we eat are the sources of the nutrients the body needs for growth and to stay healthy.

The body needs over 40 different nutrients which, in turn, can be categorized into six groups: proteins, carbohydrates, fats, minerals, vitamins and water.

Proteins play a role in such functions as formation of hair, skin, bones and nails, Miss Brink explains. They help the heart beat, are part of the hemoglobin molecule and are also an energy source--albeit an expensive one.

Meat is rich in protein. So are eggs, cheese, milk, dry peas and cereal products.

Carbohydrates' main function is providing energy; and they are relatively inexpensive sources of energy. According to Miss Brink, each person needs at least 1,200 calories daily to remain healthy. Sugar and syrup are pure carbohydrate sources. Breads, cereals and vegetables like peas, corn and potatoes are also good carbohydrate sources, and they contain other nutrients as well.

Fats are another energy source. In fact, they provide more than twice as much energy as carbohydrates and proteins. (Carbohydrates and proteins provide about equal amounts of energy.)

Fats also work as insulation for the body, support and cushion vital organs and help delay feelings of hunger.

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add 1--it's true: you are what you eat

"We could afford to cut down on our fat consumption," Miss Brink says. People now get an average of 43 percent of their calories from fats; a more reasonable figure for good health would be 25 to 33 percent. Fat sources include fat in meat, butter, margarine and fat in whole milk.

Minerals--iron and calcium, for example--help promote growth of body tissues, serve as catalysts for biological reactions and work to maintain the body's acid-base balance.

Sixteen of them have been identified as essential for good health and, Miss Brink advises, people ought to be especially careful to get enough iron.

Vitamins work with enzymes in the body to activate biochemical reactions. They are of two types: water soluble (the B complex and Vitamin C) and fat soluble (Vitamins A, D, E and K). Water soluble vitamins are needed daily while the body can retain fat soluble vitamins.

Without the sixth essential class of nutrient--water--blood would not flow and the other nutrients would not be carried throughout the body.

"A person can live only two or three days without water," says Miss Brink, "but could survive months without food."

How much water is needed? At least one quart of fluid daily. The optimum amount, she explains, is three ounces of water for each 100 calories.

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4-H NEWS

Immediate release

4-H PROGRAM HELPS  
YOUNG PEOPLE MEAL  
PLAN WITH DAIRY FOODS

Spreading the word on the nutritional benefits of dairy foods are about 700,000 young people enrolled nationally in the 4-H dairy foods program.

Minnesota's outstanding dairy foods project member is Mary Ann Donnay, 17, daughter of Mr. and Mrs. LeRoy Donnay, Route 2, Glencoe.

Miss Donnay, who has given six dairy foods demonstrations, started in her project in 1968 with an educational excursion into meal making with dairy products in each of the basic food groups.

"Dippity-Do-Da" was her demonstration on cheese fondue. "I had never tasted fondue before, but I heard so much about fondueing. It seemed like a good topic for a demonstration...Cheese is one of the most highly concentrated of all protein foods and easy to digest," Miss Donnay says.

"If somebody would ask me what the greatest thing that ever happened to me, I would answer '4-H.' I enjoy the monthly meetings and have received a perfect attendance certificate each year for eight years," she adds.

The 4-H dairy foods project may be your bag of cheese. Check with \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

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IN BRIEFS. . . .

Seed Catalogs. Now is the time to order your 1975 seed catalogs. Jane P. McKinnon, University of Minnesota extension horticulturist, says a good seed catalog is the best beginning garden book to be had. You can learn about different kinds of vegetables, flowers, bulbs and trees from the catalogs. Beware of dealers that promise miraculous results. Look for factual descriptions, good clear pictures and a bit of cultural advice.

\* \* \* \*

Catalogs Important. Get your seed catalogs now so you can order vegetable and flower seeds that may be in short supply, advises Jane McKinnon, University of Minnesota extension horticulturist. Some of the particularly good varieties may not be available later in the year. Two years ago the newly introduced marigold, Happy Face, was recommended for Minnesota, but you couldn't get the seeds, she adds. It is not hard to order Happy Face from the new catalogs, if you hurry.

(Some free seed catalogs available from: Otis S. Twilley, P.O.Box 1817, Salisbury, Md. 21801; Geo. W. Park Seed Co., Greenwood, S.C. 29647; Stokes Seeds Inc., Box 548, Main Post Office, Buffalo, N. Y. 14240; W. Atlee Burpee Co., Clinton, Iowa 52732.)

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add 1--in briefs

Sow Herds. The importance of sow herds was stressed at a recent swine breeders' seminar in Mankato. "People want to buy boars from outstanding sows so a good sow herd can't be overstressed," said Everett Forkner, nationally known Duroc breeder from Richards, Mo. "Build your sow herd by selecting for the sow with lots of capacity. The pretty, refined small sow is out," he emphasized.

"Do your own progeny testing right on the farm," was Forkner's advice to swine breeders. "And don't hesitate to use your own best boar right back into the herd. If you hesitate to do this, it means you aren't doing the job."

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Milk Replacers. Losing a valuable dairy replacement heifer can prove expensive. Cheap milk replacers can turn out to be expensive by causing sick and dying calves. Study the feed tag on milk replacers. The best ones have at least 20 percent protein, all of it derived from milk. The protein level should be 22 percent when specially-manufactured soy flours or soy concentrates are used. For more information, get a copy of Dairy Husbandry Fact Sheet No. 10, "Milk Replacers in Raising Dairy Calves." It's available from the \_\_\_\_\_ County Extension Office.

\* \* \* \*

Sheep Disease. Coccidiosis occurs infrequently in Minnesota sheep flocks, but it strikes "like the plague" when it hits, says Bob Jordan, U of M animal scientist. It's caused by filthy feed and water and is often precipitated by a sudden feed change. Symptoms include bloody diarrhea, loss of appetite and inflamed intestines. Nitrofurazone or sulfonamides in the drinking water can be used for treatment.

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SILAGE TO  
SOWS CAN  
SAVE MONEY

Hogmen may be able to save 20 to 25 percent on feed costs during gestation by feeding silage to brood sows, according to calculations by Jerry Hawton, extension swine specialist at the University of Minnesota.

Hawton compared a self-fed silage ration plus 1.5 pounds of a vitamin-fortified protein supplement and free choice mineral to 5 to 6 pounds of a complete mixed ration per head daily. Silage was figured at \$20-\$24 per ton, corn at \$3.50 per bushel and protein supplement at \$200 per ton.

"And when only 4 to 4.5 pounds of a complete ration was fed, you could still expect to save 10 to 15 percent on feed costs during gestation with the silage ration. Whether you can save money by feeding silage depends mainly on the value you charge for the silage and complete feed plus any extra labor that's required," Hawton says.

You can feed silage to bred sows and gilts and get good reproductive performance, but feed only high quality silage, Hawton cautions. Don't feed moldy silage, or silage made from overripe corn.

"A field yielding 60 to 75 bushels of corn per acre when the kernels are dented and most of the leaves still green will make good silage. For best results, the silage should be finely chopped and fed free choice once daily."

If you're feeding lower quality silage (made from immature or lower yielding corn) consider feeding one-half to one pound of additional ground corn per head daily. For best feeding results, topdress the silage with protein supplement and any extra ground corn that's needed.

More detailed information is available in the 1975 Swine Feeders' Report, available from the Department of Animal Science, University of Minnesota, St. Paul 55108.

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SHEEP DAYS SET FOR  
MORRIS, PIPESTONE

Sheep Days will be held by the University of Minnesota Agricultural Extension Service at 10 a.m. Feb. 6 at the West Central Experiment Station, Morris, and 10 a.m. Feb. 7 at the Technical School, Pipestone.

Highlighting the Sheep Days will be Charles Parker of the Ohio Agricultural Experiment Station, who will discuss results of Ohio sheep research. At the Morris Sheep Day, Richard Roe of the Vocational-Technical School, Albert Lea, will discuss sheep equipment.

University of Minnesota animal scientists, R. M. Jordan, St. Paul, and H. E. Hanke, Morris, will discuss saving protein and money. Other topics include lamb production with \$4 corn, molasses and pellets for suckling lambs, whole corn plant pellets and liquid protein.

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RURAL LEADERS  
PROGRAM SET  
FOR FEB. 2-6

About 100 local leaders, including government officials, and others have been invited to the Minnesota Rural Leaders Program Feb. 2-6 at Southwest State College, Marshall.

The conference is aimed at making participants more knowledgeable of the leadership process and better equipped to initiate development action in their own communities, counties and regions.

Among the speakers are University of Minnesota sociologist George Donohue and Don Littrell of the University of Missouri's Department of Regional and Community Affairs.

Included among several sponsors of the program are the University of Minnesota Agricultural Extension Service, Southwest State College, St. John's University and the Governor's Rural Development Council.

-daz-

CA

Department of Information  
and Agricultural Journalism  
Agricultural Extension Service  
University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
January 13, 1975

Immediate release

*Handwritten initials/signature*

HOLSTEINS TAKE  
TO POTATO SCRAPS

Potato wastes can be good feed for dairy animals, say University of Minnesota agricultural scientists George D. Marx and Eugene C. Miller of the Northwest Experiment Station at Crookston.

However, they caution that preservation of potato-processing wastes is necessary to maintain a high-quality feed for livestock.

Potato wastes include peelings, off-flavor French fries and chips, other processing residues from the processing of flakes and instant mixes, and potatoes which are unsuitable for human consumption.

Chaff--or combine wastes--used to mix with the potatoes to lower the moisture, is a feed that is normally wasted in the field, say the UM researchers. The chaff is obtained when harvesting oats and wheat. Chaff consists primarily of leaves, light kernels that normally blow over the sieves, some straw, and weed seeds.

The Minnesota scientists' findings include that:

--No problem was experienced in getting Holsteins to eat potato waste mixtures. However, animals should start on feed gradually to avoid upsetting the rumen flora.

--Potato waste-chaff mixture was an excellent feed particularly from the standpoint of cost advantage. In the UM trial performance of potato wastelage fed cattle was equal to the performance of cattle fed low moisture alfalfa silage.

--Animals made satisfactory gains on potato waste, and carcass characteristics on dairy-beef animals were similar to control animals.

--Potato waste can be used as a substitute for part of the forage or grain fed to growing dairy-beef animals.

-more-

add 1--holsteins take to potato scraps

--Dried potato meal supplemented with urea proved to be equal to dry barley as a concentrate feed in this study when fed at eight pounds per day per animal.

--Potato meal has a cost advantage compared to small grains in today's market and is an economical feed if the price does not exceed barley price on an equal dry-matter basis.

--Utilization of potato wastes for feed can eliminate a substantial pollution problem in the potato industry.

-pem-

CA, D, L, IA

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Immediate release

W.C.  
B.N.G.  
J.

IN BRIEF. . . .

Ag. & Environment. Should agribusiness put aside environmental concerns due to increasing demands for more food? No, answers the director of the University of Minnesota's Agricultural Experiment Station, William F. Hueg, Jr. Hueg says high demand for food production must be met within an environment of energy shortages for fuel, fertilizer and pesticide inputs. Legislative restraints also call for the environment to be maintained at current levels, if not improved. Hueg's comments appear in Minnesota Science, published by the Experiment Station.

\* \* \* \*

Legumes Save Fuel. Research on developing legumes could lead to reduced synthetic nitrogen needs for Minnesota crops and save valuable fuel needed for manufacturing nitrogen fertilizer. For example, a million acres of Minnesota pasture getting 100 pounds of nitrogen per acre require 150 thousand tons of ammonium nitrate. This requires the equivalent of 370 thousand tons of coal each year to manufacture the fertilizer. Scientists say research to develop legumes could cut this figure significantly.

\* \* \* \*

Ag. Chemicals. Reducing farm applications of fertilizers and other agricultural chemicals to save energy via reduced oil imports would not help national and state economies. Agricultural economists at the University of Minnesota say that each extra dollar spent on pesticide materials returns about \$6 of extra farm output. And each dollar spent on fertilizer returned between \$4 and \$6 of additional output. On a national basis, reducing fertilizer use would increase prices of raw agricultural products about one-third. And a 75 percent reduction in pesticide use would increase the price of raw agricultural products about 20 percent.

\* \* \* \*

-more-

add 1--in brief

Safe Spraying. When you're spraying crops next spring, take care that you don't contaminate water supplies when you're filling spray tanks. "Last spring I was contacted on two cases of back-siphoning of herbicides into wells in one week," says Gerald Miller, extension agronomist at the University of Minnesota. He says the obvious answer to the problem is not to fill the sprayer directly from the well. Instead, fill an intermediate storage tank from the well, then fill the sprayer from the storage tank. You can also prevent back-siphonage by installing a check valve in the line between the pump and spray tank to prevent the flow from going backward, or by leaving an air gap between the hose and liquid level in the tank. To leave an air gap, the hose should be kept above the top of the tank a distance equal to two times the diameter of the hose.

\* \* \* \*

Corn Losses. You can reduce stalk rot and lodging losses in corn by planting lodging-resistant hybrids. This is the simplest and cheapest way to reduce losses, according to Herbert G. Johnson, extension plant pathologist at the University of Minnesota. Get information on hybrid performance from all sources you can think of. Other control measures are effective only if you use resistant hybrids.

\* \* \* \*

Spraying Alfalfa. Consider spraying alfalfa next summer to control potato leafhoppers. Year in and year out, this has been one of the most economically important alfalfa pests in Minnesota, according to John Lofgren, extension entomologist at the University of Minnesota. As the regrowth for the second or third hay crop reaches six inches tall, a count of two or more leafhoppers with an insect net sweep will warrant spraying. With high hay prices, this investment will pay off in higher yields, vitamin A and dollars per acre. See the University's Entomology Fact Sheet No. 4 or check at the county extension office for recommended controls.

\* \* \* \*

Colostrum. Calves need colostrum (first milk of the mother) within four hours after birth to protect against disease. Don't assume that a calf born when you're not around has received colostrum. Either help the calf nurse or milk out some of the dam's colostrum and feed the calf with a pail or nipple bottle.

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January 13, 1975

4-H NEWS

Immediate release

SEW AGAINST INFLATION  
WITH 4-H PROJECT

At a time when most everyone is looking for ways to beat back the high cost of living, 4-H members in the 4-H clothing project find that sewing it yourself is one answer.

Minnesota's 1974 4-H clothing project achievement winner says she has saved her family several thousand dollars by making clothes for herself and other family members including her nieces and grandmother.

Carol J. Heublein, 18, Lewiston, says the clothes you make yourself fit better, last longer and are better constructed than most ready-to-wear garments. One of her most challenging projects has been making a wool coat with lots of top stitching. But she also finds an equal challenge in simple-to-sew separates and in sharing what she has learned in 4-H with others in her community. She has put on style shows for various groups and has given demonstrations, such as those on trims and knits, for her 4-H club at the Winona County Fair.

Coats and Clark, Inc., supports the clothing achievement program. Educational materials from commercial companies as well as 4-H literature are helpful to 4-H clothing program participants. With a new 4-H year underway, young people can join inflation fighters like Carol Heublein in the 4-H clothing program. For more information, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

-daz-

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January 13, 1975

ATT: Extension Home Economists

Immediate release

MSC  
GAP  
P

**PLAN FOOD PURCHASES,  
USE CAREFULLY TO  
BEAT HIGH PRICES**

High prices mean we must become more serious about planning what food we buy and how we use it, says Muriel Brink, extension nutritionist at the University of Minnesota.

If people would compare their dietary needs to what they are actually consuming, she adds, most would be amazed particularly at the amount of fruit and vegetables required. "We fall short there very very often," she says.

Although people often prefer large servings of meat, those servings can likely be cut down and replaced with larger servings of fruits and vegetables. That is also a good way to trim the food budget, Miss Brink says.

What are a person's daily nutritional needs?

For milk and milk products, adults should have two servings, children three servings and teenagers four servings. One serving is considered to be one cup.

For meat, fish, poultry, eggs, dry peas and beans, two servings daily is adequate with each serving considered to be two to three ounces or two eggs.

For breads and cereals, four servings of enriched or whole grain products is considered adequate. A serving might be one slice of bread or one ounce of dry cereal.

For vegetables and fruit, four servings per day are necessary with each serving considered to be one-half cup. Care should be taken to include portions rich in Vitamin A (dark green and deep yellow vegetables) at least every other day and portions rich in Vitamin C (such as citrus fruits) daily.

-bd-

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January 20, 1975

Immediate release

MFC  
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10/24

MILK SUPPORT PRICE  
LEVEL RISE ANALYZED

Although the U.S. Department of Agriculture recently raised the support price level for manufacturing milk, it is still below the market level of a year ago, says Martin Christiansen, University of Minnesota extension economist.

The USDA raised the support price level from \$6.57 per hundred pounds to \$7.24 for manufacturing-type milk, such as that used in making butter and cheese. The \$7.24 level on Jan. 4 and the \$6.57 level on April 1, 1973, represented 80 percent of parity when they were set. The increase in 67 cents per hundred pounds reflects what has happened to the official index of prices paid by farmers which is the basis for calculating support prices.

From October 1973 through last April, the average price for manufacturing milk was well above the \$7.24 level and, in fact, last February it peaked at \$8.11. In terms of the level of support, the recent action by the USDA represents an increase. The effect of this action will be to raise dairy prices, since these prices have been below this level in recent months. But the increase in the support level will not raise them to an unprecedented level, Christiansen adds.

The raise in the support level will mean about 67 cents more a hundred weight for dairymen who produce manufacturing milk and sell it in January. The USDA will implement the new support level by raising its buying prices for butter, non-fat dry milk and cheese at about the market level of late summer and early fall. The price of non-fat dry milk, which has been at the support level since early summer, will increase four cents a pound. The price for "bottled" milk, which is tied to manufacturing milk, will rise. Bottlers will probably pay about 30 cents a hundredweight or one-and-a-quarter cents per half-gallon in March more than they paid for January Milk, Christiansen says.

-daz-

CA, D, IA

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January 20, 1975

Immediate release

MSC  
3/1/75

SALT LEVELS STUDIED  
IN SWINE RATIONS

Hogmen may be able to get by with less than the customary .5 percent salt (10 pounds per ton) in the ration for growing hogs, University of Minnesota research shows.

"Salt levels of .2 percent added to a corn-soybean ration were satisfactory for pigs weaned at 3-4 weeks," reported L.E. Hanson, UM animal scientist. "But we had poor performance at levels of .1 percent salt," he added.

University animal scientists say that if pigs weighing 20-30 pounds appear unthrifty and crave urine, salt levels in the ration may be too low.

And if you're wondering about using high salt levels to control feed intake in pregnant sows, the answer is no, according to Hanson. "We tried feeding salt at high levels to control feed intake for pregnant gilts many years ago, but it did not reduce feed intake.

"In addition, the gilts required large quantities of water to eliminate the excess salt. This resulted in a wet bedding problem in the barn, which had a solid concrete floor."

More details on this and other Minnesota swine research are available by writing to the Department of Animal Science, University of Minnesota, St. Paul 55108. Ask for the 1975 Swine Research Report.

# # # #

CA, L

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Tel. (612) 373-0710  
January 20, 1975

Immediate release

*MHC*  
*2/15/75*

IN BRIEFS. . . .

Check Feed Tag. Many dairymen are buying grain for their dairy herd this year. If you are buying a complete dairy mixture (for example a 16 percent Dairy), be sure to check the feed tag carefully, advises Mike Hutjens, extension dairyman, University of Minnesota. Calculate the cost per pound of protein. Check if it is natural or vegetable protein (or contains urea). Second, look at the level of fiber. As fiber goes up, energy content goes down. Shelled corn contains 2 percent fiber, oats has 12 percent fiber, and screenings can vary greatly. The main reason you are buying grain is energy. Be a detective!

\* \* \* \*

Tax Credit. A 10-percent credit can be taken by Minnesota farmers on the state income tax return for feedlot pollution control equipment and facilities installed in 1974. For example, an operator may deduct 10 percent of the cost of a liquid manure spreader or a number of other pollution control devices from his Minnesota taxes. This tax credit is available only in the year that the equipment of structures were installed, so the operator should make sure he claims his credit this year. For more information, get Agricultural Engineering Fact Sheet 20-1974 from the \_\_\_\_\_ County Extension Office.

\* \* \* \*

Tax Form. State income tax credits for pollution control equipment installed in 1974 are claimed on Minnesota income tax form Schedule PC. These forms are available at tax offices. Operators can use information from their Minnesota Pollution Control Agency Feedlot Permit to fill out their returns. Where an operator does not yet have his permit, he should contact the Pollution Control Agency for a letter of certification for feedlot pollution control credit.

(The agency is at 1935 W. County Rd. B2, Roseville 55113.)

\* \* \* \*

-more-

add 1--in brief

Federal Accelerated Depreciation. University of Minnesota Extension

Agricultural Engineer Philip R. Goodrich advises farmers to ask qualified tax consultants or the Internal Revenue Service about federal accelerated depreciation for pollution control facilities certified by the State Pollution Control Agency. A seven-percent investment credit may be available for depreciation of some of the pollution control facilities.

\* \* \* \*

Chimney Fires. One of the best methods to prevent chimney fires, particularly if problems have been experienced in the past, is to annually clean the chimney, according to the FIRE Center at the University of Minnesota.

Cover all openings in the chimney within the house to prevent messy soot infiltrating the house. Use a long rod, rope or chain with a brick or a ball of chains on the end. Run this up and down the chimney to dislodge soot.

\* \* \* \*

Fire Causes. Chimney fires result from the accumulation of unburned tar or carbon deposits which are the product of one or a combination of causes.

Excessive soot deposits many times results from poor chimney design, according to the FIRE Center. A poorly designed chimney could result in poor draft conditions within the chimney, thus permitting a buildup of soot or tar in the chimney.

\* \* \* \*

Firewood. Burning green or pine firewood in the fireplace or stove is also a common cause of chimney fires. Green wood does not burn readily, thus causing incomplete combustion and soot buildup. Pine firewood has a high resin content and tar products can build up in a chimney when it is burned under unfavorable draft conditions. Well seasoned hardwood is recommended as the best fuel for fireplaces and wood stoves.

# # # #

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January 20, 1975

ATT: Extension Home Economists

Immediate release

MSC  
JASJP

**TREATING YOUR FURNACE RIGHT  
FOR COMFORT AND ECONOMY**

The silent, overlooked servant in your basement or utility room is becoming a prima donna. It's your furnace, and with the energy crunch, its maintenance and appetite for fuel can affect your pocketbook dramatically.

William Angell, extension housing specialist at the University of Minnesota offers some tips on furnace use for worry-free, economical winter comfort.

Have your heating fuel supplier inspect and, if necessary, clean and adjust your furnace each fall, Angell says. This can improve efficiency 10 to 15 percent. Oil furnaces demand more frequent cleaning and adjustment than gas, and forced air furnace filters should be cleaned or changed three or four times each heating season.

A 68 degree thermostat setting rather than 75 degrees will save about 15 percent in fuel consumption. If you lower the setting an additional five degrees at night, you'll save another 5 percent.

Leaving for a weekend or vacation? Lower your thermostat dial to 55 degrees. This will save an additional 10 percent over the recommended 68 degree temperature for occupied homes.

Dust coverings on radiators or baseboard heating elements interfere with efficient warming. Vacuum them periodically, Angell suggests. Check to see that heating elements and cold air returns aren't blocked by furniture, carpeting or draperies that can cut efficiency and increase your fuel bill. If you prefer cooler bedrooms than living areas, don't open windows to achieve it. Most heating systems can be adjusted to deliver varying amounts of heat to individual rooms.

Vent fans and fireplace dampers are good escape hatches for heated air. Use fans sparingly and be certain fireplace dampers are closed completely when not in use. Glass fireplace screens also help reduce unnecessary heat loss.

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4-H NEWS

Immediate release

MSC  
2/27/75

4-H'ERS LOOK AT  
CONSUMER EDUCATION

Concern over inflated prices and attempts to "stretch the dollar" span the generation gap.

Young people, including three million 4-H'ers, are emphasizing quality, durability and value in their purchases. The three million 4-H'ers are participating in the national 4-H consumer education program supervised by Cooperative Extension Services. Montgomery Ward provides up to four medals of honor to winners in each county and a state winner is selected by the Cooperative Extension Service for an expense-paid trip to the National 4-H Congress in Chicago in December.

Minnesota's 4-H consumer education winner is Gayle Olson, 18, Route 2, Watkins, a freshman at the University of Minnesota, St. Paul.

"Being thrifty, wise and cautious in shopping is a quality I admire. Being inspired by my work in home improvement, clothing and foods projects in 4-H. . . I developed a curiosity to learn more about consumer buying. I took an independent research class to study this area more. I could see how the consumer is being taken advantage of and how the consumer has to be shown how to shop wisely, pushing aside all gimmicks," Miss Olson says.

She has written an article on consumer buying for her school newspaper and has shown others shopping techniques. "In a time of such high inflation, every wise shopping move helps," she adds.

4-H club members are sharing their consumer ideas with fellow 4-H'ers, their families and their community. For more information on how to join this interesting activity, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

Department of Information  
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University of Minnesota  
St. Paul, Minnesota 55108  
January 24, 1975

MSC  
9/1/77  
"The University of Minnesota adheres  
to the principle that all persons shall  
have equal opportunity and access to  
facilities and programs in the University  
without regard to race, creed, color,  
sex, or national origin."

SPECIAL SHORT COURSE SCHEDULE (February-July 1975)

- January 28, 30      **Consumer Housing Short Course for East Central District;**  
February 3, 4, 6,      Anoka, Feb. 4, 11, 18, 25, March 4, 11; Carver, Feb. 11, 18, 25,  
10, 11, 13, 17,      March 4, 11, 18; Dakota, Feb. 6, 13, 20, 27, March 6, 13;  
20, 24, 25, 27,      Hennepin, Jan. 30, Feb. 6, 13, 20, 27, March 6; Scott, Feb. 3,  
March 3, 4, 6,      10, 17, 24, March 3, 10; Sherburne, Feb. 13, 20, 27, March 6,  
10, 11, 13, 17,      13, 20; Stearns-Benton, Feb. 18, 25, March 4, 11, 18, 25;  
18, 20, 25      Washington, Feb. 10, 17, 24, March 3, 10, 17; Wright, Jan. 28,  
Feb. 4, 11, 18, 25, March 4. To provide information to  
consumers who anticipate building or buying a house.\*GW
- January 28      Winter Crops Day, Technical College, Waseca, Jan. 28; Lyon  
February 6      County, Feb. 6. To bring crops and soils information to area  
farmers.+
- February 3-14      Lumbermen's Short Course, Forest Products Building, St. Paul  
Campus. To bring retail lumber personnel up-to-date on new  
ideas and techniques; acquaint industry with the University's  
teaching, research and facilities; and train personnel in the  
building supply field. For lumber and building material industry  
personnel and people working with the lumber industry in support  
activities.\*PS
- February 4-6      Home Sewage Disposal Workshop 1975, Anoka, Feb. 4-6; Inver  
February 25-27      Hills Community College, Feb. 25-27; Alexandria, March 11-13;  
March 11-13      Grand Rapids, April 1-3. To update personnel responsible for  
April 1-3      enforcing sanitary codes in the proper design and installation  
of home sewage disposal systems, including special emphasis on  
septic tanks and soils absorption. For county sanitarians,  
zoning officers, county planners, public health inspectors,  
and building inspectors.\*PS
- February 6      Lamb Feeders Day, West Central Experiment Station, Morris.+
- February 7      SW Sheep Day, Pipestone County, Pipestone. For sheep growers  
and related agribusiness personnel. Subject matter will be  
research information on sheep management.+
- February 7      Landscape Design Workshop, North Star Ballroom, St. Paul Campus.  
For landscape nurserymen, architects and sales personnel. To  
develop skills in home landscape design.\*RM
- February 7-8      Minnesota Spring Barrow Show, Albert Lea.+
- February 19, 20,      Beef-Cow Calf Day, Grand Rapids, Feb. 19; Thief River Falls,  
27      Feb. 20; West Central Experiment Station, Morris, Feb. 27.+

add 1--special short course schedule

- February 8 Green Holiday Workshop, Student Center, St. Paul Campus. Topics include economics of a home garden--a personal experience; nutritive value of vegetables; soil preparations for gardens; recommended vegetable varieties and their culture; control of insect pests and diseases; correct harvest and storage of vegetables; correct method of canning and freezing.\*RM
- February 21- March 2 Red River Valley Winter Shows, NW Experiment Station, Crookston.+
- February 25-26 Topics in Food Chemistry; The Effect of Processing of Food on Nutrition, Rm. 23, Food Science & Nutrition Building, St. Paul Campus. To inform food processing industry personnel on topics of current interest.\*GW
- February 26 Area Beef-Cow Day, Lincoln County, Ivanhoe. A field day emphasizing cow-calf production.+
- March 3-4 Regional Pesticides Workshops, Ramada Inn, Marshall, March 3-4; March 11-12 Holiday Inn, Grand Rapids, March 11-12; U of M Tech. Inst., March 13-14 Kiehle Hall, Crookston, March 13-14; Leamington Hotel, Minneapolis, March 17-18. Designed for pesticides dealers, custom applicators, educators and regulatory personnel. To provide information on plant and animal pest problems and pesticides. To provide accreditation for retention of pesticide applicators license.\*PS
- March 5 Aerial Applicators Pesticide Workshop, Arrowwood Lodge, Alexandria.\*RM
- March 4, 5, 6, 12 Fair Management Short Courses, Tobie's Restaurant, Hinckley, March 4; Donovan Center, Redwood Falls, March 5; Elks Club, Owatonna, March 6; Edgewater Inn, Detroit Lakes, March 12. Management principles, trends, budgets, physical facilities and developmental programs for county fair improvement. For fair board members, fair officers, superintendents and supervisors who have responsibilities in connection with the management of county, district and state fairs.\*CN
- March 6 Garden Store Operators, North Star Ballroom, Student Center, St. Paul Campus. Updated horticultural information and current business trends and problems. For nurserymen, florists and store operators.\*RM
- March 11, 12, 13, 18, 19 Dairy Day, Technical College Auditorium, Waseca, March 11; Murray County, Slayton, March 12; West Central Experiment Station, Morris, March 13; Northwest Experiment Station, Crookston, March 18; North Central Experiment Station, Grand Rapids, March 19. Designed for dairymen. Current research results in dairy management, breeding, nutrition and herd health will be discussed.+
- March 18-20, 24 Forest Owners and Users Conference, North Star Ballroom, St. Paul Campus, March 18; Department of Natural Resources Regional Office, Bemidji, March 19; University of Minnesota-Life Science Building, Rm. 185, Duluth, March 20; Olmsted County Fairgrounds, 4-H Building, Rochester, March 24. For forest landowners and others interested in management of forest lands. To learn and discuss alternative methods of increasing recreational, aesthetic, wildlife, and timber values of forest land.\*PS

add 2--special short course schedule

- March 19 Turf Management, North Star Ballroom, St. Paul Campus. To bring clientele up to date on what implications the energy shortage could have on the turf industry. To inform participants on how to most efficiently utilize fertilizer. To project an outlook for grass seed availability. To inform clientele on how to minimize maintenance and yet maintain quality turf. To provide a university update of latest research results.\*RM
- March 17, 18, 19, 20, 21, 31, April 1, 2, 3, 4 1975 Township Officers Short Course, Rochester, March 17; Waseca, March 18; Marshall, March 19; Chaska, March 20; St. Cloud--St. John's University, March 21; Brainerd, March 31; Alexandria, April 1; Detroit Lakes, April 2; Thief River Falls, April 3; Grand Rapids, April 4. Purposes: 1. Assist officers in developing a greater understanding of their roles and responsibilities. 2. Provide township officers with technical knowledge needed to carry out their duties and responsibilities. 3. Provide updated reference materials for the township officers handbook.\*GW
- March 19, 21, Sugarbeet Institute, Fargo, March 19; Crookston, March 21.+
- March 24 Commercial Small Fruit Growers, North Star Ballroom, Student Center, St. Paul Campus. To provide commercial strawberry and raspberry growers with information on planning, varieties, planting, pest control and harvesting.\*RM
- March 24, 25, 26 Combined Meeting Eastern Regional Biometrics Society Institute of Mathematical Statistics American Statistical Association, Classroom Office Building, St. Paul Campus. A national meeting for professional societies of the Institute of Mathematical Statistics and the Eastern North American Regional of the Biometrics Society.\*GW
- March 24, 25, 26 Liquefied Petroleum Gas, various locations on St. Paul Campus. A concentrated study program on the latest technical service and commercial developments in liquefied petroleum gas equipment and appliances. For servicemen and technicians in the Minnesota gas industries.\*CN
- March 26-27 Beekeeping Management Short Course, Student Center, St. Paul Campus. For hobby beekeepers, and all others interested in beginning beekeeping.\*PS
- April 4 Shade Tree Maintenance Conference, North Star Ballroom, Student Center, St. Paul Campus. To provide updated information on shade tree maintenance problems and to provide practical information and demonstration on maintenance techniques. For arborists, nurserymen, park administrators, landscape maintenance superintendents and all individuals concerned with shade tree preservation.\*RM
- April 15 Nature Photography Workshop, North Star Ballroom, St. Paul Campus. Photographing natural subjects, new developments in equipment and appreciation of the world around us.\*PS

add 3--special short course schedule

- April 18 Landscape Design Workshop, Student Center, St. Paul Campus. For landscape nurserymen, architects and sales personnel to develop skills in home landscape design.\*RM
- April 27-30 Minnesota FFA Convention and Leadership Conference, St. Paul Campus. To promote a learning experience for vocational agriculture students and FFA members that will be a justifiable complement to the vocational agriculture curriculum for state-wide FFA membership and vocational agriculture students.\*CN
- May 19-22 Minnesota State Fire School, Radisson Downtown Hotel, Minneapolis. For volunteer and paid fire department personnel, city officials and interested government and industry personnel who deal in fire safety, prevention, control and rescue and first aid work.\*PS
- June 17 Athletic Field Turf Management, St. Paul Campus. To inform personnel who are responsible for the upkeep of athletic fields about the latest recommended turf maintenance techniques. The course will cover sod management, fertilizer rates and recommended analysis, disease control, by selected educational faculties.\*RM
- June 24 Visitors' Day, Southern Experiment Station, Waseca.+
- June 24-25 Crops and Soils Day, Waseca Experiment Station, June 24; SW Experiment Station, Lamberton, June 25.+
- July 10, 16, 17 Crops and Soils Field Day, Morris Experiment Station, July 10; Crookston Experiment Station, July 16; Grand Rapids Experiment Station, July 17.+

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\*For further information call Office of Special Programs

VF--Vern Freeh	(612)	373-0725
CN--Curtis Norenberg	"	"
RM--Richard Meronuck	"	"
GW--Gerald Wagner	"	"
PS--Paul Stegmeir	"	"

+For further information call the Experiment or Research Station designated.

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and Agricultural Journalism  
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Tel. (612)373-0710  
January 27, 1975

Immediate release

MSC  
e/127p

TALLOW FOR HOGS  
IMPROVES FEED/  
GAIN RATIO

Supplemental tallow added to diets for finishing swine improved feed/gain ratios but did not affect daily gains, according to University of Minnesota research.

"We had the greatest improvement in feed/gain ratio when we used 14 and 16 percent protein levels in the diet, compared to 10 percent protein," said R. J. Meade, Minnesota animal scientist. Carcass leanness was decreased to a small extent by adding tallow, but this held "no practical significance."

Tallow was added at two levels--four and eight percent of the diets.

If you're interested in adding tallow, University specialists recommend comparing cost of tallow to the cost of corn that it's replacing. And, there are some handling problems that will be difficult to meet under farm conditions.

More details on this and other Minnesota swine research are available by writing to the Department of Animal Science, University of Minnesota, St. Paul 55108. Ask for the 1975 Swine Research Report.

# # # #

CA, L

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Tel. (612) 373-0710  
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Immediate release

MISS  
9/1/57

HIGH LYSINE WHEAT  
REDUCES HOG GAINS

High lysine wheat in diets for both finishing and growing swine resulted in slower gains and a higher feed/gain ratio, according to University of Minnesota research.

The high lysine wheat was used to replace soybean meal and was added at two levels, 65 and 97 percent of the diet in a trial with finishing hogs.

"Gains were significantly reduced and feed/gain ratios increased at these two levels," said R. J. Meade, animal scientist in charge of the study. This may have been due to reduced feed intake associated with the high levels of wheat, Meade added.

In a trial with growing hogs, daily gains dropped and feed/gain ratio increased as amount of wheat was increased. Performance, according to levels of wheat and soybean meal, is shown in the following table:

<u>Percent feed wheat and soybean meal</u>	<u>Daily Gain</u>	<u>Feed/gain ratio</u>
0, 17	1.47	2.61
29.3, 8.9	1.32	2.66
60.6, 6.0	1.32	2.62
94.9, 2.0	1.23	2.84

More information on this and other Minnesota swine research is available by writing to the Department of Animal Science, University of Minnesota, St. Paul 55108. Ask for the 1975 Swine Research Report.

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CA,L

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University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
January 27, 1975

Immediate release

MSC  
3/27P  
0

UM SCIENTIST  
TELLS RESEARCH  
ON BUFFALO CROSS

Research shows that cattle-buffalo bison hybrids have not compared favorably with Herefords in feedlot performance and carcass grade, Charles Christians, University of Minnesota animal scientist, says.

The only advantage in the hybrids, sometimes called beefalo or cattalo, may be that they are more hardy in northern climates than cattle, he adds.

According to research by H. F. Peters and S. B. Slen of the Canada Department of Agriculture, British cattle breeds were more efficient in terms of total digestible nutrients utilized per pound of gain as compared to bison. Cattalo were somewhere between the two.

As the amount of buffalo was increased in the hybrids, they became heavier-fronted in the carcass, which is less desirable since the higher priced cuts of meat are in the rear quarter. A lower degree of finish with the poor conformation yielded lower market grading carcasses, the scientists reported. Peters and Slen found that Herefords had heavier hides and a greater amount of internal organs than cattalo, which explains why cattalo had a greater dressing percentage than Herefords.

In a calf production study involving 1,115 matings, Hereford cows surpassed cattle-bison hybrids and cattalo cows in weaned calf crop percentage, according to Peters and Slen. The birth weight of calves declined progressively as the proportion of bison percentage increased in the dams and the trend was especially marked in the calves that died.

-more-

add 1--um scientist

The mating of bison bulls with domestic cows in the early years of Peters-Slen project resulted in a high mortality of cows and calves at the time of birth. When domestic bulls were mated with bison cows, more success was reported although there was mating indifference in both crosses. All male hybrids that were tested proved to be sterile, Peters and Slen found.

The hybrid cow has outstanding winter foraging ability and a dense hair coat. The one-quarter bison cattle has a high degree of cold tolerance--an attribute that prolongs its longevity and ability to wean heavy calves. However, embryonic mortality, death near birth, reduced performance in the feedlot and lower carcass grades limit the advantage gained from its hardy constitution, Christians says.

-daz-

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TOWNSHIP OFFICERS  
SHORT COURSES SET  
FOR MARCH, APRIL

Minnesota's township officers are being invited to day-long short courses to be held by the University of Minnesota and Minnesota Association of Township Officers in March and April.

One of the sessions will start at 9:30 a.m. \_\_\_\_\_ at the \_\_\_\_\_  
(date) (place)

in \_\_\_\_\_  
(town)

Township supervisors, clerks, treasurers and others interested in township government are expected to attend.

Among the topics to be covered are duties and responsibilities of the town board and its officers, legislation, financing township government and land use planning. Discussion groups on a variety of topics affecting townships will be held in the afternoon.

-daz-

Agents: Locations and dates--

- Rochester, Holiday Inn South, . . . . . March 17,
- Waseca, University of Minnesota Technical School, . . . March 18,
- Marshall, Ramada Inn, . . . . . March 19,
- Chaska, University of Minnesota Landscape Arboretum, . March 20,
- St. Cloud, St. Johns University. . . . . March 21,
- Brainerd, Holiday Inn, . . . . . March 31,
- Fergus Falls, Holiday Inn, . . . . . April 1,
- Detroit Lakes, A.V.T.I., . . . . . April 2,
- Thief River Falls, Eagles Club, . . . . . April 3,
- Grand Rapids, Rainbow Inn, . . . . . April 4,

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grip

HOME SEWAGE  
DISPOSAL  
WORKSHOPS SET

Home Sewage Disposal Systems Workshops will be held by the University of Minnesota Agricultural Extension Service at four locations in coming months.

The first of the three-day workshops will start Feb. 4 at the Holiday Inn in Anoka.

Another will start Feb. 25 at the Inver Hills Community College. Other locations and dates are the Holiday Inn, Alexandria, March 11-13, and the Holiday Inn, Grand Rapids, April 1-3.

Among those being invited to the workshops are planners, zoning officers, inspectors, sanitarians, installers and manufacturers of home disposal system components.

-daz-

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IN BRIEF . . . .

Green Soybeans. Green soybeans may be worth more fed and processed to dairy animals, compared to taking a large price dockage if you sell them. Mike Hutjens, extension dairy specialist at the University of Minnesota, says that feeding value of immature green soybeans is comparable to normal beans. Crude protein (36 to 38 percent) and oil content (16 to 18 percent) are about the same. Follow the same feeding guidelines as with normal mature soybeans. Immature soybeans do not have to be roasted when fed to ruminant animals.

\* \* \* \*

Nitrogen Topdressing. Farmers who have problems getting nitrogen for small grains in spring may want to consider nitrogen topdressing after they've seeded. You can fertilize wheat, oats and barley successfully with nitrogen fertilizer after seeding if you get it on before the stooling stage, according to Charles Simkins, extension soils specialist at the University of Minnesota.

Both dry and liquid nitrogen can be applied after the crop has emerged, although N rates of over 20 pounds per acre may cause temporary leaf burning. If you apply anhydrous ammonia after the crop has been seeded, do it before the grain is 4-5 inches tall. Use narrow knives, spacing them 12 inches apart or less. Apply anhydrous diagonal to the direction of seeding.

\* \* \* \*

Farm Exports. Anything such as trade restrictions that threatens our farm exports also threatens our national economy and standard of living, according to the U.S. Department of Agriculture. Reasons: exports support hundreds of thousands of nonfarm jobs, reduce expensive government programs, strengthen farm income, assure higher farm production and pay for a multitude of foreign-made products-- from shoes to sports cars.

\* \* \* \*

-more-

add 1--in brief

Control Fire. Call the fire department first if a chimney fire should occur. One of the dangers of a chimney fire is that it can ignite interior walls of the house if there are cracks in the flue lining and brick exterior. Also, sparks from a chimney fire can ignite wood shingled roofs, setting leaves on fire that have collected in gutters and roof valleys. The fire may spread to eaves and exposed asphalt shingles.

\* \* \* \*

Burning Out. In most instances, the chimney fire may have to be allowed to burn itself out. If this is done, the fire should be kept under continuous observation.

The outside should be watched to control any fire that may start from sparks. The clean-out door at the bottom of the chimney should be closed. Walls adjacent to the chimney should be watched for discoloration and felt to determine if fire may have reached the structure.

\* \* \* \*

Using Salt. Table salt--a half to one pound--can be thrown on fireplace logs or into the stove to shorten the burnout time in a chimney fire.

Using water to extinguish a chimney fire may result in cracking the extremely hot refractory flue lining. Also, sooty water may run down the chimney and seep onto interior walls.

# # # #

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January 27, 1975

ATT: Extension Home Economists

Immediate release

MSC  
JHP

**SUGAR REMAINS  
CHEAPEST SWEETENER**

Granulated sugar, even at its current high price of about 50 cents a pound, is still the consumer's cheapest sweetener says Mary Darling, extension nutritionist at the University of Minnesota.

She compared sugar with honey, molasses and light and dark corn syrup. A cup of sugar costs between 22 and 25 cents depending on what size package it comes in. Honey, which is sweeter than sugar, would be used more sparingly to achieve the same sweetness, but even at sale prices it is more costly.

A homemaker would use 3/4 cup of honey to substitute for 1 cup of sugar. The honey, featured at some supermarkets for about 66 cents a pound, would cost about 35 cents compared to the 22 to 25 cents required for the sugar equivalent. Honey would have to sell for less than 50 cents a pound before it could compete with sugar at its present price.

Molasses also is more expensive than sugar. A cup of molasses costs about 63 cents, and, like honey, molasses affects the taste, moisture, texture and other recipe properties differently than sugar does. Ms. Darling suggests using only recipes that call for honey, molasses or corn syrup if you want to experiment with these sweeteners. Foods requiring sugar may not be acceptable if another sweetener is substituted.

Corn syrup is about half as sweet as sugar so a person would need to use two cups of syrup to replace one cup of sugar. This would change a recipe's consistency dramatically and should not be done even though cup-for-cup sugar and corn syrup cost about the same.

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January 27, 1975

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4-H NEWS

MSC  
JEP

LOCAL 4-H'ERS  
TO ATTEND  
WINTER CAMPING

About 35 Minnesota 4-H club members are expected to attend a winter camping environmental education experience March 3-7 at the North Woods Resource Center near Ely.

Attending from \_\_\_\_\_ County are:

The program is an extension of classroom and laboratory experiences and is expected to sharpen the students sensitivities to environmental concerns. Staff of the North Woods Resource Center will conduct the five-day experience, assisted by selected county extension staff.

-daz-

CA

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February 1975

STORY 1--FOOD SERIES

These pigs convert grain to pork efficiently. University of Minnesota animal scientists say that from 3 to 5 pounds of grain are required to produce a pound of pork and that these ratios are improving through better management and genetics. And if we quit eating meat in an attempt to help the world's hungry, our diets would lack essential nutrients such as niacin, thiamine, riboflavin and iron that pork and beef provide. Protein quality in our non-meat diets would also be lower.

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STORY 2--FOOD SERIES

Beef cows eat corn stalks, grass and other forages that would otherwise have no value for human food. Scientists at the University of Minnesota say that efficient use of our natural resources requires that animals be a part of our food production system.

Much of the forage that cattle and sheep eat is grown on land not suited for producing other crops.

# # # #

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February 1975

STORY 3--FOOD SERIES

Food will be the world trade currency of the future, University of Minnesota scientists say. And this couple is typical of increasing numbers of consumers who are interested in growing some of their own food in home gardens.

# # # #

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February 1975

STORY 4--FOOD SERIES

Modern manure handling systems that conserve fertilizer nutrients along with higher fertilizer prices are making animal manure more important in the food production system. Efficient use of manure by U. S. farmers could free more fertilizer for developing countries where fertilizer shortages hamper food production.

# # # #

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MSC  
9/15/75  
P

FARMERS: SAVE N FOR  
NON-SOYBEAN CROPS

Farmers should consider using their available nitrogen fertilizer on wheat and feed grains rather than on soybeans this year.

Agreeing on this recommendation are Curt Overdahl, University of Minnesota soils specialist and Harold Owens, agronomist with the U. S. Department of Agriculture's (USDA) Extension Service.

Owens said research in some of the major soybean producing states has shown that "well nodulated soybeans do not generally respond to nitrogen fertilizer because they get enough nitrogen from the soil and the rhizobia (nitrogen-fixing bacteria) in the root nodules." He said since soybeans are a legume they can fix enough atmospheric nitrogen in addition to that already available in the soil to produce yields of 60-70 bushels per acre. The national average yield for soybeans in 1974 was nearly 24 bushels per acre.

USDA figures show that farmers applied upwards of 86 thousand tons of nitrogen to their soybeans in 1974. This is enough fertilizer to treat nearly 1.7 million acres of corn at the current rate of 103 pounds per acre, he said. By not applying nitrogen to soybeans farmers could save about \$4.50 per acre in fertilizer costs. This is based on a price of 30 cents a pound for nitrogen and a 15 pound per acre rate of application. This means, Owens said, that a farmer with 100 acres of soybeans could save some \$450 in fertilizer costs.

-more-

add 1--farmers: save n

USDA's Economic Research Service (ERS) estimates that 22 percent of the 1974 harvested soybean acreage in major soybean states received commercial fertilizer at an average rate of 15 pounds of nitrogen per acre. This was about one pound more per acre than was applied in 1973. In some states, nearly half the soybean acreage was fertilized with nitrogen.

Because of the current tight supply-demand situation and the high cost of nitrogen fertilizer, Owens said farmers should carefully review their fertilizer use plans for 1975. Since it has been shown that nitrogen does not usually increase soybean yields, Owens said, it would be better to use it on crops that require applied nitrogen, such as wheat, feed grains, and grass pastures.

# # # #

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February 3, 1975

Immediate release

W-30  
J. J. J.

MORE GRAIN BEING  
SHIPPED BY RAIL

Special rail rates for multiple-car grain shipments from southern Minnesota are changing that area's grain marketing patterns, a University of Minnesota survey indicates.

Before the rates were introduced in 1972, most of southern Minnesota's exported corn and soybeans moved by truck to Mississippi River terminals and then via barge to the Gulf of Mexico. This movement is still the most important, but the new rail rates have made direct shipments more competitive.

Recently, however, rail rates have been increased while barge rates have come down. Consequently, multiple-car rail rates are less competitive with truck and barge rates now than a year ago, according to Reynold Dahl, university extension economist in marketing.

Nevertheless, the new rail rates have encouraged many elevators to build loading facilities for multiple-car trains. And, according to Dahl and research assistant Michael Martin, continued heavy use of multiple-car shipments can be expected.

Another benefit from multiple-car shipments is assurance of boxcars. Railroads offering multiple-car agreements generally stipulate that an elevator must fill at least five consecutive multiple-car trains. That requirement, however, also puts pressure on elevators to assemble enough grain--pressure which may force payment of premium prices to farmers to attract the commodity.

Multiple-car rates apply only to corn and soybeans shipped for export, not domestic use.

A full report on the situation appears in an article by Dahl and Martin in January's issue of the Minnesota Agricultural Economist, a publication of the University Agricultural Extension Service.

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Immediate release

FUTURE OF FARM  
EXPORTS CLOUDY

How long will the farm export upsurge of the last few years last? The answer to that question is important to Minnesotans (the state ranks seventh in farm exports). It depends partly on these developments:

--World prices. Much of the huge increase in agricultural exports during the past two years resulted from higher world prices, instead of bigger sales volume. Lower world prices could curtail exports.

--Future of the European Community (EC) market. Although our total agricultural sales to the EC have been increasing, our share of that vital nine-country market has been diminishing.

--Some of our markets, particularly Japan, are blends of traditional trade patterns and unprecedented developments. With such markets, the situation that prevailed in the past is not necessarily the one that will prevail in the future.

--Trade potential with two newly emerged markets--Russia and the People's Republic of China--is immense but uncertain due to politics.

--America's competitors are viewing export markets as long-term development projects, not to be sidetracked by short-term supply and price variations. They're pouring money into developing these markets. U. S. Department of Agriculture researchers say it's too early to judge the effect of these activities on our customers in the future.

# # # #

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Immediate release

BE SMART SHOPPER  
WHEN BUYING HAY

If you will be buying hay, remember that hay is not just hay. Bales vary in weight and quality and poor hay deserves a poor price. Mike Hutjens, extension dairyman at the University of Minnesota, offers a way to calculate hay price:

	<u>Corn Factor</u>	<u>Soybean Meal Factor</u>
Poor legume hay, over 36% fiber	.26	.15
Ave. legume hay, 30-36% fiber	.30	.21
Good legume hay, below 30% fiber	.29	.26
Grass hay	.42	.06

a. Multiply the current price for shelled corn (per cwt) times the corn factor.

b. Multiply the current price for soybean meal (per cwt) times the soybean meal factor.

c. Add these two figures together. This is the value of 100 lbs. of hay (multiplying by 20 equals value per ton).

Example: Average hay, \$7/cwt for shelled corn and \$9/cwt for soybean meal:

$$.30 \times \$7.00 = \$ 2.10$$

$$.21 \times \$9.00 = \underline{1.90}$$

$$\$4.00 \times 20 = \$80/\text{ton}$$

If you can buy this hay for less than \$80/ton, it is a good buy. If it is higher than \$80, corn and soybean meal is a better buy nutrient-wise.

###

CA, D

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February 3, 1975

(Agents: This "urgent" story is being  
sent directly to daily newspapers and  
radio stations)

MSC  
A-

CHECK ATTICS  
FOR SNOW

Better check your home attic for snow that may have blown in during recent snowstorms. The same goes for poultry houses and grain bins.

"We've had some reports of poultry house ceilings collapsing and chickens being killed due to the weight of the snow," says Clif Halsey, extension conservationist at the University of Minnesota. How did the snow get there? High winds blew fine snow particles into some of these buildings through ventilating louvers, according to Halsey.

Check your home attic or farm building structures that may have snow accumulation. And if you find snow, "get it out any way you can--the quicker, the better." Halsey advises.

If the snow isn't removed, it will melt, ruin your insulation and damage the home's interior. Homeowners may confuse such problems with "ice dams" that sometimes build up and cause water problems inside the house.

Farmers are especially urged to check grain bins for snow accumulation. Snow should be removed promptly before it melts and causes grain spoilage.

-jms-

CA, II-P & B

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MISC  
2/10/75  
P

IN BRIEF. . . .

Mild Onions. Try growing sweet Spanish rather than Bermuda onions if you want mild onions this summer, Orrin C. Turnquist, University of Minnesota extension horticulturist, suggests.

Sweet Spanish onions do better in Minnesota because of the long summer days, whereas Bermudas bulb best where the days are shorter. When you buy onion plants, it is difficult to determine if they are sweet Spanish or Bermuda. So to be sure you are growing sweet Spanish, plant them from seed indoors in mid-February.

\* \* \* \*

Starting Seeds Indoors. The best sweet Spanish onions to start from seed indoors are the Utah or Los Anamas strains. Start them in a container of greenhouse soil mix.

You can scatter the seeds or put them in rows. If the plants get too tall, trim them with scissors to a height of three inches. This makes stronger, stiffer plants that will be easier to transplant to the garden in mid-April.

\* \* \* \*

Planting Outside. Set your onions one-half inch deep and about three to four inches apart in rows 18 to 36 inches apart in the garden. By early September you should have some nice large sweet Spanish onions.

\* \* \* \*

Baler Twine. Farmers should have adequate supplies of baler twine for 1975 harvests. Reports from the Foreign Agricultural Service show the U. S. imported about 24 percent more baler and binder twines in the first 10 months of this year compared with the same period a year ago. Also, world supplies of harvest twines appear to be improved for the 1975 season.

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February 3, 1975

ATT: Extension Home Economists

Immediate release

MKC  
9A27P

**PROPER INSULATION  
MAKES ENERGY SENSE**

About two-thirds of the energy most homes use goes for heating, but a few insulation pointers can save dollars and chills this winter, according to William Angell, extension housing specialist at the University of Minnesota.

If your home is not insulated and has no storm windows, you can save 15 percent or more of your heating costs by adding six to eight inches of insulation to your attic, a do-it-yourself project that would cost about \$175 for an average house, Angell says. He recommends attic insulation with an R value of 19 to 24. This is a measure of the material's ability to reduce heat flow.

Uninsulated walls also leak valuable heat. You can save an additional 15 to 20 percent by having about 3½ inches of R-11 insulation blown into your walls at a cost of \$400 to \$800. Angell also recommends insulating exposed basement walls or the floors over unheated crawl spaces.

If you plan to upgrade your insulation, install a vapor barrier if your home does not have one. In a house that is built already, this is accomplished most easily by painting the interior surface of exterior walls with two coats of moisture-impervious paint. In newly constructed homes and attics, a polyethylene vapor barrier is recommended.

Storm windows and doors save another 15 percent on heating costs, Angell says. Even a well-built, well-insulated home will lose up to 40 percent of its heat through leaks around doors, windows, vent fans, electrical outlets and light fixtures.

-more-

add 1--proper insulation

Caulking around door frames, windows and other exterior cracks plus weather stripping doors, including access doors or attic hatches, will reduce heat loss 10 to 20 percent. Although these steps may make your home more heat-tight, they also will prevent humidity from escaping. If you notice condensation forming on windows and walls, you may have a humidity problem that could require exhaust fans or lessened output by humidifiers.

Angell cautions consumers considering upgrading their insulation to:

- . Deal only with reputable, established contractors. Check with your Better Business Bureau, local building inspectors or former customers before signing a contract.
- . Read all contracts carefully before signing.
- . Request all promises and guarantees be put in writing before signing anything or paying any money.
- . Shop around for the best buy. Prices for similar services will vary widely

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February 3, 1975

4-H NEWS

Immediate release

MINNESOTA 4-H'ERS  
TO VISIT NORWAY  
IN SUMMER EXCHANGE

Forty Minnesota 4-H Teen Leaders and adults will visit host families in Norway next June and July, according to Minnesota State 4-H leaders. Minnesotans will reciprocate by hosting Norwegian young people next summer.

Minnesota 4-H'ers will work and play beside their Norwegian host families for three-and-a-half weeks. The 4-H'ers will take a few days to see parts of Norway and London on their return home. Before leaving on this summer exchange, the 4-H'ers will receive an orientation in Norwegian language, history and culture.

The exchange is sponsored by the University of Minnesota's Agricultural Extension Service, 4-H Youth Development Program and by the Norske 4-H Clubs of Norway. Both the Extension Service and the Norske 4-H are concerned with bettering international relations and deepening cross cultural understanding through these exchange programs, State 4-H officials say.

For more information about 4-H and the 4-H international programs, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

-daz-

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MSC  
JHP

IOWA SCIENTIST  
TO GIVE HAYES  
LECTURE FEB. 24

Iowa State University plant breeder Kenneth J. Frey will give the second annual H. K. Hayes Memorial Lecture at 8 p.m. Feb. 24 in the Palmer Classroom Building Auditorium, University of Minnesota, St. Paul.

Frey is recognized as a world leader in crop science and has contributed significantly through teaching and research on the basic problems involved in the development of superior crop varieties.

"Plant Breeding in the Seventies: Useful Genes from Wild Plant Species" is the title of his lecture.

That evening agronomy major Sheldon E. Blank will be presented the H. K. Hayes Graduate Student Award, including a plaque and cash. The award is made on the basis of classroom performance, research competence and involvement in department and student activities.

The H. K. Hayes Memorial Fund was established to provide the graduate student award and sponsor an annual memorial lecture to honor H. K. Hayes, a distinguished plant breeder, teacher and author. Hayes was affiliated with the University's Department of Agronomy and Plant Genetics for more than 40 years and led it to worldwide prominence.

-daz-

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gA=7p

REASONS FOR HIGH  
SEMI-DWARF WHEAT  
YIELDS GIVEN

Scientists give a new reason why semi-dwarf wheat varieties yield more than standard varieties: root and forage growth is greater in the early growth stage, and this is later translated into higher grain yields.

"A simple reason for higher yields of semi-dwarf varieties is a stiffer straw, which permits higher nitrogen fertilization without lodging," says University of Minnesota Extension Soils Specialist Abelardo Castro-M. "But there's more to it than that" Castro says. "In one of our studies we found that the Era variety produced more roots, stems and leaves than the standard variety Chris at an early growth stage. So contrary to popular belief, forage production of some semi-dwarf wheats can be higher than standard varieties," Castro said.

In the greenhouse research trial Era out-yielded Chris by 38 percent, yielding 117 bushels per acre compared to 72 for Chris. Total dry matter yield of Era was 8.3 tons per acre, compared to 7.1 tons for Chris.

"It's important that the extra dry matter be formed at an early stage of growth for the higher grain yields," Castro said. "Although the total dry matter yield of Era at maturity was only 15 percent higher than that of Chris, at flowering time Era had produced 45 percent more dry matter.

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MISC  
2A-7P

IN BRIEF. . . .

Soil Moisture. In most of west central and southwest Minnesota soils currently are well under the average moisture recharge level and so the chance of above average corn and soybean yields in these areas is not good.

James B. Swan, University of Minnesota soil scientist, says precipitation this past fall was below normal except for a small area near Fargo-Moorhead. In the driest areas, Lac Qui Parle, Yellow Medicine, Lyon, Chippewa and Renville counties, precipitation was only about 25 percent of the normal amount. In these areas of western Minnesota, precipitation from September through November frequently influences yield potential for corn and soybeans in the following growing season.

\* \* \* \*

Water's Importance. Studies by the Agricultural Research Service, Morris, show that water use by corn considerably exceeds the average June-to-September rainfall of about 10 to 12 inches in western Minnesota.

Stored soil water and precipitation in a six-week period in July and early August accounted for more than 70 percent of the variation in corn yield in a four-year study in western Minnesota and eastern South Dakota. The study also showed that in years of deficient water an extra inch of water could increase corn yields as much as eight bushels an acre.

\* \* \* \*

Frozen Soil. Studies indicate that little or none of the precipitation that falls after the soil is frozen actually enters the soil. Soil generally freezes in early December in central and southern Minnesota and thaws from early to mid-April.

December-through-March precipitation generally does little to recharge agricultural soils. Fall and spring rains actually recharge the soil with water with fall rainfalls ordinarily being the more efficient.

\* \* \* \*

-more-

add 1--in brief

Spring Rains. Above normal April-through-June rainfall in much of western Minnesota would be required to bring soil water storage to normal amounts by July 1, say University of Minnesota soil scientists.

The importance of the subsoil reserves after early July is that long season crops such as corn consume more water than is ordinarily provided by summer rains. So the plants must grow on subsoil water to carry them through the growing season.

There are sizeable areas in western Minnesota that currently have soil water deficiencies of three inches or more, indicating that subsoil reserves by July 1 are likely to be inadequate. This increases the probability that long season crops will suffer some drought stress in 1975 unless growing season rainfall is unusually favorable.

\* \* \* \*

Weaning Weights. Beef cow-calf producers should not "worship" weaning weight for the sake of weight alone. "The name of the game is profit...there is a point beyond which additional weight increases accomplished with better milking cows does not increase profits," said Robert Totusek, Oklahoma State University animal scientist who recently spoke to Minnesota beef producers. However, many cows produce too little milk and the weaning weights of their calves could be profitably increased by higher levels of milk production, he added.

\* \* \* \*

Soybean Seed. It's especially important for farmers to get soybean seed tested this year. "Our lab tests show wide variation in germination percentage--from almost zero to about 99 percent," says V. B. Cardwell, University of Minnesota agronomist. Much seed submitted for germination testing is showing mechanical damage due to extreme dryness at harvest. More information on soybean seed quality is available in Agronomy Fact Sheet No. 31, available from the \_\_\_\_\_ County Extension Office.

\* \* \* \*

-more-

add 2--in brief

Snow Crown Cauliflowers. The 1975 all America Vegetable Selection Snow Crown f-1 hybrid cauliflower, is earlier than other varieties, Orrin C. Turnquist, University of Minnesota extension horticulturist, says.

Snow Crown has long leaves that can be easily wrapped around the curds to keep light out. The result is an attractive, white cauliflower. Start seeds indoor early or seed directly in the ground around June 1.

\* \* \* \*

Premium Crop Broccoli. A uniform supply of broccoli for freezing can be expected from the new f-1 hybrid, Premium Crop, an All-America Vegetable Selection for 1975.

Orrin C. Turnquist, University extension horticulturist, says Premium Crop is excellent for freezing with its solid, large characteristics. This new variety doesn't open as fast as other varieties, but it has longer keeping quality.

\* \* \* \*

Yellow Baby Watermelon. Here's a conversation piece for the table--a watermelon with pineapple yellow rather than pink flesh. It's Yellow Baby, one of the 1975 All America Selections.

University Extension Horticulturist Orrin C. Turnquist says Yellow Baby has excellent sugar content and with its handy size (7 inches in diameter) fits into the refrigerator nicely. The rind is thin but quite hard.

\* \* \* \*

New Beets. Pacemaker Two, a new f-1 hybrid beet, has a lot of vigor and reaches an edible size quickly, says Orrin C. Turnquist, University of Minnesota extension horticulturist.

Another new beet, Cylindra, could be a valuable addition to your garden this year. It looks like an elongated radish, but is blood red. Both new beets are high quality, he says.

\* \* \* \*

-more-

add 3--in brief

New Vegetables. A new f-1 hybrid carrot, Trophy, is long, slim and excellent in color.

Blue Crop bush bean is similar to Tender Crop, but of Blue Lake Quality. It has straight, round pods and is quite tolerant of hot weather.

Two new sugar podded peas are Oregon and Mammoth Melting. You can eat the pods before the peas develop or leave them on the vine and enjoy the peas later in the season.

\* \* \* \*

Squash, Pepper. Golden Girl Hybrid is a new yellow-skinned straight necked summer squash that can be harvested about 50 days after planting. Emerald bush buttercup squash also is new for 1975.

A bell-shaped f-1 hybrid pepper, Ace, is expected to do well, even under adverse weather conditions.

# # # #

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February 10, 1975

ATT: Extension Home Economists

Immediate release

MSC  
8A27P

CONVENIENCE FOODS  
NOT NECESSARILY LUXURIES

In these days of inflation-tightened food budgets, don't be fooled into making everything from "scratch" to save money, says Mary Darling, extension nutritionist at the University of Minnesota.

Some convenience foods cost about the same as homemade items, and they save you time, which may be as scarce and valuable as money. "You must weigh the satisfaction you get from making a food from 'scratch' and determine if your family thinks the end product is worth the time invested," Ms. Darling says. "You're not saving anything, either on convenience or homemade foods, if they go uneaten and are discarded."

Shopping at three Twin Cities supermarkets and using white enriched bread, pudding and biscuit mixes as examples, Ms. Darling computed what homemade versus convenience items cost. She found that "scratch" bread cost between 21¢ and 25¢ for a one pound loaf. Frozen bread dough ranged from 20¢ to 31¢ for the same size loaf. Store-bought bread usually comes in larger 1½ pound loaves at 22¢ to 39¢ per pound, comparable to frozen and "scratch" breads.

She compared three types of vanilla pudding--homemade using eggs and milk, packaged pudding that requires cooking and the addition of milk and instant pudding that requires milk. Both homemade and cooked packaged puddings cost about nine cents for a one-half cup serving. Instant pudding that requires no cooking costs 10¢ to 11¢ for the same size serving. "Scratch" puddings requiring large amounts of sugar probably would top the mix products in price.

Biscuit mix, such as that used for pancakes, shortcake and dumplings, is similar to a homemade "master mix" that incorporates flour, dry milk, shortening and leavening agents. Ms. Darling found that both the readymade mix and the homemade alternative cost about two cents an ounce. The readymade variety sometimes cost three cents an ounce if purchased in less economical sizes, but Ms. Darling points out that by comparing prices and using coupon specials when possible, the readymade biscuit mix can be as economical as the "scratch" variety.

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4-H NEWS

Immediate release

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MINNESOTA 4-H'ERS  
TO VISIT JAPAN  
IN SUMMER EXCHANGE

Some 50 Minnesota 4-H'ers and adults will visit host families in Japan next summer during the Japan Labo-Minnesota 4-H Exchange, according to Minnesota State 4-H leaders. Last summer, 50 Minnesota 4-H'ers and adults joined others from Nebraska, North Dakota, California and Michigan for a 5-week stay in Japan.

Minnesotans will reciprocate by hosting Japanese young people next summer. Last summer 56 Japanese youngsters, ages 12-17, and their tutors were hosted for four weeks by families in 20 Minnesota counties.

Minnesota 4-H'ers will work and play beside their Japanese host families for three weeks. The 4-H'ers will take another week to see parts of the country other than the area where their host family lives. The 4-H'ers will receive an orientation before going on this summer exchange. The orientation study will include the Japanese language, history and culture.

The exchange is sponsored by the University of Minnesota's Agricultural Extension Service, 4-H Youth Development Program, the National 4-H Foundation in Washington, D. C. and by the Labo Exchange Foundation of Japan. Four-H is developing better international relations and deepening crosscultural understanding through these exchange programs, State 4-H officials say.

For more information about 4-H and the 4-H international programs, contact

\_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.  
(Agent's name) (Name of Co.)

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FIVE TO RECEIVE  
OUTSTANDING  
ACHIEVEMENT AWARD

Five University of Minnesota graduates will be presented Outstanding Achievement awards at 7 p.m. March 1 at the Colleges of Agriculture, Forestry and Home Economics Alumni Association annual meeting in the Ambassador Motor Hotel, Minneapolis.

The Outstanding Achievement Award is presented to alumni or former University students who have attained distinction in their chosen fields, professions or public service.

University President C. Peter Magrath is scheduled to address the alumni association meeting.

The award recipients include John A. Stevenson, Washington, D. C.; Frederick F. Wangaard, Fort Collins, Colo.; C. Robert Binger, Dellwood, Minn.; Gladys E. Vail, West Lafayette, Ind.; and Sterling Wortman, Greenwich, Conn.

Stevenson, a mycologist with the Agricultural Research Service, U. S. Department of Agriculture, developed the National Fungus Collections at Beltsville, Md., and is well known for fungi studies in Puerto Rico. He received a bachelor of science degree in 1912 in forestry and worked in the Department of Plant Pathology at the University from 1912 to 1913 while in Graduate School.

Wangaard, head of the Department of Forest and Wood Sciences, Colorado State University, has provided leadership in the development of well balanced and basic curricula in undergraduate forestry and forest products education. He received a bachelor of science degree in forestry in 1933 from the University of Minnesota.

-more-

add 1--five to receive

Binger, president of the Resources Division, Burlington Northern, Inc., is noted for the development of sound, forward looking forest management practices for United States and Canadian forests under industry control. He is also cited for deep concern with the ecology and management of forests. Binger received a bachelor of science degree in forestry from the University in 1940.

Ms. Vail, professor emeritus and former dean, School of Home Economics, Purdue University, is being cited as a brilliant and creative researcher and research director in foods and a dedicated, excellent teacher. She has been an able administrator at two major Universities, Purdue and Kansas State University. She received a doctorate degree in agricultural biochemistry from the University of Minnesota in 1938.

Wortman, vice president of the Rockefeller Foundation, has brought dedicated and determined efforts to improve food production in countries where the food supply is inadequate. He is being cited for unusual administrative skills in obtaining funds to support research on food production in these countries. Wortman received a masters degree in 1948 and a doctorate in 1950 from the University, specializing in plant genetics.

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ATT: Extension Home Economists

Immediate release

BUYING A CAMERA?  
CONSIDER USE, QUALITY, PRICE

Americans are shutter bugs. Armed with equipment ranging from simple box cameras to complex professional set-ups, they are capturing each other and the world around them on film.

If you are considering buying a camera, consider how you plan to use it, what quality of pictures you expect and how much you can afford to spend, advises Donald Breneman, extension information specialist at the University of Minnesota.

"In photography, nearly everything is a trade-off of one advantage for another," he says. "A larger camera will produce sharper pictures than a camera using smaller sized film, but a small camera is easier to carry and is apt to be more convenient."

He suggests cartridge-loading cameras using size 110 or 126 film are satisfactory for snapshots and slides when the photographer wishes to avoid technical adjustments and settings. The largest selection of color film is available in 35 mm, the most popular slide size.

If you plan to enlarge black and white or color photos for exhibits or publications, a larger format camera producing 2½ inch square negatives is best, although 35 mm cameras can produce quality results for the person who develops and prints his or her own black and white photographs.

If you decide to invest in an expensive camera, you will be purchasing such features as a focusing device, adjustable shutter speed and lens diaphragm, interchangeable lenses and a built-in exposure meter. Breneman suggests deciding which of these features you need and buying only as much camera as your abilities and interests dictate.

For more information on purchasing both new and used cameras, the publication "Selecting a Camera," Information Service Series 19, is available free from your county extension agent or the Bulletin Room, 3 Coffey Hall, University of Minnesota, St. Paul 55108.

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IN BRIEF. . . .

Livestock Day. The annual Minnesota Livestock Industry Day is scheduled for the University of Minnesota Technical College at Waseca Saturday, March 15. Registration begins at 11 a.m. Latest trends in the livestock industry and their implications for Minnesota livestock breeders will be discussed. Guest speaker will be Fred Foreman, head of the Department of Dairy Science at Iowa State University.

\* \* \* \*

Food Prices. The U. S. isn't the only country to see higher food prices. Our food prices increased 11.9 percent from November 1973 to November 1974. But other countries also had food price hikes, according to a survey by the Foreign Agricultural Service in late 1974. Japan had the largest increase with 29.2 percent, followed by Mexico (almost 26 percent) and Italy (24 percent). Showing the smallest increases were Belgium (3.7 percent) and Germany (4.8 percent).

\* \* \* \*

Rabbit Information. A correspondence course for small herd rabbit growers and beginners planning to become large commercial rabbit producers is being offered by Pennsylvania State University.

Extension Poultry Specialist Herbert C. Jordan is the author of the lessons on management, nutrition, breeding, housing, marketing, processing and production. The course, No. 109, is available by sending a check for \$3.50 payable to Pennsylvania State University to Correspondence Courses, Room 307, Agricultural Administration Building, Pennsylvania State University, University Park, Pa. 16802.

\* \* \* \*

-more-

add 1--in brief

MSC  
2/27/74

Farm Exports. Farm exports will continue to have significant implications for Minnesotans, University of Minnesota agricultural economists say. Minnesota ranks seventh among states exporting agricultural commodities. Soybeans are by far the state's largest agricultural export commodity, followed by feed grains and wheat. Other important Minnesota agricultural exports are dairy and meat products, lard and tallow, vegetables and poultry products.

Three export markets--the European Community (EC), Japan and Canada--have been important outlets for U. S. farm products for years. Three others--Russia, Eastern Europe and the People's Republic of China--have recently emerged as promising customers. These six market areas represent \$12 billion in sales of American farm products, or 56 percent of our total agricultural products in 1974, according to the U. S. Department of Agriculture.

\* \* \* \*

Milking System. Dairymen having problems with their milking systems may want to have someone observe the milking procedure. Here are some things to watch for:

--Average milking time should not exceed 4½ minutes per cow. If it's longer than this, either improper milking equipment or milking procedures may be the problem.

--Cows should be stimulated for milk let-down by having the udder washed one minute before the machine is attached.

--Don't overmilk. A cow is being overmilked if you're getting less than one pound of milk per minute.

"At any rate, don't automatically blame the milking equipment if you're having problems," say University of Minnesota extension dairy specialists Bob Appleman and Bill Mudge. They say that in many cases, the dairyman is at the root of the problem.

\* \* \* \*

(Agents: More information is available in Dairy Update No. 13, October, 1974)

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HOME CANNING  
RESEARCH AT U

University of Minnesota food scientists are beginning the first research on home food canning to be done in the nation for the past 30 years.

Researchers in the Department of Food Science and Nutrition will be re-evaluating the currently-recommended times and temperatures for home food preservation processes.

The study will take an especially close look at processing techniques for low-acid foods. Canners must be particularly careful with such foods because of the potential for botulism food poisoning when improper methods are used.

The new research has been stimulated by an upsurge of interest in home canning. The project will be under the direction of Edmund Zottola, professor of food science and nutrition.

According to Isabel Wolf, extension specialist in foods and nutrition at the University, there is a great deal of wrong, misleading and potentially dangerous information being circulated about canning.

In fact, she points out, there have been several outbreaks of botulism in the nation during the past year due to faulty home canning--although none of the cases involved Minnesota.

Meanwhile, the University has been swamped with requests for canning information. Thousands of extension publications have been distributed and a half dozen new publications prepared in response to the demand.

"And we can only think," Mrs. Wolf says, "that as prices go up there will be more and more home canners."

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GARDEN STORE  
OPERATORS TO  
MEET MARCH 6

Garden Store Operators will meet March 6 on the University of Minnesota's St. Paul Campus for morning and afternoon sessions on current topics.

The course is being offered by the University of Minnesota's Department of Horticultural Science in cooperation with the Agricultural Extension Service, Office of Special Programs and Minnesota Association of Nurserymen.

University of Minnesota faculty and professional nurserymen will conduct the course. The success story of Grand Rapids, Mich., garden center operator Robert Tuinstra will be told at 1:45 p.m. and the current status of Environmental Protection Agency requirements for pesticides will be reviewed by University of Minnesota Extension Entomologist John Lofgren at 12:45 p.m.

For more information, contact the Office of Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul 55108.

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PESTICIDE WORKSHOP  
SET FOR MARCH \_\_\_\_\_  
(date)

Five regional pesticide workshops are scheduled throughout the state in March. The one for this area is set for \_\_\_\_\_,  
(date, location)

starting at 9 a.m.

Purpose of the session is to provide information on plant problems and pesticides to pesticide dealers, custom applicators and prospective applicators, county extension agents, vocational agriculture teachers and agricultural inspectors.

For more information, contact the Office of Special Programs, University of Minnesota, St. Paul 55108.

The course will be taught by specialists from the University of Minnesota Agricultural Extension Service and the Minnesota Department of Agriculture.

# # # #

DATES AND LOCATIONS

Marshall	Ramada Inn	March 3 & 4
Alexandria (Aerial only)	Arrowwood	March 5
Grand Rapids	Holiday Inn	March 11 & 12
Crookston	Kiehle Auditorium (U of M)	March 13 & 14
Minneapolis	Lemington Hotel	March 17 & 18

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OSHA RECORDKEEPING  
REGULATIONS AFFECT  
FEW FARMERS

Relatively few Minnesota farmers will be affected by recordkeeping regulations under the OSHA (Occupational Safety and Health Act), according to Don Siebert, assistant to the commissioner in the Minnesota Department of Labor and Industry (MDLI).

"The recordkeeping provision of the law was never intended to apply to family farms," says Siebert. "Only farmers hiring seven or more employees are required to keep records under OSHA. The only recordkeeping requirement for a farmer who hires less than seven employees is that he report any employee death within 48 hours."

Under the law, any farmer who hires either full or part-time employees must comply with the standards. However, regulations do not apply to family members, nor to neighbors who exchange work with no wages paid.

Generally, a farmer's duties under the act are to provide employees with working conditions that are free from recognized hazards that may cause death or physical harm.

The four agricultural standards of the act are:

- Anhydrous ammonia. This includes safe use of containers and equipment.
- Slow-moving vehicles. Requires that slow-moving vehicle emblems be mounted on the rear of all vehicles traveling 25 miles per hour or less on public roads.
- Pulpwood logging. Farmers who harvest pulpwood must meet prescribed environmental conditions. This includes workers' clothing and personal protection devices, first aid, hand tools such as a chain saw and explosives.

-more-

add 1--osha recordkeeping

--Temporary labor camps. This covers the environmental and sanitation aspects of migrant housing.

Siebert says inspectors will begin making spot checks on the four provisions of the act this spring.

Complete details on the standards are available by writing to the MDLI, 444 Lafayette Rd., St. Paul, MN 55101. The MDLI has taken over responsibility for OSHA enforcement in Minnesota and has four area offices located in Duluth, Brainerd, Winona and Willmar.

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USDA EXTENDS WITHDRAWAL  
TIME FOR SLAUGHTER  
ANIMALS FED DES

Livestock feeders using diethylstilbestrol (DES) will be required to withhold the growth stimulant from slaughter animals for 14 days, instead of 7, effective immediately, according to the U. S. Department of Agriculture (USDA).

Effective March 17, feeders will also be required to file a certificate stating that they have not fed DES to livestock in the 14 days prior to sale for slaughter.

"The longer withdrawal period will provide additional protection to the consumer from possible residues of DES appearing in the meat supply, and also give more protection to the producer against potential violation of the law," said Dr. Francis J. Mulhern, administrator of USDA's Animal and Plant Health Inspection Service (APHIS).

APHIS officials added the livestock industry has promised its cooperation in educating producers to the new withdrawal period.

DES is a synthetic hormone used primarily on cattle and sheep to promote growth so animals reach slaughter weight more quickly at less cost.

If not used according to label directions, DES can leave residues in slaughter animals; however, residues have been detected only in internal organs and not in muscle tissue. Federal law prohibits the marketing of meat from animals which have DES residues at the time of slaughter.

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DYNAMIC TRANSITION IN  
STATE LODGING INDUSTRY

Minnesota's industry catering to tourists and other travelers is in a state of dynamic change. New forms appear as those suited to travel of earlier years suffer obsolescence and attrition.

In a current report on the state's lodging industry, University of Minnesota Agricultural Extension Service community resource development specialists say 72 percent of Minnesota hotels in 1970 were 40 or more years old. Sixty-two percent of the state's present motels were constructed from 1945 to 1959 when travel shifted from railroads to freeways and airways. Early motels were mostly on city outskirts or open countryside, while today's motor hotels often cluster near freeway nodes and airports offering services equivalent to hotels.

Changes in travel and recreation patterns also are reflected in the state's resorts. Forty-six percent of the resorts now operating were built from 1945 to 1960, but since 1960 Minnesota resort construction has been sharply curtailed. Competition from other states and nations, interest in sightseeing and increased interest in camping are among several reasons for the construction curtailment.

Evidence of substantial attrition in the number of Minnesota resorts is suggested in resort license data from the Minnesota Department of Health. The number of licenses granted in 1966 was 3,002 as compared to 2,221 in 1973--a 26 percent reduction in seven years. In Wisconsin from 1961 to 1968, the number of resorts declined 14 percent.

"Escape from obsolescence is only possible through continual upgrading and improvement," the community resource development specialists say of the lodging industry. The study indicates that 53 percent of all firms in 1970 had undertaken major new improvements or upgrading within the past three years--with small differences among the three major types (hotels, motels and resorts).

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SHELTERBELTS SOFTEN  
BLIZZARD'S STING

Better farm shelterbelts could have prevented much of the near \$20 million loss from last January's blizzard, a University of Minnesota extension forester says.

"Many livestock deaths, building losses, snow-clogged engines and expensive snow removal operations could have been averted by more effective farm shelterbelts," says Marvin Smith, the U of M forester.

"And contrary to what many people think, it doesn't take all that long for an effective shelterbelt to develop once you've planted it. In six to eight years many shelterbelts will start to be effective."

Smith says many old shelterbelts have become too drafty to be effective. Many trees may have died, and older and taller trees may not give much protection at ground level.

Aside from cutting down on both summer and winter winds and reducing drifting, a farm shelterbelt becomes extra important from an energy standpoint. Reason? "A good shelterbelt will save fuel--up to 30 percent in many homes," according to Smith.

Soil Conservation Service (SCS) planners are available to help plan farm shelterbelts.

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STANDBY GENERATORS  
SHOULD BE WIRED  
FOR INSIDE USE

Recent winter blizzards are a reminder that reliable standby electric generating systems can be a good investment.

But some farmers learned the hard way that standby generating systems designed to work under ideal conditions may not work during a blizzard.

"Make provisions to hook up the generator inside, not at the light pole, which could be engulfed in snow during a major blizzard," advises Don Bates, extension agricultural engineer at the University of Minnesota. You may not be able to run the tractor (needed to power the generator) outside during severe blizzard conditions.

If you're going to the expense of buying a generator, wire it for inside use so snow doesn't clog the equipment. You need a well ventilated but snow free shelter for the tractor and generator.

Bates advises checking with your power supplier before purchasing or connecting a standby generator.

-jms-

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MINNESOTA FARM  
INCOME TO BE  
DOWN IN 1975

Minnesota farm income will be down significantly in 1975 due to lower crop and beef prices, a University of Minnesota extension economist says.

"Beef cow-calf producers will be hit the hardest--they're not covering costs due to lower feeder cattle prices," says Paul Hasbargen, the U of M economist. Last year it was the cattle feeder who was taking \$100 plus losses per head, this year it's the cow-calf operators, he adds.

"Crop producers will also face lower prices, although many may have better yields than 1974. Last year's yields were low due to low rainfall and early frost in some areas.

"It's too early to predict crop yields, but western Minnesota farmers will need above average rainfall to get even average yields. The combination of lower prices and prospects for lower yields again means that crops farmers in western Minnesota are facing a real cost-price squeeze.

"The bright spot in the agricultural outlook situation is hog prices," says Hasbargen. Hog producers are cutting farrowings sharply this spring and the lower pork supply will bring higher hog prices in 1975. With prices over \$40 per hundred expected for most of the year, net returns to hog producers will be higher in 1975 than 1974, Hasbargen concludes.

-jms-

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IN BRIEF. . . .

Corn Diseases. Although last fall's freeze caused corn farmers some grief, from a disease standpoint it could have been worse, a University of Minnesota specialist says. "The excellent drying weather following last fall's freeze caused the corn kernels to dry fast. As a result we had few fungus ear rot problems," says Herbert G. Johnson a University of Minnesota plant pathologist. Johnson says wet weather following last fall's freeze could have caused severe ear rot problems. This could have resulted in reduced quality and potential feeding problems from poisonous micotoxins.

\* \* \* \*

Soybean Seed. Minnesota farmers have escaped serious soybean seed quality problems in recent years, but there are always some questionable seed lots around. Herbert G. Johnson, University of Minnesota extension plant pathologist, gives farmers some tips on soybean seed treatment:

--Consider any seed lot with over 10 percent discolored kernels questionable for seed use.

--Seed that germinates 85 percent or higher will seldom benefit from fungicide seed treatment.

--Soybean seed with a germination test of 75 percent or lower is likely to improve with seed treatment. This seed should be treated if it's to be planted.

--Low germination seed caused by heating in storage will not be improved with seed treatment, Johnson says.

--Low germination soybean seed can be planted at higher rates to produce desired stands, but Johnson says seed treatment is usually cheaper and may permit you to use normal planting rates. Captan and Thiram are registered for soybean seed treatment. These are two of the most widely used seed treatment fungicides for soybeans.

\* \* \* \*  
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add 1--in briefs

Spring Chisel. Chisel plowing in spring can take the place of field cultivation. But use duckfoot shovels on the chisel plow in spring, suggests Jack True, extension agricultural engineer at the University of Minnesota. Also, do not chisel too deep. You want a shallow, wider cultivation to loosen the soil up.

\* \* \* \*

Coliform Mastitis. Here are some tips on preventing coliform mastitis from researchers who spoke at the recent National Mastitis Conference in Minneapolis:

--Keep cows in a clean area.

--Cows should calve in a clean area without sawdust, which is a prime carrier of coliform organisms.

--If you're having a coliform problem, do not use straight sawdust for bedding.

--Milkers' hands should be clean to prevent spread of the disease.

--Use a minimum amount of clean water when washing udders.

--Encourage cows not to lie down immediately after milking.

\* \* \* \*

New Fungicides. Several non-mercury chemicals are available as seed treatment fungicides, according to University of Minnesota extension plant pathologist Howard L. Bissonnette. Bissonnette says these new chemicals have given good results during the last few years of field testing. But he cautions that application rates of these new chemicals are different so be sure to check the registered use rate on the label.

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SAY CHEESE --  
AMERICANS DO IT OFTEN

The average American eats about 14 pounds of cheese a year -- about twice what he or she consumed just 10 years ago. And for Minnesota cheese fanciers, the chances are increasing that their favorite cheeses were produced in the state.

Minnesota is the second largest cheese state, producing about 300 million pounds annually compared to Wisconsin's near billion pounds. Minnesota's cheese production has about quadrupled since 1960 while Wisconsin's production is falling as more of that state's milk is marketed as fluid milk, according to Vernal S. Packard, extension dairy products specialist at the University of Minnesota.

Most of Minnesota's 25 cheese plants produce cheddar cheese, which is the most popular variety nationwide. The average American eats more than 6 pounds of cheddar, 1½ pounds of Mozzarella (pizza cheese) and 1 pound of Swiss cheese yearly. American cheese, other Italian varieties, such as Provolone and Ricotta, and processed cheeses and spreads make up the remainder of the average person's consumption.

Cheese is one of the bright spots in the dairy consumption picture, Packard says. Sales of fluid whole milk, butter, cream and ice cream have declined on a per capita basis since 1965. In addition to cheese, only low-fat milk, cottage cheese and ice milk made per capita gains.

Packard says the interest in cheese stems from rising meat prices, the popularity of pizza and cheese-flavored snacks and the use of cheese as an ingredient in other foods. Higher incomes also stimulate cheese consumption. Studies show a 10 percent jump in consumer incomes is associated with a 2 to 5 percent increase in cheese purchases.

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St. Paul, MN 55108  
February 24, 1975

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"The University of Minnesota adheres to the principle that all persons shall have equal opportunity and access to facilities and programs in the University without regard to race, creed, color, sex, or national origin."

SPECIAL SHORT COURSE SCHEDULE (March--August 1975)

- February 21-March 2 Red River Valley Winter Shows, NW Experiment Station, Crookston.+
- March 1 Meats Up-Dating Conference, Meat Science Laboratory, St. Paul Campus. This conference is for foods educators who desire to stay current on latest topics concerning meat.GW
- March 3,4,6,10,  
11,13,17,18,20,25 Consumer Housing Short Course for East Central District; Anoka, March 4, 11; Carver, March 4, 11, 18; Dakota, March 3, 13; Hennepin, March 6; Scott, March 3, 10; Sherburne, March 6, 13, 20; Stearns-Benton, March 4, 11, 18, 25; Washington, March 3, 10, 17; Wright, March 4. To provide information to consumers who anticipate building or buying a house.\*GW
- March 3-4 Regional Pesticides Workshops, Ramada Inn, Marshall, March 3-4;  
March 11-12 Holiday Inn, Grand Rapids, March 11-12; U of M Tech. Inst.,  
March 13-14 Kiehle Hall, Crookston, March 13-14; Leamington Hotel, Minne-  
March 17-18 apolis, March 17-18. Designed for pesticides dealers, custom applicators, educators and regulatory personnel. To provide information on plant and animal pest problems and pesticides. To provide accreditation for retention of pesticide applicators license.\*PS
- March 4,5,6,12 Fair Management Short Courses, Tobie's Restaurant, Hinckley, March 4; Donovan Center, Redwood Falls, March 5; Elks Club, Owatonna, March 6; Edgewater Inn, Detroit Lakes, March 12. Management principles for county fair improvement. For fair board members, fair officers, superintendents and supervisors who have responsibilities in connection with the management of county, district and state fairs.\*CN
- March 5 Aerial Applicators Pesticide Workshop, Arrowwood Lodge, Alexandria.\*RM
- March 6 Garden Store Operators, North Star Ballroom, Student Center, St. Paul Campus. Updated horticultural information and current business trends and problems. For nurserymen, florists and store operators.\*RM
- March 11-13 Home Sewage Disposal Workshop 1975, Alexandria, March 11-13;  
April 1-3 Grand Rapids, April 1-3. To update personnel responsible for enforcing sanitary codes in proper design and installation of home sewage disposal systems. Special emphasis on septic tanks and soil absorption. For county sanitarians, zoning officers, county planners, public health inspectors and building inspectors.\*PS

-more-

add 1--special short course schedule

- March 11,12,13,  
18,19 Dairy Day, Technical College Auditorium, Waseca, March 11; Murray County, Slayton, March 12; West Central Experiment Station, Morris, March 13; Northwest Experiment Station, Crookston, March 18; North Central Experiment Station, Grand Rapids, March 19. Designed for dairymen. Current research results in dairy management, breeding, nutrition and herd health will be discussed.+
- March 15 Minnesota Livestock Industry Day and Annual Meeting, Minnesota Livestock Breeder's Association, U of M Technical College, Waseca. Latest trends and issues in the Livestock Industry and their implications for Minnesota livestock breeders.\*CN
- March 18-20,24 Forest Owners and Users Conference, North Star Ballroom, St. Paul Campus, March 18; Department of Natural Resources Regional Office, Bemidji, March 19; University of Minnesota-Life Science Building, Room 185, Duluth, March 20; Olmsted County Fairgrounds, 4-H Building, Rochester, March 24. For forest landowners and others interested in management of forest lands. Alternative methods of increasing recreational, aesthetic, wildlife and timber values of forest land.\*PS
- March 18 Turf Management, North Star Ballroom, St. Paul Campus. Implications of the energy shortage on the turf industry, efficient fertilizer use, grass seed availability, minimum maintenance and quality turf.\*RM
- March 17,18,19  
20,21,31  
April 1,2,3,4 1975 Township Officers Short Course, Rochester, March 17; Waseca, March 18; Marshall, March 19; Chaska, March 20; St. Cloud-St. John's University, March 21; Brainerd, March 31; Alexandria, April 1; Detroit Lakes, April 2; Thief River Falls, April 3; Grand Rapids, April 4. Purposes: 1. Assist officers in developing a greater understanding of their roles and responsibilities. 2. Provide township officers with technical knowledge needed to carry out their duties and responsibilities. 3. Provide updated reference materials for the township officers handbook.\*GW
- March 19,21 Sugarbeet Institute, Fargo, March 19; Crookston, March 21.+
- March 24 Commercial Small Fruit Growers, North Star Ballroom, Student Center, St. Paul Campus. For commercial strawberry and raspberry growers.\*RM
- March 24,25,26 Combined Meeting Eastern Regional Biometrics Society Institute of Mathematical Statistics American Statistical Association, Classroom Office Building, St. Paul Campus. A national meeting for professional societies of the Institute of Mathematical Statistics and the Eastern North American Regional of the Biometrics Society.\*GW
- March 24,25,26 Liquefied Petroleum Gas, various locations on St. Paul Campus. A concentrated study program on the latest technical service and commercial developments in liquefied petroleum gas equipment and appliances. For servicemen and technicians in the Minnesota gas industries.\*CN

add 2--special short course schedule

- March 26-27           Beekeeping Management Short Course, Student Center, St. Paul Campus. For hobby beekeepers and all others interested in beginning beekeeping.\*PS
- April 4                Shade Tree Maintenance Conference, North Star Ballroom, Student Center, St. Paul Campus. Updated information on shade tree maintenance problems and practical information and demonstrations on maintenance techniques. For arborists, nurserymen, park administrators, landscape maintenance superintendents and all individuals concerned with shade tree preservation.\*RM
- April 8                Training for Part-time Garden Store Help, Horticulture Building, St. Paul Campus. Training seminar for part-time garden store help in customer relations and care of plants in the garden store. Offered for the first time this year.\*RM
- April 15               Nature Photography Workshop, North Star Ballroom, St. Paul Campus. Photographing natural subjects, new developments in equipment and appreciation of the world around us.\*PS
- April 18               Landscape Design Workshop, Student Center, St. Paul Campus. For landscape nurserymen, architects and sales personnel. To develop skills in home landscape design.\*RM
- April 25               World Food Needs-Challenge and Opportunity for the Upper Midwest, North Star Ballroom, Student Center, St. Paul Campus. To provide people in the Upper Midwest with a better understanding of the world food situation and the role that food producers, food processors, educators, students, and the general public can play in assuring an adequate world food supply.\*LF
- April 27-29            Minnesota FFA Convention and Leadership Conference, St. Paul Campus. To promote a learning experience for vocational agriculture students and FFA members.\*CN
- May 19-22             Minnesota State Fire School, Radisson Downtown Hotel, Minneapolis. For volunteer and paid fire department personnel, city officials and interested government and industry personnel who deal in fire safety, prevention, control and rescue and first aid work.\*PS
- June 10,11            Dutch Elm Disease and Oak Wilt, Student Center, St. Paul Campus, June 10, 11. To provide municipal tree inspectors with information concerning Dutch elm disease and oak wilt, to aid them in understanding the diseases so that they may better identify these respective diseases, their hosts, and the treatment and control programs.\*RM
- June 17                Athletic Field Turf Management, St. Paul Campus. For personnel responsible for the upkeep of athletic fields. The course will cover sod management, fertilizer rates and recommended analysis and disease control.\*RM

add 3--special short course schedule

June 24-25,  
July 10,16,17

Crops and Soils Day (also Visitors' Day), Waseca Experiment Station, June 24; SW Experiment Station, Lamberton, June 25; Morris Experiment Station, July 10; Crookston Experiment Station, July 16; Grand Rapids Experiment Station, July 17.+

July 9-10

Weed Industry Tour, Red River Valley.+

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\*For further information call Office of Special Programs

VF--Vern Freeh	(612)	373-0725
CN--Curtis Norenberg	"	"
RM--Richard Meronuck	"	"
GW--Gerald Wagner	"	"
PS--Paul Stegmeir	"	"

+For further information call the Experiment or Research Station designated.

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February 24, 1975

4-H NEWS

Immediate release

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4-H STATE SPEAKING  
PROGRAM SET FOR  
MARCH 16-18

Eighteen district winners will compete March 17 in the 1975 4-H State Speaking Program and will participate in a two-and-a-half-day educational program that starts March 16 in the Twin Cities.

Attending the state contest from \_\_\_\_\_ County will be: (Agents--fill in names and identify as county or district winners).

The program is being sponsored for the 33rd year by the University of Minnesota Agricultural Extension Service and the Jewish Community Relations Council of Minnesota. Several participants will be placed in host families from the Twin Cities Jewish community.

County and district winners will receive expense-paid trips to participate in the program. The state winner will receive a \$100 award and \$50 to purchase books for a public or school library and the second place winner will receive a \$50 award and \$25 to purchase books. District winners will receive copies of the book, "Jonathan Livingston Seagull."

The district winners will give five-to-seven-minute talks related to "improving human relations." Contestants will be judged on composition, delivery and ability to answer questions. The program is aimed at promoting human understanding, providing participants with training and speaking experiences and stimulating greater awareness of social issues. Participants will be involved in workshops on March 17. The group will meet with Judy Healy of the Joint Religious Legislative Committee, tour Mt. Zion Temple and hear the B'nai Brith Minstrels on Tuesday, March 18.

First and second place winners will be announced Monday afternoon, March 17, at the St. Paul Jewish Community Center.

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March 3, 1975

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CHANGES IN WITHDRAWAL  
REGULATIONS FOR  
DES ANNOUNCED

Anyone selling cattle weighing over 450 pounds and sheep which may end up slaughtered will be required to file a certificate stating they have not fed diethyl stilbestrol (DES) to the livestock for 14 days prior to sale.

The regulation, announced by the Food and Drug Administration, is effective March 17, 1975. The U.S. Department of Agriculture (USDA) Meat Inspection Division will enforce the regulations.

The regulation requiring a signed certificate applies to all cattle and sheep even though they may have never been fed DES, or have been withdrawn from DES within 14 days.

"This regulation has wide implications since it will affect every cattle producer selling livestock for slaughter," says Ken Egertson, extension marketing specialist with the University of Minnesota. "The reason is that the regulation applies to any type of cattle or sheep that could possibly have been fed DES and any type of cattle that could possibly go to slaughter. Potentially, that's all cattle and sheep sold," Egertson adds.

"For example, the regulation applies to cows since it is possible even though not probable, for cows to have been fed DES. Also, it is possible, though not probable, for cattle sold as feeders to end up being slaughtered," Egertson states. A certificate might be required by a purchaser of feeder cattle.

"Generally the cattle buyer, commission firm or livestock handler will present the farmer with the certificate to be signed since they in turn are obligated to furnish a certificate to the next party handling the livestock or, ultimately, to USDA's Animal Plant Health Inspection Service," says Egertson.

-more-

add 1--changes in withdrawal

What happens if your cattle buyer or livestock handler doesn't furnish you with a certificate? "I suggest that you certify on a piece of paper that the animals have either never been fed DES or that it has been withdrawn at least 14 days. Make a copy of it and send the signed statement with the cattle," suggests Egertson.

"If there's no certificate when the cattle get to market, they will either be held until the required withdrawal period is met, or the animals must be analyzed for DES residues. And this will involve additional marketing expense that could be borne by the producer," Egertson concludes.

DES residue violations found by U. S. Department of Agriculture inspectors, when verified, will be turned over to the Food and Drug Administration for possible legal action.

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March 3, 1975

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TURF MANAGEMENT  
SHORT COURSE SET  
MARCH 18 AT UM

A Turf Management Short Course will be held March 18 at the Student Center, University of Minnesota, St. Paul, for supervisory maintenance personnel of golf courses, institutional grounds, athletic grounds, home lawn care services, parks and other organizations.

Registration starts at 3 a.m. in the North Star Ballroom and the program starts at 9 a.m. with a welcome from Robert Nyland, acting head, Department of Horticulture Science at the University. James R. Watson, vice president for customer relations, Toro Co., Minneapolis, will discuss maintenance in today's economy at 9:15 a.m.

The new pesticide act, turfgrass varieties, non-maintenance areas and questions and answers are scheduled for the afternoon session.

For pre-registration and a copy of the program, contact the Office of Special Programs, 405 Coffey Hall, University of Minnesota, St. Paul 55108.

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March 3, 1975

Immediate release

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HORSEMENS' CLINIC  
SET FOR MARCH 22

A clinic for horsemen is scheduled for the University of Minnesota's St. Paul Campus Saturday, March 22.

The all-day session starts with registration at 8:15 a.m. The following topics will be discussed:

- Nutrition and parasite control related to founder and colic in horses.
- Immunization programs for horses.
- Lameness, corrective shoeing and therapeutic shoeing.
- Wounds in horses.
- Horse nutrition.

Registration is \$15 per person, with an additional \$5 for family members.

More information and preregistration forms are available by writing to the Office of Special Programs, University of Minnesota, St. Paul 55108.

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ECONOMICS RESEARCHERS  
COMPARE MINNESOTA

Minnesota's prospects for a better than average economic growth rate are good, according to a report in the recent Agricultural Extension Service publication, "Minnesota Agricultural Economist."

Authors of the report, research assistant Terri Erickson and University of Minnesota Agricultural Economist John D. Helmberger, base their conclusion in part on the state's rapid long term growth in such growth industries as electronics and other industries requiring highly skilled professional labor. Also, the record shows a greater than average rate of growth. This includes growth in total personal income despite migration out of the state as well as growth in farm income and per capita personal income.

However, growth is measured Minnesota's rate of growth is faster than the national average and the Gopher State's economy is not lagging, Erickson and Helmberger say. Minnesota's personal income increased 1,055 percent from the three-year average in 1927-29 to the three-year average in 1971-73 as compared to an increase of 1,051 percent for the United States as a whole. Of the Plain States and Wisconsin, only Kansas had a higher per capita income than Minnesota for the period from 1971 through 1973 and for 1973 alone. Average weekly manufacturing wages are greater in Minnesota than the national average and the state's manufacturing payrolls have grown faster than the national average. In Minnesota, manufacturing payrolls increased 1,424 percent between 1929 and 1972, while manufacturing payrolls nationally increased 993 percent. Of the neighboring states, only Kansas and Iowa had more rapid manufacturing growth.

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OATS MAY JOIN GREEN  
REVOLUTION WITH NEW  
RESEARCH ADVANCES

Weedy oat species may hold the key to thrust oats as the fourth cereal into the Green Revolution, according to Kenneth J. Frey, an Iowa State University plant breeder.

Frey recently gave the second annual H. K. Hayes Memorial Lecture at the University of Minnesota, St. Paul. Frey is recognized as a world leader in crop science and has contributed significantly through teaching and research on the basic problems involved in the development of superior crop varieties.

The weedy oat species A. sterilis has contributed genes in plant breeding work that may increase yield in cultivated oats by 25 to 30 percent--twice as large as the 14 percent achieved with all oat breeding resources in the Midwest from 1905 to 1950, Frey says. A. sterilis has genes that could give increases as high as 35 percent above current varieties for goat-protein, as high as 14 percent above current varieties for straw-protein and as high as 12 percent above current varieties for grain-oil.

"In my estimation, we have only begun to expose the potential that A. sterilis holds for improving cultivated oats," he adds.

-daz-

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 March 3, 1975

IN BRIEF. . . .

Cull Cows. Culling out unprofitable beef cows is one way to reduce current heavy losses in the cow-calf business. A cow-calf ratio can be used to evaluate efficiency of each cow in the herd. The pounds of total digestible nutrients needed per year for a cow to produce each pound of calf constitutes the cow-calf ratio. However, this ratio is just an estimate, so use it cautiously, advises Charles Christians, extension livestock specialist at the University of Minnesota. More information is available through your \_\_\_\_\_ County Extension Office or the Minnesota Beef Cattle Improvement Program, 101 Peters Hall, University of Minnesota, St. Paul 55108.

\* \* \* \*

Farm Income. After a year of being on the top, the farmer has dropped slightly behind his non-farm counterpart in average income. Historically, disposable personal income of the non-farm population has been higher than that of the farmer. But in 1972, farm income began a sharp upturn. By midyear, it met the average non-farm income figure, then rose above it. Last year, farm income began to drop and non-farm income began to rise. And by year's end, according to USDA's Farm Income Report, the non-farmer had moved \$48 ahead in after tax income--\$4,625 to \$4,577. In 1970, the farmer made only 73 percent as much as the non-farmer, in 1973, 13 percent more, in 1974, one percent less.

\* \* \* \*

Drying Off Cows. Probably 90 percent of our dairy cows can be dried off by abruptly stopping milking. The other 10 percent are cows that are still milking heavily and should be examined for pregnancy. "If they are pregnant, dry them off gradually with intermittent milking. If necessary, cut **back** on feed and water," advises Ralph Grant, dairy researcher at the University of Minnesota.

\* \* \* \*  
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add 1--in brief

Growing Amaryllis. A beautiful flower in the house or garden is the amaryllis. Plant the bulb in a pot with an inside diameter about an inch larger than the diameter of the bulb. There should be a half-inch space between the bulb and the inner surface of the pot. Roots must be crowded if the plant is to bloom. Use rich soil and be sure to place some small stones or clay potshards in the bottom of the pot to improve drainage.

\* \* \* \*

Care Inside. Let the upper one-third of the Amaryllis bulb project above the soil. Water lightly and store in the basement or other cool, dark place where it will not freeze until growth starts. When a bloom stalk tip or leaf tips appear at the top of the bulb, take it out of storage and place in a cool, light place. Water more frequently now, but do not overwater. Use a weak liquid fertilizer, such as 6-6-6 or 8-8-8, since high nitrogen fertilizers tend to promote vegetative growth rather than flower formation. Use fertilizer at one-tenth regular strength with each watering until the flower buds show color.

\* \* \* \*

Setting Outside. After the Amaryllis blooms have faded, cut off the stem at the bulb level, being careful not to injure the leaves. Decrease the water supply slightly. When all danger of frost is past, plunge the pot up to the rim in soil in a shaded area. Keep the leaves growing during the summer months. When there is danger of frost in the fall, dig the pot and store it on its side in the basement or other dark dry place for a period of about six weeks. The leaves will dry down and may be cut off. Flower buds are initiated inside the bulb during the rest period.

After the rest period, start the growth cycle over again by setting the pot upright and water lightly. When growth starts, place in your plant window.

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March 3, 1975

ATT: Extension Home Economists

Immediate release

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CHILDRENS' BEDROOMS--  
SPOTS FOR FUN, PRACTICALITY

If your home includes childrens' bedrooms, decorate the rooms with gay colors, whimsical accessories and original design shapes geared toward the child's age and interests, says Linda Reece, extension interior design--furnishings specialist.

She emphasizes the importance of seeing decor through the child's eyes. Hang pictures, murals, chalkboards and storage shelves at the toddler's eye level and raise them as he or she grows. A child whose world is mostly people's knees and chair and table legs will enjoy colorful objects or perhaps a mirror hung where he can see it.

Consider the floor covering in a child's room, Ms. Reece suggests. Long shag or deep napped carpeting may make it difficult for a toddler to navigate, and it certainly will hinder play with pull toys or small cars and trucks. "Area rugs or rooms that are partially carpeted and partially tiled might be good compromises between the attractiveness of rugs and the practicality of hard floors," she says.

Children enjoy bright colors, but Ms. Reece says parents can overdo a color scheme. "If four bright red walls seem jarring to adults, they will jolt children too. Select colors you can live with," she says.

Color researchers say that children associate red with carefree feelings, yellow with dependence on adults, green with steady emotions and simple, uncomplicated situations. In a child's mind, mothers are associated with pastel colors, and fathers are normally darker colors. Studies show that pale blue is calming and that it lessens activity and crying in an infant's room, but Ms. Reece says the cliché "blue for boys, pink for girls" no longer applies to nursery color schemes.

Vinyl wallcoverings will resist a young artist's crayon attacks and smudgy fingerprints. Select simple, well-built furniture that can withstand abuse and won't be resented as too babyish when the child approaches the teen years. Couches that form beds and benches that provide storage are practical dual-purpose items for any child's room, according to Ms. Reece. And don't forget a comfortable desk and chair for hobbies and homework.

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CONSUMERS BLAME  
GOVERNMENT FOR COSTS

The dizzying parade of changes and price shifts at the supermarket has consumers depressed and frightened, according to a survey completed recently by a national women's magazine. Questionnaires returned by 6,000 magazine readers revealed that most blame rising costs on the government, "inflation in general," and "big companies."

Worries over shortages and product quality ranked behind prices in the list of consumer concerns. More than 40 percent of those surveyed said they were going to the store less often and are doing more homework--ad reading, coupon clipping, meal planning--before shopping.

Another survey of consumers recently indicated that more than 20 percent of grocery shoppers go to the store "without extra money" that they might be tempted to spend. Others said they are buying fewer snacks and luxuries, fewer convenience foods, less expensive meat cuts, fewer fresh produce items and more day-old bakery goods.

Most consumers reported using nutritional information on labels, and many say they are checking out "per serving" costs to get the best buys.

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March 3, 1975

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4-H NEWS

Immediate release

4-H INTERNATIONAL  
PROGRAM DETAILS TOLD

Exciting opportunities for 4-H teenagers, volunteer leaders, Extension Service staff and others are provided through 4-H international programs.

Young people can visit the Netherlands, Germany, Italy, Switzerland, France and Belgium for 21 days starting in mid-June with the International Four-H Youth Exchange (IFYE) ambassador group experience.

Discover a new world of people, places and experiences in the IFYE Caravan program for those who have completed their junior year in high school and including 25-year-olds. Departures for Denmark, Norway, Switzerland, The Netherlands, Sweden, Costa Rica, Jamaica and Trinidad/Tobago are from mid-June through July. The IFYE Caravan includes living with a host family.

Many specialized activities including living with a host family are featured in the Adventure Caravans. Age eligibility is the same as for the IFYE Caravan. Departures from Washington, D. C., and Chicago are from June through mid-July.

For more information on the 4-H international programs, contact \_\_\_\_\_  
at the \_\_\_\_\_ County Extension Office.

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MSC  
2/22/75

IN BRIEF. . . .

Short Supply. Some of the "old standby" weed killers for small grains, such as 2,4-D amine and MCPA amine, are in short supply.

University of Minnesota Extension Agronomist Oliver Strand says this is due to a shortage of de-methyl amine and other petroleum base herbicide carriers this year.

\* \* \* \*

Before Seeding. Control as many weeds as possible before seeding small grain by using normal good tillage practices, Agronomist Oliver Strand suggests planting weed-free, certified seed of an adapted variety that is vigorous and will compete well with weeds.

Do not delay seeding just to try to kill weeds with extra tillage. Early seeding, as soon as the soil is ready, gets small grain off to a head start on weeds.

\* \* \* \*

Herbicides. Identify the weed problems--then pick the best herbicide for control. The \_\_\_\_\_ County Extension Office has details on the use of picloram (Tordon) and 2,4-D, recently cleared for use to help relieve the 2,4-D shortage. Also, get Agricultural Chemicals Fact Sheet 8, "Weed Control in Small Grains," from the county extension office for more information.

\* \* \* \*

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add 1--in brief

Herbicide Combinations. Consider using combinations of herbicides to take pressure off short supplies of 2,4-D and MCPA, Agronomist Oliver Strand says.

Control weeds early when they are small--it takes less chemical. Calibrate the sprayer and apply correctly to get the best possible job done. Empty containers and use all the herbicide you buy. Use scarce herbicides, such as MCPA, on flax or oats, where other herbicides cannot be used as safely or effectively. Use 2,4-D or other alternatives on wheat and barley.

Do not hoard herbicides since new supplies will be available in the future.

\* \* \* \*

Beef Crunch. Beef cow operators should feed their higher quality hay to growing calves and use low quality hay and more crop refuse for feeding beef cows. "With current hay prices and depressed feeder cattle prices, cow-calf operators are looking at losses approaching \$100 per cow kept on a hay ration all winter," says Paul Hasbargen, extension economist at the University of Minnesota. He suggests using lower quality feeds and crop refuse to minimize losses this year. Costs of putting up these feeds with large package bale making machines are discussed in the 1975 Minnesota Beef Cow-Calf Report, available from the \_\_\_\_\_ County Extension Office or the Bulletin Room, University of Minnesota, St. Paul 55108.

\* \* \* \*

Custom Rates. Custom work can spread the cost of expensive machines over many farms. A new publication listing common custom rates charged in 1974 is available from the \_\_\_\_\_ County Extension Office or the Bulletin Room, University of Minnesota, St. Paul 55108. Ask for Agricultural Economics Fact Sheet No. 13.

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March 10, 1975

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DAIRY INCOMES  
DOWN IN '75,  
BETTER LATER

Lower feed supplies and lower cow prices are apt to be the major factors in reduced dairy farmer profits in 1975.

Milk income may be about the same as 1974, according to Ken Thomas, extension farm management specialist at the University of Minnesota.

"Due to poorer crop conditions in 1974, many dairymen will find that they either have less crops to sell or will have to buy more feed in 1975," Thomas says. "Likewise, lower cull prices will affect sales in two ways: less culling and a lower price for animals sold."

Thomas expects manufacturing milk prices to hover around support levels--in the \$7.10 to \$7.20 range for the rest of 1975. "On the demand side, the dairy industry is not in a good position," he points out. "We have large commercial stocks on hand. The cheese market is weak and powder milk consumption is down 30 percent. Butter is a bright spot and fluid milk consumption appears to have stabilized.

"And from a production standpoint, we can expect little change. It's a coincidence that we've had a rise in cow numbers in the last six months, for the first time since 1953, due mainly to low cull cow prices. At the same time, dairymen are feeding at lower levels due to high feed costs. This results in a slower increase in production per cow, so the total supply situation is not changing."

-more-

add 1--dairy incomes down

For the next three to five years, we may see some moderation of these problems, the specialist says. "However, unlike the hog industry which adjusts rapidly to changing price conditions, the adjustments in dairying will be slow." However, Thomas expects some "modest" milk price increases and increased earnings from cull cow sales as the beef industry gets straightened out again.

Basically, "we're going to have to do a better job in the next three to five years to match earnings of the early 1970's" he adds.

But the longer term outlook is a brighter one for Minnesota dairymen. "We have a good location--in a major dairy and forage producing area. And most of our dairy units are self-contained in terms of feed supply. So if individual dairymen can achieve high management levels they will be in stronger competitive position over the long term than in most areas of the country."

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March 10, 1975

ATT: Extension Home Economists

Immediate release

MSC  
GA27P

CONSIDER COMFORT, STABILITY  
IN FURNISHINGS FOR ELDERLY

More than 80 percent of men and 70 percent of women past age 65 still live in their own homes. Living quarters and furnishings for the elderly should consider the users' reduced strength, uncertain balance, vision problems and overall alertness.

Linda Reece, extension interior design--furnishings specialist, says lounge chairs should not sink so the knees of the occupant are more than one or two inches above the hip joint. Rocking chairs help stimulate muscle action and circulation, but they should be well balanced and the rockers should not protrude far in front and back. All chairs should be stable but lightweight enough to move for cleaning.

Dining chairs and side chairs should be stable enough to support a person who is leaning on them while standing or walking. For most people, the chair seat should be 18 inches high and not more than 17 inches deep.

Bathrooms can be particularly dangerous rooms for the elderly, Ms. Reece says. Minimize hazards by eliminating insecure or dangerous gadgets such as glass shelves and towel bars and curtain rods with sharp projections. Windows, too, can pose problems if roller shades wind up too tightly and require an elderly person to stand on a chair to retrieve a cord.

Cork, brick, carpet and hone finish slate and marble are good flooring materials because they are non-skid. Thick pile carpets, small throw rugs and highly polished marble floors invite dangerous spills.

Ms. Reece says elderly people respond well to strong and bright color, and when color is used properly it can make an environment safer for those whose vision is fading. Color can emphasize changes of floor level or dangerous areas such as top and bottom steps and jogs in corridors. Light bright colors are appropriate for dark areas such as corridors.

Because elderly people need almost twice as much light as younger people, the wattage and placement of all lamps and light fixtures should be considered. Stairs and hallways should be especially well lit, and night lights leading to the bathroom are essential.

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4-H NEWS

Immediate release

WILDLIFE WEEK  
PROMPTS INTERESTING  
4-H FIELD TRIPS

Wildlife Week 1975 (March 16-22), which is underway now, offers an opportunity for 4-H'ers to start getting involved in fun-filled activities related to wildlife habitats.

Bird-watching is an interesting habitat activity that you can extend well beyond Wildlife Week. Different birds prefer different habitats. The starling, a bird common to almost every part of the country, can often be seen feeding in open areas, such as the middle of a backyard.

The rufous-sided towhee, on the other hand, is somewhat solitary. It is not found in quite as many areas as the starling, but still has a wide distribution. It is usually found in wooded spots or along lower bordering shrubs, often rustling among the leaves.

4-H groups can plan field trips to a nearby wooded area and some surrounding fields, preferably early in the morning. Take along binoculars, notebooks, pencils and a field guide. Some good books are "A Field Guide to Birds" and "A Field Guide to Western Birds," both by Roger Tory Peterson.

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8/15/75

UM VET RECEIVES  
ENVIRONMENTAL AWARD

Stanley L. Diesch, a University of Minnesota veterinary medical scientist, has been honored for contributions to a national environmental control program for feedlots.

Dr. Diesch lives at 737 Heinel Dr., Roseville.

The certificate of achievement came from the Livestock Environmental Sciences Committee, a group of extension personnel and cattlemen from the Great Plains states.

Diesch's award was based on his study of the survival of pathogens--specifically leptospires and salmonella--in animal manure. Leptospires and salmonella are zoonotic disease organisms, organisms capable of transmission from animals to humans.

Working with an oxidation ditch system for disposal of animal wastes, Diesch and his colleagues concluded that:

--there is evidence that pathogens may survive for long periods of time in a manure slurry environment. Consequently, manure effluent and sludge containing pathogens should be treated to kill the micro-organisms.

--further study should be undertaken in light of evidence that leptospires at least temporarily lose their virulence and infectiousness in a manure environment.

--because high levels of bacteria were found in the air in the animal housing unit during cleaning, workers should wear face masks and protective clothing.

The research, funded over five years by the U.S. Environmental Protection Agency, also involved agricultural engineering and public health specialists at the University.

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9/9/75

IN BRIEF. . . .

Starter Fertilizer? Well drained, high testing soils in southern Minnesota do not need starter fertilizer for corn and small grains, University of Minnesota soils specialists say. But they point out three conditions where you might expect a response from using starter fertilizer on high testing soils:

--On soils with limited drainage that are slow to warm up in May and June.

--In northern Minnesota where soils may be cool regardless of texture or drainage.

--High soil pH accompanied with wetness, or low organic matter soils during cold springs.

And on soils that don't test high, starter or broadcast fertilizer is usually needed.

\* \* \* \*

Sheep Publications. Two new sheep publications are available free through the \_\_\_\_\_ County Extension Office. They offer guidelines on selecting a profitable breed of sheep and tell how to operate a profitable lamb enterprise under today's conditions. Ask for Extension Folder 307, "Selecting a Profitable Breed of Sheep," and Extension Folder 306, "Economic and Management Considerations for Lamb Production with \$4 Corn." The new publications are also available from the Bulletin Room, University of Minnesota, St. Paul 55108.

\* \* \* \*

Farm Exports. U. S. farm exports of \$22 billion set a new record last year. It was the fifth consecutive year that new records have been made. Farm exports for the year exceeded imports by \$11.8 billion--a record agricultural trade balance. It helped offset the U. S. trade deficit of \$14.8 billion in non-farm products, reducing the overall deficit to \$3 billion.

\* \* \* \*

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~~add~~  
add 1--in brief

Valuable Refuse. Higher feed prices make it more economically feasible to harvest low quality feeds such as corn refuse for beef cows. "If hay remains over \$30 per ton, corn refuse will be a competitive feed on most corn producing farms," says Paul Hasbargen, extension economist at the University of Minnesota. "Everyone is losing money on beef cow operations this year, but you can reduce losses by using crop refuse to replace most of the higher priced hay in the ration," he adds.

More details are contained in the 1975 Minnesota Beef Cow-Calf Report, available from the \_\_\_\_\_ County Extension Office or the Department of Animal Science, University of Minnesota, St. Paul 55108.

\* \* \* \*

Solar Energy. Solar energy for grain drying "May have considerable promise," a University of Minnesota agricultural engineer says. However, cost of building a collection apparatus to capture solar energy makes economic feasibility "questionable at this time," adds Vince Morey. However, that could change if energy becomes more expensive and the cost of producing collectors goes down. Last year researchers at the University's Lamberton Experiment Station dried 3,000 bushels of grain, using a solar collector to preheat the air going into the dryer.

"One factor affecting the economic feasibility of solar drying is the comparatively short period of time during the year in which the collector can be used for grain drying," says Morey. "Because use can be spread over a longer period, solar energy for heating and cooling of homes, commercial and industrial buildings may soon become feasible," he adds.

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PRACTICE CREATIVITY  
AND STRETCH DECORATING  
DOLLARS

Don't bemoan the fact that inflation's pinch may postpone plans to buy new furniture or redecorate an eyesore room. Use it as an excuse to exercise your creativity, suggests Linda Reece, extension interior design-furnishings specialist.

Psychologists say the mark of creativity is the ability to come up with new, workable ideas when faced with a problem. Everyone has a spark of creativity, Ms. Reece says, but it may have grown dim through disuse.

Learning to do more with less is a challenge, and the creative person can't be timid in trying new ideas and techniques to see what they produce. Ms. Reece says the creative approach to decorating requires flexibility and a willingness to experiment. "Don't ever get 'boxed in' by what you or your neighbors have always done," she advises.

Decorating accessories are a good place to begin exercising your creativity. Ms. Reece suggests making pillows from stitchery projects, handwoven pieces or colorful fabric scraps. Cut-up plastic bags or nylon stockings in a muslin lining make good stuffing. Small, inexpensive area rugs can be folded, stitched and stuffed for floor pillows.

Giant pillow-like bean bag chairs are popular for casual lounging, and Ms. Reece says even a novice seamstress can make one from about three yards of fabric, a zipper and about eight cubic feet of filling material.

Or try an eye-catching wall hanging from a remnant of printed fabric stretched over a wooden frame or wood dowel. Even your ceiling has decorating potential, she says. Hang kites, model airplanes or mobiles made from scraps, shells or colored plastic.

Curtain prices got you down? Make them out of inexpensive muslin or ticking or permanent press sheets. Personalized trim such as stitch-ons, press-ons, crayon drawings or embroidery can complement the room's color scheme and motif.

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March 17, 1975

4-H NEWS

Immediate release

APPLICATIONS SOUGHT  
FOR 4-H COURSE IN  
CITIZENSHIP

Applications are being accepted at the \_\_\_\_\_ County Extension Office for the 1975 Citizenship Short Course which will be held this summer at the National 4-H Center in Washington, D.C.

The six-day course is conducted by the National 4-H Foundation to supplement citizenship training provided on the state level. Young citizens attending the course are helped in realizing their potential as an effective participant in a democratic system of government. The course includes citizenship discussions at the center followed by educational tours of the National Capitol.

Five groups of Minnesotans will go to the course starting June 28. Other groups will attend in successive weeks running through Aug. 2.

The course is open to 4-H teens. Local firms and individuals sponsoring trips include \_\_\_\_\_.

For more information on the Citizenship Short Course, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

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March 17, 1975

4-H NEWS

Immediate release

11-2  
9/12/75

4-H ADULT LEADERS  
TO ATTEND DC FORUM

More than 50 Minnesota 4-H adult leaders will attend the 4-H Leader Forum  
March 22-29 at the National 4-H Center in Washington, D.C.

Attending from \_\_\_\_\_ County are: (agents, add in local names and  
addresses).

The forum is designed to help leaders increase their understanding of  
youth and their needs and strengthen their program development skills. Group  
discussions, speeches and tours are among the activities the group will  
participate in during the week.

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First In Series

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ZA27p

SOME RULES NEEDED  
FOR CHILD DISCIPLINE

Most people will agree that child discipline is necessary, but there is considerable confusion over what discipline really is, says Ron Pitzer, extension family life specialist at the University of Minnesota.

Discipline is NOT punishment, he says. Nor is it passively watching a child learn through trial and error.

Rather, Pitzer prefers to define discipline as any kind of effort aimed at helping the child learn to deal with demands from his environment that go against his own wishes or feelings.

"The aim of discipline," he adds, "is not to cut down on a child's freedom but to give him freedom within limits that he can manage."

There are three disciplinary schools of thought: the rigid "beat him while you can" approach; the laissez-faire "keep your hands off the little darling" approach; and the developmental discipline approach.

For the rigid disciplinarian, Pitzer warns that "the parent who beats evil out of his child is not beating good into him." And there is considerable evidence that such an extreme approach can have damaging psychological effects on both child and parent.

At the other extreme, the major criticism of the totally permissive approach, he says, is its failure to consider that human beings are social creatures who must consider the feelings and rights of others. It can and does lead to lack of respect for other people and property.

Pitzer believes the developmental discipline approach is best. He describes it as a democratic philosophy under which the child is recognized and respected as an individual. It falls between the extreme schools of thought.

"It is rather obvious," he says, "that children do not know what is approved behavior unless someone tells them. We simply must have rules for them to follow."

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Second In Series

MSC  
ZAGP

CHILD MISBEHAVES?  
TRY TO UNDERSTAND

Ron Pitzer, extension family life specialist at the University of Minnesota has a favorite story for introducing a discussion of why children misbehave.

"If we find that a table in the house is wobbly and doesn't behave as it should," the story goes, "we try first of all to see what is causing its faulty behavior.

"We need to do the same with our children -- try to understand reasons for misbehavior before taking action."

The important point is that behavior is caused, Pitzer says, and misbehavior for different reasons must be treated differently.

What are some reasons why well-adjusted children misbehave?

One is that children do not know and understand what they should and should not do. For example, a three-year-old may squeeze a kitten too hard, not to be mean but as an innocent gesture of love.

Second, children do the wrong thing when placed in situations too difficult for them to handle. An example? When a group gets restless during story-time because the story is too long or too complicated.

Third, a youngster may do wrong because he is hurt, angry or afraid. Or misbehavior may result when a child is ill, unduly tired or hungry.

The problem is that when adults don't understand such causes, they know neither how to prevent misbehavior nor how to interpret it nor how to deal constructively with it.

As a result, Pitzer explains, children may be punished because the adult didn't properly plan the child's activity. Or because the adult didn't understand the child's normal age level characteristics. Or because the adult didn't know how to stop the undesirable behavior or redirect it.

"Unless we can put ourselves in a child's place, sense how he feels, and see how things look through his eyes," says Pitzer, "we cannot understand that child's behavior."

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Third In Series

MSC  
JAS-7p

FOSTER DECISIVENESS  
IN CHILD REARING

Little Jimmy is busy at play when he is told it is time for bed. He responds with a decisive "NO!"

Do you: a) tell him to get into bed immediately unless he wants the walloping of his life; b) say nothing at all and proceed to clobber him; c) let him stay up as long as he wants; or d) tell him he has five minutes, to come and sit with Mommy or Daddy, and when the five minutes are up insist on bedtime?

The last alternative may be the best in such a situation, says Ron Pitzer, extension family life specialist at the University of Minnesota.

Indeed, he points out, having a child angrily say "no" is not necessarily a negative situation. It may be a constructive opportunity for encouraging what Pitzer calls decisiveness in a youngster.

"Well-disciplined children have minds of their own," he says. "This may sound strange. But obedient children don't necessarily grow into independent adults. Decisive children do. They don't falter. They put their principles into practice."

That doesn't mean a child must always have his or her own way. But, says Pitzer, adults can still respect the child's use of "no" and try to understand the logic in the child's point of view.

It will not lessen a parent's authority to listen to a child's protests once in a while and to inquire into his feelings and thinking, he adds. Children go through developmental phases in which they need to disagree with their parents in order to define their own personalities. A parent's acceptance of a child's right to disagree also helps the child understand the importance of extending such rights to other.

"Parents who sometimes allow a child to say "no" are not wishy-washy," Pitzer says. "It's strange, but the parents who most respect a child's "no" are frequently parents who are least afraid to say "no" themselves."

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Fourth In Series

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"LABELING" CHILDREN  
CAN BE DANGEROUS

In an experiment, 12 psychology students were each given five rats of the same strain. Half the students were told their rats had been bred for skill in running a maze. The other half were told that, for genetic reasons, their rats could be expected to be poor at running a maze.

From the beginning, the rats which were believed by their handlers to have the higher potential did actually perform better. The others made poor progress and sometimes failed even to start the maze.

The only difference between the rats lay in the attitudes of their trainers. It is a classic example of a self-fulfilling prophecy. And parents can run the same risk with their children, says Ron Pitzer, extension family life specialist at the University of Minnesota.

Do you believe you have a naughty child? Or do you believe you have a child who sometimes does naughty things? There is a subtle but vital difference.

"Your expectations and images affect your perceptions," Pitzer says. "If you perceive a child as naughty, you will see naughtiness and overlook or discount his non-naughtiness as being temporarily out of character."

Do you indirectly convey to your child the impression that you expect him to be good, or that you expect him to misbehave at the first opportunity?

Whether the label is "naughty", "timid", "lazy", "rude" or "stubborn", the danger is the same. The label may become a self-fulfilling prophecy which then reinforces the label. Then there is no need to look closely at why a child is actually misbehaving and the parent may become dangerously authoritarian.

"It becomes," says Pitzer, "a self-defeating pattern."

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RULES FOR CHILDREN:  
FEW AND SPECIFIC

Vague reproaches to children are wasted words, says Ron Pitzer, University of Minnesota extension family life specialist. Rules must be concrete.

"Parents," he says, "must let the child know exactly what behavior is out of order and do so as specifically as possible in words the child understands."

For example, a youngster may easily understand when told not to run in the house but may be confused by a general command to "keep still." Does that mean he can't say a word or twitch a muscle?

Further, says Pitzer, the rules established by parents should be restricted to a few important ones. If there are too many rules, a child can't judge the crucial ones for a given situation and may proceed to ignore them all.

At the same time, parents must be consistent and predictable in enforcement of rules.

"If much of his parent's behavior is consistent and predictable, the child feels secure," Pitzer says. "But if his parents are unpredictable, the child feels constantly anxious.

"Every time a rule is not enforced, the child's anxiety rises. Then the child doesn't really learn what the rules and principles are and he may become a master at manipulating his parents."

In other words, he explains, make as few demands on the child as possible, but follow through consistently on them.

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Sixth In Series

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PARENTS: DON'T DISAGREE  
IN CHILD'S PRESENCE

FATHER: "You're too strict with Joey. After all, he's just a little boy."

MOTHER: "I'm not too strict. You baby him!"

That, says Ron Pitzer, extension family life specialist at the University of Minnesota, is not an unusual dispute. While not necessarily bad, it can be dangerous.

"It is good for a child to be able to rely on both parents, each for different things and in different ways," he says. "Diversity of opinion and style at home helps prepare a child for the larger world where he will have to deal with many different kinds of people."

"But parents who squabble and get into fights over the children's upbringing can confuse children and lead to children playing parents off against each other."

Too often, Pitzer says, parents say "I" instead of "we". Parents can effectively share responsibility in child-raising and still respect each other's rights. In fact, such respect between parents is really a precondition for respect of the child's rights.

It is to everyone's advantage, he adds, when each parent lets his or her mate find his or her own style with the children.

For example, not every father may feel comfortable playing with children, and that ought not be essential. "What is necessary," Pitzer says, "is that parent and child discover something they can do together enjoyably."

If parents disagree, he adds, those disagreements should be thrashed out when the children aren't around.

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PRACTICE WHAT YOU  
PREACH TO CHILDREN

There is a cartoon showing a father giving his son a paddling and shouting, "I hope this teaches you not to go around hitting your brother!"

Which is a negative way of stating the old proverb that "good example is half a sermon" and the old saw advising us to practice what we preach.

In fact, says Ron Pitzer, extension family life specialist at the University of Minnesota, "practice what you preach" may be the most valid and important rule of all for parents.

Children are great imitators who choose as models those closest to them and those who appear most powerful and important. "Consequently," Pitzer says, "parents can teach their values if they live them."

In other words, the parent who screams at a child to keep quiet--like one who spanks for hitting, or cheats his business associates and then punishes a child for cheating--is not the most effective parent.

At the same time, Pitzer says, it is important for parents to let their children know what they believe in--to preach what they practice.

That does not mean, he adds, that a parent should say "you must believe this". It does mean the parent should say "I believe this, and, believing this, these are my limits and I cannot allow certain things to happen."

Far from being an authoritarian dictation of values, Pitzer argues, such an approach will facilitate a child's development of his own values.

"Without a body of received values," he says, "a child has no way of distinguishing the relative or absolute worth of any."

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Eighth In Series

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PARENTS' FEELINGS  
COMMUNICATE

"Your mouth says you love me," a little boy once told his mother. "But your eyes say you don't."

Indeed, says Ron Pitzer, extension family life specialist at the University of Minnesota, in relationships with other people it is impossible not to communicate.

A raised eyebrow, a frown, a slammed door, a kiss and even silence--all are communication. And, as was the case with the little boy, frequently there is a conflict between messages.

"The spoken word may say one thing, but nonverbal behavior may say something else," Pitzer explains. "And it appears that when nonverbal information contradicts verbal information, the nonverbal wins out."

The problem can be acute for parents. Children are extremely sensitive. Sometimes a parent's nonverbal message encourages behavior that is verbally prohibited--when a child is doing something cute but wrong, for example.

Sometimes it is the other way around--for example, when a parent trying to be permissive gives verbal approval but nonverbal disapproval.

The result, says Pitzer, is putting the child in a double bind in which he can't obey one message without disobeying the other. For the youngster, it is frustrating and uncomfortable and can lead to a psychological problem.

Equally as serious, a child who constantly receives mixed messages from a parent may develop grave doubts about that parent's honesty.

Perhaps the best defense, Pitzer says, is for parents to never forget that true feelings can seldom be hidden from a child.

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CHILDREN NEED  
ATTENTION, PRAISE

Punishment of a child's misbehavior is far more effective when good behavior is just as clearly rewarded, Ron Pitzer, extension family life specialist at the University of Minnesota says.

"It is altogether too easy to take goodness for granted and to respond only to misbehavior," he points out.

The key, then, is contrast. Verbal labelling of "goodness" and "badness" is not enough. The child must feel a difference in the way parents react to his behavior.

"Used judiciously," Pitzer says, "a firm scolding is usually just as good as-- or better than--physical punishment if the child is convinced that his parents really are unhappy with him.

"But there must be contrast. If a child is constantly hounded, he does not know what it feels like to be approved. If parents find themselves always nagging, they should hunt for something to approve or praise."

One of the most powerful rewards is attention. "If this is produced by good behavior," Pitzer adds, "then misbehavior will tend to die a natural death."

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Tenth In Series

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CHILD PUNISHMENT  
GUIDELINES GIVEN

Punishment is only part of effective child discipline, but when it is needed, parents ought to keep several rules of thumb in mind, according to Ron Pitzer, extension family life specialist at the University of Minnesota.

First, punishment must be adapted to the individual child, his age, his personality, his ability to understand and to what he has done.

Second, punishment barely sufficient to get the desired result is more effective in the long run than severe punishment.

Third, punishment is most effective as a teaching device when applied just when a child is beginning a disapproved act. Then he derives guilt feelings merely for being tempted.

Finally, the more love-oriented the control is, the more effective it will be in developing the child's conscience.

Among the traditional techniques are:

--isolation: this stops the bad behavior and indicates its undesirability. It gives the child a chance to calm down.

--depriving: this can be meaningful punishment but only if the child can see a logical relationship between the forbidden behavior and the penalty he pays.

--spanking: keep in mind that this might be best regarded as a last resort, perhaps only in emergency situations, since indications are that children who are frequently severely punished can become either apathetic or dangerously aggressive.

--ignoring or shaming: remember that while it may achieve results for the moment, it may cause social-emotional problems later if the child feels he is losing your love.

Punishment--2

--making amends: remember the child's age and development. It is a waste of time to force a youngster to apologize before he is old enough to feel sympathy.

If possible, Pitzer says, misbehavior should be handled without punishment. Better weapons against misbehavior during later childhood include clear explanations of right and wrong coupled with strong approval of the "right" things a child does in his earlier years.

"Don't", he cautions, "place great emphasis on punishment until you're sure your child is capable of intentionally misbehaving.

"And when you must punish, try to remain calm and unruffled no matter how exasperated you might be. It's enough for your child to have to deal with his own upset feelings."

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CHILDREN ARE  
NOT ADULTS

Sometimes, says Ron Pitzer, extension family life specialist at the University of Minnesota, parents must remind themselves that children are not adults.

For example:

--do you expect your child to be quiet and not disturb the family? Or do you keep in mind that since little children don't realize how much noise they are making, it helps if adults can learn to shut their minds to some noise.

--do you expect your child to stay neat and clean? Or do you remember that sometimes parents can push cleanliness too far. A child cannot understand degrees of dirtiness or realize the work involved in doing laundry.

--do you expect you expect your child to be grown-up and not act like a baby? Or do you remember that the child may be little more than a baby.

--do you expect your child to understand everything you say to him? Or do you remember that children really have two sets of words--one they say and the other they understand. Just because a child can talk doesn't mean he can understand.

The point, says Pitzer, is that "when a child outgrows his clothing, his parents may express disappointment that he is growing so fast and is no longer their little baby."

"But on the other hand, the same parents may expect that child to exhibit grown-up behavior."

"We must always ask ourselves, 'do we expect too much?'"

MSC  
9A27P  
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Department of Information  
and Agricultural Journalism  
Agricultural Extension Service  
University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
March 19, 1975

Last In Series

PARENTS CAN  
HELP CHILD  
CHANGE RULES

When a child is between eight and ten years old, a major change occurs: he begins to question whether rules are fair.

That, says Ron Pitzer, extension family life specialist at the University of Minnesota, is both natural and essential. It is a sign that the growing child is becoming aware of what it means to have a sense of fair play.

"My point," he explains, "is that it sharpens a child's sense of fair play to encourage his questioning, to let him state his point of view, and to raise other points for him to think about."

There is evidence, he says, that children from families who take that course of action are children whose approach to rules is more reasonable and respectful.

Children do outgrow rules and parents must use common sense to decide when rules must change. Generally, says Pitzer, that time comes when a child is between eight and 11. In fact, parents can help children set rules for themselves.

"Rules can change unless they are the basic standards of honesty and respect for life," Pitzer says. "It's the principle of 'being fair' that stays the same."

-bd-

Department of Information  
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University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
March 24, 1975

Immediate release

MOSQUITO CONTROL  
CLAIMS NEED CLOSE  
EXAMINATION

With the mosquito season just around the corner, be careful about claims made for mosquito control by purple martins, bats and various mechanical devices, says David M. Noetzel, University of Minnesota extension entomologist.

Purple martins are beautiful birds and are largely or wholly dependent on man for nest sites. So people should be encouraged to establish martin houses and take care of the houses once they are erected. However, the presence of martins will not provide mosquito control as stomach analysis of the bird indicate the virtual absence of mosquitoes in their diet. We might assume this is the case since martins gather their food in the daytime usually some distance from the ground. Mosquitoes tend to be nocturnal and their flight is usually within 25 feet of the ground.

Bats also are found not to consume mosquitoes. Their flight time coincides with mosquito flights to some degree as do their foraging territory. Yet stomach analysis of bats also reveals that mosquitoes are not present. In both the case of purple martins and bats, the prey tends to be larger sized than mosquitoes.

Each year various mechanical devices are advertised as providing mosquito control. One of these devices is the black light (ultraviolet) trap. Such traps collect huge numbers of insects including some mosquitoes, but the traps draw insects into the area where the trap is hung and higher populations will often occur near the trap. If one chooses to purchase such a trap, which we don't recommend, he should give it to his neighbor so insects are drawn by the light from his yard to his neighbor's yard, Noetzel adds.

More recently sound devices have been marketed which are claimed to repel the female (biting) mosquito. Limited testing of the sonic devices in natural environments show them to be of no measurable value.

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March 24, 1975

Immediate release

NEW FLAX  
VARIETY  
RELEASED

A new flax variety named Culbert that is resistant to all races of flax rust found in North America has been released.

"Culbert combines immunity to flax rust with good field performance," says Verne E. Comstock, University of Minnesota agronomist. "Two new races of flax rust were found in the Dakotas and Minnesota about two years ago. One or both of these races will attack all of the best flax varieties except Linott. Culbert provides a second source of resistance to these races for flax producers in the three states."

The three states are the major flax producing area in the nation. Flax is made into linseed oil, which is used in paints as a drying ingredient. Linseed oil-based exterior paints on wood surfaces withstand weathering and help prevent cracking, checking and adhesion failures. Linseed oil coatings have also been effective in preventing salt solutions from entering concrete surfaces, thus protecting concrete highways.

Culbert was developed and tested as C.I. 2776 and is being released jointly by the Agricultural Experiment Stations of Minnesota, North Dakota, South Dakota and the U. S. Department of Agriculture (USDA). The variety is named for J. O. Culbertson, long time USDA flax researcher.

Culbert is an early maturing variety with high yield, excellent wilt resistance and fair pasmo tolerance. In nine Minnesota tests over a three-year period, Culbert yielded about 5 percent more than Linott when seeded early. With late seeding, yields of the two varieties were about the same.

Foundation and registered seed is being distributed to seed growers in 1975. Certified seed will be available for commercial flax production in 1976.

# # # #

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March 24, 1975

Immediate release

LIVESTOCK GROUP  
ELECTS OFFICERS

Lyle Stephenson, Rose Creek, was elected president of the Minnesota Livestock Breeders' Association at their 79th annual meeting held recently at the University of Minnesota Technical College-Waseca.

Norris K. Carnes, St. Paul, was elected first vice-president and James Bryan, Red Wing, was named second vice-president. Raymond Palmby, Lakefield, was elected secretary-treasurer.

James Foss, Kenyan, and Paul Pierson, Lake City, were elected to the executive committee. Other members are Stephenson, Carnes, Bryan, and Palmby.

Members elected or re-elected to the board of directors included Stanley Campbell, Utica; Wayne Dobblestein, St. Charles; Arthur Sprengeler, Plato; John Volz, Elmore; Russel Wirt, Lewiston; Gerald Marstaeller, Taylors Falls; Donald Schroeder, Courtland; Donald Jergens, Hutchinson; Paul Pierson, Lake City; John Kvasnicka, Owatonna.

Also, James Foss, Kenyon; William B. Williams, Rochester; Frank Duerst, Lyle; Morris Mitchell, Westbrook; William Schulke, Jr., Bemidji; Guy Giesman, Jackson. Also Donald Scheid, Delevan; Raymond Stevermer, Easton; Keith Thurston, Madelia; Gordon Flickett, Forest Lake; David Luhman, Goodhue.

The association's annual meeting was part of activities for the annual Minnesota Livestock Industry Day.

# # # #

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Tel. (612) 373-0710  
March 24, 1975

For Release  
March 26, 1975  
or thereafter

NEW HIGH PROTEIN  
WHEAT DEVELOPED

A new high protein semidwarf wheat variety named Kitt has been developed by the University of Minnesota and the U. S. Department of Agriculture (USDA).

"The greatest advantage for Kitt is its superior wheat protein, bake absorption and loaf volume compared to Era and other hard red spring semidwarf varieties grown in Minnesota," said Robert E. Heiner, wheat breeder with the U of M and USDA.

"These characteristics are important to the bread baking industry. Usually the price paid for wheat is higher for higher protein content, so farmers may get a higher price for Kitt than some other semidwarf varieties," Heiner added.

Heiner describes Kitt as a "semidwarf, awned, yellow chaffed, midseason maturing hard red spring variety. Like most other semidwarf varieties, it has good lodging resistance. Test weight of Kitt has been lower than Chris and Era, but similar to Bounty 208."

In recent years, semidwarf varieties, especially Era, have taken over most of the hard red spring wheat acreage in Minnesota. Era, also developed by UM and USDA researchers, is grown on 65 percent of the spring wheat acreage in Minnesota and contributes over \$208 million in farm income per year.

"Kitt is higher yielding than standard height varieties and most semidwarfs," according to Heiner. "Kitt and Era produce about the same under optimum growing conditions, although Era has a yield advantage under less favorable conditions. Kitt is slightly better adapted to northwestern Minnesota than other parts of the state.

"Kitt produced about 10 percent more protein per acre than Era when we compared them on the basis of yield and protein percentage. Era averaged 52 bushels per acre and 13.0 percent protein; Kitt 50 bushels and 14.8 percent protein.

add 1--new high protein

"In the Red River Valley where both varieties yield about the same, Kitt's advantage is even more. In actual pounds of protein produced per acre, Kitt has a 44 pound advantage. So the potential advantage of Kitt over Era in Protein production would be 71.7 million pounds of protein if it were grown on the same acreage as Era."

Kitt is resistant to prevalent races of stem rust and more resistant to leaf rust than Era or Chris, according to Donald McVey, stationed with the USDA Cereal Rust Laboratory in St. Paul. And Kitt is tolerant of ergot, loose smut and most other foliage diseases, according to Roy Wilcoxson, University of Minnesota plant pathologist. However, these diseases may sometimes be found on Kitt in trace amounts under ideal conditions for the disease, he adds.

Kitt was named for Kittson County, an important spring wheat producing county of Minnesota. Foundation and registered seed is being distributed to seed growers in 1975 and certified seed of Kitt will be available in 1976.

# # # #

CA, IA, FC

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Tel. (612) 373-0710  
March 24, 1975

Immediate release

IN BRIEF. . . .

Marketing Strategy. With low carryover on all stocks and reduced acreage on corn and soybeans, markets will continue unsettled, according to Extension Economist Will Anthony of the University of Minnesota. Anthony says it continues to make sense to contract on some new crop corn and soybeans when prices move above what could be expected with average yields. These price expectations are from \$2.25 to \$2.50 a bushel for corn and from \$5.25 to \$5.50 a bushel for soybeans.

\* \* \* \*

Planting Intentions. Minnesota farmers intend to plant less corn, spring wheat, soybeans, potatoes and dry beans, but more oats, barley, durum, flaxseed and sugarbeets this year than in 1974. These were the results from the March 1 Acreage Survey conducted by the U. S. Department of Agriculture.

University of Minnesota Extension Economist Will Anthony says based on the March 1 report the corn market looks relatively bullish. But he grades the soybean market "qualified bearish." The reason: Grain traders had predicted farmers would be decreasing their soybean planting intentions fairly significantly from the January 1 intentions. The intentions for decreasing soybean acreage, as indicated by the March 1 report, were not all that great.

\* \* \* \*

Yield Predictions. Predicting '75 crop quantities from the March 1 planting intentions report is difficult. But Extension Economist Will Anthony of the University of Minnesota says with average yields we could be looking at a 1.5 billion bushel soybean crop for 1975.

For corn, it would be 5.6 billion bushels with average yields.

\* \* \* \*

-more-

add 1--in brief

Low-Cost Crops. Economist Will Anthony notes a striking shift in planting intentions from high-cost crops, such as corn and soybeans, to low cost crops, such as barley and oats.

The University of Minnesota economist says Minnesota's barley acreage is expected to be more than a million acres--up 44 percent from last year. Expected oat plantings are more than two million acres--three percent more than last year.

\* \* \* \*

Seeding Forages. The most important step when seeding forages this spring is to make sure you've selected a forage species that is adapted to local conditions. A new University fact sheet on forage mixtures is available at the \_\_\_\_\_ County Extension Office, as are many other publications.

\* \* \* \*

AK-SAR-BEN Results. A team of University of Minnesota, St. Paul, students took top honors recently at the Ak-Sar-Ben Meat Animal Evaluation Contest in Omaha, Nebraska.

University animal scientists Jay Meiske, Gene Allen, Jerry Hawton, Chuck Christians and Dick Epley received the American Meat Institute Challenge Trophy and a plaque from the Knights of Ak-Sar-Ben. The animal scientists coached the Minnesota team.

# # # #

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ATT: Extension Home Economists

Immediate release

MSC  
JAG-74

**MICROWAVE OVENS —  
HOW SAFE ARE THEY?**

Microwave ovens offer amazing cooking speed, and, according to the Food and Drug Administration, their safety record also is impressive. They report there have been no cases of radiation injury stemming from microwave ovens that were used according to manufacturer's instructions.

All ovens found in stores today carry a certification stating that they comply with Federal radiation standards. If you own a microwave oven made before the standards went into effect in October 1971, the FDA suggests you have your oven tested for radiation emission.

For safe use of any brand of microwave oven, follow these tips:

- . Examine it for evidence of shipping damage as soon as you get it home.
- . Follow manufacturer's instructions for use and care.
- . Clean door, seals and oven interior with water and a mild detergent. Grease around the door seal can interfere with proper door closure. Never use scouring pads or other abrasives.
- . Never tamper with oven safety interlocks.
- . Don't operate an empty oven.

If you already own a microwave oven or are considering buying one, you may want to send for "Microwave Ovens" from the Consumer Information Center of the General Services Administration, Pueblo, Colo. 81009. It is also available at Federal Information Centers throughout the country.

Your county extension home economist has HE fact sheet 29 "Selecting a Microwave Oven," HE fact sheet 35 "Heating with Microwaves," and folder 293 "Using Microwave Ovens." These publications also are available free from the Bulletin Room 3 Coffey Hall, University of Minnesota, St. Paul 55108.

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March 24, 1975

4-H NEWS

Immediate release

4-H SETS WORKSHOP  
FOR CAMP STAFF

Training for 4-H camp staff members in this area will be held \_\_\_\_\_ at  
(dates)

\_\_\_\_\_ near \_\_\_\_\_.  
(camp) (town)

The workshop is being offered by 4-H Youth Development at the University's Agricultural Extension Service to help develop an understanding of camping, young people and the roles and responsibilities of various camp staff members.

Special interest sessions include campfire programs, inspirational activities, nature programs, environmental activities, recreation, song leading and evening programs.

4-H junior leaders interested in serving as counselors this summer should contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

-daz-

Agents--locations and dates--Silver Lake Camp, April 10-12

Bald Eagle Center, April 24-26

Shores of St. Andrew, May 1-3

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St. Paul, Minnesota 55108  
March 25, 1975

"The University of Minnesota adheres to the principle that all persons shall have equal opportunity and access to facilities and programs in the University without regard to race, creed, color, sex, or national origin."

SPECIAL SHORT COURSE SCHEDULE (April--September 1975)

- April 1-3 Home Sewage Disposal Workshop 1975, Grand Rapids, April 1-3. To update personnel responsible for enforcing sanitary codes in proper design and installation of home sewage disposal systems. Special emphasis on septic tanks and soil absorption. For county sanitarians, zoning officers, county planners, public health inspectors and building inspectors.\*PS
- April 1,2,3,4 1975 Township Officers Short Course, Alexandria, April 1; Detroit Lakes, April 2; Thief River Falls, April 3; Grand Rapids, April 4. Purposes: 1. Assist officers in developing a greater understanding of their roles and responsibilities. 2. Provide township officers with technical knowledge needed to carry out their duties and responsibilities. 3. Provide updated reference materials for the township officers handbook.\*GW
- April 2-4 Planning in Minnesota-Action or Reaction, Holiday Inn Downtown, Rochester. The objectives of this conference in promoting the concept of planning in Minnesota are to identify the current issues in state and regional planning, review laws and enabling legislation concerning planning and zoning and to identify ways and means of coordinating planning with other governmental agencies at all levels.\*CN
- April 4 Shade Tree Maintenance Conference, North Star Ballroom, Student Center, St. Paul Campus. Update information on shade tree maintenance problems and practical information and demonstrations on maintenance techniques. For arborists, nurserymen, park administrators, landscape maintenance superintendents and all individuals concerned with shade tree preservation.\*RM
- April 8 Training for Part-time Garden Store Help, Horticulture Building, St. Paul Campus. Training seminar for part-time garden store help in customer relations and care of plants in the garden store. Offered for the first time this year.\*RM
- April 15 Nature Photography Workshop, North Star Ballroom, St. Paul Campus. Photographing natural subjects, new developments in equipment and appreciation of the world around us.\*PS
- April 18 Landscape Design Workshop, Student Center, St. Paul Campus. For landscape nurserymen, architects and sales personnel. To develop skills in home landscape design.\*RM

-more-

add 1--special short course schedule

- April 25 World Food Needs-Challenge and Opportunity for the Upper Midwest, North Star Ballroom, Student Center, St. Paul Campus. To provide people in the upper midwest with a better understanding of the world food situation and the role that food producers, food processors, educators, students, and the general public can play in assuring an adequate world food supply.\*LF
- April 27-29 Minnesota FFA Convention and Leadership Conference, St. Paul Campus. To promote a learning experience for vocational agriculture students and FFA members.\*CN
- May 19-22 Minnesota State Fire School, Radisson Downtown Hotel, Minneapolis. For volunteer and paid fire department personnel, city officials, and interested government and industry personnel who deal in fire safety, prevention, control and rescue and first aid work.\*PS
- June 5,6,10,11 Dutch Elm Disease and Oak Wilt, Alexandria, June 5; Mora, June 6; Student Center, St. Paul Campus, June 10-11. To provide municipal tree inspectors with information concerning Dutch Elm disease and oak wilt, to aid them in understanding the diseases so that they may better identify these respective diseases, their hosts, and the treatment and control programs.\*RM
- June 4-5 Minnesota State Feeder Pig Show, Canby.\*#
- June 17 Athletic Field Turf Management, St. Paul Campus. For personnel responsible for the upkeep of athletic fields. The course will cover sod management, fertilizer rates and recommended analysis and disease control.\*RM
- June 17-18 Homemakers Workshop, West Central Experiment Station, Morris.\*+
- June 24-25  
June 10,16,17 Crops and Soils Day (also Visitors' Day), Waseca Experiment Station, June 24; SW Experiment Station, Lamberton, June 25; Morris Experiment Station, July 10; Crookston Experiment Station, July 16; Grand Rapids Experiment Station, July 17.\*+
- July 7-9 Annual Agricultural Education Workshop, Holiday Inn, Fargo, ND. For instructors and administrators of Vocational and Technical Educational programs in agriculture.\*LF
- July 9-10 Weed Industry Tour, Red River Valley.\*+
- July 12 Field Day, Sand Plain Experimental Field, Elk River.\*x
- September 9-10 Corn and Soybean Day, Southern Experiment Station, Waseca, September 9; SW Experiment Station, Lamberton, September 10.\*+
- September 11 Fall Crops and Soils Day, West Central Experiment Station, Morris.\*+

add 2--special short course schedule

September 14-20      Extension Homemakers "Know America" Tour. Three-five day  
October 12-18      educational tours to Washington, D. C. planned in cooperation  
April 4-10, 1976    with the National 4-H Center for Extension Homemakers of the  
SE District and other interested adults. The tour seminars  
will provide a study topic related to citizenship, cultural  
arts, international studies, and bicentennial information and  
training.\*GW

September 15-16    36th Annual Minnesota Nutrition Conference, Thunderbird Motel,  
Bloomington. A north central area regional conference for  
animal nutritionists. Major emphasis is on nutrition topics  
of current interest for animal nutritionists representing  
producers, industry, universities, and research.\*GW

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\*For further information call Office of Special Programs

LF--LaVern Freeh	(612)	373-0725
CN--Curtis Norenberg	"	"
RM--Richard Meronuck	"	"
GW--Gerald Wagner	"	"
PS--Paul Stegmeir	"	"

†For further information call the Experiment or Research  
Station designated.

xFor further information call James Swan 373-1060.

#For further information call Jerry Hawton 376-1166.

Department of Information  
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Tel. (612) 373-0710  
March 31, 1975

Special

misc  
of 27p

DON'T DRINK WATER  
FROM FLOODED WELLS

Avoid drinking water from wells which have been flooded, warns Roger Machmeier, extension agricultural engineer at the University of Minnesota.

Machmeier says the well and entire distribution system should be flushed out, disinfected, tested and found to be safe before the water is used for drinking. Pump the well until the water is clear. Then make a solution of one quart of laundry bleach (Chlorox, Purex, Hilex or similar hypochlorite solution) in 12 quarts of water. Pour this solution into the well.

Draw the chlorinated water from the well into the pipes by opening each faucet or fixture in the system and let the water flow until the chlorine odor is detected. Close the faucet or fixture as soon as you smell the chlorine odor.

Allow the chlorinated water to stay in the well and water system at least overnight. Then the system can be pumped and flushed out until the taste and odor disappear. The water should not be sampled for bacteriological examination until at least 48 hours after the chlorinated water has been pumped out.

Don't use the water while the chlorine solution is in the system, Machmeier cautions. Drinking or washing with highly chlorinated water may be irritating and harmful. When flushing outdoor taps, use a garden hose to drain water away from vegetation.

You can have water tested for bacterial content at private laboratories or by the Minnesota Department of Health laboratory in Minneapolis. Instructions on collecting water samples and a plastic bag to contain the water sample are available through district offices of the Department of Health at Little Falls, Bemidji or Duluth. The water sample must reach the laboratory in Minneapolis within 30 hours after collecting, Machmeier stresses.

add 1--don't drink water from flooded wells

Send samples directly to the central office of the Minnesota Department of Health, Minneapolis 55440, for bacteriological analysis--there's no cost to the individual.

For more information, ask your county agent for a copy of M-156 "Chlorination of Private Water Supplies." You can also write for a copy to the Bulletin Room, University of Minnesota, St. Paul, Minnesota 55108.

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March 31, 1975

Special

MEC  
9/27p

DISINFECT WATER  
SYSTEMS IF WELLS  
HAVE BEEN FLOODED

If the only source of drinking water is from flooded wells, boil the water vigorously for two minutes. And to improve the taste of boiled water, add a pinch of salt or pour the boiled water from one container to another several times, advises Roger Machmeier, extension agricultural engineer at the University of Minnesota.

If boiling isn't practical, chemical disinfection should be used. Commercial household bleach contains a chlorine compound which will disinfect water. The procedure for disinfecting water may be found on the label. If not, determine the amount of available chlorine from the label. With a common 5.25 percent hypochlorite bleach, add 3 drops per quart of clear water, Machmeier says. Double the amount for turbid or colored water.

Mix the treated water thoroughly and allow it to stand for 30 minutes. The water should have a slight chlorine odor. If it doesn't, repeat the dosage and let the water stand for another 15 minutes. If the treated water has too strong a chlorine taste, it can be made more palatable by allowing the water to stand exposed to the air for a few hours. Or, pour the water from one clean container to another several times.

If your water supply has been contaminated by recent floods, the entire water system should be disinfected. Get Agricultural Engineering M-Sheet No. M-156 "Chlorination of Private Water Supplies" for instructions on disinfection of water systems from your county agent. District Offices of the Department of Health or emergency organizations may also have instructions.

The Department of Health will test water samples sent to the central laboratory in Minneapolis, and there is no charge, Machmeier says. Special containers and instructions are available through District Offices located in Little Falls, Bemidji and Duluth.

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March 31, 1975

Immediate release

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FINNSHEEP RESEARCH  
REPORTED AT UM

Some Finnish-Landrace (Finnsheep) crosses in sheep breeding programs can boost profits--but don't let your expectations run wild.

That's the gist of what University of Minnesota animal scientists have to say after a half dozen years of breeding trials. "Any appreciable amount of Finn blood (say one-eighth and up) will increase lambing percentage," says Melinda Burrill, a U of M researcher who recently earned a doctorate in genetics from Oregon State University. However, Miss Burrill cautions sheep producers to keep these points in mind:

--Claims of extremely high lambing percentages in the 400 to 500 percent range, even with straight Finnsheep, should be looked at critically. Straight Finn ewes in the U of M trial averaged 166, 271, and 317 percent lambs born at one, two, and three years, respectively.

First generation crosses of Finnsheep with standard breeds ( $\frac{1}{2}$  Finn) in the U of M research trial averaged a 138 percent lamb crop for yearling ewes with 208 percent for three-year old ewes.

--Don't expect even straight Finn ewes to be such good mothers that they can raise four lambs. "We've had best success in this situation by leaving two lambs on the ewe and taking two off," Miss Burrill says. This means you need to get first colostrum in orphan (bum) lambs immediately, then get them on lamb replacer. Use lamb milk replacer, not calf milk replacer.

--Likewise, don't expect too much of Finn rams. Although they are very aggressive breeders use one ram per 50 ewes, not 70, the U of M researchers recommend.

-more-

add 1--Finnsheep

Finn crosses produce satisfactory carcasses. "And our tests show a greater percentage of unsaturated fatty acids, in relation to saturated fatty acids in the muscle fat of Finn crosses," Miss Burrill continues. "Also, palatability of first generation Finn crosses may be enhanced since the 'tallowy' effect, sometimes observed on lamb fat, could be reduced."

An added advantage of the Finns--short tails, which don't require docking. First generation Finns in the research trial had an average tail length 67 percent as long as domestic breeds.

-jms-

CA, L + pictures

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March 31, 1975

Immediate release

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FOOD NEEDS CONFERENCE TO BE APRIL 25

The scope and possible solutions for the world's food crisis will be topics at a World Food Needs Conference April 25 at the Student Center on the St. Paul Campus of the University of Minnesota.

The day-long conference will feature talks by Max Milner, former director of the United Nations Protein Advisory Group; Edwin Martin, coordinator of the American effort at the World Food Conference at Rome; Robert Cotton, vice president of ITT-Continental Baking Company; and Keith Huston, director of the University's Agricultural Experiment Station.

Governor Wendell Anderson and William F. Hueg, Jr., deputy vice president of the University and Dean of the Institute of Agriculture, Forestry and Home Economics, will give kick-off addresses beginning at 9:30 a.m.

The conference is open to the public. A \$5 fee (\$2 for students) includes lunch.

-dmn-

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March 31, 1975

Immediate release

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IN BRIEF. . . .

Germination Levels. With last fall's frost, germination levels for corn seeds are lower than last year. Kernel drop must be increased for maximum yield, says Dale R. Hicks, University of Minnesota extension agronomist.

To calculate the number of kernels to drop per acre, divide the stand by the germination level. For example, if 24,000 plants per acre at harvest is the desired stand and 85 percent germination seed is used, 28,200 seeds must be dropped per acre. The seeding rates should further be increased by 10 percent to allow for losses due to insects, diseases and cultivation.

\* \* \* \*

Stand Distribution. Stands are likely to be less uniform when seed low in germination is used, Agronomist Dale R. Hicks says. But clumpy stands that result when all seeds adjacent within the row germinate or do not germinate are unlikely with low germinating seeds.

\* \* \* \*

Planting Date. Planting should not be delayed this year because of lower than normal germinating seeds, says Agronomist Dale Hicks.

Planting seeds with the highest germination first and finishing with lower germinating seed might be best. However, yields decline more as planting of full season hybrids is delayed compared to the yield decline of short season hybrids planted later. So planting in order of germination level may not be wise, Hicks adds.

\* \* \* \*

-more-

add 1--in brief

Soybean Inoculation. University of Minnesota research does NOT justify changes in soybean inoculation recommendations, says Dale R. Hicks, University of Minnesota extension agronomist.

Nodulation is important for nitrogen-efficient soybean production because similar yields can be obtained only by adding nitrogen fertilizer to the nonnodulating soybean plant types. Lower yields would result if nodulation fails on the nodulating soybean varieties used commercially.

\* \* \* \*

Current Recommendations. University of Minnesota agronomists say seed should always be inoculated when a soybean crop is grown in a field for the first time.

Seed should always be inoculated in the previously grown soybean crop contained few or no nodules and if a well-nodulated soybean crop has not been grown on the field within three to five years. If inoculation is necessary, seed should be inoculated immediately before planting. Inoculated seed should not be exposed to sunlight and high temperature.

\* \* \* \*

Comparative Study. University of Minnesota scientists have compared soybean yield without inoculation to yields when inoculant was seed-applied or applied to the soil in the seed zone.

Yields were not increased by any of the inoculation treatments on soils with natural populations of rhizobia.

The soil implant method uses insecticide application equipment to place the inoculant in the seed zone. Applying inoculant to the soybean seed immediately before planting takes up valuable time, while the soil implant method--if inoculation is required--can minimize inoculation time.

# # # #

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University of Minnesota  
St. Paul, Minnesota 55108  
Tel. (612) 373-0710  
March 31, 1975

ATT: Extension Home Economists

Immediate release

MSC  
gastp

BABY FOODS ARE  
WHOLESOME, BUT  
READ LABELS

Consumer groups' attacks on commercial baby foods as a child's first exposure to "junk food" probably aren't justified, particularly if a wary parent buys them with an eye toward the label information says Debora Wardle, research assistant and nutrition graduate student at the University of Minnesota.

Ms. Wardle, who has researched infant feeding patterns, says baby food manufacturers have stopped including monosodium glutamate (MSG) and nitrates, both controversial food additives. Some foods, notably the baby desserts, contain large quantities of sugar, and they may be marketed to appeal more to parents' notions about appealing meals than to baby's nutritional needs.

Jar labels list ingredients, and several manufacturers also include information about calories and the percentages of recommended daily allowances each serving contains. By studying these labels and following your doctor's advice, you can assure your infant an adequate diet.

Overfeeding in early life can increase the number of fat cells and make a child more susceptible to obesity as an adolescent and adult. The National Academy of Sciences recommends about 53 calories per pound of body weight for babies up to six months old. This drops to 49 calories per pound for those between six months and one year old, and to 1,300 calories total for children between one and three.

-more-

add 1--baby foods are wholesome

Like adults, babies get these calories from milk, cereal, fruits and vegetables and meat and eggs, and the various foods usually are added to the diet in that order. A large rapidly-growing infant requires solid food earlier than a small infant. The Academy of Pediatrics Committee on Nutrition says normal, full-term infants can thrive for about three months on human milk or formula supplemented with vitamins.

When the doctor advises adding strained fruit, vegetables and meat to an infant's diet, Ms. Wardle advises adding strained fruit, vegetables and meat to an infant's diet, Ms. Wardle says the parent should consider several factors before deciding whether to use commercial or homemade foods. A person should weigh costs, availability of homegrown fruits and vegetables, storage and refrigeration space required, kitchen cleanliness and whether the parent has the time and skill to prepare baby food.

-dmn-

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4-H NEWS

Immediate release

MSE  
9/10/75

PAINTING OLD BIKE  
MAY BE GOOD PROJECT  
FOR SPRING DAYS

With spring hesitating in the wings, many Minnesota youngsters may be growing anxious to resume outdoor activities such as bicycling.

If your bike is old or has had considerable use, now is a good time to make some improvements. You may want to touch up the paint. Complete repainting may be a job for a professional. To do it right, the bike must be taken apart and old paint stripped off, but you can touch up old paint or add decorative trim yourself.

First, you should find out what kind of paint was used on your bike at the factory or the last time it was painted. If you intend to paint over the old coating, be sure the new and old paints are compatible. Handy aerosol paint cans make painting much easier than using a brush, but air dry lacquer will not mix satisfactorily with enamel paint.

To insure maximum safety and riding ease, all bikes should be thoroughly checked at least twice a year for damaged and worn parts. A number of accidents involving two-wheelers are attributable to defective bikes.

The 4-H Bicycle Project offers practical ways to gain leadership experiences and share your cycling knowledge. For more information, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

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#### FERTILIZE BEEF PASTURES?

Some beef cow operators will still find it feasible to fertilize pastures-- even with high fertilizer and low beef prices. Others may not. The essential thing is to make effective use of the extra forage produced from fertilized land, University of Minnesota extension specialists say.

"Fertilize only if you can use the increased pasture production," says Abelardo Castro, U of M extension soils specialist. "If you're short on land, fertilizing pasture may be the answer, especially if you can't rent more land."

However, Extension Economist Paul Hasbargen cautions that there are some cases when farm earnings may be decreased by trying to maximize forage production per acre. Some examples are:

--If extra pasture land is available for \$5 per cow per month, this may be a cheaper source of feed than extra fertilizer with today's high fertilizer costs.

--If additional pasture production is not utilized by higher stocking rates or by cutting excess production for hay.

--When the added forage is used to carry more beef cows in years when more cows result in higher losses--such as the period we're in right now. "In situations like this, quality hay might well be sold to dairymen and lower quality crop residue used for feeding beef cows," Hasbargen adds.

-more-

add 1--fertilize beef pastures?

One northern Minnesota farmer did just that last year. He sold his beef when prices were reasonably good last year and didn't buy calves last fall since the price didn't look good. He sold hay instead to his neighbors.

"If it's possible to raise alfalfa, our figures show that alfalfa-grass mixtures are desirable, even though production costs are higher," the economist says. But he adds these precautions:

--Don't allow beef cows to eat all the high quality alfalfa hay they want. Limit feed to no more than 20 pounds per cow per day--and only four or five pounds of that needs to be legume hay to provide needed protein.

--Don't plant alfalfa on extremely acid soils if you don't push for high yields and early cutting.

Castro and other soils specialists have completed a one-year study of pasture fertilization near Crookston. They raised dry matter yields of hay from 1,468 pounds per acre with no fertilizer to 6,279 pounds with an application of 150-60-0 per acre. In this case, over 4,800 pounds of hay was produced for \$50 worth of fertilizer, which figures out to about one cent per pound of hay. (Prices used were 25 cents per pound for nitrogen, 20 cents for phosphate and eight cents for potassium).

And with a fertilizer application rate of 30-60-0 per acre, they got a yield of 3,532 pounds dry matter per acre. Fertilizer cost was \$19.50 per acre. In this case, 2,064 pounds of hay was produced at a fertilizer cost of about one cent per pound of hay.

So if you need more hay, you may be able to put on fertilizer and get cheaper, higher quality hay than you can buy.

"If you plan to apply fertilizer to pasture, test your soil first," Castro recommends. "If potassium or phosphorus levels are low in your soil, increase these first to reasonable levels, then apply nitrogen. Split the N applications according to rainfall distribution or soil moisture availability for maximum N utilization.

add 2--fertilize beef pastures?

"By increasing the number of clippings throughout the season, you increase the protein content and reduce the percent fiber of your pasture or hay. Remember that fertilizer increases not only yield, but also quality. And we should pay for quality." Higher quality hay will give better gains on growing cattle, but economist Hasbargen emphasizes that beef cow men don't need and can't afford "quality" hay.

Extension Agronomist Oliver Strand points out that many beef cows and calves in northern Minnesota need more energy feed. "Fertilizing forage acres with nitrogen will increase the protein content of grasses, but will not change the energy content appreciably," Strand says. "However, earlier cutting of both legumes and grasses will increase both the protein percentage and energy content of the forage.

"If you have excess hay to sell that's low in protein and TDN, the market should not be as good for this cash crop. Higher quality hay should command a higher price. Keep some flexibility in your beef cattle operation by producing more high quality forage to either feed or sell as the market dictates," says Strand.

Although fertilizer is high priced, it's still a good buy "up to the point where the last dollar spent for fertilizer still gives back a dollar's worth of added feed production. But that point comes at a lower fertility level now, compared to when fertilizer prices were lower," cautions Hasbargen.

"When nitrogen cost less than nine cents per pound it paid to go up to 150 pounds of nitrogen with results like those in the Crookston trial plots. With today's higher nitrogen costs, the last 30 pounds added would not give enough hay at \$60 per ton to cover fertilizer costs--120 pounds of N would be the top amount to apply.

add 3--fertilize beef pastures?

"And if you're short of capital--as are many cow-calf operators at present--the research data suggests that only 90 pounds of nitrogen and 60 pounds of phosphate would give the highest return per dollar invested," says Hasbargen.

It may be economical to improve hay yields from one to two tons per acre with a limited amount of fertilizer--providing you can market the improved hay yields through a well managed livestock enterprise or as a high quality feed to your neighbor.

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VET MEDICINE  
OPEN HOUSE SET  
FOR APRIL 27

The University of Minnesota's College of Veterinary Medicine will hold an open house from noon to 5 p.m. Sunday, April 27.

Exhibits by veterinary medicine students, tours of the veterinary hospital and classrooms and a display of animals from St. Paul's Como Park Zoo will be highlights of the open house.

An annual favorite of the open house, the cow with window in her side, will be on hand and a film depicting veterinarians' roles will be shown throughout the afternoon.

The open house is being sponsored by the Minnesota Student Chapter of the American Veterinary Medical Association to further understanding of the training of veterinarians. The College is on Commonwealth Avenue west of the Minnesota State Fairgrounds.

-daz-

(CA, metro dailies)

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SIMMENTAL, POLLED  
SHORTHORNS TOPS  
AT TEST STATION

A Simmental crossbred bull owned by Leonard Moeller, Kimball, is the top gaining bull for the first 112-day test at the Minnesota Central Bull Test Station at Lake Benton.

The bull gained 3.88 pounds per day for the 112-day test period and was sired by "Florian."

The top gaining progeny pen is a Polled Shorthorn pen owned by the University of Minnesota's West Central Experiment Station, Morris. The three bulls were sired by Ball-Dee-Perfect Count and gained 3.41 pounds per day on test.

A Simmental bull owned by Reed Loveness had the highest adjusted yearling weight of 1249 pounds and the top weight per day of age, 3.12 pounds.

Simmental bulls were the top gaining breed for the 112 day test, with an average of 3.09 pounds for 23 bulls. They were followed by 10 Polled Shorthorn bulls with a 2.96 pound average and 11 Charolais with a 2.95 pound average.

All weight gains were down this year due to the January blizzard.

All these bulls will be on display at the Central Bull Test Station field day and sale Saturday, April 19. For more information contact C. J. Christians, extension livestock specialist, University of Minnesota, St. Paul; Herman Vossen, area livestock specialist at Lamberton; or Jack Delaney, manager of the Minnesota Central Bull Test Station at Lake Benton.

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BULL FIELD DAY,  
SALE APRIL 19

Saturday, April 19 is the date for the Minnesota bull testing field day and sale at Lake Benton.

It's scheduled for the Minnesota Beef Bull Test Station 11 miles northwest of Lake Benton.

"Many people have been wondering if the winter blizzard affected bull fertility--and that's what we'll emphasize in the morning program," says Charles Christians, extension livestock specialist at the University of Minnesota.

Dr. Edward Mather, veterinarian at the University, will discuss winter weather's effects on bull fertility and outline a fertility inspection program.

A total of 91 bulls from 10 breeds will be on display and offered for sale at 12:30 p.m. Complete test station growth rate, weight per day of age and yearling weights will be available on all bulls.

"Average gains were down this year due to the winter blizzard. Bulls averaged only a 10-pound gain for January since we couldn't get feed to them for about a week," says Christians, who is supervisor of the test station.

All bulls averaged 2.76 pounds per day for the first 112 days on test, according to Jack Delaney, station manager. By breed, the averages are as follows: 23 Simmental, 3.09 pounds, 10 Polled Shorthorn, 2.96 pounds; 10 Charolais, 2.95 pounds; four Red Angus, 2.63 pounds; 18 Angus, 2.62 pounds; 10 Hereford, 2.23 pounds; and one Chianina gained 3.08 pounds.

Limousin, Polled Hereford and Blonde D' Aquitaine bulls also will be offered for sale.

"All records are measured under standard conditions so reasonable comparisons can be made between bulls and sire progeny groups," Christians states. The program is sponsored by the Minnesota Beef Cattle Improvement Association and is supervised by the University of Minnesota Agricultural Extension Service.

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IN BRIEF. . . .

Crops Prices. Weather remains the big factor in future farm crop prices, a University of Minnesota economist says. "It's too early to speculate on the size of the U. S. crop that might be produced in 1975," Paul Hasbargen says. "But much of the western cornbelt--including western Minnesota--has low subsoil moistures. So odds are that yields on long season crops will not be up to normal.

"But one big crop in the U. S. coupled with normal production around the world will put crop prices back to near production cost levels. These are about \$2 on corn, \$5 on soybeans and \$2.75 on wheat. Big crops in 1975 and 1976 could push prices below production costs, necessitating a new government support level to protect crop producers."

\* \* \* \*

Herbicide mixtures. Use only herbicide mixtures that have been field tested under local conditions. Some herbicide mixtures may cause poor weed control or crop injury, says University of Minnesota extension agronomist Gerald Miller. He says farmers or herbicide applicators may be responsible for residues in crops, crop injury or lack of weed control that results from using unlabeled mixtures.

Miller says herbicide mixtures may be used to overcome limitations of single chemicals. Certain mixtures may control more kinds of weeds--give more consistent performance with different soils and weather conditions--lessen soil residue problems--increase persistence enough to give full season weed control--or reduce crop injury.

\* \* \* \*

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add 1--in brief

Beef Outlook. Although beef producers are attempting to reduce cattle numbers, slaughter and production will actually be higher in 1975 and 1976 than in 1974. Beef supplies per person will be over 120 lbs. compared with 116 lbs. in 1974. Prices and returns will be very low during this period, especially for cow-calf producers. Beef cow operations will probably not be able to cover all production costs until 1978, although improved returns to cattle feeding operators can come sooner.

\* \* \* \*

Calf Hutch. Using portable dairy calf hutches is one way to overcome calf losses due to overcrowded, poorly ventilated and damp housing. A new publication cites advantages and disadvantages of calf hutches and gives different building plans. Free single copies are available from the \_\_\_\_\_ County Extension Office. (Agents: If you haven't received supplies of the publication, you will shortly)

\* \* \* \*

Teat Dips. Dairymen can substantially reduce new mastitis cases by using a good teat dip solution soon after milking, researchers say. And since mastitis costs dairymen upwards of \$100 per cow per year, teat dipping will make you money in the long run.

\* \* \* \*

French Soybeans. Although France's drive to produce soybeans on a commercial basis got off to a poor start in 1974 due to bad weather, French soybeans remain a crop to watch. The country has a strong interest in lessening its dependence on imported U. S. soybeans. The French launched into soybean production in earnest following the 1973 world soybean crunch.

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HOME EC ASSOCIATION  
CONVENTION SCHEDULED

The Minnesota Home Economics Association (MHEA) will hold its annual convention April 11 and 12 at the St. Paul Hilton Hotel. Sharon Kirkman, management consultant, will give the keynote speech and a workshop on "Preparing Women for Their Changing Role in Society," reflecting the convention's theme of changes within the profession.

John Hoyt, Jr., of the University of Minnesota's Agricultural Extension Service will discuss personal time management, and women's consultant Susan Sands will review alternative roles for women. Afternoon workshops April 11 will be on women's rights and the bicentennial.

Topics for morning workshops April 12 are International Women's Year, the emergence of women in management, sexual awareness and roles of women in the news media.

Other speakers during the convention include Mary Ann Grossman, family life editor of the St. Paul Dispatch-Pioneer Press, and J. Anthony Samenfink, dean of home economics at the University of Wisconsin-Stout at Menomonie.

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MICROWAVE OVEN SALES  
TOP APPLIANCE TRENDS

More than 670,000 microwave ovens were sold in 1974--a 53.4 percent increase over 1973 sales. Although less than 3 percent of homes have the ovens, this is a significant increase over two years ago when  $\frac{1}{2}$  percent had them.

Wanda Olson, University of Minnesota extension household equipment specialist, says about one-quarter as many microwave ovens as electric ranges were sold last year. The average price of microwave ovens was \$367, down slightly from previous years.

Quoting figures from Merchandising Week, which tabulates sales data for the appliance industry, Mrs. Olson says smooth top ranges also are becoming more popular. Despite costs of about \$100 more than other electric ranges, smooth tops comprised 10 percent of electric range sales. They were 6 percent in 1973.

Part of smooth tops' appeal is cleaning ease and this same factor has boosted sales of self-and continuous-cleaning oven ranges. More than half of electric ranges and about 40 percent of gas ranges have an oven cleaning feature she says.

The desire for easy upkeep also affects refrigerator and freezer sales. Last year 74 percent of refrigerators and 31 percent of freezers were no-frost. Freezer sales skyrocketed for the second straight year in 1974. This was due to consumer interest in convenience and in preserving food and buying in quantities as a hedge against rising food prices, Mrs. Olson says.

The 3.2 million freezers sold in 1974 were double the number of units sold as recently as 1972. The sales increase came despite rising prices for both chest-type and upright freezers.

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FURNITURE IS  
WHERE YOU FIND IT

Don't despair because your budget won't allow furniture purchases from tastefully decorated stores with ankle-deep carpeting and piped-in music. You'll have just as much fun and emerge with a more unique and economical decor item if you create "treasures from trash," suggests Linda Reece, extension interior design-furnishings specialist at the University of Minnesota.

Rummage sales and thrift shops are sources of clothing, bedspreads and draperies that are large enough to cover furniture. Or sew scraps into quilt squares for place mats, pillows, lap robes or wall hangings.

Prowl the waste bins behind appliance, furniture and office equipment stores for heavy boxes. Several layers of cardboard glued together are strong enough to function like plywood for shelves or improvised desk tops, Ms. Reece says. Discarded wire spools from utility companies also make sturdy end tables or bedside stands.

Wooden crates are becoming scarce, but some imported flower bulbs still come in sturdy wood boxes with partitions and lids that can be used for desktop organizers or knickknack display shelves. Brightly painted ice cream tubs stacked on top of one another or stapled to a wall make another unique storage system.

If you're lucky enough to find a sturdy wood crate with a lid, make it into a seat-chest, Ms. Reece suggests. Hinge the lid and paint or stain the box to cover any writing on the wood. Or you might want to experiment with fabric, plastic or paper coverings.

You can make attractive table legs from newsprint rolls (most newspapers give them away) or tin cans stacked atop each other and wrapped with heavy paper. Glue the rolls together vertically into an X shape and top them with a piece of plywood or heavy cardboard that has been painted or covered with colorful vinyl.

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4-H NEWS

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MS 1975-07

4-H ADULT LEADERS  
HONORED DURING  
NAT'L VOLUNTEER WEEK

Special recognition is being given this week (April 20-26) to the more than 16,000 4-H adult leaders and other volunteers in Minnesota during National Volunteer Week.

(Agent: Add in anything planned for your county and give mention to volunteer local efforts).

Besides adult leaders, many more Minnesotans volunteer their time and talents to the 4-H program.

New and more meaningful roles and responsibilities for 4-H adult leaders have evolved through the years as the 4-H program continues to reach more young people.

County project chair persons train and service local club project leaders, both adult and junior, in a specific project area. This training and service enhances the educational impact of the 4-H program on the young people involved.

Area 4-H service leaders are connecting links between the 4-H program of a local community and the county extension office. Each leader serves an area that has a community identity and helps promote the 4-H program within the service area.

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GRASS FERTILIZATION  
TRIALS ON PEAT  
REPORTED BY UM

Fertilize peat grasslands only if you can use the extra grass or pasture production. That's the advice University of Minnesota specialists give to farmers on seven million acres of peat in northern Minnesota.

Soils researchers last year conducted fertilization trials on peat grasslands near Gully, Minnesota.

"Adding 50 pounds of nitrogen and 100 pounds per acre of phosphate per acre gave good yield increases and economic results during the 1974 growing season," reports Abelardo Castro, extension soils specialist. He says split applications of nitrogen are recommended according to rainfall distribution and soil moisture availability. Other recommendations:

--Test soil for phosphate and potassium. Phosphate fertilizer will increase growth of native legumes during summer. It also increases the phosphorus content of your pasture.

--Cut grass twice during the season for hay making. This will increase the quality of forage at no extra cost to you.

--Graze pasture heavily to avoid maturation. This will reduce the percent fiber, keep the protein high and result in better forage for your cattle.

Grass on peat soils makes more efficient use of nitrogen than small grains, Castro adds. "About 90 pounds of N is released per acre when the land is not plowed and grasses use this efficiently. But when you plow peat to plant small grains, extra nitrogen not required by the small grain crop is released when climatic conditions are adequate," Castro concludes.

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FERTILIZER SITUATION  
MAKES SOIL TESTING  
MORE IMPORTANT

With fertilizer prices soaring and supply tight, soil testing can mean the difference between profit and loss for the farmer, a University of Minnesota soil scientist says.

According to John Grava, extension specialist in soils and head of the University soil testing laboratory, there is still time for farmers to take soil samples this spring and have them analyzed.

And, he emphasizes, it is of the utmost importance that farmers have confidence in the tests, in the application recommendations of the Agricultural Experiment Station, and in the data those recommendations are based on.

Fertilizer prices this spring are generally three times what they were in the fall of 1972. Other production costs have also increased. The only solution, Grava says, is for farmers to get greater efficiency out of available fertilizer.

Many farmers may be able to realize significant savings simply by using less fertilizer without a corresponding loss in yield.

For example, many corn growers over the past ten to 15 years have built up excessive phosphorus levels in their soils.

"During the years of cheap and readily available fertilizers," Grava says, "high rates of phosphorus were applied by many just to play it safe--not because of actual need."

Yet, he points out, some growers continue to apply phosphate in rates of 100 to 200 pounds per acre even though the Agricultural Experiment Station recommends application of only 30 to 40 pounds per acre.

-more-

add 1--fertilizer situation

By testing the soil and following the recommendations, a farmer could save from \$20 to \$40 per acre on phosphate fertilizer alone, Grava says. That single factor could well spell the difference between making money on the crop, breaking even, or even losing money.

Experimental data gathered by Curtis Overdahl and William Fenster of the University's Department of Soil Science provides concrete evidence that high yields can be obtained with only moderate fertilizer application on soils with high built-up or inherent fertility.

Working with test plots of corn over a five-year period in southern Minnesota, they found the initial phosphorus level to be very high. Consequently, they were able to increase yield by an average of seven bushels per acre by applying only 40 pounds of phosphate per acre in row.

Further fertilizer application did not increase yield--not even broadcast applications of up to 200 pounds per acre. Yet corn yields in these experiments ranged between 150 and 160 bushels per acre.

In other words, a farmer in a similar situation is wasting dollars with every pound of unneeded fertilizer he applies--a situation a soil test can avert.

According to Grava, the University soil testing laboratory can process samples and mail out recommendations in less than eight days. The fee is nominal. Soil testing services are also provided by several private laboratories in the state.

More information, sample boxes and instructions are available from local county extension agents.

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GRAIN SELLERS HAVE  
SCANT PROTECTION BY  
MINN. BONDING LAWS

The recent spectacular bankruptcy of American Beef Packers, Inc. is causing consternation among livestock producers, but cash grain farmers should also be forewarned, a University of Minnesota specialist says.

"Many farmers assume that Minnesota bonding requirements protect the seller, but this protection is meager," states Extension Marketing Specialist Willis Anthony. Minnesota farmers who sell grain "are not well covered by bonding requirements" in the event the buyer should go bankrupt.

"A farmer's basic protection against losses from his grain buyer going bankrupt is sound financial condition and good internal management on the part of the grain buyer. Farmers should pay close attention to the financial statements and internal management of their local elevators," Anthony emphasizes.

The Minnesota bonding requirement for a grain buyer is only \$5,000. "This does not begin to cover the total amount of grain bought by individual elevators," Anthony points out.

For grain in storage, the bonding requirement goes up to 50 percent of the value of the stored grain. And for trucker buyers, the bonding requirements is \$3,000 for a straight truck and \$5,000 for a truck-trailer combination.

Minnesota bonding requirements for grain are set up by statute and administered by the Minnesota Public Service Commission.

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IN BRIEF. . . .

Frosted Corn. Corn touched by frost in spring has a good chance of recovery if the growing point is still below the ground. The growing point remains below the ground from two to three weeks after emergence of the corn plant, says Dale Hicks, extension agronomist at the University of Minnesota. Considering that early planted corn takes 10-14 days for corn to emerge, this would mean that corn planted May 1 would likely still have the growing point below the soil surface on May 20.

\* \* \* \*

Plant Early. Some farmers' reluctance to plant corn early due to possible frost damage may be ill-founded. Over a 7-year period at three Minnesota Experiment Stations (Morris, Lamberton and Waseca), there has not been a damaging frost from corn planted in the April 20 to 25 range. "Even with a damaging spring frost, it probably wouldn't hurt the crop," says Dale Hicks, extension agronomist at the University. "Corn can stand a killing spring frost until it gets past the five-leaf stage, and this is well into June in most years.

\* \* \* \*

Corn Planting. Many Minnesota farmers could increase corn yields by planting earlier. University of Minnesota research at Morris, Lamberton and Waseca over a 7-year period shows highest yields from early planting dates, usually April 20 to 25. "Start planting as soon as the soil can be worked without damaging soil structure," advises Dale Hicks, extension agronomist at the University. On an average, start planting April 20-25 and aim to be finished by May 10. Fears of frost damage to early planted corn are over-stated, Hicks adds.

\* \* \* \*

-more-

add 1--in brief

Grain Samples. Many farmers are concerned about grain grades, either because they're unsure of quality in storage or question buyer's grading. Here are instructions on how to receive an official grade for grain samples:

Submit about two quarts of grain, place it in a sound, moisture proof container and send it to Minnesota Grain Inspection, 314 Grain Exchange, Minneapolis, Minn. 55415. Send \$3 per sample.

"Try to take a representative sample," suggests Willis Anthony, extension marketing specialist at the University of Minnesota. "The grade is only as good as the sample you submit."

Anyone may submit a sample, Anthony adds, but don't forget to include your name and address so you get the results.

\* \* \* \*

Face Flies. A revised publication on controlling face flies on livestock is available from the \_\_\_\_\_ County Extension Office. Treatment is most practical for milk cows, and should be started when face flies first appear on cattle on pasture.

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SLOW COOKING--  
LESS THAN IT'S  
"CROCKED" UP TO BE?

Newly-popular slow cooking appliances may trade convenience for less nutritious meals unless the homemaker is wary about food preparation techniques.

Mary Darling, University of Minnesota extension nutritionist, says that during a 10 or 12 hour cooking period, a lot of the water soluble nutrients will be leached into the cooking liquid. To preserve as much nutrition as possible, she suggests reducing cooking liquid and cooking time and increasing the size of meat and vegetable pieces cooked in the appliances.

She also encourages homemakers with slow cookers to be particularly gentle with produce to avoid bruising the food, thus destroying some of its nutritional value. Fruits and vegetables that are used long after their purchase have reduced nutrients so they will be even less nourishing in a slow cooked meal than fresh produce will be.

Several likely vegetables for slow cooking--cabbage, green pepper, onions, tomatoes and potatoes--contain vitamin C, which is water soluble. Cabbage slices, for example, that are boiled for one hour lose 82 percent of their vitamin C. Some of the vitamin will remain in the cooking liquid so it's important to eat it as part of the finished product.

Vitamin C loss can be cut by bringing the slow cooking mixture to a boil before allowing it to simmer for many hours. Boiling kills the enzyme that contributes to vitamin C breakdown, Ms. Darling says.

The B complex vitamins also are water soluble. Dried peas and beans lose about 40 percent of their thiamine in cooking, and about 30 percent of the niacin in meat will be leached into the broth.

Minerals and fat soluble vitamins such as vitamin A also enter the cooking liquid, increasing the importance of using that liquid as part of the meal.

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April 14, 1975

4-H NEWS

Immediate release

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4-H DAIRY GOAT  
NEW FOR 1975  
IN MINNESOTA

The 4-H dairy goat project is being introduced into Minnesota this year to give young people an opportunity to learn about the feeding, care, management and judging of dairy goats.

The new project also gives young people an opportunity to learn many other things through participation in their club's activities. You will be able to show others, through approved methods, how you can improve your dairy goat.

The project has as one of its objectives to give the 4-H'er experience and training in selecting good quality goats and feed proper rations. 4-H'ers enrolled in the project will get experience in keeping complete and accurate production records.

A manual is available to those enrolled in the project. For more information, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

-daz-

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ATT: Extension Home Economists

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**NEW BEEF GRADES  
HELP CONSUMERS**

New grading criteria for beef may increase the supply of the popular Choice grade meat and insure consumers a more consistent quality of lean beef bearing the Good grade, according to Richard Epley, extension meats specialist at the University of Minnesota.

The new grading requirements, which become effective April 14, are based on the amount of marbling (spots of fat within the lean) in the meat. This is an indicator of eating characteristics and helps diet-conscious consumers select lean cuts, Epley says.

Because the Choice grade will include some leaner meat than under the old system, there may be more Choice beef available and thus consumers may pay less for it.

Under the new grading requirements, cattle feeders may be able to reduce their animals' time on feedlots by about two weeks and still have them qualify for Choice designation. This could save about 250 pounds of grain per animal, lessen costs to the consumer and make cattle raising more profitable. This could keep some cattlemen from going out of business, thus, partially protecting beef supplies for the future.

Fewer cattle will fall within the Good category, but Epley thinks supermarkets may begin featuring this grade of beef because it is economical and its slight amount of marbling will appeal to calorie counters and persons concerned about intake of animal fat. The new, more restrictive Good grade will be more consistent in eating quality than under the previous grading system.

-more-

add 1--new beef grades

Carcass conformation, which affects quality grading under the present system, won't be considered under the new standards because carcass conformation doesn't alter eating quality.

Epley says eliminating conformation requirements will benefit consumers in cases where Holstein steers are slaughtered for meat. Previously their poor carcass conformation prevented many of them from being graded Choice even though their degree of marbling might qualify.

Although all beef grading is a voluntary measure, any carcasses that are quality graded for eating characteristics--Prime, Choice, Good etc.--also must be graded for yield grade. This will reward cattlemen who produce animals with less trimmable carcass fat, and Epley says this may result in slightly leaner beef in all the quality grades. Consumers will save because the costs of producing, shipping, and trimming excessively fatty carcasses won't be a factor in supermarket prices.

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Editor's note: There will be texts of several of the key speeches available throughout the day in the press room, 207 in the Student Center--Deedee Nagy, 373-1731
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WORLD FOOD CONFERENCE SET

Speakers from the United Nations, the Foreign Agricultural Service of the U. S. Department of Agriculture and the World Food Conference at Rome will discuss world food needs and what is being done to meet them at the Student Center on the St. Paul campus of the University of Minnesota April 25.

The day-long "World Food Needs Conference" is open to the public. It is sponsored by the student division of the Institute of Food Technologists, the Food Science and Nutrition Club at the University of Minnesota and the University's Department of Food Science and Nutrition.

Governor Wendell Anderson will open the conference at 9:30 a.m., followed by a kick-off address by William Hueg, Jr. deputy vice president and dean of the Institute of Agriculture, Forestry and Home Economics.

Max Milner, former director of the United Nations Protein Advisory Group will speak at 10 a.m. on the world's hungry children. At 11:15 David Hume, administrator of the Foreign Agriculture Service, will assess if the U. S. is capable of solving the world food problem.

At lunch in the campus gymnasium Edwin Martin, chairman of the Consultative Group on Food Production and Investment of the World Bank and an ambassador to the World Food Conference at Rome, will speak.

The afternoon program speakers include Robert Cotton, vice president of ITT-Continental Baking Company, who will talk at 2 p.m. on what the food industry is doing to solve the food crisis. Reactors from General Mills, Land O'Lakes and the student division of the Institute of Food Technologists will discuss Cotton's address.

Keith Huston, director of the University's Agricultural Experiment Station, will close the day's program with a talk on research underway in food production.

Fee for the conference, which includes lunch, is \$5 for the general public, \$2 for students.

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SAVING STRAWBERRIES,  
RASPBERRIES FROM  
TROUBLESOME DISEASES

Certain strawberry and raspberry diseases are potential trouble, particularly if extended periods of rain and heavy dew occur from blossom time through harvest, says Herbert G. Johnson, University of Minnesota extension plant pathologist.

Fungus diseases occur on blossoms, leaves and fruit. During dry weather these diseases build-up slowly and cause little damage, but yields are usually poor. If rains are normal or excessive or if you irrigate, the fungi that cause diseases grow rapidly and also there is the potential for a high yield.

At present our varieties have little resistance to these diseases and our best safeguard is the application of fungicides. Weekly application of fungicides from the start of plant growth in the spring to the start of harvest is usually an effective program. Usually one or more insecticides should be applied with the fungicide, but the fungicide alone must be used during bloom. This degree of flexibility is possible only if the fungicide is obtained as a single material. Combination fruit sprays containing insecticides must not be used during the bloom period.

The labels and other 1975 recommendations for use must be checked for the time of last application of pesticides before harvest. Some fungicides are registered for use during harvest. A good program of fungicide application up to harvest will reduce the fungus population and reduce the benefits from application during harvest.

The "Home Fruit Spray Guide," Extension Pamphlet 184; "Strawberry Diseases," Plant Pathology Fact Sheet No. 2; and "Raspberry Diseases" Plant Pathology Fact Sheet No. 8 are available from the \_\_\_\_\_ County Extension Office or the Bulletin Room, University of Minnesota, St. Paul 55108.

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MAYO RESEARCHER  
NEEDS VENOM

A Mayo Clinic researcher needs large quantities of honey bee, yellow jacket, wasp and hornet venom for research in insect allergens, says David M. Noetzel, University of Minnesota extension entomologist.

Persons interested in providing this venom should contact Dr. John W. Yunginger, Allergic Diseases Research Laboratory, Rochester, Minn. 55901. He will provide information on methods to obtain the venom and how to handle it in submitting it to him.

-daz-

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USDA DELAYS IMPLEMENTATION  
OF REVISED BEEF GRADES

Revised U. S. grade standards for beef will not be implemented, pending resolution of a lawsuit brought against USDA by the Omaha Independent Meatpackers Association in the U. S. District Court in Omaha, Neb., according to the U. S. Department of Agriculture (USDA).

The announcement followed a decision by the 8th Circuit U. S. Court of Appeals in St. Louis, Mo. The Court of Appeals upheld a preliminary injunction issued by the District Court, which enjoined implementation of the revised beef grade standards. Revised standards were scheduled to go into effect April 14.

In denying USDA's request to overturn the preliminary injunction, the Court of Appeals ordered the District Court to hold a hearing on the merits of the case and render a decision within 45 days. The District Court was also ordered to hold a hearing on the sufficiency of the plaintiffs' bond within five days.

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IN BRIEF. . . .

Raspberries. Try growing raspberries in your home garden, Leonard Hertz, University of Minnesota extension horticulturist, suggests.

It may be one of the most useful food-bearing plants for home gardeners, in terms of trimming the family food budget. (Last summer raspberries were selling for \$1.59 a pint at some Minnesota supermarkets).

\* \* \* \*

Raspberry Types. Red raspberries are the most popular and successful of those grown in Minnesota, but black and purple types also are grown in the Gopher State.

Raspberry canes grow the first year, fruit the second and then die. University of Minnesota Horticulturist Cecil Stushnoff is attempting to develop a early maturing, cold hardy raspberry bush that will produce fruit on annual wood for yields in September and October in Minnesota. In other words, the crop is produced on canes that develop the same season.

\* \* \* \*

When to Plant. Raspberries should be planted in early spring as soon as the soil can be worked. Plant only highest quality, disease free nursery stock, since virus diseases are serious in raspberries.

They can be grown in a sunny spot as a hedge toward the back of your yard. For more information, get Horticulture Fact 20, "Raspberries for the Home Garden," and Plant Pathology Fact Sheet 8, "Raspberry Diseases," from the \_\_\_\_\_ County extension Office or the Bulletin Room, University of Minnesota, St. Paul 55108.

\* \* \* \*

-more-

add 1--in brief

Yard 'n Garden Topics. The only weekly television program on gardening telecast throughout Minnesota features a full lineup for May. "Yard 'n Garden," a half-hour color program, is aired on educational stations and some commercial stations. Topics and dates for educational station showings include: vegetable gardening, May 1; pruning, May 8; tomatoes, May 15; fruit disease, May 22, and fruit pest control, May 29.

\* \* \* \*

Soybean Planting. Earlier planting could "substantially increase Minnesota soybean production," says University of Minnesota Extension Agronomist Dale Hicks. In trials at two Minnesota locations--Waseca and Lamberton--yields averaged 38 bushels per acre for early May plantings compared to 35 bushels for late May plantings. For the nine-year study, early planting dates averaged May 2; late plantings May 22. An added bonus of earlier planting; less lodging and earlier maturity. Early planted plots reached combine maturity five days earlier than the late May planted plots.

\* \* \* \*

Early Beans. Only about one-fourth of Minnesota's soybean acreage is usually planted by May 20, but earlier planting could substantially increase yields, states University of Minnesota Extension Agronomist Dale Hicks. Although some farmers are wary of early planting due to possibility of late spring frosts, this should not be a major concern to soybean growers, according to Hicks. He says soybean seedlings can tolerate temperatures of 29 to 30 degrees F for one to two hours without significant leaf damage. Also, the chances of temperatures getting below 32 degrees in late May in southern Minnesota are low.

Grain Production. World grain <sup>\* \* \* \*</sup>production (excluding rice) will exceed world consumption in 1975-76, predicts the U.S. Department of Agriculture's Foreign Agriculture Service. This will cause "moderate recovery" in grain stock reserves for the first time since 1971-72. But there's one important assumption: "normal" weather during the growing season. Total world grain production is projected at just under one billion metric tons, up almost 88 million tons over 1974-75. The United States is expected to account for 56 million tons of this increase. Consumption is currently forecast at 972 million metric tons, a 43 million ton increase over the current season.

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RESEARCHERS  
PONDER SOY  
VS. MEAT

The humble soybean has come of age. Some people credit it with holding the solution to world hunger problems.

How much of this credit is deserved is the question researchers at the University of Minnesota's Food Science and Nutrition Department are tackling. They studied 100 percent soy meat analog and 30 percent fat ground beef and found a variety of pluses and minuses for the meat substitute.

"Consumers want to know, 'how do soy products compare with meat?' but we had to decide if 'meat' meant pork, lamb, sirloin steak or hamburger," says P.V. Hegarty, head of the soy research team. "We decided on hamburger for the comparison because that is the meat a soy product is most likely to replace in a family's meals."

Soy protein is slightly lower quality than meat protein, Hegarty says. It is low in one amino acid, methionine. Soy could be fortified with methionine to make it more comparable to meat, but the missing amino acid is toxic in excess. Even a bit too much might make the soy product unpalatable or even dangerous.

The soy researchers found that soy and meat differed when compared at point of sale versus point of consumption. Soy "steaklet" contains only 1 to 3 percent fat when it's sold, but when fried as recommended, the percentage jumps to 15 to 20 percent.

Hamburger with 30 percent fat will contain less than that when cooked. How much less depends on how well done it is served and how it is cooked, Hegarty says.

"Consumers who buy soy analogs to avoid high cholesterol in meat may trade one problem for another," he says. "The 'meat' taste in soy products usually comes from a high sodium additive that covers the 'beany' flavor. Persons who need to avoid sodium in their diets should watch the nutritional information on a soy product's label or write to the manufacturer for details."

-more-

add 1--researchers ponder

Flatulence, which is caused by two sugars in the soybean, may cause mild discomfort to some people. The concentration of the sugars is lowered if the soybean is highly processed. The fiber in soy that is missing in meat may be a hedge against cancer of the colon. Studies of countries where high fiber diets are common show a low incidence of colon cancer.

"Our soy research points out once again that there is no one complete food," Hegarty says. "Meat isn't, and neither is soy. We need to combine and balance our foods. Soy analogs will be an alternative to meat, but they won't ever replace it.

"Our children, who are tomorrow's consumers, are eating soy protein now as part of school lunch programs. As they acquire a taste for it and as current low meat prices rise, soy products will become more popular," he says.

-dmn-

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4-H NEWS

Immediate release

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TEEN LEADERS  
TO ATTEND  
BIKE SAFETY CAMP

About 150 teen leaders from 4-H and other youth organizations are expected to attend the Bicycle Safety Camp June 9-12 at Camp Lincoln near Brainerd.

Also known as the Pedal Power Workshop, the camp is sponsored by the University of Minnesota Agricultural Extension Service and the Minnesota Department of Public Safety.

The camp provides an opportunity to learn bicycle safety and maintenance, to go on bike hikes, learn the rules of the road and participate in bike rodeos. Participants in the camp will teach others bicycle safety when they return home.

Other activities include swimming, canoeing, archery and horseback riding.

The camp is for young people 15 to 17 years old representing Minnesota youth-serving organizations interested in helping conduct community safety programs.

State Natural Resources Commissioner Robert Herbst will address a general assembly at 7 p.m. June 9.

For more information, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

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DEMAND GOOD FOR  
MOST AGRICULTURAL  
COLLEGE GRADS

The annual placement survey of 14 Midwest agricultural colleges shows a 6.5 percent increase in average starting salaries as compared to a year earlier.

About 95 percent of those graduating in 1974 were able to find employment. Strongest demands for graduates are in the areas of agricultural business, high school vocational agriculture teaching, agronomy and food science, reports Deane Turner, placement director in the University of Minnesota College of Agriculture.

Participating in the survey were Illinois, Iowa State, Kansas State, Lincoln, Michigan State, Minnesota, Missouri, Nebraska, North Dakota, Ohio State, Purdue, South Dakota State, Southern Illinois and Wisconsin universities. The survey results were tabulated by Roger Bruene, agriculture placement officer at Iowa State University. Participating universities report on placement of 1974 graduates and estimate job prospects and salaries for 1975 graduates.

In 1974, the 14 universities graduated 4987 students with B.S. degrees, 1191 with M.S. degrees and 612 with Ph.D.'s. Compared to 1973, this was a 7.6 percent increase for the B.S., a 9.5 percent increase for the M.S., and a 12.1 percent increase in the number of Ph.D. graduates.

Private industry accounted for the largest percent of the graduates with 28.9 percent. However, farming and professional farm management continued a recent trend of employing more graduates with 23.8 percent in 1974 compared to 10 percent in 1970. Graduate study accounted for 17.5 percent. Other areas employing agriculture graduates were teaching and extension, 7.7 percent; government work, 8.3 percent; military services, 2.0 percent; and other types of employment accounted for an additional 6.4 percent. Only 5.4 percent were not placed.

add 1--demand good

Average monthly starting salaries for 1974 were \$780 for B.S. graduates, \$946 for M.S. graduates and \$1262 for Ph.D. recipients. In 1973 the average starting salaries were B.S., \$732; M.S., \$900; and Ph.D., \$1244.

Placement officers at the schools estimate that employment trends of agriculture graduates in 1975 will be about the same as in 1974 and predict that the average starting salaries will continue to increase for all three degrees, B.S., M.S., and Ph.D.

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START SOON  
TO CONTROL  
APPLE DISEASES

Scab and cedar-apple rust cause leaf and fruit diseases in Minnesota that can range from minor to severe damage, says Herbert G. Johnson, University of Minnesota extension plant pathologist.

Infected fruit is reduced in grade for commercial sale and reduced in value for home use. Leaf loss can be severe enough to materially reduce yield and weaken trees. Some apple trees escape rust because they are a sufficient distance away from eastern red cedar trees where the rust galls overwinter.

The scab fungus overwinters on apple leaves on the ground under apple trees where the disease occurred the previous season.

Each apple grower can decide on a disease control program based on the presence and severity of these diseases in previous years. If either or both of these diseases has not been present before, there is little need for control. Scab, however, can show up even though it has not been seen before and once it starts it is likely to be present in following years.

Minnesota apple trees are susceptible to both of these diseases and the only feasible control is through the proper use of certain fungicides. Details on control are available in Extension Pamphlet 184, "Home Fruit Spray Guide," which is available from the \_\_\_\_\_ County Extension Office.

The first application of fungicides should start at pink stage when petals first show from buds. Captan fungicide, which is one ingredient in commercial fruit spray mixes, gives good control of scab, but does not control rust. Another fungicide, such as zineb or ferbam, must be added if rust is a problem.

-daz-

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SALVAGING WILD  
ELMS BEFORE  
DISEASE STARTS

Salvaging Minnesota's native wild elms, mainly American elm, should be undertaken on a statewide basis before they become diseased, says Frank H. Kaufert, former dean of the University of Minnesota's College of Forestry.

He discusses the importance of this resource and possible ways of utilizing it in an Agricultural Experiment Station bulletin soon to be released.

The more than 100 million wild elms in Minnesota are quite certain to be killed by Dutch elm disease in the next 10 to 20 years and this would be a "serious" economic loss for the state, Professor Emeritus Kaufert adds. Statewide salvaging or harvesting before elms are diseased would result in utilizing and benefitting from a resource that otherwise would be largely wasted.

Wood of American elm, although not of as high quality as that of slippery (red) and rock elm, is being used for many wood products, including veneer and plywood, furniture, pallets, railroad cross ties and pulpwood for paper and paperboard products.

Several questions regarding the elm utilization program need to be answered, Kaufert says. Among them: How much protection would be provided ornamental elms in cities and other population centers through a statewide wild elm salvage program? Which would reduce potential infection centers? What is the best way to dispose of elm slash and cull materials after logging? To what extent will wild elms be regenerated after salvage logging, and will the reproduction also succumb to Dutch elm disease?

He adds that studies are needed "if we are to carry on a statewide wild elm salvage program with safety, benefit to the economy and possible insurance for the prolonged health of our ornamental elms."

-daz-

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CATTLE PRICES  
MOVING HIGHER

The U.S. Department of Agriculture (USDA) April 1 Cattle on Feed Report released last Friday suggests that cattle prices will be moving higher during the next two months. Paul Hasbargen, University of Minnesota agricultural economist, draws this conclusion based on the fact that there are 36 percent fewer cattle on feed in the heavier weight groups.

"Even though there will be a large increase in nonfed steer and heifer slaughter--chances are it won't be enough to offset this temporary shortage of fed beef. This fact, coupled with a very large drop in hog marketings, should move cattle prices into the mid-forties by June," projects Hasbargen.

However, he cautions that more cattle will be going into feedlots and beef supplies will be higher again this fall. So beef and dairy producers should attempt to take advantage of the improved market conditions during the next few months by selling cull cows and selling feeder steers that were carried over winter.

They may also want to forward price cattle that won't actually go to market until this fall. Cow-calf men may want to get contracts on their feeders or hedge them on the futures market. And, cattle feeders may want to hedge or contract ahead on fat cattle heading for sale late in the year, Hasbargen adds.

-jms-

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DAIRYMEN CAN'T AFFORD  
OUT-OF-SIGHT HAY PRICES

Rather than paying exorbitant prices for hay, Minnesota dairymen caught in a hay shortage should consider some alternatives, advises a University of Minnesota dairy scientist.

"Some hay is reportedly selling for close to \$100 a ton and dairymen just can't afford those prices," says Mike Hutjens, the U of M specialist. According to his calculations, dairymen who have to pay over \$63 a ton for average hay would be better off to "stretch" available hay by buying corn and soybean meal instead.

"At \$5.50 per hundred weight for shelled corn and \$7 per hundred for soybean meal you can't afford to go much over \$63 per ton for average hay. You'd be better off to buy grain (corn and soybean meal) as a source of nutrients.

"However, cows need some forage," he emphasizes. "A 1300-pound cow should have a minimum of 15 to 18 pounds of forage in the ration. Part of this requirement can be 'stretched' by adding some straw."

Straw is high in fiber and low in nutrients--particularly protein and phosphorus. Hutjens offers these additional tips for dairymen caught in a hay shortage:

--Forage added to the ration should not be ground finer than about one inch in length ( $\frac{1}{4}$  inch chop) to maintain rumen digestion and fat test.

--You can stretch available hay by giving the best hay to high producing cows to maintain peak production. Dry cows and those in late lactation can get by on lower quality forage such as straw, providing the ration is rebalanced.

-more-

add 1--dairymen can't afford

--When you add straw, corn stocks or lower quality forage, the ration should be rebalanced. County extension agents can help.

--Treating straw with sodium hydroxide to improve digestibility takes "too much time and effort" to be practical.

--If you're considering buying pelleted hay, make sure you get a guaranteed feed analysis before you make the purchase. Pelleted hay may contain a variety of low quality feeds such as straw and sunflower hulls. Again, some long forage (5-10 lb) should be fed to avoid milk fat depression and maintain rumen digestion.

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VACCINATE TO PREVENT  
RABIES, SUGGESTS  
UM VETERINARIAN

Both cats and dogs should be vaccinated against rabies. "Too often people think of rabies only as a problem in dogs and cats are overlooked," emphasizes Dr. Stanley Diesch, University of Minnesota veterinary medicine professor.

A few months ago there was a human death from rabies in Minnesota following a bite of a stray cat.

When cats and dogs develop rabies an attack by them will sometimes expose several family members and other animals. However, in some cases only vague clinical signs may occur in the animal until death. In Minnesota the greatest potential to contract rabies is by your pet coming into contact with stray or wild animals.

Dr. Diesch says Minnesota ranks second only to California in the number of reported confirmed animal rabies cases. About 300 cases are reported each year in Minnesota, although Diesch says only a fraction of the total number are reported, especially in wild animals. In 1974 in this state 181 cases were reported in skunks, 41 in cattle, 18 in cats, 11 in dogs and 10 in bats.

Dr. Diesch offers these recommendations for control of rabies in dogs and cats:

--"Have cats and dogs vaccinated. The first vaccination can be administered at three to four months of age. Boosters are necessary. Vaccination of companion animals develops a resistant barrier and prevents transmission between rabid animals and the family.

-more-

add 1--vaccinate to prevent

--"Keep animals under control to prevent their contact with other infected, stray or wild animals. I realize that this is more difficult on the farm. Over population of cats and dogs can be a special problem on farms but farm cats and dogs should also be vaccinated. Farm animals are especially apt to have contact with wild animals."

Stray animal control "is essential," Diesch emphasizes. "This can be partially accomplished through avoiding overpopulation, by not breeding, spaying or neutering. Local ordinances must provide for removal of unknown or stray animals from a community. Cat and dog owners and communities must accept this responsibility," he concludes.

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Immediate release

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TIPS FOR WILD OAT  
CONTROL LISTED

Having trouble with the wild oat weed? There are two primary types of control practices, says Oliver E. Strand, extension agronomist at the University of Minnesota.

First, cultivation will help. Cultivate shallowly as early as possible in the spring to encourage germination of the wild oat seed. Then, a few days later, repeat the tillage to kill the wild oats that have germinated.

However, Strand cautions, don't delay crop seeding over a week or two or you will begin to lose full yield potential.

Second, there is chemical control. Only three herbicides are cleared for use in wheat, barley and flax, Strand says. They are triallate (Fargo or Avadex B-W), diallate (Avadex), and barban (Carbyne).

While chemicals and cultivation are the main weapons against wild oats, farmers can also be careful to plant only vigorous weed-free seed and, in some cases, cut the crop early for hay or silage before the wild oats goes to seed. Wild oat is especially difficult to combat because it is so similar to the small grains it bothers. Wild oat matures earlier than wheat and barley and sheds its seed before the crop is harvested. And those seeds can remain in the soil until the following spring or longer before germination. Proper and timely application of chemicals, according to label directions, is essential for good control.

Wild oat is a serious weed, but has some good points too. Wild oat is actually higher in protein content than cultivated oats and some wild oat strains are currently being used in plant breeding programs to improve the protein content of cultivated oats.

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Tel. (612) 373-0710  
April 28, 1975

Immediate release

MSC  
7/17/75

APRIL USDA STOCKS  
REPORT ANALYZED  
BY UM AG ECONOMIST

Even though the U. S. Department of Agriculture's April stocks report is fundamentally bullish in that it shows low grain stocks, it does not necessarily mean that everyone should hold their grain in hopes of selling it at much higher prices in mid-summer.

That is University of Minnesota extension economist Will Anthony's analysis of the April 24 USDA grain stocks report.

A tight supply situation for feedgrains before the 1975 crop harvest begins is indicated in the report, but it appears that soybean supplies on hand will be adequate, Anthony adds. The report stated that stocks of grain were quite low in the United States as of April 1.

Stocks of corn in all positions of Minnesota on April 1 totaled slightly more than 203 million bushels, 32 percent less than corn supplies on hand a year earlier.

Total wheat stocks on April 1 in Minnesota of a little more than 40 million bushels in all positions were 27 percent above a year earlier.

Soybean stocks in all positions totaled 53.4 million bushels, 24 percent less than on hand a year earlier.

-daz-

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NEW INBRED CORN  
LINES RELEASED  
BY UNIVERSITY

Five inbred lines of yellow dent corn have been released by the University of Minnesota's Agricultural Experiment Station and Department of Agronomy and Plant Genetics.

Two of the lines, A661 and A662, are suitable for use in corn hybrids adapted to central and north central Minnesota. In hybrids, they contribute to high yields, good standability and good resistance to the first brood European corn borer. Both lines, as well as their single cross, could be used as female parents University scientists say.

Inbred line A663 is adapted for use in southern Minnesota. This line contributes to good yields and very good standability in crosses. It has potential as a female parent.

And two other lines--A664 and A665--are early inbreds adapted for use in north central and northern hybrids. They also contribute to good yields and standability and could be used as female parents.

For more information, contact the Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul 55108.

Seed of each line is available in germplasm amounts of 50 kernels for \$10. Seed requests should be addressed to Foundation Seedstocks, Minnesota Crop Improvement Association, University of Minnesota, St. Paul 55108.

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PREVENT DISASTROUS  
TRACTOR ACCIDENTS

Simple precautions can prevent disastrous tractor accidents, Jack True, an extension agricultural engineer at the University of Minnesota, says.

The rules of thumb:

--keep children off and away from farm machinery.

--don't carry riders. There is no safe place on a tractor for riders.

--make sure the person operating the tractor has been well trained and supervise the operation until you are satisfied they are competent and will operate safely.

--discourage horseplay and showing off. Use the tractor only for its intended function.

--avoid fatigue. Take breaks frequently.

--provide roll-over protection for your tractor. Consider the comfort as well as safety of a protective cab. According to True, tipping alone is responsible for just under half of all tractor-mishap fatalities.

And, he adds, small yard-and-garden tractors are also susceptible to accidents.

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FIRE HAZARDS FROM  
HOMES IN WOODY,  
GRASSY AREAS

Take precautions to prevent spring wild fires from spreading to homes or vacation cabins, University of Minnesota foresters warn.

Buildings located near dry field grass and forest areas are especially susceptible to fire--and this includes many homes in the Twin Cities metropolitan area.

"Many homes and other buildings being built in grassy and woody areas on the outer fringes of the Twin Cities area are especially susceptible to fire," warn University of Minnesota forestry specialists Marvin Smith and Frank Irving. Wood piles, dry leaves and litter close to homes located some distance from fire departments present a potentially dangerous situation. So do homes surrounded by pine trees and other conifers that do not have a good firebreak between trees and the home. These trees contain highly inflammable resins.

"Homes located in conifer pine plantations are a sure fire trap unless you take some precautions," the U of M foresters emphasize. Here are some suggestions.

--Rake dead leaves and litter on a firebreak (six to 10 feet wide) on all sides of the home to stop the spread of fire at a safe distance.

--Consider removing evergreen trees that actually touch the house. You can plant less flammable trees such as oak, maple and basswood to replace trees that you cut. "At the very least, prune all lower branches from evergreen trees close to the home to reduce the chance of fire moving into the tree crown," Smith and Irving urge. However, oak trees should not be pruned during the spring and summer growing season to prevent spread of the oak wilt fungus.

--Don't pile combustibles such as firewood or hay and straw insulation near your home. They can easily ignite and serve as kindling to start the home on fire.

-more-

add 1--fire hazards

--Burn trash and other debris only when it's completely safe. Better yet, take trash and debris to a sanitary landfill. "Urge your neighbors to do the same--fire does not respect property boundaries," the foresters point out.

If you plan any open burning, a permit is required under state law. Permits can be obtained at Minnesota Department of Natural Resources forestry stations or from township fire wardens. Before doing any burning, prepare fire breaks and have water and fire fighting equipment available in case of emergency. Plan burning carefully, taking into account the wind velocity and direction, location of buildings and other property. Also, ask your local forestry office for advice and information on weather and conditions.

A final reminder--caution children about playing with matches. This poses a special hazard around combustible material such as dry grass, dead leaves, pine boughs and other debris. Adults should also avoid starting accidental fires through carelessness with smoking materials and machinery such as lawn mowers and chain saws, the foresters conclude.

-jms-

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SMOKE DETECTOR  
CAN SAVE LIVES

What can cost from \$40 to \$80, appear unobtrusive and yet save lives and property simply by emitting a loud screech?

The answer: a smoke detector.

Smoke and gases may be more dangerous than the fire that produces them. In fact, the National Fire Protection Association (NFPA) points out, most fire casualties are the victims of smoke and gas rather than burns.

The Fire-Service Information, Research and Education (FIRE) Center at the University of Minnesota recommends smoke detectors--especially for persons living in unprotected rural areas and other areas far from the nearest fire department.

And Frank E. Oberg, director of the FIRE Center, says a smoke detector is a good investment no matter where you live.

Since Jan. 1, 1974, smoke detectors have been required in all new homes and apartments built in Minnesota where the state building code applies. That means everywhere in the state where there is a building code, because units of government have only two choices: use the uniform state code or have no code at all.

Heat detectors aren't enough. The state code describes acceptable detectors as sensitive to products of combustion other than heat. According to NFPA, a slow-burning fire in bedding or upholstery, for example, may generate enough smoke and deadly gas in a home to cause unconsciousness before it produces sufficient heat to activate a heat detector.

There are two basic types of smoke detectors: photocell and ionization. Either will do the job. Photocell alarms are activated when smoke interrupts a light beam; ionization units will detect the presence of gases other than smoke, a state building code inspector says. Ionization detectors are consequently more sensitive but also somewhat more susceptible to false alarms.

-more-

add 1--smoke detector

If you are considering a smoke detector or already have one, be sure to:

--make certain the device has been listed or approved by a nationally recognized fire testing laboratory. A list of acceptable devices is available from the State Fire Marshal's Office or the State Building Code Division.

--pay attention to the directions when you install the detector. Note its distance limitations.

--install the detector between the bedroom areas and the rest of the home and sleep with the bedroom door shut. That will provide a barrier to smoke and give you a few extra seconds for escape.

--to prevent false alarms, be sure not to put the alarm in a naturally smoky place such as near a fireplace, in the kitchen or in the garage where exhaust gases from the car can set off the alarm.

--have an escape plan prepared in advance. Even a smoke alarm will be of little value if confusion sets in over how to escape from the house.

--test the alarm occasionally with a smoke source to be sure it is working.

Both battery-powered and AC-powered detectors are available. Batteries, of course, must be replaced regularly, but they do have the advantage of providing a power source regardless of electrical failure and giving you more flexibility in locating the detector in the home.

There is one other benefit in owning a smoke detector. According to Charles Munson, assistant manager of the Insurance Services Office of Minnesota, most insurance companies offer a premium credit for installation of burglary and/or fire alarms and that credit ranges from zero to 10 percent.

"We would encourage people to talk to their agent about it," he says.

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PREVENT DISEASES  
IN HOME GARDEN

Now is the time to begin taking precautions against disease in garden plants, according to Frank Pflieger, extension plant pathologist at the University of Minnesota.

He offers these suggestions:

--don't crowd plants. Crowding favors humidity build-up, which in turn favors disease.

--rotate crops. Avoid successive cropping of the same vegetables side-by-side during the same season. Many vegetables are susceptible to the same diseases and such successive cropping can facilitate disease transmission.

--keep your garden as far from the house as possible. Ornamental plants around the home can harbor many diseases that can spread to the garden.

--keep weeds well under control. They serve as host for many pathogens.

--control insects early in the season. They carry and spread plant disease.

--plant only disease resistant varieties when possible.

--be sure that seed is treated with fungicide before planting. And remember that some seeds need hot water treatment to destroy pathogens within the seed. Check the package or write to the company to see whether such treatment has been given.

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Immediate release

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FRUIT TREE  
PLANTING TIPS

Planning to plant fruit trees this year?

Don't go to work too soon, advises Leonard Hertz, extension horticulturist at the University of Minnesota. Wait until you can dig easily and then don't plant if the soil is so wet that it sticks in a ball when you squeeze it.

When you do plant, he says, look closely at the tree to see how deep it was planted before. Be sure not to place the graft below the ground. Keep it at or slightly above ground level.

Don't put fertilizer in the hole. It can damage the young tree. Hertz advises no fertilizer at all for the first year. In subsequent years, use a balanced fertilizer like 10-10-10 at the rate of 1 pound for each inch of trunk diameter. Apply in a broad ring starting about two feet from the trunk and extending beyond the branch tips, before the tree begins growing in the spring.

Fruit trees should be pruned early--before April 1 most years, but not after May 1 this year, Hertz says. Pruning is important for shaping a young tree. Older trees are pruned to better allow light to penetrate the branches.

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IN BRIEF. . . .

Weather Information. Keep posted this spring by listening to the radio for local weather information and by placing the Agricultural Extension Service Poster, RCD 4, in your home or office. You'll want to keep this poster in a conspicuous place since it lists tornado safety rules and last minute preparations for windstorms. Get a copy of RCD 4 (1966 Revision) from the \_\_\_\_\_ County Extension Office or the Bulletin Room, University of Minnesota, St. Paul 55108.

\* \* \* \*

Spinning Cloud. A tornado is a rapidly spinning, funnel-shaped cloud extending to the earth from the base of a storm cloud. If tornado history is any guide, at least 17 tornadoes could touch down in Minnesota this year. Most of them would probably occur from May through July. The southern half of the state has four times as many tornadoes as the northern half. Last year 13 tornadoes were reported in Minnesota and nine persons were injured.

\* \* \* \*

Seeking Protection. Where should a person go for the best tornado protection. An inside hallway on a lower floor, preferably in the basement, is the best place in an office building. In factories--the section of the plant offering the greatest protection in accordance with advance plans. The basement of a home usually offers good protection. Seek shelter under a sturdy workbench or heavy table if possible.

In open country, move away from the tornado's path at a right angle. If there is no time to escape, lie flat in the nearest depression, such as a ditch or ravine.

\* \* \* \*

-more-

add 1--in brief

Popular Notions. Research findings released by the National Weather Service strike down some popular notions about tornado safety.

Researchers, after examining the rubble of school buildings hit by tornadoes, say the southwest corner of the building should be avoided because the tornado will most likely approach from that direction.

Large rooms, such as gymnasiums or cafeterias, should be avoided during tornadoes. These rooms are more subject to the storm's lifting forces and more likely to collapse.

\* \* \* \*

Farm Buildings. Most farm buildings are poor protection against tornadoes. If there is time, the farmer should put his stock outside and should stay in the basement until the danger has passed.

Be prepared for electrical outages and have a good battery powered radio and flashlights handy to take to the shelter. For more information, get RCD-6, "Tornadoes. . .What to Do," from the \_\_\_\_\_ County Extension Office or the Bulletin Room, University of Minnesota, St. Paul 55108.

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ATT: Extension Home Economists

Immediate release

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SPENDING MORE FOR FOOD?  
LOOK TO YOUR GARBAGE PAIL

Consumers are quick to lament rising food prices, but recent research shows that many households may toss \$100 worth of food into their garbage cans each year.

And this waste doesn't include food ground up in garbage disposals, fed to household pets, composted or disposed of in other ways, says Mary Darling, extension nutritionist at the University of Minnesota.

The Garbage Project, a two-year study of household waste conducted in Tucson by University of Arizona researchers, sampled garbage can contents of randomly selected families. Students who received University archeology credit for their "digs" through Sanitation Department collections, found an average waste of about 9 or 10 percent of a family's total food resources.

About 60 percent of this was what the study termed "straight waste," significant quantities of food items such as whole, uncooked portions of meat or partial loaves of bread. The remainder was in "plate scrapings" or small, unidentifiable remains of cooked dishes.

Samplings in 1973 and again in 1974 showed that less protein food--meat, poultry, cheese--was wasted in 1974, but more vegetables were discarded. Projecting the data from sample families to the 450,000 residents of Tucson, the researchers estimated that Tucson households discarded about 9,500 tons of edible food yearly valued at between \$9 and \$11 million. This would feed about 4,000 persons for a year.

Food waste probably is even more flagrant than the study reveals because nearly 25 percent of the sampled households have garbage disposals and because liquid foods--milk, fruit juices, sauces--normally are poured down a drain rather than dumped in a garbage can.

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4-H NEWS

Immediate release

4-H CONSERVATION  
CONFERENCE SET AT  
ITASCA STATE PARK

About 95 4-H junior leaders and some adult leaders will attend the 41st annual Minnesota 4-H Conservation Leadership Conference June 9-13 at Itasca State Park.

(Agents: Insert names and addresses of persons attending from your county).

Some of the purposes of the conference are to provide educational experiences that will enable young people to make intelligent decisions on environmental practices and to provide training for 4-H junior and adult leaders for leadership roles in county conservation programs.

The program includes a debate on three conservation topics on Tuesday night, June 10.

Resource personnel at the conference will include, among others, Walter Breckenridge, former director, Museum of Natural History, and Norman Ordahl, State Natural Resources Department, Fish and Wildlife Area Office, Bemidji. State extension staff specialists will include Marvin Smith and Bill Miles, forestry; Clifton Halsey, conservation; O. C. Turnquist, horticulture; Warren Gore, training specialist; David M. Noetzel, entomology; and Ira Adelman, resident associate, entomology, fisheries and wildlife.

Conducting the conference will be continuation committee members Dave Potter, Houston County; Doyle Zellar, Jackson County; Marcia Olson, Lyon County; Dave Little and Brenda Thorston, both of Redwood County, and LuAnn Zimmerman, Stevens County.

During the past four decades more than 3,000 4-H'ers have been involved in learning sound principles of resource management taught by more than 80 different environmental experts. The conference is sponsored by the Federal Cartridge Corp. and the University of Minnesota Agricultural Extension Service. For registration information, contact \_\_\_\_\_ at the \_\_\_\_\_ County Extension Office.

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