MICHIGAN FARM NEWS

MICHIGAN'S ONLY STATEWIDE FARM NEWSPAPER — MICHIGAN FARM BUREAU

MICHIGAN FARM BUREAU

March 30, 1997
Vol. 74, No. 6

PRINTED WITH SOY INK

More pigs, more corn, more profits

With the goal of increasing the overall profits of Michigan corn and pork producers, the Michigan Pork Producers Association and the Corn Marketing Program of Michigan teamed up to challenge members to garner more profit through a program called More Pigs, More Corn, More Profit . It outlined strategies for producers to get involved in pork production and better utilize the corn production excess in the state.

Farmland Trust report shows America's best farmland needlessly destroyed by urban development

Charging the U.S. is squandering its best and most productive farmland, a national nonprofit farmland conservation group today called on federal, state and local policymakers to take action to stop the destruction of what it called a strategic and irreplaceable natural resource by suburban sprawl.

In a report released on National Agriculture Day, American Farmland Trust (AFT) said that between 1982 and 1992, 4.3 million acres of prime and unique farmland were overrun, nearly 50 acres every hour of every day. It said every state in the nation lost high quality land during the period, most frequently to scattered and fragmented urban development near major metropolitan areas. It identified 20 areas as the most threatened agricultural regions in the country.

According to AFT's report, *Farming on the Edge,* 79 percent of the nation's fruits, 69 percent of its vegetables and 52 percent of its dairy goods are now produced on high-quality farmland threatened by sprawling growth. AFT said an analysis of the country's 181 geographic units or major land resource areas showed 70 percent had prime or unique farmland in the path of rapid urban development. Texas lost more prime and unique farmland than any other state to suburban sprawl, nearly a half million acres from 1982 to 1992.

Other big losers were California, Florida, Georgia, Illinois, Indiana and Tennessee.

American Farmland Trust warned that with the U.S. population expected to jump 50 percent by the mid- 21st century and high quality farmland projected to shrink 13 percent, the nation could become a net food importer instead of a net food exporter within 60 years.

AFT President Ralph Grossi called the findings alarming and said America must better manage its land resources. Otherwise, he told a Washington press conference, the nation could constrain its future ability to deal with a raft of social, economic, food security and environmental issues.

"It's very simple," said Grossi, a third-generation northern California rancher who has headed AFT since 1985. "The nation's best and most productive farmland is being needlessly destroyed. The destruction of our best farmland by sprawling development reduces our agricultural efficiency, increases tensions between farmers and suburban neighbors, leads to higher tax burdens and puts greater pressure on less productive, more environmentally fragile lands here and around the world."

"Our country needs to refocus its efforts and energies on saving its best farmland for future gener-

Continued on page 3

Michigan potato producers to lose 5,000 acres of contracts, seedstock growers left with product in storage

Growers keeping eyes open for official word from processor

Michigan potato farmers have been dealt a serious blow — at least as far as anyone can tell. J.R. Simplot Company, a leading potato processor based in Boise, Idaho, has called for reducing their Michigan contract acreage by 80 percent for 1997.

The announcement revolves around the company's Grand Rapids processing plant. Fred Zerza, vice president of public relations for J.R. Simplot Company, commented on the status of the facility. "Our plan at the present time is to contract enough potatoes to run the plant through Oct. 20," he said. "The plant is in operation now and will run through mid-May on old potatoes and then we'll start again in early August."

"We're evaluating the cost structure and the competitiveness of the plant in light of market conditions, which are pretty tight. We have not made a decision yet on the plant status after the October run. If there is no decision at that point, it will hinge on the market and inventories," Zerza said.

The still-developing Simplot announcement affects Michigan growers at both ends of potato production. Seedstock growers, who signed contracts last year, are in danger of not having their contracts honored. Producers of potatoes for processing, who planned to plant for J.R. Simplot this spring, now have to seek other options.

Carl Steinbrecher, an Iron Range County Farm Bureau member who grows processing potatoes, attended a negotiating meeting in late March between J.R. Simplot Company and its growers. He left wondering what the future may hold, and why Simplot wants so few acres contracted with such late notice.

He learned the company plans to renew its 1,400 acres of Shopody variety potato contracts, which account for 225,000 hundredweight, but not contract any Russet Burbanks — 5,000 acres worth. Of those lost acres, 700 are in the Upper Peninsula and northern Michigan and the other 4,300 acres affect southern Michigan.

"This is awful late. All the farmers are getting worried," Steinbrecher said. "We bought seed in December. One guy that was on the negotiating committee fumigated his land that was to go into Russet Burbanks last fall. He's probably got $100,000 into the land."

Steinbrecher worries about what he'll do with no contract. "There's nothing for this year. There's nobody this late in the game going to come and get a contract."

Producers may be forced to compete for the limited chipping potato contracts still up for grabs.

But Zerza says this may be a temporary move, and production could be back in full swing next year. "The reason for the announcement to the growers, at this point, is to alert them to the tenativeness of the operation and to let them adjust their planting options as early as possible — because they were on the verge of planting their crop," he said

According to Michigan Farm Bureau Commodity Specialist Bob Boehm, the announcement comes at a late stage, leaving many would-be potato producers in a difficult position regarding spring planting decisions.

"The loss of these 5,000 acres represents 10 percent of the state's total potato acreage," Boehm said. "Obviously there are only so many acres that can reasonably be planted to potatoes, meaning many producers have substantial investments in facilities and equipment for potato production that may sit idle this year. The cropping alternatives in many of these areas are limited."

The announcement, or lack thereof, has left Michigan agribusiness professionals up in arms.

Continued on page 7

COVER STORY

More pigs, more corn, more profits for Michigan pork producers

Michigan markets more corn out of state than its livestock and processing facilities can utilize within its boundaries. With that in mind, the Corn Marketing Program of Michigan and Michigan Pork Producers Association teamed up in the middle of March to deliver to producers a new approach toward coordinating their efforts into *More Pigs, More Corn, More Profits.*

Utilizing the Michigan Pork Alliance as the backbone of this effort, interested producers gathered in one of five locations throughout the state to learn about the hog industry and how they might benefit from some of the principles of coordination.

"What we're suggesting is a method of coordination — with contracting," explains Dr. Laura Martin from MSU's Agricultural Economics Department. "It's linking up different segments of the industry, like people who are producing sows, the people that do the nursery pigs, all the way up to the packer sometimes. But it's not all owned by one individual. If it's owned by one individual like Premium Standard Farms – that's integration. The first thing to bear in mind is here in Michigan, most of our expansion is not coming from big, outside megafarms. It's our own family farms that are expanding, and they're linking up with other farmers, some that have been pork producers in the past and some that are new to pork production that have the land base. So there is a place for everybody."

"Michigan's advantage is that we have access to grain that is exported outside our state for milling and for processing," states Sam Hines, executive vice president of the Michigan Pork Producers Association (MPPA). "Grain is actually being sent to

Continued on page 5

MICHIGAN FARM BUREAU
A Publication of the Michigan Farm Bureau
P.O. Box 30960 • 7373 West Saginaw Highway
Lansing, Michigan 48909-8460

INSIDE THIS ISSUE OF THE MICHIGAN FARM NEWS

Sell products and services in the Michigan Farm News *classifieds—Page 21*

News in Brief

From the President

Let's quit playing politics with our roads

Funding for road and bridge repair in Michigan has been the subject of considerable debate and controversy in recent months. Farm Bureau delegates to the 1996 annual meeting endorsed policy supporting a 7-cent fuel tax increase to be used exclusively for maintenance of the rural infrastructure that each of us depends on daily for our families and for our farm operations.

Unfortunately, our interstate system is seven years older than the national average. The state of Michigan spent $7.29 for every 1,000 miles traveled in 1994, compared to the national average of $13.58 per 1,000 miles. As a result, research indicates that as many as 60 percent of our roads are in desperate need of repair. It's estimated our state will need an additional $5.4 billion over the next 10 years to bring our roads and bridges up to standards.

Meanwhile, our state's gasoline tax ranks 42nd in the nation. Put simply, present transportation funding levels are inadequate to meet maintenance needs.

While Farm Bureau wholeheartedly supports improved operating efficiencies within our state government, primarily within the Department of Transportation, as outlined by Gov. John Engler during his State of the State address, we continue to believe that a gas tax increase will be necessary.

Michigan Farm Bureau is supporting legislative efforts to increase funding for road repairs in Michigan that could generate $243 million in additional revenue for fiscal year 1997-98. That's equivalent to approximately 4.9 cents of a gas tax increase. The legislation would, among other things, reduce transfers of gas tax revenue to the Secretary of State's office by $43 million and would, phase out all diversion of gas tax revenue to the Secretary of State's office over a three-year period.

Transportation reform measures could generate an additional $20 million in tort reform and another $5 million from privatization of the Michigan Department of Transportation (MDOT), which includes capping local and state administrative expenses to 10 percent of total transportation dollars, eliminating 500 MDOT employees, and requiring performance audits of MDOT and county road commissions.

The proposal is also banking heavily on the state getting a larger share of federal Gas Tax dollars returned to the state from the federal Highway Trust Fund for highway improvements. Currently, the state receives only 93 cents of every dollar sent to the Highway Trust Fund. Proponents of the measure say that if Michigan were to receive dollar for dollar back from the fund, it could generate an additional $200 million for Michigan roads.

In fact, increased returns of federal Gas Tax dollars will be a priority issue of the 120 farmers attending the MFB annual Washington Legislative Seminar April 8 - 10.

Amidst all of the legislative remedies being introduced, let's keep one thing in mind. The longer we postpone the inevitable — a gas tax increase — the worse our roads will deteriorate, which will prove more costly in the long run.

Let's also consider the costs beyond just the fuel pump. While we may forego the expense of a fuel tax increase, we're spending more money to maintain our cars, our trucks and a transportation fleet that touches practically every item we depend on daily.

What impact does a deteriorating infrastructure have in attracting new businesses to Michigan? What incentive does it provide existing businesses to expand their operations here in Michigan if they have options elsewhere? Bottom line — what impact does an inadequate infrastructure have on the success or failure of our farms, our state's industry and, consequently, the future of jobs in this state?

While legislators in Lansing are apparently fearful a fuel tax increase is politically unpopular with constituents, I would argue that failing to provide adequate funding to maintain our infrastructure will ultimately prove considerably more politically disastrous.

It's time to face facts. Let's honestly evaluate what can be achieved through improved operating efficiencies, then determine what additional funds are needed through a fuel tax increase. We cannot, and should not, continue to jeopardize our state's future.

Jack Laurie

Jack Laurie, President
Michigan Farm Bureau

LETTER TO THE EDITOR

Dear Editor:

I have to differ with the statement made in the *Michigan Farm News,* Jan. 15, edition, by Ed Langanau, wildlife big game specialist for the DNR, on the overpopulation of the deer.

In the past, anterless deer permits were allotted like a lottery. Many would apply, but few would receive one. My family always applied — maybe three or four each year. We would be extremely lucky if one would receive one. This practice was extremely undermanaged by the DNR. Had they had a true outlook on the population of deer in the state of Michigan, they would've allotted more permits.

The theory of most hunters going only for the bucks is not only false, but a highly ignorant statement for the DNR to make. Although many hunters do go after trophy bucks, most of the hunters go for the meat. Today's venison is leaner than beef, therefore, healthier. Venison today also hasn't that wild gamey taste it did in yore. The sausage made out of it is excellent.

Why does the DNR think there is so much poaching of deer? It isn't for the antlers, it's the meat people are after.

This is nothing more than an extreme case of mismanagement on the part of the DNR. They are just looking for excuses, as usual, to pass the blame onto someone else. Their job, as managers, is to be able to look ahead, to figure what the situation is going to be a few years down the road. They didn't do their job. Now they expect the property owners to pay for their mistakes. This is not a fair or just practice. It just isn't acceptable.

They must create a means, now, to drastically reduce these deer herds.

This is not only our opinion, but the opinion of the vast majority of people living around our area that we have spoken to.

I know you agree. The problem is how to get the DNR to agree and act.

Just wanted you to be informed of not only our situation, but also that we agree with you and have let the DNR know it.

Sincerely,
Pamela A. Novak
Stockbridge, MI

The *Michigan Farm News* (ISSN:0743-9962) is published twice per month except in the months of November, December, June and July when only one issue is printed, as a service to regular members, by Michigan Farm Bureau, 7373 West Saginaw Highway, Lansing, Michigan 48917. Member subscription price of $1.50 is included in annual dues of Michigan Farm Bureau regular members. Additional subscription fees required for mailing *Michigan Farm News* to nonmembers and outside the continental U.S.A. Periodical postage paid at Lansing, Michigan, and additional mailing offices.

Letters to the editor and statewide news articles should be sent to: Editor, *Michigan Farm News,* Post Office Box 30960, Lansing, Michigan 48909-8460. POSTMASTER — Send address changes to: Michigan Farm Bureau, Post Office Box 30960, Lansing, Michigan 48909-8460.

Editorial: Dennis Rudat, Editor and Business Manager; Thomas Nugent, Associate Editor.
Design and Production: Dan Stiles. Contributor: Sue Stuever Battel. Advertising Sales Representative: Joshua Merchant.

U.P. Agriculture in the Classroom Workshop set

The U.P. Agriculture in the Classroom Workshop will be held Wednesday, April 16, at the HOJO Inn in Manistique. It is set to run from 9:30 a.m. to 3 p.m.

Who should attend?

Producers representing all commodities, agribusiness people, agricultural communicators, teachers or individuals representing all phases of the food and fiber industry should participate. You should attend if you think young people should know where their food comes from, you're curious about new proven ways to tell the story of agriculture, or if you want to enjoy the friendship of fellow farmers.

What will the workshop cover?

- Discover how to find and involve people in your county activities; finding people to make a difference!
- Innovative ways to tell the story of agriculture.
- See for yourself the best ways to speak up on agriculture. These are proven, Michigan-tested activities.
- See for yourself the variety of information and resources available to help you promote agriculture in your county.
- Experience for yourself the fun of learning agriscience through the interactive 3rd and 4th grade lesson plans: Understanding Insects — Friends or Foes, and Food and Fiber — Friendly to the Environment and You!

What is the cost?

The cost for the workshop is $12 per person, which includes lunch, refreshments, speakers and materials. Overnight room reservations can be made, on your own, by calling the HOJO Inn at (906) 341-6981.

How do I sign up?

Call the Promotion and Education Department at (800) 292-2680, ext. 3202, to make a reservation.

"Key to Profit" cattle sale planned for April 26

The Upper Peninsula Hereford Breeders Association (U.P. HBA) has scheduled its seventh "Key to Profit" sale for April 26 at the U.P. Beef Expo in Escanaba, Mich.

"Along with the Hereford cattle (horned and polled), we have Simmental, Limousin and Angus consigned," said sale chairman and U.P. HBA president Merlin Atkins, Sault Ste. Marie. "We have 20 bulls and 20 females, bred and open, cataloged for the sale, which begins at 1 p.m. (EST) at the U.P. State Fairgrounds.

"Our Expo Sales have continued to fill the demand for top-quality breeding stock. By going in with several breeds, we are able to offer cattlemen top genetics without them having to travel great distances."

The sale was organized by the U.P. HBA with a commitment to providing profitable breeding stock to the area's cattlemen. All bulls will undergo a breeding soundness exam so purchasers can buy with confidence.

For more details about the sale, contact Merlin Atkins at 6330 Nicolet Rd., Sault Ste. Marie, MI 49783, phone (906) 632-7046 or U.P. HBA secretary Glenn Hanson, Jr., Rt. 1, Box 94A, Stephenson, MI 49887, phone (906) 753-4311.

MDA toxicologist to help Ukrainians set up pesticide registration program

Dr. David R. Wade, toxicologist for the Michigan Department of Agriculture (MDA), will join a U.S. Environmental Protection Agency (EPA) mission to the Ukraine in mid-May to help the former Soviet bloc nation establish a pesticide registration program aimed at improving the country's environmental protection efforts.

Wade said the study tour will focus on the effects of toxins on human health and the impact of pesticides on groundwater, surface water and endangered species.

According to John Grand, Director of International Activities for the EPA, the Ukrainians are extremely interested in practical information on pesticides and pesticide registration. He said Wade is one of three experts going on the tour and was invited because of his "excellent qualifications in the field of toxicology."

Wade has served as MDA's toxicologist since 1987. Prior to that he worked for the National Sanitation Foundation's Drinking Water Additives Program, the Michigan Department of Public Health's Center for Environmental Health Sciences and the Medical Biological Laboratory (TNO) in Rijswijk, The Netherlands.

Distinguished Service to Ag honorees announced

The state's top leaders in agriculture and natural resources were recently cited at Michigan State University for their contributions to their professions and to MSU's teaching and research programs.

The presentations were made by Fred Poston (fourth from left), dean of the College of Agriculture and Natural Resources.

The awardees are (l-r) Deanna Stamp, of Dale-Stamp Farms, Marlette, for her dairy industry leadership and her advisory service to MSU; Florence and Herb Reiley, of Bellaire, for their lifelong natural resources work and community contributions in Antrim County; and Gordon LaFontaine (far right) for his leadership in Michigan's turfgrass industry and for spearheading the development of the Hancock Turfgrass Research Center at MSU.

Stamp is a Sanilac County Farm Bureau member active in the Michigan Milk Producers Association, United Dairy Industries of Michigan and her county Farm Bureau board of directors. Their dairy farm consists of 180 cows and 2,400 acres of corn, alfalfa, soybeans, wheat and dry beans.

The Reileys are long-time Farm Bureau members from Antrim County who have served on their county Farm Bureau board of directors for many years. They entered the Christmas tree business in the '50s and currently manage 175 acres of fir and spruce trees. Over the last 40-plus years, they custom planted conifers for reforestation and had Christmas tree production of over 15 million trees. They also manage 600 acres of forest land for timber production.

LaFontaine is best known for his expertise in the turf industry, where he has served as the Michigan Turfgrass Foundation president. While president, LaFontaine was instrumental in developing the Hancock Turfgrass Research Center. He is a member of the Michigan FFA Foundation board and assisted in soliciting funds for the MSU 2000 Capital Campaign.

MSU has recognized three outstanding individuals or couples in agriculture or natural resources each year since the mid-1950s. Portraits of the awardees will be on permanent display in Agriculture Hall.

Capitol Corner

For more information on legislative topics in the *Michigan Farm News*, call 800-292-2680.

NATIONAL

Balanced budget amendment

On March 4 the U.S. Senate voted down, 66-34, the resolution to require a balanced budget amendment to the Constitution. The measure fell one vote short of the 67 votes necessary for passage. It would have amended the Constitution to require a balanced federal budget by 2002 or two years after ratification by three-fourths of the states, whichever was later. A three-fifths vote of the entire House and Senate would have been required to approve deficit spending or an increase in the public debt limit. A simple majority vote would have been required to waive the balanced budget in times of war or a military conflict that could cause a national security threat. Sen. Spencer Abraham voted for the amendment and Sen. Carl Levin voted against it. Farm Bureau supported the amendment.

MFB Contact: Al Almy, ext. 2040.

NATIONAL

Fast-track authority

Sen. Richard Lugar (R-Indiana), chairman, Senate Agriculture Committee, has introduced S 253 to renew fast-track negotiating authority. Fast-track is a procedure Congress uses to consider and approve or reject trade agreements negotiated by the president. Under the procedure, Congress has 60 days to vote following submission of a trade agreement by the president. S. 253 would require any legislation submitted under fast-track authority to contain only provisions absolutely necessary to implement the trade agreement. Congress could not add side measures to the agreement such as labor or environmental provisions which would force further negotiations and concessions with the other nation(s). Farm Bureau supports S. 253.

MFB Contact: Al Almy, ext. 2040.

NATIONAL

Capital gains tax

The Capital Gains Tax Reduction Act of 1997, H.R. 14, has been introduced by Congressmen David Drier (R-Calif.), Karen McCarthy (D-Miss.), Phil English (R-Penn.) and James Moran (D-Va.). A total of 72 U.S. Representatives, including Michigan Congressmen Vern Ehlers, Joe Knollenberg and Fred Upton, have cosponsored the bill.

H.R. 14 would reduce the maximum capital gains tax rate for individuals from 28 percent to 14 percent and reduce the rate for individuals in the 15 percent tax bracket to 7.5 percent; index capital gains for inflation for assets held three years or more; and reduce the maximum capital gains tax rate for corporations from 35 percent to 28 percent.

In the U.S. Senate, the Capital Formation Act, S. 66, has been introduced by Senators Orrin Hatch (R-Utah), Joseph Lieberman (D-Conn.), Charles Grassley (R-Iowa) and John Breaux (D-La.). Michigan's U.S. Sen. Spencer Abraham has cosponsored the bill. S. 66 would exclude 50 percent of capital gains from taxation, reduce the maximum capital gains rate for corporations from 35 percent to 25 percent, tax only 25 percent of capital gains on small business stock held three years or more and provide capital loss treatment for the sale of a residence.

Farming is a capital-intensive business. A major capital investment for most farmers is land, which is held for an average of 28.6 years. The sale of such long-term capital assets is discouraged because of the high taxes on the inflationary gain in value of the assets. Capital gains taxes also affect the profitability of producing certain commodities with extended production cycles such as timber, Christmas trees, breeding livestock and equine animals. Farm Bureau supports H.R. 14 and S. 66.

Action Request: If your U.S. representative has not cosponsored H.R. 14, please write or call and ask him or her to join as a cosponsor. Also, write or call U.S. Sen. Carl Levin and ask him to cosponsor S. 66.

MFB Contact: Al Almy, ext. 2040.

NATIONAL

Fiscal year 1998 agriculture spending

House Agriculture Committee Chairman Robert Smith (R-Ore.) and Ranking Minority Member Charles Stenholm (D-Texas) have written to House Budget Committee Chairman John Kasich (R-Ohio) highlighting agriculture's past contributions to federal spending reductions and the need to fulfill commitments made in the 1996 Farm Bill. Attached to the letter was a statement signed by Farm Bureau and 100 other agricultural groups.

The letter and statement point out that over the last 12 years farm program spending has been reduced to $5.5 billion, a 79 percent reduction, while total federal spending increased by more than 50 percent. All this occurred even though agriculture accounts for less than one percent of total federal spending. If all other federal programs had taken the same level of spending cuts during the last 12 years, the federal budget would now be awash with surplus funds.

The letter and statement noted that with enactment of the 1996 Farm Bill, most of the remaining federal farm outlays are devoted to conservation programs and that adequate funds are necessary to operate important risk management, export, research and food safety programs to keep agriculture competitive in a world economy.

MFB Contact: Al Almy, ext. 2040.

NATIONAL

Transportation trust fund

H.R. 4, The Truth In Transportation Budgeting Act, has been introduced by Congressman Bud Shuster (R-Penn.), House Transportation and Infrastructure Committee Chairman. The bill would make funds intended for highway needs available for highways.

Currently, there is more than a $27 billion cash surplus in the federal transportation trust fund but spending from the fund has not kept pace with transportation needs. The fund balance is being used as an offset to reduce federal deficit calculations in the overall budget.

The bill would remove the Transportation Trust Fund, which is comprised of federal gas tax revenues, from the unified federal budget. If the trust fund is taken off-budget it would no longer be used to calculate the federal budget and the gas tax revenue would in fact be used for highways. Farm Bureau supports H.R. 4.

MFB Contact: Al Almy, ext. 2040.

STATE

Fireman's Rule

H.B. 4044 and S.B. 112 are sponsored by Rep. Kirk Profit (D-Ypsilanti) and Sen. Michael Bouchard (R-Birmingham).

The Fireman's Rule is based on common law that prohibits a firefighter or law enforcement officer from filing a lawsuit for injuries incurred in the normal course of performing their jobs. H.B. 4044 and S.B. 112 would repeal the Fireman's Rule to allow firefighters or law enforcement officers to file suits when injured in the course of duty.

If this legislation were enacted, homeowners could be sued if a firefighter were burned while fighting fire. In addition, a law enforcement officer could sue a driver of a vehicle involved in an accident, if the officer were injured directing traffic during the clean up.

The net effect of this legislation will be an increase in law suits. In addition, homeowners and automobile insurance premiums would increase.

Status: Both bills are currently in the Senate Judiciary Committee.

MFB Position: MFB is opposing this legislation because it will result in increase lawsuits and increased insurance premiums.

MFB Contact: Tim Goodrich, ext. 2048.

STATE

Minimum wage

Two minimum wage bills were signed by Gov. Engler March 12. The two bills were SB-1 sponsored by Sen. Loren Bennett (R-Canton) and HB-4177 sponsored by Rep. Bob Emerson (D-Flint). Both bills were given immediate effect. Senate Bill 1 is now Public Act 1 of 1997. House Bill-4177 is now Public Act 2 of 1997.

The current state minimum wage is $3.35 per hour. Beginning on May 1 the state minimum increases to $4.75 per hour and then increases to $5.15 per hour on Sept. 1.

The current federal minimum wage is $4.75 which became effective on Oct. 1, 1996. It will go to $5.15 on Sept. 1. This means that starting May 1, both the state and federal minimum wage will be the same.

Exceptions: An employer may pay a new employee who is less than 20 years old a training hourly wage of $4.25 for the first 90 days of employment. It is important to note that a employer may not terminate another employee just to hire someone on the training wage scale. In addition, the Director of the Department of Consumer and Industry Services shall establish a suitable scale of rates, (which will be lower than the minimum wage), for apprentices, learners, and persons with physical or mental disabilities who are clearly unable to meet normal production standards.

The definition of an employer is a person or corporation who employs two or more employees at any one time within a calendar year. All employers meeting this definition will be subject to the new minimum wage. The definition of an employee is individual not less than 16 years of age working on the premises of the employer or at a fixed site designated by the employer it also includes a minor employed under the Youth Employment Standards Act.

Overtime and compensatory time are not applicable to agriculture. The law states these do not apply to the following: An employee employed in agriculture, including farming in all its branches, which among other things includes: the cultivation and tillage of the soil; dairying; the production, cultivation, growing, and harvesting of agricultural or horticultural commodities; the raising of livestock, bees, fur-bearing animals, or poultry; and a practice, including forestry or lumbering operations, performed by a farmer or on a farm as an incident to or in conjunction with farming operations, including preparation for market, delivery to storage, or delivery to market or to a carrier for transportation to market or the processing or preserving of perishable farm products.

Farm Bureau policy supports a state minimum wage and piecework rates that do not exceed the federal minimum wage.

MFB Contact: Howard Kelly, ext. 2044.

STATE

Drain Code

The following Drain Code bills have been introduced:

S.B. 122 — Sen. Joel Gougeon (R-Bay City)

H.B. 4337 — Rep. Howard Wetters (D-Kawkawlin)

H.B. 4174 — Rep. Mike Green (R-Mayville)

Status: The bills have been introduced and all three bills are similar in nature in that they amend P.A. 40 of 1956, The Michigan Drain Code.

The Drain Code working group continues to review changes as proposed by the Michigan Association of County Drain Commissioners' Statute Review Committee. Both the House and Senate Agriculture Committees may take up the bills as early as the end of April.

It is anticipated work on the bill will first be done within the committee, then hearings will take place this summer around the state by the Senate and House Agriculture Committees. Passage of final amendments would be expected by the end of 1997.

MFB Position: Michigan Farm Bureau supports amendments to the Drain Code; no position is being taken on the specific bills at this time

MFB Contact: Scott Everett, ext. 2046.

STATE

Diversions from the Michigan Transportation Fund

H.B. 4147, sponsored by Rep. Thomas Kelly (D), would end all diversions from the Michigan Transportation Fund (MTF). Currently, several state departments charge the MTF over $108 million to cover administrative costs within their departments. This is the equivalent of 2 cents per gallon of gas tax monies paid by motorists that are being diverted from Michigan's roads and bridges to finance administrative costs within other state departments in Lansing.

Status: The bill has passed the House Transportation Committee and is on the House floor. Amendments were added to restrict the $108 million to road repair only and any additional funds needed for snow removal.

MFB Position: MFB is supporting HB 4147. MFB policy clearing supports all revenue raised for roads should be dedicated to road repair and maintenance.

MFB Contact: Tim Goodrich, ext. 2048.

Farmland Trust report

Continued from page 1

ations, or we will lose an irreplaceable natural resource."

To counter the alarming loss of farmland, AFT called for improved federal, state and local policies and programs and better research and information.

On the federal level, it advocated strengthening and enforcing the Farmland Protection Policy Act, expanding the Farmland Protection Program and enacting federal estate tax reforms. It also said federal agencies should quantify the impact of farmland conversion on key environmental measures such as water and air quality, wildlife habitat and rural economic health. The U.S. Department of Agriculture, it recommended, should define farmland by its agricultural importance and vulnerability to rapid urban development

American Farmland Trust called on local communities to undertake a land inventory and analysis of development trends and risks, agree on which farmland to save, and adopt necessary policy reforms such as purchase of development rights programs and agricultural zoning. Every state with threatened agricultural regions should adopt measures to protect its best farmland, including a statewide inventory tracking system

High quality farmland deserves to be treated as more than just a holding pattern for future development, said Grossi. The nation needs to take a more strategic approach to farmland protection by giving communities, states and regions the ability to identify the various agricultural, environmental and economic benefits provided by farmland, encouraging them to develop a consensus on their most important and vulnerable farmland and providing ways to permanently protect the resource.

Employing data from the National Resources Inventory, AFT's study analyzed how land use changes in virtually every state are affecting high quality farmland. Areas exceeding the statewide average of prime and unique farmland and urban development were declared threatened. To identify high quality farmland, AFT used the USDA's prime farmland definition of the land most suitable for producing food, fiber, feed and oilseed crops. AFT defined as unique land the special soils and climates where vegetables, grapes, and horticultural crops, including fruits, nuts and berries, are grown. Development was measured by the change in urban buildup with a given area needing to have experienced a loss of at least 1,000 acres to suburban sprawl from 1982 to 1992.

In order of greatest threat, agricultural regions named to the top 20 are:

1. Sacramento and San Joaquin Valley
2. Northern Piedmont
3. Southern Wisconsin and Northern Illinois Drift Plain
4. Texas Blackland Prairie
5. Willamette and Puget Sound Valleys
6. Florida Everglades and Associated Areas
7. Eastern Ohio Till Plain
8. Lower Rio Grande Plain
9. Mid-Atlantic Coastal Plain
10. New England and Eastern New York Upland, Southern Part
11. Ontario Plain and Finger Lakes
12. Nashville Basin
13. Central Snake River Plains
14. Southwestern Michigan Fruit and Truck Belt
15. Central California Coastal Valleys
16. Columbia Basin
17. Imperial Valley
18. Long Island-Cape Cod Coastal Lowland
19. Connecticut Valley
20. Western Michigan Fruit and Truck Belt

Little-known program's strategies shed new light on wildlife damage control

Are the bats in your belfry making an unsightly mess? Perhaps you're a soybean grower discouraged by deer snacking on your livelihood. A federal program may provide insight to your wildlife woes.

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service has been the government's wildlife control avenue since 1985. The Animal Damage Control program, under the direction of APHIS, helps to "resolve conflicts between people and wildlife," said Doug Parr, ADC state director and wildlife biologist.

The ADC works with the animal-human conflict at two levels, first providing technical assistance then applying direct control methods for people with wildlife conflicts.

A consultant identifies the wildlife species, accesses the damage and offers management advice. The advice ranges from purchasing a pesticide that can be applied by the producer to installing electric fencing.

"I try to work with a person and have him do as much as he can in order to hold the cost down," Parr said. The less expensive measures are tried first, since other methods, such as removing an animal from the area, are more costly. No funding exists at the state level to cover these costs, so the person who is suffering economic loss has to pay the cost of removing the animal.

Relocating an animal or applying restricted use pesticides is handled by trained ADC personnel, but the producer can provide shelter for preyed livestock or remove pest cover, such as roof overhangs.

Trapping and hunting are also options, but the producer must understand local laws and obtain the necessary permits. Upon recommendation from the ADC, permits are jointly issued through the U.S. Fisheries and Wildlife Service and the DNR.

Obtaining permits to hunt non-game species is much easier than for game species. First, a producer must be able to prove economic loss or the potential of a health hazard. Secondly, it's hard to convince game regulators that an animal needs to be controlled beyond the set hunting season.

The feces deposited by large flocks of Canada geese pollute waterways and create health hazards. The geese also strip corn fields of the crop. According to the USDA's National Agricultural Statistics Service 1993 survey, the value of corn production lost due to wildlife was $92 million, with birds and deer accounting for more than 62 percent of the total loss.

"With geese, we're hoping that this year will finally allow us to see some people get permits to take Canada geese that are causing crop losses, and if that happens, it will be the first time," Parr said.

With the Canada goose population estimated at 300,000 to 400,000, Parr stresses that the goose hunter will not notice a difference in the number of birds he has to hunt.

To help keep deer out of cornfields, Parr recommends electric fencing. Place the first wire 10 inches above the ground. Two to three more strands of wire should be placed 10 inches apart, up to approximately 30 inches. In order for deer to feel the charge through their thick hide, a strong voltage is necessary. According to Parr, approximately 4,000 volts will do the trick.

Livestock producers know first-hand that fencing is not cheap. Parr estimates the cost of fencing at $5,000 per mile. "If you start talking about using that for 10 years, then it starts becoming economically feasible," Parr said.

Along with helping producers deal with wildlife, the ADC deals with intercity wildlife problems and removes birds and deer from airports. The ADC receives only a few hundred calls from producers each year, but hopes the services offered will become well known.

For more information about the ADC, call 517-224-9517.

Cost-sharing program offers funds for food export promotion

U.S. food producers and processors may be able to cut costs and increase exports through the federally funded Branded Program.

The Branded Program is a cost-share funding program that supports the promotion of brand name products in foreign markets. Under the Branded Program, companies may receive partial reimbursement for their promotional expenses, including developing advertising and in-store promotions, as well as attending trade shows.

The program has also helped U.S. companies increase food exports. Midwestern companies participating in the Branded Program during the 1995-96 fiscal year increased their combined export sales by $104 million. On average, each company experienced an 87 percent increase in export sales.

Small companies (usually less than 500 employees) and agricultural producer cooperatives may receive up to 50 percent reimbursement; all others are eligible for up to 33 percent. Women- and minority-owned businesses are encouraged to participate.

U.S. Department of Agriculture funds for the Branded Program are available through the Mid-America International Agri-Trade Council (MIATCO), a Chicago-based association of 12 Midwestern state agricultural promotion agencies. To apply for funding, contact Joanne Leis of MIATCO by phone at (312) 944-3030 or by e-mail at jleis@miatco.org.

MDA to focus on agricultural tourism

Agricultural tourism, an often-overlooked plus of area convention and visitor's bureaus and destination marketing organization planners, can now be recognized for its potential to both our visitors' enjoyment and increasing Michigan's farm-gate value.

The Michigan Department of Agriculture (MDA), recognizing the potential that increased agricultural tourism can provide to Michigan's economy, has appointed Sandra Hill to that position in the marketing division.

Travel Michigan tourism industry is crucial to the economic well being of our state and since agriculture has been and still is the most stable component of Michigan's economy. This partnership will only enhance and highlight Michigan's diverse agriculture.

Travel Michigan's plans are well along in the strategic planning stage, with implementation close behind. This is a unique opportunity to promote Michigan agriculture, by becoming involved in your local convention and visitors bureau or destination marketing organization, or organizing your own area Ag Tour.

Welcome centers will become part of *Travel Michigan's* responsibilities. This will present a unique opportunity to promote Michigan agriculture.

The Michigan Department of Transportation is moving ahead with implementing the Tourist Oriented Directional Signs program (TODS) that was passed in 1996. More details will be available as plans progress. Another date to remember is the January 1999 National Direct Farm Marketers Conference in Grand Rapids.

Prices inch up slightly, according to Marketbasket Survey

Prices at the nation's supermarkets inched up ever so slightly during the first quarter of 1997, according to the American Farm Bureau Federation's Marketbasket Survey. The latest informal national survey shows a one-cent increase in selected grocery items from last year's fourth quarter.

Americans paid $32.28 for 16 selected items during the first quarter of the year, the second highest average since the survey began in 1989. The penny hike from last quarter's $32.27 figure follows the 52-cent drop experienced during the fourth-quarter of 1996.

AFBF, the nation's largest general farm organization with more than 4.7 million members, conducts its informal quarterly Marketbasket Survey to help track retail food prices to ensure they are in line with prices received by the nation's farmers and ranchers. While grocery prices have increased during the past year, the farmers' and ranchers' share remains fairly steady. The farm value of each food dollar spent in the United States is approximately 22 cents. Labor, at 36 cents, is the largest component of the consumers' food dollar.

"Shoppers have the tendency to point the finger of blame toward farmers when they see prices rise at the supermarkets," said AFBF President Dean Kleckner. "While prices on certain items on supermarket shelves have increased, farmers' and ranchers' share of the food dollar has remained constant or has decreased during the past several years."

Wheat and poultry products were large contributors to this quarter's slightly higher average. A five-pound bag of flour jumped 21 cents to $1.38. A 20-ounce loaf of bread increased 11 cents to $1.20. And a pound of whole fryers experienced a 13-cent jump to $1.04.

Of the 16 items on the survey, seven went up in price. A 32-ounce bottle of mayonnaise increased 13 cents to $2.69. Other increases included ground chuck, $1.70 per pound package, up 4 cents; corn oil, $2.39 per 32-ounce jar, up 3 cents; and bacon, $2.36 per pound, up 2 cents.

A pound of pork chops dropped 17 cents to $3.10, the largest decline in the survey. And a five-pound bag of potatoes dipped 12 cents to $1.41. Other decreases included cheddar cheese, $3.11 per pound, down 10 cents; whole milk, $2.51 per gallon, down 7 cents; sirloin tip, $2.70 per pound, down 7 cents; eggs, $1.04 per dozen, down 6 cents; cereal, $2.58 per 10-ounce box, down 4 cents; vegetable oil, $2.16 per 32-ounce jar, down 1 cent; and apples, 91 cents per pound, down 1 cent.

Volunteer shoppers from 36 states participated in this latest survey in mid-February. The average total price of this quarter is only $2.78 higher than the $28.50 average price of the inaugural survey in 1989.

More pigs, more corn, more profits for Michigan pork producers

Continued from page 1

North Carolina to feed those pigs. There is no reason why we can't feed the pigs here and do away with the transportation costs."

"Nationwide, we have about 20 percent of all production that's contract finished," states Martin. "In Michigan, it's definitely less than 20 percent, I would say, but we don't have a real good grasp on that. It's very regional; North Carolina has about 80 percent hogs that are finished by production contracts. We're in the process of doing a statewide survey to all of our pork producers in the state by the beginning of May."

"One of the most significant advantages to our system as opposed to the vertically integrated systems," explains Dr. Larry Granger, Alliance Networking Coordinator for the Pork Alliance. "We allow the entrepreneurial spirit to stay alive and the innovation comes from people trying new things continuously. We don't have a defined way of doing business according to a company policy. There are many examples in the country about producers that have modified their production styles, that are in contractual arrangements with others, that are loosely hand shaken arrangements, loosely working with others in order to streamline their production practice without a business arrangement."

"The contract is not the best source of primary farm income," Martin explains. "It is a good secondary source — and there's a difference, because this is not full-time employment. If you're putting up six to eight finishing units, then you're talking getting into the realm of full-time. 1,000 head per unit, so it's 3,000 head per year per unit, because you turn that building three times. So 3,000 head times six to eight units, you're talking about a lot of hogs in a year."

According to Martin, when working in a contract finishing situation the producer shifts risk to the contractor. "You're going to miss the lower $28 hogs, but you'll also miss the chance to take advantage of $60 hogs," she explains. "You get a relatively stable income, and that may be lower than the average income of the guy willing to take the big risks and take the big wins and losses."

"If you've got a producer with some corn ground that wants a part-time job, has some money to invest and has a use for the manure," explains National Pork Producers Council's Director of Economics Dr. Steve Meyer, "this is a good deal for them because the manure is valuable, you get some

part time employment for either yourself or a hired hand. As more people do that you use the corn in the area and pull a given area from a corn surplus to a corn deficit you go from transportation cost under to transportation costs over. There's a lot of good things for the cash grain farmer out there that might be under employed that might have some equity in his land that he can put to use otherwise and that could use the both grain market and the manure in a economically and environmentally sustainable system."

"This isn't for everybody," continues Meyer, "But this is really good for some people."

"The rates of return will depend on how much you have invested in the facility," continues Martin. "Nationally, the average rate of return on investment is nine percent and I think we're seeing a little bit higher than that in Michigan."

Objective-based pricing

Participants to *More Pigs, More Corn, More Profits* also discussed objective based pricing with Meyer.

"It's a program that we've developed that helps producers set objectives for their pricing and base those objectives on measurements of what they need to do in their pricing efforts for hogs," Meyer explains. "Most people don't do a very good job pricing their pigs. We have these pigs and we tend to be price takers, and we pass up good pricing opportunities and end up with worse in lots of cases."

"An example is that you arrange these costs and set a target price that gives a predetermined return to my management that covers all my costs," Meyer continues. "I'm going to look at the market every day or once a week and say, does the market offer me an opportunity to reach those goals? If it lets me reach a third of my target revenue on a third of my production, I'm going to pull the trigger and I'm going to do something – either a cash contract, buy some puts, or sell a futures contract – there's a number of ways you can do it. So, the big thing is know when to do something."

What should a producer do first?

"The first thing you do is you know what your cost of production is," adds Meyer. "Look at your cost of production and your percent equity and compute what return on equity different prices mean to you. Find a place where you're comfortable with the risk. It might be zero return on equity, it might be minus 10 for a year, it depends on where you are."

"If you're 20 percent equity you can't stand a 10 percent loss of equity," Meyer says. "If you're 50 percent equity, you can do that. You can stand the risk and if you stand more risk, you tend to earn higher returns, but they'll be much more variable. Get your costs down, know what they are, know where you stand, know what return on equities those different prices will result in, and develop yourself a few rules of thumb for making decisions. The first step is know what your costs and where your financial position is."

Questions to evaluate if you are considering a hog finishing contract

- What is the length of the contract and how can it be terminated?
- Who holds title to the manure?
- Who is responsible for dead animal disposal?
- Do you have to accept all animals, or can you reject those feeders pigs that you feel are unhealthy?
- Do you respect the knowledge and experience of the company's field representative who supervises your farm?
- What is the reputation of the company or individual offering the contract?
- If you produce grain, will the contractor purchase any of it to use as feed?
- Do you fully understand how your contract payment is calculated?
- How variable will your payments be?
- When will you be paid and by whom?
- Will you be penalized if you have less than "average" or "standard" productivity measures (i.e., feed conversion or death loss)?
- Who provides labor for loading and unloading?
- Does the contract clearly state how many animals are in the agreement, when the animals will be delivered and marketed?
- Will the manure nutrients be a benefit or a cost to you?
- How much control do you have over the animals performance (feed efficiency, mortality)?
- Does the contract clearly state the weight (or a range) at time of placement and weight (or range) at time of removal? For contracts based on pounds gained this is critical.
- Can other hogs be raised by the grower?
- What happens if the owner or integrator exits from the pork production business?
- Who provides for insurance on animals?
- Does the contract offer you a reasonable return on your labor and management?

Individuals who wish to learn more about production contracts may find these two sources useful: "A Farmer's Legal Guide to Production Contracts" by Neil D. Hamilton, January 1995, Farm Journal Inc., and "Guide to Contracting" by the National Pork Producers Council, July 1996.

Market Outlook

by Dr. Jim Hilker, Department of Agricultural Economics, Michigan State University

CORN

How many corn acres will go to soybeans? Or, do we have enough acres to increase both? The first official indicator was released March 31 at 8:30 a.m., in the form of the USDA March 1 Planting Intentions Report. This report is not what farmers will end up planting, but rather what they have been thinking. The market will react to those numbers, and then farmers can make their final decisions based on the relative prices when planting begins and their crop rotations needs.

In Table 1 below I have estimated a supply/demand situation for the 1997-98 corn marketing year. The USDA will not include their forecast for 1997-98 in their version of the Supply/Demand Report until later. I estimated that producers will plant 81 million acres of corn. You need to replace my 81 million figure with the report figure for corn planting intentions. Then subtract 6.5 million acres for silage to get the corn acres harvested for grain number. Multiply the acres harvested by the trend yield 129 bushels per acre and you will have the updated production number.

The USDA will also have released the quarterly Stocks Report number at the same time. This number will help calculate the use for the first 6 months of the year. If the figure is much off from the trade estimate, it means use has been higher or lower than expectations. This will affect 1996-97 ending stocks.

Seasonal Commodity Price Trends

Corn	↑↓
Soybeans	↑↓
Wheat	↔↑
Hogs	↔
Cattle	↔↑

Index: ↔ = stable prices; ↑ = higher prices; ↓ = lower prices; To = topping; BT = bottoming; ? = unsure

One simple method to get a handle on how much it will change is to use the difference between the actual number and the pre-report estimates.

If the reports are bullish, let's consider doing some more new crop pricing on the rally. If the reports are bearish, let's wait a bit for some adverse weather. Just to put things into perspective, what is a reasonable new crop corn price given the situation? I think the $2.60-2.70 new crop bids we have been seeing are a good level to have 15-25 percent of your crop priced at. And I would have priced some of that before we got to those levels. The bids we have been seeing are higher than fundamentals would suggest and the 15-25 percent gives some downside protection. If we have a sharp rally, consider pricing a little higher percentage if your soil type and drainage tend to give you less yield risk.

WHEAT

The spring wheat planting intentions will also be released and these can be added to the winter wheat planted to get total acreage. With the sharp drop in wheat prices and a continually strong oilseed market, I would expect some shift from wheat to sunflowers, canola, or other alternative crops. In the below balance sheet for wheat I have adjusted the 1997-98 wheat planted acreage down from 1996-97 for the 3.8 million less winter wheat acres that were planted and another half million for an expected decrease in spring wheat acres.

The wheat marketing year is considered to be June 1 to May 31, so this Stocks Report is after 3/4 of the year has passed. This means we should be able to get a good handle on total use, although exports are still somewhat up in the air.

Up to this point I probably would not have priced any new crop wheat, unless I did it last spring or early summer, and that is probably using hindsight. This is especially true given 1997 prices did not look very appealing compared to prices we were receiving for our 1996 wheat as we were harvesting. However, if this report is bullish and rallies the July-September Chicago wheat futures close to $4, then I would consider pricing some 1997 wheat.

SOYBEANS

Explosive. That is the most descriptive word I can give the soybean market at this time, and that is in either direction. It is very much like the corn market a year ago. We need to ration use because at present rates we would run out, but we don't know what price it will take to keep a minimal carryover. And, of course, there is still weather to worry about.

How many acres will $7 new crop soybean prices buy from $2.65 new crop corn prices? I have estimated another million acres on top of the two million last year that soybeans received from corn due to late plantings. And this still allows for a 1.5 million increase in corn acres. Where do I get all of these acres? From 3.8 million less winter wheat and CRP acres, and perhaps some from cotton in the South. Replace the 1997-98 planted soybean acres number in Table 3 below with the report figure to see how much it affects production.

Given trend weather and given history, $7 soybean prices are good. Consider having 15 to 25 percent of your 1997 soybean crop forward priced. If the report is bullish, move to the high side of that range, if not more. Poor summer weather across the soybean belt could take prices to $9 or more. But a good growing season could take them back to $6, especially if world oilseed acres increase and they have good yields. For example, Canada is expected to move 1.5 million acres of wheat back to canola, the opposite of their switch last year.

CATTLE

The March 1 monthly Cattle-On-Feed Report, released March 14, was in the range of expectations. Cattle on feed in the U.S. in feedlots over 1,000 head were up 6 percent and cattle on feed in the traditional seven states was up 8 percent. Placements in February were up 3 percent and 6 percent, respectively. Marketings were 99 percent and 96 percent of a year ago, respectively.

Since January 1996, the USDA has been reporting the total U.S. over 1,000 head figure monthly in addition to the seven-state number we have had for years in an effort to get broader coverage. Over time, as we have more data, our analysis will shift from the 7-state to the larger report. Another nice feature about the U.S. report is that in weights of feeders is reported.

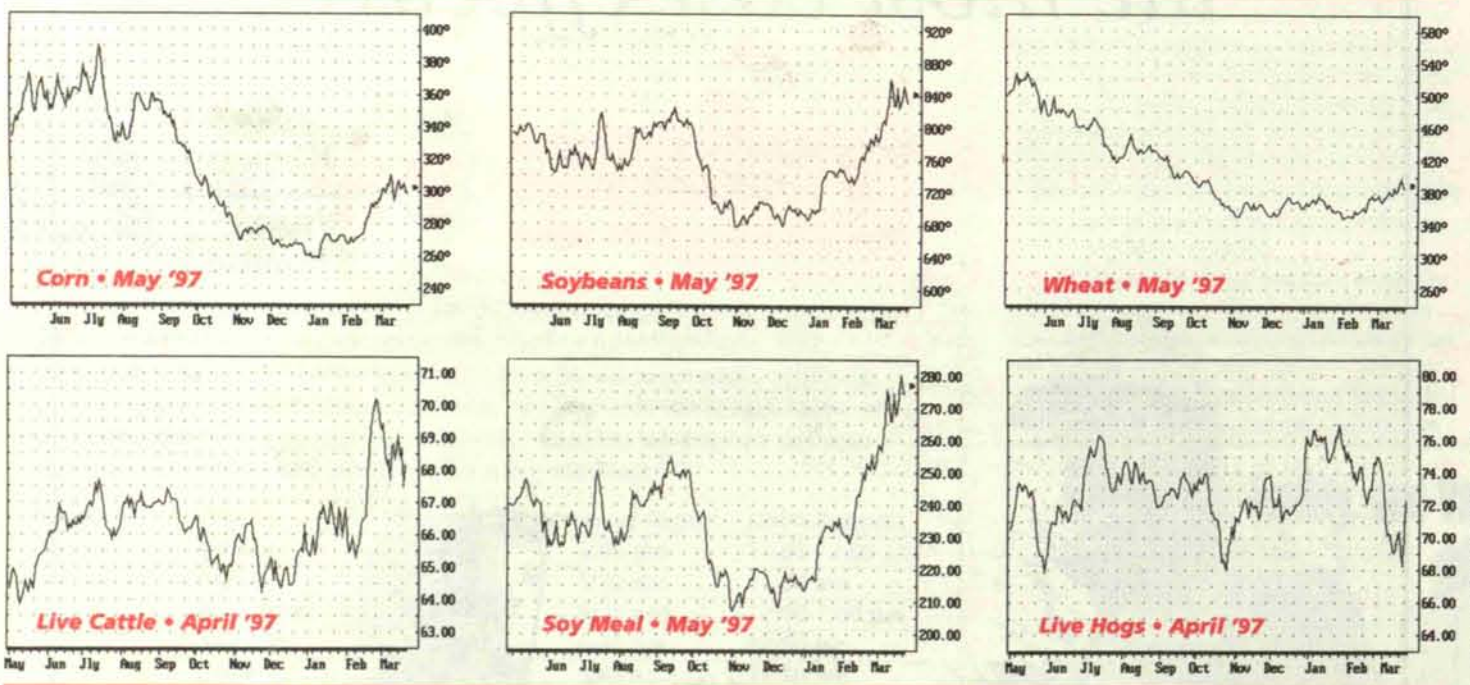
Increases in year-to-year placements came from the Southern feedlots such as Kansas and Texas, decreases in placements were seen in Nebraska, Iowa and South Dakota. Another interesting note was the placement weights. Year-to-year increases were seen in the light and heavy weight feeders, while decreases were seen in the middle weights. Perhaps they are trying to miss the summer months to some degree when prices are expected to be lower.

HOGS

It is hard to say much concrete about the hog markets when a major report comes out between my writing this piece and when you read it. This is not complaining, just a fact. The quarterly USDA March 1 Hogs and Pigs Report was released a 3 p.m. March 27. What makes it especially hard is it is the first report since the surprising December report which has turned out to be fairly accurate. The number that was surprising in the previous report was the lack of expansion, this number could change significantly with the passage of time.

With the sharp drop in prices we have seen since early February, especially in the nearbys, I suspect bullish news will be more bullish than bearish news will be bearish, especially in the next few months. However, over the longer run, prices are probably more subject to a downturn than an upturn. If the report was bullish, and the markets reacted positively, consider pricing some portion of your production out over the next year, especially if you didn't take advantage of the January rally.

COMMODITY PRICE TRENDS



Source: *Knight Ridder Financial*

COMMODITY SUPPLY/DEMAND BALANCE SHEETS

Table 1 — Corn

(Million acres)	Estimated 1995-1996	Projected 1996-1997	Hilker 1997-1998
Acres set-aside/diverted	6.2	0.0	0.0
Acres planted	71.2	79.5	81.0
Acres harvested	65.0	73.1	74.5
Bu./harvested acre	113.5	127.1	129.0
Stocks (million bushels)			
Beginning stocks	1,558	426	959
Production	7,374	9,293	9,610
Imports	16	10	6
Total supply	8,948	9,729	10,575
Use:			
Feed and residual	4,711	5,200	5,250
Food/seed & Ind. uses	1,583	1,670	1,780
Total domestic	6,294	6,870	7,030
Exports	2,228	1,900	2,200
Total use	8,522	8,770	9,230
Ending stocks	426	959	1,345
Ending stocks, % of use	5.0	10.9	14.6
Regular loan rate	$1.89	$1.89	$1.89
U.S. season average			
Farm price, $/bu.	$3.24	$2.65	$2.45

Table 2 — Wheat

(Million acres)	Estimated 1995-1996	Projected 1996-1997	Hilker 1997-1998
Acres set-aside & diverted	5.2	0.0	0.0
Acres planted	69.2	75.6	71.3
Acres harvested	61.0	63.1	62.3
Bu./harvested acre	35.8	36.3	38.0
Stocks (million bushels)			
Beginning stocks	507	376	474
Production	2,182	2,282	2,367
Imports	68	80	78
Total supply	2,757	2,738	2,900
Use:			
Food	884	910	920
Seed	104	104	105
Feed	152	300	260
Total domestic	1,140	1,314	1,285
Exports	1,241	950	1,100
Total use	2,381	2,264	2,385
Ending stocks	376	474	515
Ending stocks, % of use	15.8	20.9	21.6
Regular loan rate	$2.58	$2.58	$2.58
U.S. season average			
Farm price, $/bu.	$4.50	$4.20	$3.50

Table 3 — Soybeans

(Million acres)	Estimated 1995-1996	Projected 1996-1997	Hilker 1997-1998
Acres planted	62.6	64.3	65.5
Acres harvested	61.6	63.4	64.5
Bu./harvested acre	35.3	37.6	38.0
Stocks (million bushels)			
Beginning stocks	335	183	140
Production	2,176	2,383	2,451
Imports	5	4	4
Total supply	2,516	2,570	2,595
Use:			
Crushings	1,370	1,420	1,420
Exports	851	900	860
Seed, feed & residuals	112	110	115
Total use	2,333	2,430	2,395
Ending stocks	183	140	200
Ending stocks, % of use	7.8	5.8	8.4
Regular loan rate	$4.92	$4.97	$4.97
U.S. season average			
Farm price, $/bu.	$6.77	$7.10	$6.70

Source: USDA and Jim Hilker

Lawmakers have beef with anti-meat article

Lawmakers are incensed over an anti-meat article published recently in a children's publication affiliated with the Smithsonian Institution. The magazine's cover features a photograph of a calf and the headline "Please don't eat me!" Beside one article, entitled "Dead Meat," is boldface type that reads, "The hamburger on your plate is some dead cow's muscle."

In a letter , at least 15 lawmakers from farm states expressed serious concern about the anti-meat feature. "We feel the Smithsonian has no business in promoting to anyone, especially children, one view or another on such an issue as the morality and health risks of including meat in one's diet," warned the letter.

Smithsonian officials were immediately apologetic, agreeing that the piece had some serious flaws and was a mistake. Ronald C. Walker, publisher of Smithsonian magazine, wrote a letter of apology to the National Cattleman's Beef Association, identifying himself as a Nebraska-bred 4-H Club member.

The Smithsonian's licensing agreement with Carus Publishing allows the company to use the Smithsonian name on the children's journal. Museum officials, who reviewed some of the text but not the cover or the graphics, admitted that their review process was incomplete. They have agreed to develop new procedures for content approval.

USDA to approve yogurt as meat substitute

The U.S. Department of Agriculture week will publish its approval of yogurt as a meat substitute in the nation's school lunchrooms. The government currently requires two ounces of meat or its equivalent in every school lunch. Under the new USDA rule, an eight-ounce cup of yogurt could be substituted. The department already allows schools to substitute cheese, beans, eggs and peanut butter for meat.

Yogurt is low in fat and will offer a needed alternative for children who cannot or do not eat meat, said Mary Ann Keefe, USDA's acting undersecretary for food, nutrition and consumer services.

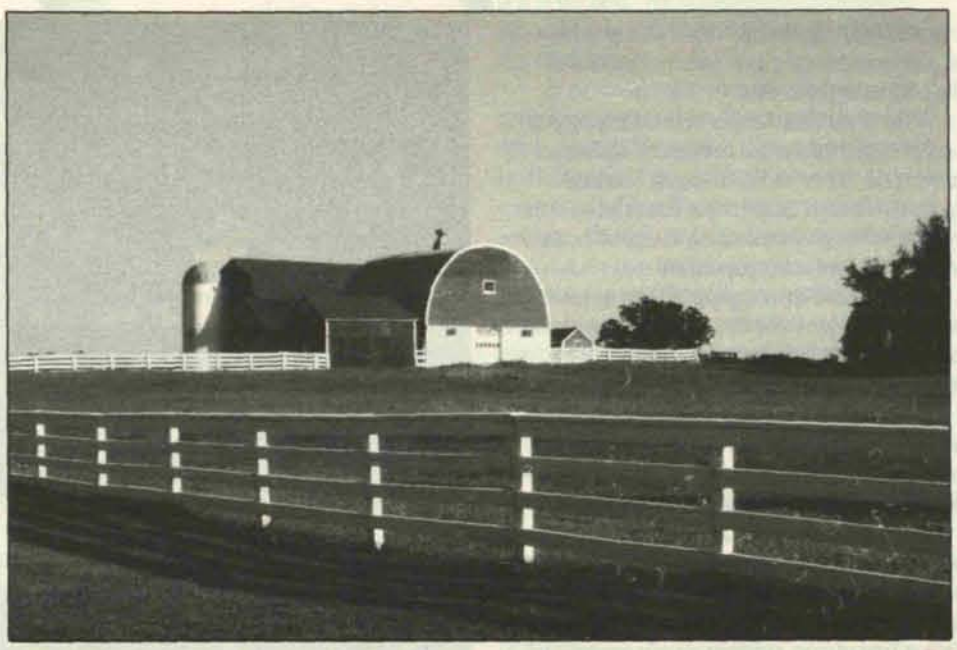
The National Cattleman's Beef Association objects to the new rule, arguing that there are already enough meat substitutes in school lunches, and that beef offers more nutrients than yogurt.

Last year 94,000 participating schools served up 146 million pounds of beef—almost 6 pounds for each of the 25 million children who went through those cafeteria lines. USDA said that allowing yogurt as a meat substitute would have a negligible impact on beef prices. School officials said they expect yogurt to be a big hit with students, particularly those who claim to be vegetarians. Yogurt typically costs more than meat, but requires no preparation.

Business Strategies

Purchases, transfers and inheritances: What is the basis?

John D. Jones, Telfarm Director and District Extension Farm Management Agent, Department of Agricultural Economics, Michigan State University Extension



Many transactions occur at the start of a new year. This is especially true for receiving inherited property or gifts to simplify record keeping chores and facilitate estate planning goals. The start of the year is also an excellent time to review any large or complex transactions for missing information. Missing information, such as dates, trades, quantities and dollar amounts, are usually easily accessible close to the time of the transaction and progressively more difficult as you let it slide. This can be very costly in terms of future income taxes paid.

Purchased asset basis

In the simplest of situations the income tax basis equals the cash purchase price of an asset which may be financed by debt or equity. The tax basis can be increased by other improvements added later and decreased by depreciation or amortization expense taken (if capital in nature and used in a trade or business.) The resultant tax basis is then sometimes called the "adjusted" tax basis.

When selling an asset, income tax is paid on the "gain" which is the difference between the selling price and the adjusted tax basis of the asset. For example, if you sold common stock for $100,000 that you paid $80,000 cash for five years ago, then you would have a taxable gain of $20,000. In this example, the tax basis is equal to the purchase price of $80,000.

A farm tractor purchased for $100,000 that subsequently claimed $60,000 of depreciation expense would have a "adjusted" tax basis of $40,000. The tax basis is extremely important to the holders of property since it is used to determine the amount gain that you will pay income taxes on later in the event of a sale.

Trade-in basis

Trade-in transactions are a type of like-kind exchange. The most common transaction will add the remaining adjusted tax basis of the traded-in item to the "cash boot" paid to consummate the trade transaction for the starting tax basis of the newly acquired item.

A typical scenario might see the previously mentioned tractor, valued at a $100,000 cash price, being purchased for $60,000 cash boot and the trade-in of an older tractor. The resulting starting tax basis for the new tractor would be $60,000 plus the old traded-in tractor's adjusted tax basis. Say the old tractor's adjusted tax basis was depreciated down to $10,000 then the new tractor's starting tax basis would be only $70,000 ($60,000 plus $10,000) and not $100,000.

Transfers or gifts

Upon receiving a property transfer or a "gift", your tax basis will be the same as the donor's income tax basis just prior to the transfer. The old tax basis may have also come from a gift or estate and not necessarily from an outright purchase.

Example: Son received a gift of farmland from his father valued at $200,000 but the tax basis for the father/donor was $15,000. Son's new tax basis then is $15,000. The father's $15,000 old tax basis was also received through a gift from the grandfather.

It is very important to determine the donor's tax basis upon receiving a transfer or a gift as it will be much more difficult, if not impossible, when needed down the road. For depreciable business assets, it is best to secure a copy of the donor's depreciation schedule and just continue on from there.

Inherited assets

Your tax basis on inherited property is the Fair Market Value (FMV) or special use valuation assigned to the asset as it passed through the decedent's estate. Assets which pass through an estate receive a new "stepped up" tax basis. The "step up" in tax basis is usually up to the fair market value on the date of death. This provides a strong incentive to hold low-value tax basis property until death to achieve the "stepped up" valuation for heirs. It may be better to sell or gift high tax basis assets and allow low tax basis assets to be passed on to heirs through an estate so they can receive a step up in basis. The total taxable gain would be minimized in this way. This is a very significant tax management tool.

Example: If Sally Smith sold 300 acres of farmland for $1000 per acre or $300,000. It had a tax basis of $100,000. Her taxable gain would be $200,000. If, however, Sally retained the property until her death, the estate would assign a "step up" in tax basis to $300,000. The heirs could later sell the property for that amount at no taxable gain and pay no income tax.

This works very well if your estate is small enough that you are not going to incur estate taxes — about $600,000 for singles and $1,200,000 for couples. Estate tax rates are currently one of the most aggressive taxes that can be imposed because the tax rate starts at 37 percent and goes up from there. So you are well advised to minimize estate taxes first.

Some estates are settled with very competent legal but incorrect accounting assistance. Often this is not even the accountants fault because they may not be asked to participate in the process. Mistakes made in this area tend to have very large income tax consequences to the receivers of inherited property. Be sure that you have updated the tax basis of property acquired from an estate even if it is not probated.

Special Note: One of the most important job for the surviving heirs to complete is a physical inventory of the crops, livestock, machinery, real estate and non-farm investments as of the date of death. Then establish fair market values for these assets for tax basis adjustments and estate valuation purposes. Real property; crop, feed and supplies inventory; and livestock, machinery and equipment all may receive a step up in basis when passing on to heirs through an estate.

Allocated basis transactions

A review of the income tax basis on newly acquired assets is especially important. It may not be apparent early on but tax basis information can be vital later during a whole or partial disposition. The tax basis on complex acquisitions needs to be determined and allocated to individual assets, such as with a farm acquisition. The total farm acquisition tax basis needs to be allocated to each farm building, machinery and improvement included in the acquisition and the sum of each individual tax basis must equal the total tax basis. Basis allocation should be proportional to the respective fair market values. This allocation of basis, especially with real property should be kept with your permanent records.

Residences are special cases

In some cases you may want to sell your residence to take advantage of the $125,000 lifetime exclusion of gain. This could be a way of liquidating assets for living expenses without incurring any income tax liability. You must be at least 55 years of age. Normally you would use this when you move out of your last home and into a rental unit or house.

Another unique possibility with residences, is to postpone the gain on the sale of your house by reinvesting in a different house of greater cost within two years of the original sale. This can be done when a move is best for all concerned but you still want or need to own your house.

See IRS Form 2119 and instructions for the sale of residences.

Michigan potato producers to lose 5,000 acres of contracts, seedstock growers left with product in storage

Continued from page 1

According to Ben Kudwa, executive director of the Michigan Potato Industry Commission, it's a $4 to $5 million dollar farmgate problem.

He attributes the Simplot acreage reduction to three key factors: french fries imported from Canada, which have caused a glut in the market; a significant potato oversupply; and storage concerns. J.R. Simplot, has fared poorly because of the high cost of raw product needed for fries.

Mark Otto of Agri-Business Consultants, a Lansing-based crop consulting firm, expects his business to suffer because of the Simplot decision. His customers produce 15 percent of the state's potatoes.

"I suspect there will be a slight reduction in acres." he said. "It will reduce some of my business. Other inputs of potato growers will suffer, as well."

"They have had a business presence for the last three or so years in Michigan," Otto said of J.R. Simplot Company, "and this will affect some of the producers they contracted with."

"The guys that have had traditionally substantial contracts with Simplot will have to try to revise their business plans to make up for that lost presence," he said. "It will create more competition for the current chip contracts, and will drive the price down for chipping potatoes."

"It creates a number of problems," he continued. "Some of my customers had some seed on order, so they may try to return it."

Shirley Skogman of Foster City, in the Upper Peninsula, is one such seedstock producer who may be affected. "They claim they're going to come and take our potatoes, but we haven't heard anything yet," Skogman said. "We wrote the contract for them last year, and now we hear they're not going to take our seed."

The announcement leaves Skogman with seed potatoes in storage and no options for selling them. "Being such a bad year, we certainly have no where to go with them," she said.

"It's just been a real shock to all the farmers. I think its a real sad situation for Michigan farmers and for Michigan agriculture," Skogman said. "But we haven't received official notification yet, it's just in limbo right now."

J.R. Simplot Company first made its mark in Michigan three years ago when it purchased the plant in Grand Rapids. It is one of six owned by the company and, until recently, contributed to two billion pounds of frozen french fries and other frozen products produced every year for the foodservice industry.

"We've got decisions to make right now," Steinbrecher, the Iron Mountain potato producer, said. "Who knows what's the right way to turn? We're young, we're not ready to fold up and quit. You can't farm one year in and one year out. It doesn't work that way. We are going to plant some potatoes. We can't quit."

New methods on the horizon for Michigan's tart cherry industry

Alternative orchard floor management systems studied

by Steve Tomac

Michigan leads the nation in tart cherry production. It also leads in many other fruit production areas. Lately, environmental and other concerns have caused growers to reevaluate their production methods. Practices that use less pesticides and nitrogen are gaining acceptance. But which ones work best? Are the pests being controlled? Are the methods practical and economical? These questions should be answered by an ongoing study performed by a team from MSU Extension, faculty from several departments at MSU, and a volunteer grower.

Located in Leelanau County, the site is adjacent to the Northwest Michigan Horticultural Research Station (NWMHRS). This allows easy monitoring of the project, said Jim Nugent, NWMHRS coordinator.

A tart cherry orchard is the focus of a study looking at 14 different orchard floor management systems. Some of the treatments are current practices, and serve as control plots; some use no herbicides, but rather mulch or mowing to control weeds; and some use alternative nitrogen sources to maintain tree vigor and production. "We would like to find a management system that has multiple benefits, including reducing nitrogen and herbicide use, and protect the environment in general," said Dr. Charles Edson, of MSU's vegetable and fruit IPM program.

Groundwater collection units, called lysimeters, have been installed to monitor six of the plots. Designed by Dr. Ted Loudon and visiting scientist Dr. Tingwu Lei, these devices leave the soil structure undisturbed and allow the water to filter down naturally. Any chemical or nitrate leaching will be collected by the lysimeters. This is an important step in monitoring the environmental impacts of the alternative practices.

The project also focuses on reducing the population of pest insects and nematodes; while enhancing the habitat and encouraging beneficial species to flourish. Edson hopes one or more of the systems will help with managing insects by increasing the beneficial insect population.

"The results are not going to show up overnight," said Nugent. The trees are deep-rooted, and effects on yields or the environment may not be readily apparent, he added.

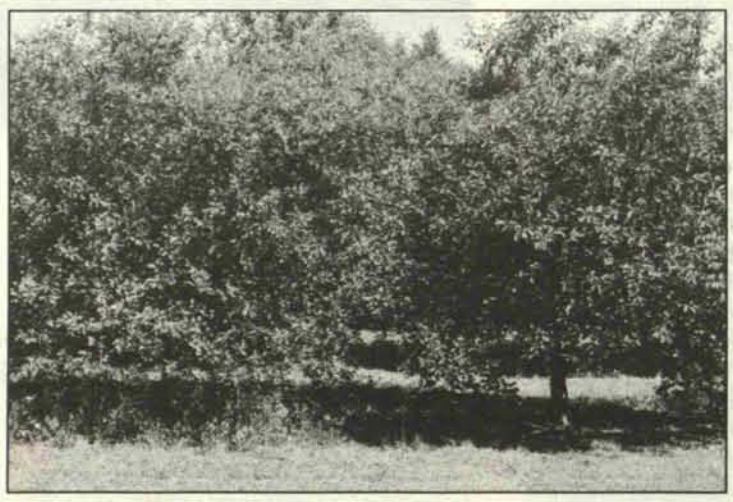
When sufficient data is gathered, and results are able to be analyzed, Scott Swinton, agricultural economist at MSU, will examine the practicality and economic viability of each treatment.

Don Gregory, owner of Cherry Bay Orchards and the plots, said that their costs for herbicide and nitrogen run between $150 and $200 per acre. He said the difference was due to varying conditions, such as type of crop, nutrients already present, and varying pest threats.

Edson said that they had not yet run a cost analysis of the alternative plots. He said that they wanted to wait until they could analyze the quality and yields of the plots under the different management systems.

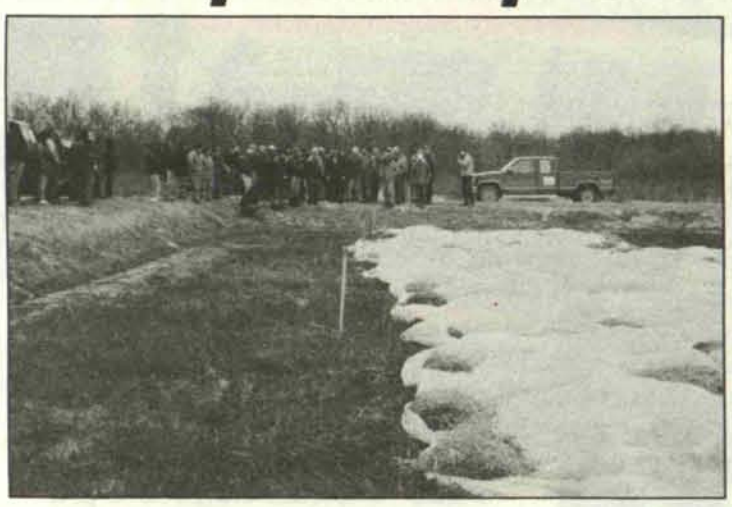
The multi-oriented approach covers many aspects of the tart cherry production. The project is designed to involve all disciplines that may be concerned with fruit production in the state of Michigan. Early results are promising, but they have yet to be analyzed in detail. Further analysis should prove that, while current practices are acceptable, alternative practices exist that may be more beneficial.

Jim Nugent examines a cherry fruit fly trap.



The alternative orchard floor management system is pictured on the left. A standard system appears at right.

Some farmers who practice good environmental stewardship exempt from key Michigan taxes



Michigan producers interested in cranberry production recently gathered in Holland for cranberry school to learn more about producing the unique fruit and visit cranberry beds already suited for growing the crop.

State's Cranberry Farms Benefit

Cranberry farmers and others involved in agriculture are exempt from key Michigan taxes for maintaining certain water pollution control measures or facilities, according to Dan Wyant, Director of the Michigan Department of Agriculture (MDA).

According to Wyant, agricultural businesses that control surface and groundwater pollution may be exempt from property, sales and use taxes.

"As frontline stewards of the environment, our growers can participate fully in those tax advantages," said Wyant. "It is important that we identify opportunities that reward those growers who are successfully implementing additional environmental safeguards that protect our natural resources." For instance, if cranberry growers follow the Generally Accepted Agricultural and Management Practices for Cranberry Production, which promote environmental stewardship, part of the operation may qualify for tax breaks under Part 37 of the Natural Resources and Environmental Protection Act (NREPA), formerly Public Act 222 of 1966.

"It's clear that the entire construction and operational costs of a cranberry farm are not eligible for the tax exemption, only specific component parts or systems that are used primarily for the purpose of controlling, reducing or eliminating water pollution," said Director Wyant.

Agriculture-related facilities associated with cranberry farms that could be exempt include:

- Pesticide or fertilizer containment buildings
- Pesticide and fertilizer mixing and loading pads
- Anti back-siphoning devices
- Erosion control structures and sediment traps that prevent a direct discharge
- Detention pond and related equipment that's designed to collect waste water for recycling and reuse and not allow it to escape to a nearby waterway

Another item could include clay, organic material or other impermeable liners in cranberry beds whose primary purpose is to prevent leaching of agri-chemicals into groundwater.

Eligibility for a tax exemption is determined by the Michigan Department of Environmental Quality (DEQ) after a taxpayer files an application for a Tax Exemption Certificate with the Michigan State Tax Commission, Michigan Department of Treasury.

Upon approval by DEQ, the State Tax Commission sends a Water Pollution Control Tax Exemption Certificate to the successful applicant. Certified copies are also sent to the assessor of the taxing unit in which the cranberry facility is located. In addition to the property tax exemption, tangible personal property purchased and installed as part of the facility are also exempt from sales tax under Public Act 167 of 1933 and use taxes under Public Act 94 of 1937.

Applications for an exemption certificate are not retroactive. They apply only during the year in which the application is submitted and the certificate issued. Exemptions can be applied to completely new facilities and equipment as well as retrofitting or modification of existing facilities and equipment.

Copies of the Tax Exemption Certificate application form are available from the Michigan State Tax Commission, Treasury Building, 430 W. Allegan Street, Lansing, MI 48922 or by calling MDA Office of Agriculture Development, (517) 335-3401.

Consumer groups oppose meat inspection fees

U.S. consumer groups said they oppose a Clinton administration proposal to shift the cost of federal meat inspection to the meat industry.

Last year, the government announced an overhaul of the federal meat inspection process which introduced scientific testing for disease-causing bacteria. In its fiscal 1998 budget, the Clinton administration has proposed $390 million in user fees to cover the cost of putting federal inspectors in meat, poultry and egg plants.

USDA said budget constraints make user fees necessary. USDA chief economist Keith Collins said the department calculates if the whole cost of user fees was passed on to the consumer, it would be a $1.45 increase annually per person.

USDA to consolidate APHIS field offices

The Agriculture Department is consolidating its 13 Animal and Plant Health Inspection Service field offices into regional hubs at Raleigh, N.C. and Fort Collins, Colo., Secretary Dan Glickman said.

About 150 employees will be relocated to the Raleigh hub and another 160 to Fort Collins. APHIS currently has science and technical centers in both cities. The moves are expected within four years.

The field offices are now in Arlington, Fort Worth and Brownsville, Texas; Albany, N.Y.; Englewood and Lakewood, Colo.; Sacramento Calif.; Tampa, Fla.; Annapolis, Md.; Brentwood, Tenn.; Gulfport, Miss.; and Moorestown, N.J.

Glickman said the reorganization is part of the Clinton administration's government reinvention program.

Measuring stick for new tractors may be eliminated

The nation's measuring stick for new tractor standards may be eliminated if the Nebraska legislature cancels a 78-year-old state tractor-testing requirement.

A measure advanced by the legislature's Agriculture Committee would repeal a 1919 state law that requires tractors to be tested before they are sold in the state. The law was designed to protect consumers from faulty tractors by requiring permits to sell each tractor model. No other state has such a requirement.

The Nebraska Tractor Testing Laboratory is the only independent lab in the United States that studies new tractors — and soon it may be closing for good. The proposed repeal would likely end many of the tests at the lab and could shut it down entirely.

Tractor dealers outside Nebraska are afraid if the lab closes it will end the only guarantee of quality tractors in the country. The lab tests a dozen tractors a year for performance standards, including fuel efficiency, noise level, lifting and pulling capacity and other consumer information. "If a company makes an advertising claim on a tractor, they have to bring it here and prove it to us," said Leonard Bashford, chairman of the state tractor-testing board, in recent testimony .

Each test costs about $18,000, paid by the manufacturer. The fees are the lab's only source of funding. The lab has four full-time employees, and needs about 10 tests per year to break even. If state-mandated testing ends, the number of lab tests will likely drop below that number, according to Bashford.

The repeal bill was offered at the request of Nebraska implement dealers, who say they are at a competitive disadvantage with dealers from nearby states.

Deere & Co., the parent company for John Deere dealers, provided written testimony, saying the proposal would allow unreliable tractors to be sold in the United States.

Cooperative agreement set up with Michigan's cooperatives

Officials from the Michigan Alliance of Cooperatives and the U.S. Department of Agriculture's Rural Development announced the signing of agreements to work collectively to assist rural cooperatives to access and utilize USDA Rural Development programs.

USDA Rural Development signed partnership agreements with the Michigan Alliance of Cooperatives and the Research, Education and Development Institute for Cooperatives (REDIC) in an effort to build stronger working relationships between the partners. "The partnership agreement between the USDA Rural Development and the Research, Education and Development Institute for Cooperatives creates new possibilities for close collaboration between this public agency and the private citizens who established REDIC." Said Joel D. Welty, President of REDIC.

Welty went on to say, "We expect to see new cooperatives rising from this collaboration. We intend to develop new co-op housing, new productive co-ops and new distribution co-ops that will benefit substantial numbers of rural citizens. This agreement brings more resources to the task, more innovative solutions to the problems and more energy into the hands of rural families building better lives."

"It is important that rural cooperatives are given every opportunity to utilize USDA Rural Development programs to their fullest extent possible." Said Donald L. Hare, State Director for USDA Rural Development operations in Michigan. "These agreements underscore our commitment to rural cooperatives in Michigan, we know they are an integral part of the fabric of rural America, and serve a very important role in improving the quality of life for rural residents."

Rural Development is a mission area within the U.S. Department of Agriculture responsible for administering various rural housing; rural business and industry; and rural community development loan and grant programs.

Lawmakers denounce further farm budget cuts

More than 100 members of Congress, including House Agriculture Committee Chairman Bob Smith (R-Ore.) and ranking Democrat Charles Stenholm (D-Texas) recently wrote House Budget Committee Chairman John Kasich (R-Ohio) urging him to exclude farm programs from any further budget cuts.

The lawmakers reiterated the claim that agriculture has already been forced to give its fair share to budget reductions in the past. "No other area of the budget has so consistently made such major contributions to budget control (over the past 12 years)," the members wrote.

The lawmakers also cited the recent farm bill, still in its infancy, which guaranteed fixed payments for most program commodities and ended support for others. They asked the budget chairman to steer clear of any changes to the monumental law.

"This extensive change in farm programs has just begun and it would be most disruptive and confusing to introduce further changes at this critical stage," the members wrote.

Attached to the letter to Kasich was a copy of a letter submitted by Farm Bureau and more than 100 other farm groups urging fair treatment in the budget process. President Clinton has requested $58.8 billion in USDA spending for 1998, up from $57 billion this year.

CBO says Clinton plan will not balance in 2002

The Congressional Budget Office reported President Clinton's 1998 budget proposal would result in a $69 billion deficit in 2002. To add salt to the White House wound, the budget office also said the 1998 budget deficit will balloon to $145 billion, up $33 billion from $112 billion this year. House Budget Committee Chairman John Kasich (R-Ohio) noted the nearly $70 billion deficit and called the president's attempt to balance the budget "vain." Senate Majority Leader Trent Lott called on the president to submit a new budget proposal and tax plan, but he admitted he has not seen any indication that would happen. White House Press Secretary Michael McCurry confirmed Lott's prediction: "It's not going to happen. Let's move on with the regular process." Other White House officials countered, encouraging Republicans to submit their own budget proposal. Lott indicated he is not yet prepared to cut off talks on the budget, noting some of the budget task forces established in January will begin meeting this week.

Precision Agriculture

VRT is an important precision ag tool

by Perry M. Petersen

Georeferenced data on yields and grid soil sampling provides a farmer with detailed, precise information on the variations that take place in his crops and land. But it's another precision agriculture tool — variable rate technology (VRT) — that enables a farmer to do something about the variances he sees in yields and soil conditions.

Simply, VRT is the process of using computers and controllers to automatically adjust the application of crop inputs. This technology uses the global positioning system (GPS) and georeferenced data a farmer collects on his crop production system and enables him to precisely place crop inputs where they will do the most good. That means rather than applying fertilizer, crop protection products or seed at the same rate across an entire field, the rate is automatically varied.

According to Pat Trail, Terra's cropping systems adviser based in Marshall, Mich., growers are relying on VRT to make soil conditions in a field more uniform. Soil pH, for example, may vary widely across a field. Georeferenced soil sampling data collected from 2.5-acre grids across an entire field documents variations in pH levels. Armed with this data, Trail prepares a computerized prescription that addresses the pH variability. Specialized application equipment "reads" the prescription with an onboard computer and changes lime rates while on the move. At any given moment, GPS signals allow the lime spreader to "know" its location in the field. The computerized prescription tells it the amount of lime that must be applied at that exact spot.

In much the same manner, a farmer can precisely vary fertilizer rates. Farmers who have developed a site-specific nutrient management program are finding that it has significant economic and environmental benefits over blanket applications of fertilizer. The right amount of fertilizer is applied based on any number of factors the farmer and his cropping systems adviser deem important: soil type, pH, drainage, topography, nearness to waterways, past cropping history, expected plant population.

On-the-go variation of seeding rates presents the farmer with another opportunity to more efficiently manage his cropping system. Trail explains that lower, wetter areas of a field may benefit from greater numbers of seed. But putting the same amount of seed on top of high, sandy hills in the field may be a waste of seed, money and time. VRT allows farmers to plant seed at varying rates to compensate for such factors as soil type, fertility and drainage.

Several of Trail's Michigan customers are ready for variable rate seeding of corn and soybeans this spring, using prescriptions that he and the farmers developed. Trail is recommending corn seeding rates as low as 18,000 plants per acre and as high as 31,000 plants per acre for specific areas of his customers' fields — based on an analysis of georeferenced data the farmers collected.

VRT also makes it possible for farmers to apply crop protection chemicals in areas of a field where they are needed and to reduce or discontinue their application where they aren't needed. A farmer or his cropping systems adviser scouting fields for weed or insect problems can use a hand-held GPS receiver to mark the exact location of pest infestations. That information, in the form of georeferenced data, can guide application of the proper chemical to precisely the correct areas in the field. GPS and VRT can make pesticide applications more precise, more effective and more environmentally friendly.

GPS-guided variable rate applications of nutrients, seed or chemicals allow a farmer to implement an action plan for each part of each field and to make better use of his resources.

Terra
PRECISION IN AGRICULTURE
Perry M. Petersen, C.P. Ag.-CCA,
Corporate Manager, Precision Agriculture
Terra Industries Inc.
Phone: (800) 831-1002 & (712) 277-1340
Fax: (712) 277-7383
www.terraindustries.com

Pavilion for Agriculture and Livestock Education dedicated

Animal agriculture leaders gathered early in the afternoon on March 15 at the newly opened Pavilion for Agriculture and Livestock Education for a formal dedication of the building during the 1997 Internation Stallion Exposition and Trade Show.

Gov. John Engler (left) presents the engraved plaque hung in the pavilion with MSU Board of Trustees member Dee Cook and MFB President Jack Laurie. At the podium for the presentation is Dean of the College of Agriculture and Natural Resources Fred Poston.

The pavilion contains a 76,000 square-foot exhibition area, an auditorium and an auction facility with seating for 350. The arena seats 2,000 people and there are also four classrooms for teaching located in the confines of the new facility.

The engraved plaque at the facility reads:

On March 15, 1997, the Pavilion for Agriculture and Livestock Education was dedicated. The pavilion is the result of the strong support of the governor, the bipartisan efforts of the Michigan Senate and House of Representatives, Michigan agriculture and Michigan State University. The pavilion is dedicated to the advancement of Michigan's livestock industry through education, exhibition and livestock distribution. Its construction was made possible on April 14, 1993, when Governor John Engler, who provided foresight, drive and leadership for the pavilion, signed into law Act 19 of the Public Acts of 1993. Act 19 also provided funding for the Animal Agriculture Initiative which enabled the university to undertake a campus-wide modernization of research, teaching and demonstration facilities to better serve Michigan's livestock industry.

Glickman announces allocations for EQIP

Agriculture Secretary Dan Glickman announced recently preliminary state funding allocations for USDA's new $200 million Environmental Quality Incentives Program (EQIP) that will help farmers and ranchers with environmental problems on their property.

Speaking at the North Carolina Governor's Summit on Agriculture, Glickman said producers will be able to sign EQIP contracts when the final rules and regulations are published in the Federal Register, expected in April. In the meantime, farmers and ranchers may contact local USDA Service Centers and the Natural Resources Conservation Service for information on possible eligibility. NRCS will also help producers develop their conservation plans.

EQIP is a new USDA program under the 1996 farm bill. Under EQIP, USDA will provide cost-share funding to family-sized farms and ranches for up to 75 percent of the costs of certain environmental protection practices, such as grassed waterways, filter strips, manure management facilities, capping abandoned wells and wildlife habitat enhancement. USDA also may provide incentive payments to encourage producers to apply such land management practices as nutrient, manure, irrigation water, wildlife and integrated pest management.

EQIP will be delivered primarily to state priority areas. Under the program, state priority areas are watersheds, or geographic regions with special environmental sensitivity or significant soil, water, or related natural resource concerns.

Approximately $170 million was covered by the announcement. The remaining $30 million will be allocated later, when individual states' needs are determined.

Great Lake State EQIP allocations

Michigan	$4,200,000
Illinois	$4,850,000
Indiana	$2,550,000
Ohio	$3,050,000
Wisconsin	$4,200,000

8th Annual Beef Expo promises to be the biggest ever

The Purebred Council of the Michigan Cattle men's Association is proud to host the 8th Annual Michigan Beef Expo at the new MSU Pavilion for Agriculture and Livestock Education on April 4, 5, and 6. This multi-breed event promises to be the largest Expo in history.

There are over 270 head of cattle consigned to the nine breed sales that are associated with the event. Friday will allow each breed to show off their consignment cattle through shows, parades, and exhibitions and Saturday will follow with the breed sales. Angus, Beefalo, Chi, Gelbvieh, Limousin, Main-Anjou, Polled Hereford, Shorthorn, and Simmental are each hosting sales at the event. In addition to the nine consigned breeds three additional breeds that will be represented by having animals located in exhibit cattle alley. These will provide attendees with a chance to see some other breeds: Murray Grey, Piedmontese, and Saler.

Youth educational events for the weekend include a poster contest and an all-breeds beef cattle judging contest that will be held on Saturday. Poster contest rules can be obtained by calling the MCA office. For more information on the judging contest contract Barb Sweeney at (517) 332-5274. Sunday will bring the annual All-Breeds Junior Heifer and Steer Show which is sponsored by the MSU Block and Bridle Club. For more information on the Junior Show, contact Tammy Klink at (517) 394-6334.

Expo provides educational opportunities for more than just youth. This year, there will be a Live Animal Evaluation Clinic, for adults and youth, on Friday at 1 p.m. This clinic will not only teach participants how to evaluate the individual carcass value of market animals, but will also let them work through a class of four market steers at MSU's Beef Cattle Research Center and practice their evaluation skills. For more information on the clinic contact Kevin Gould, MSU Extension at (616) 527-5357.

As with years past, Expo includes an extensive trade show. Due to Expo's new home at the Pavilion, the entire trade show ill be under the same roof as the exhibit cattle. Many agri-businesses will be displaying their wares at this year's event. Drop by and look around. Parking is free and there is no entrance fee.

For more information about the 1997 Michigan Beef Expo or a complete schedule of the event, contact the MCA office at (517) 669-8589 or P.O. Box 387, DeWitt, MI 48820.

Thumb oilseed producer's cooperative seeking memberships

Since early January, meetings have been held in the Thumb Area for the purpose of exploring the possibilities of organizing a farmer-owned soybean processing operation. The organization's intent is to explore the possibilities of establishing a processing plant to supply soybean meal to local livestock and dairy producers and to add value by marketing the oil expelled from the raw soybeans. The board is exploring further opportunities to refine the oil.

Now, the Thumb Oilseed Producer's Cooperative is seeking members. Membership agreements and copies of the bylaws are available at the MSU Extension-project office in Bad Axe. Memberships are being sought for 30 days, ending April 15. The membership fee ($500 each) is needed to offset legal fees, well as costs for the feasibility study and the development of a good marketing plan. Therefore, timeliness in returning the applications is important so that the board can move forward with the project.

A membership is required prior to buying any shares in the cooperative. Therefore, those who commit during this early membership drive will have first opportunity in purchasing stock. The board is seeking 100 members in this drive. The purchase of a membership is also an indication of the level of interest in the project and allows the board to proceed.

The board is also asking interested soybean producers to complete a survey on several issues related to the cooperative. The information is necessary for the feasibility study and marketing plan.

If you have questions about the Thumb Oilseed Producer's Cooperative or want information sent to you, please call Jim LeCureux at the MSU Extension-project office at (517) 269-6099.

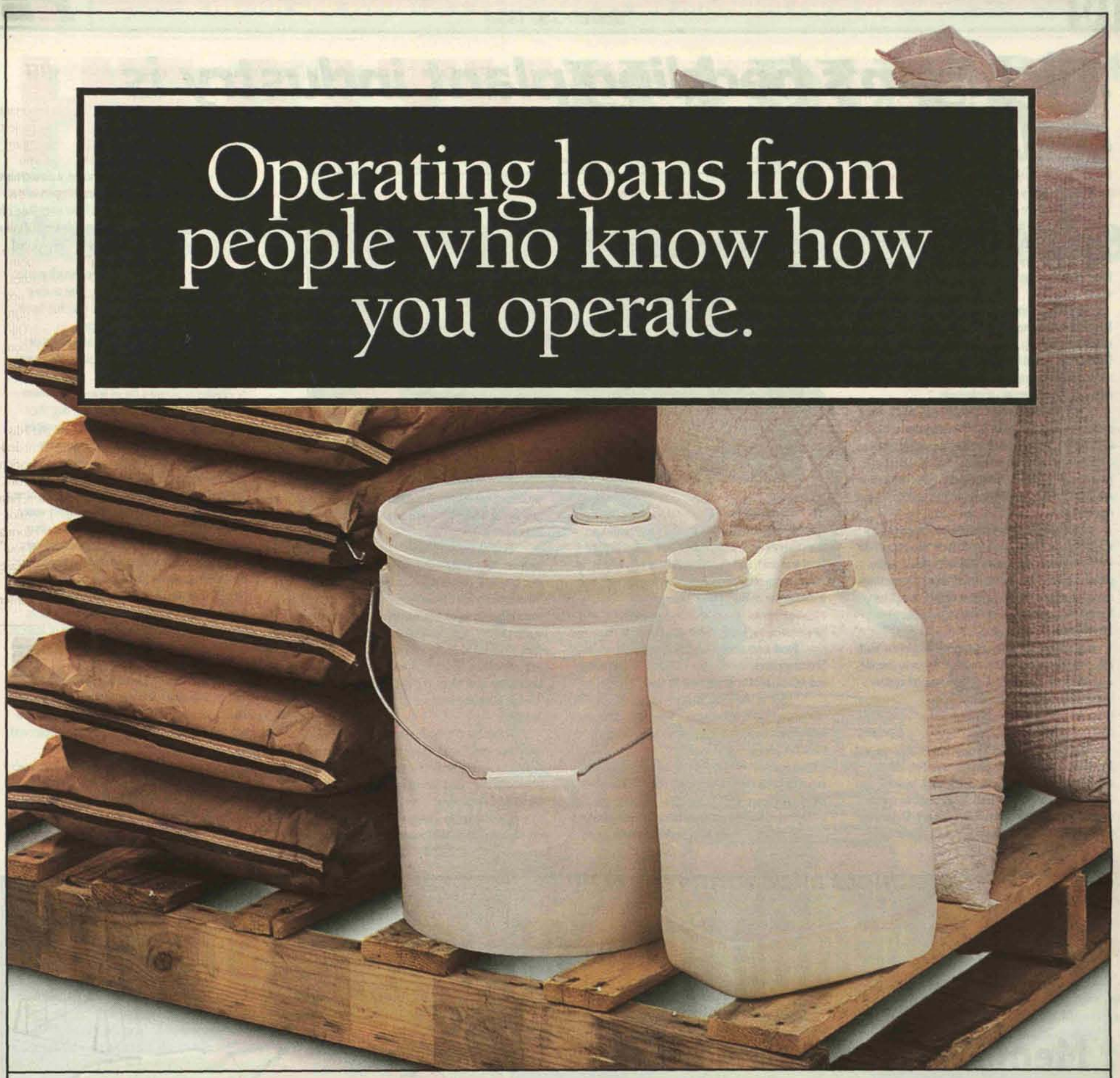
Ag Awareness Day

Ag Awareness Day will take place Wednesday, April 9, at the Hillman Community Center from 9:30 a.m. to 4:30 p.m. The program is absolutely free and each farm will receive the 1997 Weed Control Guide for Field Crops. Licensed pesticide applicators will earn three recertification credits.

The morning session will focus on providing agricultural producers up-to-date information needed to make sound agri-chemical decisions. In the afternoon, knowledgeable industry representatives from Grower Service, Novartis and Mycogen will discuss newly labeled pesticides, herbicide mode of action and Bt corn. In addition, there will be 30 displays and demonstrations set up by equipment dealers, seed distributors, chemical suppliers and various agricultural service representatives and technicians.

The Groundwater Stewardship Program, Farm Bureau, Conservation districts and MSU-Extension are working cooperatively to make the day informative and enjoyable. Registration is required. If you have any questions or would like to register, please call Mary Dunckel at the Alpena Conservation District: (517)356-6038 or at the Montmorency Conservation District: (517)785-4083.

Operating loans from people who know how you operate.



We understand the financial side of agriculture better than anyone. Which is why we've tailored our Credit Line operating loan to help you manage your farm more efficiently and profitably. Get the credit you need whenever you need it to finance everything that goes into operating your business. You can choose from a variety of loan options tailored to fit your needs. Call us today. And let us put our 80 years of experience to work for you.

1-800-444-FARM

Farm Credit Services
®At the heart of a growing America℠

Michigan's bedding plant industry is ranked no. 3 in the nation

Catch a glimpse of this bloomin' world

by Kara Endsley

Where does the bedding plant industry get its roots?

Michigan's bedding plant industry, which grossed $131 million in sales in 1995, got its humble beginnings in the celery and tomato business.

Bedding plant production started as a side business in the late 1940s and '50s for celery and tomato growers in the muck lands of Kalamazoo, Grand Rapids and Detroit. The growers were primarily Dutch immigrants who used greenhouses to start celery and tomato transplants.

As the U.S. economy grew in the '50s, flowers and bedding plants grew in popularity and economic feasibility. People were making enough money to occasionally splurge on flowers. Now the bedding plant industry is generations old. Some businesses are approaching the third and fourth generations of ownership.

Bedding plants are classified as flowering annuals – flowers that grow from seed, bloom and die within one growing season. "Most bedding plant growers also grow a small percentage of vegetables - anywhere from 5 to 15 percent of their mix," said Kalamazoo Valley Plant Growers Co-op Manager Tim Stiles.

Impatiens are the popular bedding plant leaders, grossing $12.6 million in 1995. Petunias are the second choice, grossing $7.3 million, and geraniums come in third with $3.7 million.

What makes Michigan a leader in bedding plant production?

Michigan is ranked third behind California and Florida in bedding plant production. This success can be attributed to two factors: Dutch heritage and Michigan's lake effect climate, which allows spring to stay cool and fall to stay warm longer. These conditions give Michigan-grown bedding plants a marketing edge.

"I think it's the expertise that's here," Stiles said. "It is also much easier to heat a greenhouse than to cool one. We can grow our plants kind of slow and cold, and that makes them very hearty. It makes them short; it makes them branch well; and it makes the colors bright," he said.

Flower beds keep these greenhouse bees busy

Producers are literally up to their elbows in bedding plants. Production will peak in March, but the workload is at its greatest in April.

"They're shipping; they're selling; they're planting; they're still sowing," Stiles said. "The absolute peak workload is in April, because all operations are going on at that time."

Sales peak within the first two weeks of May, especially the week of Mother's Day. "That's when a lot of people are just chomping at the bit to get out in their yard and do some gardening," Stiles said.

In addition to growing bedding plants, many producers grow potted plants, such as poinsettias and Easter lilies, to balance production in the off-season.

Finding seasonal labor is often a battle for growers. "For every one full-time person that someone employs, they employ four seasonal people," Stiles said. "A lot of housewives have found that it's real enjoyable work, because it's flexible conditions, it's not heavy work, it's a beautiful environment and they can get good wages doing it."

In relation to agricultural industries that date back to ancient times, the bedding plant's roughly 40-year existence makes it a young and changing industry.

"I think you'll see the industry continue to grow, but it may have to keep on the change — be willing to change and meet the demand that the consumer has," said Mel Klooster, a Kalamazoo bedding plant grower.

The change in society that has brought flowers to dining room tables and into flower beds has brought with it a new hobby for some, a passion for others. "It's part of our culture, and it's part of our recreation. I think a lot of people have stressful lives and gardening is a release for them," Stiles said.

Before you buy ...

1. Wait! Far too many cabin-fever-struck gardeners plant their flowers too soon. Wait at least until May 15 or after a frost free date has been broadcast on your local TV station.
2. Plant hardier varieties, such as pansies or snapdragons, first. They'll be able to withstand the cold nights of early spring.
3. After purchasing a flat of flowers, set them outside on a cold, but not freezing, day, then bring them inside a garage or shed overnight. This gradual exposure to cold hardens the plants and prevents shock.
4. If you've planted flowers and an unexpected frost is in the forecast, your back-breaking hours of planting are not at a loss. Thoroughly water your flowers. Frost won't freeze an excessive amount of water, thus your plants will be kept warm. Also cover your plants with a blanket or plastic raised above the flowers by boards or blocks. This will create a pocket of warm air.
5. Buy healthy plants. Make sure your plants don't have any visible signs of disease or insects. Brown or lost foliage are signs of an unhealthy plant.
6. If the flower color is clearly marked on the flat, try to buy flowers that are not in bloom. Plants use a lot of energy creating flowers, so a bloomless plant will have more energy reserved for root establishment.
7. Finally, develop a plan. Study flower varieties and determine the best plants for your landscape ideas. Take into consideration sunlight and water requirements and how tall the variety will grow.

A Health and Wellness Publication of the Michigan Farm Bureau

HEALTH HARVEST

Here's help for your pounding headache

Sharp-edged metal bands are tightening around your skull. A huge set of vice grips have a clench-hold on your temples. The space behind your eyes feels like it's filled with jagged shards of glass. Every beat of your heart is magnified 100 times inside your poor pounding head.

You have one monster of a headache.

What on earth could cause such pain? The National Headache Foundation reports that most headaches are caused by muscle tension in the head, neck, jaw and shoulders, not by eye problems or brain tumors. But the misery is widespread. It is estimated that between 40 and 50 million Americans suffer headaches — usually mild — every year.

Researchers have discovered that a biological disorder — a glitch in brain chemistry involving the chemical serotonin — causes most common headaches. The trouble begins when activators such as stress, hormonal fluctuations, or even certain foods set off headaches in people with this disorder. Then comes one, or a combination, of what experts call "primary" headaches, including tension, migraine and cluster headaches.

Tension headaches are the most common type, affecting as many as nine out of 10 people. They can be caused by poor posture or tired eyes, but the number one trigger is stress, which leads to contraction of the head and neck muscles. Tension headaches can be effectively treated with over-the-counter analgesics such as aspirin, ibuprofen or acetaminophen. For severe pain, your physician may prescribe medications with butalbital or non-steroidal analgesic. Be careful not to overuse pain medications. This can interfere with your body's natural pain-management system which can cause rebound pain in the form of headaches that occur more often and with even more punch. To prevent tension headaches, try:

- Massage of temples and nape of the neck.
- Hourly breaks from work to stretch your neck and back.
- Regular aerobic exercise to raise endorphin levels.
- Slow, deep breathing.
- Relaxation or biofeedback techniques to reduce stress.

Migraine headaches strike between 16 and 18 million Americans — mostly women between 25 and 55 — every year. About 70 percent of those have a family history of migraines. Characterized by mild to severe throbbing on one side of the head, nausea, vomiting and sensitivity to light and noise, migraines are often preceded by a 20 to 30 minute visual aura of light flashes, dark spots or zigzag patterns.

"Migraines are vascular headaches that are caused by insufficient levels of neurotransmitters, such as serotonin, in the brain. This initially causes constriction of the blood vessels surrounding the brain which reduces blood flow. For some sufferers, this is the cause of the visual aura. After constriction, the blood vessels dilate causing the headache itself," explained Ronald Koenig, M.D., a neurologist with PROMINA Southern Regional Health System.

Among the triggers for migraines are:

- Concentrated sugars (cakes, cookies, chocolate).
- Saccharin in diet foods and soft drinks.
- Dairy products.
- Fruits (bananas, plantains, avocados, figs, passion fruits, raisins, pineapples, most citrus fruits).
- Fermented or pickled foods (herring, sour cream, yogurt, vinegar, marinated meats).
- Meats with nitrites (bologna, pepperoni, salami, pastrami, hot dogs, bacon, sausages, smoked fish, corned beef, canned ham).
- Yeast products (yeast extract, fresh breads, raised coffee cakes, doughnuts).
- Sulfites (salad bar foods, shrimp, soft drinks, certain red wines).
- Vegetables (pods of broad lima or navy beans, pea pods, nuts and peanuts).
- Birth control pills.
- Weather changes.
- Hunger.
- Flashing lights.

"Research has shown that one trigger alone rarely sets off a migraine. Because it is believed that a combination of triggers is usually responsible, we recommend keeping a headache diary, noting the time of the month, foods eaten, where you were and the number of hours you slept. This will help you discover what triggers your migraines," Dr. Koenig said.

Mild migraines can be treated with over-the-counter pain medications taken at the onset of the headache. Rest in a dark room and apply an ice pack on the nape of the neck or side of the head. Severe migraines can be treated with prescription painkillers or migraine medications to stabilize the brain chemistry. Migraines can sometimes be prevented with antidepressants or certain beta blockers and calcium-channel blockers which have been known to stabilize the migraine-generating parts of the brain.

Cluster headaches, like migraines, are vascular in nature and are accompanied by changes in cranial blood flow. Unlike migraines, they overwhelmingly afflict men. Though they usually last less than an hour, they are the most painful of the primary headaches. These headaches occur in predictable clusters, usually within three- to eight-week periods, during which they may strike several times a day.

Secondary headaches — sinus, TMJ, caffeine withdrawal and hangover — are those caused by other conditions.

Sinus headaches develop when sinuses are congested and infected, usually following a cold or the flu. The pain, behind and below the eyes and in the forehead, can sometimes be accompanied by facial swelling and even fever. If you have fever and facial swelling, contact your physician. If you don't, try hot facial compresses, hot drinks, over-the-counter decongestants and pain medications. You might even give yourself a steam treatment by sitting in the bathroom by a hot running shower for 20 or 30 minutes to help ease congestion.

TMJ (temporomandibular joint) headaches are the result of the misalignment of the temporomandibular joint which can cause a radiating pain along the sides of the head, jaw pain, a distinct clicking when the jaw is opened or closed and limited jaw movement. This problem can be corrected with an oral appliance or splint to realign the jaw.

Caffeine withdrawal headaches feel a lot like tension headaches. They occur when the usual coffee or cola fix is missed causing blood vessels to dilate and set off a headache. To avoid this discomfort, make sure you get your coffee or cola at the same time every day. To cure it, gradually cut back on your intake of caffeinated beverages until you eliminate it completely.

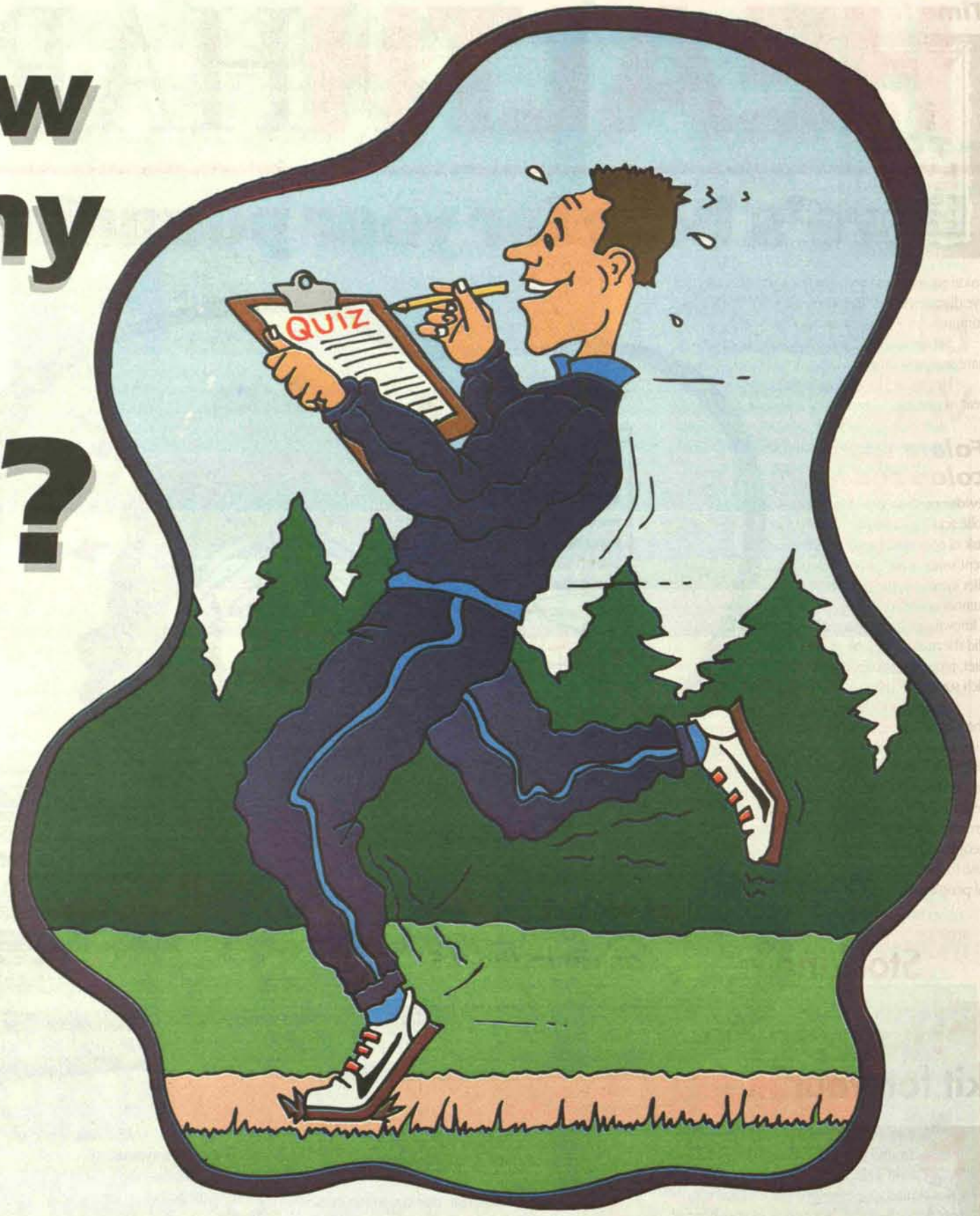
Hangover headaches feature throbbing or pounding all over your head often accompanied by nausea or queasiness. The cause? Too much alcohol, which dilates blood vessels. Even consumed in moderation, small amounts of darker liquors and wines that contain congeners (flavor and color elements) can result in morning-after misery. Get relief by drinking lots of water before you go to bed. In the morning, drink more water and fruit juice — NOT the hair of the dog!

Call the doctor when your headache

- Is unusually prolonged or severe.
- Follows a recent accident or injury.
- Is accompanied by numbness in the arms and legs, high fever or sinus pain.
- Doesn't get better with self-care measures.

Source: Healthy Times

So how healthy are you?



Here's a simple way for you to show how much you care for yourself. Fill out the questionnaire below, and you can learn how your choices for lifestyle, diet and exercise combine with your natural health profile to create a "care value."

1 Are you giving yourself enough exercise?
How many times per week do you exercise briskly for more than 15 minutes?
Double this number. 2 x ____ = ____

2 How is your weight?
On a scale of 1 to 10 where "10" is your perfect weight and "1" means you're extremely overweight, how do you rank you weight? Refer to the weight chart. ____

3 How do you rank your eating patterns?
On a scale of 1 to 10 where "10" includes lots of vegetables and whole grains and "1" is a meat-based diet with French fries and other fatty foods, rate your usual daily eating pattern. ____

4 How often are you stressed?
Choose a number in the range given (0=not at all) for the traits that describe you:

Highly competitive	(0-2)
Usually pressed for time	(0-3)
Bossy	(0-2)
Easily angered	(0-3)

Subtract your total from the value "10."
10 - ____ = ____

5 Do you smoke?
If you have not smoked for more than two years, enter "10."
If you quit less than two years ago, enter "8."
If you quit less than one year ago, enter "6."
If you smoke less than a pack each day, enter "4."
If you smoke more than a pack each day, enter "2."
____

6 How old are you?
Your age is ____. Subtract the first digit of your age from 10 and enter the result. For example, if you are in your 30s, you would enter "7."
10 - ____ = ____

7 How is your family history?
If you have parents, brothers or sisters who have experienced a life-threatening condition, (excluding injuries due to trauma) such as heart disease, a stroke or cancer, it may be an important factor for your own health. Rate your concern about your family's health history on a scale of 1 to 10 where "10" means you have no concerns and "1" means you already are experiencing a condition similar to other members of your family.
____

8 How is your health awareness?
If the answer to the following questions is "yes," you get the number of points listed.

- Have you seen your doctor in the past year? **(4 points)**
- Had your blood pressure checked in the past year? **(2 points)**
- Do you know your cholesterol count? **(2 points)**
- Women: Have you had a mammogram in the past year? **(2 points)**
- Men: Have you had your prostate checked in the past year? **(2 points)**

Add your points together. ____

9 How do you feel?
Our bodies tell us about our health all the time, if we listen. What is your body telling you?
On a scale of 1 to 10, rate your feelings about your health where "10" means you feel great with no concerns and "1" means you have serious concerns caused by an existing health condition.
____

10 Bonus points.
If you have completed this questionnaire, give yourself a "10" for showing that you care about your health! ____

Total points. ____

YOUR SCORE	
91-100	Congratulations! You really value your health.
81-90	Good job! And you probably know how you can increase your value.
71-80	Average. Like most people, investing some effort will enhance your health.
60 or less	Get a professional opinion. A physical exam or consultation can help a lot in setting goals.

Source: Blodgett Today

Weight chart

Optimal weights in pounds for adults aged 25 and over (light clothing). Range depends on size of frame.

Men

Height (In Shoes)	Weight Range	
5 ft	2 in	112-141
5	3	115-144
5	4	118-148
5	5	121-152
5	6	124-156
5	7	128-161
5	8	132-166
5	9	136-170
5	10	140-174
5	11	144-179
6	0	148-184
6	1	152-189
6	2	156-194
6	3	160-199
6	4	164-204

Women

Height (In Shoes)	Weight Range	
4 ft	10 in	92-119
4	11	94-122
5	0	96-125
5	1	99-128
5	2	102-131
5	3	105-134
5	4	108-138
5	5	111-142
5	6	114-146
5	7	118-150
5	8	122-154
5	9	126-156
5	10	130-163
5	11	134-168
6	0	138-173

Chart from Primary Care Medicine, J.B. Lippincott Company, Philadelphia

MSPC

Your checkoff dollars at work

Your soybean checkoff investment in programs designed to *assist* you in selecting varieties and cultural practices for use on your farm is the goal of our Agronomic Research. Research to control weeds, diseases and insects, and their recommendations are only meaningful if you receive the results in a timely manner. Also included with this Agronomic Research report are the results of a research project relating to the effects of soy consumption on cancer. Research is promising in this relatively new area of health research. Your Committee has developed this report in an effort to publish information which could be utilized in a manner to make your agronomic decisions more profitable for your farm.

Michigan Soybean Promotion Committee

Breeding and testing soybean varieties in Michigan

Dr. Brian W. Diers
Department of Crop and Soil Sciences
Michigan State University

The four objectives of this research area are:

1) Test soybean varieties in Michigan and provide these results to Michigan's farmers.
2) Breed new soybean varieties with resistance to white mold and soybean cyst nematode.
3) Breed varieties with value added traits for the tofu and soymilk specialty markets.
4) Conduct basic research on soybean germ plasm and seed composition.

Variety Testing

Private and public varieties were tested in the central and southern Michigan soybean test.

The southern test included 143 varieties in St. Joseph, Hillsdale, Lenawee and Ingham Counties.

The central test included 144 varieties tested in Saginaw, Allegan and Sanilac Counties.

All locations were planted by May 29, 1996.

The results of the tests were published by the Michigan Soybean Promotion Committee and 23,000 copies were distributed in the *Michigan Farm News.*

In addition, 77 varieties were tested for susceptibility to white mold. These results were included in the variety test report.

General Breeding Program

Two varieties are being released for the 1997 crop year. They are called Olympus and Apollo and are mid group II soybeans with good yield potential and lodging resistance. Olympus also has some tolerance to white mold and is available in limited quantities as foundation seed. Apollo has the Rpslk phytophthora resistance gene with 30 bushels of breeder seed available.

Breeding for Resistance to White Mold

Soybean lines with resistance to white mold have been developed through a rigorous breeding and selection program. The advanced lines from this program have the potential for release next year.

Breeding for Resistance to Soybean Cyst Nematodes

In 1996, initial crosses were made using varieties resistant to soybean cyst nematodes.

In addition, work was conducted on developing genetic markers for use in selecting SCN resistant lines. The markers were identified and will be useful for selecting more SCN resistant lines.

Breeding for Specialty Markets

In developing varieties for specialty markets, crosses were made between large seeded lines and those lines high in protein.

Basic Research

Project 1. The evaluation of genes from a wild soybean species, *Glycine soja*, that increases the seed protein content.

This 1996 project backcrossed lines with and without *G. soja* genes were evaluated. One of the *G. soja* genes did increase protein content by 2.7% but decreased yield by 4 bu./ac. The project continues.

Project 2. Mapping the location of genes that provide resistance to soybean cyst nematodes from PI 88788.

It is believed that the location of these genes is now known and marker assisted selection can be used to identify lines that provide SCN resistance.

Inhibition of colon cancer by soybeans, soy flour and genistein

Dr. Maurice R. Bennink
Department of Food Science and Human Nutrition, Michigan State University

This study's objective was to determine if full fat flakes (whole soybeans) and soy flour contain sufficient anticancer compounds to inhibit colon cancer.

Colon cancer was initiated by injecting rats with a carcinogen.

The rats were fed one of the following diets:

1) Soy Protein Concentrate
2) Full fat soy flakes
3) Soy Flour
4) Soy Protein concentrate with 150 ppm of added genistein

At the conclusion of this trial, the early stages of colon cancer were significantly reduced by feeding the following diets as compared to the Soy Protein Concentrate.

1) Full fat soy flakes - 27% Reduction
2) Soy Flour - 34% Reduction
3) Soy Protein Concentrate with 150 ppm of added genistein - 42% Reduction

These data also show that extracting fat from soybeans to produce soy flour did not remove anticarcinogenic compounds. Extracting soy flour with ethanol to produce soy protein concentrate did remove anticarcinogenic compounds.

In addition, genistein at 150 ppm was more effective in reducing early colon cancer than 490 ppm of genistein in its glucoside forms present in full fat soy flakes and soy flour.

This study shows that soybeans and soy flour contain compounds that inhibit colon cancer and suggest that free genistein is more bioactive as an anticarcinogen than genistein glucosides.

In conclusion, this research demonstrates that eating soybeans and soy flour reduces the early stages of colon cancer, with soy flour being more protective than whole soybeans.

Fungicide seed treatment for no-till soybeans

Dr. Maurice L. Vitosh
Department of Crop and Soil Sciences
Michigan State University

The objectives of this research project are:

1) To determine the effect of fungicide seed treatments on plant stand, soybean yields and profitability under no-till conditions.

2) To evaluate the effects of diverse soil and climatic conditions on fungicide's ability to control soil borne diseases.

Research Results

Trial I. Seed Fungicide Treatment Trial (Gratiot County)

The purpose of this trial was to compare the effects of a fungicide seed treatment, SuperKote, on the yield of soybeans in a no-till production system.

The results are as follows:

	Yield/ac.	Value/ac.
SuperKote	45.7	$294.05
No Fungicide	45.8	$297.70

The values per acre were calculated using $6.50 soybeans and $3.00/ac. for fungicide treatment.

Grain yields were not affected by the seed treatment.

Trial II. Seed Fungicide and Inoculation Trial (Ingham County)

The purpose of Trial II was to evaluate the effects a fungicide seed treatment, Nitragin Pro-Treat and several Rhizobuim inoculation seed treatments have on soybean yields under no-till and conventional tillage systems.

Soybean yields were not significantly affected by the fungicide or inoculation treatments; however, the plant stand was significantly lower in the fungicide treated plants with the fungicide plots showing 96,993 plants per acre versus 104,641 in the non-fungicide check plot. The no-till yields averaged 42.8 bu./ac across all treatments with a range in yields from 39.4 to 45.2. The conventional system yields averaged 55.4 bu./ac across all treatments with a range of 53.3 to 57.5.

Trial III. Fungicide Seed Treatment Trial (St. Clair County)

Trial III's purpose was to compare the effects of a fungicide seed treatment of Captan + Apron on plant population and yield of soybeans in a no-till production system.

Treatment Results

	Plant Pop.	Yield/Ac.	Value/Ac.
No Fungicide	208,353	22.9	$148.85
Captan+Apron	240,838	23.9	$152.35

The values per acre were calculated using $6.50 soybeans and $3.00/ac. for fungicide treatment.

The fungicide resulted in a significantly higher plant population at harvest; however, there was no significant yield difference.

Trial IV. Fungicide Seed Treatment Trial (Ingham County)

The purpose of Trial IV was to compare the effects of Nitragin Pro-Treat containing Thiram on plant population stand and yield of soybeans grown in a no-till production system.

Treatment Results

	Plant Pop.	Yield/Ac.	Value/Ac.
No Fungicide	276,848	49.6	$322.00
Fungicide	252,970	48.9	$315.00

The soybean yields were not significantly affected by the use of a seed fungicide treatment.

In summary, the fungicide seed treatment trials in Ingham, Gratiot and St. Clair counties demonstrated that none of the seed treatments had any significant impact on soybean yields when compared to the non-fungicidal controls.

Practical strategies for managing white mold in soybeans

Dr. Patrick Hart
Department of Botany and Plant Pathology
Michigan State University

The research objectives of this study include:

1) Study farm management practices to determine how they affect white mold, and develop recommendations to reduce the potential for white mold when environmental conditions are favorable.

2) Investigate the interaction between variety susceptibility and management practices.

Research Progress

1) Effect of Herbicides on the Germination of the Spore Developing Body (Sclerotia)

The use of Blazer, Cobra, Pursuit, Reflex, Crop Oil Concentrate and 28% N were evaluated for their effect on the germination of the spore developing body (Sclerotia). The concentrations of the above herbicides were tested at levels of 2x, 1x, 1/2x, 1/10x, with x being the standard application rates.

The Sclerotia were preconditioned to germinate when incubated in water and then exposed to the above herbicides either continuously or for a 24-hour period.

In the continuous exposure portion of this study, all of the herbicides and 28% N at each concentration inhibited the germination of the Sclerotia.

In the 24-hour exposure, the increasing concentrations of the herbicides and the 28% N reduced the germination. The crop-oil concentrate did reduce the germination but the effect was less pronounced than the herbicides and the 28% N.

2) Germination of Sclerotia in a Non-susceptible Cover Crop

The objective of this field trial was to determine if apothecia (the spore-generating body for white mold) would develop in crop rotations using wheat.

In rotations using wheat, large amounts of apothecia were observed in the wheat plots in mid-June. In plots that were fallow, planted with drybeans or soybeans, no apothecia were observed.

The two factors thought to have accounted for the differences are:

1. Surface moisture was retained for a longer period in the wheat cover crop .

2. Reduced light favored apothecial germination.

3) Effect of Row Spacing on Incidence of White Mold and Yield

There were two series of plot data generated in evaluating this management strategy.

1. In Bad Axe, Michigan, Elgin 87, NK 19-90 and Conrad were evaluated in row widths of 7", 14" and 28". The yields across the three varieties was highest at the 7" row spacing. White mold was not distributed uniformly across the plot but did occur in all row spacings with a Disease Estimate of 25%. This was a non-replicated plot.

2. The trial conducted at MSU campus plots was replicated and using NK 19-90, the yield increased as row spacing decreased; however, no white mold occurred on any of the plots.

In the plots using Elgin 87 and Conrad, the amount of white mold increased as the row spacings became narrower.

4) Yield Compensation in Healthy Plants Next to Diseased Plants

The fact that soybeans are known as "good compensators" is the basis for this research project. The primary objective is to evaluate the compensation that occurs in healthy plants when located next to a white mold infected plant.

The yield was always higher in healthy plants adjacent to diseased plants. The lowest yield compensation occurred in NK 19-90 (10-13%) and was higher in Conrad (20-28%) and Elgin 87 (14.5-21%).

Summary:

The sensitivity of Sclerotia to herbicides and additives suggest a possible role for a reduction in long-term white mold survival.

Sclerotia will germinate in a wheat crop canopy, so there may be some justification for treating the Sclerotia in the rotational crop to reduce the number of Sclerotia that are producing the apothecia.

The work will continue on developing and evaluating appropriate management strategies for managing white mold.

Soybean variety performance comparing no-till and conventional tillage systems

Dr. Maurice L. Vitosh
Department of Crop and Soil Sciences
Michigan State University

The purpose of this trial was to evaluate soybean variety performance in no-till and conventional systems.

This study was planted on May 28, 1996 using a preemergence herbicide program of 1 lb. Lorox + 1 qt. Dual II per acre. The harvest populations ranged from 139,392 to 278,784 plants per acre. Harvest dates were October 17th for the conventional plot and October 21st for the no-till plot.

research

Varieties	No-till			Conventional		
% Protein	% Oil	% Yield	% Protein	% Oil	%Yield	% Protein
Asgrow A2242	33.4	17.4	60	32.8	18.0	60
Asgrow A2506	35.0	17.0	54	33.5	17.8	54
Burlison	37.9	15.8	51	35.9	16.6	47
Dekalb CX232	35.3	17.9	62	34.0	18.7	62
Great Lakes 2415	35.5	18.1	61	33.7	18.8	61
Gutwien 7242	34.7	18.2	64	33.6	18.7	64
Hardin 91	34.4	18.2	57	33.9	18.4	58
NK s19-90	34.0	17.7	61	32.6	18.2	61
NK s24-92	34.9	17.8	62	33.6	18.9	63
Parker	34.3	18.4	55	33.7	18.8	56
Pioneer 9242	34.7	17.3	57	33.9	17.4	58
Resink	35.5	17.1	53	34.2	17.7	53
Sturdy	35.9	17.3	57	35.1	18.0	58
TerraTS253	34.8	17.7	58	33.7	18.4	59
AVERAGES	**35.0**	**17.6**	**58**	**33.9**	**18.2**	**58**

Dr. Maurice L. Vitosh

The soybean yields, protein and oil content were not significantly affected by the tillage systems.

In conclusion, high yielding varieties under conventional tillage will also be high yielding varieties in no-till systems.

Genetic engineering of soybeans for resistance to white mold

Dr. Richard F. Allison
Department of Botany & Plant Pathology
Michigan State University

The research objective is to genetically engineer soybeans to express a protein that interferes with the pathogenicity of the white mold fungus, *Sclerotinia sclerotiorum*.

Project Background

Sclerotinia sclerotiorum is the fungus that produces oxalic acid during the white mold infection process. The oxalic acid lowers the pH of the plant tissue allowing the fungal cell wall degrading enzymes to work. The cell calcium crystallizes at the lower pH and blocks vessels, thus increasing wilt symptoms.

Previous research has shown that strains of the *Sclerotinia sclerotiorum* fungus that are deficient in oxalic acid are unable to infect plant tissue.

Soybeans do not naturally produce proteins that inactivate oxalic acid; however, barley produces a protein called oxalic oxidase (OAO) that converts oxalic acid to hydrogen peroxide and carbon dioxide.

The strategy is to isolate the oxalic acid oxidase gene from barley and move it into the soybean.

Project Progress

A process called transformation has been developed whereby foreign genes are introduced into soybeans.

Progress has been made in the following three areas:

1) Two more transformation units have been constructed to improve and fine tune the transformation process.

2) Improving the detection of gene markers was accomplished by using a different marker gene that produces an easily detectable blue color during a leaf tissue assay.

3) The process of isolating and cloning a copy of the OAO gene from barley for introduction into the soybean is proceeding.

The progress of this project will continue and shows promise of leading to the commercialization of a white mold resistant soybean.

Increasing the production of soybean oil using genetic engineering

Dr. John Ohlrogge
Department of Botany & Plant Pathology
Michigan State University

This research is based upon the assumption that increasing the oil content in soybeans without losing protein will increase the value of soybeans.

The major objective of this research is to increase the oil content of soybeans by increasing the expression of acetyl-Co A carboxylase, an enzyme, in a genetically modified, transgenic plant.

In 1996, the acetyl-Co A carboxylase gene was prepared for overexpression in soybeans. In cooperation with scientists from DuPont, numerous transgenic soybean plants were generated. The seeds from these genetically modified plants are currently developing on these plants and will be available for analysis in the spring of 1997.

Research on the development of these high oil soybeans will continue in 1997 based upon the results of this seed.

Computer program to analyze precision agriculture investment decisions

Dr. Scott Swinton
Dr. Stephen Harsh
Department of Agricultural Economics
Michigan State University

The primary research goal of this project is to develop a computer program to assist farmers in making investment decisions on site-specific farming equipment and services.

The three objectives for the 1996 year were:

1) Assess the needs of Michigan soybean farmers and agribusinesses for this kind of program.
2) Design and field test a prototype computer program.
3) Develop a better computer program to analyze investment decisions in precision agriculture.

During 1996, seven focus group meetings were held to assess the need for a decision support program on site-specific farming. The results of these meetings were as follows:

1) Yield monitors are the only site-specific technology used by most Michigan farmers who use a site-specific technology.
2) Benefits from site-specific farming are hard to measure, but owners of yield monitors are optimistic about them.
3) Many unexpected costs of site-specific farming have arisen.

As a result of the above information, a prototype computer program was written that identifies the break-even return per acre that a farmer needs to cover the added costs of site-specific farming.

After testing with farmers and agribusiness representatives, a work sheet was designed to help users prepare the inputs needed to run the program.

The prototype program is being converted to a Windows operating system.

The program will be field tested and distributed by the summer of 1997.

Nitrogen retention in fish fed soybean-based diets or how to feed more soybean-based meal to farm-raised fish

Dr. Donald L. Garling
Department of Fisheries and Wildlife
Michigan State University

The primary objective of this research project is to determine the effect of feeding soybean meal to farm-raised fish. In this case, the fish species used is the tilapia.

The project has three phases:

1) Evaluating the effect of soybean meal, specifically phytic acid, a component of soybean meal, on growth, feed conversion and protein utilization.
2) Isolate and identify intestinal compounds containing phytic acid joined to protein components.
3) Evaluate the role of phytic acid in decreasing the ability to break down proteins for utilization.

All three of the phases deal with determining how to increase the use of soybean meal as a feed source for the fish industry.

Since large numbers of tilapia fish are needed for the feeding trial, the fish population for the study was increased 20 times during 1996.

The second part of the project preparation was to determine the best feed rate and schedule to use in the feeding trial.

In order to determine this, the fish were fed 1, 2, 3 or 5 times per day with the following results:

- Total consumption and average daily intake increased with 3 feedings per day.
- Slightly better weight gain and growth rates were achieved with 3 feedings per day.
- Protein efficiency, protein utilization and feed consumed per pound of gain were not significantly different comparing 2, 3 or 5 feedings per day.
- Energy retention was significantly higher in 2 or 3 feedings per day.

In conclusion, the optimal amount for efficient growth is 2.9% of body weight per day using 3 feedings per day.

Phase one of this project is now underway.

On-farm testing of WeedSIM/GWM weed management program

Dr. Scott Swinton
Department of Agricultural Economics
Michigan State University

Dr. Karen Renner
Dr. Jim Kells
Department of Crop and Soil Sciences
Michigan State University

The research goal of this two-year study is to evaluate, on a farm production level, two computer models designed to aid weed management decisions as compared to normal farmer weed management.

The 1996 objectives were as follows:

1) Conduct eight on-farm research trials to compare weed management based on the computer models WEEDSIM/GWM and SOYHERB (for Soybeans) or CORNHERB (for Corn) with normal farmer practices in a soybean - corn rotation.
2) Evaluate research results based on weed control, impressions of farmers, scouts and technicians, profitability and market potential.

1996 Research Results

The eight research trials were placed on farms in southern Michigan with four on soybean fields to rotate to corn and four on corn fields to rotate back to soybeans. Six additional sites, funded by the Michigan Department of Agriculture, were added in Livingston and Ingham counties.

The three treatments used were:

1) Farmer's choice of weed control
2) WEEDSIM/GWM recommendation
3) SOYHERB or CORNHERB recommendation

WEEDSIM/GWM was designed to recommend the most profitable weed treatment, while SOYHERB or CORNHERB recommends the most effective weed control.

Yield, Cost and Profitability Results from 11 On-Farm Weed Management Trials in Michigan, 1996.

Crop & Treatment	No. of Trials	Ave. Yield bu./acre	Ave. Weed Control Cost $/acre	Ave. Gross Margin $/acre
SOYBEANS				
FARMER	6	33.2	$29.13	$212.50
SOYHERB	6	35.6	$33.42	$225.45
WEEDSIM/GWM	6	34.6	$26.76	$224.67
CORN				
FARMER	5	135.0	$20.26	$332.13
CORNHERB	5	134.5	$21.18	$329.94
WEEDSIM/GWM	5	133.3	$26.21	$321.71

This assumes cash prices of $7.21/bu. for soybeans and $2.61/bu. for corn

Summary of Year One. (1996)

SOYHERB treatments were the most costly and the highest yielding.
WEEDSIM/GWM treatments were the least costly but yielded in the middle.
SOYHERB and WEEDSIM/GWM recommended the same treatment on two occasions.
SOYHERB and the FARMER chose the same treatment twice.
A second year of testing is needed before conclusions can be drawn from the research.

Screen for soybean cyst nematode tolerance in Michigan-grown soybean cultivars

Dr. Haddish Melakeberhan
Department of Entomology
Michigan State University

The research objective for this project is to screen and evaluate Michigan-grown cultivars for soybean cyst nematode tolerance. The basis for this research is the assumption that varieties that show positive yield differences in soybean cyst nematode situations may be exhibiting some level of field tolerance toward SCN.

Eleven cultivars, nine private and two public, were identified based upon previous greenhouse studies and planted in the field trials.

Extremely wet conditions caused a delay in planting. This along with a long dry period after planting affected plant populations in 40% of the treatment areas.

The data that resulted from the poor stands is not relevant because of the extreme environmental conditions.

This project will be implemented in 1997.

Phytophthora root rot of soybeans: Factors controlling infection

Dr. Gene R. Safir
Department of Botany and Plant Pathology
Michigan State University

Dr. Brian W. Diers
Department of Crop and Soil Sciences
Michigan State University

The research objectives of this multi-year project are:

1) To determine the presence and distribution of the races of *P. sojae,* the cause of Phytophthora root rot in Michigan soybeans.
2) To attempt to determine a chemical indicator of soybean field tolerance to *P. sojae.*

Research Progress

In 1996, plant samples from several Michigan counties were evaluated for the presence of *P. sojae* . There were 160 samples evaluated with 10 expressing *P. sojae* races. These determinations suggest the presence of additional highly aggressive *P. sojae* races.

In attempting to determine a chemical indicator of soybean field tolerance to *P. sojae* , it has been determined that genistein, which is released by soybean roots, can reduce the amount of disease caused by *P. sojae.*

In a test for field tolerance to *P. sojae*, a series of soybean varieties were evaluated. It was found that varieties with higher field tolerance released more genistein from their roots. Therefore, it would be logical to assume that soybeans that release more genistein from their roots would be more field tolerant to Phytophthora root rot. Additional research is needed in this area.

Cultural tactics for management of the soybean cyst nematode in Michigan

Dr. F.W. Warner
Dr. J.F. Davenport
Dr. G.W. Bird
Department of Entomology
Michigan State University

The primary objective of this research project is to evaluate the use of various agronomic tactics for the management of soybean cyst nematode (SCN) in Michigan.

Variety Trials

Soybean variety trials were conducted in Saginaw and Monroe counties using SCN-resistant varieties along with one susceptible variety. Soil samples for SCN evaluation were taken at planting and harvest from the 30-inch row plots.

The plot in Saginaw County has been planted to soybeans at least four years in a row, while the Monroe County plot raised soybeans in both 1995 and 1996.

Saginaw County Plot (St. Charles)

Eleven varieties with maturities from 1.5 to 3.1 were planted with four replications on June 25, 1996. The weed control program consisted of 2 ¼ pts./ac. of Broadstrike + Dual preemerge and a post treatment of Basagran and Blazer at 2 pts. and 1 pt./ac. respectively, plus 1 qt./ac. of crop-oil concentrate. The plot was harvested on October 31, 1996.

Yields were extremely poor; however, the highest yielding varieties were Jack, Pioneer 9234 and Northrup King s18-11. Jack and Northrup King s18-11 carry the SCN resistance PI 88788 while Pioneer 9234's resistance is Peking.

The SCN counts at harvest were highest in plots where Great Lakes 1559, Great Lakes 1855N and Kenwood 94, a susceptible variety, were grown. The lowest SCN population densities at harvest were in plots where Pioneer 9234 was grown.

Monroe County Plot (Maybee)

Soybeans were planted on May 23, 1996, with 12 varieties in five replications. The weed control program consisted of 2 ¼ pts./ac. of Broadstrike + Dual applied preemerge. The plot was harvested on October 29. The yields at this site were very poor and no yields were significantly different among the varieties.

The highest SCN counts at harvest were found in plots where Kenwood 94 were grown.

Crop Rotation Studies

Field trials were conducted in Saginaw and Monroe counties following a 1995 greenhouse study.

1) Saginaw County Plot (St. Charles)

This trial, consisting of six treatments with five replications, was planted on July 9, the delay caused by very wet weather conditions at the site. The yield was 4 bu./ac. rendering the data of no value.

2) Monroe County Plot (Maybee)

The rotational trial was planted on May 23 and consisted of seven treatments and five replications.

The study included the following treatments:

Soybeans - Kenwood 94
Soybeans - Jack
Corn
Alfalfa
Alfalfa + 10lbs/ac. of Zinc sulfate
Alfalfa + 25lbs/ac. of Zinc sulfate
Black Lentils

The SCN population densities exceeded the damage threshold for susceptible soybean varieties prior to planting. The yield of Kenwood 94 (SCN susceptible) was 9 bu./ac. lower than that of Jack (PI 88788 resistance). Kenwood 94 yielded 6.8 bu./ac/ while Jack yielded 15.6 bushels. The SCN population densities were higher at harvest than at planting regardless of the cross grown or treatments applied. The alfalfa and lentils did not survive the growing season.

Nematicide/Management Study

The primary objective of this field study was to examine the efficacies of Temik 15G and Furadan 4F for SCN control.

This trial was planted on July 10 and harvested on November 4. All treatments were applied at planting, using 3.0# a.i./ac. of Temik 15G in a T band and 5.0 fl. oz./ 1000 row ft. in 23 gallons of water of Furadan 4F.

The varieties used in this study were Great Lakes 1872 (SCN-susceptible) and Great Lakes 1833N (PI 88788 resistance)

The SCN numbers were much lower in Temik-treated plots at harvest than those treated with Furadan 4F. No differences in yields were observed between GL 1872 and GL 1833N, but SCN numbers were lower at harvest in the GL 1833N.

Microplots/Soil Texture Study

Initiated in 1994, using sand, sandy loam and sandy clay loam soil types, microplots were created for a study of the effect of soil types on SCN.

In 1996, the microplots were divided into five groups based on the numbers of eggs and second stage juveniles.

In summary, SCN population densities were higher at harvest than at planting for all the varieties grown in all three soil types.

The yields of resistant varieties are reduced at high preplant SCN population densities; however, yields were not reduced nearly as much in sandy clay loam plots when the varieties were Jack and Newton.

SCN Surveys and Distribution

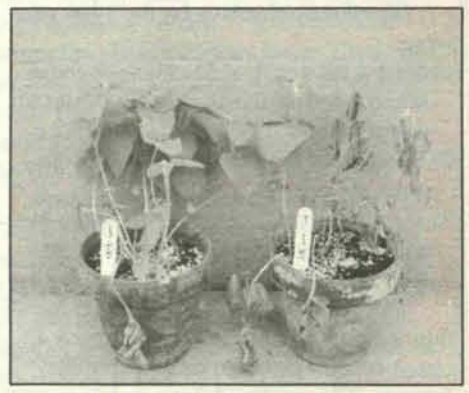
In 1996, the Michigan Soybean Promotion Committee sponsored an SCN identification program that resulted in the submission of 73 samples from 12 Michigan counties.

From these samples, 31 were positively diagnosed with SCN, 20 of those from Monroe County.

At the end of 1996, 17 Michigan counties had at least one sample identified as positively diagnosed with soybean cyst nematodes.

Genetic analysis and mapping of genes providing resistance to white mold in soybeans

Dr. Brian W. Diers
Department of Crop and Soil Sciences
Michigan State University



Soybeans varieties tested for partial resistance to white mold in greenhouse.

The research objective is to study the inheritance of the partial resistance to white mold in the cultivar NK s19-90.

The inheritance of partial resistance to white mold is being studied in a population derived from a cross between NK s19-90 and Williams 82.

In 1996, 152 F3:5 lines of this cross along with the parental lines were grown in two replicated plots at Michigan State University and Bay County.

Each plot was rated for canopy coverage during flowering, date when 50% of the plants had at least one flower, plant lodging, plant height, date of maturity, disease severity and seed yields.

The ratings of plants were then used to calculate a disease severity index (DSI) where 0 = no plants infected and 100 = all rated plants given a score of 3.

A high level of disease was obtained at the MSU location with a DSI of 28.4 for the NK s19-90 and 49.4 for Williams 82. The average DSI of the lines was 51.1 with a range of 3.5 to 82.1.

The level of disease at the Bay County site was lower than the MSU site with the DSI of 1.9 for NK s19-90 and a DSI of 6.1 for Williams 82. The average DSI for the lines was 7.6 and the range was 0 to 29.7.

The difference between the two sites is explained by the dry weather occurring at the Bay County site and the use of irrigation at the MSU site.

Correlations Between DSI and Various Traits.

DSI vs. Yield => -.63

This negative correlation indicates that the higher the Disease Severity Index of the soybean, the lower the yield.

DSI vs. Flowering Date => +.28

DSI vs. Maturity => +.45

These positive correlations indicate that the later the flowering or maturity, the greater the disease levels.

DSI vs. Lodging => +.44

DSI vs. Plant Height => +.26

These positive correlations indicate that a greater disease level occurs with greater lodging and taller plants.

In laboratory evaluations, the population is being tested for genetic markers to map the location of genes that provide resistance to white mold.

Finally, it should be noted that 32% of the variation in DSI among the lines tested can be accounted for by these traits.

Induced resistance in soybean to white mold

Dr. Ray Hammerschmidt
Dr. Elizabeth Dann
Department of Botany and Plant Pathology

Dr. Brian Diers
Department of Crop and Soil Sciences
Michigan State University

The objective of this study is to determine the effect of benzothiadiazole (BTH) and post-emergence herbicides on white mold disease severity in soybeans.

Two field trials were conducted in East Lansing and in Zilwaukee using the following cultivars: Williams 82, Elgin 87, Corsoy 79 and NK s19-90. These cultivars range in disease reaction to white mold from highly susceptible (Williams 82) to highly tolerant (NK s19-90).

All of the spray treatments were applied at the 2nd - 3rd trifoliate leaf stage or 8 - 19 days before flowering, depending upon the cultivar. Three repeat applications of BTH were made at 10-day intervals thereafter.

Effect of various treatments on white mold disease and seed yields in field soybeans in 1996

TREATMENT	APPLICATION RATE	YIELD BU/AC.	
		E. Lansing	Zilwaukee
BTH 2 applications	.5 # a.i./ac.	43.56	54.26
BTH 4 applications	each application	47.64	53.09
Cobra	6oz. + 1 pt. Crop oil/ac.	44.41	47.11
BTH & Cobra	as previously	45.65	47.36
Blazer	1.5 pt. + .25% NIS/ac.	43.52	51.17
Pursuit	1.4 oz + .25% NIS + 1 28% N/ac.	37.02	48.04
Reflex	1 pt. + .25% NIS/ac.	42.21	51.45
28% N (as UAN)	.25% v/v	39.67	53.00
BTH & 28% N	as previously	42.97	53.18
Basagran	1.5 pt + 1 qt. 28% N/ac.	41.30	52.09
Classic + Pinnacle	.25 oz each + NIS/ac	37.64	51.49

Plants treated with Cobra displayed leaf browning, defoliation and deformation within three days but plants had recovered from this damage within three weeks. The other post-emergence herbicides had similar but less severe symptoms.

The East Lansing site had five times as much White Mold as the Zilwaukee site, thus the difference in yield totals if comparing sites.

This study demonstrates that BTH and Cobra are capable of inducing resistance responses in soybeans. Further investigation will provide additional information concerning the nature of the response and possible recommendations.

MSPC This supplement funded by the Michigan Soybean Promotion Committee.
For additional information, write to: MSPC, P.O. Box 287, Frankenmuth, MI 48734

Printed as a supplement to *Michigan Farm News.*

Healthy Bites

Time for an eye exam

Children should have their eyes examined by their pediatrician when they're infants, and again at age three. School/community vision checks are needed every year or two.

After an initial comprehensive eye exam by an opthamologist, young adults need eye exams only if they have eye or vision problems, an eye injury or a family history of eye disease. At age 40, you should have a "baseline" comprehensive medical eye exam.

Between ages 40 and 60, healthy adults should have an eye exam every two to four years.

Healthy seniors should have an exam every year or two.

Folate spares colon and heart

Evidence that the vitamin folate — known as folic acid on supplement labels — may reduce the risk of colorectal cancer got another boost in a recent study of rats. As the amount of folate in their diet increased, the number of rats that developed tumors of the colon and rectum from high doses of a known carcinogen decreased proportionately. So did the number of tumors per rat. In the human diet, green vegetables, organ meats and citrus are rich sources of folate.

The second leading cause of cancer deaths in the United States, colorectal cancer claims 60,000 lives annually. Each year, 150,000 new cases are diagnosed, and up to 90 percent are thought to be related to diet. Epidemiological studies by others repeatedly have found more precancerous growths—or adenomatous polyps—in the colons of people with low folate intakes or blood levels. They also found the converse: Fewer polyps in the colons of people with high folate intakes or blood levels.

The answer to rheumatoid arthritis?

After participating in an exercise program for three months, people with rheumatoid arthritis (RA) improved the strength of their major muscle groups an average of 57 percent.

And they walked faster, had better balance and reported feeling less pain and fatigue.

The exercise program involved twice-per-week workouts on chest press, leg press, leg extension, back extenstion and abdominal curl machines set at 80 percent of the maximum weight each person could handle.

Body shape linked to stroke risk

Where you carry excess weight seems to be more important in determining your risk of stroke than being overweight in general.

A Harvard study of nearly 30,000 male health professionals in the *American Journal of Epidemiology* finds that men whose waist-to-hip ratios are close to or greater than one have more than twice the risk of stroke as men whose waist-to-hip ratios are .89 or smaller.

That means that those whose waistlines are bigger than their hips (sometimes referred to as "apples") may need to watch for signs of stroke more vigilantly than those with the reverse proportions ("pears").

Leading causes of death in the U.S.

Common belief is often incorrect when it comes to what's killing us Americans. This list shows number of deaths per year for the leading causes.

Cause	Deaths
Heart disease	739,000
Cancer	538,000
Stroke	158,000
Lung disorders	105,000
Accidents	90,000
Pneumonia and flu	84,000
Diabetes	59,000
AIDS	43,000
Suicide	31,000
Liver disease	25,000

Boron supports bone growth

Chicken drumsticks are giving boron a leg to stand on as an element that may be important for optimum bone growth in people. Studies of growing chicks show that boron — found mostly in fruits, vegetables, legumes and nuts — can partially compensate for a low vitamin D intake in bone formation.

Like human children, chicks raised on a diet deficient in vitamin D develop rickets, a bone deformity in which the actively growing ends, or growth plates, are weak from lack of minerals. Adding boron to the vitamin D-deficient diet significantly improved the accumulation of minerals in the chicks' growth plates, according to researchers with USDA's Agricultural Research Service.

They added several levels of boron to the chicks' diets to approximate the range people might get through typical diets. After four weeks, they inspected the growth plates under a microscope.

Those closest to normal came from chicks getting the highest level of boron — 4.2 milligrams per kilogram of feed. This is equivalent to the boron levels in a human diet containing plenty of fruits and vegetables. Even in the chicks raised on diets containing adequate vitamin D, the growth plates tended to mineralize better when the animals got ample boron.

Wash those hands

Parents are always telling their kids to wash their hands. Now, there's strong evidence the practice pays off.

Researchers recruited 305 elementary school children and taught them how to wash their hands properly. Half the kids were made to wash their hands at least four times daily and the others were left to their own devices.

More than seven weeks later, the supervised washers had missed fewer school days, while their less hygiene-conscious classmates had more coughs, colds and gastrointestinal problems. These results were reported at a recent American Academy of Family Physicians meeting.

More folic acid in diet cuts risk to heart

Eating more fruits and vegetables or breakfast cereal that's been fortified with folic acid can cut your risk of heart disease and stroke, scientists with USDA's Agricultural Research Service say.

Fruits, vegetables and fortified cereal provide the greatest amounts of dietary folate, according to the researchers. Folic acid is a form of folate. The body uses folate to transform a substance in the blood called homocysteine into a nontoxic amino acid and prevent blood vessel damage. High blood levels of homocysteine have been linked to risk of heart disease or stroke.

In a study of 855 elderly men and women, the highest blood folate levels — and low homocysteine levels — were seen in those who ate five to six servings of fruits and vegetables or about one serving of breakfast cereal every day.

People who took dietary supplements of folate had the lowest homocysteine levels, but not much lower than those who frequently ate fruits, vegetables or fortified cereal. Study participants who ate less than three servings of fruits and vegetables daily and seldom ate cereal had the highest homocysteine levels.

Good natural sources of folate include orange juice and dark green leafy vegetables, such as broccoli and spinach.

The findings reinforce other studies that show people of all ages can reduce health risks just by changing their diet—especially important for the elderly, who often have low folate levels.

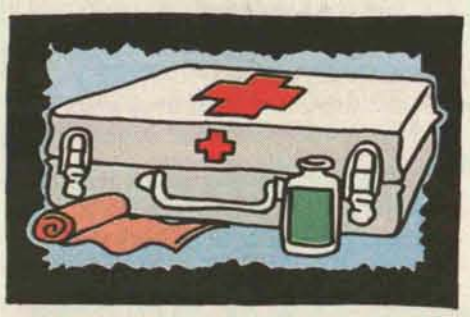
Milk and kidney stones?

It's an old myth that drinking milk will cause kidney stones in men.

In reality — a low calcium intake has been associated with the development of kidney stones.

Studies have shown that a high calcium diet reduces urinary excretion of oxalic acid — and this is believed to lower the risk of developing kidney stones.

Stocking a FIRST AID kit for your home



To be prepared for an emergency, make sure your home first aid kit includes:

For cuts — Bandages of various sizes, gauze, adhesive tape, an antiseptic solution to clean wounds and an antiseptic cream to prevent infection.

For burns — Cold packs, gauze, burn spray and antiseptic cream.

For aches, pain and fever — Aspirin (for adults only), or another nonsteroidal anti-inflammatory drug (NSAID) and acetaminophen.

For eye injuries — An eye wash, an eye-wash cup and eye patches.

For sprains, strains, and fractures — Cold packs, elastic wraps for wrapping injuries and a triangular bandage for making an arm sling.

For insect bites and stings — Tweezers to remove stingers and hydrocortisone cream to relieve itching. If a family member is allergic to insect stings, also include a kit containing a syringe and epinephrine (adrenaline).

For ingestion of poisons — Syrup of ipecac to induce vomiting. Use it only after contacting a poison control center or medical professional (keep the number of your local poison control center on a sticker on your telephone).

For general care — A thermometer, sharp scissors, cotton swabs, tissues and a first aid manual.

Office Calls

Q: I love cheese, especially on a sandwich. What are the lowest fat varieties?

A **Cottage cheese is quite low in fat** — the kind with 1 percent milkfat has less than a third of a gram of fat per ounce — but it's not likely you'd put that on your sandwich. Mozzarella cheese made from part-skim milk is a more likely choice. It has about 4.5 grams of fat and 72 calories per ounce. Compare that to Swiss cheese at 8 grams of fat and 106.5 calories per ounce.

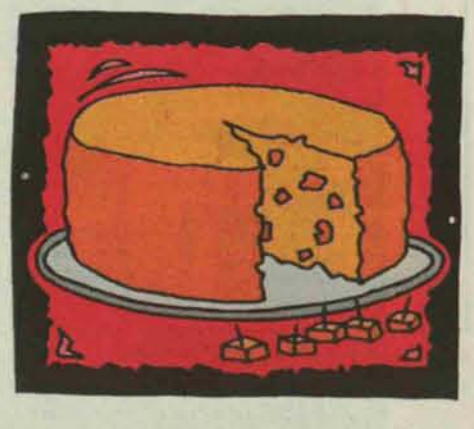
An even better option would be choosing a lower-fat variety of some of the highest-fat types of cheese. Low-fat cheddar or Colby cheeses often have less than 2 grams of fat and about 50 calories per ounce. That's significantly lower than their usual 9 grams of fat and 112-114 calories per ounce.

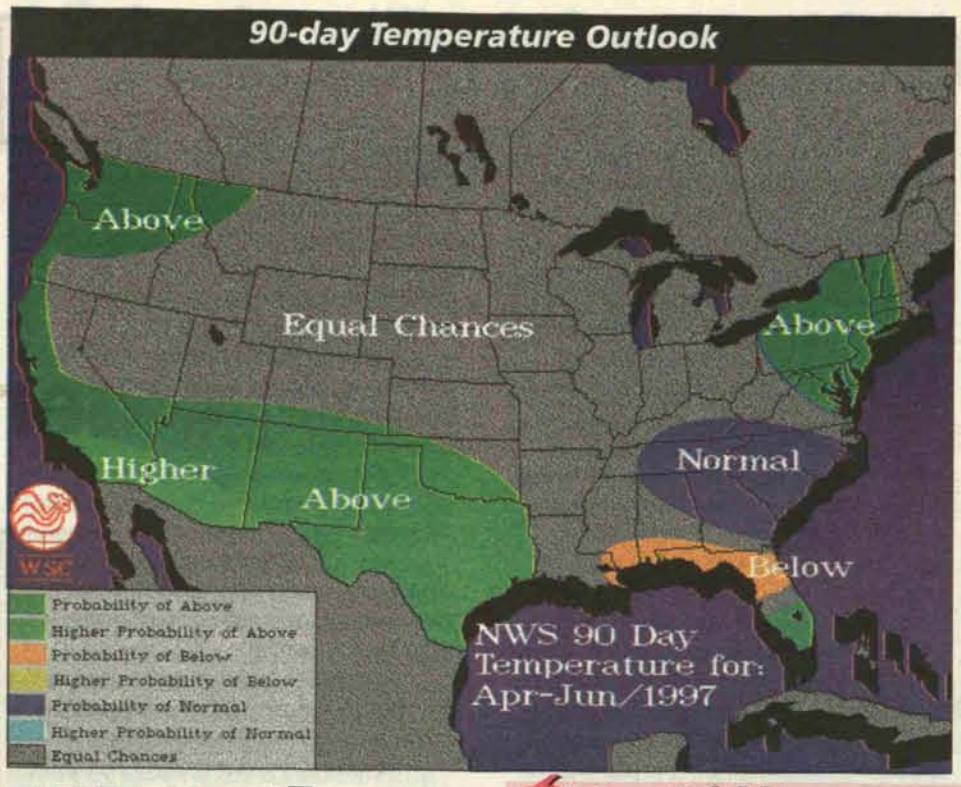
Generally, on a per-ounce basis: Neufchatel and feta cheeses have about 75 calories and 6-6.5 grams of fat; provolone, blue, Gouda and Edam have about 100 calories and 7.5-8 grams of fat; Muenster, brick, Monterey and Swiss have about 105 calories and 8-8.5 grams of fat; and Romano and Parmesan have about 110 calories and 7.5 grams of fat.

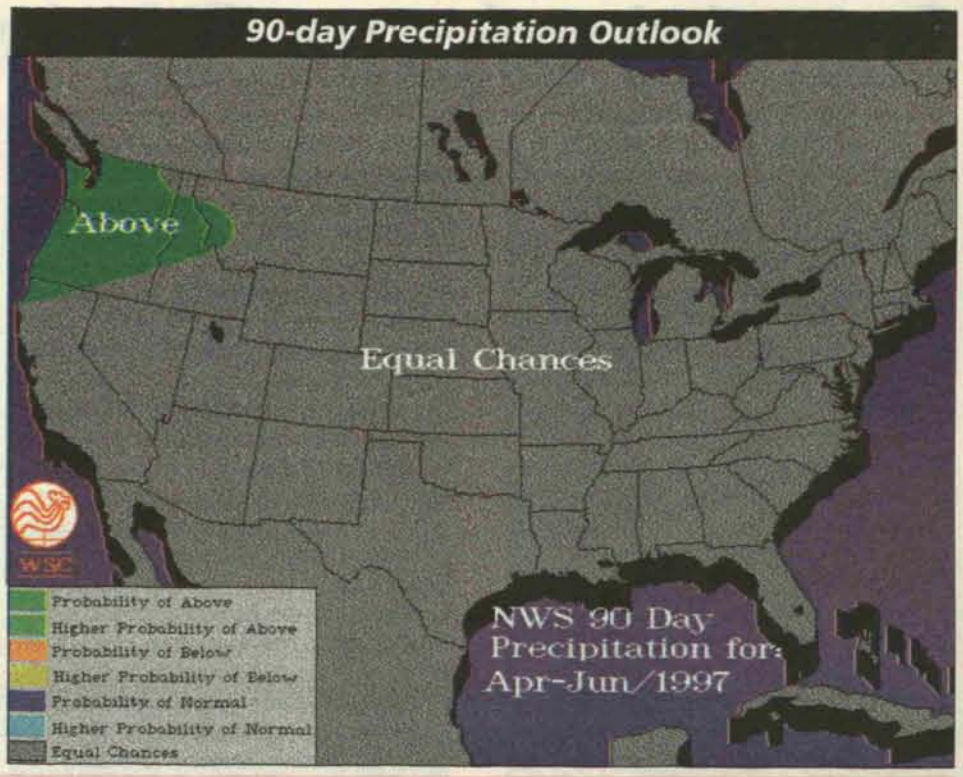
You can find the fat and calorie content of any processed cheeses on the Nutrition Facts label. But remember, pay close attention to "serving size." If your usual serving is two or three times what is listed on the label, then the fat and calories you consume will be two to three times what's listed, too.

Even though nutritionists often recommend choosing cheeses with no more than 3-5 grams of fat per serving for a low-fat diet, they also know that most people won't completely deprive themselves of their favorite foods for long. And if high-fat cheese is something you crave, you should be able to work it in to a healthy diet.

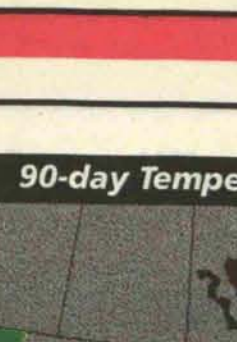
For example, a 2,000-calorie-a-day diet has enough room for 65 grams of fat to still keep you under the recommended 30 percent of calories from fat per day. Less than 20 grams of that total should be saturated fat. An ounce of cheddar cheese has 9 grams of fat, including 6 grams saturated fat. If that's how you want to "spend" your allotted fat and calories, watch your portion size, but go ahead! And take some additional comfort in knowing that you're also getting about 200 milligrams of calcium while you're indulging yourself.







Weather Outlook



by Dr. Jeff Andresen, Agricultural Meteorologist, Dept. of Geography, Michigan State University

A very active storm track continued across Michigan through mid-March, dropping heavy precipitation (30-day totals from 200-300 percent of normal) and keeping soil moisture levels at or above field capacity.

Heavy rains falling into a cold air layer at the earth's surface led to ice storm conditions across most of the southern Lower Peninsula on the 13th and 14th. The resulting icing conditions, the worst since in most areas since the New Year's Eve ice storm of 1984, left up to 1.5 inches of glaze ice and caused widespread disruption of electrical power and transportation.

To the north of the ice storm, heavy snow fell, including a lake-enhanced storm total of over 30 inches in the Marquette area (as of the middle of March, the seasonal snow total at Marquette was only seven inches shy of the all-time record for seasonal snowfall, 251 inches, which ironically was set last winter).

New NOAA long lead outlooks for April and for the April-June 90-day period both call for near equal odds of below-, near-, and above-normal temperatures and precipitation. For the early summer, however, the May-July temperature outlook has Michigan in between areas of increased risk of below normal temperatures to our west and including much of the western and central Upper Peninsula, and for elevated odds of above normal temperatures to the south and east of Michigan, including some southernmost counties of Lower Michigan.

The cooler-than-normal temperature forecast for sections of the upper Great Lakes and northern Great Plains regions is a result of the extremely heavy snowpack currently in place in that area, which will likely lead to problems with flooding and wet soils during the next one to two months, which in turn frequently results in an increase in cloudiness and a decrease in air temperature.

Michigan Weather Summary

2/16-3/15/97	Temperature Obs. mean	Dev. from normal	Precipitation Actual (inch)	Normal (inch)
Houghton	17.6	-0.7	1.21	1.63
Marquette	17.4	0.0	3.00	1.63
Sault Ste. Marie	17.6	-1.0	1.71	1.66
Lake City	23.6	1.3	3.09	1.60
Pellston	20.2	0.4	2.62	1.60
Traverse City	26.1	1.9	4.12	1.60
Alpena	20.3	-2.3	3.58	1.67
Houghton Lake	22.0	-1.5	2.10	1.67
Muskegon	29.1	0.6	3.28	1.96
Vestaburg	27.4	0.7	3.44	1.87
Bad Axe	27.5	1.0	4.98	1.81
Saginaw	28.6	1.8	6.44	1.81
Grand Rapids	29.6	1.1	4.93	2.02
South Bend	35.0	3.5	3.85	2.02
Coldwater	32.6	2.7	6.20	1.91
Lansing	29.3	1.5	4.51	1.91
Detroit	33.0	2.9	5.23	1.99
Flint	29.5	1.5	3.56	1.99
Toledo	36.0	5.9	5.09	1.99

Lugar sponsors fast-track bill

Senate Agriculture Committee Chairman Dick Lugar (R-Ind.) has introduced a bill to renew fast-track trade negotiating authority. Lugar has named his bill (S. 253) the Trade Agreement Implementation Reform Act. The Lugar bill, which is supported by Farm Bureau, requires legislation submitted under fast-track authority to contain only provisions absolutely necessary to implement an agreement. Farm Bureau opposes the inclusion of side agreements such as labor and environmental language in trade agreements. Under fast-track, Congress has 60 days following submission of a trade agreement to approve the pact without amendments. In other words, Congress must vote an agreement up or down.

Cooperative's producers participate in elections and 75th annual meeting

The 75th Annual Meeting of Michigan Livestock Exchange (MLE), was held March 8 at the Holiday Inn South Convention Center in Lansing, and focused on the 75th anniversary of the cooperative.

A record number of delegates from Michigan, Ohio, Indiana and Kentucky joined together at the meeting to elect members to the Board of Directors and discuss business pertaining to their cooperative. The changing and expanding livestock industry requires a cooperative that is innovative and progressive in its decisions. The leadership provided by the cooperative's Board of Directors is a vital factor in the accomplishments of the cooperative, as well as the success that is envisioned for years to come.

A close election was held during the business meeting for three positions to MLE's Board of Directors. Reelected to a three-year term to the Board of Directors were Rex Hannewald from Stockbridge, and Ron Stuckey from Archbold, Ohio. Hannewald is very active within the sheep industry and is a director for the Southeast Michigan Sheep Producers Association and the National Livestock Producers Association. Stuckey operates a beef, sheep and grain operation with his father and has taught high school agriculture for 21 years.

Newly elected board member Dave Stoneman of Breckenridge will also serve a three-year term. Stoneman operates a 4,500 acre beef cattle operation with his father and three brothers.

Past board member Glen Noonan of Maple City was defeated by a very close vote. Noonan has been a member of the MLE Board of Directors for the past nine years and runs a beef cattle operation with his two sons. Noonan has been a powerful member of the Board of Directors over the past years.

During the lunch break, MLE delegates, employees and guests heard a speech from Gov. John Engler. Engler spoke about the general livestock industry within Michigan and presented MLE with a certificate of special tribute in honor of the 75th anniversary.

MLE was also presented awards from the Michigan Cattlemen's Association by Dave Morris and the Michigan Sheep Breeders Association by president Tom Rorabaugh for 75 years of service to the livestock industry.

The afternoon program consisted of a panel of speakers who represented the beef cattle industry from consumers to producers. Jack Allen and Tom Pierson from Michigan State University (MSU) spoke about changing consumer trends and how they relate to the livestock industry. Bob DeYoung, senior sales and merchandising representative for the meat division of Spartan Stores, Inc., brought insight to the afternoon panel on the retail store perspective and Cal Siegfried, marketing manager for Premium Feeders, Inc., shared his views pertaining to the feedlot sector of the food chain. The panel concluded with Harvey Mitchel, who spoke about the seedstock and backgrounder perspective and where he sees the future of the livestock industry. Mitchel is the farm manager of Anderson Circle Farm in Harrodsburg, Ky., and was the 1996 president of the Kentucky Cattlemen's Association.

The evening dinner program was enjoyed by close to 800 members, employees and associates of MLE. Tom Reed, president and CEO of MLE, thanked everyone for an excellent 75 years of working together for their cooperative. After dinner, the MLE 75th anniversary book entitled "Pride in the Past, Fair in the Future" was presented by author Carl Kramer of Kentuckiana Historical Center. The first book in print was then auctioned off by auctioneer and entertainer, Leroy Van Dyke. The book was purchased by Mercy Ag Vet for $5,000 by Senior Sales Representative Glenn Elliott of Kentwood. Elliot donated the book back to MLE to display at the main office in East Lansing. Proceeds of the book will go toward the MLE scholarship fund.

The evening speaker, Baxter Black, is known as the best-selling cowboy poet in the world and spoke about the ups and downs of everyday people who care for livestock and work the land.

MMPA returns $1.9 million of cash patronage refunds to members

For the second consecutive year, the Michigan Milk Producers Association paid $1.9 million in cash patronage refunds to its dairy farmer members. This cash allocation represents 30 percent of the $6.3 million earnings generated by the cooperative in fiscal year 1995-1996. The cash patronage returned includes 100 percent of the farm supply earnings and 25 percent of the milk marketing earnings. All members who marketed milk through MMPA during the past fiscal year will be receiving a portion of the $1.9 million.

These payments cap a record year of cash returned to members. Last November MMPA paid members $750,000 as a "13th" check from fiscal year 1996. Last August over $6 million were returned to members through revolvement of 1983 and 1984 equities. These cash payments to members in the last six months total over $8.7 million.

"The return of premiums, net savings and capital to members is the essence of a successful cooperative," says MMPA President Elwood Kirkpatrick. "MMPA has consistently generated premiums and net savings that have been paid or allocated to members."

Cash patronage refunds and equity allocations are based on the amount of milk each individual member marketed and on the supplies purchased through the cooperative during the year in which the earnings were achieved. Under current board policy the allocated certificate of equity for the 1995-1996 earnings will be revolved back to the members in approximately 10 years.

"Cash refunds and equity retirements are one of the greatest advantages of marketing your milk through a successful cooperative," Kirkpatrick adds. "They are proof that the profits MMPA earns are returned to the members. We strongly believe that income to dairy farmers will be the greatest when all farmers market cooperatively."

Since 1987, MMPA has operated without an equity capital retain, relying on the Association's plant operations, milk marketing and member dues to fund the cooperative.

Michigan Milk Producers Association is owned and controlled by over 3,200 dairy farmers located in Wisconsin, Indiana, Ohio and Michigan.

For more information contact John Dilland, MMPA Director of Finance, P.O. Box 8002, Novi, MI 48376-8002 or call (810) 474-6672.

Excess stock a windfall for FLCA members

Farm Credit Services of Michigan's Heartland has announced that more than 1,100 of its FLCA stockholders will receive their share of nearly $600,000 in excess stock from the credit cooperative in February. This excess, a result of declining loan balances and the cooperative's strong surplus position, will be applied to eligible FLCA members' accounts or distributed as cash refunds.

Chairman of the FLCA board, Gerald Lehman, is pleased to announce the excess. "Farm Credit FLCA's strong financial condition enables us to return this money to our members," he said, adding that the excess will come as a welcome windfall to many FLCA members.

President and CEO of Farm Credit Services of Michigan's Heartland, James Bremer, shares Lehman's enthusiasm, adding, "Another advantage to our financial strength if that we now are able to offer lower stock requirements on new FLCA loans." Bremer went on to explain that the lower requirements carry a slightly higher interest rate.

Farm Credit Services of Michigan's Heartland provides real estate, operating, equipment and term loans for agricultural producers and country living loans for rural residents in 40 counties in the northern, central lower peninsula. Products such as crop, life and disability insurance, and financial management services also are available through Farm Credit. For more information, call 1-800-444-FARM.

If you were a cow, would you want to eat grass or alfalfa?

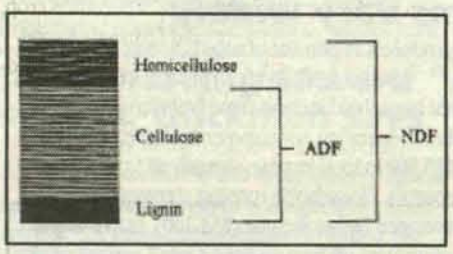
by Paul Dyk, MSU Extension, and Dave Beede and Herb Bucholtz, MSU Animal Science Department

Did you ever wonder why you can't eat grass? Why cows can eat grass? If you were a cow, would you want to eat grass? Or would you want to eat alfalfa? To answer these questions, we need to understand the cow and how she works.

Cows are amazing creatures that are able to digest the fiber part of plants that we cannot. Fiber is basically complex carbohydrates and lignin, corn starch is also carbohydrate but in a much simpler form. The complex carbohydrates in fiber include cellulose, hemicellulose and pectins.

So what? "Complex carbohydrates" and "lignin" are not on a feed analysis report. How do we measure them? We use neutral detergent fiber (NDF percent) and acid detergent fiber (ADF percent) to measure the amount of fiber in a plant. In the diagram below, we can see that ADF measures lignin and cellulose whereas NDF measures lignin, cellulose and hemicellulose. NDF will never be a lower value than ADF in forages because NDF includes the hemicellulose portion too. So which one do you use when you're balancing rations? NDF should be used in ration balancing because NDF is a better estimate of fiber requirements of a dairy cow than ADF. In other words, when your feed test comes back, pay attention to your NDF, not ADF.

When we balance diets, ideally we balance for NDF. In a TMR for a high producing cow we generally balance for about 28 percent NDF. Balancing for about 28 percent NDF assures us that we have adequate fiber in the diet. Adequate fiber in the diet keeps the rumen healthy and functioning properly (no acidosis). If you fed mostly forage, you would have really high NDF (fiber) levels, but this means you would feed little grain. If you fed little grain you would not be able to meet the cow's energy needs and milk production and body condition would decrease. In addition, intake would be lower because high NDF limits intake because of fill.



The 28 percent NDF recommendation is a guideline, a starting point. Whether or not you balance for higher or lower than 28 percent depends on other factors including particle length, degradability of starch, maturity at harvest, rate of fiber digestion, fat levels etc. I can't explain everything in one article so let's just stick to the question: If you were a cow would you want to eat grass or alfalfa? The answer depends on what kind of cow you are. Let's split cows into high producing and low producing cows.

What is ideal to the high producing cow? If we had alfalfa and grass with the same NDF, we might think that cows would produce about the same. But it's not quite that simple. The NDF from grass digests slower than the NDF in alfalfa; this lower digestion limits how much a cow can eat.

For example, identical high producing cows, Bessy and Flora, eat 30 lb. of TMR balanced for the same NDF at high noon. Bessy's diet has grass as the forage base and Flora has alfalfa as the forage base. At 6 p.m., Bessy and Flora eat more TMR. This time, however, Bessy only eats 20 more pounds whereas Flora eats 30 more pounds. Flora eats more because she has more room in her rumen.

The alfalfa NDF (Flora) breaks down faster and passes out of the rumen faster than the grass NDF (Bessy). This allows Flora to eat more because the NDF is no longer taking up room in her rumen. Because Flora can eat more, she will likely produce more milk (or gain weight).

Digestion curves for dry matter (DM) and NDF of a typical grass and legume. In this example, maximal digestion of alfalfa NDF occurs by about 40 h whereas a 60 h retention time is required for maximal digestion of grass NDF (adapted from Allen & Oba, 1996 Minnesota Nutrition Conf.)

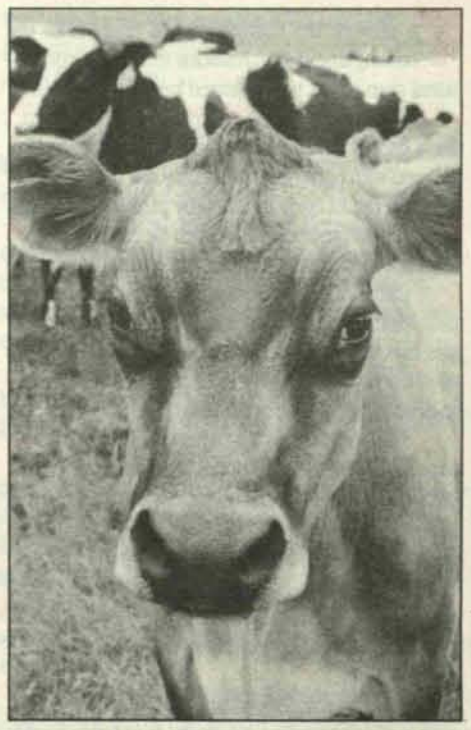
What is ideal to the low producing cow?

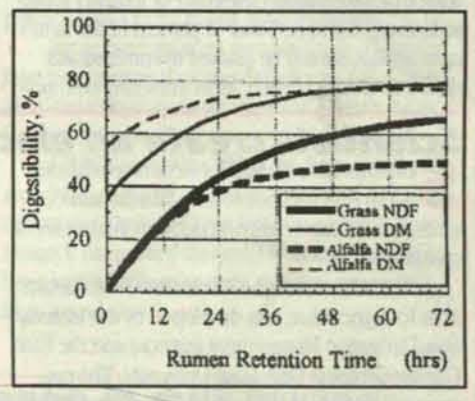
Although a high rate of digestion is very important to the high producing cow, it is not as important to the low producing cow. The low producing cow will not eat as much as the high producing cow and the rate of digestion will probably not limit intake. In fact, in the low producing cow grass may be as good as alfalfa. If grass NDF stays in the rumen long enough it will usually digest more completely than the alfalfa NDF. Because forage moves more slowly through the rumen in lower producing cows, the grass NDF is allowed to more completely digest than alfalfa NDF.

For example, Bessy and Flora (now low producing cows) eat 20 lb. of TMR balanced for the same NDF at high noon. Again, Bessy's diet has grass as the forage base and Flora's diet has alfalfa as the forage base. At 9 p.m. (not 6 p.m. as the high producing cow), both cows eat 20 more pounds of TMR. This time intake is similar because intake is not limited by rate of digestion. At lower levels of milk production, Bessy (with the grass forage) may be as well off as Flora. The grass NDF will remain in the rumen longer and more of it will be digested than the alfalfa NDF. Therefore, in later lactation Bessy will likely receive as much energy from the grass forage as Flora does from the alfalfa forage.

How does this apply to your farm? Few farms actually have all grass or all alfalfa forages. Many farms have a mixture of the two. Older stands of "alfalfa" often have a high percentage of grass. If possible, the haylage with a higher percentage of alfalfa should be fed to high producing cows. This will take advantage of rapid digestion of alfalfa in high producing cows. Haylage with more grass should be fed to lower producing cows. This may mean opening a second tower silo, mixing two batches of TMR, or splitting your bunker silo in the future.

These are simplified explanations, but they do answer the question we originally asked. If I were a high producing cow I would want to eat alfalfa: if I were a low producing cow I may prefer alfalfa but could probably eat grass without affecting performance.





Michigan FarMedic training set for May 3-4

Tell your local fire chief and rural rescue squad they should consider sending a representative to this specialized training for those who serve rural areas and wish to update their skills concerning agricultural accident rescue techniques.

All contacts for this training should be directed to: Greg Hammond, Michigan FarMedic Training, EMS Continuing Education Coordinator, Lansing Community College, P.O. Box 40010, Lansing, MI 48901-7210, phone: (517) 483-9793 or FAX (517) 483-1508.

The two-day training includes a text book, related printed handouts, a FarmMedic patch, lunch each day, plus refreshments and transportation on Sunday between the farm training sites — all for $159. Overnight lodging and other meals are on the trainee. Nine EMS CEU credits are issued to those who complete the training.

This training is a joint effort between Michigan FarMedic and the Agricultural Safety Program at Michigan State University Extension.

Training will take place south of the main campus utilizing the various University Farms.

February milk production steady

Dairy herds in Michigan produced 425 million pounds of milk during February, according to the Federal/State Michigan Agricultural Statistics Service. While this was down 3 percent from a year ago, there was an extra day in February 1996. On a daily basis, there was virtually no change. The dairy herd was estimated at 310,000 head, down 12,000 head from February 1996, and 1,000 below last month. Production per cow reached 48.9 pounds per day, up from 47.1 pounds a year earlier.

The preliminary value of milk sold was $13.20 per hundredweight in February, down 60 cents from January and 80 cents from February 1996. The mid-month February slaughter cow price was $32.00 per cwt., compared with $32.90 in February 1996.

Milk production in the 20 major states during February totaled 10.4 billion pounds, 2 percent below production in these same states in February 1996. This decrease was due to February 1996 having an extra day. Production per cow was 1,337 pounds for February, 10 pounds below February 1996. On a daily basis, production per cow for February was up 1.25 pounds from a year ago. The number of cows in the 20 major states was 7.75 million head, 81,000 head less than in February 1996 and 10,000 fewer than last month.

Dairy manufacturing plants in Michigan produced 2.3 million pounds of butter in January, 7 percent more than a year ago.

First ever Michigan Dairy Expo to be held

The Department of Animal Science at Michigan State University and the Michigan Purebred Dairy Cattle Association are proud to sponsor the first Michigan Dairy Expo. Dairy Expo activities will take place July 22-26 at the newly constructed Pavilion for Agriculture and Livestock Education on Farm Lane at Michigan State University.

The Michigan Dairy Expo is directed toward youth and adults in the dairy industry and those who have an interest in the dairy industry.

The mission of the Michigan Dairy Expo is to encourage and promote youth involvement in dairy activities, to showcase the Michigan dairy industry, and to provide continuing education to the dairy industry in Michigan and nearby states. Participants in the expo will have the opportunity to interact with commercial and organizational exhibitors (July 24-26), attend seminars and workshops for adults and youth (July 24-26), compete in state dairy breed shows (July 25-26), and explore the 4-H Dairy Days program (July 22-25). The state dairy breed shows will culminate with an award for "Supreme Champion" on the afternoon of July 26.

4-H Dairy Day events that will be held in conjunction with the Michigan Dairy Expo include the All-Michigan Dairy Youth Show and Showmanship Contest, the State 4-H and FFA Dairy Cattle Judging Contests, Dairy Quiz Bowl, Dairy Days Youth Awards Banquet and a number of youth workshops.

During the workshops, youth can learn about fitting and showing of dairy cattle, dairy cattle judging and herd health. The dairy management workshops and seminars for adults will include prominent guest speakers from around the United States.

A $16,000 grant from the Michigan Department of Agriculture was awarded to the Michigan Dairy Expo. A large portion of this grant will be awarded in premiums to youth participating in the 4-H Dairy Days events.

Commercial exhibitors are invited to display their products in the Michigan Dairy Expo. Registration packets for 4-H Dairy Days will be available at your local county extension office by April 1. Individuals who are interested in exhibiting animals in the open breed shows need to contact your state breed organization for entry information. Organizations and companies interested in having an exhibitors booth should contact Dr. Richard Pursley at (517) 335-8319, Mr. Larry Bush at (810) 635-4197, or Carla McLachlan at (517)353-4893. Other questions can be directed to: Dr. Richard Pursley, Department of Animal Science, Anthony Hall, Michigan State University, East Lansing, MI 48824-1225, (517) 335-4893, e-mail: pursleyr@pilot.msu.edu

Growing conventional corn alongside Bt corn may reduce resistance

To prevent the European corn borer from becoming immune to resistant to Bt corn, conventional corn needs to be planted beside the Bt corn.

The purpose of the companion planting is to allow corn borers emerging from conventional corn to mate with corn borers that may not have been killed by the Bt corn and thereby prolong development of resistance to the Bt corn by the European corn borer. This is called resistance management.

Chris DiFonzo, Michigan State University pesticide education coordinator and field crop entomologist, says that whenever most insect-killing agents are used intensively, the target insect population begins to develop resistance to the killing agent.

"Research shows that when the European corn borer was fed high doses of the Bt in the laboratory, the insect developed moderate resistance in just eight generations," DiFonzo says. "Of course, resistance buildup is not going to happen nearly as quickly in the field—it may take many years for it to occur – but it underscores the fact that transgenic crops should not be considered the cure-all for pest control."

She says that, depending on the grower's source of information (university or industry representatives), between 5 and 40 percent of the farm's corn acreage should be planted to conventional corn if Bt corn is planted. Most university entomologists suggest at least 20 percent be planted to conventional corn.

Conventional corn planted to prolong Bt resistance buildup is called a refuge.

"If between 5 and 10 percent of the farm's corn acreage is planted to conventional corn, it should never be treated with an insecticide to control the corn borer," DiFonzo says. "On the other hand, if a larger refuge is planted, it could be sprayed with a non-Bt product to control the corn borer because the insecticide treatments are generally only 70 to 80 percent effective."

DiFonzo recommends that the Bt corn be separated from the refuge in blocks. The blocks need to be close enough to one another to assure the mating between the corn borers from the refuge and those from the Bt corn. Ideally, this means planting the blocks next to each other, separated perhaps by a tree line, ditch or a road with grassy edges where the corn borers will go to mate (they do not mate in the corn).

DiFonzo says that this resistance management should be taken seriously by all corn growers.

"Bt corn is an exciting new tool for producers, but its long-term effectiveness depends on everyone's cooperation in reducing the potential for resistance problems in the future," DiFonzo says.

Scientists create an electronic atlas

Scientists have created an electronic atlas that needs only seconds to show rainfall and climate data for any neighborhood, region, country or continent.

The atlas, called the World Water and Climate Atlas for Agriculture, was developed by the International Irrigation Management Institute and the Utah Climate Center at Utah State University. The program will provide easy access to a vast array of data useful for agriculture. It will be available on CD-ROM or on the Internet.

The first CD, dealing with Asia, was recently released. CDs covering the rest of the world will be available by year's end. The entire atlas will be available over the Internet in July (http:/atlas.usu.edu).

Information can be summoned for areas as small as one square mile. That could be useful for planning irrigation projects or deciding how large a reservoir should be, according to Donald Jensen of the Utah Climate Center.

Data from 56,000 weather stations worldwide was used in compiling the atlas, which is based on weather from 1961-90. The atlas includes 10-day, monthly and annual summaries of average, maximum and minimum temperatures, precipitation, precipitation probabilities and evapotranspiration, the amount of water evaporated from bodies of water and growing crops.

It also has two indices, one showing if there is enough moisture in a region for crops and the other showing areas that would need irrigation to supplement rainfall.

Australian researchers plan large-scale cattle cloning

Australian researchers who have achieved the first large-scale cloning of cattle embryos said they hope to launch commercial cloning within three or four years. Researchers at Melbourne's Monash University developed the process solely for use in agriculture.

Bernie Harford, chief executive of the Genetics Australia cooperative, said the researchers are focusing on producing genetically identical embryos in large numbers at low cost. Last week it was announced that the team, led by Alan Trouson, had managed to create more than 400 identical embryos from a single cattle embryo.

The researchers produced the embryos using standard test-tube technology and letting them grow into a ball of cells known as a blastocyst. They then separated cells out and fuse them with eggs that have had their nucleus removed to create new embryos, which are grown and separated again and again. None of the embryos has yet been implanted into a cow.

Harford said he considered the Melbourne cloning to be less spectacular than the work in Scotland which produced a clone from the cell of an adult sheep.

Search for alternative fungicides picks up

Synthetic fungicides can combat a throng of fungal diseases thriving in damp soil which rot crop roots and spoil the seed. But some fungi are immune to fungicides.

That gap, combined with grower concern over possible loss of existing fungicides and public pressure for less chemical use is fueling searches for biological alternatives.

One alternative is a bacterium first isolated from English soil that may prove to be a potent natural fungicide.

In three years of University of Idaho field trials in potatoes, the bacterium has reduced seed piece decay and Rhisoctonia root rot in treated plants. It has performed almost as well, if not as well, as synthetic fungicides, according to Mike Thornton, crop management specialist at the university's Parma Research and Extension Center.

Applied to soil or dusted on crop seeds before planting, the bacterium spreads along growing plant roots as a protective net, all the while producing antibiotics to kill fungi and enzymes that otherwise break down root cell walls. The bacterium also shows potential for controlling potato diseases in storage.

University of Idaho microbiologist Don Crawford collected the biocontrol agent, Streptomyces lydicus, in 1991 on the roots of a linseed plant.

J.R. Simplot Co. is applying to the Environmental Protection Agency to register the bacterium as a fungicide, and plans field trials leading to a marketable product as early as 1999.

Tyson lobbyist goes on trial for lying in Espy probe

The Washington lobbyist for Tyson Foods went on for allegedly lying to federal investigators. Legal experts said the outcome of the case will be key in the government's investigation of former Agriculture Secretary Mike Espy.

Jack Williams, chief lobbyist for the Arkansas-based company, is accused of making false statements to FBI investigators and other federal agents about his role in providing gifts to Espy on behalf of Tyson Foods.

The charges stem from the two-year-plus investigation of Espy, who has been accused of accepting illegal gratuities from companies during his time as Secretary.

Whether Espy and Tyson will be indicted may be determined by the outcome of the Williams trial.

Another key target in the case is Don Tyson, former head of Tyson Foods and a longtime close friend of President Bill Clinton.

MAES pledges funds to help reverse wheat problems

In 1953, Michigan's farmers planted more than 1.5 million acres to winter wheat. By last fall, the acreage planted to wheat had declined by more than 50 percent.

Among the reasons for the decline are erratic growing seasons, fluctuating yields and generally depressed market prices the past two decades, all of which have essentially made Michigan's wheat industry fearful of its future.

Following a two-day, industry wide discussion about the wheat problem Jan. 3 in Lansing, the Michigan Agricultural Experiment Station (MAES) has pledged $60,000 a year for the next two years for research to address the problem.

MAES director Ian Gray says a major portion of the problem will be solved when a wheat variety is developed that will resist scab, but that process will take up to a decade.

That quest, led by MAES wheat breeder Rick Ward and plant pathologist Pat Hart, will start soon at Michigan State University. Companion efforts will address problems related to the disease.

The efforts of MAES researchers, MSU Extension specialists and agents, and Michigan agribusinesses will include ferreting out chemicals that assist in disease control and improving sprayer technology, grain sampling and grain processing procedures.

"The Experiment Station is committed to help the industry, and the industry has offered its total support to the Experiment Station and to Extension to put together a cooperative program to get our activity going in the right direction," Gray says.

"Another very refreshing thing to come out of the conference was the willingness of other pathologists at MSU to get involved in this problem, and I think the sooner that we engage them through some support, the closer we'll be to a solution," he adds.

In the interim, information on improved wheat planting and handling practices will be provided to growers via MSU Extension and publications such as the Wheat Alert, Gray says.

"We realize that this is certainly not a solution, but finding the genetic material that has the proper agronomic traits for Michigan will be a painstaking effort," Gray says.

He adds that research agronomists in Canada may have a scab-resistant variety in four years and that similar work is being done at Purdue University.

"We also need to interact closely with research agronomists in North Dakota, Minnesota and Ontario to put together strategies and share information on breeding and variety development so that we can maximize the development of a scab-resistant wheat variety," Gray says.

MSU Extension seed specialist Larry Copeland says that wheat remains one of Michigan's most important crops, in spite of the current problems.

"Historically, wheat has generated an average of $1.5 billion in value-added revenue for the state economy," he says. "Wheat is also very valuable in the crop rotation to help break disease and insect cycles and improve soil quality, and wheat spreads out the use of farm labor and equipment and provides a summer cash crop."

He says that the Wheat 2000 program, begun at MSU two years ago, has attracted more than 1,000 member growers who are working with MSU Extension specialists, agents and MAES researchers in a coordinated program aimed at restoring profitability to Michigan wheat production.

18th annual family farm report: Characteristics of U.S. farms vary widely

The 2.1 million farms in the contiguous 48 states operated an average of 436 acres and produced an average of $73,700 in agricultural products in 1993. But the characteristics of the farms varied widely, according to Structural and Financial Characteristics of U.S. Farms, 1993; 18th Annual Family Farm Report to Congress, a new report from USDA's Economic Research Service.

The report uses statistics from USDA's 1993 Farm Costs and Returns Survey. It presents information on structural characteristics of farm operations, farmland ownership and use, farm finances, characteristics of farm operators, farm operator households' dependence on farming and linkages between farm operators and their communities.

Nearly three-fourths of U.S. farms were noncommercial (gross farm sales less that $50,000). However, noncommercial farms accounted for only 10 percent of total gross farm sales. Commercial farms (gross sales of $50,000 or more) made up 27 percent of all farms but accounted for 90 percent of gross sales. Just 4 percent of all farms accounted for half of gross sales, while less than 1 percent of farms produced 25 percent of total U.S. output.

Overall, only about 12 percent of farm operator household income came from farming. Households operating noncommercial farms averaged $35,000 in total income, virtually all from off-farm sources. Households running commercial farms averaged higher income ($53,100), half of which came from off-farm sources. Only 8 percent of all farm operator households received income from farming that was near or above the average income for all U.S. households.

Most farm operations were full owners of their land. The 6 percent of farms that rented both land and other assets produced about 23 percent of gross sales. About 3 percent of U.S. farms were corporations in 1993, and that 3 percent produced 18 percent of total gross farm sales. Family corporations accounted for a larger share of total gross farm sales (15 percent) than nonfamily corporations (3 percent).

About 17 percent of all farm operators said they were retired. Although still classified as farm operators, this group accounted for little production.

Happy with your bean yields? They could be better

Many of our most effective and most promising products and systems are successful because they work in conjunction with the natural mechanisms already present in each field. Biological insect and disease control products, genetically-altered seed, integrated pest management programs -- their effectiveness is due, at least in part, to the fact that they allow the environment's natural control devices to function to their fullest abilities.

At best, however, these inputs can only save the yield potential carried in each seed; none can actually contribute to a yield increase. But dry bean producers anxious to squeeze every possible bushel from their acres are rediscovering one of the oldest ideas in legume production: nitrogen-fixing Rhizobia inoculants.

History lesson

First isolated by researchers in the late 19th century, the Rhizobia bacteria interacts with the legume plant, producing nodules on the root system. The bacteria within these nodules convert atmospheric nitrogen, normally unavailable to the plant, first into ammonium, then into necessary amino acids and proteins. By helping ensure the plant is never starved for nitrogen, inoculant use can produce healthier plants and, as a result, higher yields.

The earliest methods of inoculation often consisted of simply creating a slurry from the soil surrounding the root system of healthy legume plants. The paste was then used as a seed treatment, supposedly coating the seed with a layer of Rhizobia-rich soil. But competition from foreign bacteria, along with low Rhizobia concentrations, made these first inoculants only minimally effective.

Today's peat-based inoculants can deliver much higher populations of Rhizobia. HiStick from MicroBio, Ltd., for example, takes purity a step further by using a sterilized peat medium, resulting in a Rhizobia population of up to 50 times that of non-sterile inoculants. Contamination from unfriendly bacteria is virtually eliminated, while storage life is increased over non-sterile and unstable inoculants. A patented sticker formulation helps keep the bacteria on the seed and protects the Rhizobia from injury due to other crop protection products.

One product, multiple benefits

Though originally developed as a yield-enhancement tool, many growers are discovering a multifaceted benefit to inoculation. Greg Varner, Michigan Dry Edible Bean Production and Research Advisory Board, says while potential yields are increased through inoculation, the need for high rates of supplemental nitrogen applications is decreased, reducing fertilizer runoff into nearby Lake Huron.

"In this area," he says, "anything we can do to avoid losing our nitrogen to runoff helps. By allowing the plants to convert atmospheric nitrogen, inoculants decrease our dependence on high rates of soil-applied nitrogen fertilizers."

Through the effects on yields will, of course, vary among farms, Varner says data obtained from long-term inoculant trials should convince growers to take a closer look.

"We're not quite ready to make an across-the-board recommendation for inoculant use, but we're certainly encouraging our growers to experiment," says Varner. "We have seen the inoculants give growers a yield increase, and it's not really costing much to use them.

Situational awareness

Many growers, especially those producing dry beans, are finding the need for inoculation isn't related strictly to environmental or field conditions.

"Basically, the dry bean plant doesn't make an optimal host for native Rhizobia," says George Bolton, Helena Chemical, Marshall, Minn. "It's just not as easy to build large populations of the bacteria in dry bean fields."

To encounter this effect, Bolton says many bean producers have adopted an annual hopper box application of HiStick inoculant.

"By adding HiStick in the hopper box," he says, "we're able to grow a more efficient plant that can convert much more nitrogen than a non-inoculated plant. In our area, we're seeing yield increases of up to 200 pounds per acre."

Bolton says in addition to the yield increases, growers also can realize savings on supplemental nitrogen applications.

"Many times, the grower finds he can eliminate the additional nitrogen. At rates from 30 to 40 pounds, that's $7.50 to $10 per acre saved."

Varner says growers shouldn't rule out inoculants just because they're satisfied with their current level of production; in any situation, there's room for improvement.

"This is one of the oldest dry bean production areas in the country," he says, "and we've got a high natural population of Rhizobia in our soils. But our research has proved that even with soils that have been in production for years, growers can benefit from inoculation."

USDA moving toward "locally led" conservation efforts, Glickman says

Local people at the local level" should determine the usefulness and applicability of agricultural conservation programs U.S. Agriculture Secretary Dan Glickman told *American Farmland,* the quarterly magazine of national farmland conservation group American Farmland Trust.

The interview, in which Glickman reviews his conservation goals for the next four years, appears in the magazine's next issue. "At USDA, we are moving toward what we call "locally led conservation," Glickman stated. "I strongly believe that the needs, the willingness and the motivation must come from local individuals and the local community."

Addressing the rapid loss of U.S. farmland to development, Glickman said this, too, is an issue warranting local support. "I have traveled all over the country and seen some of our most threatened farmland," he said. "No briefing paper or meeting can demonstrate the extent of the problem better than seeing firsthand what is at stake and talking to the people fighting to preserve their way of life."

The new federal Farmland Protection Program, which AFT strongly promoted, offers the first-ever federal funding to state and local farmland protection programs. Glickman said that integrating the FPP with the 1996 Farm Bill's other incentive-based federal conservation and rural economic programs would multiply the beneficial effects of each and go a long way toward ensuring long-term protection and balanced use of resources" for farming communities. "But why should you stop there?" he asked. "Why not include other federal, state or local programs to offer an even more complete package?"

Glickman noted that with the farm bill's enactment last year the USDA is making the transition from "an agency based on commodity programs to one based on conservation programs." In a major shift in U.S. ag policy, the bill phases out commodity-based income support payments, which for decades encouraged farmers to produce on environmentally sensitive lands and discouraged crop diversification.

Senators call for quick change in milk pricing

The Agriculture Department should move quickly to change its method of calculating prices for the milk that farmers sell to dairies and cheese manufacturers, according to Sen. Arlen Specter (R-Pa.).

Specter suggested Thursday during a hearing by the Senate Appropriations Committee's agriculture subcommittee that the USDA has not responded fast enough to complaints by dairy farmers. Sen. Russell D. Feingold (D-Wis.) said that in his 14 years as a state and U.S. senator, he has never seen a greater sense of urgency in the dairy industry.

Agriculture Secretary Dan Glickman said in January the department would consider dropping the National Cheese Exchange in Green Bay, Wis., as a source of information for setting national base-market milk prices. He reported Thursday that he has not chosen an alternative.

Prices have dropped more than 25 percent since September. Farmers say part of the problem is price fluctuations on the Green Bay exchange.

Glickman repeated previous comments that the department is considering whether to replace cheese-exchange prices with those on the Coffee, Sugar and Cocoa exchange in New York or the Chicago Mercantile Exchange. USDA told the Senate committee that it is experimenting with a mailed questionnaire that asks price information from cheese factories. Specter said the process could be hurried by surveying the plants by telephone. When Glickman and other department officials appeared to balk, Specter demanded a list of telephone numbers and said he and his staff would make the calls themselves.

Glickman questioned whether voluntary surveys can provide the information needed. He suggested legislation making responses mandatory might be required. Specter urged consideration of a base of $13.50 per 100 pounds of milk as a short-term solution. Glickman replied a price floor would be contrary to Congress' intent in the 1996 farm bill to phase out price supports for milk by 2000.

The Michigan GSP is intended to help growers reduce groundwater pollution

The Michigan Groundwater Stewardship Program (GSP), begun in 1993, is intended to provide farmers with information and, in some instances, cost-sharing that will help them protect farmstead water resources.

Among the first steps in farmstead groundwater protection is the Farm*A*Syst assessment, which allows producers to identify potential water contamination risks on their farms. More than 5,000 Farm*A*Syst assessments have been conducted on Michigan farms since the GSP was started.

"The procedure is an assessment of the risk posed to groundwater resources, such as recognizing risk posed by abandoned wells or identifying improper pesticides and nitrogen fertilizer storage practices," says Allen Krizek, Michigan State University Extension liaison to the GSP.

In most instances, inexpensive solutions are found to protect water resources. In others, the farm owner is able to make cost-share arrangements with the GSP to install groundwater protection devices, such as portable pesticide mixing and loading pads or secondary containment structures for on-farm fertilizer storage. Another common activity is closing abandoned farm wells.

The GSP offers a variety of other programs and activities that can improve farmstead stewardship practices, such as pesticide sprayer calibration, water well nitrate testing, manure spreader calibration, pesticide container recycling, disposal of unused or unwanted pesticides, and technical assistance in dealing with pesticide, fertilizer and manure spills.

Funding for the GSP cost-sharing and education programs comes from farm and homeowner pesticide and fertilizer registration fees — upwards of $3 million each year.

Krizek says that more than 85 percent of the revenues generated by the fees are returned to pesticide and fertilizer users through education, technical assistance, applied research and cost-share programs.

The GSP is jointly administered by MSU Extension, the Natural Resource Conservation Service and the Michigan Department of Agriculture.

The program is directed by advisory councils consisting of farmers, agribusiness representatives and others who help establish policies and activities for the program.

Other collaborators in the GSP are the Michigan Farm Bureau, the Michigan Agribusiness Association and the Michigan Association of Conservation Districts.

Additional information about the program and the assistance it may provide can be obtained by writing to the GSP, Michigan Department of Agriculture, Box 30017, Lansing, MI 48909, or by calling Krizek at (517) 373-9813.

Pioneer researchers discover new opportunities with genome project

Researchers at Pioneer Hi-Bred International, Inc. (NYSE: PHB), are discovering new opportunities. It all started last year when the company began research to understand the genome of corn – how and what genes determine important traits.

"We are exploring a new frontier in crop genetics research," says Rick McConnell, senior vice president of Research at Pioneer. "Our researchers are seeking more information about how our proprietary germ plasm base can be mined to benefit our customers."

New tools are making it possible to identify and understand genes that control agronomic traits such as pest resistance, drought resistance and root strength, as well as grain traits such as carbohydrate, protein and oil content.

"We are making strides in crop genetic research that will pay off for customers in the long run," says Tony Cavalieri, vice president of Trait and Technology Development Research. "Currently, the industry is actively exploring single-gene traits, such as Bt. Although we are also involved in this area of research, we are looking into the future for broader technology and project opportunities."

Pioneer is investing in and developing a number of technologies that will enable researchers to build knowledge about how the corn plant works. Some researchers are mapping genes. Some are developing a number of technologies for modifying DNA molecules or determining gene function. Others are involved in developing technologies that measure expression. Still others are developing powerful computer programs that are helping researchers draw a picture of the corn genome. All of these technologies are necessary to realize the full potential of existing genes in corn.

"The Genome Project was born from our quest for knowledge about corn genetics," says McConnell. "It is a natural extension of our longtime efforts to improve crop genetics for our customers."

The steps

Corn contains about 100,000 genes. DNA is the chemical blueprint for all life forms. Individual genes are composed of sections of DNA in which the chemical bases are arranged in a specific order or sequence. DNA provides the instructions for a leaf to be a leaf or a plant to resist a particular disease.

In January 1996, Pioneer entered into an agreement with Human Genome Sciences Inc. (Nasdaq-NNM: HGSI), to begin sequencing tags for many of the genes in corn. The extensive corn gene sequencing and discovery project is providing insight into genes which control complex traits in corn, with possible application to other crops.

Currently, Pioneer researchers are working with about 80,000 sequence tags. Access to these sequences, when used in conjunction with other technologies, will help Pioneer researchers identify and determine the function of certain genes. Determining function is a critical step in identifying how a gene controls a specific trait or characteristic.

We're looking for genes that positively affect economically important traits," says Cavalieri. "We have discovered a number of possibilities in the disease resistance and grain traits areas. The results are being combined with a number of proprietary biological and analytical systems designed for product development."

Pioneer researchers may select for a gene's presence directly, or modify genes to change expression. (For example, to increase pest resistance.) Once these steps are completed, experimental products are tested by Pioneer Hi-Bred's intensive field evaluations.

Pioneer Hi-Bred International, Inc., is the world's leading supplier of agricultural genetics and is a leading integrator of agricultural technology. Headquartered in Des Moines, Iowa, Pioneer develops, produces, and markets a full line of seeds, microbial products, and services to farmers, grain processors, and other customers worldwide.

Human Genome Sciences Inc. (HGS) is located in Rockville, Md. Well known in human gene research, they are world leaders in sequencing and discovering genes. HGS conducts discovery research to create new means to predict, prevent and cure human diseases.

MSU Extension's "Leap" has evolved into "SFE" to Improve Logger Skills

A few years ago, more than a few professional foresters, environmentalists and others began wondering about the capability of Michigan loggers to safeguard woodland environments as they went about their businesses.

Loggers, for the most part, have done a pretty good job in the woodlands, but to assure that they were aware of the role they could play in good woodland management, the Michigan State University Department of Forestry began the Logger Education to Advance Professionalism (LEAP) program in 1994.

Several hundred loggers were trained under the LEAP. The results sufficiently impressed timber processors that they requested timber contractors from whom they bought timber to enroll their loggers in the program.

Partly because of the broad interest in the LEAP program, MSU forestry faculty members expanded the content and changed the program's name to Sustainable Forestry Education (SFE).

"The LEAP primarily focused on teaching loggers about forest ecology concepts and silviculture, the development and care of forests," says Doug Lantagne, MSU Extension forest regeneration specialist. "The SFE program has been broadened to include forestry best management practices, such as how to maintain water quality during logging, and how the state permit process works for putting in culverts and bridges."

The SFE program also includes review of Michigan Occupational Safety and Health Act (MI-OSHA) regulations as they pertain to logging and other topics that will increase the loggers' knowledge of the forest ecosystem.

Supported by a grant from the Michigan Forest Resource Alliance, the SFE program consists of 18 hours of instruction, including six hours of field application. Each participant finishing the training receives a certificate of completion.

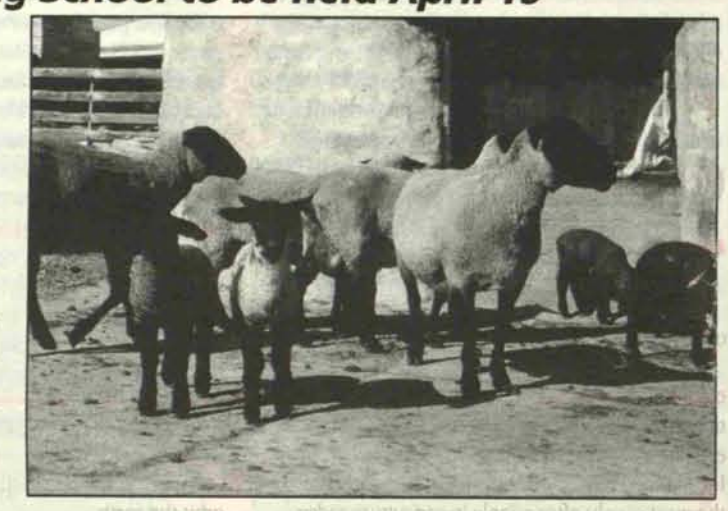
About 195 logging contractors have already completed the SFE, which started a few months ago, reports Tom Barnes, MSU Extension district forestry agent, who manages the program for the northern Lower Peninsula.

"The long-term goals of the SFE program are to provide continuing educational opportunities for loggers and to improve communication between loggers, foresters and landowners and subsequently enhance the sustainability of Michigan's forestland," Barnes says.

Barnes is offering the SFE program about every other month to loggers and private landowners. There is no charge for the training.

More information about the program in the northern Lower Peninsula can be obtained from Barnes at the MSU Extension office in Grayling by calling (517) 348-2841. Call Dave Anderson at (906) 774-0363 about the SFE program in the Upper Peninsula. Additional information about the program can be obtained from Lantagne at MSU by calling (517) 353-4616.

MSU Lambing School to be held April 19



A lot of people who want to, or are just getting into the sheep business, have little or no experience in flock management, especially at lambing time.

Birthing lambs may send the inexperienced handler into a panic, which might be avoided by attending the Baby Lamb Management for Novice Sheep Producers Hands-On training Session, April 19 at Michigan State University.

Lambing is the most critical and labor-intensive period of the year for sheep producers and therefore, the reason for the annual lambing school for would-be and novice sheep producers, says Margaret Benson, MSU Extension sheep specialist.

The school will run from 9:30 a.m. to 3:30 p.m., April 19 at the MSU sheep research and teaching barns on Hagadorn Road, about a half mile south of Mt. Hope Road.

"Most of the participants really appreciate learning how to help get newborns off to a good start", Benson says. However, on occasion, some people who are thinking about starting a small flock may decide not to; it's just more than they expected".

Benson says that in those instances, the decision to quit at that point is important for the mutual welfare of the sheep and the human.

While school participants will not deliver lambs, they will spend several hours in the barn weighing, tagging, giving injections and other things that are critical to the health of a newborn lamb.

They will also learn about lamb and ewe nutrition, flock management and health maintenance and be shown a video that details lamb birthing.

Enrollees should bring suitable outdoor work clothing. School enrollment is limited to 20 people (first come, first served) and costs $30.

Payment must accompany registration, which should be sent to Margaret Benson, Department of Animal Science, 113 Anthony Hall, MSU, East Lansing, MI 48824-1225. Make checks payable to MSU Lambing School.

A proper start for newcomers to the industry increases the likelihood that they will remain with it and possibly help strengthen Michigan's sheep industry, according to Benson.

Hydraulic maintenance raises efficiency and saves money

It's hard to notice because it's so gradual, but the build-up of dirt can progressively damage the hydraulics in your tractor or combine, causing lost money in repairs, parts and down time during busy periods. Accumulation of dirt can also severely decrease hydraulic efficiency.

With some periodic maintenance, you'll keep power- and dollar-robbing contaminants out of the system. Here's what you can do:

- Change hydraulic oil periodically. Changing hydraulic oil annually or every 1,000 hours is recommended.
- Replace filters regularly. Consult the owner's manual to find out how often filters should be replaced.
- Keep unused filters clean. Store filters in dry, dust-free areas and keep them in their boxes until installation.
- Clean couplers and hose tips. Be sure to clean hydraulic connections and wipe off the hose tips before attaching and after detaching.
- Clean parts. Parts left out in the open or unsealed attract dust. Wash exposed parts with a cleaning solvent. It's also a good idea to flush the hydraulic system after repairs.

These procedures are usually all it takes to keep your hydraulics running smoothly and efficiently. If you have any questions or want more advice, talk to your dealer.

Oil analysis detects engine problems

Used engine oil often warns of problems that can shorten engine life and lower resale value. The next time you change the oil, have the used oil analyzed.

Massey Ferguson offers a test kit through the AGCO Parts division. For a few dollars, you'll get a sample bottle, a data sheet to complete and a mailing tube to send the samples in.

Researchers use a spectrometer, which passes a beam of intense light through the oil, to measure the kinds and amounts of metal fragments present to determine if any engine parts are wearing excessively.

For example:

- Wear in the crankshaft and cylinder walls shows up as a high concentration of iron fragments.
- Copper indicates serious bearing wear.
- Contaminants like water, fuel and antifreeze can be found during testing.

A report detailing the contents of your engine oil will be sent after the analysis, as well as an indication of any problems discovered. Your dealer can recommend a course of action to remedy these problems.

Source: Massey Ferguson, *Farm Profit*.

NIOSH warns: improper hitching to tractors can be fatal

According to the National Institute for Occupational Safety and Health (NIOSH), farmers and others who use tractors are at risk for severe injury or death if proper hitching methods are not used when towing or pulling objects with tractors.

In a recent article in the Centers for Disease Control and Prevention's Morbidity and Mortality Weekly Report, NIOSH warned that improperly attaching a tow chain to a point above the tractor's drawbar can cause tractors to suddenly flip backward. These rear rollovers often result in injury or death.

On October 29, 1994, a 13-year old male sustained severe fatal head trauma when the 1983-model tractor he was using overturned to the rear while pulling a felled 18 inch diameter tree that was still partially attached at the stump. The tow chain had been hooked directly around the rear axle. The tractor did not have a roll over protective structure (ROPS).

Between April 1991 and June 1996, 28 incidents of sudden rear rollover of tractors were documented in New York by NIOSH's Occupational Health Nurses in Agricultural Communities program. Sixteen of these incidents resulted in death. Improperly hitching equipment or material for towing caused the rollovers in 60 percent of these incidents. Environmental circumstances such as muddy conditions, wet ground, snow-covered, hilly or uneven terrain may have contributed to some of the incidents.

"These figures are particularly tragic because we know that proper hitching and ROPS on tractors would have prevented most, if not all of these injuries and deaths," said NIOSH Director, Dr. Linda Rosenstock. "We must work together to decrease the toll of tractor related incidents on America's farms."

As the number of people using tractors for towing and hauling increases during the winter months, it is important that they are informed of the hazards associated with hitching and the proper prevention measures. NIOSH requests the assistance of the farming community, media, Cooperative Extension Service, equipment manufacturers, and dealers to help deliver this important safety message.

Typical cases

On September 3, 1991, a 71-year old male part-time farmer was fatally injured when his 1950-model tractor overturned to the rear while pulling down a downed tree. He suffered multiple trauma with a fractured neck and jaw. The tow chain used to pull the tree had been hitched above the drawbar of the tractor. The tractor was not equipped with ROPS.

On January 3, 1994, a 42-year old female farmer died from chest injuries when a 1970-model tractor she was using to pull a loaded pickup truck out of snow overturned to the rear. The tow chain had been attached at the top link connection of the tractor's three point hitch. The tractor did not have a ROPS.

On June 22, 1996, a 29-year old male died from multiple crushing injuries when his 1950-model tractor flipped over, pinning him underneath. The operator of the tractor was clearing trees and brush in the yard of his newly built home. The tow chain was found to be attached to a six inch tree stump, and fastened at the top of the three point hitch attachment.

Steps for prevention

- Use farm tractors equipped with ROPS, and wear a safety belt.
- Carefully select the hitching point to a tractor.
  - Don't alter the drawbar by raising or shortening it.
  - Never attach the load directly to the axle.
  - Never use a two- or three-point hitch as a single-point hitch instead of the drawbar.
  - If the load attaches by a single point, attach it only to the drawbar.
  - Ensure that the tractor operator is familiar with safe use of the equipment.
  - Select a strong tow chain with a length sufficient to allow adequate stopping distance between the towed object and the towing vehicle to avoid collision and rear rollover.
- Ensure a cleared work area for greater maneuvering.
- Use slow, steady pull.
- When using a tractor to free an embedded vehicle, hitch the vehicles front-to-front and drive the towing tractor in reverse to minimize the risk of rollover.

Technology brings new career opportunities to agriculture

There's good news for high school graduates who want careers in agriculture but may not have a place on the family farm. Career opportunities in custom application are booming.

Custom applicators operate sophisticated equipment, applying plant food and crop protection products to farm land. According to Alex Eckert, placement specialist with Farmland Industries Inc., trained, skilled custom applicators are some of the most sought-after people in agriculture today. Agriculture dealers in the Midwest literally can't get enough of them.

"Within the Farmland system alone, we are seeing a tremendous demand for trained custom applicators," says Eckert.

In response to the growing demand for qualified personnel, many community colleges and technical schools in the Midwest now offer training programs specifically geared to custom application.

According to Susan Brocksmith, Agribusiness department chair at Vincennes University in Vincennes, Ind., there are currently more custom application positions out there than there are graduates. "The custom application job market is strong and graduates have their pick of positions," she says.

Custom application is a growing industry as more farmers turn to their local farm supply retailers for application of a variety of crop products. At the same time, advances in technology have made the job of custom application more complex. The latest trend in application technology is precision agriculture, where variable-rate applications of fertilizers and crop protection products are guided by computerized rigs getting signals from satellites that orbit the earth.

"Custom application has become a prestigious profession because of the advanced technologies that these applicators are working with," notes Brocksmith.

Training programs in custom application are evolving from the basic agri-business curriculum. They offer classes specifically geared toward custom application, related technologies and agronomy.

"Our students learn the different aspects of custom application before they enter the work force," says Dick Lyons, an instructor at Lincoln Land Community College in Springfield, Ill. "They have to be able to identify weeds and make crop protection recommendations. They learn about soil fertility, they can read field maps, and they get firsthand experience with precision agriculture." In addition to custom application, students at Lincoln Land are also trained in business management and communications, with an emphasis on customer relations. At Lincoln Land, graduates receive an Associate degree in Agri-Fertilizer Operations.

Brocksmith says custom application programs aren't limited to students with farm backgrounds. "We have some students who don't have any direct farm experience and they are doing very well," she notes. "The new computer technologies are increasing the interest among non-farm students as well as those who grew up and worked on farms."

"Wages in this field of agriculture are very competitive, and students aren't limited to custom application," notes Brocksmith. "They can move into sales, management, or other positions within the business. It all depends on what the student is interested in."

According to Farmland's Eckert, a recent Farmland survey of 150 co-ops found that 50 percent of all department managers started out in custom application or in similar positions. "As a custom applicator, you learn the business from the ground up. It's a good stepping stone to middle management," he says.

Many of the training programs offer paid internships so that students can graduate with actual work experience. "Our students are required to do 16 weeks worth of internships," explains Lyons. "Many students will end up working in full-time positions for the dealerships they interned with."

Scholarships for students interested in these programs are plentiful. Zeneca Ag Products, a leading manufacturer of crop protection products, will offer twenty $500 scholarships again this year as part of its "Careers In Precision Agriculture" program. Scholarships and financial aid are also available from many regional co-ops and independent dealerships.

"The cooperation and financial support of the chemical and fertilizer industries are what are making this program, and others like it, possible," says Lyons.

For more information about careers in custom application, contact Lansing Community College, in Lansing, offering application training with a two-year agri-business program. Classes include soil systems, weed management, sustainable agriculture, and principles of global positioning systems and precision agriculture. Students are prepared for professional licensing exams. Contact Bob Welch at (517) 483-9675.

Scholarships available from Zeneca Ag Products

For the second year, Zeneca Ag Products is offering 20 scholarships to students who will be enrolled in an approved custom application program this fall. Each scholarship is worth $500. Any high school graduate who plans to become a professional applicator is eligible to apply. Applications for the 1997-1998 school year are available from participating schools and must be submitted by June 1.

"Custom application is opening many doors for young people who want to remain in agriculture," says Bill Beutke, senior marketing lead for Zeneca Ag Products. "The demand for qualified personnel is so high that many students can receive pay for training, internships during school, and guaranteed jobs after graduation."

"We had such a positive response to our scholarship program last year that we now have fifteen schools participating in the program, up from ten a year ago," says Beutke.

Scholarship winners will be selected based on past records of academic achievement, participation in school and community activities, work experience and personal references. For more information, contact one of these participating schools:

Black Hawk Community College in Kewanee, Ill.
Central Community College in Hastings, Neb.
Dodge City Community College in Dodge City, Kan.
Iowa Western Community College in Council Bluffs, Iowa
Kirkwood Community College in Cedar Rapids, Iowa
Lake Area Technical Institute in Watertown, S.D.
Lansing Community College in Lansing, Mich.
Lincoln Land Community College in Springfield, Ill.
Minnesota West Community and Technical College in Jackson, Minn.
Muscatine Community College in Muscatine, Iowa
Parkland College in Champaign, Ill.
Ridgewater College in Willmar, Minn.
South Central Technical College in Mankato, Minn.
State Fair Community College in Sedalia, Miss.
Vincennes University in Vincennes, Ind.

Taiwan allows foreigners to produce wine and tobacco

Taiwan has agreed to let foreigners manufacture wine and tobacco on the island, further opening its markets in order to join the World Trade Organization. The agreement was reached during the latest round of trade talks between Taiwan and the United States.

Vice Finance Minister Wu Chia-sheng said his government would gradually ease its current restrictions after revising a law governing tobacco and wine monopolies. Currently, Taiwan only allows imports of foreign wine and tobacco. No timetable was given for the change.

Weeds need attention on CRP ground

CRP acres earmarked for row-crop production will need special attention to weed control this spring – even if burndown herbicides were applied in the fall.

"Fall is the best time to apply a burndown herbicide to stop the growth of the perennial cover crop," says Marshal McGlamery, weed scientist with the University of Illinois. "But most CRP ground will need another burndown in the spring to get complete control."

If you're no-tilling, a spring burndown also will be needed to control annual weeds, reports David Quarles, extension weed specialist with the University of Missouri. "There will be residual seed out there waiting to germinate," says Quarles. "Without competition from the sod, these seeds will start germinating as soon as it warms up in the spring."

Where fall burndown herbicides were applied, foxtails will be the number one weed problem on ground coming out of CRP this spring, predicts Lloyd Murdock, extension agronomist with the University of Kentucky. Velvetleaf will be a close second, according to Quarles. Gordon Harvey, agronomist with the University of Wisconsin, says growers can also expect to see winter annuals.

"Besides stopping the growth of the cover crop, a fall burndown treatment is also excellent for controlling perennial weeds," says Murdock. "So your spring burndown is primarily to control annual weeds, as well as finish off your cover crop."

If there is less than 30 percent regrowth from the cover crop, then the spring burndown treatment can be applied any time before planting, says Murdock. But if there is more than 30 percent regrowth, Murdock recommends applying the spring burndown at least four weeks prior to planting to clear the field of voles.

"The damage from voles can be devastating," says Murdock. "By clearing out their food supply early in the season, you're allowing enough time for them to move elsewhere to find food."

Another alternative is to mow CRP fields in early spring, then apply a burndown herbicide when regrowth reaches six to eight inches. "There's a double advantage in that you're removing the food source for the voles and you're providing conditions that will enhance the activity of your burndown herbicide," says Murdock.

While translocated herbicides like Touchdown® or Roundup® are very effective for fall applications, Murdock says a contact herbicide like Gramoxone® Extra is more effective for spring applications.

"Roundup and Touchdown work better in the fall because all of the plant's food supply is moving toward the roots, and these herbicides move with it," explains McGlamery. "Contact herbicides like Gramoxone Extra are more effective in the spring, when the plant's food supply is moving upward for topgrowth."

According to Quarles, a tankmix of Gramoxone Extra and atrazine is a good spring-time combination for corn.

"The Gramoxone attacks from the top," he explains. "The atrazine, with some rain, goes into the soil and is absorbed by the roots. It's like hammering the weed from the top and from the bottom."

If there are perennial weeds in the field, tankmixing Gramoxone Extra with 2,4-D can help, says Murdock.

In test plots at the Greenley Research Center in Novelty, Missouri, a tankmix of Gramoxone Extra, atrazine and 2,4-D provided full-season weed control on corn ground that followed CRP.

If you're dealing with a tough-to-control perennial like quackgrass, though, Harvey recommends using Touchdown or Roundup – even in the spring. "The most important advice I can give is don't get in too much of a hurry," he says. "To control quackgrass with Touchdown or Roundup, you will need substantial growth – about eight to ten inches in the spring. If you apply either product before then, you may not get complete control.

Novartis Seeds sponsors first-ever $100,000 yield contest prize

For years, corn farmers have pitted their crop production skills against the nation's best through the National Corn Growers Association (NCGA) Corn Yield Contest. Next year, there is more than just pride on the line – at stake is $100,000 purse sponsored by Novartis Seeds, Inc. – the largest such prize ever offered by an NCGA corn yield contest sponsor.

Growers who enter and win a national first place in the annual competition with one of the company's insect-protected corn hybrids are eligible for the $100,000 bonus. Don Jacoby, vice president of sales at Novartis Seeds announced the special incentive during a news conference at the 1997 Commodity Classic in Tampa Fla.

"We are confident about the insect-protection technology in our NK® Brand Bt and Maximizer™ hybrids and we want growers to try them on their own farms," Jacoby said. "The $100,000 prize is added encouragement for growers to see just how these new hybrids benefit corn production."

This is the first year that a significant amount of the biotech corn hybrids is available for sale. Novartis Seeds hold 65 percent of the seed industry's insect-protected hybrids.

"Even if no one claims the $100,000 prize next year, every farmer with corn borer pressure who uses an insect-protected hybrid wins," Jacoby said.

In company field trials in 1995 and 1996, under heavy corn borer pressure, insect-protected Bt corn averaged 15- to 20-bushels an acre more than unprotected hybrids. As an example, if a producer planted Bt corn on 500 acres, the return on investment could easily exceed $20,000.

Although producers using Bt corn will see significant economic benefits most years, the yield contest incentive is a one-time bonus offered by Novartis Seeds. Any NCGA member is eligible to participate in the annual Corn Yield Contest. If more than one grower wins with a Maximizer™ or NK® Brand Bt hybrid, Novartis Seeds will divide the $100,000 bonus equally among each winner. In the event that more than five growers win with a Novartis Seeds insect-protected hybrid, each grower will take home $20,000.

Novartis Seeds AG is a leading worldwide research organization that produces and sells corn, soybean, alfalfa, sunflower, sorghum, sugar beet, vegetable and flower seeds.

Industry leaders merge to form Novartis

Novartis Crop Protection, Inc., officially formed on Jan. 1, was created from the merger of agricultural industry leaders Ciba Crop Protection and Sandoz Agro.

Novartis Crop Protection, headquartered in Greensboro, N.C., is the nation's largest supplier of crop protection products. Based on 1995 results, CIBA was the crop protection leader in the United States with more than $1.1 billion in product sales. The merger with Sandoz strengthens that position, and provides Novartis with stronger research and development capabilities than Ciba or Sandoz had before combining operations.

Novartis Crop Protection lists more than 10 prospective products in its development pipeline, with five expected to receive Environmental Protection Agency (EPA) registration within the next three years.

In the turf and ornamental industry, Novartis is a leader in disease, insect and weed control for golf courses, greenhouses, nurseries, sod farms and commercial lawn and landscape companies.

Plans to merge Ciba-Geigy Ltd. And Sandoz Ltd. Of Basel, Switzerland, were announced in March of 1996. Provisional approval of the merger by the U.S. Federal Trade Commission in December cleared the way for completion of the merger.

As a condition for FTC approval, Sandoz Argo agreed to divest its dicamba and dimethenamid corn herbicides and their mixes. The sale of those products to BASF also was finalized in December.

69th Michigan FFA Convention

FFA names 1997 leadership contest winners

State winners in eight leadership contests were names at the 69th Annual State Convention of the Michigan Association of FFA held March 3-5 in East Lansing. Teams from eight FFA chapters met in final competition after district and regional eliminations were held in each contest prior to the convention.

Jacqueline Swihart from the Vicksburg FFA Chapter was named the state winner of the Public Speaking Contest, sponsored by the National FFA Foundation. She spoke on the preservation of farmland in the state of Michigan.

The Greenhand Public Speaking Contest, a contest for freshmen FFA members, was won by Dan Kiesling of the Perry-Morrice FFA Chapter.

The Parliamentary Procedure Contest, a contest involving demonstration of parliamentary abilities to solve an item of business by five- to seven-member terms, was won by Montague FFA. The six FFA members participating were: Jared Tenrbink, Shirley Paulin, Joy Ross, Megan Burgess, Rick Ramthun, and Todd Courtland.

Cassopolis FFA Chapter won the Agricultural Forum Contest, a group discussion event involving five to seven FFA members working together to solve an agricultural problem. The Cassopolis FFA team members participating in the contest were: Beth Smego, Barbie Hartsel, Lisa Bates, Jesse Bennet, Ed Asmus and Dennis Peterson.

The Greenhand Conduct of Meetings Contest, designed to teach greenhand FFA members parliamentary procedure skills, was won by the Cassopolis FFA Chapter. Team participants were: Amy Abrams, Elizabeth Deubner, Lori Owen, Lisa Stevenson, Kandale White, Ian Salo, and Leyna Dussel.

The Mason FFA Chapter competed in the Ag Forum discussion during the FFA convention probing the topic of farmland preservation.

In a contest simulating a Job Interview, Corine Boekeloo of Vicksburg FFA Chapter was names state winner. This contest was sponsored by Michigan Farm Bureau.

Lori Preston of the Region I Branch Area Career Center FFA Chapter won the Extemporaneous Public Speaking Contest. She will represent Michigan in the central region contest next November in Kansas City, Missouri. As state winner, Lori will receive $100 from the National FFA Foundation.

In the Demonstration Contest, teams of two of three FFA members gave 15 minute demonstrations on some aspect of agricultural practices. The Laingsburg FFA team consisting of Nicole Plotner, Michele Doyle, and Tracy Wizner emerged as state winners.

State FFA officers elected

Brian Preston of the Branch Area Career Center was elected state president of the Michigan Association of FFA. He succeeds Teresa Swamba, of the Capac FFA Chapter.

Other state officers elected for 1997-98 are: Vice President Darron Birchmeier from New Lothrop, Secretary Sheri Greiser from Lowell, Treasurer Leslie Seifka from St. Louis, Reporter Kandi Kukar from Corunna, and Sentinel Nick Ladd from Waldron.

Regional state vice presidents are: Region I, Marty Smego, Cassopolis; Region II, Kevin Robinson, Jonesville; Region III, Amanda Moore, Alma; Region IV, Brian Kiesling, Perry-Morrice; Region V, Melissa Skully, Beal City; Region VI, Mary Beth Kline, Alpena.

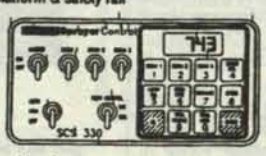
FFA members from all over Michigan were able to enjoy meeting the 3,000 people who attended the 69th Michigan FFA Convention.

Michigan Farm News Classified

DEMCO FIELD SPRAYERS

Sprayers to Bank On

- Polyethylene elliptical tank w/(2) dual jet agitators, sump, baffle and 16" manway w/center cap.
- Formed steel trailer w/ground clearance settings of 23" or 29" & adjustable row spacing
- A large & convenient front mounted step, work platform & safety rail
- 3-Section electric boom controls
- Heavy duty axle cross member tube
- Sleek, compact, auto. level and flotation boom
- Rearward horizontal folding boom. No vertical folding
- Sprayers w/Lil' Thumper piston pumps come w/elec. shut-off, centrifugal agitation pump (C9401B4) & PTO shaft
- All booms are complete with 3/4" high volume plumbing & Demco drip free diaphragm check nozzles spaced at 20"
- A clean water tank is conveniently mounted on each sprayer frame
- **With the purchase of any 500, 600, 750 or 1,000 Gallon Demco Sprayer, add the New Raven 330 Sprayer Control for just $995 installed, in lieu of std. Electric Control.**



For more information or the dealer nearest you, contact:

FARMCO

13619 S. DeWitt Rd., Lansing, MI 48906 • Telephone: 517-669-8391

Maturity - 121 days (early group II)
Yield - 55 bushels per acre +

ProSoy® brand
Soybean Seed

PS 212

Germination 95%

Seeds/lb. 2530

Broad Spectrum, Root Rot Resistance, White Mold Tolerance

PRO-SEED®
P.O. Box 55
236 Sugar St.
Blissfield, Michigan 49228

For a local dealer call:
Toll Free **1-888-PRO-SEED**

Mr. Corn Farmer: Are you pleased with the price you pay for seed corn?

In 1995 Bayside Seed Corn was tested in seven different Michigan counties by seven different county ag agents. When the results were in, Bayside Seeds had the highest actual yield in four of those seven counties.

When you order seed corn for next year, I would like you to think about that. Bayside was tops four times, the entire rest of the Seed corn world combined was on top three times. Consider that our corn costs much less than any single cross corn in the industry, why would anyone want to pay more to get less yield? Bayside 1796 had the highest actual yield in three counties including an all time high of 216 dry bu. in Tuscola County. Bayside 86 was the winner of the Ogemaw County Trials. Also, in 1995, Michigan State University tested Bayside 1796 in six mid-Michigan counties and 1796 outyielded Pioneer's excellent 3751 and 3769 in all six counties. The averages for those six county trials by Michigan State University are below:

	Yield	Moisture	TW
Bayside 1796	165.01	20.63	56.58
Pioneer 3769	151.60	19.63	57.08
Pioneer 3751	157.68	19.00	56.66

Bayside 1796 and all the other Bayside corn can be bought in March for $59 per 80,000 kernal bag.

Lyle Grigg—Bayside Seeds
259 Bowker Rd., Munger, MI 48747
Phone: 517-659-2845 or 517-659-3115

When MSU tested corn in 1996, in Saginaw County, Bayside had 7 hybrids that averaged 165.1 bushels/acre. Any one of these fine hybrids would do very well for you and would cost only a fraction of what you are paying now.

---

01 Farm Machinery

(TWO) 4000 GALLON stainless steel storage tanks. Dairy quality, $2000 each. Toggenburg dairy goats w/grade A milking equipment. Sold as package. 1962 Willys wagon, 6-cylinder, 4x4. 1-616-829-3779.

1962 GLEANER E with variable speed cylinder. Many improvements, always stored. Also 13' Hart-Carter floating head. Orange 2 row cornhead, both good shape. 616-781-5515.

1967 MASSEY FERGUSON tractor. 180 diesel. Heavy duty Freeman 4000 loader with 2 buckets. Very good condition! Call 1-616-754-7378.

1993 BELARUS 825, 4x4, cab, International 715 combine, plow, disc, planter, cultivator, sprayer, drill for $18,250 or will separate. Make offer or trade for lake lot property. 517-862-4346 evenings.

4000 BALES OF WHEAT STRAW: 16' Vandaye silo unloader, Model 1230 DA. 20' Magnum silo unloader. 1-517-269-8843 between 6-10pm.

ALLIS-CHALMERS 1300 field cultivator. Fair condition. Call 1-517-851-8106.

01 Farm Machinery

7200 JOHN DEERE 1230 fertilizer cross auger. Monitor, front mounted coulters. Used 2 years, 2,000 acres, 1-810-651-8241.

Case International 1250 feed grinder, like new, no scales, $4500. 1968 International truck, tandem, 20' steel rack, wood sides, needs brake work, $2000. 13 1/2' Case disc, $1200. 1-616-784-1676.

FOR SALE: #720 IHC chopper, 2 forage wagons, 3 beaters with roof and gear, Gehl mixer grinder, NH 30 blower, Wic power feed cart, 12', 16' 20' silo unloaders. Everything good! Bought new. Ionia, 1-616-761-3655.

For Sale: 1974 Model 6060 Speicher tiling machine, $25,000. 1974 JD 310 backhoe, $14,000. 1974 IHC tractor and Ottawa 25 ton lowboy $4500. Tile trailer for Maxi coils. $2000. 1-616-527-6438.

FORD NEW HOLLAND tractors and equipment from **Symon's** in Gaines. For 43 years your best deal for the long run!

Symon's
1-517-271-8445, Gaines

01 Farm Machinery

GRAIN WAGON with hydraulic auger, 8 ton running gear. Good condition! $1000. 1-810-735-4908.

Grinder/Mixer Gehl 135 21" mill, good condition. $4000. New Holland super 717 chopper, 2 heads, cornheads like new, $3500. Gehl 910 chopper wagon, tandem, 12 ton gear, good condition, $2800. 1-616-894-6839 or 1-616-894-5050.

INTERNATIONAL 1486 tractor, cab. Excellent condition! New tires, field ready. Must sell! 1-616-588-6084.

HARVESTORE manure system. 400,000 gallons. Patz gutter cleaner, left hand drive, 100' of chain. Slat to cover 20x38 area. Make an offer. 10x30 silo to give away. 1-616-794-1118.

JOHN DEERE 12' off set disc, 16' clay silo unloader. 222' raised paddles VanDale gutter chain. Used three months. 1-616-734-2532.

JOHN DEERE 3 bottom, 14" trailer plow for sale. Also, New Holland 55 side rake. 1-517-669-9376.

01 Farm Machinery

JOHN DEERE 4250, C.H.A. Dyno-140hp, 4100 hours, very good, $27,750. 1-616-979-2171.

LIQUID MANURE SPREADERS: New and used. Balzer, Better-Bilt parts. UPS daily. Also, grain dryers and handling equipment.
Hamilton Distributing Company
1-800-248-8070

NEW HOLLAND 273 with thrower, rebuilt knotters and new pickup teeth, field ready. 1-616-754-6969.

SEEDLING TREE PLANTER: Kasco, 2-seat, 3 point hitch. Excellent condition! Used less than 40 acres. $1000 firm. A.B. Cook, 1-517-589-9590.

START SOD FARM: 5' Brillion seeder, 5' gang Blitzerd mowers, Brouwer sod harvester on a 3600 Ford diesel. Retiring. 1-810-949-3111.

03 Farm Commodities

THUST LIQUID FERTILIZER, $2.60 a gallon, 8-20-4, ask about Somerset foliar feed for alfalfa, potatoes, small grains, vegetables and lawns. Call Paul, 8am-1pm. 1-517-479-9356.

04 Seeds

MICHIGAN CERTIFIED SOYBEAN SEED: Hardin-91, Kenwood-94, Conrad-94 and BSR-101. Also Newdak certified oats. Call **Schmidt Farms** of Auburn, 1-517-662-6705 or 1-517-662-2695.

04 Seeds

BAYSIDE SEED corn. All maturities! Dairybrand alfalfa. Bayside 169 soy beans.
B & M SEED
1-517-463-2846

FOR SALE: AuSable seed oats, test weight, purity and germination tested. Call **Duane Basel** at 1-517-734-3694.

MICHIGAN CERTIFIED SEED: Bowers barley, Newdak, Prairie oats, Felix soy beans.
B & M SEED
1-517-463-2846

05 Livestock

ANGUS & GELBVIEH: Breeding stock. Free delivery! Border Collie Stock Dogs. Call today.
Bordner Farms
Sturgis, MI
1-616-651-8353

ANGUS BEEF: Bulls, heifers and cows with calves. Performance tested, semen tested. Free delivery! Call anytime.
SHAGBARK FARMS
Alto, Michigan
1-616-868-6040

FOR CURRENT LIST of available Angus Cattle, write: Secretary, West Michigan Angus Breeders, 585 36th Street SW, Grand Rapids, MI 49509.

LLAMAS: North American Sitting Bull and Essex bloodlines. Pet males and weanling females. Reasonably priced! Call for more information and visit. 1-517-645-2719.
Miller's Llamaland
Potterville, MI

05 Livestock

HORTON BAY LLAMAS is reducing herd size. Four bred females available. Due this spring and fall. We also have weanling males. Photos sent on request.
Jack & Barbara Danly
06300 Boyne City Road
Charlevoix, MI 49720
1-616-582-7473
Fax 1-616-582-6540

LLAMAS ARE GREAT, and now they're affordable! These docile, intelligent animals make wonderful pets for hiking, packing, picnicking, pulling carts, or to just plain enjoy. Their wool is valuable and they also make outstanding guard animals. Call for a visit today! 1-616-677-3309. Ron & Nancy Laferriere.
Laferriere LLamas
Marne, Michigan
(Just northwest of Grand Rapids)

McKENNEY CATTLE COMPANY Private Treaty Bull Sale, April 12, 1997. Commercial Angus, Traveler and Rainmaker Blood Lines. Registered Simmental, Gelbvieh type. The top of our February, 1996 Calf crop. Semen tested. Free delivery 350 miles. Call for information, **1-810-672-9676.** Paul McKenney, 4987 Mushroom Road, Decker, MI 48426.

NINE REGISTERED Polled Hereford breeding age bulls for sale. Optimum and Rocky Banner blood lines.
Rye Hereford Farm
Rogers City
1-517-734-3005

Piedmontese Cattle: Lean, tender, double muscled, good calving ease. Quality registered breeding stock. Also available, embryos and semen.
Redbird Farms
Lapeer, Michigan
1-810-667-7389

05 Livestock

PUREBRED BOER GOATS. MichFlock. Stud Service available. 612 North Madison, Lapeer, MI 48446. 1-810-667-0169 any time.

REGISTERED MINIATURE DONKEYS: Breeders, pets, geldings. Nicely built, very friendly. $450, up. Great for driving, showing, guard animals. Pygmy goats.
Acker's Ass-Key Acres
1-517-547-4418

REGISTERED SCOTTISH HIGHLAND CATTLE, breeding stock and semen for sale. Visitors welcome! Call evenings or weekends. 1-517-543-7979. Charlotte, Michigan

REGISTERED TEXAS LONG HORNS, weanlings, heifers, yearling heifers and bred cows. 1-616-676-1462.

REGISTERED TEXAS LONGHORNS: Top quality and selection! Breeding age bulls, guaranteed 100% calving ease. Cows, heifers and calves available. Also, lean beef and skulls. 1-616-945-2153.

05 Livestock

SIMMENTAL BULL, three years old, solid red, good bloodlines, semen checked, high quality. 1-517-423-2343 or 1-517-263-5352.

SIMMENTAL BULLS: Purebred red yearling; 7/8 blood black 3 year old, and 1/2 blood black white yearling. 1-517-689-4696.

TEXAS LONGHORNS BULLS: Three year old, solid black and a yearling, black and white. Also, several bred heifers.
Diamond 6 Ranch
1-616-642-9042

TOP QUALITY HOLSTEIN breeding age bulls, from high producing cow family. Top AI sires, $800-$900.
Pasch Farms
1-517-644-3519

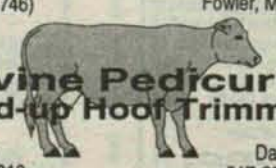
YORKSHIRE HAMPSHIRE BOARS: Ready to breed. Delivery available! **Robert Harper,** 9016 Exy Avenue, Vicksburg, Michigan, 49097. 1-616-649-2803.

You Can Still Save Big Bucks on Quality Alfalfa Seed!

You can pay more for an alfalfa seed but you will not get a better alfalfa.
Find out how we can sell superior varieties and premium seed at low, low prices.

GEERSTON SEED FARMS
call 1-800-843-0390

800-550-TRIM (8746)
4501 N. Wright Rd.
Fowler, MI 48835



Bovine Pedicurist
Stand-up Hoof Trimming

Jim Rondy
517-593-3310

Dan Davis
517-224-1323

We trim with a fully hydraulic stand-up chute which offers the ultimate in cow comfort. Each cow is in the chute only 3-6 min. This offers many benefits to the herd and owner, while causing less stress for the cow. References upon request.

OAK HAVEN RESORT

Conveniently located to all attractions:
Pigeon Forge & Gatlinburg
• Kitchens • Fireplaces
• Hot Tubs • Large Pool

LOG CABINS IN THE SMOKIES

Open Year Round
Call Toll Free
1-888-200-0625
for a FREE color brochure

JOHNSON SYSTEM INC.
"Designing For Growth"

Complete Grain System

- Grain Bins
- Bucket Elevators
- Millwright Service
- Airstream Auto Dryers
- Leg Towers/Catwalk
- Hopper Bins
- Dryer Service
- Crane Service
- GSI Top Dry
- Specialists

Johnson System, Inc.
Marshall, MI 49068
1-800-962-1495

Michigan Farm News Classified

ZFSoya

Grain Merchandiser

Zeeland Farm Services is seeking an individual to work in our grain office. The ideal individual will have a strong background in dealing with customers as well as beign detail oriented and familiar in general office procedures. This is a fast paced environment and the ability to handle multiple functions is requires. Some agricultural knowledge is a plus but we will train the right person. Pleas apply in person or send resume to:

Personnel Manager
Zeeland Farm Services
2468 84th St., P.O. Box 290
Zeeland, MI 49464

HATFIELD SPRAYING SERVICE, INC

Call 800-632-0087
for a quote on
SPRING FERTILIZING
by AIR
27 years experience
- GPS equipped -

Hatfield Spraying Service, Inc.
~ Nunica, Michigan ~

07 Dogs & Puppies

AKC BRITTANY PUPS: Champion bred. Excellent hunting stock! Whelped January 10, 1997. Orange or liver colors available. Call 1-810-367-3825.

For Display Advertising Information
Call:
Josh Merchant
800-292-2680
Ext: 6543

MICHIGAN FARM NEWS

Place your advertising with us and see the results!
800-292-2680, ext. 6543

FARM AUCTION

Having discontinued farming, the following will be sold at public auction on the farm located 2 mi. south of Napoleon, MI on M-50 then west on Krego Rd. 1½ mi. and north ¾ mi. to 8293 Giles Rd. (Jackson Co.)

Tuesday, April 15, 1997
10:30 a.m.

- Tractors: JD 8430 4x4 dsl. tractor, cab, quad range, 3 pt. 1000 pto, 3 outlets, 18.4x34R tires and duals, complete rebuild in 1994; JD 730 dsl. tractor, new 18.4x38 tires, rebuilt in 1990, SN 7316808
- Combine and Heads: JD 8820 4x4 turbo dsl. combine, 150 hrs. on rebuilt engine and cab, hydro, 30.5Lx32 tires, feeder house reverser SN 3464609; JD 220 20' flex platform SN 442611; JD 643 6-row N corn head, SN 336936; Kilbros grain headed cart, low profile wheels; (all of the above will sell separate); JD 7000 12-row front fold planter, 30" rows, deluxe monitor, liquid fert.; JD 7000 6-row no-till planter, 30" rows, liquid fert., insecticides; Great Plains solid stand 15 no-till drill, 15', pull type drill hitch; JD 694 6-row planter, new tires; Brady 3850 3' hyd. fold field cultivator w/buster bar leveler; Landoll 19-shank hyd. fold chisel plow, trailer type; JD 1600 chisel plow; IH 7-shank chisel plow w/gauge wheels, 3 pt.; JD F145 4x16" semi mtd. plows, new bottoms; JD 125 4x16" plows; (2) JD BWF 22' manual fold discs; JD BWF 16' disc 4-parts; JD F 130 16' hyd. lift transport drag; JD C-10 14' 3 pt. field cultivator; JD C-11 16' 3 pt. field cultivator; JD RG-4 4-row cultivator; JD RG-8 8-row cultivator; JD FB 15 hoe grain drill; JD FB8 17 hoe grain drill; Brillion 10' 4" axle transport cultipacker; JD 505 5' 3 pt. brush mower; Land Price 8' HD angle back blade; JD 953 running gear; 2 New Holland tandem axle manure spreaders 4-parts
- Truck: 1979 Chevy C-30 dually pickup, V-8, auto, new rubber
- Shop and Farm-related Items: Set of 18.4x38 axle duals; st. steel 200 gal. saddle tanks, univ. fit; 200 gal. field sprayer; NH 3 applicator; 3,500 gal. ploy tanks; Pacer 5 HP transfer pump; 2" transfer hose; 200' of HD welding cable; 6, 18.4x34 tires; welding steel; good quantity of new and used nuts and bolts; gear reduction motor and other elect. motrs; 3,200 gal. fuel tanks w/ 12 volt pumps; roll of 5/8" cable; pc. of 7/8" cable; misc. scrap iron; wagon full of misc. farm items too numerous to mention!

Terms: Cash or good check day of sale. No items removed from premises until settled for. Not responsible for accidents. Lunch available. Porta jon on site.

James Haller, Prop.
8293 Giles Rd., Napoleon, MI 49261
For info, call 517-536-5208

SYKORA AUCTION SERVICE, INC.
Jim & Scott Sykora, Auctioneers, Clare, Michigan
517/386-2252 or 9694 ~ Fax 517/386-2246

FARMER BANKRUPTCY IMMIGRATION LAW

Throughout
Michigan and Ohio
Lawrence
G. Reinhold, Attorney at Law
810-350-2250

FARM AUCTION

Having discontinued dairying and rented our farm, the following will be sold at Public Auction on the farm located 5 mi. East of Hemlock, MI on M-46 to junction M-52 and M-46, go North on Graham Rd. 2.5 mi. then 1.5 mi. East to 9345 Frost Rd. or 3 mi. South of Freeland, MI on M-47 then 1 mi. West on Tittabawassee Rd., and 2 mi. South on Thomas Rd. then East ½ mi. to farm (Saginaw Co.).

Wednesday, April 9, 1997
10:00 a.m.

5 Tractors and Skidsteer: Ford 7710 MFWD Dsl. Tractor, 3900 hours; Ford 9600 Dsl. Tractor; Ford 8600 Dsl. Tractor; Ford 5000 Dsl. Tractor; Ford 4000 Gas Tractor, w/Ford hyd. loader; Clark Bobcat 643 Skidsteer, hydro., new Kubota engine, 400 hrs. **Combine and Heads:** JD 7700 Turbo Dsl. Combine, posi torque drive, straw chopper, SN 113353; JD 443 4-row N Corn Head; JD 216 16' Grain Platform; (Combine and Heads offered separate, then as a package); Wagon gear adapted for grain platform **Trucks:** 1976 Ford F-600 Single Axle Truck w/14' grain box and hoist, V-8 gas, 4x2 speed, 25,000 miles; 1972 Chevy C-60 Single Axle Truck w/16' Omaha grain box and hoist, 327 V-8, 4x2 spd., fresh engine, 12,000 miles ago; 1979 14' Tandem Axle Livestock Trailer, bumper hitch. **Machinery:** JD 7000 8-row Plateless Planter, dry fert., cross auger; JD 1010 24.5' hyd. fold Field Cultivator w/time leveler; Ford 5x18" semi mtd. Plows; M&W 1921 8-row flat fold Rotary Hoe, 3 pt.; MF 520 18' spring fold Wheel Disc; Kewanee 12' Cultimulcher; Miller 8-row S-tine Rigid Cultivator; Speedy 4-row front mt. Bean Pullers; Heath 1050 4-row Bean Windrower; Leon 10' Universal Fit Dozer Blade, underslung; 3 pt. back hoe attachment w/self-contained hyd. unit; Kilbros 350 Gravity Box on 8-ton gear; MF 1050 Grinder/Mixer; 27,000 watt Ag-Tronic 3 pt. Generator; Hedlund Martin Tandem Axle Side Throw Manure Spreader (HD reconditioning) **Many Farm-Related Items**

Terms: Cash or Good Check Day of Sale

Hughes Farms
For information, call Doug Hughes 517-479-3661

SYKORA AUCTION SERVICE, INC.
Jim & Scott Sykora, Auctioneers, Clare, Michigan
517/386-2252 or 9694 ~ Fax 517/386-2246

08 Ponies/Horses

BEAUTIFUL GRAY Arabian stallion for sale. Eleven years old, extremely versatile, trained English and Western. Produces Typey foals, good disposition, 1/2 brother to National Champion and grandson of Ferzon. 1-517-833-7821.

08 Ponies/Horses

FREE HOME DELIVERY! Simply the best! Complete Horse Feed. ELITE +, 10% or 12%. Dealer inquiries welcome! For information or delivery,
Mathie Energy Supply Co., Inc.
1-800-467-7340

Main Dairy Machinery Auction

Having discontinued dairy farming, the following will be sold at public auction on the farm located 3 mi. west of Winn, MI on Blanchard Rd., then ½ mi. south on Woodruff Rd. & turn east on Ward to end of road to farm. (Isabella Co.)

Wednesday, April 16, 1997
10:00 a.m.

-Tractors and Skid Steer: 1991 Case/IH 7130 MFWD Dsl. Tractor, 1540 hrs., cab, air, AM/FM, 3 outlets, 1000 PTO, powershift, 20.8x42 tires & axle duals, full set of front wts., 1 owner, sharp!; IH 1466 Dsl. Tractor; IH 1466 Dsl. Tractor; IH 966 Dsl. Tractor; IH 856 Dsl. Tractor; JD 4010 Dsl. Tractor; Case 1845C Dsl. Skid Steer, 2335 hrs.
- Combine and Heads: 1981 IH 1460 Axial Flow Combine, 2WD, 1644 hrs., 1 owner, SN 023681; IH 963 6-row N corn head; IH 15' rigid grain platform
- Vehicles and Dozer: 1975 Chevy C-65 Live Tandem Truck w/ Hoekstra 18' metal box and twin post hoist, 454 V-8 gas, 5x4 spd., all new brakes in 1996!; 1988 GMC 1500 Sierra; 1967 Dodge Charger, 2 dr., 1 owner; Tri-axle Implement Trailer, grate deck, tongue hitch; 1952 AC HD 9 Dsl. Dozer w/12' blade (runs)
- Hay and Forage Equipment: IH 1500 14' self-propelled haybine, dsl. cab, hydrostat; New Holland 900 forage chopper, 3-row N corn head, 7' hay pickup head, elec. cab controls, tandem axle; 1992 New Holland 144 windrower/converter, pull type; 10 wheel 3 pt. 2 into 1 hay rake; 3 Badger self-unloading forage wagons on tandem axle gears; New Holland self-unloading forage wagon on tandem axle gear; 1992 Statewide 16' metal cattle feeder on gear; 1990 new Holland 308, 2400 gal. side discharge manure spreader, tandem axle, flotation tires; New Holland 680 tandem axle manure spreader, slush gate; Case/IH 600 silo blower; Winpower 50 kw. PTO 3 ph. generator, used very little
- Machinery: (2) IH 400 Cyclo 6-row planters w/dbl. hitch frame for 12-row appl.; 1991 Case/IH 496 21 ½' hyd. fold wheel disc, good cond.; IH 700 6x16' on land auto spring reset plow
- Consigned by Neighbor: IH 966 Dsl. Tractor w/Leon hyd. loader and mat. bucket; (2) Simon planing 16' dump wagons on Knowles 10-ton gear w/midwest hoist; 1978 New Holland 479 9' haybine; JD 6 bottom plow; 250 gal. above-grd. fuel tank; 18' Athens disc; United 500 gal. 45' field sprayer; hay thrower rack made out of sucker rod; hoe; JD 10' hd. disc; IH 16' finish disc w/ JD cyl.; Gehl 260 hay rake tedder; New Idea 150 bu. manure spreader

Terms: Cash or good check day of sale.

Main Dairy Inc.
Lewis and Chad Main, Props.
For info, call 517-561-5255

SYKORA AUCTION SERVICE, INC.
Jim & Scott Sykora, Auctioneers, Clare, Michigan
517/386-2252 or 9694 ~ Fax 517/386-2246

FARM AUCTION

Having retired from farming and rented my farm, the following described items will be sold at Public Auction on the farm located 1½ mi. E. of Freeland, MI on Freeland Rd. to 3-way stop, then N. on Garfield Rd., past MBS International Airport to first farm on north side of airport or 4½ mi. S. of Auburn, MI on Garfield Rd. to farm (Saginaw Co.).

Friday, April 11, 1997
10:00 a.m.

Tractors and Backhoe: White 4-150 4x4 Tractor; White 2-135 Dsl. Tractor, 2793 hrs.; Ford 5000 Dsl. Tractor; AC WD 45 Tractor, W.F.; Ford 4500 Loader/ Backhoe, dsl. **Combine and Trucks** White 8900 dsl. 4x4 Harvest Boss Combine, hydrostat drive, rice & cane tires, 2700 hrs.; White 6-row N Corn Head; White 18' Grain Platform; White 11' Dummy Head; 1965 Ford F-600 Single Axle Truck, w/Midwest box and hoist; 1981 Ford F-250 Pickup **Machinery:** IH 455 8-row Planter; White 378 8-row hyd. fold S-tine Cultivator with tunnell shields; White 25' hyd. fold up Danish Tine Field Cultivator w/Buster Bar leveler; Brillion 25' hyd. fold up Crowfoot Packer; White 18' spring fold Wheel Disc; Yetter 8-row 3 pt. Rotary Hoe; Innes 835 (red) 6-row center delivery Bean Windrower; Innes 570 4-row Bean Windrower; Top Air Mfg. 750 gal. Tandem Trailer Sprayer w/60' boom, PTO pump, elec. cab controls; Brillion 9-shank Soil Saver Trailer Type, w/Buster Bar Leveler; Haulette 28' Tri-Axle Imp. Trailer; Parker 350 bu. Gravity Box on 10-ton gear; McCurdy 160 bu. Gravity Box on gear **Many Items from Around the Farm:** 2 Jewelry Wagons full of Farm Primitives, Antiques and Collectables! **Consigned by Neighbor:** IH 720 6x16" Auto Spring Reset Plow; MF 43 Soy/Grain Drill 22 Hoe, dbl. disc openers; Wilbeck 11 shank Trailer Chisel Plow

Terms: Cash or Good Check Day of Sale

Ron Krauss, Owner
For information, call 517-695-9074

SYKORA AUCTION SERVICE, INC.
Jim & Scott Sykora, Auctioneers, Clare, Michigan
517/386-2252 or 9694 ~ Fax 517/386-2246

09 Help Wanted

INDIVIDUALS for custom harvesting operation. Texas through Montana, 1997 season. Must be clean, honest, hard working with farm background. 1-402-364-2468.

11 Agricultural Services

FARM DRAINAGE AND EARTH WORK:
Laser Construction.
Surface drainage, farm lagoons, water retention basins, building pads, access roads, driveways.
Todd Haynes
Carson City
517-584-3265

12 Business & Legal Services

METAL ROOF COATINGS: Heavy fibered or white roof coatings. **H.J. Butzin.** Call anytime, early or late. 1-517-777-9815.

12 Business & Legal Services

EXPERIENCED Michigan agribusiness attorneys with farm backgrounds. Knowledge and experience in all farm areas; restructure, stray voltage, bankruptcy, estate planning. **EAST SIDE:** Thomas J. Budzynski, 43777 Grosebeck Highway, Mt. Clemens, Michigan. 48036. 1-810-463-5253. **WEST SIDE:** Robert A. Staniha, 40 West Sheridan, Fremont, Michigan, 49412. 1-616-924-3760.

HERITAGE
BUILDING SYSTEMS
800-643-5555
BUILD IT YOURSELF AND SAVE

30 x 40 x 10	$4,189	50 x 75 x 12	$9,979
40 x 60 x 12	$7,487	60 x 90 x 12	$13,198
60 x 60 x 12	$9,380	120 x 200 x 14-m2	$47,913

Commercial steel buildings featuring easy bolt up assembly from America's largest distributor. We have over 10,000 standard sizes of shop, farm, industrial, commercial and mini-warehouse buildings. All are complete with engineer stamped permit drawings, 20 year roof and wall rust warranty. Call us for a free information package and a quote on our component parts.

Mini Warehouse Sale
$9,999
20' x 120' with 24 units complete with partitions
http://metalbldg.cei.net

FARMERS
Livestock & commodity prices too low?
- Cash flow too slow?
- Mortgage payments and bills overwhelming?
- Want someone who understands lenders?
- Want someone to talk to your lender?
- Do you understand your options with P.A. 116?
- Do you need to restructure your farming business?
- Do you need to consider changing your vacation?

We can, we have and we do all of the above.
Let us help turn your life around.
Call 1-800-455-9137

14 Real Estate

120 ACRE FARM: Newago County. 4-bedroom home with pool. Excellent soil, 95% tillable. Buildings in A-1 condition! $169,900. Call **Mark Wentland,**
BIG RAPIDS REALTY
1-616-796-7856

S.W. MICH: 80 acre irrigated wholesale nursery. Growers of trees, shrubs, and perennials. Complete set up with house, three barns, all machinery equipment, and marketing systems. Great location for thirty years. 1.35 million dollars, terms available to qualified buyers.
Heartland Management Services.
1-616-637-2625

14 Real Estate

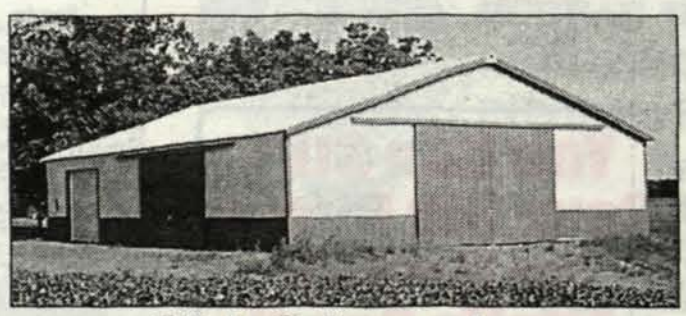
GORGEOUS REMODELED FARM HOUSE with acreage. Just outside Big Rapids. Fireplace, outbuildings, much more. $189,900.
Call **Mark Wentland,**
BIG RAPIDS REALTY
1-616-796-7856

15 Real Estate Wanted

BUYING FARM LAND and recreational property throughout northwest Michigan. Call **Ron McGregor** at 1-616-943-7709 for details.

FARMS AND LAND throughout Michigan, agricultural and recreational. Large parcels preferred. We have buyers!
Call **Dan VanValkenburg,** Rural Property Specialist.
Faust Real Estate
Adrian
1-517-263-8666

FACTORY CLEARANCE
INVENTORY MUST BE SOLD!
STEEL BUILDINGS
SUPER HEAVY STEEL
25 X 30 (2 LEFT) 40 X 50 (1 LEFT) 50 X 100 (1 LEFT)
30 X 40 (3 LEFT) 42 X 64 (2 LEFT)
UP TO 40% OFF!!!
20 Year Warranty
Made in USA
United Steel Span, Inc.
800-951-5669
Ask for Regional Manager



Wick Columns Are Guaranteed For 50 Years.

Wick pressure-treated columns are backed for 50 years against decay and insect damage. That gives you an idea of how Wick buildings are made.

They're constructed with roof and wall steel screw-fastened for added strength and structural integrity. And these colored panels are tough, full-hard base steel. That's why we sell Wick buildings.

To learn more about strong Wick buildings, contact us today.

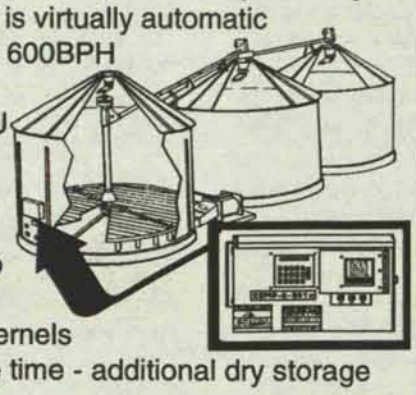
Wick Buildings®

DICK ALWOOD
Wick Buildings Dealer
202 Pearl
Charlotte
MI 48813
Office
(517)
543-0996
Home
(616)
623-8780
Fax
(517)
543-9475

Michigan Farm News Classified

THE SHIVVERS ADVANTAGE

With Each System You Get:
- The most efficient dryer your money can buy
- Precision drying is virtually automatic
- Capacities up to 600BPH 25-15%
- At least 5000 BU wet holding
- 2-4# higher test weight
- Low kernel temp 110°-120°
- Large uniform kernels
- And at the same time - additional dry storage



SHIVVERS

FREY CONSTRUCTION

Lake Odessa, MI 616-374-8027
Wauseon, OH 419-446-2791

15 Real Estate Wanted

WANTED: 80-120 acre farm, Ionia area. Young couple relocating due to off farm employment and urban sprawl pressure at present location. Contact Steve, 1-517-675-5472.

17 Auctions

SYKORA AUCTION SERVICE

Jim & Scott Sykora
Auctioneers
6028 E. Colonville
Clare, Michigan 48617
517/386-2252 or 386-9694
Fax 517/386-2246

19 General

ARTHRITIS: Call 1-888-556-2017 toll free. Ask for a free copy of the "Arthritis Formula". Learn how to treat the condition, not just the pain.

FISH FOR STOCKING: Giant Hybrid Bluegills, Walleye, Rainbow Trout. Largemouth, Smallmouth Bass, Catfish, Fathead Minnows, Perch.
Laggis' Fish Farm
09888 35th Street
Gobles, MI 49055
Days, 1-616-628-2056
Evenings, 1-616-624-6215.

HUNTING LEASE WANTED: Courteous, mature hunters with experience in leasing Southern Michigan farm land seek property for 1997-1998 hunting season. Will pay you to help control nuisance deer. References available. 1-517-676-0486.

Mineral Owners Gas/Oil: Investor interested in purchasing, producing royalty income for immediate cash. Prefer Antrim gas. Other formations considered. Call Jay, 1-800-968-7645.

19 General

HYDRAULIC CYLINDER and hydraulic pump repair. Seal kits and chrome work, all makes. Strawchoppers balanced and rebuilt.
Venture Tool & Metalizing
Sebewaing, MI
1-517-883-9121

STOCK-UP: Sheepskin mittens, hats, gloves, slippers, woolen garments, yarn. Catalog available!
Bellair's Hillside Farms and The Sheep Shed
8351 Big Lake Road, Clarkston.
1-810-625-2665.
Visa/Master Card

STRAW CHOPPERS: We rebuild and balance. Some exchanges. We stock chopper parts. **ENGINE REBUILDING** our specialty. Auto-Truck-Tractor-Antique-Continental-Kohler-Onan-Wisconsin engine dealer. 70 years of service!
HART'S AUTO PARTS
Cecil, OHIO
1-419-399-4777

19 General

PROFESSIONAL CATTLE HOOF TRIMMING. Statewide! Over 16 years experience. Prices start at $8. Call,
Norman Beale
1-616-775-0488

SAVE 75% ON WORK CLOTHES! Good, clean, recycled in very best quality. Money back guarantee. Free brochure
Suntex Recycling
Toll Free
1-800-909-9025
24 hours-7 days.

TRAILERS: Complete line of Avenger enclosed cargo units available at low prices. Preseason specials on snowmobile and ATV models.
TAG-A-LONG TRAILERS
1-800-515-6846
517-659-3478
Munger, Michigan

20 Wanted To Buy

WANTED TO BUY: Standing timber.
1-313-429-4322.

Lease financing for equipment vehicles & buildings

- 100% tax deductible
- fixed payments
- min advance payment

TELMARK INC.
www.telmark.com
800-451-3322

20 Wanted To Buy

CASH, NOT OPINION for quality tractors, combines, heads and round balers. 1-517-439-2440 evenings.

STANDING TIMBER AND VENEER:
Black River Hardwoods, Inc.
1-810-657-9151,days.
Call 1-517-845-3345 evenings.

WANTED STANDING TIMBER: Buyers of timber of all types. Cash in advance! 1-517-875-4565, ask for Tim.
Maple Rapids Lumber Mill, Inc.
St. Johns, MI

We Buy Damaged Grain

Buyer and seller of:
- Cash grains
- Feed ingredients
- Milling quality grains

Licensed and bonded with over 20 years of experience

800-878-8900
Michigan Agricultural Commodities, Inc.
445 North Canal
Lansing, MI 48917
Open 7 a.m. – 5:30 p.m.
Mon.-Fri.

WANTED: Old motorcycles, snowmobile and off road vehicles. 1965 and older. Call JD at1-517-676-0583.

WANTED: Used irrigation equipment, aluminum tubing, PTO pumps, hard hose and soft hose travelers. Buy, Sell or Trade! Call
Rain Control
1-800-339-9350

WANTED: Used rake, side delivery, reasonably priced. 1-810-735-4908.

23 Financing

Loans For Homeowners

Regardless of credit history, call for same-day approval.

CASH FAST!

CommonPoint Mortgage

1-800-968-2221

23 Financing

PROBLEMS WITH YOUR LAND CONTRACT? Late payments? Back taxes? Property damage? 9 of 10 qualify for purchase. We can help.
1st NATIONAL
1-800-879-2324.

Call For Classifieds
1-800-968-3129

MICHIGAN FARM NEWS

Michigan Farm News has joined **USAgnet**, your one-stop Internet address showcasing ag classifieds!

Your classified line ads in ***Michigan Farm News*** can now appear on the Internet!

Ask our classified personnel for more information or visit our site at http://www.usagnet.com

Deadline for next issue is Noon, April 7, 1997

Call1-800-968-3129 to Place Your Classified Ad Today!

VISA MasterCard

or use the coupon below and mail or fax your classified ad to Michigan Farm News

Buy Line/Daily News
P.O. Box 6, Stanton, MI 48888

FAX:
1-517-831-5063

All classified ads must be pre-paid by check or VISA/MasterCard

Classified Ad Codes

1. Farm Machinery	10. Work Wanted	20. Wanted To Buy
2. Livestock Equipment	11. Agricultural Services	21. Special Events
3. Farm Commodities	12. Business Services	22. Recreation
4. Seeds	13. Business Opportunities	23. Financing
5. Livestock	14. Real Estate	24. Investors Wanted.
6. Poultry	15. Real Estate Wanted	25. Buildings
7. Dogs and Puppies	16. Estate Sales	26. Lawn And Garden
8. Ponies/Horses	17. Auctions	27. Announcements
9. Help Wanted	18. Antiques/Collectibles	28. To Give Away
	19. General	29. Vehicles

Name_____ Phone ( )_____ _____

Address_____

City_____ State_____ Zip_____

Classified Ad Code Requested_____ Number of Issues_____

Desired Insertion Date(s):_____

Method of Payment

Check $_____(payable to *Michigan Farm News* Classified)

Visa Card Number_____ Exp. Date_____

Master Card Number_____ Exp. Date_____

Classified Rates - $8 for up to 24 words - 30 cents each additional word

Write your ad here, including phone number and area code

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36

Circulation over 46,000 In State of Michigan.

News for Farmowners from Farm Bureau Insurance

Why not the best insurance for your farm?

Farm Bureau Mutual adds 21 coverage improvements

Michigan's best selling farm protection program, the Farmowners policy from Farm Bureau Mutual Insurance Company of Michigan, has upgraded its coverages 21 ways.

This is one of the biggest overall coverage improvements in the policy's history, giving Michigan farmers more thorough protection than ever before.

The 21 improvements range from expanded coverage for newly acquired farm machinery and livestock to emergency road service for farm machinery and twice as much coverage as before for debris removal.

Farm Bureau Mutual has long been Michigan's leading farm insurer, dating back to 1960 when it introduced the first Farmowners policy in the nation.

The policy offers Michigan farmers customized protection, fast claims service, and agents who know and understand the needs of today's farmer. It's the kind of service you would expect from the only insurance company in Michigan owned and controlled by Michigan farmers.

As Michigan's number one farm insurer, Farm Bureau Mutual has a goal: to protect even more quality farm operations in 1997.

Call your Farm Bureau Insurance agent today to find out more about Michigan's best farm insurance protection. When you work hard to run a quality farm operation, make sure you protect it with quality coverage … the Farmowners policy from Farm Bureau Mutual.

Career opportunities

Do you know someone who has an outgoing personality and a strong desire to succeed?

Your local Farm Bureau Insurance agency manager may be looking for a career-minded person in your area.

Contact your local agency manager to learn more about a career as an agent with Farm Bureau Insurance.

Will your farm stay in the family after your death?

What will happen to your farm or business after you're gone? Will it have to be sold to pay taxes and bills? Will it stay in the family?

You can make sure your farm or business continues into the next generation with an estate plan, one of the most important — and often most neglected — parts of any family business.

"If you've worked all your life to build your farm or business, you want to make sure it stays intact and in the family after your death," say Farm Bureau Insurance estate planning specialists. "Nothing will accomplish this as effectively as an estate plan."

An estate plan puts everything in order and on paper, making sure your wishes for your farm or business are carried out. Life insurance is an important part of an estate plan, because it guarantees that your family will have the money needed to pay off estate taxes and bills and keep things going.

Every year, many Michigan farm families are forced to sell the family farm because they had no estate plans.

A farm is a legacy and Farm Bureau Insurance can show you how to pass it on. You owe it to yourself and your family to begin your estate planning now.

Farm Bureau Insurance, a statewide leader in farm estate planning, has been working with Michigan farm families for nearly 50 years.

Protect yourself in the sun

Almost all of the more than 500,000 cases of skin cancer in the U.S. each year are sun-related. The American Cancer Society offers this advice for the times when you'll be out in the sun:

- Try to avoid sun exposure between 10 a.m. and 3 p.m.
- Wear cool and loose-fitting clothing to cover as much of your skin as possible. Wear a wide-brimmed hat, too.
- Apply a sun screen with a sun protection factor (SPF) of at least 15 to exposed areas.
- Remember that you're not fully protected in the shade. Rays bound from all directions—sand, water, and patio floors.
- Don't count on being safe on a cloudy day or under water. The sun's burning power penetrates clouds, and the rays can up to three feet below the surface of the water.
- Avoid sun reflectors, sun lamps, and tanning parlors.
- Request skin exams as part of your regular checkups, and self-examine your skin regularly.

Prevent skid-steer loader accidents

Skid-steer loaders are particularly useful to many farmers because of their small size and exceptional maneuverability. But their buckets and lift arms have been known to cause serious injuries and death. Here are recommendations to help prevent skid steer loader accidents:

- Follow the manufacturer's warnings and instructions for safe mounting and dismounting. Mount the loader only when the lift arms and bucket are flat on the ground. And before leaving the loader seat, remember to lower the lift arms and bucket to the ground; turn the engine off; and engage the parking brake.
- Use the controls from the operator's position.
- Do not use controls as grab handles.
- Inspect control interlocks, safety belts, safety bars, ROPS, and side screens. Maintain them properly, and never modify or bypass them.
- Do not perform maintenance or service under a raised lift arm or bucket unless an approved lift arm support is in place. When an operator cannot engage lift arm supports directly from the operator's seat, a second person should engage them—and should be sure to stay clear of the raised lift arms and bucket while doing so.
- Make sure all operators read and understand the operating and service procedures specified in the manual and on the machine's safety signs.

Farm Bureau Insurance honors scholar-athletes

A record number of outstanding high school seniors in Michigan — nearly 3,000 — applied for 1996-97 Scholar-Athlete Awards, sponsored by Farm Bureau Insurance.

The Michigan High School Athletic Association, which administers the scholarship program, then assembled a committee of educators from around the state to review the applications and select the 24 scholarship recipients.

This year's winners of $1,000 scholarships from Farm Bureau Insurance are …

Fall sports

Jessica Jenkins, Livonia Churchill, girls basketball
Nathan Hoffman, Allegan, boys cross country
Marjorie Kathryn Brooks, Westland John Glenn, girls cross country
Jonathan Leigh West, Warren Lincoln, football
Jason Hartman, Wyoming Park, boys golf
Jason Coplen, Warren Macomb Christian, boys soccer
Katherine Kowalski, Troy, girls swimming and diving
Amy Eleanor LaGuire, St. Johns, girls tennis

Winter sports

Mark Edward Swart, Holland, boys basketball
Melissa Charnesky, Rochester, girls competitive cheer
Katherine Fix, Grand Rapids West Catholic, girls gymnastics
Brian Crawford, Clio, ice hockey
Brian Sanford Matchett, Elk Rapids, boys skiing
Susan Corbin, Saginaw Heritage, girls skiing
Jeffrey Phillip Patton, Saginaw Heritage, boys swimming and diving
Kerri Wendling, New Lothrop, girls volleyball
Edward Ball, Grosse Point North, wrestling

Spring sports

Michael Newsted, Blissfield, baseball
Kari Lynne Prochazka, Flushing, girls golf
Nikki Johnson, Lansing Catholic Central, girls soccer
Kim Grotenhuis, Hamilton, softball
Edward Chung, Okemos, boys tennis
Adam Homolka, New Buffalo, boys track
Stephanie Jo Barker, Traverse City, girls track

We would like to hear from you.

Please let us know if you'd like information about:

- ☐ A Free Insurance Review
- ☐ Passing On Your Farm
- ☐ Farmowners Insurance
- ☐ Life Insurance
- ☐ Annuities
- ☐ Our video *Farm Safety: The People Factor*
- ☐ Other _____

You may also want more information about:

- ☐ Workers Disability Compensation Insurance
- ☐ RCAP — The Regulatory Compliance Assistance Program
- ☐ Long-Term Care Protection
- ☐ Disability Income Protection
- ☐ Multi-Peril Crop Insurance
- ☐ Health Insurance from Blue Cross/Blue Shield

Free for you:

- ☐ *Wood Heat: The Safe Way*

Name _____

Address _____

City/Zip _____

Mail to:
Farm Bureau Insurance
Communications Department
Post Office Box 30400
Lansing, Michigan 48909-7900

Fax to:
517-323-6615