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 protection group has just issued a report that warned that 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 Profits. It outlined strategies for getting involved in pork production and better utilize the corn production excess in the state.

In its report, America's Best Farmland Needlessly Destroyed by Urban Development, the American Farmland Trust reports that 71 percent of the nation's farmland is being destroyed every year by development. The report states that if current trends continue, 100 million acres of high-quality farmland will be lost by the year 2020. The report also notes that the loss of farmland is not just a regional problem, but a national one. It estimates that if current trends continue, the nation will be short 150 million acres of farmland by the year 2030.

The report suggests that federal, state, and local policymakers take action to stop the destruction of farmland. It calls for a national policy that would protect farmland from development and provide incentives for farmers to conserve their land. The report also suggests that a national farmland protection program be established to ensure that farmland is protected for future generations.

The American Farmland Trust report also highlights the importance of farmland for food security and environmental protection. It notes that farmland is a critical resource for producing the food we need to feed ourselves and our families. It also emphasizes the importance of farmland in protecting the environment, as it helps to regulate the climate, prevent soil erosion, and provide habitat for wildlife.

The report concludes with a call to action for policymakers to take steps to protect farmland and ensure that it is used for agricultural production rather than development. It urges policymakers to support programs that provide incentives for farmers to conserve their land and to ensure that farmland is protected for future generations.
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, agricultural people, agricultural communicators, teachers or individuals interested in the food and fiber industry should participate. Should you attempt if you think young people should know where their food comes from, you're curious about new ways shown 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 and involve people in your county activities, finding people to make a difference.
• Innovative ways to sell the story of agriculture.

For several weeks, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763-4511.

MDA toxicologist to help Ukrainians set up pesticide registration program

D r. David H. 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 protections.

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 expected to be interested in practical information on pesticides and pest control. The EPA has provided $20,000 to help the Ukrainians improve their pesticide registration program.

MADA toxicologist to help Ukrainians set up pesticide registration program

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 Poisson (fourth from left), dean of the College of Agriculture and Natural Resources. The awards are given to Deanna Stamp, of Dale Farm Markets, for her dairy industry leadership and her advisory service to MSU, Florence and Herb Reedly, of Belleville, for their lifelong natural resources work and community contributions in Arenastown, and Gordon LaFontaine (for 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.

In the past, antlers, or "savages," were removed when a buck was sold. However, this is no longer the situation. Nowadays, antlers are left on the buck and the buck can be sold with antlers.

The Reileys are long-time Farm Bureau members and have been involved in raising livestock and dairy cattle. They believe in supporting organizations that promote the dairy industry and its benefits.

The Upper Peninsula Herdsmen Breeders Association (U.P. HBA) has scheduled its second "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 areas to 550 bulls and 200 females, and open, cataloged for the sale, which begins at 1 p.m. (EST) at the U.P. Beef Expo grounds.

Our Expo Sales have continued to fill the demand for top-quality breeding stock. By going to the sale, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763 4511.

Distinguished Service to Ag honorees announced

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, agricultural people, agricultural communicators, teachers or individuals interested in the food and fiber industry should participate. Should you attempt if you think young people should know where their food comes from, you’re curious about new ways shown 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 and involve people in your county activities, finding people to make a difference.
• Innovative ways to sell the story of agriculture.

For several weeks, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763 4511.

Distinguished Service to Ag honorees announced

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, agricultural people, agricultural communicators, teachers or individuals interested in the food and fiber industry should participate. Should you attempt if you think young people should know where their food comes from, you’re curious about new ways shown 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 and involve people in your county activities, finding people to make a difference.
• Innovative ways to sell the story of agriculture.

For several weeks, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763 4511.

Distinguished Service to Ag honorees announced

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, agricultural people, agricultural communicators, teachers or individuals interested in the food and fiber industry should participate. Should you attempt if you think young people should know where their food comes from, you’re curious about new ways shown 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 and involve people in your county activities, finding people to make a difference.
• Innovative ways to sell the story of agriculture.

For several weeks, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763 4511.

Distinguished Service to Ag honorees announced

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, agricultural people, agricultural communicators, teachers or individuals interested in the food and fiber industry should participate. Should you attempt if you think young people should know where their food comes from, you’re curious about new ways shown 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 and involve people in your county activities, finding people to make a difference.
• Innovative ways to sell the story of agriculture.

For several weeks, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763 4511.

Distinguished Service to Ag honorees announced

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, agricultural people, agricultural communicators, teachers or individuals interested in the food and fiber industry should participate. Should you attempt if you think young people should know where their food comes from, you’re curious about new ways shown 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 and involve people in your county activities, finding people to make a difference.
• Innovative ways to sell the story of agriculture.

For several weeks, we are able to offer certain top genetics with having to travel great distances.

The sale was organized by the U.P. Farm Bureau with a commitment to providing profitable breeding stock to the area’s farmers. All bulls will undergo a breeding soundness exam so buyers can buy with confidence.

For more details about the sale, contact Merle Atkins at 6335 Nokomis Rd, Sault Ste. Marie, MI 49783, phone (906) 633-7606 or U.P. Farm Bureau secretary Glenn Hansen, Jr., 1, Box 94A, Stephenson, MI 49876, phone (906) 763 4511.
**NATIONAL**

**Balanced budget amendment**

Of late, the U.S. Senate voted down, 66-34, the resolution that would have linked a balanced budget amendment to the Constitution. The measure fell one vote short of the 60 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 is later. Under the proposal, House and Senate would have been required to approve deficit spending or an increase in the pub-

**Fast-track authority**

Sen. Richard Lugar (R-Indiana), chairman, Senate Agriculture Committee, has introduced S.255 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. Sen. S. 255 would require any legislation submitted under fast-track authority to contain only provisions absolutely necessary to implement the trade agreement. Congress could not amend the legislation. The legislation would be subject to the agreement such as labor or environmental provisions which would further negotiations and concessions with the other nation(s). Farm Bureau supports S.255.

**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-1717 sponsored by Rep. Rob Emerson (D-Flint). Both bills were given immediate effect. Senate Bill 1 is a nodal Act of 1997. House Bill-1717 is now Public Act 2 of 1997.

The current state minimum wage is $5.35 per hour. Beginning on January 1, 1998, the minimum wage increases to $5.45 per hour on Sept. 1. The current federal minimum wage is $4.15 which will be effective on Jan. 1, 1996 and increases to $4.55 on May 5, 1997. This means that starting May 1, both the state and federal minimum wage will be the same.

**Drain Code**

The Michigan Drain Code that was approved by the Michigan legislature and signed by the governor on May 4, 1982.

**STATE**

**Diversification from the Michigan Transportation Fund**

H.R. 4177, sponsored by Rep. Thomas Kelly (D), would end all diversions from the Michigan Transportation Fund and transfer all revenues to the state general fund. Currently, state, federal, and local departments charge the MTO over $108 million to cover administrative costs within departments. This is equivalent to 2 cents per gallon of gas tax revenue. IfEnacted, diversions are being deleted from Michigan's roads and bridges to fund administration costs within other state departments in Lansing.

**STATE**

**Feral hogs: New report**

**Continued from page 1**

In order of greatest threat, agricultural regions identified:

1. The defined area of an employer is a person or corporation that employs two or more employees at any one time. An employer meeting this definition will be subject to the new minimum wage. The definition of an employer is included in the Omnibus Public Employee Employment and Retirement Standards Act.

Over time and customary practices are not applicable to agriculture. The laws that do not apply to the following. An employer employed in agriculture is one who is engaged in any branch, which among other things include: the cultivation and vitiage of the soil; the production, culture and distribution of agricultural and horticultural commodities; the raising of live stock, bees, fur-bearing animals, or poultry, and a practice, including forestry or land management, operations, performed by a farmer or on a farm as an incident to or in conjunction with farm operations.

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

**STATE**

**Farm Bill**

Both S.237, signed by the governor on May 4, 1992. The new Act updates some regulations, including prepayment for market, delivery to or from the owner or other person holding livestock as soon as possible after the sale or delivery.

**STATE**

**Transportation trust fund**

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

**Fireman's Rule**

H.R. 312 would be sponsored by Rep. Mike Pence (D-Indiana) and Sen. Michael Bouchard (R-Minnesota).

The Fireman's Rule is based on common law that prohibits a firefighter from facing an enforcement officer from filing a lawsuit for injuries incurred in the normal course of performing their jobs. H.R. 4094 and S. 933 would repeal the Fireman's Rule to allow firefighters or law enforcement officers to file suits when injured in the course of duty. Although the Fireman's Rule is considered to be a protection to firefighters, lawmakers who would 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 was injured directly during the clean up.

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

**STATE**

**Fireman's Rule**

H.R. 312 would be sponsored by Rep. Mike Pence (D-Indiana) and Sen. Michael Bouchard (R-Minnesota).
Little-known program's strategies shed new light on wildlife damage control

A re the bugs in your cellar making an un-gratefully noise? Perhaps you’re a soybean grower discovering deer tracks 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, APHIS state director and wildlife biologist.

“A wildlife control service with an animal-human conflict at two levels, first providing technical assistance then applying direct control methods for people with animal damage problems,” Parr said.

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

“For every tree you plant and have him do the same as he can in order to hold the cost down,” Parr said. The less expensive measures are tried first, such as removing an animal from the area, Parr said. “No funding exists at the state level to cover these costs, so the person who is suffering economic loss has no way to cover the cost of removing the animal.”

Relocating an animal using applied restriction use pesticides is handled by trained APHIS personnel, but the producer can provide shelter for preyed livestock or remove pest perk, such as roof overhangs.

“Traps and humane animal removal are, however, the least expensive method and the producer must understand local laws and obtain the necessary permits. Upon recommendation from the ADC, producers 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 pro-
ducer must be able to prove economic loss or the potential of a health hazard. Secondly, it’s hard to come up with a game regulated non-game species need to be controlled beyond the set hunting season. The focus has been directed by large flocks of Canada geese policies and waterway health create health hazards. The goose also uses corn fields of the crop. Accordin-
g to the USDA’s National Agricultural Statistics Service survey, the value of corn production lost 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 goose that are causing crop losses, and if that happens, it will be the first time,” Parr said. Wisconsin farmers applying restricted use pesticides at $300,000 to $400,000, Parr stresses that the goose hunter will not notice a difference in the number of birds he can hunt.

“‘To help keep it out of comfords, Parr rec-

MICHIGAN FARM NEWS
March 30, 1997

MDA to focus on agricultural tourism

Agricultural tourism, an often-overlooked plus of area convention and visitor’s bureau and different tourism organization planners, can now be recognized for the potential it offers both to 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 econ-
omy, 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 agri-
culture has been and still is the most stable compo-
nent of Michigan’s economy. This partnership will only enhance and highlight Michigan’s diverse agriculture.

Prices inch up slightly, according to Marketbasket Survey

P rices at the nation’s supermarkets inch up over to slightly during the first quarter of 1997, according to a new Market Basket Survey. The latest informal na-
tional survey shows a one cent in increased for grocery items from last year’s fourth quarter.

Americans paid $32.84 for 16 selected items during the first quarter of the year, the second high-
grocery prices ever recorded in 1997. The average price per pound of chicken breast from last quarter’s $2.72 figure follows the 52-cent drop experienced during the fourth-
quarter of 1996. AFBF’s report, paying close the charge through the animal’s thick hide, a strong volt-

Radio Network

Since its beginning in 1971, Michigan Farm Radio Network’s only objective has been to serve Michigan’s farm families. This dedication to serve agriculture is shared by 27 local radio stations in Michigan. Through these stations, Michigan Farm Radio Network provides the latest in market analysis, weather and news to Farm Bureau members daily on the following stations:

<table>
<thead>
<tr>
<th>Station</th>
<th>City</th>
<th>Frequency</th>
<th>Morning Show</th>
<th>Noon Show</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAJB</td>
<td>Adrian</td>
<td>1490</td>
<td>5:45 am</td>
<td>11:05-12:00 pm</td>
</tr>
<tr>
<td>WATZ</td>
<td>Alpena</td>
<td>1450</td>
<td>5:30 am</td>
<td>11:30 am</td>
</tr>
<tr>
<td>WTRK</td>
<td>Ann Arbor</td>
<td>1050</td>
<td>6:05 am</td>
<td>12:00-1:00 pm</td>
</tr>
<tr>
<td>WLEW</td>
<td>Bay City</td>
<td>1240</td>
<td>6:20 am</td>
<td>12:30 am</td>
</tr>
<tr>
<td>WKFJ</td>
<td>Cadillac</td>
<td>1370</td>
<td>5:45 am</td>
<td>11:10 am</td>
</tr>
<tr>
<td>WKYO</td>
<td>Caro</td>
<td>1360</td>
<td>6:15 am</td>
<td>12:10-1:00 pm</td>
</tr>
<tr>
<td>WSTB</td>
<td>Coldwater</td>
<td>1590</td>
<td>5:30 am</td>
<td>12:00 am</td>
</tr>
<tr>
<td>WDOM</td>
<td>Dowagiac</td>
<td>1440</td>
<td>6:05 am</td>
<td>12:15 pm</td>
</tr>
<tr>
<td>WGHN AM</td>
<td>Grand Haven</td>
<td>1370</td>
<td>6:54 am</td>
<td>12:15 pm</td>
</tr>
<tr>
<td>WGHN FM</td>
<td>Grand Haven</td>
<td>921</td>
<td>6:54 am</td>
<td>12:15 pm</td>
</tr>
<tr>
<td>WPBR</td>
<td>Greenwell</td>
<td>1380</td>
<td>7:15 am</td>
<td>12:45 am</td>
</tr>
<tr>
<td>WBCH</td>
<td>Hastings</td>
<td>1220</td>
<td>6:15 am</td>
<td>12:30 pm</td>
</tr>
<tr>
<td>WCSR</td>
<td>Hillsdale</td>
<td>1310</td>
<td>6:15 am</td>
<td>12:30 pm</td>
</tr>
<tr>
<td>WHOL</td>
<td>Holland</td>
<td>1360</td>
<td>7:30 am</td>
<td>12:45 am</td>
</tr>
<tr>
<td>WIGN</td>
<td>Ionia</td>
<td>1430</td>
<td>6:26 am</td>
<td>12:00 pm</td>
</tr>
<tr>
<td>WKZO</td>
<td>Kalamazoo</td>
<td>590</td>
<td>5:00-6:00 am</td>
<td>12:00-1:00 pm</td>
</tr>
<tr>
<td>WOLP FM</td>
<td>Lakeview</td>
<td>1063</td>
<td>6:15 am</td>
<td>12:15 pm</td>
</tr>
<tr>
<td>WOAP</td>
<td>Ocego</td>
<td>1080</td>
<td>7:15 am</td>
<td>12:40 pm</td>
</tr>
<tr>
<td>WHAK</td>
<td>Rogers City</td>
<td>960</td>
<td>6:15 am</td>
<td>12:15 pm</td>
</tr>
<tr>
<td>WMML</td>
<td>St. Louis</td>
<td>1520</td>
<td>6:05 am</td>
<td>12:20 pm</td>
</tr>
<tr>
<td>WSOW</td>
<td>Saginaw</td>
<td>790</td>
<td>5:55 am</td>
<td>11:30-12:30 pm</td>
</tr>
<tr>
<td>WCF conf.</td>
<td>660</td>
<td>7:00 am</td>
<td>12:40 pm</td>
<td></td>
</tr>
<tr>
<td>WKCFC FM</td>
<td>Tawas City</td>
<td>104.7</td>
<td>5:45 am</td>
<td>12:15 pm</td>
</tr>
<tr>
<td>WLKM</td>
<td>Three Rivers</td>
<td>1510</td>
<td>5:45 am</td>
<td>12:15 am</td>
</tr>
<tr>
<td>WTCM</td>
<td>Traverse City</td>
<td>580</td>
<td>5:45 am</td>
<td>11:10 am</td>
</tr>
</tbody>
</table>

Visit our web site at: www.mfrn.com

Cost-sharing program offers funds for food export promotion

U.S. food processors and producers may be able to cut costs and increase exports through the federally funded Branded Program. The Branded Program is a co-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 pro-

Visit the web site at: www.mfrn.com

WWW.MICHIGANFARMNEWS.COM
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 system," explains Dr. Grant, 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."

"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 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 run that holding those three units. 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 $40 hogs," he 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 some goals, some object on making money, you can do it, you can do it in a very cost-effective way," explains National Pork Producers Council's Director of Economics Dr. Steve Meyer, "this is a good deal for them because the money is reliable, you get some part-time employment for either yourself or a hired hand. As more people do that the use of 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 hogs in the 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 in 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 three pigs and we tend to be price takers, and we pass up good pricing opportunities and end up with worse in less of cases."

The example is that you arrange these costs and set a target price that gives a predetermined return to your 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 means 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 pigs, or sell a futures contract—there's a number of ways you can do it. So, the big thing is knowing 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 compare what return on equity different prices mean to you. Find a place where you're comfortable with the risk."

"If you're 20 percent equity you can't stand a 30 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 you are, know where you stand, know what return on equity 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 hogs?

Who is responsible for dead animal disposal?

Do you have to accept all animals, or can you reject those fedeed 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 feeding and handling?

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 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 on the grower?

What happens if the owner or operator rents from the pork production business?

Who provides 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 resources 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 and the Pork Alliance.

"Prowl took care of the lambsquarters and grasses in my corn while also being the most cost-effective."

Dale Warner
Tippecan, Michigan

---

The image contains text discussing the benefits of contracting to feed pigs as a part-time job and the advantages of objective-based pricing in the pork industry. It also includes a list of questions to consider when evaluating a hog finishing contract. The text emphasizes the importance of understanding costs, equity, and risk in determining the best strategy for pork production.
The March 1 monthly Cotton-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 7 percent. Placements in February were up 3 percent and 6 percent, respectively. Marketing days were 99 percent and were 4 percent lower than a year ago.

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. Because we have more data, our analysis will shift from the 7-state to the larger region. The nice feature about the U.S. report is that it 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. Increases in placements were found in the placement weights. Year-to-year increases were seen in the light and heavy weight feedlots, whereas decreases were seen in the medium weight feedlots. Producers are trying to miss the summer months to some degree when prices are expected to be lower.

Lawmakers have beef with anti-meal article

L

C

The National Cattlemen’s Beef Association published recently in the Smithsonian’s publication with the cover feature a photograph of a calf and the headline “Please don’t eat me!” Beside article, entitled “Dead Meat,” is headline type that says, “The hangover on your plate is 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 apologizing that they had done some spin control to the flaws and was a mistake. Ronald C. Walker, publisher of Smithsonian magazine, wrote a letter of apology to the National Cattlemen’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 Smithsonian name on the children’s journal. Museum officials, who reviewed some of the text but not the illustrations, said the review process was incomplete. They agreed to develop new procedures for content approval.

USDA to approve yogurt as meat substitute

T

The U.S. Department of Agriculture 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. This change should allow some schools to substitute cheese, meats, eggs and peanut butter for meat.

Yogurt is low in fat and will offer a needed alternative for children who have no place in their diet meat, said Mary Ann Kelle, USDA’s acting undersecretary for food, nutrition and consumer services. The National Cattlemen’s Beef Association objects to the new rule, arguing that there are already enough meat substitutes in school lunches. Under the new USDA rule, these meats are strongly flavored and there were objections from some cafeteria lines. USDA did say that allowing yogurt as a meat substitute would have a negligible impact on beef prices. School officials said they expect the change to be a big hit with students, especially 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, Wayne County Director and District Extension Farm Management Agent, Department of Agriculture, Economics, Michigan State University Extension

In many transactions 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. 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 you let it slide. This can be very costly in terms of future income taxes paid.

**Purchased assets**

In the event 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 $10,000 (cost of $6,000) five years ago, then you would have a taxable gain of $4,000. In this example, the tax basis is equal to the purchase price of the asset.

A farm tractor purchased for $100,000 that subsequently claimed $60,000 of depreciation expenses has an 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 of gain that you will pay income taxes on later in the form of a tax liability.

**Trade-in basis**

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

A typical scenario might be the previously mentioned tractor valued at $100,000 cash purchase money, 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 $30,000 then the new tractor's starting tax basis would be only $70,000 ($60,000 plus $10,000) and not $100,000.

**Trade-in assets**

Upon receiving a property transfer or a "gift" your tax basis will be the same as the donor's tax basis plus any capital gain realized. The "gain" 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's ownership was $150,000. Son's new tax basis then is $150,000. The new tractor tax basis was also received through a gift from the father.

It is very important to determine the donor's tax basis upon receiving a tractor or 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 for the property is the Fair Market Value (FMV) or the use specific valuation assigned to the asset as it passed through the decedents estate. Assets which pass through an estate receive a new "stepped up" tax basis. The "stepped up" basis is usually equal to the fair market value of the date of death. This provides a strong incentive to hold low basis property and avoid Estate taxes. The "stepped up" valuation for heirs may be better to sell or gift high basis assets and allow low basis assets to be passed through an estate as 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 $100 per acre or $30,000. 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 "steep up" in tax basis to $300,000. The heirs could then 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 incurring estate taxes--about $100,000 for singles and $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.

All Telmark reps start out in the same place. So we know what it's like to be in your place.

Talk with us about lease financing and you'll come away feeling confident that we understand the realities of farm life. That's because we, too, grew up on farms. Our customers don't utilize us just because of our farm heritage. We've made sure our managers have the best products and the highest level of knowledge available in the agricultural leasing business. Just ask them to explain our fax guaranteed leases and customized payment schedules. In addition, we do more than just lease equipment, we also lease buildings and vehicles.

If you're looking for a financing source that understands the farm industry better, talk with TelMark. And don't be surprised by how much we know about your industry.

**Colin Zehr & Linus Kubacki**
Michigan Farm News
March 30, 1997

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

Michigan leads the nation in tart cherry production. It also leads in many other fruit production areas. Locally, 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 economically workable? These questions should be answere by an ongoing study performed by a team from MSU Extension, faculty from several departments at MSU, and a volunteer group.

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

A tart cherry orchard is the focus of a study looking at different integrated pest management systems. Some of the treatments are current practices, and serve as control plots; some use herbicides as a barrier against 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 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. Developed by Dr. Ted London and visiting scientist Dr. Tingwu Lei, these devices leave the soil structure undisturbed and allow the water to filter down naturally. Any chemical or innate 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 increasin the beneficial insect population.

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

Sufficient data is gathered, and results are to be analyzed, Scott Swanson, 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 range between $150 and $200 per acre. He said the difference was due to varying conditions, such as size of tree, nutrition already present, and varying pest threats.

Edson said that they had not yet run a cost analysis of the alternative plots. He said 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 are concerned with crop 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.

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.

Some cranberry farmers benefit

"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 (NREP), formerly Public Act 222 of 1966.

"It is clear that the entire construction and operational aspects 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
- Pest control and fungicide mixing and loading pads
- detention ponds and related equipment that's designed to collect waste water for recycling and reuse and not allow it to escape to a nearby waterway.
- Irrigation systems that may be exempt from property, sales and use taxes.

Consumer groups oppose inspection fees

USDA to consolidate APHIS field offices

The Agriculture Department is consolidating its Animal and Plant Health Inspection Service field and district 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 Alexandria, Va.; Fort Worth and Brownsville, Texas; Albany, N.Y.; Englewood and Lakewood, Colo.; Sacramento, Calif.; Tampa, Fla.; Anchorage, Md.; Boone, Tenn.; Gulfport, Miss.; and Madison, N.J.

Glickman said the reorganization is part of the Clinton administration's government reorganization 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 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 such a tractor. 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 it's one of the few left in the nation for good. The proposed repeal would likely end many of the tests at the lab and could result in a downward slide. The Nebraska Department of Agriculture is concerned 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 rents about 10 tests per year to keep it in operation. It's state-mandated testing job, the number of labs in the state 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 in a competitive disadvantage with dealers from nearby states.

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

Jim Nagent examines a cherry fruit fly trap.

The alternative orchard floor management system is pictured on the left. A standard system appears at right.
Cooperative agreement set up with Michigan's cooperatives

O

By Perry M. Petersen

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, the Michigan 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 the two to work together in 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 programs to promote rural business and industry, and rural community development loans and grants programs.

Lawmakers denounce further budget cuts

More than 100 members of Congress, including House Agriculture Committee Chair Bob Smith (R-Or.) and ranking Democrat, Charles Stenholm (D-Texas) recently urged House Budget Committee Chairman John Kasich (R-Ohio) 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 $88.6 billion in USDA spending for 1998, up from $75 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 $43 billion deficit in 2002. Faced with a White House demand, the budget office also said the 1998 budget deficit will balloon to $145 billion up from $73 billion from $12 billion this year. House Budget Chairman John Kasich (R-Ohio) said the deficit is "horrible" and called for new budget proposals. The House is considering an alternative.

CBO said the White House's $88.6 billion request "would seriously impair the nation's ability to deal with the enormous economic problems it faces, and would be an irresponsible failure to consider the needs of future generations."
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 StallionExposition and Trade Show.

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

The pavilion contains a 76,000 square-foot exhibit area, an auditorium and an auction area for featured animals. The area 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 governors; the bipartisan efforts of the Michigan Senate and House of Representatives, Michigan agriculture and Michigan State University leaders.

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 can contact their 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 farmers and ranchers that will help them pay 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 waste, 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 $80 million will be allocated later, when individual states’ needs are determined.

Great Lakes State EQIP allocations

Michigan $4,200,000

Wisconsin $4,850,000

Illinois $4,850,000

Ohio $3,050,000

Wisconsin $4,200,000

8th Annual Beef Expo promises to be the biggest ever

The Purebred Council of the Michigan Cattlemen’s Association is proud to host the 8th Annual Beef Expo for the Animal Agriculture Initiative which enables the university to undertake a campus-wide modernization of research, teaching and demonstration facilities to better serve Michigan’s livestock industry.

The Purebred Council of the Michigan Cattlemen’s Association is proud to host the 8th Annual Beef Expo for Agriculture and Livestock Education on April 5, 170.

There are over 270 head of cattle consigned to the nine breed sales that are associated with the Expo. Friday will allow each breed to show off their consignment cattle through shows, parades, and exhibitions and Saturday will follow with the breed sales.

The 8th Annual Beef Expo promises to be the biggest ever.

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 interest 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 ($300 each) is needed to offset legal fees, as well as costs for the feasibility study and the development of a good marketing plan.

Thousand Oilseed Producer’s Cooperative or want information sent to you, please call Jim LeCourc at the MSU Extension project office at (517) 687-4093.

Precision Concrete

BUNKER SILOS

9' or 10' "A" STYLE

12' "A" STYLE

Easly Converts to Center Well

Solid or alat top, 6' x 8' or 10' deep

SCC approved

MANURE STORAGE TANKS

"H" STYLE FEED BUNKS

H" STYLE FEED BUNKS

8' lengths

Beef Cattle

Dairy Cattle

Concrete with wire mesh reinforcing

ADL AG SALES, INC.

PORTLAND, MI

(517) 647-7543 or 1-800-544-5691

EVENINGS:

Terry Grant

(517) 647-4890
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

Why does the bedding plant industry get its roots? Michigan’s bedding plant industry, which grossed $331 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 mark 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 Siles.

Impatiens are the popular bedding plant leaders, grossing $12.6 million in 1995. Petunias are the second choice, grossing $7.3 million, and geraniums grossing $12.6 million in 1995. Petunias are the Tim Stiles.

"They’re shipping; they’re selling; they’re growing," said "I think it’s the expertise that’s here," Siles said. "It also much easier to heat a greenhouse than to cool one. It can grow our plants kind of slow and cool, and that makes them very hearty. It makes them short, it makes them branch well, and it makes the colors bright," he said.

Money makers 
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," Siles said. "The absolute peak workload is in April, because all operations are going on at that time."

Siles says 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," Siles said. In addition to growing bedding plants, many

[continued on page 14]"
Steroid analgesic. 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. About 70 percent of those suffer 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 the medications with butalbital or non-steroidal analgesics. Be careful not to overuse pain medications. This can interfere with your body's natural pain-management systems 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 38 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 and psychologist with PROMINIA Southern Regional Health Systems.

- Among the triggers for migraines are:
  - Concentrated sugars (cakes, cookies, chocolate).
  - Saccharin in diet foods and soft drinks.
  - Dairy products.
  - Fruits (bananas, prunes, plums, oranges, figs, passion fruits, pears, pineapple, most citrus fruits).
  - Fermented or pickled foods (herring, sour cream, yogurt, vinaigre, marinated meats).
  - Meats with nitrites (bologna, pepperoni, salami, pastrami, hot dogs, bacon, sausages, smoked fish, canned beef, canned ham).
  - Wine (except extra, fresh beards, raised coffee, cakes, doughnuts).
  - 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 migraine, Dr. Koenig said. Mild migraines can be treated with over-the-counter pain medications taken at the onset of the headache. Best in a dark room and apply 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 clustures, 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 you cut off your caffeine or cola fix for even as short as one day. In the morning, drink more water and fruit juice — NOT the juice of the dog!

Headache feature throbbing or pounding all over your head often accompanied by nausea or lightheadedness. 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 your 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 your body. Add your point total to 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 "9." If you quit less than one year ago, enter "8." If you smoke less than a pack each day, enter "7." If you smoke more than a pack each day, enter "2." ___ x 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 50s, you would enter "5." 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 concern 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)
   - Did 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 exam 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.

Source: Blodgett Today

---

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

<table>
<thead>
<tr>
<th>Height (in Shoes)</th>
<th>Weight Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ft 0 in</td>
<td>92-119</td>
</tr>
<tr>
<td>4 ft 1 in</td>
<td>94-122</td>
</tr>
<tr>
<td>4 ft 2 in</td>
<td>96-125</td>
</tr>
<tr>
<td>4 ft 3 in</td>
<td>98-128</td>
</tr>
<tr>
<td>4 ft 4 in</td>
<td>100-131</td>
</tr>
<tr>
<td>4 ft 5 in</td>
<td>102-134</td>
</tr>
<tr>
<td>4 ft 6 in</td>
<td>104-137</td>
</tr>
<tr>
<td>4 ft 7 in</td>
<td>106-141</td>
</tr>
<tr>
<td>4 ft 8 in</td>
<td>108-144</td>
</tr>
<tr>
<td>4 ft 9 in</td>
<td>110-147</td>
</tr>
<tr>
<td>4 ft 10 in</td>
<td>112-150</td>
</tr>
<tr>
<td>4 ft 11 in</td>
<td>114-153</td>
</tr>
<tr>
<td>5 ft 0 in</td>
<td>116-156</td>
</tr>
<tr>
<td>5 ft 1 in</td>
<td>118-160</td>
</tr>
<tr>
<td>5 ft 2 in</td>
<td>120-163</td>
</tr>
<tr>
<td>5 ft 3 in</td>
<td>122-166</td>
</tr>
<tr>
<td>5 ft 4 in</td>
<td>124-170</td>
</tr>
<tr>
<td>5 ft 5 in</td>
<td>126-173</td>
</tr>
<tr>
<td>5 ft 6 in</td>
<td>128-176</td>
</tr>
<tr>
<td>5 ft 7 in</td>
<td>130-180</td>
</tr>
<tr>
<td>5 ft 8 in</td>
<td>132-183</td>
</tr>
<tr>
<td>5 ft 9 in</td>
<td>134-186</td>
</tr>
<tr>
<td>5 ft 10 in</td>
<td>136-189</td>
</tr>
<tr>
<td>5 ft 11 in</td>
<td>138-193</td>
</tr>
<tr>
<td>5 ft 12 in</td>
<td>140-197</td>
</tr>
<tr>
<td>6 ft 0 in</td>
<td>142-201</td>
</tr>
<tr>
<td>6 ft 1 in</td>
<td>144-205</td>
</tr>
<tr>
<td>6 ft 2 in</td>
<td>146-209</td>
</tr>
<tr>
<td>6 ft 3 in</td>
<td>148-213</td>
</tr>
<tr>
<td>6 ft 4 in</td>
<td>150-217</td>
</tr>
<tr>
<td>6 ft 5 in</td>
<td>152-221</td>
</tr>
<tr>
<td>6 ft 6 in</td>
<td>154-225</td>
</tr>
<tr>
<td>6 ft 7 in</td>
<td>156-229</td>
</tr>
<tr>
<td>6 ft 8 in</td>
<td>158-233</td>
</tr>
<tr>
<td>6 ft 9 in</td>
<td>160-237</td>
</tr>
<tr>
<td>6 ft 10 in</td>
<td>162-241</td>
</tr>
<tr>
<td>6 ft 11 in</td>
<td>164-245</td>
</tr>
<tr>
<td>6 ft 12 in</td>
<td>166-249</td>
</tr>
</tbody>
</table>

Chart from Primary Care Medicine, J.B. Lippincott Company, Philadelphia
Breeding and testing soybean varieties in Michigan

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 yield 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 Trial I was to compare the effects of a fungicide treatment, ReNewPro, on the yield of soybeans in a no-till production system.

The results are as follows:

<table>
<thead>
<tr>
<th>Variety</th>
<th>Plant Pop.</th>
<th>Yield/Ac.</th>
<th>Value/Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReNewPro</td>
<td>208,353</td>
<td>22.9</td>
<td>$315.00</td>
</tr>
<tr>
<td>Control</td>
<td>204,838</td>
<td>23.9</td>
<td>$315.00</td>
</tr>
</tbody>
</table>

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

Yield losses were not affected by the 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.

**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 - 24% 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 cell lines that showed greater genistein effectiveness than 490 ppm of genistein in its glucoside form 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 glycosides.

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

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 spor-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 plot 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.

<table>
<thead>
<tr>
<th>Varieties</th>
<th>No-till</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Protein</td>
<td>% Oil</td>
</tr>
<tr>
<td>Asgrow A2242</td>
<td>33.4</td>
<td>17.4</td>
</tr>
<tr>
<td>Asgrow A2506</td>
<td>35.0</td>
<td>17.0</td>
</tr>
<tr>
<td>Burtislon</td>
<td>37.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Dekalb C2232</td>
<td>35.3</td>
<td>17.9</td>
</tr>
<tr>
<td>Great Lakes 2415</td>
<td>35.5</td>
<td>18.1</td>
</tr>
<tr>
<td>Gutwien 7242</td>
<td>34.7</td>
<td>18.2</td>
</tr>
<tr>
<td>Hardin 91</td>
<td>34.1</td>
<td>18.2</td>
</tr>
<tr>
<td>NK 19-90</td>
<td>34.0</td>
<td>17.7</td>
</tr>
<tr>
<td>NK x24-92</td>
<td>34.9</td>
<td>17.8</td>
</tr>
<tr>
<td>Parker</td>
<td>34.3</td>
<td>18.4</td>
</tr>
<tr>
<td>Pinquick 9242</td>
<td>34.3</td>
<td>17.3</td>
</tr>
<tr>
<td>Resink</td>
<td>35.5</td>
<td>17.1</td>
</tr>
<tr>
<td>Sturdy</td>
<td>35.9</td>
<td>17.3</td>
</tr>
<tr>
<td>TerraTS253</td>
<td>34.8</td>
<td>17.7</td>
</tr>
<tr>
<td>AVERAGES</td>
<td>35.0</td>
<td>17.6</td>
</tr>
</tbody>
</table>

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 wall crystals 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 oxalate decarboxylase (ODC) that converts oxalic acid to hydrogen peroxide and carbon dioxide.

The strategy is to isolate the oxalate 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 OAD 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-CoA 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 being developed 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
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 expected 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.

On-farm testing of WeedSIM/GWM weed management program

Dr. Scott Swinton
Department of Agricultural Economics
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, improvements of farmers, scouts and technicians, profitability and market potential.

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.

On-farm testing of WeedSIM/GWM weed management program

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

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 trials, 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.

1996 Research Results

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.

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

Dr. Haddish Mekaleberhan
Department of Entomology
Michigan State University

The research objective of this project is to screen and evaluate Michigan-grown cultivars for soybean cyst nematode tolerance. The basis for the 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 stand 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. Safran
Department of Botany and Plant Pathology
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.

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 protein 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 2.5% of body weight per day using 3 feedings per day.

Phase one of this project is now underway.
Cultural tactics for management of the soybean cyst nematode in Michigan

Dr. F.W. Warner
Dr. J.P. Davenport
Dr. G.W. Bird
Department of Entomology and Plant Pathology
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.

### Varieties Tried
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 five replications on June 25, 1996. The weed control program consisted of 2 ¼ pts/ac. of Broudnicro + Diuron in a post treatment of Basagran and Blazer at 2 pts and 1 pt/ac. respectively, plus 1 pt/ac. of crop-oil concentrate. The plot was har- vested on October 31, 1996.

Yields were extremely poor; however, the highest yielding varieties were Jack, Pioneer 9234 and Williams 81. Jack and Northrup King's I8-11 carry the highest yielding varieties were grown. The lowest SCN population densities harvested 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 6 bu/ac. rendering the data of no value.
   - 2. **Monroe County Plot (Maybee)**
     - The rotational trial was conducted 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 + 10%Mct. of Zinc sulfate
       - Alfalfa + 25%Mct. of Zinc sulfate
       - Black Lentil

   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 or treatments applied. The alfalfa and lentils did not survive the growing season.

### 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 Broudnicro + Diuron in a preemerge and a post treatment of Basagran and Blazer at 2 pts and 1 pt/ac. respectively, plus 1 pt/ac. of crop-oil concentrate. The plot was h攻ested on October 29, 1996. The yields at this site were very poor and no yields were significantly different from the varieties.

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

### Used Herbicides
- 1.5 to 3.1 were planted with four replications, 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 'B' tank and 5.0OZ./1000 row ft. in 23 gallons of water of Fierce 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 Fierce 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, soybean loam and sandy clay loam soil types. Microplots were used for a study of the effect of soil types on SCN.

In 1996, the microplots were divided into five groups based on the number 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 nematode.

**Nematocide/Management Study**
- The primary objective of this field study was to examine the efficacy of Temik 15G and Furanad 4F for SCN control.

**Induced resistance in soybean to white mold**

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

The objective of this study is to determine the effect of benazolin (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, Coors 70 and NK 19-90. These cultivars range in disease reaction to white mold from highly susceptible (Williams 82) to highly tolerant (NK 19-90).

All of the spray treatments were applied at the 2nd - 3rd trifoliate leaf stage or 8 - 9 days before flowering, depending upon the cultivar. Three replicate 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

<table>
<thead>
<tr>
<th>TREATMENT</th>
<th>APPLICATION RATE</th>
<th>YIELD BU/AC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTH 2 applications</td>
<td>5# a.l/ac.</td>
<td>43.56 54.26</td>
</tr>
<tr>
<td>BTH 4 applications</td>
<td>5# a.l/ac.</td>
<td>47.64 53.09</td>
</tr>
<tr>
<td>Corn</td>
<td>1.4# + 25% NIB</td>
<td>44.41 47.11</td>
</tr>
<tr>
<td>BTH &amp; Corn</td>
<td>1.5# + 25% NIB/ac.</td>
<td>45.65 47.36</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>43.52 51.17</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>37.02 48.04</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>42.21 51.45</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>39.67 53.00</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>42.97 53.18</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>41.30 52.09</td>
</tr>
<tr>
<td>BTH &amp; 28% N</td>
<td>1.5# + 25% NIB/ac.</td>
<td>37.64 51.49</td>
</tr>
</tbody>
</table>

Plants treated with BTH displayed leaf brownig, 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 many SCN eggs and second stage juveniles.

### Correlation Between BTH and Various Traits

**DSI vs. Yield**
- This negative correlation indicates that the higher the Disease Severity Index (DSI) the lower the yield.

**DSI vs. Flowering Date**
- This positive correlation indicates that the later the flowering or maturity, the greater the disease levels.

**DSI vs. Plant Height**
- This negative correlation indicates that a greater disease level occurs with greater lodging and taller plants.

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

---

For additional information, write to: MSPC, P.O. Box 287, Frankenmuth, MI 48734

Printed as a supplement to Michigan Farm News.
I love cheese, especially on a sandwich. What are the lowest fat varieties?

Cottage cheese is quite low in fat and is often served with 1 percent milk, which has 1 gram of fat per ounce — but it’s not likely you’d put it 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, which is 8 grams of fat and 105.6 calories per ounce.

An even better option would be choosing a low-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 cream cheeses have about 75 calories and 6.5-6.8 grams of fat; provolone, Blue, Gouda and Edam have about 100 calories and 7.5-8.5 grams of fat; Muenster, brick, Monterey and Swiss have about 105 calories and 8.5-9.5 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 type of cheese on the label. But remember, pay close attention to calorie intake as well. If that’s how you want to “spend” your allotment of cheese, then go for it. But be aware of your total fat intake for the day.

For more information on fat and calorie content of different cheeses, you can find the fat and calorie content of any type of cheese on the label. But remember, pay close attention to calorie intake as well. If that’s how you want to “spend” your allotment of cheese, then go for it. But be aware of your total fat intake for the day.
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 50 inches in the Marquette area (at the middle of March, the seasonal snow total at Marquette was nearly seven inches shy of the all-time record for seasonal snowfall, 251 inches, which ironically was set last winter). New NOAA long term 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 the 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 southern counties of Lower Michigan.

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 on MLE's Board of Directors. Reelected to a three-year term to the Board of Directors were Ben Hanewald from Stockbridge, and Ron Stuecky from Archbold, Ohio. Hanewald is very active within the sheep industry and is a director for the Southeast Michigan Sheep Producers Association. Stuecky 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 Beekmantown will 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 Bonnbaugh 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 from Michigan State University (MSU) spoke about changing consumer trends and how they relate to the livestock industry. Bob Depue, 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 Leighfeld, marketing manager for Premium Beeters, Inc., shared his views pertaining to the feedlot sector of the food chain. The panel concluded with Harvey Mitchell, who spoke about the seedstock and background perspective and where he sees the future of the livestock industry. Mitchell is the farm manager of Anderson Circle Farm in Harmondurg, 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 7 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 to auctioneer and entertainer, Leroy Van Dyke. The book was purchased by Mercy Ay for $1,000 for Senior Sales Representative Glenn Elliot of Kameawood. Elliot donated the book back to MLE to display at the main office in Muskegon. Proceeds of the book will go toward the MLE scholarship fund.

The evening speaker, Barry 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 dairy farmer members. This cash allocation represents 30 percent of the $6.3 million earnings generated by the cooperative in fiscal year 1995-96. 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 at a "1260" check from fiscal year 1996. Last August over $6 million were returned to members through revolving of 1981 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."

Excess stock a windfall for FLCA members

From Michigan's Heartland, James Bremer, shares Lehman's enthusiasm, adding, "Another advantage to our financial strength is that we 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 48 counties in the southeastern lower peninsula. Products such as crop, life and disability insurance, and financial management services are also 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

D if you ever wonder why you can’t eat a cow! Why can cows 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. Cows have basic complex carbohydrates and lignin, starch is also carbohydrates but in a much simpler form. The complex carbohydrates in fiber include cellulose, hemicellulose and pectin.

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 at any concentration because NDF includes the hemicellulose portion too. So which one do you use when you’re balancing rations? NDF should be used for feeding balance and DH needs, whereas ADF is often used to estimate fiber requirements of a dairy cow at ADF.

In other words, when your feed test comes back, pay attention to your NDF, not ADF.

Dairy cows have a higher percentage of fiber for NDF. In a TMR for a high producing cow we generally balance for about 28 percent NDF. Balancing for ADF 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 the cow would not be able to eat enough to meet the limits inside because of the NDF.

The 28 percent NDF recommendation is a guideline, a starting point. Whether or not you balance at higher or lower than 28 percent depends on other factors including particle length, degradability of starch, maturity at harvest, rate of fiber digestion, etc. Levels on intake can be explained every 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 digestible limits how much a cow can eat.

For example, identical high producing cows, Bessy and Flora each had 10% 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 both have more TMR. This time, however, Bessy only has 100 more pounds whereas Flora eats 50 more pounds. Flora eats more because she has some more rumen space. At 6 p.m., Bessy’s NDF (Flora) breaks down faster and passes out of the rumen faster than the 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 are shown in the diagram. In this exercise, maximum digestion of alfalfa NDF occurs by about 40 hours while the 60 hour requirement is for mature bulls.

February milk production steady

Dairy herds in Michigan produced 425 million pounds of milk during February, an increase of 1.25 pounds from a year ago. This was an extra day in February. Production per cow was 1,337 pounds, up 1.25 pounds from February 1995. Production per cow was 1,337 pounds per hundredweight in February 1996, and 1,000 more than last month. Production per cow reached 499 pounds per day, up from 471 pounds a year earlier. The preliminary value of milk sold was $13.20 per hundredweight in February 1996 and 10,000 fewer than last month.

First ever Michigan Dairy Expo to be held

T he Department of Animal Science at Michigan State University and the Michigan Purebred Dairy Carcass Association are proud to sponsor the first Michigan Dairy Expo. milk Expo activity set for May 3-4

The two-day training includes a text book, relaxed printed handouts, a FarmMedic patch, lunch, and refreshments. This training is being held Sunday through Sunday on the farm training sites - all for $35. Retail value of items you are taken to complete the training.

This training is a joint effort between Michigan FarMedic and the Agricultural Safety Program at Michigan State University. The Dairy Expo will include a tour of the farm training sites.

Michigan FarMedic training set for May 3-4
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.

Mike Thornton, a crop protection consultant, says that when most insect-killing agents are being used extensively, the insecticide rotation begins to develop resistance to the killing agent. "Research shows that when the European corn borer emerges from the leaves of the Bt in the laboratory, the insect developed moderate resistance in just eight generations," Diffone says. "Of course, resistance building 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 management."

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 builds 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," Diffone says. "On the other hand, if a larger refuge is planted, it could be sprayed with a standard insecticide to control the corn borer because the insecticide treatements are generally only 70 to 80 percent effective." Diffone says that this resistance management strategy should be taken seriously by all corn growers.

"It is an exciting new tool for producers, but its long-term effectiveness depends on everyone's cooperation in maintaining potential for resistance problems in the future," Diffone says. "Small farmers and home gardeners should make sure that they do not overlap their crops in the field."

Australian researchers plan large-scale cattle cloning

Australian researchers who have achieved the first large-scale cloning of cattle embryos said that their research is based on cloning an animal one to three years ago. Researchers at Melbourne's Monash University developed the process solely for use in agriculture. "The Effort in this area has been ongoing for some time," Diffone says. "The first CD, dealing with Asia, was recently released. CDs covering the rest of the world will be available on the web in the near future. We will have one on Africa on the website sometime this year."

Information can be obtained for areas such as small at one square mile. That could be useful for planning irrigation projects or deciding how large a reservoir should be, according to John Thorpe, spokesperson for the Utah Climate Center.

"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 by the end of the year."

The first CD, dealing with Asia, was recently released. CDs covering the rest of the world will be available on the web in the near future. We will have one on Africa on the website sometime this year. Information can be obtained for areas such as small at one square mile. That could be useful for planning irrigation projects or deciding how large a reservoir should be, according to John Thorpe, spokesperson for the Utah Climate Center.

Australian researchers plan large-scale cattle cloning

Australian researchers who have achieved the first large-scale cloning of cattle embryos said that their research is based on cloning an animal one to three years ago. Researchers at Melbourne's Monash University developed the process solely for use in agriculture. "The Effort in this area has been ongoing for some time," Diffone says. "The first CD, dealing with Asia, was recently released. CDs covering the rest of the world will be available on the web in the near future. We will have one on Africa on the website sometime this year."

Information can be obtained for areas such as small at one square mile. That could be useful for planning irrigation projects or deciding how large a reservoir should be, according to John Thorpe, spokesperson for the Utah Climate Center.

Australian researchers plan large-scale cattle cloning

Australian researchers who have achieved the first large-scale cloning of cattle embryos said that their research is based on cloning an animal one to three years ago. Researchers at Melbourne's Monash University developed the process solely for use in agriculture. "The Effort in this area has been ongoing for some time," Diffone says. "The first CD, dealing with Asia, was recently released. CDs covering the rest of the world will be available on the web in the near future. We will have one on Africa on the website sometime this year."

Information can be obtained for areas such as small at one square mile. That could be useful for planning irrigation projects or deciding how large a reservoir should be, according to John Thorpe, spokesperson for the Utah Climate Center.

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

The 2.1 million farms in the contiguous 48 states averaged an average of 456 acres and produced an average of $7,700 in agricultural products in 1993. But the characteristics of farms vary widely, according to Structural and Climatological Characteristics of U.S. Farms, 18th Annual Family Farm Report, Congress, a new report from USDA's Economic Research Service. The report uses statistics from USDA's 1993 Farm and Income Report Survey. It presents information on structural characteristics of farm operations, farm ownership and use, farm finances, characteristics of farm operators and households' dependence on farming and linkages between farm operators and their communities.

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

The report uses statistics from USDA's 1993 Farm and Income Report Survey. It presents information on structural characteristics of farm operations, farm ownership and use, farm finances, characteristics of farm operators and households' dependence on farming and linkages between farm operators and their communities. The experiment station is committed to help the industry, and the industry has offered its tool to the Experiment Station and to Extension to pay for a conference 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 pathology agents 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. And his team is confident that some new wheat planting and handling practices will be proposed to growers via MSU Extension and publications and the online service, Gray says.

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

He adds that researchagronomists in Canada may have a race-stamp variety in four years and that similar work is being done at Purdue University. "We also need to interact closely with research agro specialists in both Dakotas, Minnesota and Ontario to put together strategies and share information on breeding and variety development so that we can maintain the development of a race-stamp wheat variety," Gray says.

MSU Extension service 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 $15.4 billion in value-added revenue for the state economy," he says. "It is also very valuable to the crop rotation to help break disease and insect cycles and improve soil quality, and wheat outperforms 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 mentioned more than 1,000 member growers who are working with MSU Extension specialists, agents and researchers in a coordinated program aimed at increasing profitability to Michigan wheat production.

Are you using old fashioned marking systems?

Try tram lines and drilled crops.

New method of marking your fields for later application of chemicals.

Tram Lines

Tram Lines don't cost, they save!

No Lapping, No Skipping

Very Little Crop Damage

Precision Accuracy and Reduced Input Costs

Expanding the Window of Application

Reduced Risk of Crop Disease

Contact:
540-373-7578
fax: 540-371-4113

Ramey-Ritt Service Company
PO Box 7208
Fredricksburg, VA 22404-7208
any of our most effective and most promising products and services 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—these effectiveness is due, at least in part, to the fact that they allow the environment’s natural control functions to dominate 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 anticipate to squeeze every possible benefit out of their acres are redeploying one of the oldest ideas in legume production—sowing Rhizobia inoculants.

History lesson

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

The earliest method of inoculation often consisted of simply creating a slurry from the soil surrounding the root system of healthy legume plants. The paste was then applied to a plant seed treatment, supposedly coating the seed with a layer of Rhizobial cell soil. But competition from foreign bacteria, along with local contamination, made these first inoculants only minimally effective. Today’s pea-based inoculants can deliver much higher populations of Rhizobia. HiStick from MicroBio, Ltd., for example, takes purity a step further by using a sterilized pea medium, resulting in a Rhizobium population ranging from 5 to 10 times that of sterile inoculants. Contamination from unfriendly bacteria is virtually eliminated, while storage life is increased over non-sterile and unstable inoculants. A potential sticker formulation helps keep the bacteria on the seed and promotes the Rhizobia from sprouting due to other crop protection products.

One product, multiple benefits

Though originally developed as a yield-enhancing tool, the new federal Farm Bill’s New Federal Inoculation Program can create a multifaceted benefit for inoculation. Greg Varner, Michigan Dry Edible Bean Production and Research Advisory Board, says white protein levels are increased through inoculation, the need for high rates of supplemental nitrogen application is decreased, reducing fertilizer run-off into nearby Lake Huron. “In this area,” he says, “anything we can do to avoid losing our nutriments to runoff helps. By allowing the plants to convert atmospheric nitrogen, inoculants decrease our dependence on high rates of salt-applied nitrogen fertilizers.”

Though the effects on yields will, of course, vary among farms, Varner says data obtained from long-term inoculation trials should continue 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.”

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 Bob- on, Helena Chemical, Manhah, Minn. “It’s just not as easy to build large populations of the bacteria in dry bean fields.”

To encourage 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-inocu- lated plant. In our area, we’re seeing yield increases of up to 200 percent 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 elimi- nate the additional nitrogen. At rates from 30-60 pounds, that’s $7.50 to $10.00 per saved,” Varner says growers shouldn’t rule out inoculants just because they are satisfied with their current level of production, in any situation, there’s room for improvement.

“Glickman stated. “I strongly believe that the needs, the willingness and the motivation must come from local people at the local level” should deter- mine the usefulness and applicability of agricul- tural conservation programs U.S. Agriculture Secretary Dan Glickman said American farmland, the quarterly magazine of national farmland conserva- tion group American Farmland Trust.

In an interview, in which Glickman reviews his conservation goals for the next four years, appears in the magazine’s next issue. ’USDA, we are mov- ing toward an agency based on commodity programsto one based on conservation programs.” In a major shift in the department would consider dropping the Senate Appropriations Committee’s agri- culture subcommittee that the USDA has not responded fast enough to complaints by dairy farmers. Sen. Russell D. Dengl (R-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 hal- market milk prices. He reported Thursday that he has not chosen an alternative. By September, the department projects 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 commit- tee that it is experimenting with a failed ques- tionnaire that asks price information from cheese factories. Specter said the process could be hurried by surveying the plants by telephone; When Glick- man and other department officials appeared to be, Specter demanded a list of telephone numbers and said he and his staff would make the calls themselves. Glickman questioned whether voluntary sur- veys can provide the information needed. He sug- gested legislation making mandatory answers might be required. Specter urged consideration of a base of $15.25 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 1900.

Steve O’Connor, the department’s Situational Awareness Program chief, described the program as an assessment of the risk of potential crop loss, the severity of diseases and pest injury due to other crop protection products. Glickman said that integrating the program has been an agency-based commodity programs into one based on conservation programs. Glickman said that integrating the program has been a federal Farmland Protection Program, which APT strongly proposed, strengthens the free society in state and local farm protection program. Glickman said that integrating the program has been a federal Farmland Protection Program, which APT strongly proposed, strengthens the free society in state and local farm protection program. Glickman said that integrating the program has been a federal Farmland Protection Program, which APT strongly proposed, strengthens the free society in state and local farm protection program. Glickman said that integrating the program has been a federal Farmland Protection Program, which APT strongly proposed, strengthens the free society in state and local farm protection program.
**Pioneer researchers discover new opportunities with genome project**

Resarchers at Pioneer Hi-Bred International, Inc. (NYSE:PHB), are discovering new opportunities for their customers. As at 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 will enable researchers to develop powerful computer programs that are helping researches 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 genes," says McConnell. "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, its expression, 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.

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

---

**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, costing you 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-eating contaminants out of the system, so 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 for 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 couplings and hose tips. Be sure to clean hydraulic connections and wipe off the hose tips before attaching and after detaching.
- Check hydraulic parts for wear in the open or unassembled condition. 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 shows problems that can shorten engine life and reduce resale value. The next time you change the oil, use the oil analyzed.

Maysie Ferguson offers a test kit through the AGCO Parts division. For a few dollars, you get a sample bottle, a data sheet to complete and a mailing tube to send the sample in. If you have a problem, Maysie's Ferguson will investigate and, if necessary, help you get your engine repaired.

--

**Introducing STEEL" herbicide for soybeans.**

It keeps weeds from getting through. Just apply it for maximum early-season control of more than 50 weeds, including yield-robbing species like cocklebur, nigril, ragweed and foxtail. And with its solid residual control, STEEL" frustrates weeds all season long.

For more information call 800-942-0500.
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 injury. One of the main death-provoking methods is not using or using poor hitching methods on tractors. In 1996, 28 incidents of sudden rear rollover of tractors were documented in New York by NIOSH's Occupational Health Nurses. Of those incidents, 18 were sudden rear rollovers, and 10 were sudden front rollovers. These rollovers result in injuries and deaths.

NIOSH warns that improperly attaching a tow chain to the tractor can cause the tractor to suddenly flip backward. These rear rollovers often result in injury or death.

On October 29, 1994, a 15-year-old male succumbed to several head injuries after the tractor he was operating rolled over. The tractor was being used to tow a roll 18 inch diameter tree that was still attached to its roots. The tow chain had been hooked directly around the rear axle. The operator did not have a protective structure (RaPS).

Between April 1991 and June 1996, 28 incidents of sudden rear rollovers of tractors were documented in New York by NIOSH's Occupational Health Nurses. These incidents caused a total of 18 fatalities and 10 injuries. The rear rollovers resulted in injuries and deaths.

NIOSH recommends the following safety measures:

- Use farm tractors equipped with RaPS, 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.
- Use a two or three-point hitch instead of a single-point hitch instead of the drawbar of the tractor.
- If the load attaches by a single point, attach it to the RaPS bracket.
- Ensure that the 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 fields. Some states, like Arkansas, extend opportunities for custom applicators to trained, skilled workers in other states, including New York.

According to Susan Brocksmith, Agribusiness department chair at Vincennes University in Vincennes, Ind., there are currently more custom applicators in the Midwest than ever before. Brocksmith says custom application 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 Brocksmith.

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) 483-9785.

Scholarships available from Zeneca Ag Products

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 Rockwell City, Iowa
- 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 Decatur, Minn.
- State Fair Community College in Sedalia, Mo.
- Vincennes University in Vincennes, Ind.

Many of the training programs offer paid internships so that students can graduate with real world experience. "Our students are required to do 10 weeks worth of internship," explains Lyon. "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 Lyon.

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) 483-9785.

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 Chi-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.

Powerhouse Brand
Soybean Seed

Offered exclusively by:

Schmidt Farms of Auburn
1068 N. Union Rd.
Auburn, MI 48611
517-622-6705
517-662-2695

P-150 mid group I maturity. Excellent white mold resistance. Perfect for soybeans - wheat rotation.

P-175 late group I maturity. Outstanding yield potential and suitable for edible use.

P-240 mid group II maturity. Exceptional yielding bean and stands very well.

Weeds need attention on CRP ground

Another alternative is to sow CRF 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 netting 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 full applications, Murdock says a contact herbicide like Gramoxone® plus 2.4-D 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 mice move in on it," explains McGlamery. "Contact herbicides like Gramoxone Plus are more effective in the spring, when the plant's food supply is moving upward for topgrowth."

According to Quarles, a tankmix of Gramoxone Plus and atrazine is a good spring-time combination for corn.

"The Gramoxone attacks the top," explains Quarles. "In the fall, the rain gets into the soil and is absorbed by the plant. It's like smothering the weed from the top and from the bottom."

If there are perennial weeds in the field, tankmixing Gramoxone Plus with 2.4-D can help, says Murdock.

"In plots at the Greenley Research Center in Novoisy, a tankmix of Gramoxone Plus 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, however, Harvey recommends 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. "Be 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 prided 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 $100,000,000 of course 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 Jacobs, vice president of sales at Novartis Seeds announced the special incentive during a news conference at the 1997 Corn Industry Classic in Tampa, Fla.

"We are confident about the insect-protection technology in our NK® Brand Bt and Muster® hybrids and we want growers to try them on their own farms," Jacobs 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 biopest corn hybrids is available for sale. Novartis Seeds hold 65 percent of the seed industry's insect-protected hybrids.

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 Sanofis Agro. Novartis Crop Protection, headquartered in Greensboro, N.C., is the nation's largest supplier of crop protection products. Based on 1996 results, Ciba was the crop protection leader in the United States with more than $1.1 billion in product sales. The merger with Sanofis strengthens that position, and provides Novartis with stronger research and development capabilities than Ciba or Sanofis had before combining operations.

"If you do not enter and win 1997 state contest, you may not achieve this level of success," says Jacobs. "If you are a winner, you could take home $20,000."

Statewide FFA officers elected

Bret Menon of the Branch Area Career Center was elected state president of the Michigan Association of FFA. He succeeds Teresa Swamba, of the Greenhand FFA Chapter. Other state officers elected for 1997/98 are: Vice President Darren Bercheimer from New Lothrop, Secretary Sherri Greiser from Lowell, Treasurer Leslie Sezak from St. Louis, Reporter Richard Bark from Corunna, and Sentinel Nick Ladd from Waldron. Statewide regional vice presidents are: Region I, Marty Smego, Cassopolis; Region II, Kevin Robinifka from St. Louis; Region III, Amanda Moore, Alma; Region IV, Brian Kieling, Perry-Mercey; Region V, Melinda Mills, Bay City; Region VI, Mary Beth Kline, Alpena.

"Florida's Best"

Florida Farm Bureau Products!

Super Concentrated Orange Juice and Grapefruit Juice!

Famous Southern Fried Peanuts!

Kenny Chunch Peanuts!

Dirt Squad Citrus Based Hand Cleaner and more

Contact your County Farm Bureau for ordering information

Available in Michigan through Peterson Farms, Inc. (Shelby, MI)

Statewide order deadline: Wednesday, April 30th
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 vari
teties and premium seed at low, low prices.
GEERSTON SEED FARMS
call 1-800-843-0390
Main Dairy Machinery Auction

Having dissolved dairy farming, the following will be sold for cash on May 11th.

Lot 1 - 275 head of dairy herd.
Lot 2 - 200 head of dairy herd.
Lot 3 - 50 head of dairy herd.
Lot 4 - 30 head of dairy herd.
Lot 5 - 20 head of dairy herd.
Lot 6 - 10 head of dairy herd.
Lot 7 - 5 head of dairy herd.
Lot 8 - 3 head of dairy herd.
Lot 9 - 2 head of dairy herd.
Lot 10 - 1 head of dairy herd.

Main Dairy Machinery Auction

Starting 10:00 a.m.

10:00 a.m.: Tractors and Mower & Box Blade. White 4-150, 44 Forward/White 4-150, 44 Forward/White 4-150, 44 Forward/White 4-150, 44 Forward.
10:30 a.m.: Equipment. Harvestor, 1980, 42’ wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
11:00 a.m.: Equipment. Threshing, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
11:30 a.m.: Equipment. Wheat combine, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
12:00 p.m.: Equipment. Soybean combine, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
12:30 p.m.: Equipment. Hay equipment, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
1:00 p.m.: Equipment. Grain equipment, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
1:30 p.m.: Equipment. Silage equipment, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.
2:00 p.m.: Equipment. Stock equipment, 1980, 10’6” wide, 4’3” rear, 36’ front, 30’1” rear, 34’3” front, 40’1” rear, 36’3” front. Other equipment.

FARM AUCTION

Having decided selling dairy farming, the following described farm will be sold at public auction on the farm located 1 mi. E. of Freeland, MI on Freeland Rd. to farm.

Terms: Cash or Good Check due Day of Sale. 10% or 12%.

For info, call 517-636-9999. Fax 517-636-7755.

FARM AUCTION

Having dissolved dairy farming, the following described farm will be sold at public auction on the farm located 1 mi. E. of Freeland, MI on Freeland Rd. to farm.

Terms: Cash or Good Check due Day of Sale. 10% or 12%.

For info, call 517-636-9999. Fax 517-636-7755.

REAL ESTATE


Zeeland Farm Services
~ Nunica, Michigan ~

Lewis and Chad Main, Props.

For info, call 517-561-5255

Terms: Cash or Good Check at Closing.

For info, call 810-643-5555 BUILD IT YOURSELF AND SAVE $9,999

FARM AUCTION

Having dissolved dairy farming, the following described farm will be sold at public auction on the farm located 1 mi. E. of Freeland, MI on Freeland Rd. to farm.

Terms: Cash or Good Check due Day of Sale. 10% or 12%.

For info, call 517-636-9999. Fax 517-636-7755.

REAL ESTATE


Zeeland Farm Services
~ Nunica, Michigan ~

Lewis and Chad Main, Props.

For info, call 517-561-5255

Terms: Cash or Good Check at Closing.

For info, call 810-643-5555 BUILD IT YOURSELF AND SAVE $9,999

FARM AUCTION

Having dissolved dairy farming, the following described farm will be sold at public auction on the farm located 1 mi. E. of Freeland, MI on Freeland Rd. to farm.

Terms: Cash or Good Check due Day of Sale. 10% or 12%.

For info, call 517-636-9999. Fax 517-636-7755.
Michigan Farm News Classified

Deadline for next issue is Noon, April 7, 1997

Call 1-800-968-3129 to Place Your Classified Ad Today!

or use the coupon below and mail or fax your
classified ad to Michigan Farm News

P.O. Box 6, Stanton, MI 48886

Fax 1-517-831-5063

All classified ads must be pre-paid by check or Visa/MasterCard

---

**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](http://www.usagnet.com)

---

**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 6000 BPH
- 25-15% moisture at 5000 BPH
- Wet holding 2-4% higher test weight
- Lower kernel temp and uniform kernels
- And at the same time - additional dry storage

---

FREY CONSTRUCTION

Lake Odessa, MI
619-574-9207
419-446-2791

---

HYDRAULIC CYLINDER and hydraulic pumps ready. Seal kits and chrome work, all materials. Strawchoppers- balers and so forth.

- Venture Tool & Manufacturing
- Sarnaweg, MI
- 1-817-983-8211

---

STOCK-UP: Sheepskin mittens, hats, gloves, slipper, woven garments, yarn. Catalog available! Baiter's Hillside Farms, and The Sheep Shed

- 8351 Big Lake Road, Clarkston
- 1-810-625-2665

---

SUNSET RECLAMING Toll Free 1-800-909-9205

---

PROFESSIONAL CATTLE HOOF TRimming

- Statewide! Over 16 years experience!
- Prices start at $5.
- Call Norman Beale
- 1-616-775-0588

---

SAVE 75% ON WORK CLOTHES!

- Good, clean, recycled in very best quality. Money back guarantee.
- Free brochure

---

We Buy Damaged Grain

Buyer and seller of:
- Cash grains
- Feed ingredients
- Milling quality grains

Licensed and bonded with over 20 years of experience

---

Michigan Agricultural Commodity Buyers

- 445 North Canal
- Lansing, MI 48917
- 1-517-548-2308

---

TRAILERS:

- Complete line of Avenger enclosed cargo units available at a low price
- Pressurization specialists on snowmobile and ATV models.
- TAG-A-LONG TRAILERS
- 1-800-515-8641
- 217-638-2378
- Munger, Michigan

---

WANTED TO BUY:


---

ARTHRITIS:

Call 1-888-556-2017 for more info.
Ask for a free copy of the "Arthritis Formula".
Learn how to treat the condition, not just the pain.

---

LEAFY GREENADS

---

FISH FOR STOCKING:

- Giant Hybrid Bluegills, Walleyes, Pan- dow Trout. Largemouth Smallmouth Bass, Catfish, Fathead Minnows, Perch,
- Lago's Fish Farm 9098 West Street
- Gobles, MI 49055
- 1-616-428-3954
- 1-616-424-3281

---


---

Mineral Owners- Gall: Oil! Investors interested in purchasing producing royalty income for immediate cash. Prefer Antrim gas. Other formations considered.
Call 1-989-660-7545.
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 plan, 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 defolium removal.

Farm Bureau Mutual has long been Michigan's leading farm insurer, dating back to 1930 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 Michigan farm families for nearly 50 years.

Call your Farm Bureau Insurance agent today to find out more about Michigan's best farm protection plan.

Protect yourself in the sun

A

most of the more than 50,000 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:

• 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.

You may also want more information about:

- Workers Disability Compensation Assistance Program
- TRAP — The Regulatory Compliance Assistance Program
- Long-Term Care Protection
- Disability Income Protection
- Multi-Peril Crop Insurance
- Health Insurance from Blue Cross/Blue Shield

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've seen the billboards

FARM INSURANCE UP TO DATE?

You can 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 dismantling. 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.

A

Call your Farm Bureau Insurance agent today.

FOR YOUR FARM, HOME, AUTO, BUSINESS AND RETIREMENT INSURANCE, SEE YOUR FARM BUREAU INSURANCE AGENT TODAY.