MICHIGAN FARM NEWS

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At PressTime...

Schuette to Resign MDA Post

Bill Schuette, director of the Michigan Department of Agriculture for the past three years, announced on Jan. 6, that he will be resigning his Cabinet-level post as of Feb. 25. He plans to return to the Midland-based law firm of Currie & Kendall, P.C. where he worked in the early 1980s.

In making his announcement, Schuette thanked Gov. Engler, the Michigan Ag Commission, farm groups and farmers for their support during his tenure.

As director, Schuette helped to secure funding for the $70 million Animal Livestock Initiative at Michigan State University, and implemented a series of environmental policy initiatives, including the Michigan Groundwater and Freshwater Protection Act.

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Group Risk Plan Crop Insurance - Is It For You?

Soybean and corn acres in select counties will be eligible for GRP in 1994.

Corn and soybean farmers in 37 Michigan counties have another crop insurance product to consider in 1994, that could cost only 50 to 60 percent of conventional Multi Peril Crop Insurance (MPCI), and save a tremendous amount of paper work in the process, while providing catastrophic loss protection.

The Group Risk Plan, more commonly known as GRP, grew out of a recommendation of the Commission for the Improvement of Crop Insurance, commissioned by Congress in 1988. MFB President Jack Laurie served on the commission.

GRP is an old crop insurance concept, however, this is the first time it will be sold on a widespread basis in the U.S. The product is intended to complement existing insurance products, according to MSU Ag Economist Roy Black.

"Farmers basically have three different crop insurance products to choose from, that most agents in Michigan can sell," explained Black. "We have the Hail and Fire products, as they've always been sold; the multi-peril product with indemnities based on shortfalls in the individual farmer's yields; and the new multi-peril product known as GRP, with indemnities based on shortfalls in county yield. If your yield history has trended well with the expected county yield, regardless of whether it's higher or lower, then GRP may be for you."

GRP is based on the premise that when an entire county's crop yield is low, most farmers in that county will also have low yields. GRP only pays when the yield of the county drops below the expected county yield set by the National Agricultural Statistics Service (NASS). Payment is based on the percentage of decline below the expected county yield, the coverage level the farmer selected, and the amount of protection purchased.

Farmers can select their own coverage level of 90, 85, 80, 75, 70, or 65 percent of the expected county yield. For example, suppose the expected county yield for soybeans is 40 bushels and a farmer chooses a coverage level of 90 percent. The trigger level then is 36 bushels. Anytime the county yield was below 36 bushels, the farmer would receive a payment.

Farmers can also select any protection level per acre up to a maximum that is established as 150 percent of the expected county yield times the indemnity price. This feature should attract farmers with yields higher than the county average according to Black.

Continued on page 12 ...see

"GRP – Is It For You?"

Ag Jury Still Out on School Finance Reform

After record breaking debate lasting until noon on Dec. 24, and several hundred amendments to nearly 20 different related bills, the Legislature put the fate of school finance reform back in the laps of Michigan voters and state agencies to determine just what it all means, according to MFB Legislative Counsel Ron Nelson.

"The effort now is to look at the new body of law, piece it all together with existing law and then analyze how that will affect agriculture," Nelson explained. "It's important to understand that there is a relationship between the new bills and current law, which means we need to have the Michigan Department of Treasury's interpretation."

Nelson doesn't expect a final analysis to be available until February due to the complexity of the issue and the sheer number of bills sent to the governor.

Of major interest and concern to agriculture is the "homestead" definition. There's still not a definitive answer, and the final outcome could have a big impact on net tax savings for farmers, according to Nelson.

"Under the bill, as passed, homesteads may include all unoccupied property classified as agricultural, which is adjacent and contiguous to the home of the owner, unless that land is leased or rented by the owner to another person," Nelson said. "I say 'may' because there are other criteria in current law that further limit that homestead to just the residence where the individual lives and the five acres on which that residence is located."

In general, Nelson expects that agriculture will see a lower property tax rate, but perhaps not to the extent originally anticipated. However, with the approval of the ballot proposal, and an increase in sales tax, adjustments to the income tax, he questions the change to net tax liability.

The following chart summarizes the current law, the statutory plan, which would be the basis for funding K-12 education if the ballot proposal fails, and finally a brief summary of the ballot proposal if approved by voters on March 15.

TAX SUMMARY
(Revenue in Millions)

	Current Law	Statutory Plan Rate	Statutory Plan Revenue	Ballot Plan Rate	Ballot Plan Revenue
Property Taxes					
Homes	36-mill average	*12 mills	$1,198	*6 mills	$ 599
Non-homes	36-mill average	#24 mills	$1,852	#24 mills	$1,852
Voc ed, ISD taxes	3 mills	3 mills	$ 510	3 mills	$ 503
Property Transfer	0%	1%	$ 213	2%	$ 425
Income Tax	4.6%	6.0%	$1,727	4.4%	$- 247
Pers. Exemption	$2,100	$3,000	$- 352	$2,100	$ 0
Renter Credit	17% of rent	20% of rent	$- 40	20% of rent	$- 40
Sales/Use Tax	4.0%	4.0%	$ 0	6.0%	$1,830
Business Tax	2.35%	2.75%	$ 335	2.35%	$ 0
Cigarette Tax & Other Tobacco	25 cents/pack	40 cents & 16%	$ 127	75 cents & 16%	$ 357
Interstate Phone	N.A.	4%	$ 40	6%	$ 60

*Property tax on homes includes 6 mills statewide and 0 local mills under a ballot plan and 12 mills under the statutory plan.
#Property tax on non-homestead property includes 6 mills statewide and 18 locally under the ballot plan, or 12 mills at the state level and 12 at the local level under the statutory plan.

In Brief...

1994 Farm Economy – Net Cash Income Expected Up

The farm sector entering 1994 is more cost-efficient, better capitalized and positioned for improved potential profitability. The farm economy will experience only a moderate rate of growth, despite a relatively high level of net cash income, according to USDA.

Both assets and debt are expected to increase at annual rates of 2 to 3 percent throughout the remainder of the 1990s. The value of farm business assets at the end of 1993 stood at $878 billion. However, the real value of farm assets is at virtually the same level as in 1962. During this 32-year period, the inflation-adjusted level of farm debt has increased about 15 percent.

Farm business assets are projected to rise $16 billion during 1994, less than 2 percent, while the general rate of inflation is expected to exceed the growth rate in asset values giving an overall decline in 1993 and 1994 in the real value of farm assets.

New Year Brings Giant European Trade Bloc

The new year will usher in a giant new European trading bloc -- the European Economic Area, which links the European Community and the neighboring European Free Trade Association, according to a *Reuters* story.

The EEA, the world's biggest trading zone, will extend the EC's single market to five out of seven of the EFTA nations -- Austria, Finland, Iceland, Norway and Sweden. Although it is expected to bring real economic benefits in an area stretching from the Arctic to the Mediterranean and covering 372 million consumers, it is seen by four of the five EFTA nations as being but a stepping stone to full EC membership.

Russian Farm Woes Continue

Russian farmers lost more than 30 percent of their 1993 harvest due to weather, financial and infrastructure problems, reports *Knight- Ridder*. Russia's agricultural ministry reports a harvest of 100 million metric tons compared with 107 million tons the previous year. Meat production is also expected to fall to 11.9 million metric tons from 12.9 million tons in 1992. Lower meat output is expected to reduce some of the demand for grains.

Analysts report Russia's winter grain crops are 4 million hectares smaller than in 1992. Russian farmers purchased 50 percent less fertilizer in the three planting months ending in November. The country's farmers were also short 400,000 tons of seed, roughly 5 percent of their total needs.

The United States will not decide what action to take on future aid to Russia until after President Clinton returns from his scheduled visit to Moscow in mid-January. In preparation for the Russian visit, the U.S. is exploring several aid possibilities including efforts to press the International Monetary Fund to relax its monetary policy standards to aid in the release of the remaining $1.5 billion from an earlier aid package; more help from the Group of Seven industrialized nations and more direct U.S. food aid.

Canada May End St. Lawrence Seaway Fees

Canada is considering a U.S. proposal calling for an end to tolls on the seaway which amount to as much as $45,000 per shipload. Shipments on the Seaway have fallen by 40 percent since reaching a peak in 1979, reports the *Chicago Tribune.*

The U.S. abolished all tolls on its two locks in 1986, but Canada maintains the tolls on 13 locks under a 1954 law. As a result of the 40 year old law, any negotiated end to the tolls must be approved by the Canadian Parliament. Hearings on the proposed toll changes are scheduled for February.

Removal of the tolls could generate greater Seaway grain shipments and lower shipping costs. The bulk of U.S. export grain now moves down the Mississippi River to ocean-going ships in New Orleans. The current negotiations call for a freeze on tolls for 1994, followed by a general phaseout of all fees.

Elton Smith Receives Honorary MSU Degree

Elton R. Smith (second from right), who served as MFB president for 22 years, received an honorary degree from Michigan State University during MSU's December commencement ceremonies. Fred Poston, Dean of MSU's College of Agriculture and Natural Resources, called Smith "a giant in Michigan agriculture."

"I can't think of anyone more deserving of an honorary degree from MSU than Elton Smith, based on his leadership and accomplishments across the span of 40 years in agriculture and natural resources in Michigan," Poston said. "He has almost single-handedly put our state on the map with one of the most productive agricultural programs in the nation. Even in retirement, Elton continues to exert a great influence on Michigan agriculture."

Machinery Prices Up in 1994?

An Ohio State University agricultural economist says the need to replace aging, worn out equipment will help drive farm equipment prices above the national inflation rate in 1994.

Economist Allan Lines is optimistic about farm purchases, partly because inflation is expected to stay under control at a national rate of 3 percent or less. He said farm machinery probably will see the greatest price increases, with the rate depending on the kind of equipment.

He predicts tractor prices will rise about 5 percent, while the cost of other machinery will jump by 6 percent to 7 percent. Pickup trucks, he said, will see the biggest increase, between 7 percent and 10 percent.

Midwest Governors Organize Big Push for Ethanol

Iowa Governor Terry Branstad is organizing a Midwest governors' lobbying effort to push for final acceptance of the 30 percent ethanol mandate in the oxygenated fuels. According to an *Associated Press* story, Branstad is organizing the campaign to coincide with a Jan. 14 hearing on the proposal in Washington.

Branstad and Nebraska Gov. Ben Nelson plan to testify at the hearing. They are seeking the added support of governors from Illinois, South Dakota, North Dakota, Wisconsin, Indiana and Minnesota.

"While there is broad support for the proposal throughout the Midwest, there is still significant opposition. That makes the lobbying push important. We don't want to take any chances," Branstad said. The latest EPA proposal requires 30 percent of the oxygenated fuels to come from renewable energy supplies, such as ethanol. The cities targeted for the 1995 clean air programs represent roughly one-half of the gasoline sold in the United States.

Rotational Survey for Horticulture Survey Coming

In January, the first Michigan Department of Agriculture triennial survey of the horticulture industry will begin. The project will encompass Michigan Christmas tree growers, and nursery stock producers and retailers. This is the third phase of the Michigan Rotational Survey cycle, which surveyed fruit in 1991 and vegetables in 1992.

Data collected from respondents by the Michigan Agricultural Statistics Service (MASS) will be summarized to produce estimates at the state and district level. A bulletin will be published containing statistics documenting the size and breadth of this segment of agriculture in the Great Lakes State. Every report returned to MASS is kept strictly confidential, and as a federal statistics agency, MASS reports are exempt from the Freedom of Information Act.

Producers receiving this questionnaire are encouraged to complete and return it using the postage paid envelope. Those not responding by mail will be contacted by telephone or personal enumeration.

December Farm Prices Up 5.1 Percent from 1992

The index of prices received by U.S. farmers for their products in December was unchanged from November, but rose 5.1 percent from a year earlier, USDA said Dec. 30. Price increase for tomatoes, corn, wheat, and strawberries were offset by declines for oranges, hogs, cattle and lemons. The year-to-year increase was caused by higher prices for corn, soybeans, milk and sorghum, which more than offset declines for cattle, lettuce, apples and hogs.

U.S. Soybean Prices Ride Argentina's Problems

Soybean futures rose above the $7 per bushel figure on news that Argentine farmers are facing problems caused by excessive moisture. About 20 percent of the Argentine soybean crop remains unplanted, reports the *Wall Street Journal.*

Much of that country's growing region received 3-5 inches of rain on already saturated fields. The wet fields are delaying planting and hurting germination on recently planted fields. The markets are responding to the South American problems, along with the poor U.S. harvest.

Third Annual MASA Meeting Jan. 29 in Mt. Pleasant

The Michigan Agricultural Stewardship Association will be holding its third annual meeting Jan. 29, at the Mt Pleasant Holiday Inn, starting at 9 a.m. and concluding by 2 p.m. Participants can attend one of several breakout sessions during the morning portion of the program. Topics include: Organic Truck farm Vegetables; Dairy Manure Composting; Chestnuts as an Alternative Orchard Crop; Rotational Dairy Grazing; and Reduced Tillage/No-till Sugar Beets.

The afternoon portion of the program will feature keynote speaker Fred Kirschenmann, a manager of a 3,100 acre grain and cattle farm in Medina, North Dakota. Kirschenmann will share his experiences on sustainable agriculture and the impact on the future of agriculture. For more program information and/or registration, contact MASA President Jerry Wirbel, at (517) 689-3857.

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Michigan's Hog Numbers Down Six Percent

Michigan's hog and pig inventory on Dec. 1 decreased 6 percent from a year ago, according to the Michigan Agricultural Statistics Service. Total inventory, estimated at 1,200,000 head, was 80,000 less than last December.

Market hogs make up 87 percent of Michigan's hog and pig inventory while breeding stock comprises 13 percent of the state total. Market hogs were down 6 percent, totaling 1,040,000 head. The under 60 pound weight group totaled 340,000 head, down 10,000 head from a year earlier.

The 60-119 pound weight group at 240,000 head, was 10,000 less than a year ago, while the 120-179 pound weight group was estimated at 240,000, down 25,000 head from last year. Hogs weighing 180 or more pounds, totaled 220,000 head, down 20,000 from last year. The Michigan breeding stock at 160,000 head, is down 15,000 head from the previous year.

Producers farrowed 56,000 sows during the September-November quarter, down 2,000 head from the previous year. Average pigs per litter was 8.0 pigs, up from 7.9 pigs per litter last fall. Fourth quarter pig crop was down 2 percent from the previous year, totaling 448,000 pigs. Producers' farrowing intentions for the next two quarters are 47,000 for the December-February 1994 period and 76,000 for the March-May 1994 period.

Nationally, the inventory for all hogs and pigs on hand Dec. 1 was estimated at 56.8 million head, 2 percent below Dec. 1992 and 4 percent below Sept. 1, 1993. The breeding hog inventory, at 7.03 million, decreased 1 percent from Dec. 1, 1992, and Sept. 1, 1993.

The market hog inventory, at 49.8 million head, was 2 percent below a year ago and 4 percent below Sept. 1, 1993. A total of 2.85 million sows farrowed during the September-November 1992 period. The September-November crop totaled 22.9 million head, 5 percent less than 1992 and 2 percent less than the same period in 1991.

Michigan ASCS State Committee Reinstates Legume Seeding Cost Share Program

The Michigan Agricultural Stabilization and Conservation Service (ASCS) State Committee has voted to reinstate cost-share assistance to farmers planting various legumes on fields prone to erosion, in response to comments received from farmers across the state, according to Vern Kretzschmer, chair of the State Committee.

"This was an extremely popular practice. When it was suspended last year, farmers wrote to our offices by the dozens complaining about the decision, and the new State Committee believed we should help farmers reduce erosion and improve ground water quality by reinstating this practice," said Kretzschmer. "The state committee made some changes in the practice to ensure that it would address the objective of reducing erosion. Fields adjacent to streams or other bodies of water, and those designated as highly erodible will qualify for cost share planting of alfalfa, birdsfoot trefoil and other permanent seedings under this practice."

The final decision on the implementation of the practice in most counties will be made by county ASCS committees, but most counties should have the practice available to farmers in the spring of 1994.

Michigan Tops in Dry Beans in 1993

Michigan once again leads the nation in dry bean production, knocking North Dakota back into second place. Michigan growers enjoyed good growing conditions this year, with an increase in production over 1992's crop. The crop is estimated to total 6,080,000 hundredweight (cwt.), up 42 percent from 1992's disappointing production of 4,290,000 cwt.

Yields for all dry beans averaged 1,600 pounds per acre, up 300 pounds from 1992. Planted acreage of all dry beans was estimated at 390,000 acres, up 11 percent from last year. Navy bean plantings accounted for 250,000 acres, while all other classes totaled 140,000 acres.

Harvested acreage of all dry beans was estimated at 380,000 acres, up 15 percent from 1992. Navy beans and all other bean harvested areas were 245,000 and 135,000, respectively. Navy bean production totaled 3.9 million cwt., up 31 percent from last year. Production of all other dry beans totaled 2.18 million cwt., up 65 percent from 1992.

Nationally, dry bean production is estimated at 21.7 million cwt., down 4 percent from 1992. This is the smallest dry bean crop since 1988. Production is down sharply in North Central and Plains States. Area for harvest is up 4 percent to 1.59 million acres, while yields dropped 112 pounds from last year to 1,366 pounds per acre.

Farm Women's Symposium Feb. 16 – 18

An exciting and challenging program is planned for the Third Annual Farm Women's Symposium, Feb. 16-18, 1994, at the Sheraton Inn, Lansing, Mich. Women associated with agriculture from around the state are expected to convene for the three day seminar.

This year's topics will cover a wide range of interests: long-term estate planning; farm labor and financial forms; computer software and hardware; use of farm chemicals; balancing life's demands; stress management; interaction with our legislators; a trip to the capitol; and an all-day Dale Carnegie Workshop (an extension of one area from last year's program – by popular request).

Highlights will include a welcome speech by Dr. Gail Imig, director of MSU Extension; lunch with House Representative Sandy Hill; and a banquet speech by State Representative Debbie Stabenow on "Women's Changing Role in Politics."

Dawn Messer, marketing and sales manager for MACMA Apple Division and one of the symposium's organizers, said that the past two year's gatherings have "created much enthusiasm among the participants – they find it a great educational benefit and there's a distinct camaraderie among them. It's truly a rewarding and satisfying experience."

Judy LaCross, a participant both years and a fruit grower from Leelanau County, says "I've come away each time refreshed and renewed. I've gained insights and techniques that are applicable in both my personal life and workday experiences."

The planning committee is made up of women in agriculture from throughout the state and MSU Extension advisors.

For more information, contact Rebecca Finneran at (616) 774-3282 or Dawn Messer at (800) 292-2653.

MFB's AgriPAC - Working for Agriculture's Future

Despite the recent bad press and negative public perception of PACs or Political Action Committees, they're a political reality that agriculture must continually be aware of and involved in, according to MFB AgriPAC Chairperson Faye Adam.

Adam, a partner in Pleasant View Farms, near Snover in Sanilac County, has chaired the MFB AgriPAC Committee for over three years now. She says that financial contributions, and volunteer campaign efforts on behalf of AgriPAC's endorsed "Friends of Agriculture," is more important now than ever, with the upcoming elections.

"The 1994 elections are probably one of the most important opportunities for Farm Bureau, through our AgriPAC system, to be effective in electing qualified candidates to represent agriculture," Adam said. "There will be a gubernatorial race and intense competition for an open U.S. Senate seat, not to mention elections for MSU Board of Trustees, U.S. and state representatives and state senate seats."

If past AgriPAC endorsements are any indication, this year's endorsed candidates should be very successful. In the 1992 elections, 75 percent of the candidates designated as "Friends of Agriculture" were elected. In 1990, nearly 90 percent of the candidates endorsed by the AgriPAC committee were successful in their bid for public office.

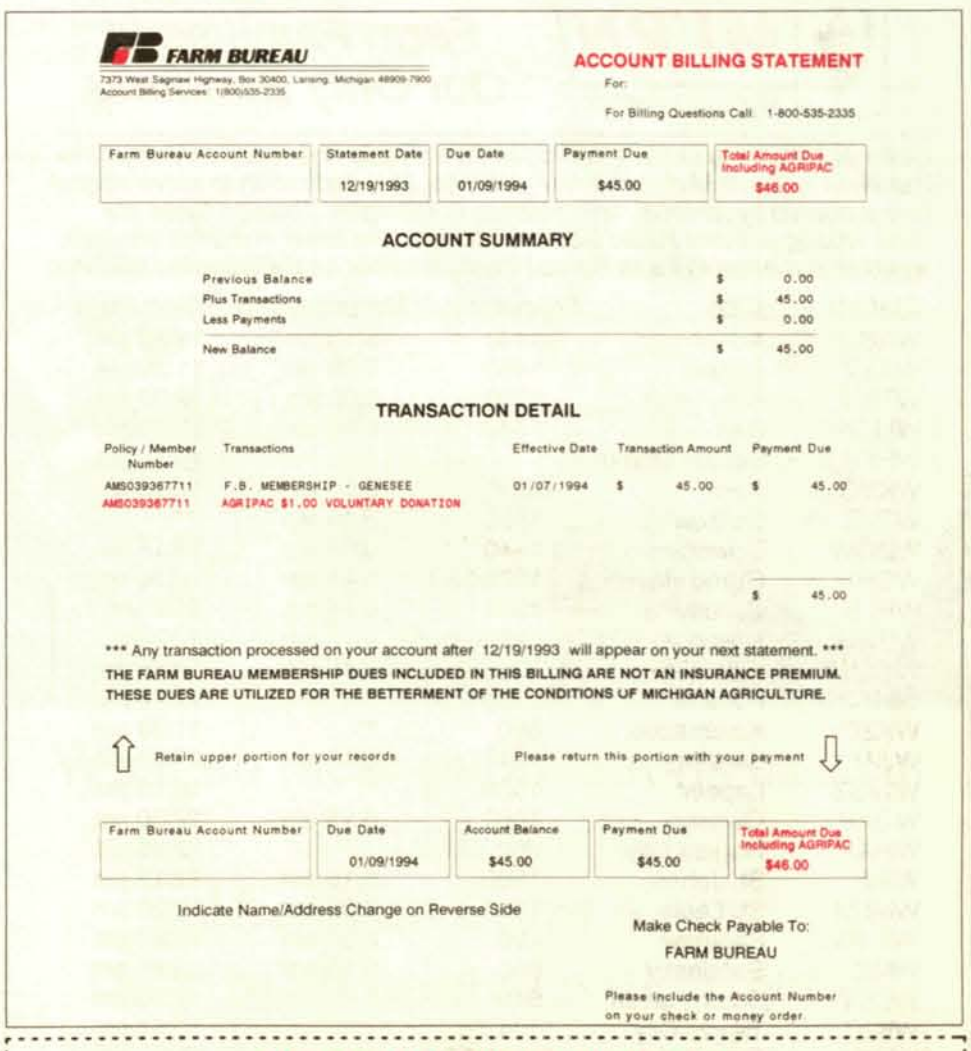
MFB's AgriPAC was formed in 1977 to influence the nomination and election of qualified candidates who have demonstrated strong support for agriculture, as evidenced by their past voting records on key agricultural issues. County Farm Bureau Candidate Evaluation Committees review those voting records and, in some cases conduct interviews, before making their recommendation to the MFB AgriPAC Committee.

According to Adam, that process has made the "Friend of Agriculture" endorsement highly sought after by candidates. "The most important part of our PAC is the fact that it is truly a grass roots process that sets it aside from other PACs," Adam explained. "It's a well-respected PAC and candidates come back to us time and time again seeking our endorsement."

MFB's AgriPAC is funded primarily through voluntary contributions from members when they pay their membership renewal notices, by adding $1 to their dues payment. Those contributions funded nearly $72,000 in donations to endorsed candidates in 1992. While substantial and appreciated, Adam said that the leading Michigan-based association contributor, distributed $264,565 in those same elections, making it critical that MFB members continue to support AgriPAC.

"We can no longer sit back and let things happen," Adam said. "If we're going to address the agricultural issues of today, we need qualified people representing us in Lansing and Washington, D.C., that understand these issues. I think AgriPAC is certainly a way that we have of surfacing, supporting and electing those qualified candidates. It's been proven over and over just how effective this process can be."

Farm Bureau members interested in donating to the MFB AgriPAC can do so by donating an additional dollar on their membership dues notice (see sample notice in red on this page) or by simply filling out the coupon below and submitting it along with their donation to: MFB AgriPAC, c/o Al Almy, P.O. Box 30960, Lansing, MI 48909-8460.



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Weather

30-Day Forecast – Continued Cold and Wetter Than Normal

Following milder and drier than normal weather for much of November and the first three weeks of December, winter finally arrived in Michigan just before Christmas, courtesy of a marked shift in the jet stream which allowed several air masses of arctic origin to move through the Great Lakes region.

Mean temperatures for December generally ranged from one to three degrees above normal, due mainly to abnormally mild minimum temperatures early in the month.

Precipitation for the same period was generally much less than normal, with the notable exception of the lee shores of lakes Michigan and Superior, where several outbreaks of lake-effect snow late in the month brought precipitation to above normal levels and left some areas of extreme northwestern lower Michigan with the deepest snow cover in the lower 48 states outside of the western mountains by year's end.

Outlooks for the coming weeks are somewhat contradictory. The official National Weather Service (NWS) 30-day outlook for January calls for somewhat of a continuation of recent weather, with temperatures expected to remain below normal but for precipitation to increase to above normal levels. The NWS 90-day outlook for January through March is less winter-like, calling for temperatures and precipitation during the period to average out near normal across most of the state.

Michigan Weather Summary

12/1/93 to 12/31/93	Temperature Observed Mean	Temperature Dev. From Normal	Precipitation Actual (inch.)	Precipitation Normal (inch)
Alpena	26.3	+ 2.1	0.44	2.06
Bad Axe	27.0	+ 0.1	0.74	1.93
Detroit	31.5	+ 3.4	0.78	2.31
Escanaba	25.8	+ 2.7	0.50	2.11
Flint	28.2	+ 0.8	0.51	2.31
Grand Rapids	28.6	+ 1.3	1.47	2.71
Houghton	22.9	+ 2.6	1.99	2.11
Houghton Lake	27.1	+ 3.3	0.65	2.06
Jackson	28.6	+ 0.7	0.82	2.11
Lansing	28.5	+ 1.4	0.69	2.11
Marquette	21.7	+ 4.0	1.12	2.11
Muskegon	29.9	+ 1.3	1.06	2.49
Pellston	26.1	+ 3.4	3.18	2.15
Saginaw	28.4	+ 1.6	0.50	1.93
Sault Ste. Marie	22.8	+ 2.6	2.56	2.11
South Bend	30.8	+ 1.8	1.43	2.71
Traverse City	29.2	+ 2.6	3.64	2.15
Vestaburg	27.1	+ 0.3	0.58	2.11

Normals are based on district averages.

Jeff Andresen, Ag Meteorologist, MSU

Michigan and Major Commodity Area Extended Weather Outlook

T - Temp. P - Precip.	1/15..... 1/31 T.....	1/31 P	1/15 .....3/31 T.....	3/31 P
Michigan	B	A	N	N
W. Corn Belt	B	N	A	B
E. Corn Belt	B	N	B	B
Wint. Wheat Belt	N	N	B	N
Spr. Wheat Belt	N	A	A	N
Pac. NW Wheat	A	N	A	N
Delta	B	N	B	N
Southeast	B	A	B	N
San Joaquin	A	N	A	N

A-Above Average, B-Below Average, N-Normal, MA-Much Above, MB-Much Below, NP-No Precip. Source: National Weather Office

Michigan ASCS Personnel to Assist in Flood Ravaged States

In an effort to speed the delivery of disaster assistance to victims of flooding this past spring and summer, almost 60 United States Department of Agriculture county office employees from Michigan will be travelling to Iowa, Minnesota, Missouri and Wisconsin in January to help process thousands of applications for disaster benefits.

These applications have been filed by farmers with the Agricultural Stabilization and Conservation Service (ASCS) for special disaster benefits approved earlier this year by Congress after record flooding in midwestern states.

"With farmers in these states harvesting record low production from what they did manage to plant, and no production from fields that didn't survive the floods, this will be a very cold winter for farmers in much of the midwest," said Jim Byrum, Michigan Executive Director of the ASCS.

Although the rivers crested about six months ago, flooding left homes and building destroyed, crops devastated, and in some cases, up to four feet of sand on top of what used to be productive soil. Life may never be the same for farmers and others affected by this natural disaster.

"Our ASCS personnel in Michigan have been asking if they could help in these other states for months. They knew there would be delays in getting payments to farmers, and they wanted to help speed up the process," said Byrum.

"Secretary of Agriculture Espy has encouraged us to be innovative in how we approach problems. Asking for volunteers from our ASCS ranks to help these other areas makes sense," Byrum continued. "Our people know these programs and will be able to 'hit the ground running' to help get checks to farmers without further delay!"

The Michigan contingent will travel to several county offices in all four target states, and stay for a period of up to two weeks beginning Jan. 3, 1994. They will be joined by 40 ASCS employees from the states of Illinois, Indiana and Ohio.

"The objective of this entire effort is to help get disaster benefits paid to farmers as soon as possible. We believe that we can at least help them make a dent in their backlog," said Byrum.

"I am extremely proud of these people who have made the commitment to leave their homes and family during the first part of the new year to help others in need. That demonstrates how deeply these ASCS volunteers believe in what they do, serve farmers," said Byrum.

County office employees volunteered for these assignments, and will work in offices based on their work backlog.

"Some of these offices have more than 2,000 applications pending, and without help, they wouldn't see the end of the pile until spring," concluded Byrum.

MICHIGAN FARM MFRN RADIO NETWORK

Serving Michigan Farm Families is Our Only Business

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 29 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:

Station	City	Frequency	Morning Farm	Noon Farm
WABJ	Adrian	1490	5:45 am	11:50 am
WATZ	Alpena	1450	5:30 am	11:30 am
WTKA	Ann Arbor	1050	6:05 am	12:05 pm
WLEW	Bad Axe	1340	6:30 am	12:50 pm
WHFB	Benton Harbor			12:30 pm
WKYO	Caro	1360	6:15 am	12:15 pm
WTVB	Coldwater	1590	5:45 am	***
WDOW	Dowagiac	1440	6:05 am	12:15 pm
WGHN	Grand Haven	1370/92.1	5:45 am	12:15 pm
WPLB	Greenville	1380	6:15 am	11:45am
WBCH	Hastings	1220	6:15 am	12:30 pm
WCSR	Hillsdale	1340	6:45 am	12:45 pm
WHTC	Holland	1450		12:15 pm
WKZO	Kalamazoo	590	**	11:30 am
WJIM	Lansing	1240	5:05 am	11:50 am
WWGZ	Lapeer	1530	*	12:15 pm
WOAP	Owosso	1080	6:15 am	12:30 pm
WHAK	Rogers City	960		12:15 pm
WSJ	St. Johns	1580	6:15 am	12:15 pm
WMLM	St. Louis	1540	6:05 am	12:20 pm
WSGW	Saginaw	790	5:55 am	12:20 pm
WMIC	Sandusky	660	6:15 am	12:45 pm
WCSY	South Haven	940		12:15 pm
WKJC	Tawas City	104.7		12:45 pm
WLKM	Three Rivers	1510/95.9	6:15 am	12:15 pm
WTCM	Traverse City	580	5:55 am	11:20 am

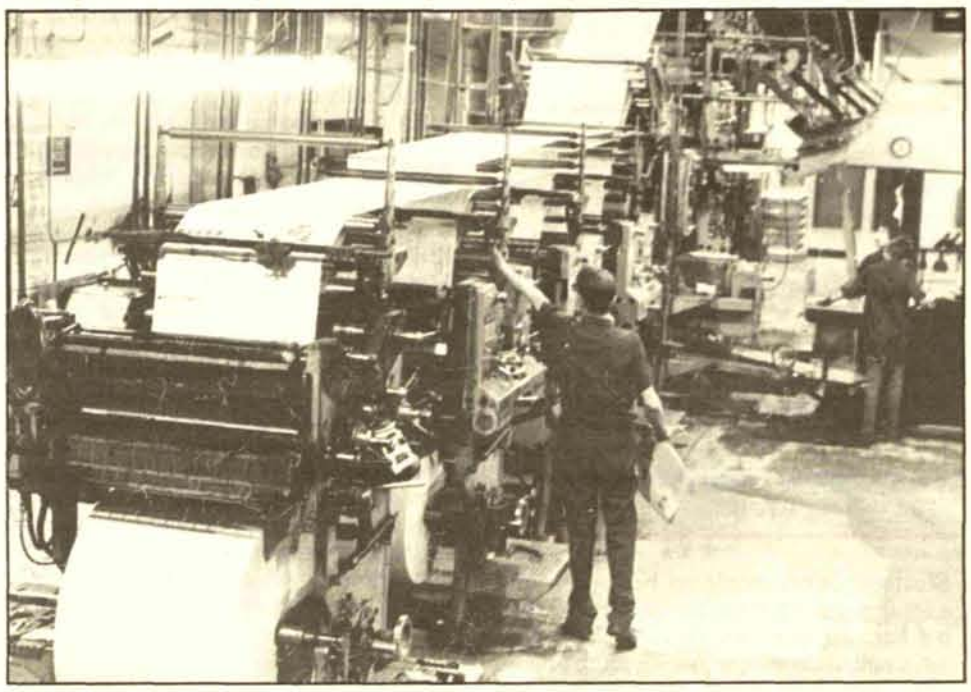
* Station signs on at different times during the year. Morning farm times change with the sign-on times.
** Station airs various farm reports between 5:30 and 6:00 a.m.
*** Station airs various farm reports between 12:00 and 1:00 p.m.

Some stations carry additional market reports throughout the market day.

Soy Ink More Than Environmentally Friendly

by Michelle Strautz

More and more printing presses, like this one at the Greenville Daily News where the Michigan Farm News is printed, are using soy ink as an alternative to petroleum based inks. The soy inks are not only environmentally friendly, they also produce a better product.



Thanks to producer-funded research, new uses and new markets for soybean products, including soy ink, have added up to a market for more than 10 million acres of soybeans per year, according to the United Soybean Board (USB).

More than $277,000 has been allocated toward soy ink research at the national level during the 1993 fiscal year with money from the national soybean checkoff program. According to estimates from the USB, that $277,000 commitment by producers has meant that additional contributions of more than five million dollars have come from the printing industry and the USDA.

Soybean-oil based printing ink was formulated by the Newspaper Association of America in 1985, in response to a shortage of imported oil which threatened many industries dependent on petroleum-based chemicals.

Soy ink has actually been available on the commercial market for a little over four years, but already, oil from about nine million bushels of soybeans is currently being used by approximately 75 ink manufacturers and 1,600 printing and publishing companies in the United States.

The nation's largest circulation newspaper, the *Los Angeles Times*, uses 100 percent soy ink, which equals 1,000 bushels of soybeans daily, while some Michigan newspapers, including the *Detroit Free Press* and the *Greenville Daily News*, have also incorporated soy ink into their printing shops.

News Web Printing, the printing facility at the *Greenville Daily News*, located in Montcalm County, which also prints the *Michigan Farm News*, began using soy-based inks five years ago and currently does 100 percent of their printing with the product, according to General Manager, Kendell Martin.

"We began using soy-based ink because it's environmentally friendlier than petroleum-based ink," said Martin. "We believe that it provides a sharper, brighter color, and we also feel that we use less ink with the soybean application than we did with the petroleum-based ink. It's just a lot cleaner to use."

Micky Marter, print manager of the *Detroit Free Press* Riverfront Plant, said they began using soy ink four years ago and currently do about 13 percent of their printing with the soy-based product.

"We started using soy ink because it performed better with our system and we felt as though it gave us better reproduction," said Marter. "It gives us brighter colors and the pictures seem to stand out more. It's also more environmentally friendly and is made in the USA, which does give us a back-up if we ever get into another petroleum crunch."

Marter added that the soy-based ink seems to lay down better on the press and works better with the mechanics of the press, with workers having much better control over the soy-based ink because it flows better than the petroleum-based ink.

Bill Bogle, manager of Farm Bureau's in-house print shop, is currently using 100 percent soy ink to print county newsletters and other materials.

According to Bogle, soy-based black ink costs about $11 less per five pound can than petroleum-based black ink, and the colored soy ink is priced comparatively to the petroleum-based colored inks.

Keith Reinholt, executive director of the Michigan Soybean Promotion Committee, said the committee continues to fund research at Western Michigan University on soy ink.

"We've done work with them previously relative to the recycling of newspapers that were printed with soy-based inks versus those printed with petroleum-based inks and then the characteristics of the resulting recycled paper," said Reinholt.

"This year, we'll hopefully be doing research with them on a formulation that is basically 100 percent soy-based and then the recycling of that paper."

Previous research conducted at Western Michigan basically looked at the biodegradation of soy ink compared to petroleum-based inks. Reducing the petroleum content of the ink by substituting soybean-oil benefitted just about everything, including the environment, according to Jean Rosinski, a graduate research assistant in the Department of Paper and Printing Science.

The soybean checkoff program, which collects one-half of one percent of the net sale value of a producer's soybeans per year, has been instrumental in funding research to find new uses and new markets for soybeans, according to Reinholt.

Reinholt said the program was developed by and is managed by soybean growers themselves, with all growers investing at the same rate and all growers benefitting equally.

"You must be a soybean producer to sit on the board. At the state level there are a group of seven farmers, and nationally, there's a group of 63 farmers, representing all the soybean producing states. There's no project approved unless they can see that it's going to increase grower's profits," concluded Reinholt.

Soybean Referendum Set for Feb. 9

The National Soybean Checkoff, directed by the 63-farmer members of the United Soybean Board (USB), has been up and running for more than two years. On Feb. 9, 1994, soybean growers will have the opportunity to vote on its continuation in a national referendum.

"Growers will be able to cast their vote at county Extension offices, or cast an absentee ballot by mail," according to Harold Phillips, USB chairman and a soybean grower from Stevenson, Ala.

"The way it looks now, seven out of 10 soybean growers approve of how the USB goes about its business of planning and evaluating programs, making sure every checkoff dollar is invested wisely. We encourage every grower to participate in the vote," he adds.

How the USB Operates

Every soybean farmer contributes equally in proportion to the value of their crop when sold: one-half of one percent. Half of the checkoff money collected stays in the state where the farmer controlled State Soybean Board decides how it should be spent.

These dollars are used to fund programs that are unique to the needs of the state or region, such as production research, or they can be used to support a USB program the state feels warrants additional support.

The USB uses its half of the checkoff money to fund hundreds of research, promotion and market development programs that need a national focus to be effective.

This funding split among the states and USB is an important part of the system of checks and balances that underlies the checkoff program.

Where the USB Spends Money

Almost half of the soybeans grown in the United States are exported, and in 1993, approximately $8 million of national checkoff money was used for international market promotion in more than 400 individual projects. For example, the USB spent about $900,000 in Germany to defend a $900 million market for U.S. soybeans. In Japan, it spent about $200,000 to defend a $800 million market.

It's important to note the USB leverages checkoff dollars with other funding. Because of the checkoff dollars invested, in 1993, international programs received an additional $12 million from the Foreign Agricultural Service of the USDA, and another $8 million from other industry segments – manufacturers, crushers, etc.

While international marketing is one of the major areas where the USB puts checkoff dollars, developing new uses for soybeans accounts for another large portion.

SoyDiesel market development activities lead the new uses parade. Now moving out of the test stage, where dozens of required EPA and engine manufacturers' tests took place, to the market creating stage, SoyDiesel shows promise to use a significant portion of the U.S. soybean oil surplus.

Checkoff dollars fund numerous other soybean research projects: polymers that can replace disposable plastic bottles, shopping bags, etc.; edible coating to preserve the shelf life of fruits and vegetables; next textile fabrics; and medical research. The USB funds hundreds of research and development projects annually. Efforts such as these is an investment working to make growing soybeans more profitable for every producer.

Market Outlook...

Dr. Jim Hilker, Dept. of Agricultural Economics, MSU

CORN

As I sit here writing, my crystal ball seems very cloudy. As you read this article, you will have the benefit of the final Crop Report and quarterly Stocks Report which were released Jan. 12. If you have not seen them, look them up; we will discuss them in the next issue.

The Stocks Report gives us an indication of fall feed use through Dec. 1. Since that time, we have had some very cold weather through the Midwest which may increase feed use. Also, the Hogs and Pigs Report seems to indicate a few more hogs being fed through the second half of the crop year than previously expected. These factors should benefit corn prices.

Exports keep rolling along near expectations, considerably below last year, but at a rate which should reach USDA projections. We have exported 40 percent of projections up to this point, and last year, we had exported 40 percent of the total by late December. We will need to export about 23 million bushels of corn a week through August to reach expectations.

Both corn basis relative to March corn futures and March cash corn bids indicate the market is willing to pay on-farm storage until March. Opportunity costs are 1-2 cents per month, depending on the interest rate you face, and the market is offering 6-10 cents for the 2-month storage.

Off-farm storage payments are hard to justify. The spreads after March tell the market it is not willing to pay storage beyond March.

Seasonal Commodity Price Trends

Wheat	↔
Corn	↑ ?
Soybeans	↑ ?
Hogs	↑
Cattle	↔ ↑

Index: ↑ = Higher Prices; ↓ = Lower Prices;
TP= Topping; BT= Bottoming; ? = Unsure

Strategy: What should we be doing? Well a lot depends on what the reports indicate, but here are some thoughts. If the reports were bullish, consider pricing more of your total, especially if you are less than half sold. Prices are good now even if they go higher later.

For the portion you chose to continue speculating with, use storage and wait to price or store and buy put options if you have on-farm storage and use a basis contract or a minimum price contract (or buy calls) if you do not have farm storage. If the reports were bearish, we'll probably see more chances to price, but don't bet your entire crop on it.

Another thought, if the report is bullish, start looking for opportunities to price fall 1994 corn. The higher the market goes, the more rationing (cutback in use) we will have. A trend corn yield next year will likely take us back to the $2.20 area.

WHEAT

Wheat prices have gone beyond any expectations, but that hasn't made pricing decisions a whole lot easier, other than the worst you can do is price any remaining wheat at today's high prices. There are both positives and negatives in possible price scenarios lurking in the future.

Up to this point, wheat exports have been a positive and it appears that will continue a little longer. Check the Supply/Demand Report released Jan. 12 to see if the USDA increased their 1993-94 wheat export projections.

However, it also appears that Australia will harvest their best crop since 1984-85; this could pressure prices. But, Argentina is having a lot of rain and fungus's may force 20-30 percent of their production away from food consumption.

On the production side, the USDA released the winter wheat plantings on Jan. 12. What did they say, more acres or less acres? Are set-aside requirements the same as a year ago? Also, what affect will this cold snap have on unprotected wheat? Nobody ever said well thought out pricing decisions were easy.

Be watching for new crop wheat pricing opportunities.

CATTLE

The Dec. 1 monthly USDA 7-State Cattle-On-Feed Report released Dec. 17 showed 5 percent more cattle on feed than last year. November marketings were about the same as last year, but had been expected to be 3 percent higher.

This shows we are probably not current. Along with this, slaughter in December, while up 2-3 percent compared to last year, has not been high enough to use up much of the extra cattle on feed, and this is on top of weights being up significantly compared to a year ago. And this situation is likely to continue into early February.

Strategy: The bottom line is to keep current, feeding these fat cattle more expensive feed is clearly not the answer. Is there anything optimistic? The answer is yes, exports have been going well and that is likely to continue with the new trade agreements, but that is longer term.

EGGS

Henry Larzelere, Dept. of Agricultural Economics, MSU

Egg prices at year-end were about 5 cents a dozen above last year. These somewhat better prices were partially offset by feed ingredient costs about 4 cents per dozen above year earlier levels.

In the first quarter, egg prices will likely average in the low 70s in New York at wholesale for Grade A large white eggs in cartons. By the second quarter, prices will slip into the 60s. Since Easter is the first Sunday in April in 1994, Lenten price strength will be weaker in most of April.

On Dec. 1, the number of layers in production were 2 percent above the comparable date a year earlier. Both total and table egg production figures in November were also 2 percent above Nov. 1992.

The egg-type chick hatch in 1993 was above 1992 levels in each month except May. The layer-type eggs in incubators on Dec. 1 were 6 percent below that figure in 1992. That was the first sign of moderating egg production by the summer of 1994.

MICHIGAN DAIRYING – AN EXCITING 1994?

Sherrill B. Nott, Dept. of Agricultural Economics, MSU

If you enjoy change, you'll find dairying in Michigan could be exciting. As we start 1994, milk prices to be received will benefit from the better than expected Minnesota-Wisconsin (M-W) price levels.

Milk production was down 4.5 percent in Minnesota and down 8.2 percent in Wisconsin in Nov. 1993 compared to Nov. 1992. If this trend continues, it will have a positive effect on the M-W price.

We may hope the factors that are reducing cow numbers don't make it across Lake Michigan, but we'll accept the milk price strength they foster. USDA predicts 1994 farm level milk prices will drop below 1993 levels, but hastens to add that uncertainty about both supply and demand conditions may make a mockery out of any price projections.

Early February could see the start of BST purchases. But, the *New York Times* reported on Dec. 24 that a foundation will file lawsuits in January seeking to block sales in the U.S. History shows exciting rhetoric often surrounds the introduction of new technology.

FARM BUSINESS OUTLOOK

High feed prices will take their toll. The excitement here is watching 1994's weather patterns unfold. An early first crop of roughage would be welcome. Will today's low crude oil prices hold into the growing season to help offset high purchased feed costs?

Milk component pricing may come to Order 40 in May. This will be a very different way to compute the pay price for milk in southern Michigan. It'll provide an exciting challenge to learn how to manage cows for more protein and lower somatic cell counts.

Dairy farmers own lots of land and pay lots of real estate taxes. It will be exciting towards the end of 1994 to figure out the dollar impact of any changes to school funding the Legislature and the voters may ultimately approve.

SOYBEANS

My crystal ball for soybeans looks the same as the one for corn and for many of the same reasons. Like wheat, the Southern Hemisphere is quite willing to throw in some extra twists.

The Brazilian soybean crop looks as good as ever, timely planting and timely rains point to a lot of competition in the export market come spring and summer. However, the picture in Argentina is much different, heavy rains have delayed plantings in many areas and the crop overall does not look as good.

The demand side for soybeans is also clouded. Soy oil content is low which means either projected oil use will drop or crushings will have to increase, or some combination.

Exports are running at only 37 percent of the projected total up to this point; last year we were near 40 percent by now. While it does appear we will meet projections, it is unlikely bullish information will come from this area.

Strategy: The basis and cash bids for March delivery are telling us the same story as for corn. If you have on-farm storage, use it. If you don't and want to stay in the market, use a basis contract or a minimum price contract if you want less risk. As with corn and wheat, start watching for 1994 soybean new crop pricing opportunities.

HOGS

The USDA quarterly Dec. 1 Hogs and Pigs Report released Dec. 29, 1993, was somewhere between neutral, bullish and bearish. And that is kind of how the markets opened the following day, up some in nearby futures and neutral to down through the summer futures.

The report showed that there are 2 percent less hogs in inventory than the same time last year and 2 percent less being held for market, which after adjusting for the revisions in last year's number, is slightly less than trade expectations.

However, since Dec. 1, hog producers have become less current, so look for a slight seasonal increase in prices through January before picking up some in February.

Strategy: At this point the key is to keep very current. It does not appear it will pay to wait and sell heavy hogs, especially at today's corn prices.

The lighter weight market hogs, under 60 pounds on Dec. 1, are 4 percent below last year which should help April prices. As we look toward the summer supply, a key is the December-February farrowings. The report indicates farrowings will be up 2 percent in that period. This may pressure summer prices a bit, but they are still likely to get near or exceed $50 per cwt.

Longer term it appears the breeding herd liquidated some, down 1 percent this fall, and that was before corn prices really shot up and hog prices really dropped off.

The report also said March-May farrowing intentions would drop off 3 percent in 1994 relative to 1993. This should help fall prices. Where are the increases coming from? The answer is North Carolina, Missouri and Oklahoma. These are also the states where the large-scale farrowing operations have been going in.

Leasing Farmland a Popular Trend

Recent USDA statistics reveal that nearly half of all agricultural land is leased. One and a half million landowners lease about 332 million acres. In 1980, leased agricultural land totalled 30 percent; in 1988, it had increased to 45 percent. Leasing is viewed as an effective way to gain control of land resources, enhancing management flexibility and reducing risk. Forty-one percent of all farmers operate at least some leased land. Women are the largest group of agricultural landlords, controlling 40 percent of the land in the rental market.

Food Prices Expected Up – Little to Reach the Farm

The Consumer Price Index for all food in 1994 is expected to rise 2 to 4 percent. Restaurant prices are expected to increase 2 to 4 percent. Competition among fast food outlets will continue to keep price increases moderate. The farm value of food, the cost of farm commodities used in finished food products, totalled just under 30 percent of retail food costs in 1993. It will have little additional impact on 1994 prices except the few areas of tight supply.

7 Should You Consider GRP Crop Insurance?

FARM BUSINESS OUTLOOK

Most of you are familiar with hail (HCI) or multiple peril crop insurance (MPCI). These products are designed to reduce the financial risks that occur when you have significantly below normal yields due to hail or due to drought, excess moisture and other "Acts of God." The goal is to transfer risk from the farm to the "insurance pool." You pay premiums each year so that if you have a poor yield, you will be compensated by the insurance pool up to your deductible.

In 1994, the Federal Crop Insurance Corporation/USDA added another product to the crop insurance toolbox — the Group Risk Plan (GRP). The plan offers higher coverage (lower deductibles), minimal paperwork and lower premiums compared to their Actual Production History (APH) plan.

The plan does not guarantee that you will receive a payment if you have a yield shortfall. That's because the losses upon which indemnities are based are shortfalls in county yields, not individual farm yields.

The level of your yield vs. the level of the county yield is not important. Within reason, you choose the amount of protection you want to purchase. That can be up to 1.5 times the county's expected yield.

Tracking is what is important. If you have a poor yield, the county needs to have a poor yield. Thus, it comes down to what skilled commodity marketers would call basis risk if this were a corn or soybean market. If the risk of poor tracking is small relative to the variability in your yields, GRP is worth considering.

Do My Yields Track the County Yield?

That's an easy question to answer. MSU county extension offices, crop insurance agents selling GRP and some farm management consultants have graphs of corn and soybean yields in your county over the 1962 to 1992 period.

Let's consider an example. Figure 1 shows the graph for corn in Jackson county. Get out your records and plot your yields against the graph of yields in your county. If the county had lousy yields in the same year you had lousy yields, then GRP is worth considering — if you need insurance. If your lousy years don't match the county's lousy years, GRP probably isn't for you.

Who is likely to have a good tracking? You probably can think of other examples, but two cases would be a farm that's spread across a county and/or a farm that's typical of the county.

My Yields Track...but the Percentage Shortfalls are Larger on My Farm

This is where the level of protection purchased comes in. And, this is where GRP differs a bit from hail insurance. Typically, you have some level of cash flow you are trying to protect. You usually select the deductible with that goal in mind.

Try the following idea on for size. If your yield tends to have a larger percentage of shortfalls than county yield, simply scale up protection so the percentages match. For example, if your yields are 30 percent more variable, choose protection that's 1.3 times the county expected yield.

How Are Premiums Calculated?

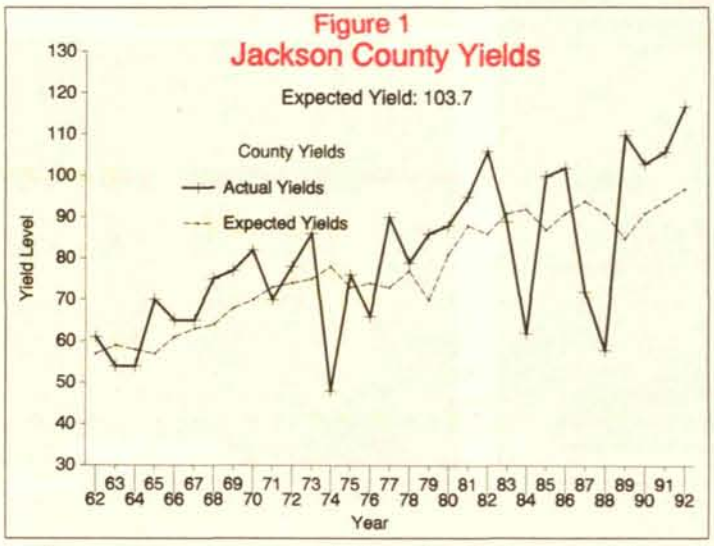
Table 1 depicts the GRP coverage and rate table for corn in Jackson county. It describes the expected county yield that's used to calculate the trigger yield, the trigger yield for each coverage level (deductible), the unsubsidized premium rates/$100 protection and the maximum subsidy/acre. It also describes the dollar value of the maximum protection you can buy per acre — $342.

Table 1
GRP County Coverage and Rate Table for Corn in Jackson County

Expected county yield: 103.7 bu/acre
Maximum Protection: $342/acre
Maximum Subsidy: $ 3.66/acre

Coverage level:	65%	70%	75%	80%	85%	90 %
Trigger yield, bu:	67.4	72.6	77.8	83.0	88.1	93.3
Unsubsidized premium rate, $/$100:	0.70	0.90	1.50	2.20	2.90	3.70

Figure 1
Jackson County Yields



Let's suppose you were a Jackson County farmer and that you decided that an 80 percent coverage policy would provide the floor on cash flow you need. Further, suppose that your yields were high enough and more variable than the county yields to warrant scaling by 30 percent. You would buy about $300 protection.

Table 2 is a worksheet showing all the steps in calculating farmer premium/acre. We've assumed 100 acres of corn in the county — to provide an easy number for calculating.

Table 2: GRP FARMER PREMIUM CALCULATIONS
CORN WORKSHEET

State: MICHIGAN County: JACKSON

	Maximum protection $342 Per Acre		
(1)	Minimum protection $103 Per Acre	Your selection	$300
(2)	Coverage Levels: 65 70 75 80 85 90	Your selection	80
	Trigger Yield		
(3)	(Expected County Yield 103.7 Bu. Per Acre X Coverage Level)	Trigger Yield:	83.0
(4)	Premium Rate Per $100 protection	Per $100:	$2.20
	Insured Acreage (Net Acres)		
(5)	(Estimated acreage of CORN in the insured county X insurable share)	Net Acres:	100
	Your Policy Protection		
(6)	Line 1 X Line 5 ->		$30,000
	Gross Premium		
(7)	Line 6 X Line 4 X .01 ->		$660
	Premium Subsidy Amount:		
(8)	30% X Line 7 ->	Lesser of:	$198
	not to exceed $3.66 X Line 5 ->	or	$366
	Premium due from Grower		
(9)	Line 7 - Line 8 ->		$462

The preliminary payment yield will be released on November 30. When the preliminary payment yield falls below 90% of your trigger yield, a preliminary payment will sent to you within 30 days. This payment will equal 2/3 of the payment calculation factor times your policy protection.

The final payment yield will be released on April 15 following the insured crop year. Any final payment due you will be made within 30 days.

How Indemnities Calculated?

Table 3 is the GRP indemnity calculation worksheet. Suppose the county had a yield of 60 bu/acre. The percent loss relative to a 20 percent deductible would be 27.7 percent and the indemnity/acre would be $83.10. That's $8,310 for 100 acres.

Summary

GRP is easy to understand. It has minimal paperwork. How many acres? How much protection? What deductible do you want? It's a product worth considering if you don't have the financial capacity to take a big hit or if you would like more stability in your revenues — providing your yields track well with the county yield.

Table 3:
GRP Indemnity Calculation Worksheet

Value/Calculation Result	
Protection/A. in $	300
Trigger Yield bu./A	83
Realized Yield, bu./A	60

$$\% \text{ Loss} = \frac{\text{Trigger Yield - Realized Yield}}{\text{Trigger Yield}}$$

$$\frac{83 - 60}{83} = 27.7\% \text{ loss}$$

$$\text{Indemnity/A} = \frac{\text{Protection/A x \% Loss}}{100}$$

$$\frac{\$300 \times 27.7\%}{100} = \$83.10$$

8 BST Management Aspects to Consider

What will Posilac cost? At what point in the lactation do you begin to use it? What production level is required? What's the shelf life? How does Posilac affect reproductive performance?

Milk Yield Response to POSILAC in Michigan

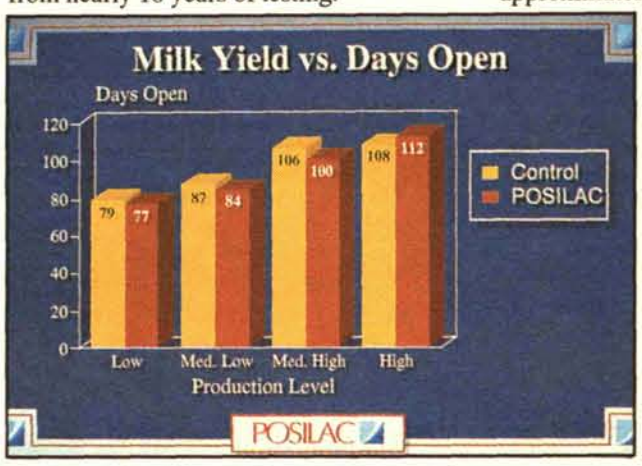
Farm	Rolling Herd Av.	Milkings /Day	Herd Size	Cows on Trial	Milk Production Before lbs.	Increase lbs.	Increase %
1	16,149	2	252	72	56.1	15.2	27.1
2	17,641	2	148	50	63.8	8.6	13.5
3	17,712	2	251	79	65.6	13.0	19.8
4	20,805	2	189	59	66.6	12.0	18.0

12 weeks of POSILAC supplementation on commercial farms

POSILAC

Forty dairy farmers had an opportunity to ask these questions and others during an advisory committee meeting of the Michigan Milk Producers Association, with Monsanto representatives on their version of BST known as Posilac.

Monsanto's Animal Sciences Technical Services Veterinarian, Gene H. Swenson, Posilac Product Manager, Robert Powell, and Director of Industry Affairs Monte Hemenover were on hand to respond to questions and share research information from nearly 10 years of testing.



Milk Production Increases

Production increases due to BST ranged from 5 pounds per day to 15 pounds, with an average of 9 pounds per day, said Swenson. Twice a day versus three times a day milking showed no difference in increases.

"The biggest response in production occurs with the second and third injections, and then it plateaus at the higher production level for as long as the cow continues to receive Posilac," Swenson explained. "On average, first-calf heifers experienced approximately a 2 pound less per day increase compared to second-lactation cows."

Milk Composition

Swenson told the group that Posilac is a protein not a steroid, meaning that it's digested when consumed orally. BST does not affect the composition of milk according to research results. Despite the apparent differences shown in the table below, they are not statistically different, Swenson said.

Milk Composition Comparisons

	Posilac	Non-Posilac
Fat	3.67	3.76
Protein	3.24	3.32
Lactose	4.81	4.85
Ash	.73	.73

Feed Intake

The most important aspect of Posilac management, according to Swenson, is making sure the cow is fed to her higher production level. "You have to keep feed available at all times, and be ready to increase your rations," he said. "Dry matter intake increased generally six to seven weeks after BST use was initiated, in second lactation cows."

According to Swenson, as a general rule of thumb, herds on a total mixed ration will require an additional four pounds of feed for every 10 pound increase in milk. In non-TMR herds, plan on increasing concentrate levels by one pound for every three pounds increase in milk production.

Reproduction Impact

In regard to reproduction performance, Swenson said that research has shown no difference between BST and non-BST treated cows at similar production levels. He was quick to point out, however, that higher producing cows are generally open longer than lower producers.

"An old rule of thumb is that every 200 pound increase in milk production on a 305 day lactation generally increases the number of days open by one," Swenson said. "We recommend that producers continue with their normal breeding program, and continue using Posilac right up to the dry-off period."

Breeding Performance

	Heifers non-BST	Heifers BST	Cows non-BST	Cows BST
Days Open	118	119	112	131
Pregnancy Rates	91%	83%	94%	82%

* 305 day lactation - bred after BST started at nine weeks

Mastitis Frequency

Swenson explained to the advisory committee that the highest period for new infection in a cow occurs early in the dry-off period, hence the use of dry-cow mastitis treatment. Posilac use is started in the ninth week of lactation, which coincidentally is the lowest opportunity for new mastitis infection.

"Increased milk production has been demonstrated to increase the incidence of mastitis," Swenson said. "The bottom line, however, is that BST research has shown that producers can expect one additional case of mastitis per cow over 10 lactations, because of the higher production."

BST Economic Aspects to Consider

To introduce Posilac, Monsanto is using the "Try it Right" program, which means producers can make a qualifying purchase of Posilac equal to the number of cows in their herd for $5 per dose, for an indefinite period of time, according to Monsanto's BST Product Manager Robert Powell. Posilac will normally be priced at $6.60 per dose for a daily cost of 47 cents.

Monsanto is also using a voucher system, that will allow a producer using Posilac for the first time to get $150 worth of free veterinarian consultation services.

Powell thinks that producers will quickly realize the economic pay-off of BST, once they put pencil to paper.

"The beauty of this product is that it allows a producer to make a substantial increase in production, without a large capital outlay," he said. "It will also provide a better return on current capital investments. In many cases, using the nine pound average increase, a producer could expect a net of $80 per cow per lactation."

In addition to spreading overhead and optimizing existing facilities, Powell said producers can extend the profitability of a long lactation with problem breeders, and if so desired, a producer can maintain current production levels with less cows.

Posilac Price Worksheet

(Example assumes 100 cows treated for 245 days/lactation)

Milk Response (lbs/cow/day)	6 pounds	9 pounds
Milk Value ($/cwt.)	$12.50	$12.50
Milk Income ($/day)	0.75	1.125
Posilac Price (14 days)	6.60	6.60
Posilac Costs ($/day)	0.47	0.47
Feed Costs ($/day)*	0.21	0.315
Total Incremental Costs ($/day)	0.68	0.785
Net Profit ($/cow/day)	0.07	0.34
Profit Opportunity (100 cows/lactation)	$1,715	$8,330

* Assumes feed costs of 3.5 cents/pound increase in milk.

According to Powell, Monsanto is offering a generous credit program, that allows a producer to order Posilac the first of the month, with billing occurring on the 20th of the following month.

"This will allow a producer to actually receive the benefits of Posilac prior to incurring charges for the product," Powell explained. "However, as soon as the cow increases her feed intake, the producer will start to experience incremental costs. The same could be said for labor charges too."

Posilac Price Worksheet For Your Farm

Milk Response (lbs/cow/day) _____

Milk Value ($/cwt.) _____

Milk Income ($/day) _____

Posilac Price (14 days) $6.60

Posilac Costs ($/day) $0.47

Feed Costs ($/day) _____

Total Incremental Costs ($/day) _____

Net Profit ($/cow/day) _____

Profit Opportunity (# cows/lactation) _____

* You could also use this worksheet to calculate your total costs and local milk value to determine the actual milk response you would need on your farm to break even.

Posilac Facts

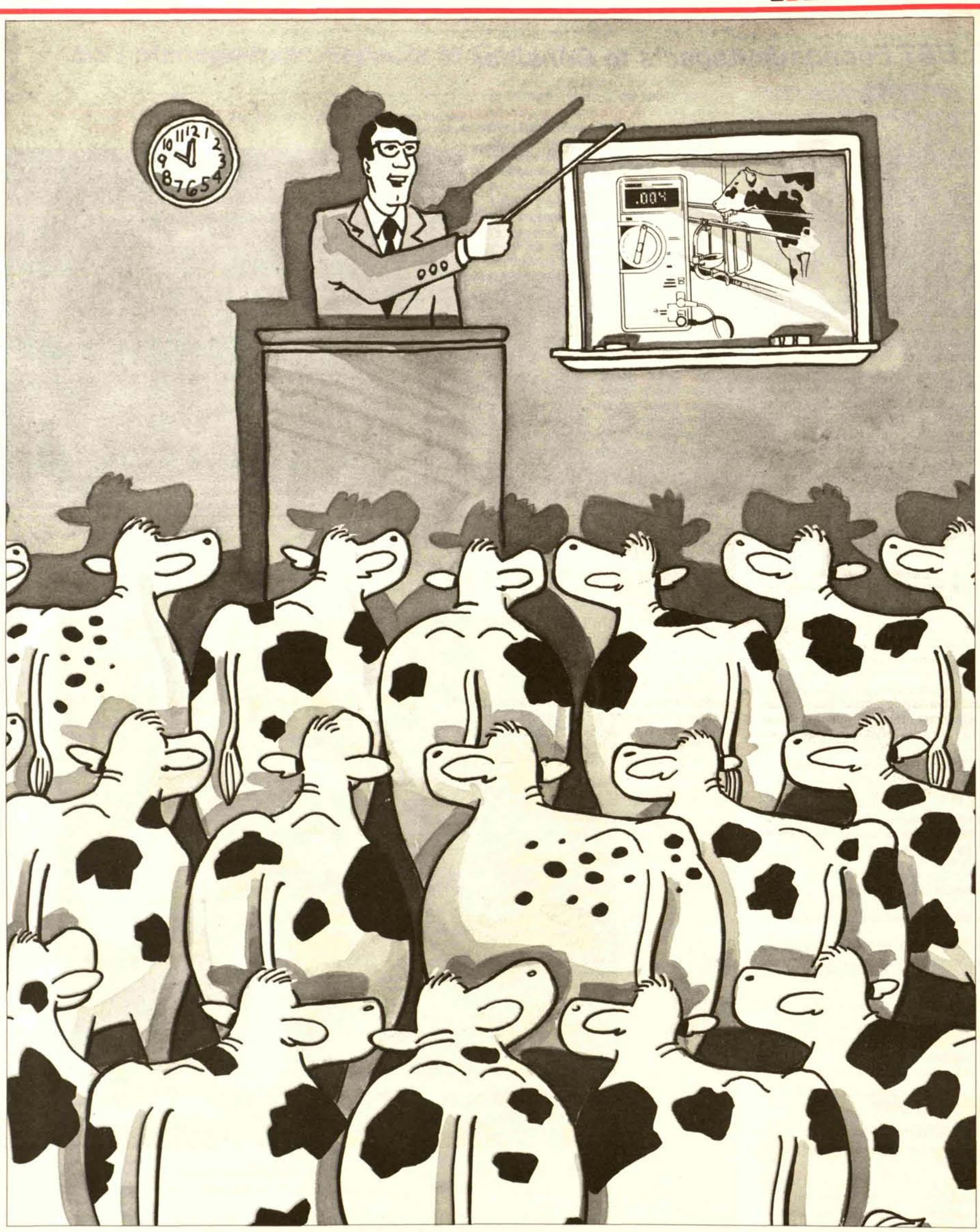
- ☐ 500 mg. of BST/dose in individual syringes, complete with 5/8" 16-gauge needle.
- ☐ Start using during the 9th week of lactation right up to dry-off. Monsanto advises use of Posilac on healthy cows only.
- ☐ Inject under the skin every 14th day in the depression on either side of the tail head or behind the shoulder blade.
- ☐ Five to 15 pound/day increase in milk production, with an average 9 pound increase expected.
- ☐ "Try it Right" introductory offer of $5 per dose. Normally priced at $6.60 per dose.
- ☐ No drug withdrawl period for milk or meat is required.
- ☐ 36-month shelf life for Posilac.
- ☐ Posilac must be refrigerated.
- ☐ Buy direct via a 1-800 phone number.
- ☐ Used syringe disposal program allows producers to send used syringes back to Monsanto for disposal.

Michigan Milk Production Down Slightly in November

Dairy herds in Michigan produced 424 million pounds of milk during November, 4 million pounds less than a year ago, according to the Michigan Agricultural Statistics Service. Milk per cow averaged 1,250 pounds, down 10 pounds from last year. The Michigan dairy herd was estimated at 339,000 head, down 1,000 head from Nov. 1992.

The preliminary value of milk sold averaged $13.60 per hundredweight (cwt.) in November, $.30 more than last year. Mid-month October slaughter cow prices averaged $43.30 per cwt., $2.30 less than the previous year.

Milk in the 21 major states totaled 10.0 billion pounds, 2 percent below production in these same states in Nov. 1992. Production per cow averaged 1,237 pounds for November, unchanged from Nov. 1992. The number of cows on farms was 8.08 million head, 152,000 head less than Nov. 1992 and 10,000 below Oct. 1993.



You're invited to a dairy seminar.

No one should miss this informative seminar on stray voltage and the latest in dairy facilities planning. Jointly sponsored by the Michigan State University Extension and Consumers Power, the seminar explains the causes and effects of stray voltage, how to recognize it and how it can be corrected. We'll also highlight the characteristics of healthy, well-managed dairy facilities. This seminar is coming to your area soon, so watch your mail for more information. We're sure you'll want to attend. If you think you have a stray voltage problem, call Consumers Power's stray voltage specialists immediately at 1-800-252-VOLT.

Consumers Power
POWERING MICHIGAN'S PROGRESS

11 Restricted Use Pesticide Certificate Rules

Jim Good, MSU Extension

Due to the fact that restricted use pesticide certifications expire at the end of the third year, it's a good idea to review the procedures for re-certification.

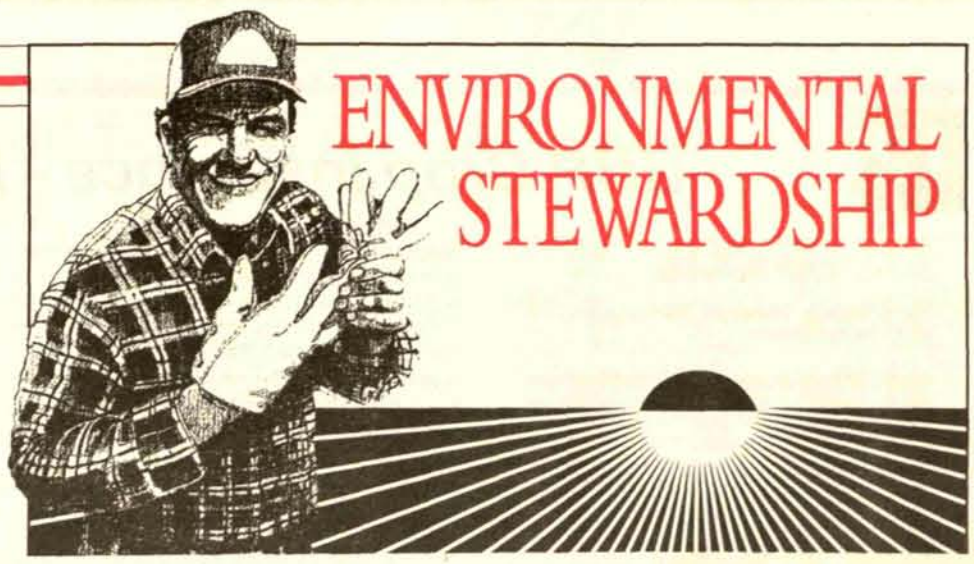
If you want to know when your certification expires, check the lower right hand corner of your green certification card. You should have received a renewal application in the mail from the Michigan Department of Agriculture (MDA) well before the end of 1993. Keep this in a place where you can find it later! **If you didn't get one or lost it, call MDA at (517) 373-1087.**

To renew, you have two alternatives. First, take the renewal test and receive a passing grade (70 percent or higher). Second, if you have accumulated enough educational credits and can list them for MDA, you are renewed without testing.

Private applicators (farmers) need 12 credits and commercial applicators need 18 in one category plus six in any other category they wish to renew. In this case, send your renewal application, a list of the credit programs and dates, and a check for the fee back to MDA, Lansing.

If you have not been certified as a Restricted Use Pesticide (RUP) applicator or your certification has lapsed, you must pass a core test for commercial, at least one category test, but should be certified in any category you apply pesticides in.

New certification applications are available from Extension and MDA offices. Note: Private applicators are growers of crops or trees applying RUPs on their own or rented lands. This includes farm employees. Commercial applicators are any other RUP application and if done for hire (customer application), you must also be licensed.



To be certified or re-certified by testing, register for one of the many test site dates and take your completed application and a check (State of Michigan) to the test site. Don't mail it in!

About 10 days after the test, you will be notified of passing or failing. You will be issued a plastic RUP Certification card if you pass; if you failed, you can take the test again.

Prior to taking the test, get a current study manual from Extension. Most of these have been updated in the last 18 months.

Note: If you are a farmer who applies pesticides for anyone else in the course of employment, you probably should have commercial certification. A new ruling states that non-farm commercial applications of ready-to-use general use pesticides (GUPs) do not require any certification!

National Survey Shows Conservation Tillage Putting the Plow to Rest

A nationwide survey shows more farmers are abandoning the plow for the economic and environmental benefits of conservation tillage. The *1993 National Crop Residue Management Survey* indicates the number of planted acres that benefit from less tillage could soon outpace the acres that are plowed or tilled clean of crop residues.

Farmers who practice conservation tillage, either no-till, ridge-till or mulch-till, leave 30 percent or more of the residues from previous crops on the ground after planting.

According to the survey, this soil-protecting and labor-saving practice has been adding an average of about 9 million acres for the last two years and is now less than 11 million acres away from the number of acres that are clean tilled.

Survey coordinator Jerry Hytry, executive director of the nonprofit Conservation Technology Information Center (CTIC), predicts the acres of conservation tillage will overtake the number of acres clean tilled next year.

"Economics are driving this transition and I fully expect conservation tillage to exceed clean tilled acres in 1994," says Hytry.

The survey, which includes more than 3,000 counties nationwide, shows conservation tillage accounted for over 97 million acres or nearly 35 percent of total cropland acres planted in 1993. Almost 39 percent or nearly 108 million acres are being clean tilled, leaving little or no residue.

Mulch Till Leads the Way

Mulch-till is the largest among the conservation tillage categories, adding 1.6 million acres this year for a total of almost 59 million acres. No-till continues to post the largest annual increases in the conservation tillage categories, growing more than 6.7 million acres this year to encompass almost 35 million acres in 1993. Ridge-till grew by 100,000 acres this year, it now accounts for about 3.5 million acres nationwide.

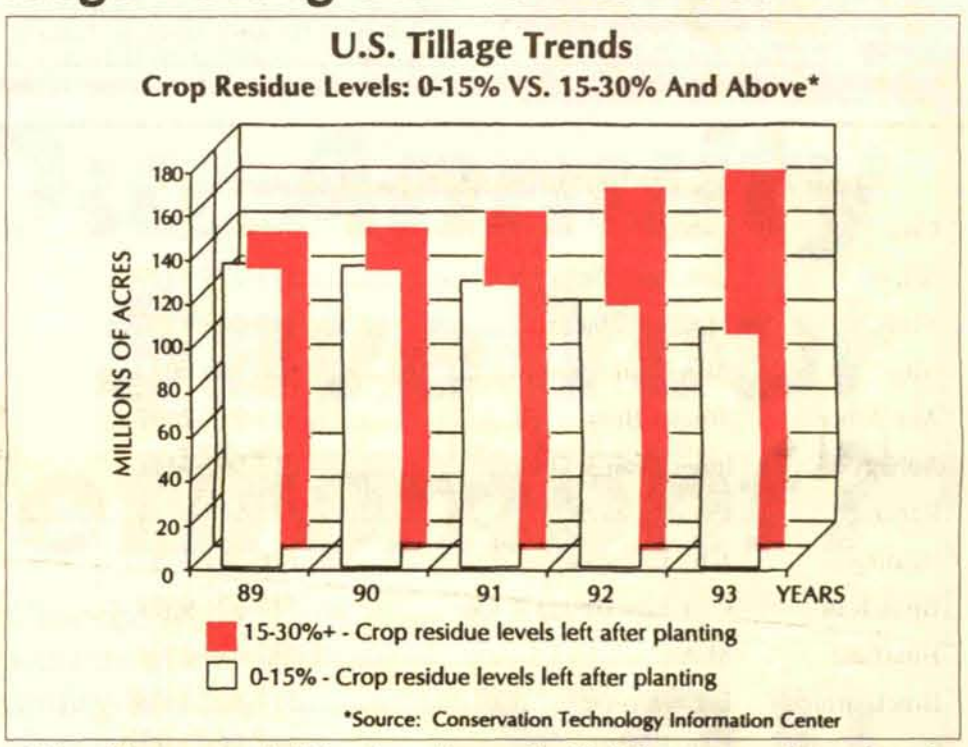
The survey includes a 15-30 percent residue category which is not a form of conservation tillage but may represent a positive system for soil erosion control. Combined with other conservation practices like strip cropping, terraces, and rotations, 15-30 percent residue levels can provide adequate erosion control. Adding the 15-30 percent category to conservation tillage acres, more than 170 million acres or 61 percent of the 278 million planted acres in the U.S. utilized some form of crop residue management system.

Regional/State Highlights

• Regions with the greatest conservation tillage acreage are: Corn Belt – 37 million acres, Northern Plans – 24 million acres, and the Great Lakes States – 9.5 million acres.

• The largest no-till state is Iowa with 6.9 million acres, followed closely by Illinois with 6.3 million acres.

• Mulch-till is the strongest of the conservation tillage types in the Southern Plains, Mountain and Pacific regions.



• Ridge-till's top state is Nebraska, with nearly 1.5 million acres. Minnesota, a distant second, has 600,000 acres.

• Ridge-till is most practiced in the Northern Plains with 1.9 million acres, followed by the Corn Belt with 700,000 acres, and closely behind are the Great Lakes States with 600,000 acres.

Crop-Related Highlights

• No-till corn has more than doubled in five years from 7 percent to 17 percent of all planted acres in 1993.

• No-till full season soybeans have increased over five times in the last five years, from 4 percent of total planted acres to 22 percent his year.

• Use of conservation tillage for full season soybean production now exceeds 47 percent of planted acres, half of which is mulch-till.

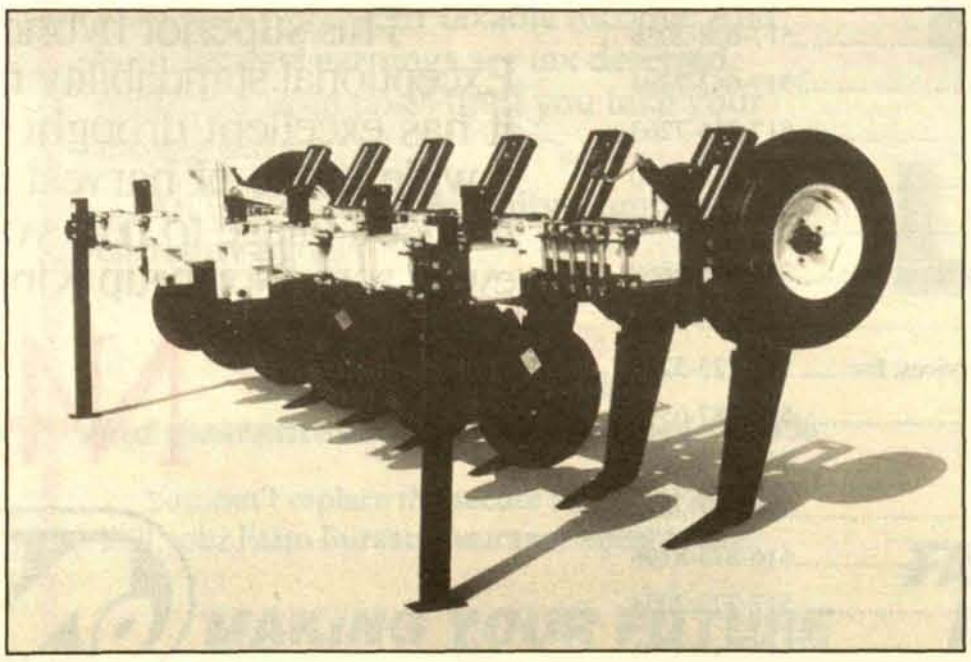
• No-till cotton has increased more than three times in the last three years, with Tennessee, Alabama, Georgia, North Carolina and Mississippi leading the way.

Slicing Through To Zone-Till: The Rawson Zone-Builder from Unverferth

Eliminating the yield limiting effects of hardpan is the first step toward successful adoption of the Zone-Tillage soil management system. Only the Rawson Zone-Builder deep-till implement from Unverferth is designed specifically for this purpose.

The Rawson Zone-Builder deep-till implement slices through hardpan to create a passageway that allows plant roots and soil moisture to move freely into the subsoil. Unless this is done, plants can only use the nutrients and soil moisture above the hardpan, making them vulnerable to the weather extremes of drought or excess moisture.

The deep-tillage operation is equally effective when done in the fall or spring and whether you till between every or every other row. If done as a spring operation, the Zone-Builder deep tillage tool can also be used to side-dress nitrogen at the same time using optional Zone-till sealers.



The Rawson Zone-Builder deep-till implement from Unverferth features automatic reset and special alloy steel shanks that dig down and through compacted soil. A 20" ripple coulter that cuts residue leads each shank through the field. Available with four or six shanks, the Zone-Builder deep-till implement from Unverferth is adjustable to virtually any row spacing. The 1" replaceable shank points slice through the hardpan opening with minimal surface soil disturbance. The shanks can be positioned to work directly under the rows, or between them, to a depth of 26".

The Zone-Tillage soil management system combines the seedbed preparation benefits of conventional tillage with the conservation compliance benefits of no-till and ridge-till, without sacrificing yield.

Rawson Zone-Till products are manufactured and marketed through Unverferth Mfg. Co., Inc., a leading manufacturer of quality agricultural wheel systems, grain handling, seed handling, tillage equipment, and the Brent line of products.

For more information about the Zone-Builder deep till implement, the Zone-Tillage soil management system, and the entire line of Rawson Zone-Till products, contact Unverferth Manufacturing Company, Inc., P.O. Box 357, Kalida, OH 45853. Telephone 1-800-322-6301, 419-532-3121 or fax 419-532-2468.

GRP Crop Insurance - Is It for You? continued from page 1

GRP Benefits

- ☐ It's typically cheaper than traditional crop insurance.
- ☐ It has higher coverage choices (lower deductible options) than traditional crop insurance.
- ☐ It has the potential of providing protection against catastrophic events that are common across a county, such as drought.
- ☐ It requires minimum paperwork. All it asks is, "How many acres of corn/soybeans do you farm and how many dollars per acre of protection do you need?
- ☐ It's easily understood by farmers who are experts in commodity marketing since the concept is very common to options or futures contracts.

GRP Caution

- ☐ GRP doesn't guarantee payment if you experience a yield shortfall on your own farm, while the remainder of your county experiences normal yields.

With the 40-bushel yield, and a $5.75 indemnity price for soybeans, the maximum protection level would be 40 bu. x $5.75 x 1.5 = $345. If the county yield dropped to 20 bushel per acre, that represents a 44 percent shortfall (36-20/36). The percentage shortfall is multiplied by the protection level to derive a payment figure (.44 x $345 = $151.80). Each farmer with this contract in that particular county would receive a payment of $151.80 per acre.

Available in Limited Counties

GRP will be offered for corn and soybeans only in those counties with 15,000 or more acres of those commodities. GRP coverage must be purchased in the county where the acreage is located.

Black predicts that if the GRP concept takes off, that acreage figure could be reduced to 10,000 acres meaning that more Michigan counties could participate in GRP.

"I would be real surprised, however, if the acreage cut-off went below 10,000 acres, since the program is based on county yield to establish the insurance rates," Black said.

Why GRP?

GRP is designed to eliminate many of the shortcomings of conventional multi-peril crop insurance, namely those of cost, duplication, low participation, and program abuses, according to Dr. Jerry Skees, professor of agricultural economics at the University of Kentucky. Skees is under contract to the Federal Crop Insurance Corporation (FCIC) to develop the GRP concept.

"Congress has been trying for some time to make the Federal Crop Insurance Program work," Skees said. "However, every time we have a major catastrophe, Congress also comes in and provides additional incentives and protection. With GRP, we now have a mix between free disaster assistance and the current multi-peril crop insurance program."

Between fiscal years 1980-90, the net cost of the U.S. crop insurance program averaged $489 million per year. However, the average $489 million per year for crop insurance was only 24 percent of the total net cost of U.S. government disaster assistance programs over the period. The remaining 76 percent was for free disaster assistance payments and low interest loans.

According to Skees, research using 3,000 soybean farms has shown that two-thirds of these farms would have reduced their risk more during the 1980s with a GRP policy at 90 percent than with a MPCI policy at 75 percent. Consistently bad managers would not be able to collect with GRP, since payment is based on shortfalls in the county's yield, not the individual's yield.

Black agrees with Skees, adding that a tighter federal budget and a growing concern by public policy makers over the existing MPCI program's ills prompted the testing and development of GRP.

"We had too many farms in some markets that were collecting year in and year out - something clearly wasn't working very well," Black said. "During the Bush administration, OMB (Office of Management and Budget) started looking very aggressively at GRP as a way to provide a reasonable amount of protection for many farmers. They would absolutely like to get out of the disaster program business, and secondly, be able to offer more flexibility in their insurance programs."

According to the FCIC, Michigan's loss ratio for corn, wheat, and soybeans averaged 2.48 from 1981-89. That fact alone, got Michigan selected as one of several states to participate in GRP. "Michigan, as a whole, has taken a lot more out of the insurance pool than it has put in," Black concluded.

The bottom line, says Black, is that GRP offers the producer two primary advantages, considerably less paper work, and in many cases it will cost much less than conventional MPCI. There is, however, a downside to GRP, he cautions.

If your yields don't track well with county yields, then you're not going to achieve your objective of having an indemnity payment in those years when you need it the worst," Black said. "It's conceivable that you might have a severe yield loss in your part of the county, and still not get paid. However, it's also con-

Continued next page see "GRP"

Farm Bureau Insurance Agents to be Trained for GRP Sales

The following Farm Bureau Insurance agents will be going through training meetings during the months of January and February, in preparation for GRP sales in the 37 selected counties. Training dates and locations are:
Jan. 25, Lansing
Jan. 28, Kalamazoo
Feb. 15, Gaylord
Feb. 16, Mt. Pleasant
Feb. 18, Lapeer

According to Jim Gallagher, manager of Community Service Acceptance Company, the company that provides for Farm Bureau's Crop Insurance sales and service, the agents will receive training and materials to aid their farmer clients in deciding whether or not they should participate in GRP in 1994. For more information and assistance, call your nearest agent before the April 15 sales closing date.

City	Name	Phone
Allegan,	Dennis Smiertka	(616) 673-6651
Allendale,	David Carlson	(616) 895-5321
Allendale,	Robert Willard	(616) 895-4380
Alma,	Ron Artecki	(517) 463-4859
Alpena,	Jim Milstein	(517) 356-4582
Alpena,	Margaret Schultz	(517) 356-4581
Bad Axe,	James Leonard	(517) 269-6520
Battle Creek,	Tom Cain	(616) 963-4214
Battle Creek,	Scott Hisler	(616) 979-3337
Bay City,	Joe Davis	(517) 892-9771
Berrien Springs,	Larry Dobberstein	(616) 473-2722
Berrien Springs,	Marty Rudlaff	(616) 473-4791
Big Rapids,	Paul Jefts	(616) 796-7697
Birmingham,	Rita Ski	(313) 644-6364
Breckenridge,	Jim Cooper	(517) 842-3220
Cadillac,	Leon Bigelow	(616) 775-0126
Caro,	David Kolacz	(517) 673-5553
Carson City,	E.J. Horricks	(517) 584-3508
Centreville,	Larry Frisbie	(616) 467-6308
Charlotte,	James Camp	(517) 339-3222
Charlotte,	Dave Simpson	(517) 543-5565
Chesaning,	Robert St. Gordon	(517) 845-7090
Dundee,	Larry Brossia	(313) 529-3939
Elkton,	Frank Kluger	(517) 375-4598
Escanaba,	Daniel Veeser	(906) 786-4757
Escanaba,	Dwayne Klein	(906) 786-4757
Escanaba,	Rick Jensen	(906) 786-4757
Fennville,	Warren Wilkinson	(616) 561-2514
Fenton,	Steve Keswick	(313) 629-1507
Fowler,	Tom French	(517) 593-3104
Frankenmuth,	Carl Gustafson	(517) 652-6411
Frankenmuth,	Dale VanFleet	(517) 652-6411
Fremont,	Ben Landheer	(616) 924-4000
Gladwin,	Duane Simpkins	(517) 426-8131
Grand Rapids,	Mark Johnson	(616) 940-8181
Grand Rapids,	Dale Johnson	(616) 940-8181
Grass Lake,	Charles Tobias	(517) 522-8066
Harrisville,	Alvin Sharp	(517) 724-6524
Hillsdale,	Noble Bertalon	(517) 437-7393
Hillsdale,	Douglas Miller	(517) 437-7393
Hillsdale,	Duane Sanford	(517) 437-7619
Homer,	Terrace Anderson	(517) 568-4342
Ida,	David Brown	(313) 269-3275
Imlay City,	Dan Duncan	(313) 724-6407
Ionia,	Robert Shelden	(616) 527-3960
Ionia,	Dan Croel	(616) 527-3960
Iron Mt.,	Tony Demboski	(906) 779-1774
Ithaca,	Jerome Desrochers	(517) 875-2200
Jackson,	Robert Nelson	(517) 782-0485
Jackson,	Robert Cowing	(517) 784-9166
Kalamazoo,	Robert Vlietstra	(616) 381-2311
Kawkawlin,	Ed Samborn	(517) 697-3146
L'Anse,	Roland Sweeney	(906) 524-6229
Lakeview,	Todd Lincoln	(517) 352-6069
Lapeer,	John Welke	(313) 664-4928
Laurium,	Martin Olgren	(906) 337-2700
Marlette,	Jack Walker	(517) 635-7563
Marshall,	Larry Robinson	(616) 781-2849
Mason,	Vic Whipple	(517) 676-5578
Midland,	Dave Katt	(517) 631-4903
Midland,	Linda Martin	(517) 631-6222
Midland,	Ron Andrews	(517) 631-6543
Midland,	Larry Breasbois	(517) 631-6222
Montrose,	James Hardy	(313) 639-7077
Mt. Pleasant,	Gordon Moeggenborg	(517) 772-0996
Munger,	Dan VandenBoom	(517) 895-8600
New Era,	Roger Fessenden	(616) 861-5219
Onekama,	Marcia Korwin	(616) 889-3228
Orion,	William Porritt	(313) 391-2528
Petoskey,	Thomas Gambrell	(616) 347-6051
Petoskey,	Dick Schaefer	(616) 347-6051
Pigeon,	Bill Weitzel	(517) 453-3334
Pigeon,	Jim Armbruster	(517) 453-2502
Port Huron,	Carl Tice	(313) 984-5200
Portage,	Clayton Hisler	(616) 342-0212
Reed City,	Michael Burke	(616) 832-3283
Rogers City,	Dan Gabara	(517) 734-2692
Romeo,	M. John Pearson	(313) 752-3554
Sandusky,	Max Kreger	(313) 648-2800
Shelbyville,	Ann Davis	(616) 672-9300
Spring Lake,	John Queen	(616) 846-6909
St. Johns,	Michael White	(517) 224-3255
St. Johns,	Don Keim	(517) 224-3255
St. Johns,	Dale Feldpausch	(517) 224-3255
St. Johns,	Daryl Feldpausch	(517) 224-3255
Standish,	Marvin Schwab	(517) 846-6323
Stephenson,	Edward Johnson	(906) 753-6620
Three Rivers,	Loren Carlisle	(616) 273-9551
Union City,	Ralph Strong	(517) 741-7353
Unionville,	Ted Balzer	(517) 674-8617
Wayne,	Mark Patterson	(313) 729-2012
W. Branch,	Darrell VanPamel	(517) 345-0230
W. Branch,	Vern Clemens	(517) 345-1447
W. Branch,	Mary Kartes	(517) 345-1447

GRP Counties and Commodities In Michigan

Allegan	corn	
Barry	corn	soybeans
Bay	corn	soybeans
Berrien	corn	soybeans
Branch	corn	soybeans
Calhoun	corn	soybeans
Cass	corn	soybeans
Clinton	corn	soybeans
Eaton	corn	soybeans
Genesee	corn	soybeans
Gratiot	corn	soybeans
Hillsdale	corn	soybeans
Huron	corn	
Ingham	corn	soybeans
Ionia	corn	soybeans
Isabella	corn	
Jackson	corn	
Kalamazoo	corn	soybeans
Kent	corn	
Lapeer	corn	
Lenawee	corn	soybeans
Livingston	corn	
Macomb		soybeans
Midland	corn	soybeans
Monroe	corn	soybeans
Montcalm	corn	
Muskegon	corn	
Newaygo	corn	
Ottawa	corn	
Saginaw	corn	soybeans
St. Clair		soybeans
St. Joseph	corn	soybeans
Sanilac	corn	soybeans
Shiawassee	corn	soybeans
Tuscola	corn	soybeans
Van Buren	corn	
Washtenaw	corn	

"GRP – Is It for You?"

continued from page 12

ceivable that you would have a normal crop year and still collect, because the county yield, as a whole, was below the expected level."

One other big factor that Black expects to weigh heavy on farmer participation is the fact that GRP does not pay based on quality. That could be a bitter pill for many to swallow with the memory of the disastrous 1992 corn crop still fresh in their minds.

Another obvious shortcoming of GRP is the lack of coverage for many of the specialty crops grown in Michigan, including fruits and vegetables, due to limited acreage in specialized regions of the state. Black does expect, however, that drybeans, wheat and sugar beets will be eligible for coverage in the future if GRP proves to be a useful product for corn and soybean farmers.

See page 7 for more GRP details, complete with a worksheet example from MSU's Roy Black. Signup deadline date is April 15.

– Michigan Farm News Classifieds –

01 Farm Machinery

12,000 GALLON liquid NH3 holding tank. 10 liquid NH3 tanks on running gear (2 tanks with variable size row). 1 liquid NH3 tank without running gear. 6 applicators. 2 tool bars (1 tool bar with kohlers for no till). 500 gallon sprayer. Miscellaneous parts. All in very good condition! As a package, will consider individual sales. Call 1-800-352-3354.

1982 CLARK C-500 lift truck for sale. 3800 hours, LP gas, 3,000# capacity, Pneumatic tires, side shift, 60" free lift, 152"lift, 3 stage upright. Excellent condition!
Harrington Seeds, Inc.
2586 Bradleyville Road
Resse, MI 48757
1-517-868-4750

01 Farm Machinery

1988 FIELDBOSS 40h farm tractor with all equipment. Less than 500 hours. All attachments! $10,000. Call 1-313-793-4760.

1 UNION Special Model 80800E Sewing Head with Thread Cutting Wheel. 1 King Line Model 600 (Union Special Look-Alike) Sewing Head with Thread Cutting Wheel. Excellent condition! Ready to run. Contact:
Harrington Seeds, Inc.
2586 Bradleyville Road
Reese, MI 48757
517-868-4750

JOHN DEERE 45 combine for sale with 243 corn head and 10' grain head. Also, M&M ear corn sheller with drag chain. Call evenings, 1-616-674-3681.

01 Farm Machinery

NEW AND USED irrigation and manure spreading equipment. Pumps, travelers, agitators, PVC and aluminum pipe. Call for listing. We deliver!
Plummer Supply, Inc.
1-800-632-7731.

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11 Wanted to Buy

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INTRODUCTORY OFFER: $60 per ton; animal bedding made from recycled newspaper, chopped not shredded. More absorbent-less flies-less odor. 70# bales.
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BUILDINGS: Canceled orders. Two Quonset Steel Arch Buildings, 42'x78' and 51'x94'. Selling for balance owed. Brand new! Call Larry at our factory, 1-800-866-2534. Serious inquiries please.
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FRENCH STUDENTS in Agronomy are searching for farms which would accept them as apprentice for 1 or 2 months next summer. For more information, write to: Coralie Mouton, ASIS, 113 rue J. d'Arc, 54000 Nancy, France.

12 General

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14 Antiques/Collectibles

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February Discussion Topic -- "Animal Agriculture Initiative"

1994 is the year that the agricultural industry will begin seeing real progress toward completion of the $69 million Animal Agriculture Initiative at Michigan State University.

The funding will be used to renovate Anthony Hall, the Dairy Plant, the Meats Lab and the farm facilities. It will be used for new research farm facilities, including a swine farrowing barn and nursery, grower/finisher facilities and a new horse barn and arena. It will construct new infectious disease containment facilities at the veterinary research farm. And it will construct a new agriculture and livestock education center to replace the old livestock pavilion.

Preliminary architectural drafts of the facility construction are expected to be completed by March, according to Kevin Kirk, livestock specialist for Michigan Farm Bureau.

"The major construction projects will all be underway at the same time," he said. "The Anthony Hall renovation will begin in August with completion about 20 months after that. Work on the research farm facilities and the livestock education center should start in June or July and be finished a year later."

Kirk said one unanswered question is the status of a $4 million appropriation for additional livestock staff and teaching programs. "But we're optimistic that the dollars will be found to pay for the personnel to fully utilize these tremendous new facilities," he said.

The Animal Industry Initiative has the potential for providing big dividends for Michigan's farm economy. In particular, the additional funding support should help MSU develop solutions to one of the most vexing challenges facing animal agriculture in the state: manure management.

Solutions are critically important if the industry is to expand or even maintain its current level of production. And finding appropriate, environmentally sound manure application techniques is a key to maintaining a "good neighbor" policy with non-farmers in rural areas.

"At first glance, it may seem ironic that we're talking about using the Animal Agriculture Initiative to expand livestock production when manure management seems to be such a serious concern," said Kirk. "But, in reality, the additional manure that will be produced should be seen as a resource that will displace some of the need for commercial fertilizer. And we have enough land mass in our state that the additional manure can be easily be fully utilized by the cash crop industry."

Kirk believes it is possible for cattle and consumers to co-exist in an urbanized, environmentally-conscious state like Michigan.

"The farmers I've talked to who are expanding their livestock operations are very aware that the expansion won't be successful if irate neighbors can potentially push them out of business tomorrow," Kirk said. "As a result, farmers are being very open and professional in approaching their neighbors, discussing possible conflicts and coming to some mutual understandings to make sure that they can all get along after the expansion."

In addition, the farmers are paying close attention to the Right-to-Farm guidelines to protect their livestock investment and the environment, according to Kirk.

This revitalization of Michigan's animal agriculture project will benefit all sectors of the state's agricultural economy. For example, it will allow more farmers to diversify their operations by taking advantage of Michigan's unique environment for livestock production.

The project will also expand local livestock grain markets, and help reduce the need for costly "out of state" grain shipment. By some estimates, the extra demand for corn and soybeans created by this livestock expansion could boost prices by 25 to 30 cents a bushel.

A growing livestock industry is also expected to generate additional jobs and income from the processing and distribution industries, and as the impact of this expansion multiplies, it could produce over $625 million a year in direct and indirect value for the Michigan economy. Within a decade, this amount could exceed a billion dollars a year.

All-in-all, the long-awaited beginning to the Animal Agriculture Initiative should help make 1994 a memorable year for Michigan farmers.

Michigan Livestock Producers Encouraged to Complete January Survey

The January Agricultural Survey was conducted the first two weeks of January to collect information on inventory of cattle, sheep, and goats on farms in Michigan. This is the only major survey conducted each to year to collect such livestock information. Nearly 1,300 farm operators in the state will be contacted and asked to complete the survey which requests detailed information about their livestock operations.

This information will be used to estimate inventory by class for cattle, sheep, and goats, respectively, for the state of Michigan. Published estimates from this survey will help keep producers and other data users equally informed. Users of these statistics include farm operators, farm organizations, government agencies, farm supply firms, food processors, agricultural exporters, and transportation firms. Major reports based on the January Agricultural Survey will be released on Jan. 28 and Feb. 4, 1994.

Farm operators receiving a January Agricultural Survey in the mail are encouraged to complete and return it promptly. This helps to keep the cost of the survey to a minimum. Operators participating in the survey will receive a free copy of the results as published in *Agriculture Across Michigan*.

Farm Household Incomes Depend on Off-Farm Jobs

Farming is no longer the dominant source of income for most farm operator households. Three-quarters of U.S. farms are very small businesses having less than $50,000 in gross sales.

Farm operator household income from all sources averaged $40,000 last year, about the same as the average for all U.S. households, $39,000. Farm income was only $4,337 or about 11 percent of household income. Most off-farm income comes from wages and salaries or from a non-farm business.

The larger the farm, the less likely the farm operator is to have a major occupation off the farm. Economic development in rural areas is probably most important to non-commercial farm households to improve their off-farm earnings.

16 Caring Program for Children - Providing Health Care to Those in Need

Thanks to a Blue Cross and Blue Shield (BC/BS) of Michigan health care program for children, sponsored by the Michigan Health Care Education and Research Foundation, eligible children without health care coverage can now receive limited health care coverage, according to MFB Member Services Manager Doug Fleming.

"The Caring Program for Children, funded primarily through private donations, provides free preventative health care coverage to eligible uninsured Michigan children," Fleming explained. "The program, sponsored in partnership with the Michigan Department of Social Services and the federal Health Care Financing Administration, does not include inpatient hospitalization."

The Caring Program does, however, provides basic, preventative care at no cost to the family, including office visits, diagnostic tests, emergency care, outpatient surgery and prescription drugs.

Children meeting the following requirements are enrolled into the Caring Program as funds become available.

- ☐ The child must be an unmarried son or daughter, stepchild, legally adopted, or otherwise under your full-time care and living with you. College students living away from home may be eligible. Children under age 19 living independently from their parents may also apply and should contact the program for further details.
- ☐ The child must be a resident of Michigan.
- ☐ The child must be under 19 years of age.
- ☐ The child cannot be eligible for any other private insurance (including co-pay through an employer) or government-sponsored health insurance, including Medicaid or Medicare.
- ☐ Parents' or guardians' yearly income must be above the level that would qualify for Medicaid or some other public health insurance program, and below the Caring Program maximum. Parents or guardians income cannot exceed:

Family Size	Caring Program 1993 Income Maximum
2	$17,445
3	$21,996
4	$26,547
5	$31,098
6	$35,649
7	$40,200
8	$44,751
9	$49,302
10	$53,853

According to Fleming, BC/BS is donating all administrative resources. The actual health care services are financed by donations to the program – from the general public and from BC/BS employees.

"The Caring Program can mean two different things to Farm Bureau members," Fleming said. "There may be members whose children would qualify as Caring Program participants, and there may be Farm Bureau families who would be willing to make financial contributions to the program as well. Every penny of your tax deductible donation will go directly to providing basic health care to children."

Either way, Fleming suggests that interested MFB members **contact BC/BS at 1-800-543-7765 for more program information.** Once an applicant submits the necessary paperwork, the application is processed in the order it's received.

Enrollment of approved applicants will occur as funds become available. When the coverage actually goes into effect, each eligible child will receive an identification card and benefit booklet.

Calendar of Events

Jan. 18-22 – American Sheep Industry Association Convention & Trade Show, Reno, Nev., (303) 771-3500

Jan. 19 – Media Response Team Workshop, Farm Bureau Center, Lansing, 1-800-292-2680, ext. 6540

Jan. 21 - "Ag Action 94," Kalamazoo Valley Community College (616) 467-5511.

Jan. 22 – Central Michigan Family Ag Day, Lakewood High School, Lake Odessa, Barry County CES, (616) 948-4862

Jan. 27 – MFB's "The Difference Is You" Workshop Holiday Inn-Lansing Conf. Center, Lansing, 1-800-292-2680, ext. 3213

Jan. 29 - Michigan Ag Stewardship Association annual meeting, Holiday Inn, Mt. Pleasant, (517) 689-3857

Feb. 1 – MFB's "The Difference Is You" Workshop, Holiday Inn, Grayling, 1-800-292-2680, ext. 3213

Feb. 3 - 5 Michigan Pork Congress, Lansing Convention Center

Feb. 8 – Pesticide Applicator Review and Test 9 a.m. to 3 p.m., Montcalm Township Hall, registration required, (517) 831-5226

Feb. 15 – Pesticide Certification Program, Macomb County, reservations required, call (313) 469-5180

Feb. 16-18 – 1994 Farm Women's Symposium, Lansing, contact Dawn Messer at 1-800-292-2653

Feb. 16-17 – MFB's Campaign Management Workshop, 1-800-292-2680, ext. 6560

Feb. 26 – Southeast Michigan Pepper School, 8:30 a.m. to 4 p.m., Holiday Inn, Ann Arbor, contact Monroe CES (313) 243-7113

March 3-5 – Young Farmer Leaders' Conference, Midland, Mich., 1-800-292-2680, ext. 3234

March 7-9 – Mich. FFA State Convention, MSU Campus, East Lansing

March 4-12 – Agriculture and Natural Resources Week, MSU Campus, call your local Extension office for program information

March 12 – Gustafson Farms Open House and Bull Sale, Mason, 1 p.m.

March 15-18 – MFB Washington, D.C., Legislative Seminar

March 16-17 – Michigan Grazing Conference, Mt. Pleasant, contact Ben Bartlett, (906) 228-4830

Send or FAX information (include contact name and phone number) three weeks in advance to: Michigan Farm News, P.O. Box 30960, Lansing, MI 48909-8460.
FAX: (517) 323-6793

Special Section: Sustainable Agriculture

MASA

THE LAND STEWARD

Newsletter of the Michigan Agricultural Stewardship Association

Vol. 3, No. 1 **January 1994**

MASA News Notes

Reaching out to share a vision

In this issue of Michigan Farm News, the Michigan Agricultural Stewardship Association (MASA) is reaching out beyond its membership to tell its story to the 45,000 farm families who are MFN readers and who will see this special 12-page section.

This insert combines the MASA quarterly newsletter and the 1993 Report of the Michigan Sustainable Agriculture Project. Each year, about 25 MASA farmers, with technical and financial support from the American Farmland Trust, conduct on-farm research and demonstration projects and publish the results. Those results are presented in this publication beginning on the next page.

MASA members are motivated to find practices that work on their farms but cost less or reduce the impact of their farming efforts upon the environment. These practices are considered "sustainable." As the MASA mission statement puts it, sustainable farm practices are those that are economically feasible, agronomically sound, and environmentally safe.

They are also motivated to help other farmers find better ways to farm so that they can do well financially using methods that have fewer adverse impacts on the environment or on people who look to farmers for their sustenance.

We hope these goals and ideals shine through as you read this, and inspire you to join with these farmers who are trying to meet the future with better methods--better for farmers, better for consumers, better for the environment, better for everybody.

MASA Annual Meeting January 29 In Mt. Pleasant. Details Inside

MASA will sponsor
MSU ANR Week program

Again this year, MASA will be a sponsor of a day-long program during Michigan State University's ANR Week March 7-12. The program, from 10 a.m. to 4 p.m. Wednesday, March 9, in the Plant and Soil Sciences Building, is titled "Managing for soil quality as a basis for sustainable agriculture."

MSU soil scientist Ernesto Franco starts the session by defining soil quaiity and telling how it is measured. Then Richard Harwood, who holds the C.S. Mott Endowed Chair in Sustainable Agriculture, will tell how diversity and timing of crop residues is a primary determinant of soil quality.

A panel discussion on cover crops will be moderated by Joe Scrimger, with Bio Systems in Marlette. The MASA-sponsored lunch will be in the Plant and Soil Science greenhouse, where there will be a poster session on sustainable farm systems, on-farm research and local food systems.

In the afternoon, Ben Stinner of Ohio State University will talk about managing soil biota and organic matter for enhancement of nutrient cycling and soil quality. The day ends with another panel discussion on farming systems management for soil quality and sustainability. It will be moderated by Roger French from Dawnera Farms near Kalamazoo. French, a dairyman and MASA board member, is a key contact person in MASA's network of on-farm research.

Want to do on-farm research?

If you would like to participate in the MASA-sponsored Michigan Sustainable Agriculture Project for 1994, by doing an on-farm research or demonstration project, contact Roger French. Write him at Dawnera Farms, 10004 Stadium Drive, Kalamazoo 49009, or call (616) 375-0658. Let him know what you would like to discover (objectives) and how you plan to do it (procedures).

Deadline for project applications is March 1.

The Road To Sustainable Agriculture

By Dick Lehnert

The term "sustainable agriculture" carries with it some "baggage." To some farmers, it smacks of a plot by government and environmentalists to deprive farmers of the pesticides and fertilizers they use to farm.

Some think it advocates a return to an old style of farming that could rob them of their ability to produce food abundantly and inexpensively.

But the farmers who founded the Michigan Agricultural Stewardship Association in 1991 glimpsed a new future in sustainable agriculture, and they wanted to get involved. A lot was happening.

--The C.S. Mott Foundation had funded an Endowed Chair in Sustainable Agriculture in the Crop and Soil Sciences Department at Michigan State University. The chair was filled by Richard Harwood. The department was looking for farmers who wanted to try more sustainable farming techniques and work with the researchers. MASA members are an important constituent of that program.

--The American Farmland Trust, founded in 1980 to protect the nation's agricultural resources, had developed a sustainable agriculture agenda as well. It has provided leadership and funding to MASA from its inception, and to other sustainable agriculture groups in other states.

--The Americana and the C.S. Mott Foundations have provided funding for AFT's and MASA's work in Michigan since 1991.

--The W.K. Kellogg Foundation has developed an Integrated Farming Systems program, and it is now funding projects. MASA now is the lead agency in a proposal called MIFFS, the Michigan Integrated Food and Farming System, which is now under consideration for funding by Kellogg.

--The U.S. government created, in the 1985 farm bill, a provision called LISA--low-input, sustainable agriculture. That name has been changed to SARE--Sustainable Agriculture Research and Education. For the past two years, it has been headed by MSU Nematologist George Bird, who took leave to go to Washington, D.C.

SARE also provides funding for sustainable agriculture projects. Bird is now back in Michigan, and is on the advisory board of MASA.

With all this going on, what was needed in 1991 was a group of farmers who, interested in making agriculture more sustainable, would take advantage of what was growing up about them.

In January 1991, 100 farmers were invited to a meeting at MSU's Plant and Soil Sciences building. From 100 farmers who attended, 40 volunteered to assume the leadership tasks of forming a new organization and setting its agenda. From the beginning, the group has worked closely with crop scientist Oran Hesterman, who chairs the group's advisory board, and specialist John Durling, who serves as the group's coordinator.

MASA President Jerry Wirbel believes farmers adopt new practices when they see them working on their neighbors' farms. Here he hosts a field day at his farm.

While not everybody agreed with all that sustainable agriculture might entail, most MASA members would probably agree with the Food and Agriculture Organization of the United Nations, which uses this definition of sustainability: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Last Dec. 9 and 10, the MASA board met for a leadership development seminar and to meet with its advisory board. Jerry Wirbel, a cash crop farmer from Hope in Midland County who had been MASA's president from the start--including its first year as an ad hoc entity--reviewed its accomplishments, some of which include:

--Development of an organizational structure, including a mission statement, bylaws, non-profit corporation status, and funding.

--Development of leadership

(Continued on page 11)

Shetler wins first Land Steward Award

Kalkaska County dairyman George Shetler has won the first-ever Land Steward Award, created by MASA last year. The award was given December 10 at the Michigan Association of Conservation Districts annual meeting in Lansing.

Shetler won the recognition for his efforts to convert his dairy herd from drylot feeding to intensive rotational grazing. Along the path, he has kept careful records and participated for three years in the Sustainable Agriculture Project sponsored by MASA and the American Farmland Trust. Shetler's report on his 1993 research appears elsewhere in this publication.

The Land Steward Award was created last year by the Michigan Agricultural Stewardship Association (MASA). The Soil Conservation Districts in Michigan were asked to nominate farmers they thought exemplified the spirit of sustainable agriculture. Eight nominations were received, and Shetler was chosen by a judging committee of three MASA board members: Suttons Bay fruit grower Larry Mawby, Imlay City cash cropper Richard Lauwers and Hillman cow-calf operator Marlin Goebel.

"My basic motivation is to farm more safely, producing meat and milk without chemical inputs," Shetler said. "Family health and economics were also primary reasons for changing to a more sustainable system."

He said the changeover to intensive rotational grazing for his dairy herd has been a blessing. "I wasn't happy," he said. "Now, I've found time for my family, time to relax. I'm not chasing hay, or fixing equipment and chasing parts so I can chase hay. Instead, I spend about an hour a day moving electric fences.

"My personal health is better. I walk. I observe nature, the pasture, the cattle. The cows seem healthier, too. They have no hoof problems,

(Continued on page 11)

Inside: Results of the 1993 Michigan Sustainable Agriculture Project

Results of the 1993 Sustainable Agriculture Project

Environmental issues are a growing concern for most Americans. Urban residents want a healthy, yet plentiful, food supply. Rural families want clean water for their own communities. Business and industry compete to see who can be the "greenest" producer of goods and services, and they use environmental responsibility as a marketing tool.

Farmers are taking inventory of their operations in an effort to eliminate farming practices that have the potential to degrade land and water resources. This desire to farm in a way that is less damaging to the environment has caused a revolution of sorts in many agricultural communities, with farmers adopting new production techniques at an unprecedented rate. The trend toward renewed environmental responsibility is commonly referred to as sustainable agriculture.

Sustainable agriculture is perhaps best defined by the way farmers use component practices to develop farming systems that are practical, profitable and environmentally sound. For example, success with a simple practice like nitrogen reduction often leads an individual to experiment with other alternative practices, like the use of cover crops. Success with cover crops can lead to modifications in tillage and pest management. Each subsequent success leads to modification and adaptation, creating a new, improved system that is continually evolving.

No one decides to become a "sustainable" farmer overnight, but when a producer makes the decision to become a better steward of the land, and accepts the challenge that he can always do a better job of conserving natural resources, the die is cast. Farmers who embrace the concept of sustainability believe in long-term care of the land. They understand that there is a fine line between using the land and abusing it. They are keenly aware that how they manage the farm today will have a lasting impact on the quality of life for future generations.

Since 1991, with funding support from the C.S. Mott Foundation, American Farmland Trust and the Michigan Agricultural Stewardship Association have been working with Michigan farmers who wish to experiment with and adopt some of the component practices of sustainable agriculture. The 1993 Michigan Sustainable Agriculture Project established 25 on-farm research/demonstration sites at locations throughout the state with cooperating producers. These on-farm plots were designed to address farm management problems with an emphasis on reducing impacts to water quality, preventing soil erosion and improving farm profitability.

The information presented in this publication was collected from farmer participants throughout the project year. Its purpose is to give an idea of what sustainable agriculture means when component practices are applied in actual farming operations. It is also hoped that the examples presented here may encourage other producers to experiment with similar practices on their own farms.

One final note: Any new practice or farming system should be applied incrementally. If something in this publication appears feasible for use in your operation, don't go out and convert everything overnight. Try it first on a small scale (a couple of acres or less) before proceeding further. Experiment, evaluate and make decisions that are right for your own farm.

Bryan Petrucci, Director
AFT Sustainable Agriculture Programs

The 1993 Michigan Sustainable Agriculture Project is a cooperative effort of the Michigan Agricultural Stewardship Association and the American Farmland Trust. Funding for this project was provided by the C.S. Mott Foundation.

Michigan Agricultural Stewardship Association
7301 Milo Road
Delton, Mich. 49046

The Michigan Agricultural Stewardship Association is a statewide, nonprofit educational organization committed to the development and use of sustainable farming systems.

American Farmland Trust
Center for Agriculture in the Environment
P.O. Box 987, DeKalb, Ill. 60115
(815)753-9347 (phone) - (815)753-2305 (FAX)

American Farmland Trust is a private, nonprofit membership organization founded in 1980 to protect our nation's farmland. AFT works to stop the loss of productive farmland and promote farming practices that lead to a healthy environment. Annual membership is $20.

George Shetler, Kalkaska County

Intensive Rotational Grazing in a Dairy Operation

Shetlers' Fawn Meadow Farm has been moving toward what the family considers a more sustainable system of production for 11 years. The emphasis has been on reducing the need for purchased, non-farm-produced inputs--chemicals, fertilizers, machines, electricity, fuel.

George Shetler, his wife Sally and five children run the 40-cow dairy operation on 275 acres near Kalkaska. The farm is split between hay and corn, and all crops are fed on the farm.

After reading about intensive rotational grazing as a reduced input option for dairy herds, the idea seemed plausible, and they began in 1991. Grass grows well in cool seasons and deep-rooted legumes offer midsummer feed. The challenge has been to harvest and preserve enough protein from the grass to maintain milk production.

This last year was a fairly good grazing year in northern Michigan. The Shetler herd covered fields designated for grazing six times. Supplemental energy and protein fed in the barn has been kept at a minimum in the interest of greater pasture use and improved profit. In 1993, production levels rebounded after a year of poor pasture performance in 1992. Income over feed costs, when adjusted to a 1991 parity, continue to outperform 1990's pre-grazing levels.

The Shetler farm continues to reduce corn acreage in favor of a more profitable mixed pasture. An experimental and expensive six-acre field was planted to Matua grass and clover in the fall of 1992. The Matua did not survive the winter. Shetler continues to search for alternative pasture crops but alsike and red clover seem to offer the best alternative to alfalfa at this time. Annual ryegrass is used quite effectively as a good cool season feed source.

In 1993 the Shetler farm was certified organic. George and Sally are convinced that the introduction of such products and practices as BGH (bovine growth hormone) are not going to serve the dairy industry well. "There will never be BGH used on this farm," says Shetler. "Our customers don't want it and we can't afford to ignore that fact." The market for BGH-free milk will offer an excellent opportunity for producers and processors who listen to their customers, he says.

The Shetlers have contact with consumers through a local farmers market. Several hundred free-range chickens are sold from the farm, giving the Shetlers extra income and allowing them to talk directly with their customers.

The Shetlers are looking for profit opportunities by spending less on purchased inputs, and grazing will have a marked effect on the need for machinery. On the other side is marketing--gaining more from products by on-farm processing and distribution.

The following tables report data comparing grazing years (1991-3) with the pre-grazing year 1990.

ELECTRICITY CONSUMPTION
KWH

	1990	1991	1992	1993
MAY	5540	5220	4760	4530
JUNE	5160	4510	4900	4580
JULY	5210	4630	4130	4620
AUG.	5340	5220	4800	4440
SEPT.	5360	4650	4750	4950
OCT.	5350	5200	4900	4900
TOTAL	31960	29430	28240	28020

MILK PRODUCTION (DHIA RHA)

	1990	1991	1992	1993
MAY				
Milk	18783	19035	16357	18057
Fat%	3.65	3.86	4.00	3.95
Pro.%	3.40	3.38	3.33	N/A
JUNE				
Milk	19071	18414	16299	18134
Fat%	3.66	3.94	3.80	3.5
Pro.%	3.39	3.39	3.22	N/A
JULY				
Milk	19256	17931	16348	17880
Fat%	3.66	3.99	3.70	3.34
Pro.%	3.38	3.41	3.37	N/A
AUGUST				
Milk	19445	17710	16254	17289
Fat%	3.66	4.01	3.80	3.57
Pro.%	3.36	3.43	3.16	N/A
SEPTEMBER				
Milk	19725	17412	15912	16698
Fat%	3.67	4.02	3.80	3.80
Pro.%	3.38	3.44	3.25	N/A
OCTOBER				
Milk	19768	17262	15657	16262
Fat%	3.68	4.03	4.00	3.65
Pro.%	3.35	3.42	3.50	N/A

SUPPLEMENTAL FEED COSTS
($/cow/day)*

	1990	1991	1992	1993
Season average	$2.89	$1.93	$1.24	$1.26

RELATIVE VALUE OF PRODUCT
($/cow/day)

	1990	1991	1992	1993
Season average	$8.72	$8.48	$7.55	$7.84

* Based on 1991 prices of $ 13.54 milk and $ 0.11 butterfat differential.

INCOME OVER FEED COSTS
($/cow/day)**

1990	1991	1992	1993
Season average $5.83	$6.55	$6.31	$6.58

** Based on 1991 feed prices of:
Grain mix - $145/ton; Dry hay - 50/ton
Corn silage - 25/ton; Haylage - 40/ton

LABOR AND MACHINERY COSTS
($/acre)**

	Conventional	Intensive Grazing
Haylage harvest	44.25	-
Dry hay harvest	36.97	-
Manure spread	18.38	3.12
Pasture clipping	-	15.67
Fencing	-	3.00
Manual labor (fence moving)	-	2.65
Seeding (no-till)	*-	9.90
TOTAL	$99.60	$34.34

* included as a 1 year cost
** Rates per MSU Extension Bulletin E-2131 "Custom Work Rates in Michigan"

YIELDS
Conventional - 2688 Pounds Dry Matter/A
Intensive Grazing - 4257 Pounds/Acre

Jim LeCureux, Huron County

Changing Tillage Practices at the Tip Of The Thumb

The Saginaw Bay Watershed has been studied and monitored by a number of agencies, and the conclusion is inescapable: Water in the rivers and the bay contain sediments, nutrients and pesticides--and much of that comes from farmers' fields as surface water run-off. Last year, Huron County farmers, working with the Huron County CES, began to look at ways to reduce nutrient, pesticide, and sediment loading of the county's surface waters.

Since surface water movement has been directly linked to the amount of crop residue and cover crops in place on fields, the Huron County CES and farmers targeted high-residue tillage systems as a key means of water movement control. Historically, Thumb farmers have used conventional clean tillage, especially for dry beans and sugar beets. To change farmers' minds about tillage, farmers must see that these crops can be grown in high-residue systems.

An "innovative farmers group" of nearly 50 farmers has been developed to help design and evaluate the systems in a problem- solving approach over five years. The systems will be adjusted throughout the project. The project looks at fertilizer placement and timing, coulter systems, herbicide programs, cultivation of high residue fields, soil aeration and harvest techniques.

In 1993, the project used seven project sites on three different crops. Three different tillage systems were used on corn and sugar beets. These were zone tilling, trans-tilling, and conventional tilling. Zone tilling uses a coulter configuration that tills strips several inches wide to prepare a seedbed in an otherwise undisturbed field. Trans-till is similar to zone tillage but is done as a separate field operation rather than as the front part of the planting unit. It can be done any time before planting. Conventional tillage is tillage as usually accepted, including moldboard plowing, disking or field cultivating and finishing.

In 1993 conventional tillage out-performed the other tillage systems in nearly every instance. As would be expected, the conventionally tilled plots required higher input costs due to more trips with equipment. These costs were offset, however, with higher yields. Differences in net income for the sugar beet plot amounted to nearly $70 per acre. The net income difference on the corn ground was less striking. And on the dry beans, net income was slightly higher on the minimum tillage plots. This may be because dry beans are planted later and soil temperatures are less a factor. Cool, wet weather led to poor weed control and lower soil temperatures that hurt the high-residue plots.

But the idea for the first year was to get different kinds of equipment and planters into the fields, see how they performed, and make adjustments, said Jim LeCureux, Huron County Extension Agricultural Agent. As technique improves, yield differences may disappear.

The innovative farmer committee has recommended several changes for next year. All plots will be moved to two 40-acre fields, committed to the project for five years, where four replicated and randomized tillage programs can be carried out. These include fall plowing, fall chiseling, zone tilling and trans-tilling. The farmers felt they needed to reduce the uncontrollable variables associated with fields located some distance from each other. This will enable growers to view the varied tillage plots side by side. Soil types, equipment, and weather conditions will be less a factor with a centralized demonstration site. And all the work will be done in a timely manner; on farms, the plots received lower priority than did regular fields.

The farmers will be involved in the design of the study. There is also new commitment to address sociological factors that can stifle change. Banks, equipment and fertilizer dealers and sugar companies are being informed and involved. The economic and environmental issues of the community demands that farmers continue to strive for reduced production costs and environmental risks. It is important that all the institutions that influence the decisions farmers make become partners as farmers make changes.

Don Cordes, Montmorency County

Composting Manure on a Commercial Dairy Farm

The Cordes farm has had no chemical fertilizers or pesticides applied for several years, and Don is trying to incorporate new systems into the farming operation that will allow the farm to better use on-farm resources. One of these systems is manure composting.

Don Cordes, his wife Katherine and son Tom operate a 50-cow dairy in Montmorency County. They own 300 acres, 250 devoted to corn, alfalfa, and oats for the dairy herd.

Manure that used to be scraped and hauled daily is now windrowed on a small field near to the barns. These windrows are turned, usually every few days, to aerate and heat the manure and produce compost. A special compost turner has been used for several years.

Properly composted manure is light, crumbly, virtually odorless and looks much like topsoil. Composted manure will increase soil tilth and organic matter content while providing slow-release nutrients.

Don adds straw to the freestall barn--and is considering newsprint. The straw makes the manure handle easier and compost better.

This is the second year that the Cordes farm has participated in the Sustainable Agriculture Project. In 1992 the Cordeses applied a biological "compost starter" to selected manure piles, thinking it might reduce composting time and increase uniformity.

In 1993, the Cordes farm purchased four different compost starters. In addition, a homemade starter was applied to one pile and fallow soil from an old, unused barnyard was applied to another to compare their effectiveness as sources of compost-forming bacteria.

The cost, consistency, and application rates of the starters vary greatly. The product costs expressed below reflect product costs per ton of fresh manure.

COST OF COMPOST STARTERS

	$/Ton Treated	Application Rate/ton
Colloidal Phosphate	$1.75	25#
Floristem	7.20	40#
BioActivator	.83	8.5#
B-D Starter	2.90	.5 units
Fallow soil	N.A.	144#

The year 1993 was wet. None of the compost piles dried down as well as in 1992 when there was a substantial difference between the quality of the compost and the fresh manure. The following table states in pounds per ton and dollar value the difference in the two manures as tested in 1992.

COMPARISON OF COMPOST FROM VARIOUS TREATMENTS

	Fresh	1	2A	2B	2D	2E	2F	6
Moisture (%)	75.6	72.7	73.2	74.7	70.4	74.6	80.2	57.0
Nitrogen (#/T)	12.7	10.0	11.2	9.8	8.6	10.4	8.9	2.8
P_2O_5 (P) (#/T)	5.4	10.0	9.0	7.3	7.7	10.4	9.8	28.8
K_2O (K)(#/T)	11.9	6.9	9.3	7.1	7.2	8.5	6.9	22.2

Fresh=Fresh manure 1=B-D Brand Starter 2A=Control 2B=Floristem Brand 2D=Fallow Soil 2E=BioActivator Brand 2F=Homemade starter 6=Colloidal Phosphate and BioActivator

VALUE OF PRODUCT
(DRY MATTER BASIS)

	Fresh		Composted	
	#/ton	$/ton	#/ton	$/ton
Nitrogen	40.0	8.80	49.20	10.82
P_2O_5	18.2	3.28	34.00	6.12
K_20	42.6	5.11	46.00	5.52
Total Value	$17.19		$22.46	

The Cordes herd produces about 4,100 pounds of manure per day. The cost of handling in a conventional system is $40.64 per day, or $19.82 per ton. The cost of handling in the compost system is $48.67 per day, or $23.74 per ton.

Values attributed to the manure in the table above reflect only the value of the N, P, and K and places no value on organic matter or biological benefits from the composted manure. Cordes believes the quality of crops produced on the farm has increased since use of compost began. A great deal of value is placed on the sugar content of the feed produced on this farm, and is reflected in higher production per cow and improved herd health, according to Cordes.

Tom Semans, Shiawassee County

A Death in the Family

Tom Semans, a Laingsburg farmer who carried out on-farm research projects in 1991 and 1992 as a member of the Michigan Agricultural Stewardship Association, and was working on a project in 1993, was killed in a freak farm accident last summer.

MASA and the American Farmland Trust wish to remember him.

Tom and his wife Barbara operated a 100-cow, 1,000-acre dairy and cash crop farm. He was an avid no-tiller. In 1991, his on-farm research looked at the effect of cutting back on soil-applied corn rootworm insecticide. In 1992, he found an economic advantage in cutting rates of starter fertilizer on corn.

Tom was well known to Michigan farmers. He was active in the Shiawassee County Farm Bureau (past county president), the Michigan Milk Producers Association (president of the Ovid local). He was involved in the FFA, the Shiawassee County No-Tillers, and was secretary of the Shiawassee County Soil and Water Conservation District for several years.

He was hauling a load of logs behind his tractor when it hit loose gravel, left the road and overturned, killing him.

Tom was 47 years old. He will be greatly missed.

Bernard Wall, Isabella County

Intensive Rotational Grazing in a Cow-Calf Operation

Bernard Wall and his wife Delores farm 40 acres near Coleman. The Walls have a small herd of 14 Simmental brood cows. In 1992, the Walls put in the fencing required to form pasture paddocks and use intensive rotational grazing.

Bernard chose intensive grazing because he believes that an acre of pasture managed properly will be more productive than two that are not. This year was the second year of this demonstration, and Bernard feels that last year's experience served him well. "This year we began grazing earlier than we did in 1992. I also reduced the size of the paddocks, utilizing the feed in each paddock more efficiently and reducing quality losses."

The cows were put out on pasture May 11 and kept grazing until November 5, when they were returned to confinement feeding.

The measure of the success of a cow-calf operation is pounds of calf weaned at the end of the grazing season. Calves are weaned between 5 1/2 and 6 months and had been averaging 500 to 525 pounds at weaning. Last year, the calves averaged 580 pounds. This year the calves were weaned at 625 pounds in 170 days. This represents an average daily gain of 3.1 pounds. These calves received no creep feed. Bernard credits the exceptional weight gains to increased milk production by the cows. He reports that, for the first time in memory, the cows were not being completely milked out, indicating an abundance of food for the calves--with no supplemental grain for the cows beyond calving.

Pasture paddocks were grazed three times, some four times. Pastures yielded about 2,860 pounds of dry matter per acre.

Investment in wire and posts was minimal. Two spools of polywire and about 100 posts were purchased for less than $100. No watering equipment was purchased; the cows and calves returned to the barnyard for fresh water.

Bernard believes intensive rotational grazing offers landowners a low-investment alternative, one that can make use of marginal land and conserve soil under permanent sod. What is needed are high quality pasture crops that will endure Michigan winters and crops that extend the grazing season and reduce the need for making winter feed. Last fall, he planted winter wheat for early spring grazing and made an experimental seeding of Sanfoin and Small Burnet, two legumes grown in Colorado for late fall pasture. The success of these crops is yet to be determined.

Arnold Elzer, Grand Traverse County

Reducing Pesticide Applications in Cherries and Apples Using IPM

Arnold and Betty Elzer own a 30-acre fruit farm in Grand Traverse County. They grow primarily tart and sweet cherries and apples. Arnold began farming after a career in the United States Coast Guard. Initially the farm consisted of field crops and livestock, but Arnold realized that tree fruit was better suited to the area. The Elzer's enthusiasm for their business is evident. The entire farm is manicured and Arnold can always be found in the orchard. Arnold became interested in Integrated Pest Management (IPM) a few years ago and has been learning to put IPM to work on his farm ever since.

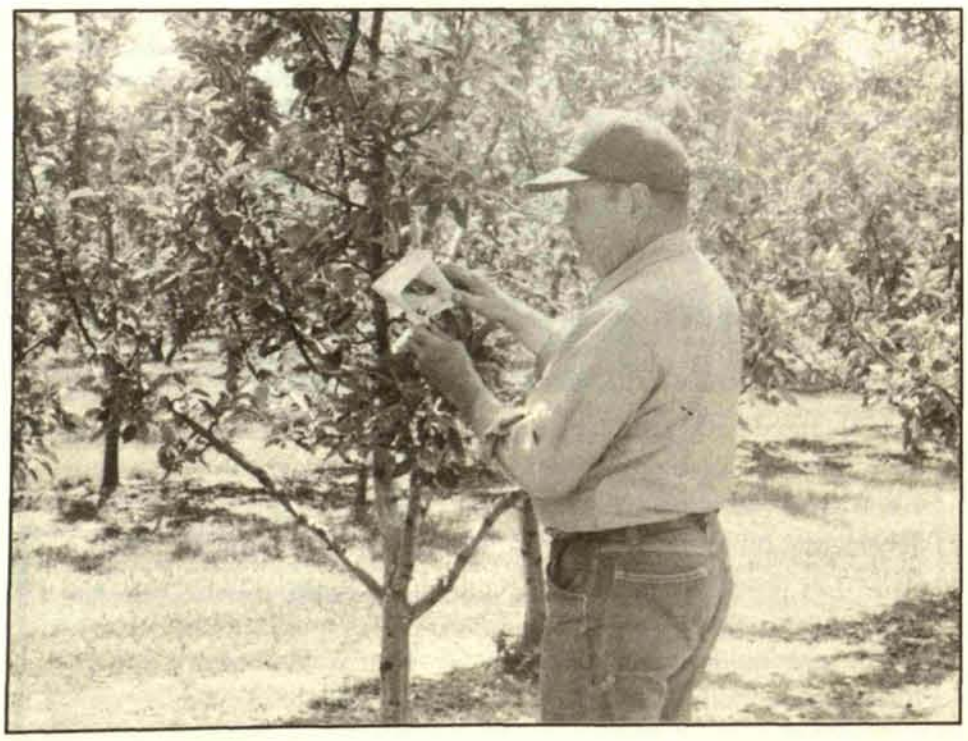
In 1992, a pest scout provided through the Grand Traverse Soil and Water Conservation District was employed to monitor conditions in the orchard. Arnold became extremely interested in the procedures of scouting and "tagged along" as the scout made his rounds. He purchased books to help identify pests. This year, Arnold was able to handle the scouting himself. "There is no substitute for time spent in the orchard," Arnold likes to say. He believes it is very important that growers learn pest scouting themselves. Scouting is of best use when the farm is visited or a regular schedule and weather conditions are factored in.

This interest in pest monitoring led Arnold to participate in a Code-A-Phone service offered by the Northwest Michigan Horticultural Research Station. Growers can call a recorded message and receive information on weather and pest conditions for the area. Growers are advised on potential pest outbreaks so that they can begin watching for threshold numbers. Information on recommended treatment for pests is also available. Arnold felt this service was a great help.

Another service offered growers in Grand Traverse County is a Soil Conservation District-sponsored weekly grower meeting. These meetings provide a forum where growers discuss current pest problems and controls. This helps growers prepare for an infestation outbreak that is traveling with the weather. Arnold found these meetings helpful.

Yields on the Elzer farm were pretty good in 1993. Tart cherries produced 8,000 pounds per acre. The apple orchards, which yielded exceptionally well in 1992, did not produce as well this year.

The year 1993 required numerous applications of fungicides to keep disease and mildew problems in check. While the 1992 growing season saw drastic reductions in the amount of material that had to be applied, differences in pesticide costs between an IPM system and the Spray Calendar system were not as great in 1993. Still, cherry pesticide costs in 1993 were about $42 per acre less with IPM; apples about $26 less with IPM. Even in years that require extensive spaying, IPM can be an economic benefit. In 1992, pesticide cost reductions using IPM amounted to $117.90 per acre on tart cherries and $191.20 per acre on apples.



IPM is becoming a routine management tool on the Elzer farm and Arnold plans to continue to learn more about the life cycles of pests and how best to control them each season. With environmental risks and non-farm neighbors, IPM has become another generally accepted practice on the Elzer farm. Arnold believes the intensive use of pesticides is the least sustainable aspect of fruit farming--but reducing pesticides and suffering excessive loss is not sustainable either. IPM is the key to reducing pesticides without excessive loss.

Mark Crumbaugh, Gratiot County

Soybean Varieties Tested Under No-Till

Mark Crumbaugh and his wife Dawn farm 475 acres near Ashley. Mark grows corn, soybeans, dry beans, wheat, and alfalfa, and also helps with his father's farm, bringing the total acreage to about 1,500.

An advocate of no-till, in 1993 he put in an extensive no-till soybean variety test plot. Mark believes no-till is one way farmers can become more sustainable without making drastic changes in production practices. Soil erosion and the subsequent nutrient and pesticide loading in surface waters can be detrimental not only to the environment but to a farm's ability to be sustainable.

All soybeans were planted in standing rye cover. The rye cover was burned down with 12 ounces of Roundup. At that rate, the rye was not completely killed and a wick applicator pass was necessary.

The variety plots received two separate nutrient treatments. Most of the field was broadcast with 200 pounds of 2-10-51. The remaining third received 18,000 gallons per acre of liquid hog manure. All the beans were sprayed post-emergence with 4 ounces of Pursuit.

Yields varied from 34.5 to 51.3 bushels per acre. A potpourri mix of the varieties was planted on a manure-covered portion of the field and produced 52 bushels per acre. Two unnumbered Pioneer varieties were tested with and without inoculant.

Total input costs (less seed, which was variable) for the fertilizer plot was $68.76. Input costs for the manured plot was $56.86.

Mark found a variety's response to plant nutrients had little to with the nutrient form. Both the manured plot and the commercial fertilizer plot had high-yielding beans. Some varieties, however, seem better suited to no-till. The varieties Mark tested and their yield are listed in the table below.

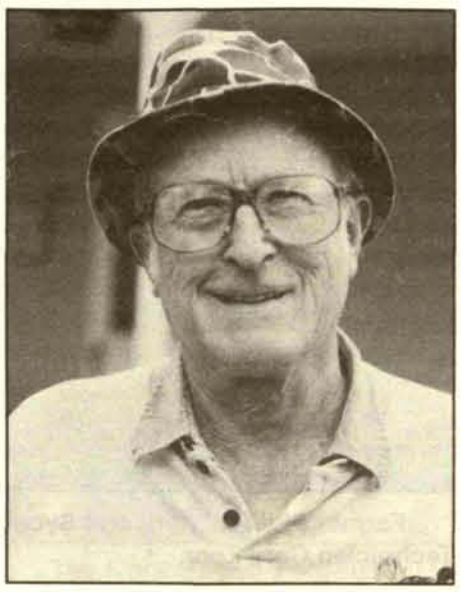
Variety	Yield (bu/a)	Fertilizer	Manure
Mixture	52.0		X
Funks 3253	51.3	X	
Pioneer untreated	51.3		X
Conrad	50.4	X	
AgriPro 2122	49.9	X	
Payco 9119	49.9	X	
Elgin 87	49.8	X	
Golden Harvest X213	49.0	X	
Pioneer untreated	48.5		X
Pioneer 9231	47.5	X	
Golden Harvest X263	46.7	X	
Stine 2250	46.1	X	
Archer	45.9	X	
CHECK AVERAGE	45.7	X	
Pioneer treated	44.7		X
Funks 3202	44.6	X	
Dairyland Seed R217	44.5	X	
Pioneer treated	44.4		X
Pioneer 9302	43.7	X	
Stine 1295	42.7	X	
DeKalb CX248	42.1	X	
BSR 101	41.3	X	
Amcorn SB2375	41.0	X	
Payco 4927	40.4	X	
Bayside 169	39.2	X	
Countrymark 221	39.0	X	
Felix	37.5	X	
Vinton 81	36.2	X	
DeKalb CX187	34.5	X	

L.L. "Bud" Coulter, Antrim County

Testing the Best Conditions for Growing American Chestnut Trees

Bud Coulter owns and operates a small farm in Antrim County. He grows hay, asparagus, strawberries, kiwi and has 27 acres of chestnuts. His interest in American chestnuts prompted him to plant a 125-tree orchard on which to test various production practices. Before he retired and undertook growing American chestnuts, Coulter worked as a researcher for a chemical company.

The plot is in its second year and is not a direct comparison of yield, but rather the first of several years' demonstrating various cultivation practices--irrigation, mulching and fertilizing--in this chestnut planting.



American chestnuts were once dominant forest trees in the eastern United States. Most of them were killed by chestnut blight early in this century. In recent years, a few resistant trees have been discovered, and these are being propagated by growers, like Coulter, interested in these majestic trees and the unique nuts they produce.

Chestnut trees should remain productive for 50 to 60 years, he said, and provide an orchard crop that breaks up pest cycles in dense orchard areas.

Five different treatments were applied in this demonstration. Twenty-five blocks each containing 5 trees were laid out in a randomized pattern. Five treatments were replicated five times in the orchard. These treatments include:

* Fertilizer, no mulch, trickle irrigation
* No fertilizer, no mulch, no irrigation
* Fertilizer, no mulch, no irrigation
* Fertilizer, mulch, no irrigation
* No fertilizer, mulch, no irrigation

Treatment	Height (in.)	Diameter (in.)	Rank Height, diameter	Per acre costs
1. Fertilizer, no mulch, irrigation	69.2	.51	3,3	$97.83
2. No fertilizer, no mulch, no irrigation	63.6	.48	5,4	34.85
3. Fertilizer, no mulch, no irrigation	68.4	.46	4,5	70.31
4. Fertilizer, mulch, no irrigation	75.2	.58	1,1	85.61
5. No fertilizer, mulch, no irrigation	71.8	.55	2,2	50.15

The trees were planted into an alfalfa field. Trees were 20 feet apart with 25 feet between rows. All trees are grown in weed-free bands that receive a herbicide application of Roundup and Princep in the spring. All trees are grown in "tree shelters" made of corrugated plastic tubes 6 inches in diameter and 48 inches tall. Cost of these tree shelters is about $3 each.

Bands of weed control are about 10 feet wide. The alfalfa between rows is harvested by a neighbor for hay. Trees receiving mulch are mulched with one garbage bag of leaves from the local landfill per tree.

Chestnut trees will not produce fruit until at least the fourth year of growth. Tree growth was measured as the benchmark for comparison. Trees were measured for height and stem diameter.

Soil temperatures were taken in the root zones of both mulched and non-mulched trees. Temperatures were generally 5 or 6 degrees cooler under mulch in spring, but remained warmer longer in the fall, when most root growth occurs.

Grass control has been so important it appears possible that quackgrass may be toxic to chestnut trees. Broadleaf weed control does not seem to be as important. The trends established in 1992 continued in 1993. The tree growth in tube tree shelters seems to justify the expense, but other differences in cultivation are becoming less obvious. The greatest advantages can be expected in younger trees.

Herbrucks Poultry Ranch, Ionia County and Ken Rader, Montcalm County

Shifting Nutrients by Using Composted Poultry Manure

Last year, Herbrucks Poultry Ranch shifted thousands of tons of poultry manure that were "wastes" to be disposed of to farmers who, having no livestock, had to buy fertilizer nutrients.

The Herbruck family--father and four sons--operates a large, commercial laying chicken farm in Ionia County. The corn, soybeans and wheat raised on their 700 acres falls far short of supplying enough to feed the nearly 1 million birds.

The operation's size (170 employees run the production, packing, and food processing facilities) also requires that the Herbrucks develop a way to handle the huge volume of manure their own cropland could not use. The Herbrucks chose composting as a way of making the manure salable.

Herbruck Poultry Ranch built a new composting building near Saranac. The 63,000-square-foot facility is ventilated with air ducts in the floor to ensure adequate air flow to the composting manure. Ventilation fans and a series of compost pile temperature probes are computer monitored to maintain quality control of the compost piles. The piles are turned with a large commercial turner to produce a consistent quality compost. The farm uses some of the compost, but more than 3,000 tons are produced annually for sale. Most is sold to farmers in bulk form but some is screened and bagged for sale in the lawn and garden market.

Bulk material prices vary but retail prices are about $35 per ton.

Ken Rader farms in Montcalm County near Lakeview. He grows cash crops including potatoes, snap beans and carrots. Ken used Herbruck compost in addition to a commercial fertilizer program on snap beans in 1993. A ton of composted poultry manure contributed the following nutrients: nitrogen, 40 pounds per ton; phosphoric acid, 100 pounds per ton; potash, 60 pounds per ton; and calcium, 200 pounds per ton.

Ken applied one ton per acre of the compost to a new field of snap beans. All production practices were identical on the two plots, except for the added compost, which cost $37 per acre for the ton of compost and its handling.

The beans that received the compost yielded about one-half ton per acre better, an increase in income of $57.50. Ken believes the compost contributed more than just the NPK to the soil. He believes that additional bacteria and organic matter were in part responsible for the increased yields.

The Rader Farm will be applying composted poultry manure again next year. In this situation, a concentrated livestock operation is able to provide manure to a cash crop operation to the economic and environmental benefit of both.

George Perkins, Montmorency County

Organic Producer Wins Customers with Quality Produce

George Perkins and his family operate a small, organic vegetable crop operation near Hillman.

An avid gardener, George became interested in organic production, an interest that gradually expanded to become the produce farm he and his family now operate. Three acres and two greenhouses are devoted to vegetables. George considers their small operation a hobby and educational tool, but their customers would probably disagree.

What George began as a hobby and educational tool turned into a thriving second income. Both he and his wife work off the farm, and the places of their primary employment became ready markets for homegrown, high quality produce. Word spread to the local grocery store. It wasn't long before George was unable to fill all the orders. Selling all he produces isn't difficult, as long as it remains a small part-time operation, he says. But increasing acreage and dedicating himself full time to his produce farm would result in more production than he would be able to market locally.

George and his family believe they have a pretty good grasp of soil biology, cover crops, and pest control. A LaMotte soil test is used to determine fertility needs. The test, done at home with a kit, allows George to interpret the results. Fertilizers are grown in the form of yellow blossom sweet clover and Mammoth red clover, buckwheat and rye cover crops. By rotating crops, pests are kept in check. Mulch is used for weed control and moisture conservation. Plants started in a greenhouse that George built reduce transplant costs. Virtually no inputs come from off-farm. "This is truly a made-in-Michigan product," George says. The last major hurdle is marketing.

"The way our food system is set up now there is no need for local grocery store managers to buy produce from local growers," George says. "It's far easier and in most cases cheaper to let the buyer from the corporate headquarters buy in volume and keep prices low. Less attention is paid to quality."

The idea of quality and health are, in his view, closely tied. Soil health results in healthy crops that yield healthy fruit and healthy people. As more people see this connection, production and consumption patterns will shift, he believes.

Sycamore Creek Water Quality Program

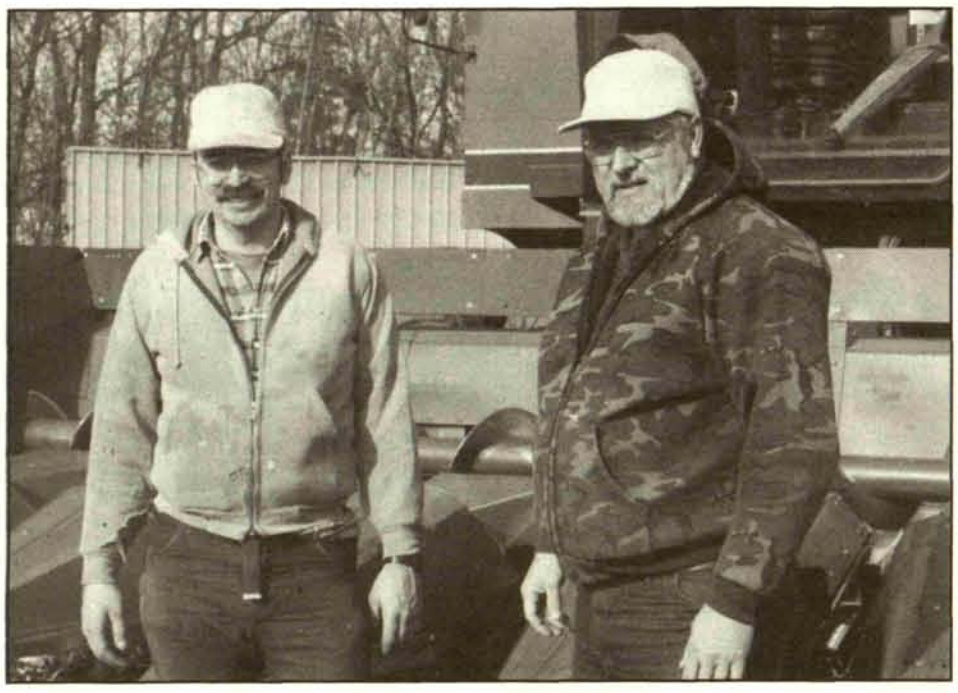
Three farms participating in the MASA/AFT Sustainable Agriculture Project are involved in the Sycamore Creek Water Quality Program (SCWQP), established by the USDA in 1990 to serve as a model for watershed management. Farming technologies promoted by the SCWQP are considered to be sustainable agriculture practices, which is to say they:

- Take advantage of and enhance biological relationships and natural processes that exist on farms.
- Use management skills and information to reduce costs, improve efficiency, and maintain production.
- Emphasize agricultural diversity.

The participating MASA farms (Chellisons Farm, Hawkins Homestead, and the Lyons farm) are all successful farming enterprises able to adapt sustainable practices into mainstream production.

Extension agricultural agent Jack Knorek has provided invaluable service to MASA and the producers in the SCWQP with his interest in making Michigan agriculture more sustainable.

Farmer Phil Hall (left) and Sycamore Creek Water Quality Program Technician Gary Zehr.



Tony Igl (left) and Sid Hawkins

Hawkins Homestead, Ingham County

Testing Fertilizer Rates on Corn

Hawkins Homestead, in the family since 1862, is farmed by Sid and Carol Hawkins, their daughter Jeanine and her husband Tony Igl. The farm consists of 2350 acres in a corn-corn-soybean-wheat rotation. The Hawkins Homestead uses IPM, regular soil testing, and conservation tillage practices. The farm is diversifying into feeder steers.

In 1993, they tested the effect of various rates of anhydrous ammonia with and without starter fertilizer on corn. Two rates were used: 120 pounds actual N (140 pounds ammonia) and 75 pounds N (91 pounds ammonia). The ammonia rates were used with and without 120 pounds per acre of 18-46-0 at planting.

Herbicide treatment for all plots was the same, with one quart Dual applied preemergence and one pint Marksman applied post. Tillage was the same for all plots.

Fertilizer costs varied from $8.44 to about $25 per acre with no appreciable increase in yield. The resulting yields are listed below.

RATE	YIELD (bu/a)
120# N + starter	134.0
75# N + starter	135.1
120# N - starter	133.5
75# N - starter	137.5

Farmers toured corn plots at the Hawkins Homestead as part of a larger tour of the 20 farms participating in the Sycamore Creek Water Quality Program.

Chellisons Farm, Ingham County

Interseeding Clover in Small Grains

Chellisons Farm (Hall Brothers) is a 70-head dairy operation run by Nolan, Phil, Pete and Mike Hall. The Halls farm approximately 800 acres near Mason. Standard crop rotation on the farm is corn-corn-soybeans-wheat. They also raise alfalfa.

The Halls use a liquid manure system. They have also seeded red clover for a cover crop for many years. Phil feels clover provides tremendous benefits to the following corn crop.

The Halls use IPM pest scouting services to determine if and when to use pesticides. Regular soil testing, cover crops, manure spreader calibration and manure analysis ensure fertilizer cost effectiveness.

In 1993 the Halls compared wheat and oat production when seeded with a cover crop of red clover to the small grains seeded with no cover. The Halls believe a corn crop following these crops benefit from the nitrogen the clover supplies. But does the small grain benefit?

Both wheat and oats had similar yields. The wheat with clover cover yielded 41.2 bushels per acre; the wheat with no cover 41.4. Both produced 40 bales of straw per acre.

On oats the crop with clover cover yielded 60.0 bushels per acre and the crop with no cover yielded 61.5. Oats with clover produced 30 bales of straw per acre; oats with no clover produced 40.

The establishment costs were about $20 per acre higher for the crops with clover, a cost to be recaptured in future crop yields.

Leigh Lyons seeded ryegrass into standing corn to capture nitrogen.

Leigh Lyons, Ingham County

Using Ryegrass as a Nitrogen Scavenger

Leigh Lyons has farmed for more than 30 years on his 300-acre farm near Mason. His preferred rotation is corn, soybeans, wheat.

In 1993, he began a study on his farm (1) to see if the addition of annual ryegrass planted in July in growing corn would depress corn yields and (2) to see if the annual ryegrass would take up enough nitrogen during its late-season growth to pay for the costs of seeding it and burning it down with herbicides the following spring. Lyons believes that the ryegrass provides other benefits, providing erosion control and added soil organic matter.

The first step of this two-step experiment was done in 1993.

All corn growing practices were the same except for one variable--the broadcast seeding of 22.5 pounds per acre of annual ryegrass at the time of cultivation July 2.

Yields on the two plots, replicated six times and averaged, were virtually identical. The ryegrass was determined to have no negative effects on yield. Expenses on the treated plot added $8.55 for the ryegrass seed and $2 for broadcasting it. The added $10.55 fell to the bottom line, reducing net income. The challenge for next year is to determine the value of the ryegrass in terms of pounds of nitrogen saved that might otherwise have leached away. Subjective evaluations must also be made about whether the ryegrass prevented soil loss and added to soil organic matter and tilth.

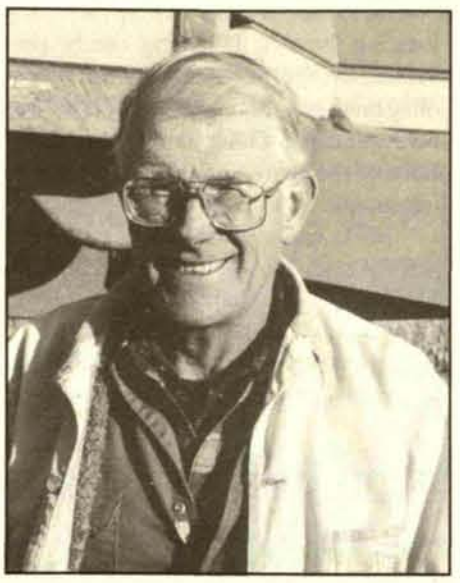
Richard Lauwers, Lapeer County

Comparison of Ridge-Till and No-Till Soybeans

Rich Lauwers and sons Mark and Mike farm nearly 2,500 acres. The cash crop operation grows sugar beets, wheat, corn and soybeans using no-till and ridge-till systems. Rich is a director of the Michigan Agricultural Stewardship Association.

The Lauwers changed their style of farming on this cash crop operation several years ago and began moving toward ridge-till. Not entirely happy with the results, 1993 looked like a year to see if ridge tilling could produce the kind of yields that would compete with solid seeded (drilled) soybeans.

The Lauwers' farmland is heavy, wet ground that dries out and warms up slowly in the spring. Ridge building has been an attempt to overcome these problems. Weed control has been an issue the past couple of seasons. "It seems that the weeds are harder to get under control since we reduced tillage," explained Richard.



The Lauwers use a sophisticated sprayer, a four-wheel-drive Quad Runner with a ground speed monitor and digital readout that enables the operator to vary the volume of material applied based on soil type and incidence of weeds. Heavy quackgrass areas can receive more Roundup than areas with little grass. The spray rig is light and can get on the fields before heavier equipment, enhancing timeliness.

Herbicide application rates were increased in 1993 to compensate for greater weed pressure. A cooler than normal spring and early summer led to immobilized herbicide and both plots suffered herbicide damage.

Both plots performed poorly this year. Besides herbicide damage, Richard sees other reasons for poor yields. "The fields were wet and we planted too late," he said. "In addition to late planting, we set the planter too deep and we just didn't get weed control."

The ridge-till plot yielded 22 bushels per acre compared to 31 for those drilled no-till. Costs were generally the same for the two systems, except for a higher seeding rate (90 pounds versus 50) in the solid-seeded plot. The extra nine bushels boosted net income from $77.13 on the ridge-tilled field to $131.76 on the no-till drilled field.

The Lauwers are preparing for more changes. More tillage is planned in an attempt to regain control of weeds. They have been growing hairy vetch and rye, and plan to use them more extensively as cover crops. These crops should help with weed control and water infiltration, as well as nutrient management.

As a side note, the Lauwers had other ridge-tilled beans planted earlier that yielded better than either of the demonstration plots.

The Lauwers are innovative farmers who will continue to search for ways to enhance economic and environmental returns on their farm. Rich believes heavy reliance on chemicals for weed control is, in the long run, not a sustainable agricultural practice.

Gale McNitt, Muskegon County

Foliar-Applied Fertilizer in Corn

Gale McNitt and his wife Marilyn farm 500 acres near Ravenna. The farm supports a 40-cow dairy herd and provides excess grain for sale. Crops are corn, hay and small grains.

Gale hoped to determine the cost-effectiveness of additional foliar fertilizer (3-18-18) applied to corn when the plants were about 18 inches tall. In addition to the foliar fertilizer, a natural growth hormone, called Symspray, was applied to one replication. According to the manufacturer, this growth regulator reduces the energy the plant uses for foliage and puts it into grain production. The growth regulator was donated to the project and was applied with an application of fertilizer, so no additional costs were attributed.

The three replications received identical herbicide and tillage treatments. Corn was planted after tillage with a SoilSaver. When the corn reached the optimum size for foliar plant food and growth regulator applications, the soil was too wet. Unable to get on the fields at the optimum time, the application occurred late. Yields were nearly the same in all three treatments, so the extra cost of the added foliar fertilizer and the growth regulator were not recovered.

Still, Gale believes that foliar-applied fertilizers have a place on his farm. Timing is the critical factor, he says. If weather conditions or other field operations prohibit a grower from making the fertilizer application at the proper time, yield response will be reduced and costs will not be recovered.

The environmental advantage of foliar fertilizers is obvious to Gale. Leaching on his sandy-loam soil would be practically eliminated, but the farm has not had yields that would warrant a switch to all foliar materials yet.

The entire plot was covered with municipal sludge in the fall of 1991. This sludge contributed the following: nitrogen, 136 pounds per acre; phosphorus, 30 pounds per acre; potassium, 4 pounds per acre; calcium, 594 pounds per acre.

No sludge was applied to this field since 1991. Gale continues to use sludge on fields that meet phosphorus, soil type, and slope criteria.

The McNitts would like to develop rotations for more effective nitrogen management. But, they say, USDA programs are not yet compatible with the need for cover crops and rotations that facilitate nutrient or herbicide management. This is one area that will have to be addressed if widespread acceptance among farmers is to occur, they say.

Gale McNitt

Bob Fogg, Ingham County

Can Hairy Vetch Alone Produce Enough N for Good Corn Yields?

Bob and Joann Fogg farm 335 acres near Leslie. Since 1986, the farm has been a Rodale Institute Midwest On-Farm Research Farm promoting sustainable agricultural production practices.

Until recently, the farm operation included a 25-cow dairy herd as well as the organic cash crop system. Since 1981, he has been using fewer chemicals, with no herbicides or chemical fertilizers used since 1986. He grows corn, soybeans, alfalfa, small grains and legume cover crops, including hairy vetch.

The dairy milking operation has been phased out, and now replacement dairy heifers are being raised.

Fogg's goal in his research plot this year was to see if taking away dairy manure would hurt corn yields. He planted corn on June 13, after plowing and disking down a hairy vetch stand that was planted after wheat harvest in 1992.

The plots differed only in that manure was spread on half this spring and not the other half. The plots were randomized and replicated six times to achieve scientific accuracy.

Yield estimates were made December 17 from a hand-taken sample and showed little difference.

Date	No manure	Manure
Aug. 92	Plant hairy vetch 40#/acre	
May 93		Spread 5 tons manure/acre
May 28	Moldboard plow entire field	
June 3, 8	Disk entire field	
June 13	Cultimulch and plant entire field with 95-day corn	
June 21	Rotary hoe entire field	
July 5	Cultivate	
July 15	Cultivate	
Dec. 17	Hand harvest plots, no difference in yield	

Larry Mawby, Leelanau County

Mating Disruption for Codling Moth Control

Larry Mawby, a member of the MASA board of directors, operates a 30-acre vineyard in Leelanau County and a 40-acre apple orchard located in the Upper Peninsula's Delta County. This apple orchard has been the focus of three years of research conducted in cooperation with Michigan State University. The study focuses on pheromone disruption of codling moths.

Codling moths are serious pests, causing the proverbial worm in the apple. Effective control has to date been through repeated applications of chemical insecticides. Reasons are emerging to look for new control possibilities: cost of chemicals, insect resistance and increased public pressure to reduce agricultural chemicals that may result in residue on their food. A most important reason is that the chemical control methods used for codling moth tend to suppress natural enemies that would otherwise lend to the control of other pests in the orchard. For these reasons, mating disruption is being tested for control of codling moths.

Mating disruption works like this: Synthetic copies of the pheromone released by female codling moths to attract male moths are released into the orchard. The idea is to place enough artificial sources of pheromone into the environment to disrupt the "scent trails" and prevent male moths from locating females. If mating can be prevented, the risk of damage to fruit by codling moth larvae is eliminated. Plastic dispensers allow for long-term controlled release of the pheromone during the growing season.

MSU entomologist James Johnson worked with Mawby testing this disruption for three growing seasons. Two eight-acre mixed variety apple blocks were chosen for the study. In 1991, the back block was managed with mating disruption and the front block used conventional insecticides. In 1992, both blocks were managed with mating disruption. Effectiveness of the control methods were determined by monitoring with codling moth pheromone traps and evaluating fruit damage. Fewer trap catches indicate mating disruption (males can't find the traps well in the pheromone-saturated orchard).

Disruption appears to work, but costs of this method are currently prohibitive, Mawby says.

TRIAL RESULTS

	Codling Moth Trap Catches	Codling Moth Fruit Damage (%)
1991		
Disruption	0	5.3
Control	11	-
1992		
BACK BLOCK		
Disruption	0	1.0
Control	59	-
FRONT BLOCK		
Disruption	6	2.0
Control	43	-
1993		
BACK BLOCK		
Disruption	3	1.0
Control	36	-

Control represents catches in traps in trees in adjacent areas.

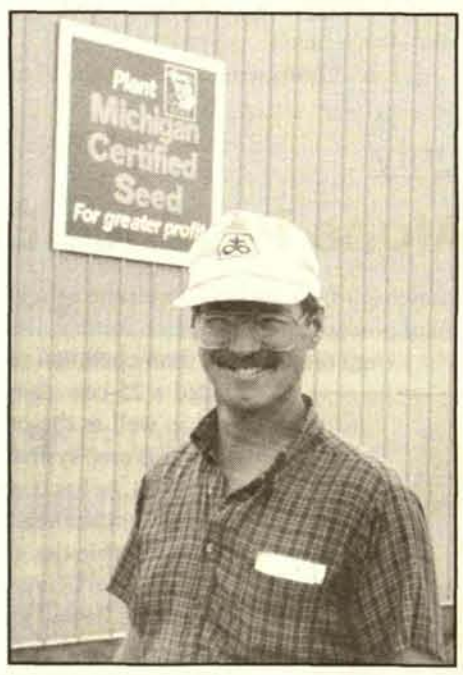
John Densmore, Gratiot County

Poultry Manure Compared to Commercial Fertilizer

John Densmore (left) discusses nitrogen test plot results with Bryan Petrucci of American Farmland Trust, which co-sponsors the on-farm research with MASA.

John Densmore and his wife Kathy farm about 1,000 acres near Ithaca. The cash crop rotation includes soybeans, corn, dry beans, and wheat for seed.

John had access to poultry manure from his brother's nearby farm. Interested in determining what source of nitrogen would most efficiently supply needed N for corn production, John set up this demonstration to test the possibilities.



Four combinations were used. Anhydrous ammonia with manure, ammonia and no manure, no ammonia and no manure (control), and no ammonia with manure. All plots received 100 pounds of starter at planting and 150 pounds per acre of potash pre-plant. Plots were given identical herbicide treatments and planted in a conservation-tilled field.

John farms good sandy loam soils and can get yields of 150 bushels per acre consistently (weather permitting). This year was a relatively good growing season in central Michigan.

Highest net return in 1993 were on plots receiving only ammonia. This is different from 1992 results, when manure outperformed the anhydrous. Input costs, including machinery and labor, were higher on the anhydrous plot. But the plot yielded nearly 14 bushels per acre better and corn prices were slightly higher, resulting in the economic advantage.

Production costs (excluding land and harvest costs) are listed in the table below.

Comparison Results

	NH_3	NH_3 + Manure	Manure	Control
Seed costs	22.95	22.95	22.95	22.95
Pesticides	8.35	8.35	8.35	8.35
Fertilizer	37.13	37.13	20.35	20.35
Machinery/labor	31.86	37.60	37.60	31.86
TOTAL	100.29	106.03	89.25	83.51
Yield (bu/a)	161	144.2	147.2	141.0
Gross ($/a)	418.60	374.92	382.62	366.60
Net return	318.81	268.89	293.37	283.09

Paul Guenther, Washtenaw County

Interseeding Medic in Corn for a Fall Cover Crop

Paul Guenther's research sought to determine whether there is a yield reduction from interseeding medic in corn at last cultivation. Medic is a legume plant that grows well during the cool days of fall, scavenging fertilizer left from the crop in which it was planted. The goal is to produce nitrogen, provide ground cover and prevent erosion during winter and spring. It dies over winter and releases nutrients to the next crop.

When planning to interseed medic, choose corn varieties with upright leaves and match medic variety to your soil type, Guenther says.

Following soybeans in 1992, Guenther planted corn using ridge-till methods in 1993. He sprayed Roundup May 20, cleaned the ridges May 27 and on May 29 planted corn, applying fertilizer and band-applying Dual and atrazine. On July 2, he cultivated to build ridges and applied 15 gallons of 28 percent nitrogen fertilizer solution. As he cultivated he seeded four pounds of Cyprus medic between the rows in 12-inch bands on half his corn plot, none on the other half. The six randomized and replicated plots were harvested Dec. 9.

Yields were statistically identical, 154.6 without medic and 154.0 with medic.

About This Publication

Several people were instrumental in the compiling the material in this publication.

Kalamazoo dairyman Roger French worked with farmers in southern Michigan as they designed their experiments and carried out their on-farm research. He helped them collect and compile their data.

Russ LaRowe, district manager of the Kalkaska Soil Conservation District, worked with farmers in northern Michigan, helping them design their experiments, collect and compile data and wrote narrative descriptions of their farm operations.

Bryan Petrucci, Director of Sustainable Agriculture Programs for American Farmland Trust, worked with French and LaRowe and visited with farmers to observe their experiments.

The farmers themselves must be given credit for devoting time and effort to constructing scientifically valid experiments. In some cases, simple side by side comparisons were made; in others, plots were replicated four to six times and set up in random order. Use of product names does not imply endorsement.

The material was edited by Dick Lehnert.

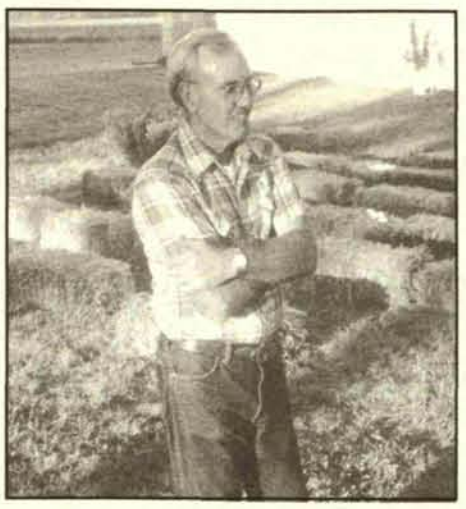
Dale and Sally Stuby, St. Joseph County

Reduced Rates of Soil Insecticide in Seed Corn

Dale and Sally Stuby farm 770 acres near Constantine. Most of their land is planted to inbred corn lines that are crossed to produce commercial hybrid seed. Because these inbreds are more sensitive to stresses, production systems rely heavily on irrigation, conventional complete tillage, high levels of fertilizer and insecticides. Because of the investment in irrigation, fields tend to be planted to corn year after year.

The soils in the county are sandy, easily eroded by wind and cover a vulnerable aquifer that causes serious concern about degradation of water quality from fertilizer and pesticides.

For several years, the Stubys have looked at more sustainable strategies: conservation tillage, field scouting, use of cover crops, rotations with soybeans and wheat, reduced chemical applications, reduced nitrogen applications, irrigation scheduling,



under-center-pivot-height windbreaks, and rotational manure application. They raise 2,000 head of market hogs farrow to finish each year, and inject liquid manure into the soil.

In their 1993 research, they compared four rates of Counter 20G insecticide applied to the soil at planting to combat corn rootworms. The test covered 36 acres in which each treatment was replicated six times and the results averaged. The field was in corn in 1992, with a wheat cover crop in place during the winter between crops.

In this study, yields improved as the rate of insecticide used increased. Of the three years with replicated research trials, 1993 was the first in which the full rate of insecticide produced higher yields than the three-fourth rate.

After three years of research, the Stubys shifted to the three-quarter rate on all their seed acreage.

SEED CORN YIELD RESPONSE TO SOIL INSECTICIDE

Counter 20G rate (lbs/a)	0	3	4.5	6
Counter cost ($/a)	0	4.92	7.38	9.84
Yields (bu/a)	48.4	56.0	58.2	61.3
Root ratings	2.55	2.53	2.32	2.43

Henry Miller, St. Joseph County

Seed Corn Grower Tries Lower Input Rates

Henry Miller's primary crop is seed corn, with corn following corn for three or four years. In 1993, he grew 750 acres of corn for seed, 50 acres of soybeans, 90 acres of snap beans, 60 acres of oats and 60 acres of alfalfa.

"I am always looking for ways to reduce my inputs and farm for maximum efficiency or greatest net return instead of maximum yields," he said. In his on-farm research, he has been trying to determine when soil-applied corn rootworm insecticides are most likely to pay and what rates of nitrogen fertilizer yield the optimum return.

He farms sandy soils. He fall chisels, plants a wheat cover crop between corn crops and works the ground with a field cultivator in the spring. In 1993, he ran four on-farm experiments with the following results:

Trial 1--Rootworm reduction by spraying adult beetles. On August 5, 1992, based upon scouting reports, the field was sprayed with 1 quart per acre of Penncap-M (cost per acre: $9.44) to kill adult corn rootworm beetles. In 1993, no soil insecticide was applied to half the field and 8 pounds of Counter (cost: $12.96 per acre) was applied to the other half. Plots were randomized and replicated six times. No obvious goosenecking or lodging was seen in either treatment. Yields with Counter averaged 81.2 bushels per acre; without Counter 79.1 bushels.

Trial 2--As in trial 1, field was sprayed (Aug. 8, 1992) to control corn rootworm adults and Japanese beetles that were clipping silks. One quart per acre Sevin XLR+ was used (cost: $9.25 per acre). In 1993, 8 pounds of Counter was used on half the field, no insecticide on the other. No visual differences were seen. The Counter-treated field yielded 84.8 bushels per acre, the untreated 81.8.

Trial 3--Four nitrogen rates were compared in four replications. The lowest rate (68 pounds N per acre) produced visual symptoms of deficiency and yields of 66.5 bushels per acre. Three higher rates produced similar yields: 89 pounds of N, 80.3 bushels per acre yield; 95 pounds N, 82.3 bushels; 120 pounds N, 80.0 bushels.

Trial 4--Yields were compared from two replicated treatments. Half received starter fertilizer (192 pounds per acre of 15-15-2) and the other no starter, but both received nitrogen. Yields favored starter fertilizer (79.4 bushels per acre compared to 63.6).

Wenger Brothers, Ionia County

Using Hog Manure To Sidedress Corn Worked Out Well

Tom, Ron, and Larry Wenger farm 500 acres, along with their wives and children, in a partnership created in 1977. They grow corn, hay, small grains, and soybeans and also have about 115 sows, feed pigs and finish about 100 head of beef. They also keep a brood cow herd.

The farm began a ridge-till system a few years ago. The brothers wanted to reduce herbicide use by banding. They also wanted to find ways to better use the liquid manure from the hog operation.

Part of this demonstration was to reduce the amount of nitrogen applied to the corn crop while maintaining yields. To facilitate liquid manure applications in standing corn, a special manifold was built to direct manure between the rows, where it was then cultivated in. About 6,000 gallons of manure was sidedressed per acre and no other N source was applied to one plot.

A second plot received 29 gallons of 28 percent liquid nitrogen in split applications and no manure. A third plot received 24 gallons of 28 percent liquid with no manure.

To facilitate liquid manure applications in standing corn, a special manifold was built to direct manure between the rows.

Herbicide treatment was a broadcast spray of Roundup before planting and then a banded application of Dual at planting. This banding allowed only 25 percent of each acre to be treated. All plots received the same herbicide treatment. All the corn was cultivated twice.

The Wengers believe that yield can be maintained and herbicides and fertilizer rates reduced if manure applications and follow-up cultivations are timely. The 1993 field results support this conclusion.

Liquid manure analysis showed that 1,000 gallons of hog manure contained 22.9 pounds of nitrogen, 16.1 pounds of phosphorus and 18.5 pounds of potassium. Using this analysis, the manure supplied 137 pounds of N per acre. None of the plots yielded especially well but the return over input costs was best on the manure plot. Input costs and returns are listed in the table.

Tom Wenger

	High N Rate No Manure	Low N Rate No Manure	Manure No Added N
Seed costs ($/a)	24.05	24.05	24.05
Fertilizer	26.77	23.85	15.07
Machinery & labor	28.87	28.87	34.61
TOTAL	96.76	93.84	90.80
Yield (bu/a)	77.3	74.5	82.3
Gross income ($/a)	200.98	193.70	213.98
Net income ($/a)	104.22	99.86	123.18

* Production costs were calculated from MSU Extension Bulletin "Custom Work Rates in Michigan."

Paul and Tom Wing, Barry County

Alternative Methods of Controlling Weeds in Corn

Paul Wing and his son Tom farm about 600 acres devoted to corn, alfalfa and soybeans. They have a 65-cow dairy herd and feed about 30 beef steers.

Paul believes that sustainable agricultural methods include purchasing fewer off-farm inputs--pesticides, fertilizers and machinery.

For the past two years, the Wings have compared three methods of controlling weeds in corn: cultivation and rotary hoeing only, banded herbicides with cultivation, and broadcast herbicides with no cultivation or hoeing. This last year, they added a new treatment: cultivation and broadcast herbicides. Since they use only atrazine and Prowl for weed control, costs at the full rate amount to only $11.40 per acre.

In 1992 and 1993, the no-herbicide treatment was most expensive (higher machine and labor costs) and produced the lowest yields.

In 1992, yields were about the same when herbicides were used full rate or at half rate in bands with cultivation, but the two cultivations cost more than the savings in herbicide. Not so in 1993. The plots with banded herbicides yielded five bushels more than the plot with broadcast herbicides and one cultivation, and nine bushels more than the plot in which herbicides were broadcast and no cultivation was used.

The Wings plan to use more herbicide banding and cultivation. While the cost of cultivation is more than the saving in herbicides, cultivated corn yields the same and sometimes better than non-cultivated.

Paul Wing

President Wirbel's Vision for MASA

"I would like MASA to be known as the environmentally concerned organization in agriculture, but one concerned about economics as well."

That's how MASA president Jerry Wirbel describes his vision of what MASA should become. "I'd like to see it grow with members. I'd like to see people become part of it," he said.

He'd like to see a network of members doing on-farm research and talking to each other about farm practices that are sustainable and that work for them. It needs enough people involved so that it can be local. What works a hundred miles away isn't convincing to a farmer convinced his conditions are different, he said.

When a new agricultural practice comes along, Wirbel wants to know all about it. "I want somebody to show me what it looks like and tell me how it works," he said.

He calls it his "show and tell" attitude. Ideally, he'd prefer to see a new practice as used by a farmer, rather than in a research plot, and by a neighbor in his local community who deals with his kind of soils and climate, rather than somebody miles away. He'd like to see it done under "real" field conditions and "realistic" economics.

To his thinking, the most exciting part of MASA is the on-farm research projects done by members. Real farmers, working under real conditions and constrained by real economics, try out ideas on their farms—and then share the results with other members in "show and tell" sessions—field days.

Jerry's "project" is his whole 1,000-acre cash crop farm. After some experimentation with no-till techniques, he extended them to his whole farm. While lots of farmers grow no-till corn and soybeans, he's one of a very few farmers who uses no-till with sugar beets and dry edible beans.

Jerry and his wife Pearl farm near Hope in Midland County. He uses a three-crop rotation of corn, sugar beets and dry beans. "No-till takes a lot less field work time," he said. "It saves fuel cost and wear and tear on the machinery and me."

As president of a group dedicated to developing and putting into practice sustainable agricultural practices, Jerry has given thought to what sustainability means on his farm. Partly it means controlling costs so he can stay in business; partly it means reducing the impact of his farming operation on the environment. Wind and water erosion are two problems he believes he must control, for environmental reasons. Since losing soil isn't profitable to his farm operation, he doesn't view it as a burden to control erosion.

His land is flat and a lot of water leaves his land as surface runoff. It should move as free of soil and chemicals as possible, he says. Reducing tillage and leaving surface residues help achieve that. At the same time these practices reduce wind erosion as well.

MASA cultivates ties to the political world. Last year, Congressmen Dave Camp (left) spoke at the MASA annual meeting, at the invitation of President Jerry Wirbel (right).

Not only is blowing soil an environmental problem, small sugar beets and beans can be blown out of the soil or damaged by abrasion when soil blows.

Corn follows sugar beets in his rotation. Corn, with its deep roots, is the best crop, he says, to restore the ground after beets. Corn is followed by dry beans, mostly black turtles but also kidneys and cranberries. These are drilled, using a Tye no-till drill with 8-inch row spacings. "The secrets to no-till dry beans are narrow rows and selecting upright varieties with strong roots to penetrate untilled soil," he said. Beans are historically a much-tilled-for crop.

The dry beans are harvested by direct cutting. The upright varieties and the close planting help reduce harvest losses.

Did the MASA board choose well in choosing him as its first president? Jerry thinks so. "They needed a production-type farmer who's not pushing anything," he said. "I'm not trying to sell any products or one farming system or get anybody to change farming methods cold-turkey."

He wants MASA to be open to all kinds of ideas—but not be captured by any interest group. He wants MASA to foster exchange of ideas, help members see new ideas in action and help farmers learn from other farmers.

Potential Impacts of Sustainable Agriculture

What kinds of gains might farmers expect when they shift from conventional to more sustainable agricultural production systems?

A University of Missouri analysis by agricultural economists John Ikerd, Don Van Dyne and Sandra Monson came to these conclusions about what the shift could mean:

1. Reduce soil loss as much as 70 percent, bringing sheet and rill erosion down to "T" on all but the most highly erodible lands and below "2T" on almost all land.

2. Reduce total fossil fuel-based energy use by as much as 22 percent. Reductions in energy use associated with fertilizers and pesticides by far offset the small increases in fuel used for cultivation, they say.

3. Reduce direct production costs by as much as 17 percent, reflecting a 38 percent decrease in cost of crop chemicals, a 16 percent reduction in fertilizer costs, and a 7 percent reduction in fuel costs.

4. Reduce use of commercial herbicides by as much as 40 percent for corn and soybeans.

5. Reduce commercial nitrogen use by as much as 30 percent, primarily through more efficient nutrient management programs and increased use of crop rotations, specifically reducing the monocropping of corn and soybeans.

6. Increase crop labor requirements about 7 percent, although possibly increasing management requirements significantly and increasing the management to land ratio for reduced input conservation tillage programs.

Alternative cropping systems that incorporate reduced tillage, greater crop diversity and more efficient management of commercial pesticides and fertilizers are capable of improving resource conservation, reducing production costs and improving the overall sustainability of farming systems, the analysts said.

And, they added, these systems rely on practices, methods and technologies that are currently being successfully used on many farms and would probably be considered reasonable alternatives by farmers.

Land Steward Award

(Continued from page 1)

"Peace of mind is one of the things I value," he said, obviously enthralled as the pastoral images go through his mind.

Shetler also spoke in glowing terms at a session during the MASA annual meeting in Clare last winter. He has good records. They show that with grazing he cut purchased protein and fed less purchased and more farm-produced feed. Milk production slipped somewhat, but cost of milk produced fell, too. His income over feed cost, per cow per day, went from $5.83 in 1990 to $6.55 in 1991, his first grazing year, then fell slightly to $6.31 during the cold, wet 1992. In 1993, income over feed cost rose to $6.58.

Conventional grazing was never productive for dairymen. When livestock are put into one field, they pick and choose what they like to eat, overgrazing and killing the best plants and converting the pasture to the worst forage species and weeds.

In intensive rotational grazing, there are more fields each designed to be grazed briefly and regrazed after recovery. This system uses livestock just like a mechanical hay harvesting system. Michigan State University Extension specialist Richard Leep estimates that livestock producers spend three hours per acre per year green chopping and seven hours making hay. With grazing, livestock do much of that work, plus hauling manure. The time and labor saved is available for other uses in the grazing program.

Grazing is beneficial to pasture plants, Leep said. Grazing stimulates growth by removing shade, but excessive grazing reduces root reserves. Ben Bartlett, the district Extension dairy and livestock agent from the Upper Peninsula, in his bulletin "Controlled Grazing," says grass/legume mixtures should be grazed when they are 10 inches tall and be grazed down to 3 inches, then rested for 30 days of growth.

But, as Leep notes, the weather doesn't make that always possible. In the spring, you must start grazing early when grass is only two or three inches high. Livestock must be moved often. During the cool season of high growth, you may need to "stockpile" for hot, dry days ahead.

That may mean cutting some pasture for hay. It may mean planting some fields to birdsfoot trefoil, the quality of which does not deteriorate as it matures, or to a warm season grass, like switchgrass, which starts later and provides grazing during the heat of summer when cool season grasses slow down. Shetler has made plantings of Matua, a grass grown widely for grazing in New Zealand.

Choosing the plant species you want to work with can be hard or easy. "Graze what you have" is a good starting point, Leep said. Getting started means building fences to divide existing hayfields. Even quackgrass is a good forage to graze. Then, add species that help.

If you need a species that stockpiles in the field and provides summer grazing, trefoil is a good choice. If you have soil problems, trefoil tolerates wet, acid soils.

Extending the grazing season also becomes a goal to consider. Planting rape, kale, turnips or other brassicas can provide grazing well into the winter. They are easy to establish, often no-tilled into pasture, and they are ready to use about 70 days after planting.

Two very helpful MSU bulletins on the subject are "Controlled Grazing" and "Grasses and Legumes for Intensive Grazing in Michigan."

The Road to Sustainability

(Continued from page 1)

programs. MASA leaders have met with sustainable agriculture groups in Indiana, Illinois and Iowa and traveled to the field day at Dick Thompson's farm in Boone, Iowa. Thompson, a leader of the Practical Farmers of Iowa, which stresses on-farm research as a method of evaluating sustainable practices, is a member of MASA's advisory board.

--Development of the Sustainable Agriculture Project, in cooperation with AFT, and publication of results. Fifteen farms participated in 1991, looking at the effects of reduced fertilizer and pesticide applications, cover crops, intensive rotational grazing, and others. In 1992 and 1993, 25 farms cooperated.

--Demonstration farms also serve as hosts for field days or educational tours. Each year there are three to six field days drawing about 300 participants. In addition, three or four winter workshops are held each year, in cooperation with Extension or Soil Conservation Districts.

--Establishment of the Land Steward Award to be given annually to a farmer who exemplifies the ideals of sustainable agriculture.

--MASA members receive a newsletter, called The Land Steward, edited by Dick Lehnert, published quarterly.

Future goals call for membership expansion; expansion of the newsletter in size, frequency and circulation; hiring an executive director; expansion of on-farm demonstrations, field days, winter meetings and seminars; increasing linkages with other sustainable agriculture organizations, especially through the Sustainable Agriculture Working Group; creation of a sustainable agriculture hot line; and creation of a lending library.

Eldor Paul, chairman of the MSU Department of Crop and Soil Sciences, congratulated MASA for the way it has established itself. He said it was a model for other groups, and said the department plans to invite farm people with other specialized interests to meetings in March and April to look at department directions and discover what MSU can do for them.

George Bird congratulated MASA on its fine start, saying that sustainable agriculture techniques are "a major part of the future." He also endorsed on-farm research as a valuable farmer to farmer communication and education tool.

Jack Laurie, president of Michigan Farm Bureau and a MASA advisory board member, said MASA had "given credibility to something that those on the farm had heard about and read about, but never figured quite how to fit into." The credibility comes from "having good farmers doing it," he said. "As long as you keep doing the show and tell, you're going to have an impact."

Certainly the organization has been helped greatly by having good farmers as leaders. Jerry Wirbel grows 850 acres of corn, soybeans, sugar beets, wheat and dry beans. His drive is to reduce the amount of fertilizer and pesticides that leave his farm, and no-till has been his primary tool for achieving that goal. He's a farmer, but at the same time has environmental interests and concerns. For example, he's a member of Pheasants Forever.

Board Secretary Tom Guthrie must also have crossed Laurie's mind when he made his comments. Guthrie, who runs a 1,225-acre cash grain farm near Delton in Barry County, was elected in early December to the position of vice-president of Michigan Farm Bureau and will serve as Laurie's right-hand man.

Become a MASA Member

Become a member of the Michigan Agricultural Stewardship Association (MASA) and get access to the key that opens the door to farming in the future.

In this Information Age, the key is access to the kind of information you need. MASA President Jerry Wirbel puts it this way: "Your membership reinforces and encourages the board of directors to fulfill the mission of MASA--to develop a process for research and dissemination of information about agricultural systems that are economically feasible, agronomically sound and environmentally safe."

MASA is a statewide, not-for-profit educational organization committed to the development and use of sustainable farming systems.

Formed in 1991 by a group of innovative farmers and agricultural professionals, MASA works to:

- Increase awareness and educate the public on sustainable agriculture issues;
- Promote research that will determine the sustainability of alternative farming systems;
- Aid in the development of sustainable agriculture techniques for use on Michigan farms, and assist in their adoption by Michigan's farmers;
- Encourage cooperation between producers, agribusiness, researchers and government agencies for the development of sustainable farming systems.

Soil conservation, water quality and wildlife issues are also concerns of MASA members.

MASA believes that Michigan producers need access to practical, readily usable information on sustainable farming systems.

The organization holds field days, workshops and farmer meetings throughout the year to educate members about ways to reduce some of the negative ecological impacts associated with agricultural production and to farm more profitably.

The organization participates in the establishment of on-farm demonstration and research plots, designed by farmers and agricultural professionals to compare conventional and alternative production methods.

Members of MASA receive special mailings, including the newsletter The Land Steward, that keep them abreast of information on sustainable agriculture issues and events.

To become a member, fill out the application below. You'll be just in time to attend this year's annual meeting (see details next page), where you can meet and exchange ideas with other farmers who are looking for better farming methods.

Making Contact with MASA

The Michigan Agricultural Stewardship Association is a non-profit organization, the goal of which is to foster sustainable agriculture practices among farmers of Michigan. The official address is that of Secretary Tom Guthrie, 7301 Milo Rd., Delton, MI 49046 (Phone: 616-623-2261 or -2255), who may be contacted for membership information or other matters. Other officers are: President, Jerry Wirbel, Hope, 517-689-3857; Vice-President, Gary Hoyt, St. Louis, 517-681-5184 or -3259; Treasurer, Christopher Lufkin, Ionia, 616-527-5357. Other directors are Russ LaRowe, Kalkaska, 616-258-3307; Roger French, Kalamazoo, 616-375-0658; Larry Mawby, Suttons Bay, 616-271-3522; Richard Lauwers, Imlay City, 313-724-2263; and Marlin Goebel, Hillman, 517-742-4505. Leadership Development Coordinator is John Durling, Michigan State University, 517-353-3209 (fax 353-5174). Advisory Board Chair is Oran Hesterman, MSU, 517-355-0264. Newsletter editor is Dick Lehnert, DeWitt, 517-669-9023 (fax: 669-2184).

MASA Membership Application

Name _____ ☐ $25 - Individual

Address _____ ☐ $100 - Institutional

City _____ State _____ Zip _____ ☐ $10 - Student

Telephone _____

New member? _____ Renewal? _____

Are you a full-time farmer? _____ Major commodity? _____

Volunteer for committee work or have a demonstration plot? _____

Mail completed membership form and check to:

MASA, 7301 Milo Rd., Delton, MI 49046

MASA's Third Annual Meeting Jan. 29 in Mt. Pleasant

The third annual meeting of the Michigan Agricultural Stewardship Association will be held Saturday, Jan. 29, at the Holiday Inn in Mt. Pleasant.

The registration, which includes lunch, costs $15 for those who pre-register by Jan. 22 and who have their annual dues paid. Dues are $25 for individuals, $10 for students, and $100 for organizations. Non-members may attend for $20 in advance; cost for all who don't pre-register is $25 at the door.

Registrations and dues should be sent to Russ LaRowe, 605 N. Birch, Kalkaska, MI 49646.

Registration begins at 9 a.m, followed by the business meeting at 9:30. Items of business include election of three directors to fill expired terms and, later in the day, election of president from among the entire board (see election story for information on the candidates). By-laws also need some revision to comply with MASA's legal status as a non-profit corporation.

From 10 a.m. until noon, six breakout sessions will be held. Visitors may attend two or three in the time allotted. The sessions include: composting dairy manures, with Tom Cordes, Hillman dairyman; chestnuts as an alterative orchard crop, with L.L. "Bud" Coulter of Eastport; intensive rotational grazing, with George Shetler of Kalkaska (first recipient of the new MASA-sponsored Land Steward Award); reduced tillage and no-till sugar beets, with Jim LeCureux, Huron County Extension director; organic truck farm vegetables, with George Perkins, Hillman; and a program on on-farm research, with a Rodale Institute farm cooperator as yet unnamed.

After lunch, keynote speaker Fred Kirschenmann will discuss "sustainable agriculture--its relationship to the structure of agriculture today and in the future." Kirschenmann is the manager of his family's 3,100-acre grain and cattle farm near Medina, North Dakota. The farm uses organic and bio-dynamic production methods and is certified with these methods.

Kirschenmann left a career in higher education (he has a Ph.D. in religion and philosophy and was a college dean) in 1977 to begin managing the family farm on which he grew up. By 1979, he was a charter member of the Northern Plains Sustainable Agriculture Society and its president during much of the 1980's. He has been a member of the LISA administrative council for the north central region since 1989. In 1990, the Center for Science in the Public Interest gave him its "Safe Food Trailblazer" award.

He has written and spoken extensively about sustainable agriculture.

1994 MASA Annual Meeting Registration

January 29, 1994

Name _____ Phone _____

Address _____

Registration (by Jan. 22, 1994) Member____ x $15/person = _____

Non-Member___ x $20/person = _____

After Jan 22, 1994 (at the door) _____ x $25/person = _____

Please assist us with planning and indicate your preference as to breakout sessions.

- ☐ A: Rodale Midwest On-Farm Research and Extension (speaker invited)
- ☐ B: Organic Truck Farm Vegetable - George Perkins
- ☐ C: Composting Dairy Manure - Tom Cordes
- ☐ D: Chestnuts as an Alternative Orchard Crop - L.L. "Bud" Coulter
- ☐ E: Intensive Rotational Dairy Grazing - George Shetler
- ☐ F: Reduced Tillage/No-Till Sugar Beets - Jim LeCureux

For Room Reservations: Holiday Inn - 1-800-292-8891

Return with full payment to Russ LaRowe, 605 N. Birch, Kalkaska, MI 49646

Candidates nominated for MASA board, president

At the annual meeting Jan. 29, MASA members will elect three to the board of directors and vote to choose a president.

A nominating committee offers seven candidates for the three open board positions and two for president. Nominations from the floor will be accepted as well.

The two candidates for president are Jerry Wirbel and Christopher Lufkin. The seven candidates for the board are Rich Bowman, Wendy Elsey, Robert Fogg, Jim LeCureux, Christopher Lufkin, Greg Mund and Sara (Sally) Stuby. The following are brief biographies of each candidate:

FOR PRESIDENT

JERRY WIRBEL--A farmer from Hope in Midland County, Jerry was a founding member of MASA, chaired the ad hoc committee that formulated its by-laws and mission statement, and became its first and so far only president.

He and his wife Pearl farm 850 acres devoted to sugar beets, corn, soybeans, wheat and dry beans. In farming, Jerry uses as little tillage as he can. For dry beans and sugar beets, he uses some fall field cultivating to level ridges and no tillage in the spring.

He is a supporter of on-farm research, believing that farmers will try things they see their neighbors do successfully and profitably.

CHRISTOPHER LUFKIN--One of the founders of MASA, Christopher served as its first and so far only treasurer. He has worked to procure grant funding and non-profit corporation status.

Christopher grew up on a small farm in Oakland County. He has degrees from Michigan State University in Crop and Soil Sciences (B.S.) and Extension education (M.S.).

Currently, he is coordinator of the Michigan Manure Management Project in Ionia. This multi-agency-sponsored project focuses on composting, nutrient management and milking center waste handling. He has varied experience: working for Bangkok Bank to set up a swine immunization program in Thailand; working in the Land Pavilion at Walt Disney World's EPCOT Center; coordinating science and agriculture programs at MSU's Tollgate 4-H Education Center; and farm consulting for TransNational Agronomy.

FOR DIRECTORS

CHRISTOPHER LUFKIN--(see above).

GREG MUND--Involved with MASA from the beginning, he was one of the original directors, has conducted on-farm research projects for three years, and is active as a member.

He farms in southern Oceana County, near Rothbury, growing asparagus, fruit and soil-building cover crops. About 300 acres of his 370 is woodland. A graduate of Michigan State University, he is a 19-year employee of the Soil Conservation Service, having spent the last 10 as district conservationist in Muskegon.

RICH BOWMAN--Rich is Michigan Farm Bureau's west Michigan regional representative. Before joining Farm Bureau, he was crops manager of a 2,500-acre cash grain and cattle operation near Williamston. While there, he worked with Richard Harwood, who holds Michigan State University's endowed chair in sustainable agriculture. Research centered on integration of crop rotations and livestock into sustainable systems.

A graduate of MSU in ag economics, Rich is one among about 30 collaborators working to create the Michigan Integrated Food and Farming Systems (MIFFS) Initiative, a proposal now seeking funding under the W.K. Kellogg Foundation's Integrated Farming Systems program.

ROBERT FOGG--Since 1986, the Fogg farm near Leslie in Ingham County has been a Rodale Institute Midwest On-Farm Research cooperator promoting sustainable agricultural production practices. An annual field day has been hosted for several years.

Since 1981, he has been using fewer chemicals, with no herbicides or chemical fertilizers used since 1986. His 330-acre farm uses organic production methods. He has been a member of the Organic Crop Improvement Association since 1988. He grows corn, soybeans, alfalfa, small grains, legumes including hairy vetch as a cover crop, and raises dairy replacement heifers.

WENDY ELSEY--She and husband David and family farm in partnership with his parents in Cass County, rotating corn, small grains and alfalfa on 760 acres of land and producing 6,600 hogs per year, farrow to finish.

An original member of MASA, she is active in her community, both in farm groups and as a member of the Cass County Environmental Council and the county Planning Commission, of which she is vice-chair.

JIM LeCUREUX--As county Extension agricultural agent in Huron County for the last 11 years, he has worked with a number of programs designed to create a more sustainable agriculture.

He worked with a local non-profit growers association to provide pest scouting and soil sampling services and has set up a regional soil nitrate testing lab. He has conducted applied research plots, in cooperation with MSU specialists, investigating reduced rates of starter phosphorus fertilizer and corn rootworm insecticides, nitrate testing, row width, tillage systems, subirrigation and herbicides.

Last year, 75 farm operations were involved in demonstration projects and more than 40 plots were harvested for yield and economic analysis.

He also helped organize the first County Corn Growers Association in Michigan.

SALLY STUBY--Sara (Sally) Stuby and her husband Dale have been MASA members from its inception. They farm 850 acres, primarily irrigated corn for seed, in St. Joseph County. They also grow soybeans, wheat and alfalfa and produce 2,500 hogs farrow to finish.

For three years, they have participated in on-farm research looking at reduced rates of soil insecticides in seed corn. They have also conducted cover crop studies, tillage comparisons, nitrogen application studies, herbicide comparisons and studies on biological control and microclimates.

Sally is employed as Extension coordinator of the Interagency Integrated Pest Management Project in St. Joseph County.

The top three vote-getters will be elected.

Kalamazoo dairyman Roger French, a founding member of MASA, a coordinator of the On-Farm Research and Demonstration Projects, a member of the board of directors since its inception, decided not to run for a new term on the board. Also not running is Gary Hoyt, a dairyman and potato farmer from St. Louis, who has been MASA's vice-president since its inception.