

MICHIGAN FARM NEWS



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Health Insurance Deduction, Energy Tax, Private Property Rights Headline D.C. Seminar

Michigan congressmen expressed support for some key objectives of the 110 MFB members participating in the organization's annual Washington D.C. Legislative Seminar, March 23-26. Meeting with the groups at a morning breakfast, Rep. Dave Camp (R-Midland) said he strongly advocates a 100 percent tax deduction for health insurance premiums paid by farmers and other self-employed persons.

"Farmers and other small business people had been able to deduct 25 percent of their health insurance premiums, but that provision expired this year," Camp said. "It's essential that we reinstate that deduction and increase it to 100 percent. That change would be very helpful to people in taking care of their health care needs and controlling high costs."

Sen. Don Riegle told the groups at an afternoon briefing that he also supports a 100 percent health insurance premium tax deduction. "As the chairman of the subcommittee on health insurance in the Senate Finance Committee, I'm involved in working with the health care legislation and I've put the deduction in the bill that I've developed," he said. "I've also advocated this very strongly to the health care task force named by the president."

The Farm Bureau members also discussed the health insurance deduction with Sen. Carl Levin, who said he was "99 percent sure" that Congress would at least extend the 25 percent tax deduction.

In response to a question about the impact of President Clinton's proposed energy tax on agriculture, Sen. Riegle said he looks forward to input from farmers. "I'm open to how we finally sort out the energy tax issue," he said.

Rep. Nick Smith (R-Addison) said the energy tax would be a tremendous imposition on agriculture. "Farmers can't pass along that added cost like manufacturers can," he said. "The Clinton economic proposal does not reduce spending. It's promising those spending cuts in the third, fourth and fifth

year of the plan while we increase taxes now. That's not the way to get the economy rolling again."

Former U.S. Senator Steve Symms from Idaho gave a presentation to MFB members on the Private Property Rights Act (S. 177). Symms, who retired from Congress in 1992, was the original sponsor of the legislation. The act, which has a companion measure (H.R. 561) in the House, would require the Justice Department to review federal regulations for their possible impact on private property rights.

"It would be a win-win situation for farmers if we can get the Senate to consider this bill," Symms said. "If the bill gets voted down, everyone who voted against it is going to have to explain why they voted against private property rights. And if it passes, it's going to give us one more little measure of protection against the bureaucracy and the regulators."

The desire to have private property rights is a basic part of human nature, according to Symms. "Polls showed that the one thing people of the former Soviet Union wanted more than anything else, more than the right to vote or hold elections, was the right to own property and assets," he said.



Above, Wayne County Farm Bureau members Wayne DeForest (l) and Walt Rochowiak (r), discuss amendments to the Agricultural Worker Protection Act and private property rights legislation with Christen Eliason, a liaison with Congressman William Ford, (D-Ypsilanti). Ford is sponsoring amendments to the Agricultural Worker Protection Act that could be very detrimental for agriculture.

"In Eastern Europe, people are fighting to get control of property, run their businesses and be able to raise their families the way they want. Meanwhile, here in the U.S. we have just turned the federal government

over to a group of people who want more government and who want to raise taxes on the people who might invest money in creating more jobs for the private sector," Symms concluded.

USDA to Consider Quality in 1992 Corn Disaster Program – Application Deadline May 7

USDA Secretary Mike Espy announced April 9 that new assistance will be available to producers impacted by low-quality corn from the 1992 growing season. The decision comes after requests from Michigan Farm Bureau and Michigan Congressmen to former USDA Secretary Ed Madigan, and current Secretary Mike Espy to include quality considerations in addition to quantity criteria.

Following a meeting with members of Michigan's Congressional delegation, led by Sen. Don Rielge, Espy sent acting ASCS Director Randy Weber on a whirlwind tour of areas hard-hit by a disastrous 1992 corn crop.

The discretionary authority to consider quality in disaster eligibility criteria had been ignored up to this point, however. In a Dec. 17, 1992, letter to former USDA Secretary Edward Madigan, MFB President Jack Laurie urged the secretary to exercise his discretionary authority to allow grade standards to be used as eligibility criteria for disaster assistance.

In a March 1993 follow-up letter to current USDA Secretary Mike Espy, Laurie again encouraged the department to reconsider the need for quality-based disaster criteria.

"In addition, special consideration should be given to assure fair and equitable treatment of livestock producers who suffered reduced feed efficiency due to the poor quality of feed that they produced," Laurie said. "A large number of Michigan producers are suffering financial difficulties due to the widespread nature of this quality related problem."

According to Espy, adjustments in production will be made for corn producers who suffered losses from reduced quality caused by damaging weather or related conditions. "This adjusted production will be used to determine whether these corn producers qualify for dis-

aster payments for the first time, or for additional payments, as applicable," he said. "Corn producers who filed a written disaster application for the corn crops may be entitled to additional payments because of quality production adjustments. Also, producers who have not filed a written disaster application for 1992, may file an application through May 7, 1993.

For example: A producer harvests 5,000 pounds (adjusted to dry basis) of corn from

one acre. At 56 pounds per bushel, this converts to 89 bushels/acre.

With a 45 lb. test weight, this corn would grade out to sample grade, meaning that the adjusted yield for disaster payment purposes would be 13 bushels per acre (89 bushels x 15 percent = 13 bushels).

If the producer's ASCS yield is 100 bu/acre, then the disaster threshold would be 65

Continued... See page 9 for more details and a worksheet

Nearly 225 corn farmers attended a meeting with acting director of ASCS, Randy Weber, at Aldermans Farm Equipment. Weber made a total of 13 stops in the central and thumb portions of Michigan during a two day fact-finding tour.



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In Brief...

Farm Spending Cuts Vary in Budget Packages

Farm program payments to farmers will drop between \$2.7 billion and \$4.9 billion in the 1994-98, period depending on how the House Senate Conference Committee resolves the differences between the two plans. The lower amount is called for in the Senate budget plan, while the House version would reduce farm program spending by the higher amount, reports *Knight-Ridder News*. Another \$900 million in user fees could boost the cost to farmers even higher.

Most of the cuts would likely come from a 10 percent increase in the base acreage declared ineligible for subsidy payments, and from elimination of the 50/92 and 0/92 programs, under which farmers can receive deficiency payments on 92 percent of their base acreage even though only 50 percent or all of the acreage was not cropped.

Another plan that has been discussed is raising the commodity loan rates on feed grains and wheat, which some say would cause higher market prices, thus reducing deficiency payments. However, under marketing loans that will be offered to wheat and feed grain producers in the 1993-95 crop years, that could create more treasury exposure instead of less, because farmers would be allowed to repay their loans at the market price rather than the actual face value of the loan, even if market prices were much lower than the loan rate.

Espy Vows User-Friendly Conservation Rules

Agriculture Secretary Mike Espy said he expects a spirit of cooperation and common sense will prevail in the administration's attitude on conservation and natural resource management. Speaking to a North American Wildlife and Natural Resource Conference, Espy said USDA plans to move aggressively in dealing with natural resource and environmental problems, but he vowed to work with other agencies to achieve better results.

"I will seek to ensure that common sense guides are used in the development and implementation of our conservation programs. By this, I mean that rules and regulations should be customer-oriented and 'user-friendly'....This is critically important, if we expect farmers and ranchers to take the initiative to address agricultural conservation concerns."

Fast Track Extension Needed For GATT Talks

Leon Brittan, external economic affairs commissioner for the European Community (EC), said a proposed nine-month extension of fast-track authority in the U.S. Congress should provide enough time to reach a successful conclusion to the General Agreement on Tariffs and Trade. Fast-track authority, which allows Congress to vote a trade agreement up or down without amendment, expires at the end of this month, but President Clinton has indicated he will ask for its extension.

Brittan did not speculate on when the agreement might be completed, nor what compromises need to be made to end the stalemate between the U.S. and EC. "I am not willing to pre-negotiate," he said. "We will have to get to the table and see what proposals come forward."

Clinton to Limit U.S. Ag Biotechnology Research

The Clinton administration has decided to significantly slow the pace of biotechnology deregulation by retaining limits on agriculture research, according to *The Wall Street Journal*. The administration also is reviewing federal policy on the sale of genetically engineered plants and other products.

The move would reverse the former Bush administration plans to speed the commercialization of genetically engineered products. Vice President Albert Gore's domestic policy adviser recently met with environmentalists and biotechnology industry officials to help write new USDA biotechnology regulations, which are expected to be published in the *Federal Register*.

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DNR Asks - Avoid Burning If At All Possible

The last two weeks of April and the first two weeks of May have the unfortunate distinction of being the worst fire period in the state, with a majority of the fires resulting from debris burning, according to the Department of Natural Resource's Ron Wilson, section leader for resource protection in the Forest Management Division.

Although agriculture is exempt from the burning permit ban issued by the DNR for the four-week period under the Forest Fire Law, Wilson asks that farmers either avoid burning altogether or make sure that adequate control measures are implemented.

"If farmers are going to burn sacks or other debris, they should try to burn them in the middle of a freshly plowed or planted field, in a no-wind situation," said Wilson. "Farmers should also make sure the fire is completely out before leaving the site, and if there's any way they can avoid burning until after the critical time period, we'd certainly appreciate it."

USDA Planting Estimates Released

The USDA took its first look ahead at the 1993 crop year recently, estimating that corn will be planted on 76.49 million acres. Expected acreage of wheat was just under 19 million acres and soybeans will occupy 59.3 million, just about the same as last year.

Corn acreage in 1992 was 79.3 million and wheat was 18.698 million, a little below the 18.96 million USDA expects to be planted this year. Traders said the corn planting forecast was somewhat higher than they had anticipated, which could push corn prices down today. The planting estimates were below expectations for wheat and soybeans, especially beans, for which a decrease in ending stocks is indicated. (See **Jim Hilker's comments, page 6.**)

Experts See Slight Increase in Soybean Planting

A panel of economists, convened by the American Soybean Association forecasts 1993 soybean plantings will total 60 million acres, up 700,000 acres from a year ago. The group, representing major exporters, crushers, end-users, farmer advisory services and academia, figure a favorable soybean-to-corn price ratio to bring about the increased planting, but they stress that weather during corn planting time will be an important factor.

They said soybeans planted on "flex" acres could be about the same as last year. The panelists figure on slight increases in foreign demand for soybeans and a 10 million bushel boost in domestic soybean meal use, and a 1992-93 end-of-year inventory of 310 million bushels.

BST Hearing Brings Approval Nearer

The Food and Drug Administration's Veterinary Medicine Advisory Committee heard arguments for and against commercial use of bovine somatotropin, the hormone known to make cows produce more milk.

Officials gave no indication when or whether BST will receive final approval for commercial use by the FDA. However, the panel's findings -- basically that the hormone poses no risk to human health and any risk of causing increased mastitis in cows is manageable -- were considered the last roadblock in the approval process, according to Sparks Companies' daily policy report.

Sheep and Goat Owners Face Indemnity Deadline

The USDA has set a July 7 deadline for sheep and goat producers to apply for scrapie indemnity benefits for infected animals. The department believes the number of indemnity applications received so far does not reflect the actual number of herds that could be exposed or infected with the disease, for which there is no known treatment or vaccine. Payment rates are \$150 for each registered sheep and goat destroyed under the program and \$50 each for all others.

"Key to Profit" Cattle Sale Repeats at Escanaba

The Upper Peninsula Hereford Breeders Association (U.P. HBA) has scheduled its third "Key to Profit" sale for April 24 at the U.P. Beef Expo in Escanaba, Mich. "Along with the Polled Hereford and Hereford cattle, we have Simmental, Limousin and Angus consigned," said sale chairman and U.P. HBA President Merlin Atkins, Sault Ste. Marie. "We have 24 bulls and 26 females, bred and open, cataloged for the sale, which begins at 1 p.m. (EST) at the U.P. State Fairgrounds.

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

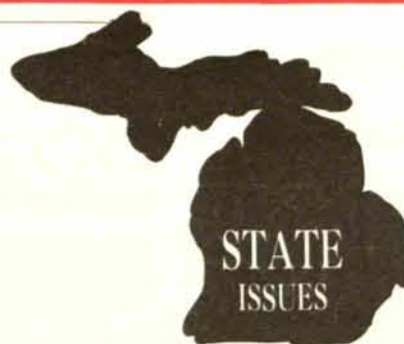
The sale was organized by the U.P. HBA with a commitment to provide profitable breeding stock to the area's cattlemen. All bulls will undergo a breeding soundness exam so purchasers can buy with confidence.

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

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Log Export Ban

MFB Contact:
Al Almy, Ext. 2040

In recent years, there have been efforts in Congress to restrict the export of logs produced on private property. These efforts were not successful. However, President Clinton's new Interior Department Secretary Bruce Babbitt has suggested that one solution to the spotted owl/lost logging jobs issue would be to ban, tax or restrict the export of logs harvested on private property.

MFB Position: Farm Bureau strongly opposes export restrictions on logs and has sent a letter to Agriculture Secretary Mike Espy urging him to oppose any such restriction because of the signal it would send to the world markets that the United States is an unreliable agricultural supplier.

Wetlands

MFB POSITION: Supports H.R. 1330 which would balance the protection of wetlands with the need for economic growth and protection of landowners' rights.

MFB Contact:
Al Almy, Ext. 2040

H.R. 1330, sponsored by Rep. Jimmy Hayes (D-Louisiana), would replace Section 404 of the Clean Water Act with a new wetlands program. It would establish a realistic definition of a wetland and base the identification of a wetland on its functions and values.

The bill would exclude prior converted cropland from regulation under Section 404 and require compensation to landowners who lose the economic use of private land. Language restating Congress' intent to exclude normal farming practices from Section 404 permit requirements is also included.

No-Fault Automobile Insurance Reform

MFB Position: MFB supports H.B. 4156 (H-2) and is urging Michigan legislators to make the bill effective immediately.

MFB Contact:
Darcy Cypher, Ext. 2048

The Michigan House and Senate have passed H.B. 4156, sponsored by Reps. Mike Griffin (D-Jackson) and Bill Martin (R-Battle Creek), to reform Michigan's No-Fault Automobile Insurance law. The bill contains numerous measures to curb lawsuits, control medical costs and reduce auto insurance premiums an average of 16 percent.

Unfortunately, because the Legislature did not give H.B. 4156 immediate effect, it won't become law until April 1994. This means that consumers won't see auto insurance savings for at least another year. A two-thirds vote from both houses is needed to give any bill immediate effect. The Senate has postponed action until May 4, when it's expected it will again vote to give this bill immediate effect.

Highly Perishable Commodity Frost Weight Exemption

MFB Position: MFB opposed H.B. 4121 (H-2) because it does not require road authorities to establish a permitting process or allow other highly perishable commodities a means to apply for seasonal weight exemption.

MFB Contact:
Darcy Cypher, Ext. 2048

After numerous amendments H.B. 4121 (H-2), sponsored by Rep. John Gernaat (R-McBain), to exempt milk haulers from seasonal weight restrictions, was passed by the Michigan Legislature. The bill allows county road commissions and MDOT to establish a permitting process for milk haulers wishing to apply for exemption from seasonal weight restrictions.

These road authorities would be required to respond, in writing, to the applicant within 30 days. If the application is denied, the road authority would be required to include alternate routes in its response. Since this legislation doesn't require the road authorities to establish a permitting process and review hauler needs, it offers haulers nothing that isn't currently allowed.

MFB's highways policy supports "a frost weight exemption for highly perishable commodities and supports granting county road commissions the authority to suspend frost weight exemptions."

Medical Malpractice

MFB Position: Supports the Griffin - Bandstra substitute for S.B. 270.

Action Needed: Call your legislators now and ask them to support the Griffin - Bandstra substitute to S.B. 270. The Michigan House of Representatives is expected to consider this S.B. 270 substitute on April 20, 21 or 22, 1993.

MFB Contact:
Howard Kelly, Ext. 2044

On March 30, the House Judiciary Committee unanimously reported out a substitute version of S.B. 270 to reform medical malpractice and sent it to the full House. It was an agreement reached between the co-chairs of the committee, Rep. Tom Mathieu (D-Grand Rapids) and Rep. Mike Nye (R-Litchfield). While it was an improvement over current medical malpractice law, it did, however, move further away from Farm Bureau policy on non-economic awards, "pain and suffering" settlements and contingency fees.

Farm Bureau policy calls for the "elimination of pain and suffering settlements." S.B. 270 passed the Senate with a \$250,000 cap on these settlements. Non-economic settlements are over and above the money awarded for "economic" damages.

A new substitute that is being drafted by Rep. Michael Griffin, (D-Jackson) and Richard Bandstra, (R-Grand Rapids), will move medical malpractice liability language back closer to the bill as it passed the Senate.

Local Pesticide Ordinances

MFB Position: Farm Bureau policy opposes local regulation of pesticides and, therefore, strongly supports H.B. 4344 (H-3).

Action Needed: Please contact your State Senator and ask him/her to support HB 4344.

MFB Contact:
Vicki Pontz, Ext. 2046.

House Bill 4344, as introduced by Rep. Tom Alley (D-West Branch), would preempt a local unit of government from enacting or enforcing an ordinance that conflicts with the Michigan Pesticide Control Act. The bill would allow a local unit of government to pass a pesticide ordinance if unreasonable adverse effects on the public health or environment will exist within the local unit of government. The ordinance must be approved by the Agriculture Commission. The bill also allows the Department of Agriculture to contract with a local unit of government to act as its agent for the purpose of enforcing the Michigan Pesticide Control Act.

H.B. 4344 was introduced on Feb. 25, 1993, and was reported out of the House Agriculture and Forestry Committee. Amendments were added in committee to require that if the Agriculture Commission approves an ordinance, the local unit of government shall provide that persons enforcing the ordinance comply with the appropriate and applicable training standards. Another amendment was added to require the MDA to hold a public meeting at the request of the local unit of government to determine the nature and extent of unreasonable adverse effects on the environment due to the use of pesticides. Farm Bureau supported both amendments.

The bill passed the full House on Tuesday, March 23, with a 67-37 vote. An amendment was added to the bill to require local units of government to petition the Agriculture Commission by resolution for local ordinances. The bill was referred to the Senate Local Government and Urban Development Committee.

How They Voted on H.B. 4344 Pesticide Preemption

Michigan Farm Bureau urged a yea vote.

District/Party/Rep.....	Vote	District/Party/Rep.....	Vote
92 D Agee, James: Muskegon.....	Y	41 R Johnson, Shirley: Royal Oak.....	N
84 R Allen, Dick: Caro.....	Y	70 D Jondahl, H. Lynn: Okemos.....	N
103 D Alley, Tom: West Branch.....	Y	42 R Kaza, Greg: Rochester Hills.....	Y
108 D Anthony, Dave: Escanaba.....	N	17 D Keith, William: Garden City.....	Y
91 D Baade, Paul: Roosevelt Park.....	Y	9 D Kilpatrick, Carolyn: Detroit.....	N
75 R Bandstra, Richard: Grand Rapids	Y	33 R Kukuk, Alvin: Mt. Clemens.....	Y
19 R Banks, Lyn Livonia.....	N	13 D Leland, Burton: Detroit.....	Y
18 D Barnes, Justine: Westland.....	Y	100 R Llewellyn, John: Fremont.....	Y
87 R Bender, Robert: Middleville.....	Y	81 R London, Terry: Marysville.....	Y
14 D Bennane, Michael: Detroit.....	N	105 R Lowe, Allen: Grayling.....	Y
36 D Berman, Maxine: Southfield.....	N	62 R Martin, Bill: Battle Creek.....	Y
101 R Bobier, Bill: Ferry Township.....	Y	76 D Mathieu, Thomas: Grand Rapids.....	Y
106 R Bodem, Beverly: Alpena.....	Y	99 R McBryde, Jim: Mt. Pleasant.....	Y
79 R Brackenridge, Bob: St. Joseph.....	Y	104 R McManus, Michelle: Tvc. City.....	Y
60 D Brown, Mary: Kalamazoo.....	N	98 R McNutt, James: Midland.....	Y
1 R Bryant, William Jr.: G. P. Farms.....	N	80 R Middaugh, J Mick: Paw Paw.....	Y
38 R Bullard, Willis Jr.: Highland Tshp.	N	46 R Middleton, Thomas: Ortonville.....	Y
68 D Byrum, Dianne: Onondaga.....	Y	66 R Munsell, Susan: Howell.....	Y
27 D Ciaramitaro, Nick: Roseville.....	N	7 D Murphy, Raymond: Detroit.....	N
48 D Clack, Floyd: Flint.....	N	58 R Nye, Michael: Litchfield.....	Y
45 R Crissman, Penny: Rochester.....	N	29 D Olshove, Dennis: Warren.....	Y
86 R Cropsey, Alan: Dewitt.....	Y	95 D O'Neill, Jr. James E.: Saginaw.....	Y
51 D Curtis, Candace: Swartz Creek.....	Y	56 D Owen, Lynn: Maybee.....	Y
90 R Dalman, Jessie: Holland.....	Y	59 R Oxender, Glenn: Sturgis.....	Y
72 R DeLange, Walt: Kentwood.....	Y	24 D Palamara, Joseph: Wyandotte.....	N
25 D DeMars, Robert: Lincoln Park.....	Y	22 D Pitoniak, Gregory: Taylor.....	N
39 R Dobb, Barbara: Union Lake.....	N	6 D Points, David: Detroit.....	N
15 D Dobronski, Agnes: Dearborn.....	N	23 D Porreca, Vincent (Joe): Trenton.....	Y
37 R Dolan, Jan: Farmington Hills.....	N	54 D Profit, Kirk: Ypsilanti.....	N
49 D Emerson, Robert: Flint.....	a	93 R Randall, Gary: Elwell.....	Y
71 R Fitzgerald, Frank: Grand Ledge.....	Y	83 R Rhead, Kim: Sandusky.....	Y
34 D Freeman, John: Madison Hghts.....	N	53 D Rivers, Lynn: Ann Arbor.....	N
107 D Gagliardi, Pat: Drummond Island.....	Y	30 R Rocca, Sal: Sterling Heights.....	Y
44 R Galloway, David: White Lake.....	Y	10 D Saunders, Nelson: Detroit.....	N
102 R Gernaat, John: McBain.....	Y	52 D Schroer, Mary: Ann Arbor.....	N
63 R Gilmer, Donald: Augusta.....	Y	50 D Scott, Thomas: Burton.....	N
31 D Gire, Sharon: Clinton Township.....	N	110 D Shepich, Steve: Iron River.....	Y
78 R Gnodtke, Carl: Sawyer.....	Y	61 R Shugars, Dale: Portage.....	Y
94 R Goschka, Michael: Brant.....	Y	74 R Sikkema, Ken: Grandville.....	Y
64 D Griffin, Michael: Jackson.....	a	12 D Stallworth, Alma: Detroit.....	N
35 D Gubow, David: Hunt, Woods.....	N	89 R Stille, Leon: Spring Lake.....	Y
67 R Gustafson, Dan: Haslett.....	Y	8 D Varga, Ilona: Detroit.....	N
55 R Hammerstrom, Beverly: Temp.....	Y	77 R Voorhees, Harold Sr.: Grandville.....	N
85 D Harder, Clark: Owosso.....	Y	20 R Vorva, Jerry: Plymouth.....	Y
43 D Harrison, Charlie Jr.: Pontiac.....	a	57 R Walberg, Timothy: Tipton.....	Y
2 D Hertel, Curtis: Detroit.....	a	5 D Wallace, Ted: Detroit.....	N
47 R Hill, Sandra: Montrose.....	Y	28 D Weeks, Pete: Warren.....	Y
88 R Hillemonds, Paul: Holland.....	Y	97 D Wetters, Howard: Kawkawlin.....	Y
69 D Hollister, David: Lansing.....	N	21 R Whyman, Deborah: Canton.....	Y
11 D Hood, Morris Jr.: Detroit.....	N	82 D Willard, Karen: Fair Haven.....	Y
73 R Horton, Jack: Belmont.....	Y	26 D Yokich, Tracey: St. Clair Shores.....	Y
109 D Jacobetti, Dominic: Negaunee.....	Y	4 D Young, Joseph: Jr. Detroit.....	N
40 R Jamian, John: Bloomfield Hills.....	N	3 D Young, Joseph: Sr. Detroit.....	a
32 R Jaye, David: Utica.....	Y	16 D Young, Richard: D. Heights.....	N
96 R Jersevic, Roland: Saginaw.....	Y		

Key: Y = yea, N = Nay, a = Absent

4

30-Day and 90-Day Forecast – Expect Normal Precip. and Temps.

Weather

Drier than normal conditions covered nearly all of the state in March, with less than an inch of water equivalent measured across the Upper Peninsula. This continued a much drier than normal trend in northern sections of the state, where some areas reported less than 0.25 inches precipitation during February.

Temperatures averaged above normal in the north (1-4 degrees F above normal). Recent normal or cooler than normal temperatures have not kept most overwintering crop and insects dormant or inactive.

This may change quickly, however, as latest National Weather Service (NWS) medium range computer guidance projects a ridging pattern forming over the eastern U.S. during the next couple of weeks or so, which should result in above normal temperatures.

Looking farther ahead, both the NWS 30-day and 90-day outlooks for April and April through June, respectively, call for near normal temperatures and precipitation. By mid-April, normal maximum temperatures should be in the mid to upper 50's range

3/1/93 to 3/31/93	Temperature		Growing Degree Days		Precipitation	
	Observed Mean	Dev. From Normal	Actual Accum.	Normal Accum.	Actual (inch.)	Normal (inch)
Alpena	27.2	-0.6	9	4	0.41	1.87
Bad Axe	28.6	-3.0	4	11	1.12	2.04
Detroit	34.9	-0.2	20	20	2.29	2.32
Escanaba	27.5	+1.0	1	0	0.22	1.93
Flint	32.4	-0.5	14	20	1.52	2.32
Grand Rapids	32.4	-1.2	10	25	2.65	2.48
Houghton	26.3	+2.7	0	1	0.72	1.94
Houghton Lake	29.6	+0.9	19	4	0.84	1.87
Jackson	33.1	-1.8	16	24	1.25	2.26
Lansing	32.6	-0.3	13	24	1.96	2.26
Marquette	26.4	+3.3	6	1	0.89	1.94
Muskegon	33.5	+0.6	16	11	1.89	2.25
Pellston	29.3	+4.4	9	4	0.32	1.83
Saginaw	30.0	-2.6	2	11	1.15	2.04
Sault Ste. Marie	26.9	+2.9	6	6	0.35	1.93
South Bend	35.8	-0.3	23	25	2.56	2.48
Traverse City	30.4	+0.9	8	4	0.83	1.83
Vestaburg	30.8	-1.8	9	10	1.48	2.16

Observed and normal growing degree day totals are accumulated from March 1. Normals are based on district averages. Jeff Andresen, Ag Meteorologist, MSU

south to mid 40's far north. Lows range from the low 30's north to upper 30's south. Precipitation increases rapidly to weekly totals of 0.7 inches south to 0.4 inches north.

Michigan and Major Commodity Area Extended Weather Outlook

T - Temp.	4/15.....4/30	4/15.....5/31
P - Precip.	T.....P	T.....P
Michigan	N.....N	N.....N
W. Corn Belt	N/B.....N	N.....N
E. Corn Belt	B/N.....N	N.....N
Wint. Wheat Belt	N.....A/N	B.....N
Spr. Wheat Belt	N.....N	N/A.....N/B
Pac. NW Wheat	N.....A	A.....N
Delta	B.....N	B.....N
Southeast	B.....N/A	B.....N
San Joaquin	A.....N	A.....B/N

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

Soybean Committee Selects 1993 Research Projects

The Michigan Soybean Promotion Committee (MSPC) met on March 16 for budget considerations and final approval of research grants. The committee appropriated \$92,931 for research to be conducted through Michigan State University. An additional sum of about \$50,000 was set aside should additional meaningful projects be submitted in 1992-93 (FY93).

Receiving approval for FY93 were eight proposals ranging from weed management to disease/insect problems to soybean variety testing and breeding. The grants include:

- Wild Carrot Management in Michigan No-Tillage Soybean Production – \$8,118
- Field Evaluation of WEEDSIM Weed Management Model in a Corn-Soybean Rotation in Michigan – \$7,263
- Soybean Cyst Nematode Management in Michigan – \$14,000
- Screening Varieties for Resistance and Developing Cultural Means of Controlling White Mold of Soybean – \$10,500
- Phytophthora Root Rot of Soybean: Factors Controlling Infection and Symptom Expression – \$10,500
- Performance of Improved Soybean Varieties in Narrow Rows as Influenced by Minimum Tillage – \$9,550
- Breeding and Testing Soybean Varieties for Michigan's Unique Environments – \$30,000
- County Soybean Educational Research Plot Projects – \$3,000

Bill Kirk, chairman of the MSPC, said he was excited about the opportunities in soybean research this year. "We're looking at the opportunity to make real strides in soybean production and the entire soybean industry with the research we have at our university," said Kirk. "None of this would be possible without the checkoff program. With SPARC, we finally have the funds to make a difference for the soybean farmers in this state."

SPARC, the Soybean Promotion and Research Checkoff, began in September 1991, superseding all former individual state checkoff programs. Half of all funds collected stay in the state of origin, with the other half administered by a 63-member national board composed of soybean farmers. In-state funds are directed by the MSPC which has seven members representing all soybean-producing counties in Michigan.



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Station	City	Frequency	Morning Farm	Noon Farm
WABJ	Adrian	1490	5:45 am	12:15 pm
WATZ	Alpena	1450	5:30 am	12:15 pm
WPZA	Ann Arbor	1050	6:15 am	12:05 pm
WLEW	Bad Axe	1340	6:30 am	12:50 pm
WHFB	Benton Harbor	1060	*	12:30 pm
WKYO	Caro	1360	6:15 am	12:45 pm
WTVB	Coldwater	1590	5:45 am	***
WDOW	Dowagiac	1440	6:15 am	12:15 pm
WACY	Fenton	1160	6:15 am	12:15 pm
WGHN	Grand Haven	1370/92.1	5:45 am	12:15 pm
WPLB	Greenville	1380	6:15 am	12:45 pm
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	**	12:15 pm
WJIM	Lansing	1250	5:05 am	12:15 pm
WWGZ	Lapeer	1530	*	12:15 pm
WNBY	Newberry	92.5		12:15 pm
WOAP	Owosso	1080	6:15 am	12:30 pm
WHAK	Rogers City	960	7:10 am	12:15 pm
WSJ	St. Johns	1580	6:15 am	12:15 pm
WMLM	St. Louis	1540	6:06 am	12:20 pm
WSGW	Saginaw	790	5:55 am	12:15 pm
WMIC	Sandusky	660	6:15 am	12:45 pm
WKZC	Scottville	95.9	5:45 am	12:30 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	12:40 pm

* Station signs on at different times during the year. Morning farm times change with sign-on times.
 ** Station airs various farm reports between 5:50 and 6:20 pm.
 *** Station airs various farm reports between 12:00 and 1:00 pm.
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Michigan's Soybean Crop May be Ravaged by a Microscopic Worm

5

The soybean cyst nematode (SCN), a tiny worm that thrives in soybean plant roots, has become a severe threat to Michigan soybean production.

At risk is a 52.8 million bushel crop that was valued at \$298 million in 1991.

Discovered in Gratiot County in 1987, the SCN has spread to at least 12 Michigan counties. The counties include Bay, Saginaw, Shiawassee, Clinton, Gratiot, Midland, Montcalm, Monroe, St. Joseph, Cass, Berrien, and Van Buren counties.

"The most severely affected counties are Saginaw and Monroe," says Steve Poindexter, Michigan State University Cooperative Extension Service agricultural agent in Saginaw County.

Poindexter says that a Fall '92 survey of high risk fields showed that 75 percent of the soil samples tested had significant SCN levels.

"Sixty-six percent of the samples have such a high SCN population that we are recommending soybeans not be grown in those fields until 1996," Poindexter says.

He says that neither he nor the research entomologists at the MSU nematode laboratory know the extent to which the SCN has spread throughout the state, but it is known to be as far south as Monroe County.

The tell-tale signs of SCN infestation are circular areas in the field of stunted, yellowed soybean plants.

The nematode lives in the roots of the plant, disrupting the vascular tissue and, moreover, robbing the plant of its ability to make nitrogen which is required for a robust maturity.

In fields that are moderately infested, the SCN can reduce soybean yield by 10 to 20 percent, but where SCN infestation is severe, plants die.

Expense, effectiveness and environmental concern pretty much minimize chemical control of the SCN. The most feasible SCN control is crop rotation.

"We no longer recommend that soybeans or a host crop (dry edible beans or snap beans) be planted in the same field two years in a row," Poindexter says. "We are trying to impress upon growers that it is much easier to prevent the problem than control it once it is in the field, because once it is in the field, it will be there probably forever."

Poindexter says that it is critically important that soybean growers know whether or not the SCN is present in their soybean cropland and that requires MSU nematode laboratory testing.

"If the SCN is found, a control plan should be developed in cooperation with an Extension agriculture agent or other consulting agronomist," he says. "This problem will have to be approached on a farm by farm basis if we are going to limit the spread of SCN."

However, even a four year rotation will probably not starve the SCN out of the field.

"But in four years, the SCN population will likely have diminished to the point that it will not affect soybean yield significantly," Poindexter says.

He cautions growers about trying to avoid SCN damage by planting SCN-resistant soybeans.

"We don't have a lot of resistant varieties to use, because the SCN is a relatively new problem in Michigan," Poindexter says. "Even if growers are able to plant a resistant variety, it is most advisable to use that variety sparingly, perhaps once every four years."

He explains that if SCN-resistant varieties are continuously used, the SCN will likely overcome the plant's resistance, rendering the variety useless against attack.

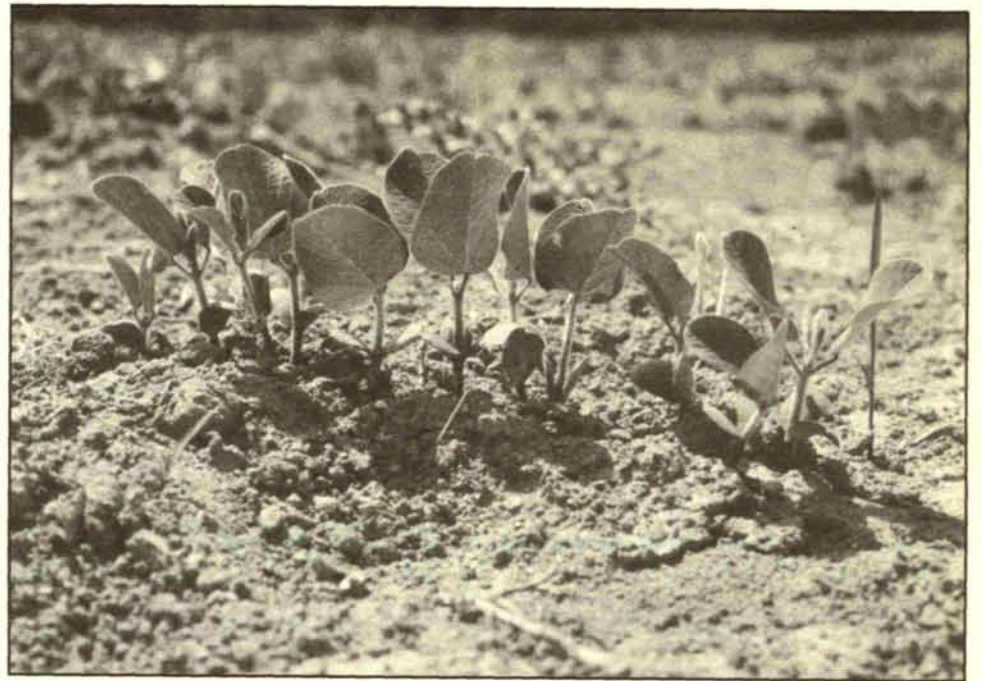
The SCN is almost entirely soil transmitted and is not a seed borne pest.

"SCN-infested soil can move from field to field on equipment, by wind erosion and water runoff, even by dirt particles in a seed lot," Poindexter says. "However, we don't really know why it seems to have spread so rapidly from one county to the 12 known to be infested at this time."

The reasons for the spread and improved cultural practices that will help control the SCN are being researched at MSU.

"A lot of research, ranging from identifying SCN-resistant soybean varieties to the most suitable crop rotation, is being conducted," Poindexter says. "But our biggest game-plan at this time is to make growers aware of the SCN problem so that they can prevent it from occurring on their ground."

MSU's Steve Poindexter, CES agricultural agent in Saginaw County, says that it's critically important that soybean growers know whether or not the SCN is present in their soybean cropland and that requires MSU nematode laboratory testing.



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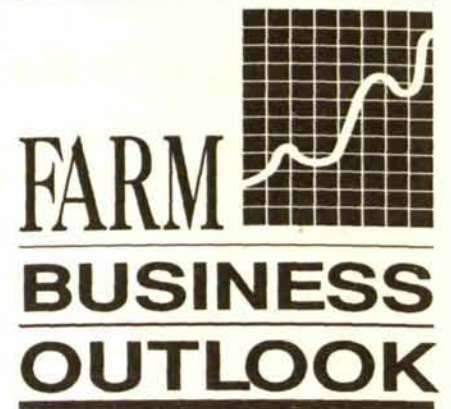
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6

Market Outlook...



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

CORN

On March 31, the USDA released the March 1 Quarterly Grain Stocks and Prospective Planting Reports. Corn stocks were very near expectations at 5.7 billion bushels.

Prospective corn plantings were in the mid-range of expectations at 76.5 million acres. In general, the two reports were considered fairly neutral to the corn market.

The Stocks Report is used to calculate disappearance through the year. This helps to project total annual use and ending stocks. The corn stocks figure indicates that corn is being fed at the record rate that the USDA projects, seen below in Table 1. Given exports are also meeting expectations, I do not expect to see major changes made in the April 12 USDA 1992-93 Supply/Demand Report.

The 1993 corn acres intended to be planted is a little higher than the extra 5 percent set-aside would indicate. However, we must remember flex acres and, as we will discuss later, 1993 soybean acres were lower than expected. My guess is that the report is pretty much on target to slightly high.

WHEAT

Wheat stocks, while within the range of expectations, was on the low side at 1.05 billion bushels. At this point, exports are struggling to meet expectations, but if they do, the stocks figure indicates that ending stocks may be a bit smaller than indicated below. In my 1993-94 wheat supply/demand projection (shown in Table 2), I use 521 for beginning stocks versus 541.

The winter wheat acres planted was left the same as the January report at 51.2 million acres. Spring wheat planting intentions were listed as 19 million acres, right at expectations. Durum wheat acres to be planted were called 2.1 million, a surprising 20 percent below last year and expectations.

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

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

Michigan prospective plantings of corn was put at 2.4 million acres, down 11 percent from 1992. As seen in the 1993-94 column of Table 1, this acreage and a trend yield would leave us in a price situation for No. 2 corn much the same as this year.

Strategy: At this point, new crop pricing opportunities are higher than my fundamentals would indicate they will be this fall. Consider setting some realistic pricing goals and place them with your elevator to fill in a scaling-up manner. Soil moisture is good everywhere; our "Spring Rally" may consist of a small late planting rally.

This left total wheat acres at 72.3 million acres, the same as last year. Michigan was listed as planting 600,000 acres of wheat, 50,000 less than last year.

Strategy: I expect ending stocks (last column of Table 2) for 1993-94 to be larger than this year. For the first time in several years, there is plenty of moisture in both the spring and winter wheat areas. At this point, new crop contracts are about where fundamentals would suggest. Watch for a rally to do some pricing of new crop. Consider starting a scale-up program when new crop cash prices in mid-Michigan approach \$3.00, or when July futures hit \$3.20.

SOYBEANS

The soybean reports were the most bullish of the reports. Stocks on March 1 were put at 1.215 billion bushels, which was on the low side of expectations. Exports and crush continue to be strong.

Working through the numbers, the report indicates that ending stocks will be about 15 million bushels lower than previously thought. Much of the increase in disappearance may come under residual. I put this change in Table 3.

Acreage intentions were put at 59.3 million acres, the same as last year and below trade expectations of 60 million acres. Using this acreage and a trend yield, and trying to estimate possible use for 1993-94, would

HOGS

On March 26, the USDA released the long awaited Quarterly Hogs and Pigs Report. It was hoped it would answer some of the discrepancies between the December report and slaughter numbers. However, it may have raised more questions than it answered.

The December report indicated slaughter would be up 4-5 percent over the winter and into the spring; year-to-date slaughter is down 3 percent. This report showed all hogs and pigs, market hogs, and those kept for breeding all up 4 percent relative to March 1, 1992.

The March 1 report shows market hogs 180 pounds and over were up 5 percent. These are the hogs which would have been slaughtered in March and much of April.

Through March, slaughter continued to run 3 percent below last year. Hogs between 120-179 pounds were put at up 6 percent. Look to see what weekly slaughter is running now to check the accuracy. Lighter hogs are up 2-3 percent -- these are the ones we will see late spring and summer.

Kept for breeding being up 4 percent would partially explain the lower slaughter this winter, but not nearly the 7 percent difference. It also conflicts with gilt slaughter

indicate smaller ending stocks next year as shown in the third column of Table 3.

Strategy: Consider pricing some new crop on this rally. Again, scale into it. Without a real weather problem, I would not expect November soybean futures to get above the \$6.10-6.30 range. For mid-Michigan, this means new crop contracts in the \$5.85-6.05 range.

which is kept at only a few plants in the country. This report is another strong argument for separating gilt and barrow slaughter like the heifer and steer slaughter date is kept.

December-February farrowings were up 1 percent and the pig crop 2 percent, which corresponds to hogs under 60 pounds being up 2 percent. March-May farrowing intentions are up 1 percent and June-August intentions are projected to be up 3 percent. This means the expansion will go well into 1994.

What does all this mean for prices? If the report does turn out to be correct and slaughter numbers do increase accordingly, then I think we will see futures prices drop in all of the contract months.

Strategy: In that light, the market is giving us excellent forward pricing opportunities throughout the next year.

However, if the report continues to be off, the futures could well be right. In either case, consider forward pricing some of your future production.

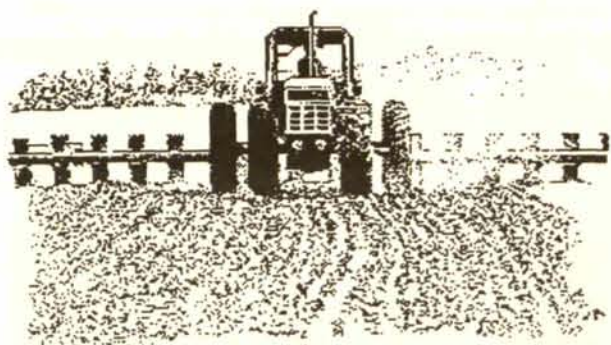
"Market Outlook..." Continued following Site Specific Insert on page 7.

	USDA Proj.	Hilker Proj.
	1991-92	92-93 93-94
Corn Acreage (Million Acres)		
Acres Set-Aside and Diverted	4.7	3.5 7.0
Acres Planted	76.0	79.3 76.5
Acres Harvested	68.8	72.2 69.4
Bu./A. Harvested	108.6	131.4 121.5
Stocks (Million Bushels)		
Beg. Stocks	1521	1100 2237
Production	7474	9479 8432
Imports	20	3 6
Total Supply	9016	10,582 10,675
Use:		
Feed	4897	5200 5200
Food/Seed	1434	1495 1535
Total Domestic	6331	6695 6735
Exports	1584	1650 1700
Total Use	7915	8345 8435
Ending Stocks	1100	2237 2240
Ending Stocks Percent of Use	13.9%	26.8% 26.6%
Regular Loan Rate	\$1.62	\$1.72 \$1.72
U.S. Season Average		
Farm Price, \$/Bu.	\$2.37	\$2.05 \$2.10
Source: USDA & Hilker		

	USDA Proj.	Hilker Proj.
	1991-92	92-93 93-94
Wheat Acreage (Million Acres)		
Acres Set-Aside and Diverted	10.0	3.5 0.5
Acres Planted	69.9	72.3 72.3
Acres Harvested	58.1	63.1 62.5
Bu./A. Harvested	34.1	39.0 39.5
Stocks (Million Bushels)		
Beg. Stocks	866	472 521
Production	1981	2459 2469
Imports	38	65 50
Total Supply	2885	2996 3040
Use:		
Food	785	810 850
Seed	94	95 100
Feed	259	225 175
Total Domestic	1137	1130 1125
Exports	1275	1325 1325
Total Use	2413	2455 2450
Ending Stocks	472	541 590
Ending Stocks Percent of Use	19.6%	22.0% 24.1%
Regular Loan Rate	\$2.04	\$2.21 \$2.45
U.S. Season Average		
Farm Price, \$/Bu.	\$3.00	\$3.30 \$3.00
Source: USDA & Hilker		

	USDA Proj.	Hilker Proj.
	1991-92	92-93 93-94
Soybean Acreage (Million Acres)		
Acres Planted	59.1	59.3 59.3
Acres Harvested	58.0	58.1 58.3
Bu./Harvested Acre	34.3	37.6 35.2
Stocks (Million Bushels)		
Beg. Stocks	329	278 325
Production	1987	2197 2052
Imports	3	2 3
Total Supply	2319	2477 2380
Use:		
Crushings	1254	1270 1250
Exports	685	765 720
Seed, Feed and Residuals	102	117 100
Total Use	2040	2152 2070
Ending Stocks	278	325 310
Ending Stocks, Percent of Use	13.6%	15.1% 15.0%
Regular Loan Rate	\$5.02	\$5.02 5.02
U.S. Season Average		
Farm Price, \$/Bu.	\$5.60	\$5.45 \$5.50
Source: USDA & Hilker		

SITE



FARMING

SPECIFIC

Site Specific Management in Michigan - An Introduction

Fran Pierce, Crop and Soil Sciences, Michigan State University

Site specific management involves the management of soils and crops according to localized conditions within a field. Localization of management practices is accomplished by controlling field machinery operations, such as fertilization, pesticide application, tillage and seeding rate, as machinery moves across the field.

The decision to change a management practice on-the-go is based on detailed knowledge and interpretation of variation in important soil, plant, and pest attributes within the field. The action to make the management change requires a specialized control system.

Also known by many other names, such as "Farming by Soil" or "Grid Farming," site specific management uses currently available technology including such things as: soil testing and pest scouting by location within the field; positioning systems that rely on state-of-the-art satellite global positioning systems; sensing devices for plants and soil; on-the-go harvest measurement; on-board computer aided decision making capabilities including soil, fertility, yield and pest maps; and Variable Rate Technology (VRT) for the application of management inputs including fertilizers, pesticides, seeding rates and depth, irrigation and tillage to the specific needs within the field.

Why site specific management?

Farmers generally farm fields with rather uniform management practices. This is not to say that farmers do not recognize variability within their fields. It's just that agronomic practices and recommendations have generally been developed and applied on a field basis.

Variability does exist in most fields. Some variability is fairly obvious, while some is not. Some variation is natural (soils), some is the result of the management history of the field (fertility). For example, nutrient levels within a field may depend more on fertilizer application and cropping practices than soil type.

Because of variation, uniform management of fields may result in inappropriate

management for some areas of a field. Efficiency and conservation in crop production systems would be improved if the areas in a field were managed according to their needs and yield potentials. This has been difficult, if not impractical in the past.

However, the situation is rapidly changing due to some remarkable milestones in information management and technology innovation. With the near completion of the computerized national cooperative soil survey and the development of sensing, navigational, and variable rate technologies, it is now possible to assess soil spatial variability and modify agronomic practices accordingly.

Does It Work?

Farmers are now applying site specific management to their production systems. However, with specific management in its early stages of development, many questions remain. How much variability exists in a given field?

How can it be measured? If the variability is known, can it be managed? How will site specific management be evaluated? Is it worth the effort? Who will use it? Is it for all farmers? Is it important for agribusiness? Do our current best management practices and recommendations still hold under site specific management?

In simple terms, site specific management matches nutrient inputs to specific locations within a field rather than application on a field basis. In its purest form, site specific management involves doing the right thing, at the right time, in the right place, and in the right way.

These are difficult but answerable questions. The primary motivation for site specific management technology is to improve economic returns to the farmer and increase the use efficiency of fertilizers and pesticides, thereby reducing their movement into the environment.

The various technologies for site specific management have been under development for the last decade in various locations in the United States, Europe, and Australia. There have been no studies to date in Michigan, but the technology has already arrived here. It is important for Michigan agriculture to determine the extent to which variation occurs, the extent to



which it can be managed, and what benefits (economic, environmental) this technology offers farmers.

What's Happening in Michigan?

In August of 1992, a conference/workshop sponsored by the Agricultural Experiment Station was held on site specific management. Last fall, yield and soil nutrients were

mapped in five fields in southern Michigan. This spring, the Michigan Department of Agriculture has provided some funding for Michigan State University to continue the assessment of variability of soils, nutrients, and yields in Michigan fields.

A research project on site specific management is being developed with support from the Agricultural Experiment Station at Michigan State University. A few farmers in Michigan have been using site specific management on their farms and are continuing to adopt and adapt the newest technologies. A number of companies currently offer equipment for variable rate applica-

tion of seeds, fertilizer and pesticides. Global positioning systems (GPS) are becoming more available, more accurate and less expensive.

Most recently, a new committee has been formed in the North Central Region of the United States on site specific management to review recent and current knowledge and application technology; to outline the necessary research that will enable evaluation of the agronomic practices for site specific crop management relative to the economic and environmental consequences of its adoption; to identify development and technology transfer needs; and to facilitate coordinated research among states.

Summary

Agriculture is constantly changing. Forty years ago, the average corn yield in Michigan was approximately 46 bushels per acre.

Today, the average corn yield across the state is approaching 120 bushels per acre. This steady increase in yield reflects the continuing development of technological innovations, including those in plant genetics, fertilizers, irrigation, and pest management.

The focus during much of this 40 year period was increasing productivity. However, the energy crisis of the 1970s altered the focus in agriculture to farm profitability and conservation of resources. The focus was again altered in the 1980s with an increasing emphasis on environmental quality. Thus, the major issues facing agriculture in the 1990s are farm profitability, environmental quality, and conservation of resources. The focus in the 1990s is sustainability.

In simple terms, site specific management matches nutrient inputs to specific locations within a field rather than application on a field basis. In its purest form, site specific management involves doing the right thing, at the right time, in the right place, and in the right way.

Perhaps that is the recipe for sustainable agriculture; perhaps that is wishful thinking. The only thing for sure is that site specific management is here in Michigan. Let's watch and listen. It is certainly worth a look.

Producer Profile – Gordon Brighton, Brightview Acres

by Sarah Rupprecht

Gordon Brighton and his wife, Pam, operate Brightview Acres in Adrian, Mich., a 1500-acre farm growing corn, soybeans, wheat and oats. Brighton learned about site specific farming from his county Extension agent and decided to implement it into his management to give him an edge.

"We are a progressive farm," Brighton said. "If there's anything that could make us money or give us an edge, we're going to try it." Brighton said that in addition to economics, there are many positive environmental benefits of site specific farming.

"This will be a rare opportunity to optimize our fertilizer, seed and herbicide inputs," he said. "In doing so, we are making better use of these inputs and we'll be more environmentally sound."

Brighton worked with Dr. Fran Pierce, of MSU in conducting yield mapping research on a 26-acre plot of soybeans. They are planning to move their test plot to two different fields of corn and wheat this spring.

Brighton says that the technology is still very new, and much work needs to be done with records and equipment.

"We need to figure out what we can do with this technology and how far we can go," he said. "Right now there are a half dozen ways to collect the data. We need to determine which is the most economical and beneficial."



The Economics of Site Specific Management

by Sarah Rupprecht

Farmers interested in the concept of site specific technology are also concerned if the technology will be economical to a variety of producers. Site specific technology has proven to overcome its high initial capital investment, through increased yields, reductions in the amount of fertilizer and pesticide applied and improvements in environmental stewardship.

There are a number of factors to look at when analyzing the total cost of using this new technology. Based on figures from Agriscad, DeKalb, Ill., Steve Simmons of Omega Farms in Williamston, Mich., estimates he'll need \$18,000-\$20,000 to purchase a system containing various computer software, variable rate application equipment, and GPS receivers. According to Simmons, this cost will vary depending on the farmers' existing amount of up-to-date equipment and computer technology.

Farmers must also analyze the costs of data management and additional field mapping. On a study done in Minnesota, the costs of conventional soil mapping, analysis and fertilizer application were compared to those of site specific. The study found an average cost of \$3.30 per acre for conven-



tional, and \$7.30 per acre for site-specific. This difference in costs was attributable to the requirements for special application equipment and additional soil sampling and analysis.

Scott Swinton, professor of Agricultural Economics at MSU, said that once a service industry is set up to provide the farmer with everything he needs to be able to adapt site specific technology into his management practices, producers will be likely to use the technology.

"The question from farmers is going to be how rapidly will we see a development on the dealer industry level to do this," he said. "If individual dealers don't come up with the technology to do this, then the existing technology is biased only to the large farms that can afford the investment.

"It has to be scale-neutral," he added. "We need to find a way to provide these services in a way that is both profitable to the dealer and affordable to a variety of farmers."

It's necessary that farmers know how much this site specific technology will help increase their yields. On studies done in Minnesota, the variable rate technology proved

to be more economical than conventional methods. Dr. Pierre Robert, soil scientist with the University of Minnesota-St. Paul, found that there was a \$20 per acre increase in profits on low input crops and as much as a \$60 per acre increase on high input crops such as sugar beets. That's \$10,000 - \$30,000 increase for each 500 acres of crops harvested every year.

"The net returns are going to vary from field to field," Robert said. "In general, however, we have found some type of benefit from using site-specific technology."

Swinton says that this technology will force producers to pay closer attention to fertilizer application and yield expectation. Having producers give their soil credit for its actual available nitrogen from manure applications, previous crop nutrients, and previous fertilizer application, yields are optimized while fertilizer over-application is eliminated.

"When this technology is implemented, there's going to be more incentive to go ahead and develop the whole relationship between fertilizer levels and the amount of yield expected," he said. "Farmers need to apply fertilizer based on the soil's most profitable yield, not the maximum yield.

"Farmers revenues will increase because their yields will increase," he added. "The value of those yields will be more than the added cost of fertilizer."

In addition to profits seen from increased yields and more efficient use of inputs, producers will see tremendous environmental benefits. Variable rate technology will allow for more efficient and precise application of inputs, decreasing the occurrence of water contamination and soil residue build-up. Detailed mapping of fields will allow producers to improve irrigation measures and decrease problems with salinity and leaching.



Neal, Kelly, Pat, Harold and Marty Travis operate North Valley Farms, a 300-cow dairy operation at Shepherd, MI. The four brothers farm with their parents, Pat and Evelyn Travis. The farm has a 20,500-lb. milk RHA and produces 1,000 acres of hay and corn.

HOW A DROUGHT SET SEEDS OF EXPANSION FOR THE TRAVIS FAMILY.

"We've just completed the second phase of a dairy expansion that includes a free-stall, center-feed barn and double-8 milking parlour. The expansion began in 1988 after a severe drought forced us to make some serious decisions. As brothers, we knew we wanted to farm together with our folks but a cash-crop business was too risky for all of us to depend on.

"Looking back, 1988 wasn't a pretty year to begin an expansion, but Farm Credit had confidence in us and stood behind our decision. Our loan officer has been a tremendous planning resource and helped us work through countless 'what if' situations on the computer.

"A lot of lenders wouldn't have been able to grasp our vision for this family dairy business but Farm Credit not only grasped it, they helped us figure out a better way to make it happen. If it hadn't been for the facilities expansion loan and other help from Farm Credit, there's no question that several of us couldn't be in this operation today."

Conventional Practices	Soil Potential	Grid Nutrient
\$/acre	\$/acre	\$/acre
Soil Sampling Labor 1 hr. @ \$25/hr. .25	Soil Sampling 2 hrs. @ \$25/hr.50	Soil Sampling 5 hrs. @ \$25/hr. 1.25
Sample Analysis 1 @ \$6 .06	Sample Analysis 5 @ \$6 .30	Sample Analysis 40 @ \$6 2.40
Fertilizer Application 3.00	Fertilizer Application 4.50	Fertilizer Application 4.50
	Photography, data management digitation 1.50	Data Management and map making 1.50
	EPROM (computer chip) (0-200 acres) .50	EPROM (computer chip) (0-200 acres) .50
Total costs/acre \$3.31	\$7.30	\$10.15

Variable costs associated with two methods of site specific are compared to conventional practices (one soil sample, one fertilizer rate) for a hypothetical 100 acre field. The soil potential method of site specific management run about \$7.30 as compared to the grid nutrient method of site specific at \$10.15 per acre.

N.C. Wollenhaupt, Assistant Professor, Dept. of Soil Science, Univ. of Wisconsin-Madison, and D.D. Buchholz, Associate Professor, Agronomy Department, Univ. of Missouri, Columbia. April 1991.

Field	Crop Yield bu/acre	Crop Value*	Fertilizer Costs**	Other Costs***	Value - Costs
			\$/acre		
Field 1	Single Rate	134.5	5.00	3.31	327.94
	Variable Rate	150.0	11.75	10.15	353.10
Field 2	Single Rate	147.6	13.60	3.31	352.09
	Variable Rate	150.0	13.97	10.15	350.88

* Corn Price = \$2.50/bu. **Phosphorus = \$.25/lb.; Potassium = \$.12/lb.
*** Soil Sampling, soil analysis, and fertilizer spreading

This Missouri study showed a higher return for variable rate fertilizer application when the grid system method of site specific was used to manage fertilization in a field that contained low P levels. When soil tests P and K levels were in the medium to high range, then there was a slight income reduction with site specific when only P and K were managed.

N.C. Wollenhaupt, Assistant Professor, Dept. of Soil Science, Univ. of Wisconsin-Madison, and D.D. Buchholz, Associate Professor, Agronomy Department, Univ. of Missouri, Columbia. April 1991.



The Environmental Consequences of Site Specific

by Sarah Rupprecht

With increasing demands from society for environmental regulations, agriculture has had to make adjustments in the production of food. Farmers are taking additional precautions to secure the safety of the food they produce and protect the environment they live and work in.

A key concern for farmers today is efficiency. Farmers are striving to produce the greatest amount of high quality food, at the lowest cost, using as few nutrient inputs as possible.

Terms like no-till farming and sustainable agriculture have become a common part of farm vocabulary. Farmers now have another opportunity to engage in a practice that could not only improve efficiency and prove economical, but also have lasting environmental benefits.

Site specific farming allows farmers to more efficiently manage their land and water resources by applying inputs at levels that match the soil's productivity. Using satellites and detailed soil fertility maps to determine the position in the field, farmers can vary their inputs according to soil type, thus minimizing residue build up and waste, and improving soil and groundwater quality.

"In my opinion, site specific farming is one of the newer approaches in allowing us to continually maximize yields while minimizing inputs," said Dave Lusch, research specialist with the Center for Remote Sens-

ing at Michigan State University. "Leaching of pesticides is a significant problem in many areas of Michigan," he added. "Being able to locate ourselves in a specific soil type, and vary the application of inputs, is the only way to minimize residues."

Tough environmental regulations regarding the use of various inputs will continue to become stricter, as the public's concern for food safety and protection of the environment grows.

"The public's attitude toward chemicals won't change," said Jim Johnson, Environmental Division, Michigan Department of Agriculture. "Laws are going to keep getting stricter."

"We have a society that has become addictive to high quality, low cost food. That's a result of improved efficiency with the help of inputs," Lusch said. "If society wants to steer clear of the use of chemical inputs, they are going to have to learn to give in price or quality, or farmers won't be able to adopt it."

The impacts of this technology have the potential to be seen in input efficiency, and in water quality, reducing residue runoff and buildup. According to Johnson, farmers will adapt the technology for both environmental and economic reasons.

"The reality of this is that farmers are in this to make a living," he said. "The farmers are the people who are living right there where



they're applying the inputs. It would be foolish to think they didn't care about raising their family in a healthy environment."

Steve Simmons, owner of Omega Farms in Williamston, Mich., has been doing a manual form of site specific management for a few years. "Right now, the key important thing in agriculture is food safety," he said. "If a farmer is polluting his environment, then he's polluting his own life."

Site specific farming has the ability to impact Michigan farmers immediately. The diverse climate and variety of crops grown poses both environmental and economic benefits.

"Site specific farming has only been used on a limited amount of crops in Michigan," Johnson said. "It's definitely the way to go in the future. The technology will continue to change and will be applicable in all areas of agriculture."

Farmers Software Assoc. – Making Site Specific Work For You!

Farmers Software Association, formed in 1986, has researched, evaluated, and then developed agricultural software with the farmer in mind, according to owner Neil Havermale. As an authorized dealer, it supports a catalog of over 100 software titles covering all major farm enterprises as well as farm financial bookkeeping.

A new title, called FarmGIS™ comprises software and hardware to support site specific precision cropping systems. The programs are capable of integrating and working with farm mapping, field navigation, sensors, and implement control systems.

The current list of FarmGIS software includes "Visual Crop Records Manager" by Ag-Ware, "Instant Survey" and "Instant Crops" by Agri-Logic, "CropSight" by Solution Applications, and "MapInfo" by MapInfo Corporation.

"Visual Crops Manager" from Ag-Ware is a Microsoft Windows product that combines a crop records system with a scanned-image and mapping system. The Ag-Ware product is currently in its Version 1.0 release and offers users a new environment for crop records plus simple mapping capabilities. "Visual Crops Manager" has potential for limited integration with Ag-Ware's "Financial Manager," an MS DOS farm accounting system.

Agri-Logic provides an updated "Instant Survey" farm mapping system. "Instant Survey" has been a pioneering and award winning farm mapping product since 1988. A brand new addition, "Instant Crops," is designed to make effective use of the Microsoft Windows system. The two products, "Instant Survey," for field mapping and "Instant Crops," to register crop records and build budgets, do not cross-integrate information at this time.

"CropSight" from Solution Applications is being distributed by both Harvest Computer Systems and FMS (Farm Management Systems). "CropSight" was the first farm mapping system to directly control site specific planting rates and fertilizer levels. The two distributors are in the process of integrating their crop record systems to field maps created by this MS DOS software.

In the case of Harvest, look for integration of "CropSight" with their Harvest Field Manager system. FMS, the exclusive distributor of "EASi Crops," an MS DOS crop records system, plans to integrate its crop

records with "CropSight" field maps. Solution Applications is also developing GPS navigation and implement hardware to integrate with a real time version of "CropSight."

Neal Havermale of Farmers Software Association installed hardware and assisted the five Michigan farmers participating in the MSU yield mapping program last fall.



The latest product in the FarmGIS lineup is the popular "MapInfo" for Microsoft DOS, Microsoft Windows, Macintosh, SUN Microsystems, and Hewlett-Packard UNIX operating systems. With over 30,000 users, "MapInfo" is the leading GIS software providing professional mapping at a desktop value.

"MapInfo" technically out performs all but the highest-end farm mapping systems for approximately half the cost. "MapInfo" is currently being used on-farm as well as in weed control districts and at farm supply businesses.

Additionally, Farmers Software Association resells and supports GPS navigation hardware from Magellan, NavStar, and Magnavox. Data acquisition and control hardware, as well as hard-to-get sensors and cabling parts, are also available through the Farm GIS technologies catalog.

For more information on products and prices or literature on any of these products, call Farmers Software Association, Fort Collins, Colorado, at 1-800-237-4182 or (303) 223-4093.

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Global Positioning Technology and Site Specific

by Sarah Rupprecht



The Global Positioning System (GPS) of satellites (left) sends signals that are caught by earth-based receivers and used to determine exact locations within a field. The GPS receivers are small and can easily be mounted on the tractor or combine. The GPS below was a temporary installation used for yield mapping at MSU's Kellogg Biological Station.



The Department of Defense found them a necessity during Operation Desert Storm. Surveyors, geologists, fishermen, the transportation industry and many others are finding their service invaluable.

Today, farmers are using a combination of satellites, computer technology, field maps and specific equipment to accurately apply precise amounts of agricultural inputs. Farmers have known that soils vary within

fields, but until now, have had no known way to adjust their input application to correspond with the varying soils. Using satellites, farmers can pinpoint their exact location in the field. By using detailed soil maps and variable rate equipment, they can precisely apply various inputs according to soil type.

The Global Positioning System GPS, or Global Positioning System, is a

constellation of 17 satellites that was originally designed as a military-navigation system. It was developed to provide 24-hour positioning to within tens of meters world wide. These satellites transmit signals which are picked up by earth-based receivers.

Anyone can catch the signal. Farmers will need two GPS receivers to accept and compare the signals sent from the satellites.

A receiver mounted on the tractor, and another in a fixed location in the field, pick up signals transmitted by the satellites and relay the information to the onboard computer which then pinpoints the exact longitude and latitude in the field.

With this new technology, computers can make digitized soil maps of fields. By integrating these digitized maps, and the location displayed by the satellites, variable rate application equipment will allow the farmer to adjust the amount and rate of fertilizer, herbicides or seeds.

GPS will be the most common method agriculture will use to determine vertical and horizontal positions. A full constellation of 24 satellites is planned to be fully operational in 1993.

Will it be economically feasible?

It's expected that GPS will become a public utility, making the availability and cost of technology user-friendly. Currently, a 12-channel code receiver the size of a 3.5 computer disk can be purchased for \$2,000.

Determining a position to within a few centimeters within a field is going to be straight-forward and simple in the future. It will be easy to find out where things are, and put things where we want them.

Additional uses will be tracking the position of a machine and logging in data on soil conditions, topography, crop yields and weed densities. The application of fertilizer, pesticides, herbicides and other inputs can then be integrated with this data for optimum efficiency.

Shivvers MOISTURE TRAC Moisture Monitors

MOISTURE TRAC, the first "on-the-move" grain moisture monitor for combines, was recently introduced to the industry by Shivvers Incorporated, a mid-western manufacturer of grain drying equipment, moisture monitors, and dryer controls. This computerized tester obtains a reading from the clean grain entering the combine grain tank and displays this on the monitor mounted in the cab.



The current moisture content, a rolling average of the last 48 samples, and the grain temperature are displayed. An instantaneous reading may be obtained by pushing a button. MOISTURE TRAC fits most combines and may be used to test corn, soybeans, wheat and other small grains. For more information, contact: Shivvers Incorporated, 614 West English, Corydon, IA, 50060 or phone 1-800-344-8237 or (515) 872-1005.

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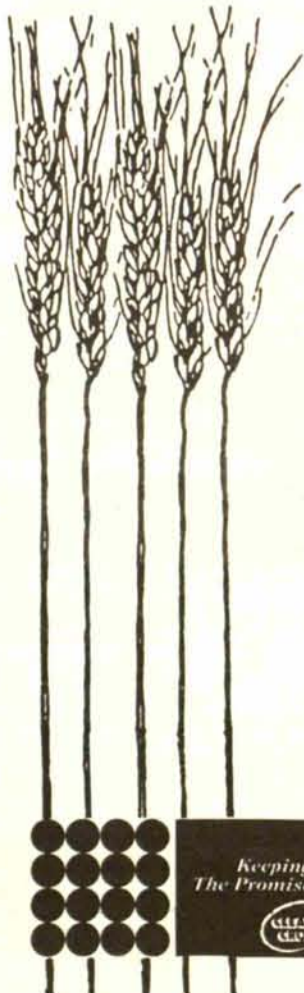
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Soil Testing and Site Specific Nutrient Management

Darryl Warncke, Crop & Soil Sciences, Michigan State University

Soil testing is built on the premise that the quantity of nutrient inputs required to maximize crop yield in soils is related to the levels of available nutrients already present in the soil. The more that is available in the soil, the less that is needed from outside sources. Being knowledgeable about the nutrient status of soils in a field is the key to successful nutrient management.

Generally, soil testing enables efficient and economical use of nutrient inputs for fields with uniform soil properties and homogenous available nutrient levels. However, soils in most Michigan farm fields are quite variable in all properties important to crop production.

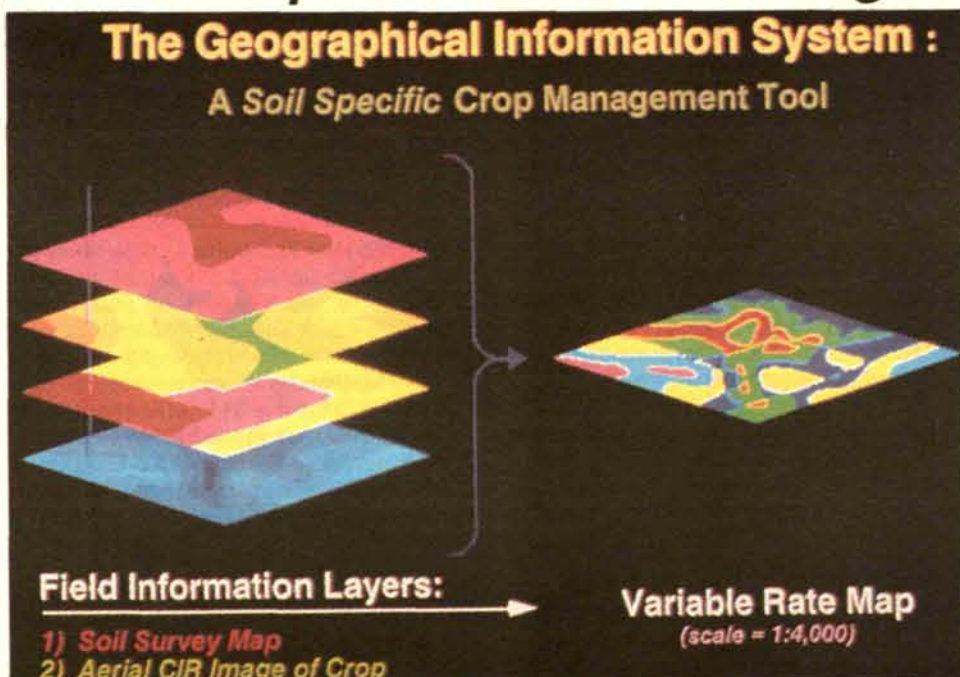
Due to extensive glaciation, Michigan soils are naturally quite diverse. Differences in soil types are well defined on soil survey maps. The farming activities of man have introduced additional variation to farm fields, much of which is not recognized in farming activities. As farms have grown in size, fence rows have been removed and fields with different management histories have been combined. Non-uniform application of animal manures has also contributed to field variability as have other farm management practices.

Despite the variability in Michigan farm fields, nutrient management programs most often deal with fields, regardless of size, as though they were homogenous units.

The first and probably most important step in soil testing is the collection of several soil samples that represent the nutrient recommendations for the field. A soil sample composed of sub-samples or cores taken from a large field area will result in soil test values which are average for that field.

This doesn't tell us anything about variability, however. There may be areas in the field with very high phosphorus levels and areas with low levels. Using an average soil test value to determine the amount of phosphate or potash fertilizer to apply

Using advanced computer software technology, field soils maps are viewed on a monitor screen in the tractor cab. These maps tell the farmer such things as speed, soil type, acreage figures, and applications rates.



Technology is continuously being developed to provide farmers with detailed field and soil maps. Here the Geographical Information System (GIS) produces detailed variable rate maps for input applications.

results in over-fertilization of the very high testing areas and under-fertilization and under-production in the low testing areas.

In the fall of 1992, one corn field was found to have phosphorus test values ranging

from 27 to 215 pounds per acre. Potassium levels ranged from 160 to 472 pounds per acre and pH values ranged from 5.3 to 7.6. The farmer thought the field was fairly uniform. Significant differences in soil test values were found in other fields and are likely to occur on most Michigan farms.

Grid Sampling
Site specific nutrient management starts with the assumption that the nutrient status of a field varies. To assess the variability, a field is broken into small units or grids.

Private consultants, using the grid sampling approach, commonly use a 330 by 330 foot grid. This generates one soil sample for each 2.5 acres, compared to typical field crop operations in Michigan where one soil sample commonly represents 20 or more acres.

point or global positioning, these sampling points can be revisited at a future time to accurately assess changes. A grid spacing of 100 feet is commonly used for research projects and generates more than four samples per acre. This allows intense evaluation of nutrient variability in a field.

Private consultants using the grid sampling approach commonly use a 330 by 330 foot grid. This generates one soil sample for

each 2.5 acres. This is still quite intense sampling compared to typical field crop operations in Michigan where one soil sample commonly represents 20 or more acres.

More intense sampling and testing enables a better understanding of the variability existing within a field. It provides the base for more accurately matching nutrient input resources to where they are needed in a field.

Intense sampling and testing results in a soil fertility map of a field. Computer programs are now available to utilize soil test information to generate nutrient or fertilizer management maps indicating the amount and grades of fertilizer materials to apply to the various areas of a field. These management maps are then used as guides for applying the appropriate amounts of lime, phosphate or potash to the various areas of the field.

Being able to match nutrient application amounts to localized needs in a field provides the potential to improve crop yields in areas with low test values and reduce or eliminate nutrient application on higher testing areas. As a result, the overall field yield can be improved.

The total amount of fertilizer needed may or may not be changed because of offsetting effects of increased application amounts on low testing areas and reduced application amounts on high testing areas. With site specific nutrient management, increased costs for soil analysis are recovered by improved overall field yield and/or by reduced input costs.

By bringing together intense systematic soil sampling of fields and laboratory soil analysis, site specific nutrient management provides farmers the opportunity to eliminate plant nutrition as a yield limiting factor in crop production, without increasing nutrient inputs.

By matching nutrient input with localized needs in fields, nutrients are also used in an environmentally responsible way.

By entering a new field, the respective map is entered into the computer, prior to starting applications. Farmers can then easily view the field soil maps on a monitor in the cab, and adjust input application rates on the go based on grid soil sample analysis results.

By using a permanent reference

point where the imaginary lines intersect.

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Producer Profile – Dan Kline, Coggan Farms

by Sarah Rupprecht

Dan Kline, of Coggan Farms in Plainwell, Mich., started doing specific soil mapping and fertilizing on his farm, because he was frustrated with having to guess how much fertilizer was needed for the entire field.

Kline's operation consists of 2,300 acres, growing corn, soybeans, wheat and canola. They have always done soil testing and were interested in learning how that affected yields.

Working with Dr. Fran Pierce of MSU, a 56-acre corn field was used last fall to do

yield mapping research. Kline found that even within one row of corn, the yield varied from 120-180 bushels.

"Every farmer knows there is variation within the fields," Kline said. "It's getting over the hump to do something about it."

Kline has been doing digitized mapping of his fields for four years and has been apply-

ing lime in a site-specific manner. He became interested in site specific technology as a means for testing the relationship between inputs and output.

"All the bells and whistles are in place," Kline said.

"The ultimate frontier will be when we can pinpoint the exact locations in the fields where there is variation."

All the bells and whistles are in place. The ultimate frontier will be when we can pinpoint the exact locations in the fields where there is variation.

Kline says that more research needs to be done to bring the technology to the farm level. "We've dabbled in an unscientific approach of site specific farming for many years," he said. "The question is what is science going to do to make site specific feasible on the farm."

Kline plans on using some of this technology this spring by using digitized soil maps to apply anhydrous ammonia and herbicides at a variable rate.

An Ag Agency Perspective on Site Specific

by Sarah Rupprecht

The implementation of site specific management techniques here in Michigan will need the support of regulatory and government agencies such as the Soil Conservation Service (SCS), Michigan Department of Agriculture (MDA), and the Agricultural Experiment Station (AES).

Bill Schuette, director of the MDA, sees MDA playing a partnership role with Michigan State University and the SCS in this new technology. "We're a partner and we have a strong interest because of the stewardship," Schuette said.

Schuette said that farmers strive to leave the land better than they found it, and site specific technology is another opportunity to refine their management skills.

"The smart farmer is going to take advantage of what's best for the operation," he said. "Agriculture in the future is all about the manager looking at an array of options and assessing those in terms of wind, water and soil. This technology will allow farmers to become more refined in their practices," he added.

The Soil Conservation Service hopes to work with the Cooperative Extension Service and conservation districts on being the educational arm and informing producers about the benefits of site specific farming.

Homer Hilner, state conservationist with the SCS, says that site specific's biggest impact will be on soil management.

"As I see it, when technology allows us to be even more specific within fields and on specific soils, it is going to be a real benefit in a positive way," Hilner said. "We've always tried to treat each individual farm, each individual field and each individual

soil type to be handled within its capabilities and not abused."

Hilner said that SCS's role in site specific farming will be that of education and assistance to producers.

"Site specific farming is going to enhance our technical capabilities and cause us to do more training to make us more technologically sound," Hilner said. "Eventually, we'll be able to give better technical assistance to individual farmers."

The SCS hopes to work with leading farmers across the state, provide demonstrations and educational field days, and provide written recommendations and new conservation plans that incorporate the site specific technology, according to Hilner.

The SCS feels that site specific farming will need to be incorporated into many farm management programs for environmental and economic reasons.

"I think once the user costs of some of this equipment reach the point where it's practical, it's going to go," said Hilner. "Because of environmental benefits, if for no other reason, we are going to be pushed in that direction."

Schuette added that for Michigan agriculture, site specific technology will help with efficiency, costs and stewardship. "Certainly our yields have increased, the number of farmers has decreased and technology has advanced. Those are market driven forces," he said. "I am convinced that technology and market forces will solve the environmental challenges to agriculture."

Schuette said that Michigan needs to support the farmers' decisions as they ultimately impact the country's economic strength

and power. "I'm totally convinced that in the future, a country's sophistication and level of technology of its food and agricultural industry will be a major and significant element in how you define a nation's strength and power," he said.

The (AES) has also made a commitment to site specific farming. "We have a major interest in the support of and future development of site specific farming," said Ian Gray, associate director of the Agricultural Experiment Station at MSU. The MDA has issued a \$157,000 grant to the AES from the Michigan Energy Conservation Program. AES has issued \$30,000 of that to the research team from Michigan State University working on site specific management.

Fran Pierce and the team of researchers from MSU submitted a research proposal and request for funding from the AES.

"Fran Pierce turned in an excellent proposal and it received high priority from the experiment station," Gray said. "It is an outstanding proposal, and one that truly embraces the concept of multidisciplinary research. This is the secret to solving many of Michigan's agricultural problems."

"We will leave it up to Pierce and his two principal investigators as to the disburse-

ment of those dollars. They have gotten together as a team and they are the ones who are going to manage the budget and the project," he said.

The AES also requested the formation of a North Central Regional Project Committee to be established to study site specific research.

According to Robert Gast, director of the Agricultural Experiment Station, the main purpose of these committees is to help address the problem of duplication of research. "These committees are one of the primary mechanisms that allow the researchers that are working on site specific management to get together and make sure that they are complementing each other and not duplicating each other inappropriately," Gast said.

Both Gray and Gast agree that the future of site specific research and implementation is going to depend on the economic evaluation.

"As much as we like to think in terms of development of sustainable production systems which achieve all of the goals of being environmentally benign and resource conserving, they still have to be profitable," Gast added. "If they aren't profitable, they aren't going to go."

Producer Profile – Steve Simmons, Omega Farms



by Sarah Rupprecht

Steve Simmons, owner of Omega Farms, Williamston, Mich., has implemented site specific management techniques on his farm, because he feels environmental concerns are prompting today's farmers to look at alternative methods of producing food. The 4,000 acre operation grows corn, soybeans, wheat and oats, and raises Angus and Charolais cattle.

Simmons feels that site specific farming is going to have a huge environmental impact on farming.

"Site specific farming is environmentally friendly," Simmons said. "Right now, the key important thing in agriculture is food safety."

The issue of food safety is not only an issue to the consumer, but more importantly to the producer. "If a farmer is polluting his environment, then he's polluting his own life," he added.

Simmons said that farmers are doing things today that they're taking for granted. "We've got a lot better tests for water quality today," he said. "Very small traces

of herbicides and fertilizers are beginning to show up."

Simmons, who operates Omega Farms with his wife Ruth, son Cliff, and daughter Christine, has already implemented and used some site specific techniques on his crop acreage. All of Omega's cropland is no-till, and has been manually soil mapped. Using these maps, Simmons varies the

amount of fertilizer applied to the various areas of the fields.

"For me, site specific farming is economical. Last year, we saved over \$4,000 on fertilizer alone by using this technique, and that figure doesn't include yields."

alone by using this technique, and that figure doesn't include yields."

Simmons is ready to plant and apply fertilizers completely by computer. "We've got the computers, equipment and technology," he said. "Now all we need is reliable software to command the hardware and control the planter."

Simmons' goal for this year is to be able to equip his planter and tractor with GPS. He says that technology and farming go hand-in-hand, and he wants to be ready.

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Service Industry Needs for Site Specific Management

by Sarah Rupprecht

Site specific technology requires the use of specific equipment. Much of this equipment is currently in developmental stages and is still very expensive to the user. If this technology is to be implemented in Michigan, several people feel that a service industry needs to be developed to provide this technology as a service to the farmers.

Neal Havermale, of Farmers Software Systems, Colo., said that his company started developing the equipment because farmers needed an integrated system to do a lot of the things they're already doing separately.

"You can consider us as a systems integrator. We go out and pick out the pieces that logically fit the answer and glue them together," he said. "With us digging out this technology ourselves, we found that our main target will be retrofitting the farmers who are already using planter monitors, spray control rigs, etc. We can tap an opportunity to add a deeper dimension to it in terms of information," he added.

Dealers and consultants will continue to play an increasing role in providing farmers with current information and technology. Dave Swain, location manager for Terra International, said he didn't become involved with site specific technology to sell more fertilizer, but rather to be able to provide a source of information.

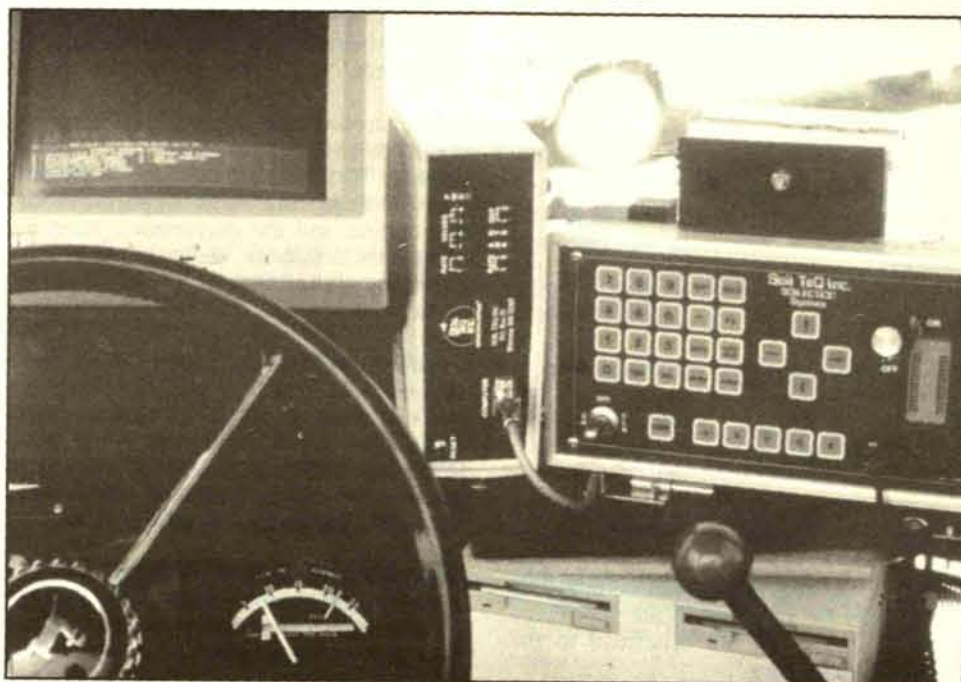
until the farmer demands it. Most farmers aren't going to have the equipment to do it and will rely on dealers and consultants to provide the service," he said.

Whether it's farmers or dealers, the rate of adoption of this equipment is dependent on economic factors. "Adaptation will be a slow process just because of economics," Swain said.

"Very few farmers just plant anymore. They're also dropping fertilizer or throwing out herbicides. They have a lot of money running out the back of their planters, and if we could get a 10 percent improvement in efficiency, it would make a lot of difference," Havermale said.

"There will be manufacturers of sensors and systems. It will be up to the farmer to go in and pick out what he/she wants," said Havermale. "The commercial fertility sales people – this is a new angle on a service that they can provide. The new equipment is all computer optimized. As things go on, these will be packages or options that will be plugged into the combines and planter equipment."

An example of what the inside of a tractor cab looks like with the necessary computer and variable rate application control panels. Service industry professionals will be needed to install and maintain this equipment.



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Producer Profile – Jim Bronson, Kellogg Biological Station

by Sarah Rupprecht

At the Kellogg Biological Station (KBS), they're concerned with keeping abreast with the newest technology that could save producers money.

Jim Bronson, farm manager, said KBS got interested in the technology for both economical and environmental reasons. "If it works, the best thing it has to offer is from an environmental standpoint.

"Due to the diversity of soils in this state, it could do an awful lot to improve the environmental impacts of agriculture," he said. "If they are able to pinpoint our exact location in the field, it will have a huge impact here in Michigan."

KBS, located in Hickory Corners, Mich., is a university-owned farm that dedicates 250 acres of its total 1,100 to small plot crop research. KBS was involved with Dr. Pierce of MSU, in doing yield monitoring research on 20 acres of corn. Bronson said they are waiting to see what the technology is going to offer, but plan on using variable rate technology with a variable rate corn planter to do yield mapping again in the fall.

Bronson said that testing site specific technology at KBS is logical because of its set-up. "It's (KBS) a logical place to get involved from a research and demonstration standpoint," he said. "We have a good infrastructure for tours and demonstrations."

Site Specific – Where Does Michigan Go From Here?

by Sarah Rupprecht

The potential for the application of site specific management technology here in Michigan has been demonstrated to be great. What needs to happen to get this technology off the ground and running here in Michigan?

Service Industry

Site specific nutrient management provides agribusinesses the opportunity to provide a valuable service for farmers. Farmers will be looking for assistance in the collection of soil samples, generation of nutrient management maps and spreading of product on a site specific need basis.

According to MSU's Fran Pierce, site specific management is a societal issue. It's something that will benefit all of society, not just individual farmers.

"Agricultural agencies and businesses need to provide this service to farmers to ensure that they all have access to it," he said. "Without the help of this service industry, it will only be available to the very large farmers, and that's not beneficial to the future of agriculture."

Pierce said it's important that farm companies and businesses push site specific technology and information to the farmers because the average farmer will sit and wait. "We have to be proactive. We can't wait for the farmer to try it out. We have to teach them."

Pierce stressed the importance that farm organizations and companies make this a priority. "Organizations like the Michigan Farm Bureau, Michigan Department of Agriculture and the universities, need to make this a priority, to ensure that this technology is beneficial across the board to all farmers," he added.

Positioning Technology

When farmers will be able to pinpoint their exact location in the field, variable rate application of nutrient inputs will be utilized most efficiently. Farmers will increase their profits through increased yields, more efficient input use, and decreased environmental damage.

The Global Positioning System of satellites sends signals that anyone can catch, if they have the receiver. Receivers the size of a small computer disk are already available.

New computer technology now allows the farmer to harness these signals to pinpoint their exact location in the field. Software has been developed that coordinates the location and field map information in a way that the farmer can then operate his/her variable rate equipment.

Pierce said that the full constellation of satellites will be in place by June, 1993. What's needed are some land-based differential signal receivers. These provide the farmer with the stationary receiver that's needed to use along with his/her small tractor mounted receiver.

"As a state, we should be taking a statewide approach to the satellite challenge," he said. "One agricultural agency or organization could purchase one of the differential signals at a price that it would take 10 farmers to buy. What organizations like Farm Bureau can say is that we're a definite potential user so why don't we look at providing this to our members."

Research Funding

Pierce said that all of the research that has been done in Michigan has been done this far without funding. Pierce's team of re-

searchers has been issued a grant by the MDA and by the Ag Experiment station to study further site specific management.

"We've got to provide this technology in a way that is most profitable for Michigan farmers," he said. "In order to identify that, you've got to have research."

"Developing technology is very expensive," Pierce added. "The average farmer is going to have to spend a lot of money to get in, unless we can study this further and make the technology adaptable to the farmers' existing equipment."

Education

Pierce said that education is the key on this whole issue. "If you were to poll farmers today, you'd find they are relatively uninformed on this issue," he said. "We have a lot of teaching to do."

"Everything we are going to do on this is based on our previous knowledge," he added. "There hasn't been any formal education or classes taught on this subject yet."

"It's necessary that some of us have extensive training, and are then able to translate it to the farmers in an informal setting," Pierce said. "We've got to provide this technology to the farmer in a way that's non-intrusive. They've got to be able to adapt it to their operation, and not have to change the way they live their lives."

"As an industry, farm organizations need to pull together to get the information out," he added. "This is something that's going to benefit all of agriculture, and we all need to work together."

Producer Profile – John Anibal, Morning Star Farms

by Sarah Rupprecht

John Anibal of Morning Star Farms in Durand has been working closely with Dr. Fran Pierce, of MSU, on implementing site specific farming techniques on his 1000 acre farm, growing corn and soybeans.

Anibal used a yield monitor on 60 acres of corn this past fall. Soil samples were taken from four transects across the field and the pH was found to vary from 5.5 to 7.7. Every 1,000 feet, yield checks were done, resulting in a variation that ranged from 150 bushels to 70 bushels. Similar results were found with plant populations ranging from 29,000 to 14,000.

"It could increase yields, and decrease costs, but there needs to be a service industry to help develop this idea."

"We implemented the site specific technology for economic reasons," Anibal said. "We're always looking for better production and need to solve the problem of over-fertilizing."

Anibal plans on using site specific again this spring to do grid mapping of the same field. He hopes, in working with Dr. Pierce, to be able to execute a pilot program to study site specific techniques.

"Knowledge and the lack of funding to study site specific farming is holding us back," he said. "It's a new technology, and we need more knowledge to be able to address the issue."

Anibal predicts that site specific farming in the future will require the need for a new agricultural service industry.

"It could increase yields, and decrease costs, but there needs to be a service industry to help develop this idea. It's going to be too technical for the average farmer to grasp," he said.



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7 USDA Announces Changes in Price Supports

The U.S. Department of Agriculture is seeking comments on an interim rule which proposes changes in the price support programs for wheat, feed grains, rice, oilseeds, farm-stored peanuts and honey, said Randy Weber, acting executive vice president of USDA's Commodity Credit Corporation (CCC).

The provisions are:

- Persons having an interest in the storing, marketing or purchasing of commodities are no longer prohibited from acting as the producer's agent.
- Two or more producers may obtain a joint loan deficiency payment (LDP) for a commodity commingled in the same storage facility, and each producer is jointly liable

for obligations set forth in the documents for obtaining an LDP.

- To be eligible for price support benefits, a producer must retain title and risk of loss in the commodity and control of the commodity.
- CCC will no longer require a producer to obtain a lease agreement when commodities are stored in leased space.

• The deduction of the national soybean assessment will be made at the time CCC acquires the soybeans.

• New administrative actions for violations involving incorrect certification, unauthorized removal and unauthorized disposition will relieve the producer from repaying the outstanding loan for which the violation occurred while maintaining eligibility for future farm-stored loans.

• CCC will make available loans at a rate reduced for quality discounts on grain otherwise not eligible to be pledged as loan collateral because of quality.

• A producer may designate, at the time of the loan request, additional storage structures that may be used for storage of the loan collateral. A producer will be able to move loan collateral among these designated structures without prior written approval from the county Agricultural Stabilization Committee.

• CCC now defines the mortgaged quantity to be the same as the loan quantity. Therefore, the quantity CCC will accept as non inventory for settlement of a farm-stored loan is 110 percent of the outstanding farm-stored loan quantity.

• A producer may lock in a loan repayment rate under the marketing loan provisions when a producer obtains Form CCC 681-1 requesting to release loan collateral for sale.

• A producer who would lose beneficial interest at the time of delivery of a commodity, except honey, to a warehouse, buyer, processor, or cooperative, may request a loan deficiency payment on or before harvest for a quantity of the commodity which would otherwise be in-



FARM BUSINESS OUTLOOK

eligible because of the loss of such beneficial interest.

• When a honey producer obtains a loan deficiency payment in lieu of obtaining a price support loan, CCC will waive the requirement that the honey be stored in approved containers.

• Honey producers may obtain loans and loan deficiency payments based on 100 percent of the net quantity shown on eligible disposition evidence, if the evidence is submitted within 30 calendar days after date of sale.

• CCC will allow honey producers to deliver a complete barrel of honey, instead of splitting a barrel, if the quantity delivered would exceed the 110 percent quantity limitation.

Comments must be received by April 19 and should be sent to: Director, Cotton, Grains and Rice Price Support Division, USDA/ASCS, P.O. Box 2415, Washington, D.C. 20013. Comments will be available for public inspection during business hours, Room 3623-S, 14th St. and Independence Ave., S.W.

According to MFB Commodity Specialist Bob Boehm, the proposed changes are generally viewed as favorable, since they will add flexibility and clarification to several issues.

The changes would also allow more flexibility in rotating stored grain, by permitting a producer to designate additional storage structures. The revisions would also allow the state ASCS to adjust the basic loan rates down to allow loans on lower grade grain.

CATTLE

The March 1 Monthly 7-State Cattle-On-Feed Report released March 19 showed the cattle are out there, but bad weather over the winter has held up their coming to market.

On-feed was quoted at up 8 percent, February marketings at up 1 percent, and February placements at down 15 percent, all compared to the same period last year. This information would indicate prices will

drop off from their record highs through the spring and summer. I suspect the futures markets are doing a pretty good job of forecasting the prices through out the remainder of the year.

At this point, keep very current. One may consider pricing some future production. There is a downside risk of a couple of dollars from where futures are now.

TABLE EGG MARKET

Allan Rahn and Henry Larzelere, MSU Ag Econ. Dept.

Egg prices in late March were trading in the 92 cent range (New York, Grade A, large white, in cartons, to retailers), 24 cents above one month ago and 28 cents per dozen higher than the prices at this time last year.

Market News data indicate that the main impetus for the sharp price advance is coming from demand strength in the egg product markets and not in the retail shell egg market. Liquid, dried and frozen egg product prices have been leading the general market strength.

Lower corn prices have reduced layer feed costs and accordingly cut egg production costs almost 2 cents per dozen from a year ago. The size of the table egg laying flock

on March 1, 1993 was 236 million birds, unchanged from the previous year. Table egg production during February, however, was down 3 percent. The age of the laying flock is relatively old with a March 1 induced molt completed percentage estimate of 22.7 percent.

This is the highest March 1 induced molt completed percentage since 1986. The egg-type pullet chicks hatched during February was up 5 percent and the number of egg-type eggs in incubators on March 1 was up 10 percent from a year ago.

Egg prices are sure to weaken as the Easter period passes. Given the unexpectedly strong egg demand conditions, April and May price averages in the low 70 cent range--with the lowest prices occurring in May--appear most likely.

DAIRY OUTLOOK

Larry G. Hamm, MSU Ag Econ. Dept.

As welcome as 60 degree weather in March was, it was not as pleasant as the thaw in dairy product prices. The rapidly rising wholesale cheese prices during March assure that the Minnesota-Wisconsin (M-W) price has bottomed out.

The February M-W stood at \$10.74 (3.5 percent test). The February M-W sets the April Class I price. Therefore, farm milk prices will be lagging in the next two months. Any farm price drops will, however, be tempered by the rising M-W. The March M-W (announced April 5) and the April M-W will likely rise significantly.

This is earlier than in previous years. In 1992, the M-W started up in April and in 1991, it waited until May to break out of the winter doldrums. This year's activity is encouraging.

Countless studies show that the current M-W is driven by the wholesale price of cheese on the National Cheese Exchange and the prices of cheese on assembly points in Wisconsin. The recent increases in wholesale cheese prices have been spectacular. On February 28, 1993, the wholesale price of cheddar cheese in 500 pound barrels was \$1.1250 per pound.

On March 26, the price was \$1.25; a 12.5 cent per pound increase. Similarly, the price of 40-pound blocks was \$1.16 on February 28 and \$1.27 on March 26. This 11 cent per pound increase, when averaged with the 12.5 cent barrel increase, suggests that the M-W can increase over \$1.00 per cwt. over the next two months.

Again, such increases are not out of the ordinary when compared to past years. The only difference is that it is starting early this year.

All in all, this is good news for Michigan's dairy producers. Early spring price momentum usually means higher average prices for the year. But as everyone knows, it's a long time until December.

1993 FARM BUREAU TRAVEL SERIES

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One does not need the "Luck of the Irish" to enjoy the many attractions included in this deluxe package. This 16-day tour is full of many great attractions including such things as Killarney, the Ring of Kerry, the Blarney Castle, Waterford Crystal factory, Dublin, Edinburgh Castle, an overnight stay in Ruthin Castle in Wales, theatre tickets to a Royal Shakespeare Theatre production, a Medieval Banquet, a visit to Stonehenge, Buckingham Palace, and a tour of London, as well as London Theatre tickets. Our package includes roundtrip airfare, deluxe hotel accommodations, 24 meals and much more for \$2,799 per person.

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Our 12-day central European tour takes in the beautiful countryside of Austria, the mountains of Italy and the lakes of northern Italy as we visit Fairytale Bavaria, the Passion play village of Oberammergau, the Italian resort of Stresa and Linderhof Castle.

This European tour includes roundtrip airfare, transfer, deluxe motorcoach transportation, first class and Tyrolean-style hotel accommodations, European-style buffet breakfast daily, 1 dinner, and much more. The Farm Bureau member price is \$1,725. Non member price is \$1,755 per person.

8

Keep Farm Life Safe For Young And Old

Young or old, everyone needs to be protected from the hazards of farming. Farm children must be kept away from workplace and health hazards--and when they are old enough to work, they have to be properly trained and supervised.

But children become adults, and as adults move on in years, it's equally important for them to take proper measures to reduce safety and health risks. Farmers who continue working into old age are particularly vulnerable to the effects of injury and illness.

Here are steps you can take to protect both young and old on the farm:

For children . . .

- Create a hazard-free play area, including safe play equipment, for small children. Make sure bikes are in good condition, right for the child, and that bike helmets are worn.
- Provide fences, barricades, or locks for silos, bins, chemical storage facilities, the farm shop, gates to live-

stock quarters or lots, manure lagoons or pits, and other places where children might get themselves into trouble. Remove keys from motorized equipment.

- Secure abandoned wells. Fence the farm pond or pool. Have lifesaving gear wherever swimming is permitted. Teach children how to swim, but don't let them swim alone.
- Unplug power tools and put all tools away when you're finished with them. Put chemicals away, too. Have a safe place to store chemicals and other substances children shouldn't have--and mark the storage area in a way that children can understand.
- Don't allow children to ride on farm equipment or be near operating machinery.
- Give youngsters tasks appropriate for their age. When they are physically and mentally ready, train them before allowing them to operate farm machinery.

- Teach children about poisonous plants and dangerous animals.
- Teach children what to do in case of fire or other emergencies. Include instructions on how to get help.
- When you drive, use approved child safety seats for small children--and insist that everyone use safety belts.

For older workers . . .

- If you're older, be careful not to exceed your limitations. Find ways to work safely with any chronic health problems that are limiting but not disabling--arthritis, back trouble, visual or hearing difficulties, for example. Consider your age and state of health before taking on a task--and don't hesitate to leave work to others in the interest of safety.
- Be ready for a safe day. Choose proper dress and footwear for your work and the weather. Eat well and get enough rest. Take breaks to conserve your energy--and don't let yourself get overtired.



From Farm Bureau Insurance

- Find the least-taxing way of doing things to avoid undue fatigue and stress on your joints and back. Get help rather than struggle with heavy loads. Use mechanical aids when possible.
- If you take medication, ask your doctor about its effects on job performance and driving. Have your vision checked, and wear glasses if you need them.
- Know the symptoms of heart attack and stroke. Heed any warnings. You and your family members should know what to do in case of sudden illness.

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Annual YPCS Student Search On!

Outstanding high school students attending the Michigan Farm Bureau Young People's Citizenship Seminar (YPCS), June 14 - 18 at Calvin College in Grand Rapids, will be participating in the one of the finest programs offered to young people in Michigan.

YPCS "graduates" return to their communities with the knowledge, commitment and enthusiasm for participating in the democratic process.

During the conference, over 200 young men and women will participate in mock voter registrations, political party conventions, campaigns, and voting. Dynamic speakers, recognized experts in the fields of economics, world cultures, government, and personal growth will background students on their roles as citizens of the United States and the world.

Eligible students are:

- High school juniors and seniors in the 1993-94 school year.
- Interested in government, social and economic issues and/or politics.
- Potential leaders or those who participate well in large group settings.
- Articulate and willing to speak to groups during and after the seminar.
- From either a farm or non-farm background.

The selection process varies from county to county, according to program manager Julie Chamberlain. "Some students may be asked to prepare a written essay or take part in a personal interview," she explained.

County Farm Bureaus generally pay the registration fees with the support of local businesses, leaving only transportation costs to be covered by the students.

For application and program information, contact your county Farm Bureau office. But hurry! Registration deadline is April 30, 1993.

School Finance/Property Tax Reform Good News For Ag

During the final week before Easter recess, the Michigan Legislature approved legislation to substantially change the way Michigan finances its schools. The package includes a June 2 election to make a change in the Michigan Constitution and thereby protect the funding, according to MFB Legislative Counsel Ron Nelson.

"The June 2 election will give voters the power to reduce property taxes and increase the sales tax by 2¢, which would be dedicated to the funding of K-12 education," explained Nelson. "This is significant since the Legislature cannot change that which the people decide."

For farmers, the proposal will result in a substantial reduction in property tax expenses. Nelson said the reform package is good news for P.A. 116 contract holders, too.

"For those farmers with property enrolled in P.A. 116, the result will be a reduction in the amount of money required to pay the property tax prior to receipt of the credit,"

said Nelson. "In addition, this will reduce the liability over time for those P.A. 116 agreements which are allowed to expire, since the credit received will be less."

Nelson said the proposal would include a number of features, including the allocation of up to 18 mills for school operating which could be levied by local school boards. The state would guarantee \$4,800 per pupil for those school districts levying 18 mills.

In addition, voters in school districts could vote an extra 9 mills for school operation. The state would guarantee at least \$100 per mill in those areas.

Schools would be limited in the Constitution to a maximum of 27 mills, 18 allocated and 9 extra voted for operating. Total millage would be limited to 40 mills versus the current 50 mill limit.

Starting in 1995, the state would pay half of the additional cost of FICA and teacher retirement. The \$4,800 which the state would guarantee to any school district levy-

ing the 18 mills, would be inclusive for most programs, excluding adult education.

Property tax assessment increases would be limited to the rate of inflation, or 5 percent, whichever is less and would be rolled back to the level during the freeze and increase from that value. New construction and sales would be valued at the sales value or the new construction assessment.

According to Nelson, the June vote is important because, if approved by the voters, the changes would be implemented prior to the summer tax bills being calculated based on the higher assessments.

"With an average statewide property tax assessment increase of 10 percent, with some increases as high as 100 percent, the question becomes critical and timing is important," he said. "If assessments can be reduced to levels prior to the increases, property owners will experience significant property tax relief."

Schools are also assured a higher level of funding with 100 percent of the funds generated from the 2¢ sales tax increase going to educational funding. In addition, the current portion of the sales tax and lottery funds allocated to school finance will continue to go to K-12 education.

In addition, Nelson said, there's finally a significant reduction and cap on future increases in property tax as a source of funding for schools, which will provide relief for Michigan property and business owners. That should translate into a better business environment that will maintain and attract new businesses and jobs to Michigan.

"For the farmer, the benefits of this proposal are a reduced reliance on property taxes with a minimal increase in the sales tax, depending on the family's amount of taxable consumer purchases made outside of the farm operation," said Nelson.

"USDA to Consider Quality in 1992 Corn Disaster Program - Application Deadline May 7"...continued

**Table 1
Production Adjustments**

Grade	% Production for Disaster Purposes
1,2,3	100%
4	80%
5	50%
Sample	15%

bushels (65 percent of ASCS established yield) with crop insurance and 60 bushels without insurance as pre-established for disaster payments. The producer would, therefore, be eligible for disaster payments.

Assuming the producer had crop insurance, the yield of 65 bushels, less the 13 bushels, would result in 52 bushels being eligible for disaster payment considerations.

Payment would be based on 65 percent of the target price of \$2.75/bu. (assuming the producer participated in the 1992 farm program) for a net payment per bushel of \$1.78. Total disaster payment would be 52 bushels x .65 x \$2.75 x 50.04 (disaster payment reduction factor) for a net of \$46.47 per acre.

The disaster payment (\$46.47 in this example) would be reduced by subtracting a portion of the 1992 deficiency payment as well. Although actual amounts will vary from farm to farm, in our example, the producer's estimated deficiency payment reduction would be \$11.53, bringing his net disaster payment down to \$34.94 per acre.

Producers should call their local ASCS office to schedule an appointment if they think they qualify for disaster assistance, according to newly appointed Michigan ASCS Director Jim Byrum. He also suggested that producers provide a summary of elevator receipts, total quantity harvested, and supporting documentation such as individual elevator receipts to speed up processing of applications.

In those cases where farmers sold or fed their 1992 corn crop, Byrum said that local ASCS committees will be determining claims based on case histories and comparative analysis of other farm operations in the county to determine the grade and adjusted production for each farm.

Participating producers will also be required to purchase 1993 crop insurance. The signup period for crop insurance for 1993 corn will be extended to May 7.

**Table 2
Test Weight Grading Factors**

Grade	Minimum Test Weight
#1	56
#2	54
#3	52
#4	49
#5	46
Sample	less than 46

Simplified Worksheet:

1. Disaster Yield Bushel Calculations:
1992 per acre yield (dry matter basis) _____ x test weight percentage _____ (see table 1 and 2) = _____ disaster bushels

2. Disaster Threshold:
ASCS established yield _____ x 65% with crop insurance = _____ (x 60% without crop insurance) = _____ disaster threshold.

3. Net Disaster Bushels:
_____ disaster threshold (number 2) - _____ disaster yield (number 1) = _____ net eligible bushels.

4. Net disaster payment calculations:
_____ net eligible bushels x \$2.75 target price (if in 1992 farm program) x 65% = _____ net dollars per acre.

5. Disaster Payment Reduction Factor:
_____ net dollars per acre x 50.04% = disaster payment amount.

6. 1992 Deficiency Adjustment:
Each operation will be different, depending on flex acreage and crop mix (in our example this figure was \$11.53). See your ASCS County office for precise calculations.

_____ Disaster payment amount - _____ 1992 deficiency factor = _____ estimated net payment per acre to producer.

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- Michigan Farm News Classifieds -

01

Farm Machinery

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HINKER RIDGING Cultivator. 8 row with bean shields and weighted bar. \$8000 or best offer. 616-467-6109, 7pm please.

01

Farm Machinery

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JOHN DEERE 1209 HAYBINE for sale 9' cut. H&S 16' forage wagon. Both excellent shape, stored inside \$4000 each. 517-766-2484, Northern Michigan.

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01

Farm Machinery

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02

Livestock Equipment

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04

Livestock

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04

Livestock

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06

Agricultural Services

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EXPERIENCED Michigan agribusiness attorneys with farm backgrounds. Knowledge and experience in all farm areas; restructure, stray voltage, bankruptcy, estate planning. **EAST SIDE:** Thomas J. Budzynski, 43777 Groesbeck Hwy., Mt. Clemens, MI 48036, 313-463-5253; **WEST SIDE:** Robert A. Stariha, 40 W. Sheridan, Fremont, MI 49412, 616-924-3760.

08

Building Materials

STEELWOOD BUILDINGS: Spring specials, 24x28 to 200x400. Limited quantities. Call today! 1-517-647-2226.

10 ACRES on paved road. Mostly tillable. OK for mobile or build. Southeast Hillsdale County. \$13,500. Terms. F-714. **FAUST REAL ESTATE** Adrian 517-263-8666.

130 COW Dairy facility for sale. Harvestore, Slurrystore, Trigon Parlor. Extra land and feed available. Free natural gas in house. 1-800-982-5687.

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11

Wanted to Buy

BUYING JOHN DEERE belt buckles and farm toys. Write or call: **Kenneth Cook**, 10849 U.S. 31 North, Williamsburg, MI 49690. 1-616-264-8527.

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12

General

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12

General

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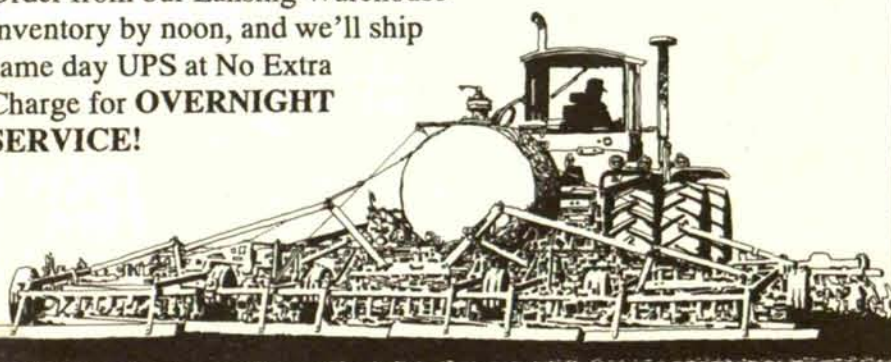
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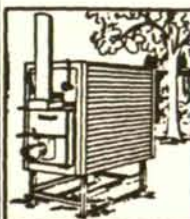
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12

Hornings Named 1992 Michigan DHIA Progressive Dairyman of the Year



Washtenaw County dairy farmers Earl and Diane Horning and their son and daughter-in-law Jeff and Lynda were named DHIA's 1992 Progressive Dairyman of the Year during the organization's annual meeting. The 75-cow herd has a rolling herd average of 28,146 pounds of milk, with 1,005 pounds of butterfat, 852 pounds of protein and a dollar value per cow of \$3,527. The farm also raises replacement heifers in addition to 400 acres of crops. Above, Earl (left) and Jeff Horning (right) accept congratulations from DHIA's Joe Brokaw, (center).

Woods Named MSU 1992 Dairy Farmer of the Year Award



Sanilac County dairy farmers Harold, and sons, Wayne and Randy Wood, owner/operators of HWR Wood Farms in Marlette, have been named 1993 Dairy Farmer of the Year by Michigan State University's Animal Science Department. The 275 cow herd has a rolling herd average of 20,853 pounds of milk, 727 pounds of butterfat, and 634 pounds of protein. The operation also raises 220 head of replacement heifers, and raises 1,250 acres of corn, soybeans, wheat and alfalfa.

Above (l-r) MSU Animal Science Department Chairperson Maynard Hogberg presents Harold and Randy with their award. Wayne, who is a member of the Michigan Farm Bureau Board of Directors, was in Washington, D.C. attending the Michigan Farm Bureau Legislative Seminar.

Harvard Rates Dairy-Farmer Funded Research Number One in 1992

Dairy farmer-funded research findings headlined a list of the top ten research discoveries of 1992 in the March 1993 issue of the *Harvard Health Letter*, a monthly publication of the Harvard Medical School. Researchers, funded by America's dairy farmers via the National Dairy Promotion and Research Board, found the location of a human gene responsible for atherosclerosis, more commonly known as heart disease — the leading killer of both men and women.

The discovery was ranked number one for having the greatest long-range impact on human health and disease by physicians — representing 16 fields of medicine — who serve on the advisory board of the *Harvard Health Letter*.

The National Dairy Board began funding this research in 1989 by forming the Dairy Research Institute for Genetics and Nutrition as a coalition of Berkeley Laboratory in Berkeley, Calif., The Jackson Laboratory in Bar Harbor, Maine, and the Children's Hospital Oakland Research Institute in Oakland, Calif.

According to Ron Krauss, Ph.D. and head researcher on the project, "Approximately 15 percent of the population appears to have the gene defect (attributed to risk of heart disease), and benefits by reducing the fat content of their diet, while the remainder of the population either does not benefit or is put at an increased risk of cardiovascular disease by consuming a low fat diet."

Researchers will try to develop a method for easy identification of individuals who need drug therapy and/or special diet so that the majority of the population that does not benefit or is put at a greater risk with diet restriction, can eat a wide range of foods, especially dairy products.

"America's dairy farmers have plenty to be proud of," said Raymond Johnson, New York dairy farmer and chair of the National Dairy Board's dairy foods and nutrition research committee. "The research we are funding is a well-respected, long-term investment. This research can help build a case against today's generalized diets and dietary recommendations which some media and doctors tend to translate into limiting dairy food intake."

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