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 advocated 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 ... 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 the added cost like manufacturers can," he said. "The Clinton economic proposal does not reduce spending. It's promising those cuts, but it'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 Christian 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 Riegle, Espy sent acting ASCS Director Randy Weber on a two day fact-finding tour of areas hardest 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 disaster payments for the first time, or for additional payments, as applicable, he said. "Corn producers who filed a written disaster application for the corn crop 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 bushels/acre. 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.

Michigan Farm News - Site Specific Extra This Issue! Pull Out and Save
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 1994-95 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 by $2 billion or more.

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 5092 and 0922 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 even though only 50 percent or all of the acreage was not cropped.

Another $900 million in user fees could boost the cost to farmers even higher.

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 USDAGo to be user-friendly 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 go 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 altered 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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Clint for Your Protection

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DNR Asks - Avoid Burning If At All Possible

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, 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 Hilliker'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, figures increased soybean production will reflect the actual number of beans 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 a 1992-93 end-of-year inventory of 310 million bushels.

Sheep and Goats 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 do 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 Pollied Hereford and Hereford cattle, 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) 632-7864 or U.P. HBA Secretary Glenn Hanson Jr., Rt. I, Box 94A, Stephenson, MI 49887, phone (906) 753-4311.
Highly Perishable Commodity Frost Weight Exemption

After numerous amendments, H.B. 4156 (H-2), sponsored by Rep. John Garmo (R.-McBain), to reform Michigan's No-Fault Automobile Insurance law, the Michigan House and Senate have passed H.B. 4156, supported by Reps. Mike Griffin (D-Jackson) and Bill Marquart (R-Yale) to reform Michigan's No-Fault Automobile Insurance law. The bill contains numerous measures to curb payouts, 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 there will be no 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.

Medical Malpractice

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

On March 30, the House Judiciary Committee unanimously reported out a substitute version of S.B. 270 to reform medical malpractice and送去 to the full House. It was an agreement reached between the co-chairs of the committee, Rep. Tom Mason (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.

Farming Bureau policy calls for the "elimination of pain and suffering" settlements and contingency fees. Support for the Griffin - Bandstra substitute to reduce the $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 more medical malpractice liability language back closer to the bill as it passed the Senate.

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.

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 request to the Department of Agriculture, Secretary Mike Espy, has suggested that one solution to the spotted owl/soft wood logging 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 veto any such restriction because of the signal it would send to the world markets that the United States is an unreliable agricultural supplier.

Michigan Farm News

April 15, 1993

How They Voted on H.B. 4344 Pesticide Preemption

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Key: Y = yea vote. N = nay vote. Absent.
Drier than normal conditions covered near-ly 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 temperatures are cooler than normal temperatures have not kept most over-wintering crop and insects dormant or inac-tive.

This may change quickly, however, as the latest National Weather Service (NWS) medium range computer guidance projects a riding 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 south to mid 40’s far north. Low 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 FARM RADI0 NETWORK**

Since its beginning in 1971, Michigan Farm Radio Network’s only objective has been to serve Michigan’s farms families. This dedication to serve agriculture is shared by the stations. Through its 29 local radio stations in Michigan and beyond, Michigan Farm Radio Network provides the latest in market analysis, weather and news to Farm Bureau members daily on the following stations:

**Serving Michigan Farm Families is Our Only Business**

- **Stations**: WABJ 1460, WATZ 1450, WPZA 1140, WLEW 1340, WHFB 1065, WKOY 1300, WTVB 1600, WDOW 1440, WACY 1160, WPSH 1300, WPLB 1380, WBCH 1220, WCSP 1340, WHTC 1450, WJIM 1225, WWGZ 1520, WNBW 92.5, WQAP 1050, WAUK 960, WSBJ 1560, WUWM 1540, WSGW 790, WMMI 660, WMIC 650, WCSP 1250, WCSC 940, WJKC 1040, WLKM 1510, WTCM 580.

**Dakota and 90-Day Forecast - Expect Normal Precip. and Temps.**

**Michigan Weather Summary**

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  - 20-year protection against red rust (including acid rain)
  - 10-year mini-load protection on Aluminum® sliding doors (with no weight limit)
  - 6-year mini-load protection on complete building (with no weight limit)

**Weather**

**Michigan and Major Commodity Area Extended Weather Outlook**

- **Temperatures**: 34.9°F - 0.2°F 20°F 2.2°F 2.32°F
- **Precipitation**: 0.4°F 1.8°F

**Soybean Committee Selects 1993 Research Projects**

- **Proposals ranged from weed management to disease/insect problems to soybean variety testing and breeding.**

- **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** - $4,276

- **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** - $9,520

- **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.**
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 nematology 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 nematology 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 best.

"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 nematology laboratory testing.
**Michigan Farm News**

**April 15, 1993**

**Market Outlook...**

**SOYBEANS**

The soybean reports were the most bullish of the reports. Stocks on March 1 were put at 1.219 billion bushels, which was 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 disappearances 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 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.

**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 slaughtered 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 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 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.
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 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 fields; 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 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 would be lost 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 advances 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 within a field? Is it worth the effort? Who should use it? Is it for all farmers? Is it important for agriculture? 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 and testing for decades 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 application 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

Gordon Brighton and his wife, Pam, operate Brightview Acres in Adrian, Mich., a 1,500-acre farm growing corn, soybeans, wheat and oats. Brightview learned about site specific farming from his county Extension agent and decided to implement it into his management plan 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."
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 Agricad, DeKalb, Ill., Steve Simmons of Omega Farms in Williamson, 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 conventional, 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.

The study 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 $50 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 buildup. Detailed mapping of fields will allow producers to improve irrigation measures and decrease problems with salinity and leaching.

**The Economics of Site Specific Management**

by Sarah Rupprecht

Scott Swinton, professor of Agricultural Economics at MSU, said that once a service industry builds 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 is 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 that 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.

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.

**FARM CREDIT SERVICES**

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**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."

**Michigan Farm News - Site Specific Special**

April 15, 1993

**The Associated Variable Rate Costs Based on a 100 Acre Field**

<table>
<thead>
<tr>
<th>Conventional Practices</th>
<th>Soil Potential</th>
<th>Grid Nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soil Sampling 1 hr. @ $25/ hr.</strong></td>
<td>25</td>
<td>5</td>
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<tr>
<td><strong>Sample Analysis 1 @ $6</strong></td>
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<td>0.3</td>
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<tr>
<td><strong>Fertilizer Application 3.00</strong></td>
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<td>40</td>
</tr>
<tr>
<td><strong>Photography, data management and map making 1.50</strong></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td><strong>Total costs/acre</strong></td>
<td>$7.30</td>
<td>$3.31</td>
</tr>
</tbody>
</table>

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. Bucholz, Associate Professor, Agronomy Department, Univ. of Missouri, Columbia. April 1991.

Field 1

<table>
<thead>
<tr>
<th>Crop</th>
<th>Yield bu/acre</th>
<th>Crop Value*</th>
<th>Fertilizer Cost/acre**</th>
<th>Other Costs***</th>
<th>Value Costs - Value Costs**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Rate</td>
<td>134.5</td>
<td>336.25</td>
<td>5.00</td>
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<td>327.94</td>
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<tr>
<td>Variable Rate</td>
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<td>375.00</td>
<td>11.75</td>
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| Field 2

<table>
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<th>Yield bu/acre</th>
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<td>10.15</td>
<td>350.88</td>
</tr>
</tbody>
</table>

* Corn Price = $2.50/bu. **Phosphorus = $2.25/bu.; Potassium = $1.10/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 increase in profits when only P and K were managed.

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

**Gross Returns and Costs For Two Southeast Missouri Fields**

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The Environmental Consequences of Site Specific

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 possible, 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 which farmers can vary their inputs according to soil type, thus minimizing residue buildup 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 Lash, research specialist with the Center for Remote Sensing 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," Lash 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 food 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 supplies a catalog of over 100 software titles covering all major farm enterprises as well as farm financial bookkeeping.

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 record system, plans to integrate its crop management software with the popular "MapInfo" GIS software. FMS, the exclusive distributor of "EASI Crops," an MS DOS crop record system, plans to integrate its crop management software with the popular "MapInfo" GIS software. FMS, the exclusive distributor of "EASI Crops," an MS DOS crop record system, plans to integrate its crop management software with the popular "MapInfo" GIS software.

The latest product in the FarmGIS lineup is the popular "MapInfo" GIS software. "MapInfo" is the leading GIS software providing professional mapping at a desktop value.

AsSOCIatIon 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 FarmGIS 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.

MapInfo
The Standard On The Streets

The Environmental Consequences of Site Specific

by Sarah Rupprecht
Global Positioning Technology and Site Specific

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 worldwide. 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 5.5 computer disk can be purchased for $2,000.

Determining a position to within a few centimeters within a field is going to be straightforward 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.

Roots to Profitability.

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18.4% 74F AVE=17.3% exclusively from

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The MoistureTrac™ (pat pend.) combine moisture monitor reports precise grain moisture content to you as you harvest. This revolutionary technology offers you:

• Current, accurate readings of grain moisture and temperature, plus hopper average!
• Easy to install in all major combine brands.
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Soil Testing and Site Specific Nutrient Management

Darryl Warrone, 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 homogeneous 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 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 homogeneous 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 large field areas 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 or low nitrogen levels and areas with low levels. Using an average soil test value to determine the amount of fertilizer to apply to the entire field results in soil test values which are average for that field.

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.

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.

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A grid system is developed by establishing imaginary lines at specified intervals (e.g., 100, 200, or 300 feet) across the field. Imaginary perpendicular lines are also established at the same interval. When sampling on a grid, soil samples are collected at each point where the imaginary lines intersect.

By using a permanent reference 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 intensive evaluation of nutrient variability in a field.

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

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.

By matching nutrient input 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 analysis are recovered by improved overall field yield and/or by reduced input costs.

By bringing together intensive 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.

Producers Profile – Dan Kline, Coggan Farms

Dan Kline, of Coggan Farms in Plainwell, Mich., started doing precise, careful testing 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 a 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 applying 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."

Kline says that more research needs to be done to bring the technology to the farm level. "We’re dabbling 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.

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An Ag Agency Perspective on Site Specific

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 the MDA playing a partnership role with the SCS. "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 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 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 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 disbursement 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

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 an environmental impact on farming.

"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," Simmons said. "If they aren't profitable, they aren't going to go."

Simmons is ready to plant and apply fertilizer 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's 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.
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, Inc., 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.

"I'm going to position myself to have any information that the farmer may need on equipment, fertilizers or micronutrients. I want to be an information source to be able to create awareness among farmers, especially with the new environmental regulations that continuously come out," Swain said.

The need for this technology has always been out there. Vernon Menits, a consultant for Agri-Business Consultants, said that dealers and consultants will be needed as farmers demand the technology. "Currently, no dealers in this state are set up to make variable rate applications. Dealers aren't going to move into this costly equipment 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."

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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 Swain 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."
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, so that the 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 want to look at it. “One agricultural agency or organization could purchase one of the 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 this equipment, and then share the technology with their 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 researchers 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**

“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.”

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 overfertilizing.”

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 exercise a more formal 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 technical for the average farmer to grasp,” he said.
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, cotton, peanuts, and honey, said Randy Weber, acting executive vice president of the National Commodities Credit Corporation (CCC).

The provisions are:

- Persons having an interest in the storing, marketing or purchasing of commodities 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 and Conservation Committee.
- CCC now defers 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 ineligible because of the loss of such beneficial interest.
- When a 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/ASC, P.O. Box 2415, Washington, D.C. 20213. 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 Bosch, 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 ACS to adjust the basic loan rates down to allow loans on lower grade grain.

CATTLE

The March 1 Monthly 7-State Cattle-On-Feet report released March 19 showed 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 the rest 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

Allen 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 market. Egg production is not in the full 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 is 2.4 percent larger than a year ago.

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 slightly 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 1996. 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 gets closer. 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.

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.

DAIRY OUTLOOK

Larry G. Hamm, MSU Ag Econ. Dept.

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

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 $11,250 per pound.

On March 26, the price was $1,25; a 12.5 cent 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 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.

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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 farm ponds or pools. Have lifesaving gear wherever swimming is permitted. Teach children how to swim, but don't let them swim alone.

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, and the farm shop, gates to live-stock quarters or lots, manure lagoon, 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've 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.
During the final week before Easter recess, the Michigan Legislature approved legislation to substantially change the way Michigan finances its schools. The package included a June 2 election that would change the Michigan Constitution and thereby provide a framework for the MFB Legislative Counsel Ron Nelson.

"The June 2 election will give voters the power to reduce property taxes and increase the sales tax by up to 27 mills, 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 the 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 on 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 for an extra 9 mills for school operation. The state would guarantee at least $100 per pupil in those circumstances.

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 levying 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 increased 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 new assessment.

"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 important," he said. "If assessments can be reduced to levels prior to the increases, property owners will experience significant property tax relief."

Michigan Farm News

April 15, 1993

School Finance/Property Tax Reform Good News For Ag

"USDA to Consider Quality In 1992 Corn Disaster Program – Application Deadline May 7th...continued

Table 1

<table>
<thead>
<tr>
<th>Production Adjustments</th>
<th>Grade</th>
<th>Production for Disaster Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>480</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Sample</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>

bushels (65 percent of ASCS established yield) with crop insurance and 60 bushels with crop 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, lesse the 13 bushels, would result in 52 bushels being eligible for disaster assistance.

Payment would be based on 65 percent of the target price of $2.75/bu. (assuming the producer participated in the 1992 crop program) for a net payment per bushel of $1.78. Total disaster payment would be $91.42 x $2.75 x 50.04 (disaster payment reduction) = $65.57 - 18 mills = $46.47 per acre.

The disaster payment ($46.47 in this example) would result in 52 bushels being eligible for the yield of 65 bushels, less the 13 bushels, with crop insurance and 60 bushels without crop insurance.

Table 2

<table>
<thead>
<tr>
<th>Test Weight Grading Factors</th>
<th>Grade Minimum Test Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>52</td>
</tr>
<tr>
<td>#2</td>
<td>54</td>
</tr>
<tr>
<td>#3</td>
<td>52</td>
</tr>
<tr>
<td>#4</td>
<td>49</td>
</tr>
<tr>
<td>#5</td>
<td>46</td>
</tr>
<tr>
<td>Sample</td>
<td>less than 46</td>
</tr>
</tbody>
</table>

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Grant M., Accountant: We replaced our oil furnace with a HydroSil™ system saving us $2,500 in heating cost savings. The savings were realized the first year.

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Michigan Farm News Classifieds

April 15, 1993

Classified Ad Code: 01

LH

Farm Machinery

HINKLEY RIDGE 416 Cultivator, 4-row, rolling and bean shields, $3,000. Call 517-547-2068 evenings.

JOHN DEERE 329 HAYBINE for sale or rent: 45-1/2' fork wagon. Both excellent condition, stored inside $4000 each. 517-766-2484, Northern Michigan.

BRILLION 12 cul-mulch, new tach and scrapers, always hoed. Excellent condition. Call 517-566-8566.

1155 M.F. TRACTOR, cab, air, 6-bottom plow, 2600 hours, $6,900. Great [41], 15' bucket, cab, new tires, new air camp. $11,900. 1-313-829-3376.

NEW HOLLAND BALE PICK up wagon, $1500 Deutz hay rake and loader. Budget #2600 chopper, both 4-bottom Deere plow 1967. Deutz baler, very good shape. 2-1/2 HP, Oliver 1855 Selecta. Oliver 1800 bucket. 15' Deere pickup. 15' Deere rock box. Used on Oliver plant 2-5-97 616-832-5977.

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Expires Order May 31, 1993
As Hay Becomes Scarce, Livestock Producers May Want to Consider Feeding More Corn in the Ration

If shrinking hay supplies or rising prices put hay out of reach, livestock feeders may wish to consider feeding the amount of corn in the daily ration.

Steve Rust, Michigan State University live- stock specialist, says that current prices make corn a more economical source of stock feed. He notes that the list of names of people who wish to buy corn will be held in confidence so they are not flooded with calls from people who want to sell corn.

Producers who need corn can find ample supplies via the list of corn sellers that is available at all MSU Extension County offices or the MSU Extension or Michigan Farm Bureau (MFB) County offices. Currently, the list has more than 150 farmers who are available to deliver up to 50,000 bushels of corn for sale.

To obtain a free copy of the list, call MSU at (517) 335-1555. The list of names of people who wish to buy corn will be held in confidence so they are not flooded with calls from people who want to sell corn.

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According to Rust's calculations, before the corn is fed, it should be stored at least 22 hours to allow the moisture to drain from the pile. After the moisture is removed, the corn should be fed to the livestock within a few days to prevent it from becoming acidotic. High-moisture corn, or HMC, has a moisture content of about 30% to 40%.

More than 150 farmers are registered on the corn seller list. The list is updated periodically and is available at all MSU Extension offices or from Rust at (517) 336-1390.

- CORN SELLERS-

Larry Windey, Dewitt, Clinton County. Estm. 300 acres. Trucking available. Call in a.m. or p.m. Trucking available.

Vaughn Vondrasek, Bath, Clinton County. Estm. 320 acres. Trucking available. Call in a.m. or p.m. Trucking available.

Mary May, Quincy, Hillsdale County. Estm. 250 acres. Trucking available. Call in a.m. or p.m. Trucking available.

Larry Meyer, Lenawee County. Estm. 420 acres. Trucking available. Call in a.m. or p.m. Trucking available.

Jeff Brittle, Manchester, Washtenaw County. Estm. 25,000 acres. Call 313-328-7113.

Paul Thelen, Fowler, Clinton County. Estm. 3,000 acres. Trucking available. Call in a.m. or p.m. Trucking available.

David Cooley, Dorr, Calhoun County. Estm. 400 acres. Trucking available. Call in a.m. or p.m. Trucking available.

John Feeney, Mt. Pleasant, Gratiot County. Estm. 10,000 acres. Call 517-682-5894.

Jeff Beebo, Alma, Gratiot County. Estm. 700,000 bu. Call 517-868-4219 or 536-4454 p.m. Trucking available.

Roger Root, Cass City, Tuscola County. Estm. 40,000+ bu. Call 517-868-4219 or 536-4454 p.m. Trucking available.


Joe Catarinia, Tecumseh, Lenawee County. Estm. 8,000 - 10,000 bu. Call 517-828-6477. Trucking available.

Bill Spurk, Bay Port, Huron County. Estm. 10,000 bu. dry corn. Trucking available.

Jack Dillon, Corunna, Shiawassee County. Estm. 20,000 bu. dry corn. Trucking available.

David Gross, Midland, Midland County. Estm. 4,000 bu. Trucking available.

Robert Richfield, Hillsdale County. Estm. 80,000 bu. Call 517-742-2950. Trucking available.

Tom Todd, Crosswell, Sanilac County. Estm. 8,000 bu. dry corn. Trucking available.


Jeff Knoblauch, Blissfield, Lenawee County. Estm. 80,000 bu. Feed in -7,000 d.w. Call 517-726-5027. Trucking available.


David Vanden Bunte, Martin, Alger County. Estm. 18,000 bu. Call 517-788-1017 anytime. Trucking available.
Horning Named 1992 Michigan DHIA Progressive Dairyman of the Year

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.

Woods Named MSU 1992 Dairy Farmer of the Year Award

Michigan Farm Bureau President Maynard Hogberg presented 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.

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).

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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."