

MICHIGAN FARM NEWS



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Sandoz Acquisition of Gerber Positive for Michigan Farmers

Plans by Sandoz Ltd. to acquire the Gerber Products Company, based in Fremont, should be good news for Michigan farmers, with no major change expected currently, and growth anticipated in the future, according to Gerber's agricultural purchasing manager, Pat Chase.

"At this point, everything will continue as they have been. We'll be buying a lot of Michigan produce," Chase said. "The transaction should be a real positive, since Sandoz is already quite active in the food and nutrition business."

Gerber's Fremont facility annually purchases 50,000 to 60,000 tons of fresh produce from within the state of Michigan. The company contracts most of its vegetables from producers in Montcalm, Newaygo and Oceana Counties, based on location, soil type and irrigation capabilities.

Gerber tends to be an even bigger player in fruit purchases which are more evenly spread throughout western Michigan. According to Chase, the company purchases most of its fruit products on the open market either at harvest, or as needed. Apples, says Chase, are a big ticket item, since the Fremont plant produces most of the apple products for Gerber.

In addition to harvest purchases of apples, Gerber also makes year-round buys for apples out of cold storage facilities. Gerber Products is currently one of the top three processors in the state making apple juice and applesauce for the Gerber baby food product line, according to Tom Butler, manager of the Apple Division of the Michigan Agricultural Cooperative Marketing Association.



"Another significant factor, in addition to quantities of apples purchased, is the fact that Gerber is a cash buyer, and the state's apple industry needs all of the cash buyers we can get," said Butler. "We just hope, in the final analysis, that Gerber will be bigger and stronger than they were before this takeover, because it could be real good news for Michigan producers."

Besides the Fremont facility, Gerber has two other U.S. processing facilities, located in North Carolina and Arkansas. All three plants are capable of processing the entire Gerber

product line, with few exceptions, according to Chase.

Apple products, based on availability, are predominantly Michigan based as are all of the pea products, while sweet potato products are processed at the southern plants. Produce will also be trucked in, such as carrots from Texas and California, during Michigan's off-season.

In a company press release, Sandoz said it expects the approval process for the Gerber acquisition to be completed within three to six months. Alfred Piergallini, Gerber chairman,

Sandoz Ltd. Profile:	
Headquarters:	Basel, Switzerland
Annual Sales (1993):	\$10 billion
Net Income:	\$1.1 billion
Cash Flow:	\$1.8 billion
R & D Spending:	\$1.2 billion
Employees:	52,000
Businesses:	
Pharmaceutical Division	- \$5.0 billion in annual sales
Nutrition Division	- \$1.2 billion in annual sales
Seed Division	- \$0.7 billion in annual sales
Develops, produces and markets seed for field crops, vegetables and flowers.	
Chemicals Division	- \$1.7 billion in annual sales
Agro Division	- \$0.9 billion in annual sales.
(Crop protection products such as herbicides, fungicides and insecticides.)	

president and CEO, says the transaction provides Gerber "dynamic growth" opportunities in the international market, thanks to the necessary infrastructure already in place through Sandoz.

Gerber had sales of \$1.2 billion in fiscal 1994, with an operating income of \$212 million and a net income of \$127 million. Nearly 89 percent of the company's sales were domestic, with a 70 percent market share. Gerber employs 12,000 people worldwide.

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Michigan BST Labeling Legislation Introduced in Both Houses

Bills have been introduced in both the House and the Senate calling for labeling of milk and dairy products which are produced by cows not treated with BST, according to MFB legislative counsel Ron Nelson.

"Senator DiNello (R-East Detroit) has introduced a five-bill package which would require labeling on all products - milk, butter, cheese, powder, ice cream - stating the product was produced by cows not treated with BST," explained Nelson.

A similar five-bill package was later introduced in the House by Reps. Gnodtke, Randall, Gernaat and McManus that would also provide for labeling on all dairy products. As of press time, those bills were referred to the House Agriculture Committee with no hearing scheduled on the bills.

Farm Bureau is opposed to state labeling since milk flows across state lines and is commingled from a variety of sources. In addition, there is no test nor regulatory or enforcement mechanism to ensure the milk is meeting the standards as stated on the label says Nelson.

"There are no documented health implications for cattle or for humans who consume dairy products, because the milk produced from cows treated with BST is identical to the milk from untreated cows," said Nelson. "Farm Bureau opposes state legislation dealing with labeling of milk and dairy products produced by cows treated with BST."

Nelson said MFB will continue to monitor the legislation in both houses. The legislation may very well hit a snag in regard to federal

regulations which require that labeling claims be provable by testing, which isn't possible with BST treated milk, since all milk contains the protein BST.

MFB dairy specialist Kevin Kirk, says the legislation could also cause the dairy industry unnecessary bad publicity at a time when consumer perception and consumption is critical.

"Michigan dairy farmers simply can't afford the bad press over arguments about management tools, such as BST," said Kirk. "Now, more than ever, dairy farmers need to be working together, promoting their dairy products for what they are - safe, wholesome and nutritious. Legislative labeling requirements will ultimately raise false safety fears and reduce consumption."

A Picture of Pesticide Exposure

Protective Gear Part of MSU Ag Expo Field Demonstration

As a part of the MSU Ag Expo field demonstrations, participants will be able to see the latest in protective gear for pesticide application during one of the stops on the field tour. The picture at right was one of many taken during a pesticide exposure study conducted by the University of Illinois, in cooperation with American Cyanamid and Successful Farming Magazine.

Using "blank" insecticide granules with a fluorescent tracer mixed in, this photo shows the level of exposure and the importance of protective clothing. Notice the contamination and clean areas on the neck and face where the applicator's goggles and respirator were worn, protecting the applicator's eyes, nose, and mouth.

This was the level of exposure from filling just eight insecticide boxes using bags as opposed to a closed handling system. For more photos and details, see the Ag Expo Extra in this issue.

Photo: University of Illinois



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P.O. Box 30980, 7373 W. Saginaw Hwy., Lansing, MI 48909

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BST Labeling - A Mandate for False Advertising

At first glance, permitting milk to be labeled as "free of bovine somatotropin (BST)" sounds like an innocent-enough proposal. After all, who could be against giving consumers more information, and choice, about the food products they buy?

Farm Bureau agrees that consumers should be able to purchase the food products they desire. That's the free market at work. Agricultural producers thrive when they follow the market signals sent by their customers. Our highly diversified farm industry here in Michigan prospers by presenting food shoppers with many high quality, wholesome food choices.

But permitting milk to be labeled as "free of bovine somatotropin (BST)," as some groups have demanded, would present consumers with a false and misleading choice. It's false because milk produced by cows treated with BST is absolutely as safe and wholesome as milk from cows not treated with BST, and misleading because there is no way to verify claims or to test whether or not milk is produced with BST.

The Food and Drug Administration, National Institute of Health, Congressional Office of Technology Assessment, American Medical Association, American Dietetic Association and American Academy of Family Physicians, agree that milk and meat from BST-treated cows is safe and essentially the same as milk and meat from untreated cows. Regulatory agencies from 20 other nations, including the United Kingdom, France, Germany and Canada, agree.

There is little value in labeling milk as "free of BST," because there is literally no way to tell the difference between milk from supplemented and non-supplemented cows. The milk is the same in appearance, taste, nutrition, composition and safety. A label would imply a hazard where there is none, because using BST on a cow is similar to using commercial fertilizer on a crop. BST is a production tool that a farmer uses to produce a safe and wholesome product, nothing more.

Furthermore, labeling dairy products from BST-treated cows would trivialize real health and nutrition information. "Warning" consumers about a safe product or establishing a difference where there is none diminishes the effectiveness of truly informative labels.

In 1940, each American farmer fed about 19 people. Today, each farmer produces enough food and fiber to feed nearly 130 people at home and abroad. Well managed technological innovation has been the driving force behind this agricultural success story.

Biotechnology products are poised to further advance agricultural innovation. These technologies have the potential to boost productivity, enhance the environment and improve food safety and quality. Let's not short circuit this process by mandating false and misleading labeling requirements for safe products.

Jack Laurie
Jack Laurie, President
Michigan Farm Bureau

A Huge Market for Soy Ink?

U.S. legislators are considering the merits of ink made from vegetable oil, which would be required for use in all government printing, "whenever technically feasible," in the proposed Vegetable Ink Act (S. 716, H.R. 1595), sponsored by Sen. Paul Wellstone (D-Minn.) and Rep. Richard Durbin (D-Ill.).

The use of soybean-based ink for printing began in the newspaper industry in 1985 as a response to the volatility of petroleum prices during this period, according to Larry Dietrich, president of the American Soybean Association. The Department of Agriculture already uses soy ink for all of its printing. Use of vegetable ink will add little, if any, cost to government printing, according to the Government Printing Office (GPO), the largest provider of federal printing services. GPO supports the bill, said Public Printer Michael DiMario, according to the *Congressional Monitor*.

Genetically Altered Tomato Now on Sale

A new genetically-altered tomato dubbed "Flavr-Savr" by its developer, Calgene Fresh Inc., is now available in about 70 stores around the country. First to market the new tomato was a store in Northbrook, Ill. The proprietor said customers who tasted the tomato liked it, but may not like the price. The Carrot Top Market listed the Flavr-Savr at \$2.79 a pound, more than double that of varieties whose genes have not been tampered with.

Calgene, which said it spent eight years and \$20 million developing the tomato, hopes consumers will be willing to pay the extra price to get a more flavorful, better-keeping tomato, especially between October and June. Quality of tomatoes has traditionally dropped during that period and sales decline an average of 30 percent. Availability is limited now because the Flavr-Savr has been grown only on small experimental plots in California, Florida and Mexico, but it is expected to be more generally available by 1995.

U.S. Ag Exports Rose in March

U.S. agricultural exports in March totaled \$3.9 billion in March, up 1 percent from the same month a year ago. Bulk commodity exports, at \$1.7 billion, were off 7 percent from March 1993 sales, mainly because of lower shipments of wheat, soybeans and tobacco, according to the report from the Foreign Agricultural Service.

Exports of intermediate products remained virtually unchanged from a year earlier at \$836 million for the month. Gains in hides and skins, sugar and sweeteners, live animals and animal fats were offset by declines for soybean meal, vegetable oils and planting seeds. Double digit increases in sales occurred for chilled and frozen meats, poultry, dairy products, eggs and produce, tree nuts, wine and beer and pet foods, the report said. Combined U.S. exports of agricultural, fish, and wood products for the first six months of this fiscal year totaled \$27.7 billion, nearly matching the 1993 pace which ended in a record-high \$52.7 billion for the year.

In Brief...

USDA Announces Flex Acreage Plans

The USDA says farmers will plant 4.7 million acres of "flex" acreage to soybeans this year, 428,191 acres to minor oilseeds and 93,846 acres to other "non-program" crops, according to a *United Press International* story.

"Flex" acres are a provision of the federal acreage reduction program. Producers have the option to plant specific crops -- other than the crop covered by the reduction program -- on up to 25 percent of their acres enrolled in the program. For example, a farmer reducing cotton acreage by 100 acres could plant 25 of those acres to soybeans.

Zero Set-Aside Proposed for 1995 Wheat Crop

As expected, the USDA said in a preliminary announcement that it will not require wheat farmers to idle any of their base acres from production of wheat in 1995. The USDA must make its final announcement of the set-aside for next year's crop by July 31, 1994.

If the recommendations of farm groups, including the American Farm Bureau, are followed, farmers will be allowed to plant their entire base wheat acreage next year. The zero set-aside option provides the best prospect for farm income from the 1995 wheat crop, according to Farm Bureau, the National Association of Wheat Growers, and other groups.

USDA did not require any wheat acres to be idled for the 1993 and 1994 crops, and even with zero set-aside in 1994, wheat planting is expected to be down about 2 percent from 1993, according to Kendall Keith, president of the National Grain and Feed Association.

EPA Expected to Decide on Ethanol Rule June 15

The EPA was expected to rule June 15 on its mandate that 30 percent of fuel in the nation's smoggiest cities must contain ethanol. The EPA may mandate a 15 percent market share for ethanol in 1995 and phase in the 30 percent share by 1996, taking the more gradual approach to avoid possible difficulty in ethanol supply. EPA's Richard Wilson said, "We want to do this in a way that will not be disruptive to the public."

Ethanol opponents have argued the government should not reserve any market share for any particular type of fuel. The American Petroleum Institute may back a "legal challenge to the rule," reports *GREENWIRE*, an environmental newsletter.

The "Rest of the Story" on Ethanol

Paul Harvey, the widely traveled, outspoken, believable columnist-commentator, did a recent column comparing methanol and ethanol, the two additives locked in a battle for approval by the Environmental Protection Agency as a cleaner burning fuel. Harvey says methanol, made from petroleum, is highly toxic if ingested or absorbed through the skin. It can be explosive if tightly confined. And it does nothing to help our balance of trade, since it is made from the same oil sold to us by the oil cartel of the Middle East.

Ethanol, on the other hand, is manufactured in America from corn produced by American farmers. "In the mid-1800s, Americans lit their homes and businesses with it. Henry Ford built the Model-T to run on it. No worries about accidental spills. No fears over an infrequent sniff. And little danger of fires, explosions and death," extols Harvey. "So, Americans," the columnist asks, "what'll it be? Methanol with an 'm' or ethanol with an 'e'?"

Low Beef Prices Tone Farm Receipts Down

A six-year low in market prices for steers and heifers set a lower tone for farm receipts and helped cause a 1.4 percent drop in prices received by farmers for their commodities sold in May, the USDA reports. Prices were also lower in the month for milk, eggs and corn, more than offsetting higher prices for tomatoes, broilers, celery and peaches.

The monthly drop in beef cattle prices brought the average to \$67.70 per cwt., down \$4.30 from April and \$9.40 lower than a year ago. The USDA monthly report said the average of \$70.30 for steers and heifers, the chief slaughter animals, was the lowest monthly price since August 1988. The report said dry conditions in the Southeast and Southern Plains caused farmers to sell more animals rather than feed them, which added to heavy marketings from the glut of cattle in feedlots where the bulk of cattle are fattened for market.

Farm Bureau Opposed to Wetlands Conversion for Flood Control

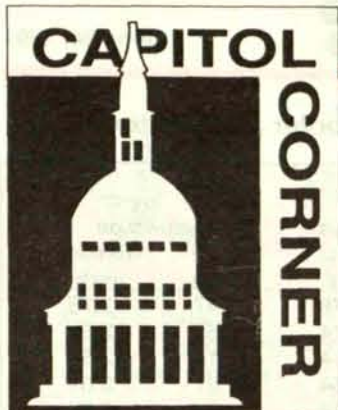
A draft report released by the Army Corps of Engineers calls for a drastic change in federal flood control policies, according to the *Reuters News Service*. The report includes a recommendation for the federal government to convert farms and towns into wetlands, instead of building new flood-control structures.

Experts are asking the government to relocate businesses and farms to higher ground and restore the natural flood cycles, according to a *New York Times* story. Farm Bureau, convinced that the nation can ill afford to turn its back on highly-productive river bottom land, continues to be in favor of rebuilding flood-control levees ravaged by last year's flood.

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Editorial: Dennis Rudat, Editor and Business Manager. Staff Contributors: Mike Rogers; Connie Lawson; Donna Wilber; Henry Huisjen.

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Environmental Law Codification

MFB POSITION
Farm Bureau is reviewing the proposed changes to ensure they are policy neutral and is assessing the proposed amendments for their impacts on Farm Bureau members.

MFB CONTACT
Vicki Pontz, Ext. 2046

Senate Bill 927 codifies all of Michigan's natural resource and environmental laws. The bill would reorganize the laws into a more workable and rational unit from a procedural standpoint and form a user-friendly environmental code for the state of Michigan without impacting existing environmental policies.

Another bill, S.B. 247 (H-3), includes several laws of interest to agriculture that will be included in the code, such as the Pesticide Control Act, Wetlands Protection Act, etc.

The bill has been reported out of the House Conservation Committee and awaits action on the House floor. Several amendments will likely be attempted on the House floor including amendments to reinstate the Water Resources Commission and the Air Pollution Control Commission that were decommissioned by executive order earlier this year.

Fertilizer Act Amendments

MFB POSITION
MFB supports S.B. 688 (S-1) which includes the Farm Bureau amendments, but opposes the amendments offered in committee that would authorize MDA to regulate the use of nitrogen fertilizers on farms.

MFB CONTACT
Vicki Pontz, Ext. 2046

S.B. 688, sponsored by Sen. George McManus, (R-Traverse City), amends the Michigan Fertilizer Act to provide for the protection of groundwater in compliance with the Groundwater and Freshwater Protection Act. Michigan Farm Bureau has offered language to amend S.B. 688 that would require all possible sources of nitrates be included in programs to abate nitrate contamination.

The bill would establish regional stewardship teams to address nitrate contamination in the areas of greatest concern on a local level. The regional teams would be eligible to receive funds from the Groundwater and Freshwater Protection Fund.

Language giving the Michigan Department of Agriculture authority to regulate the use of nitrogen fertilizers on farms was offered in the House Agriculture and Forestry Committee. The amendments were defeated in committee and the bill was reported to the House floor. Action is expected on the bill on the House floor soon.

MFB policy states that programs to abate nitrate contamination in groundwater should address all possible sources of nitrates including all uses of nitrogen fertilizers, animal manure, septic systems, urban runoff, nitrate occurring naturally, etc. Farm Bureau policy recommends regional groundwater stewardship teams be established to address nitrogen contamination in the areas of greatest concern on a local level.

Coastal Zone Management Act Reauthorization Amendments - Michigan Farm Bureau Represented on DNR Advisory Panel

MFB POSITION
MFB is serving on a DNR advisory committee and an agricultural work group to review existing laws that meet the CZMA Nonpoint Source Program requirements.

MFB CONTACT
Vicki Pontz, Ext. 2046

In 1990, Congress passed amendments to the Coastal Zone Management Act (CZMA). Section 6217 requires states to establish coastal nonpoint programs which must be approved by both the National Oceanic and Atmospheric Administration (NOAA) and the Environmental Protection Agency (EPA).

Beginning in fiscal year 1996, states that fail to submit an approvable coastal nonpoint program to NOAA and EPA face statutory reductions in federal funds awarded under both section 306 of the CZMA and section 319 of the Clean Water Act (CWA), which are programs to address nonpoint source pollution voluntarily with cost share assistance.

The agricultural best management measures include erosion and sediment control measures, management measures for facility wastewater and run-off from confined animal facilities, nutrient management, pesticide measures, grazing management, and irrigation water management.

DNR staff has formed an advisory committee for overall policy discussions and several work groups to address various sources of nonpoint source pollution.

Michigan Farm Bureau has been asked to serve on the overall advisory committee and on the agricultural work group, and is working with several subgroups. The work groups have been preparing a document that reviews all existing laws and regulations that currently exist in Michigan that would help meet the requirements of the CZMA Nonpoint Source Program.

The Michigan Department of Natural Resources is scheduled for an initial threshold review with EPA and NOAA this July.

Equine Liability

MFB POSITION
MFB supports the bill.

MFB CONTACT
Ron Nelson, Ext. 2043

Rep. Llewellyn (R-Fremont) has introduced H.B. 5006 to limit the liability for equine owners. Although the bill doesn't provide liability exemption, it does limit the liability under certain circumstances unless there was negligence or the users were not advised of the potential risk.

P.A. 232 Amendments

MFB POSITION
Farm Bureau no longer opposes the bill with the substitutes. The bill is on the House calendar waiting for debate.

MFB CONTACT
Ron Nelson, Ext. 2043

H.B. 5393, introduced by Rep. Gnodtke (R-Sawyer), would revise several sections of P.A. 232, the Agricultural Commodities Marketing Act. The revisions include:

- Revising the \$800 qualification floor.
- Provide for the administration of assessment collections which would mandate that the Department of Agriculture follow up on complaints, investigate and carry out court action if necessary.
- Provide an unlimited cap on borrowing money and unlimited per diem for committee members.

MFB was successful in having an amendment attached that dropped the 10 percent or 100 grower signature requirement to initiate a referendum. MFB policy specifically supports the 25 percent or 200 minimum signature requirement to initiate a referendum for any changes to P.A. 232. A second amendment was also attached that includes both nursery and aquaculture to allow them to utilize P.A. 232.

Expanded Bank Authority to Insurance Sales Opposed

MFB POSITION
Farm Bureau supported the measure to limit bank expansion into insurance sales.

MFB CONTACT
Darcy Cypher, Ext. 2048

The Michigan House recently voted 80 - 25 to prohibit banks from expanding into new insurance services. The legislation was amended to include a sunset provision making the new law expire on Oct. 1, 1995. Sunset provisions generally receive more legislative review before the statute reaches its sunset date.

Present statute has for decades been interpreted to limit banks to credit insurance sales where loans are paid in full upon death. A recent court ruling had created questions about banking authorities.

Business and consumer groups expressed concern that banking customers would feel obligated to purchase insurance products from their banker, especially when a loan is in question.

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4 Weather

30-Day Forecast - Normal Temperatures and Precip.; 90-Day Forecast Cooler and Wetter

Following a wet period early in the month, cool northwesterly flow aloft brought drier than normal weather to nearly all of the state for the remainder of the month. By early June, precipitation deficits for the season since April 1 had reached 3 inches or more, especially in southern sections of the state.

The dryness allowed spring planting to proceed rapidly to completion, but caused problems with uneven emergence and herbicide activation.

While mean temperatures for the month were near to slightly below normals, there were several intrusions of cool, dry, Canadian-origin air that brought frost and/or freezing temperatures to many areas long past the normal last dates of these events as defined by climatological records.

The outlook for the coming weeks is for a slow transition to a different upper air flow pattern. While the current ridging pattern over the middle of North America and associated dryness in the Great Lakes Region is expected to continue for the next week or two, the new National Weather Service

5/1/94 to 5/31/94	Temperature		Growing Degree Days		Precipitation	
	Observed Mean	Dev. From Normal	Actual Accum.	Normal Accum.	Actual (inch.)	Normal (inch)
Alpena	53.5	+ 1.4	307	276	1.47	2.76
Bad Axe	53.0	- 2.5	309	374	2.59	2.63
Detroit	59.3	+ 0.7	508	414	1.18	2.85
Escanaba	49.4	- 1.0	113	164	1.67	3.01
Flint	55.6	- 0.9	388	414	.74	2.85
Grand Rapids	56.6	- 1.0	424	441	2.63	3.01
Houghton	51.7	+ 2.3	197	252	2.46	3.37
Houghton Lake	55.6	+ 1.1	349	276	1.03	2.76
Jackson	56.0	- 2.6	416	413	1.17	2.92
Lansing	55.5	- 1.9	408	431	1.10	2.92
Marquette	51.3	+ 1.0	229	252	2.29	3.37
Muskegon	53.7	- 2.5	286	356	1.26	2.67
Pellston	53.3	+ 1.8	268	297	1.48	2.61
Saginaw	56.7	- 0.2	383	374	1.90	2.63
Sault Ste. Marie	50.1	+ 0.5	171	164	2.56	3.01
South Bend	58.0	- 1.1	502	441	0.79	3.01
Traverse City	54.6	+ 1.5	309	297	1.34	2.61
Vestaburg	54.5	- 2.4	374	381	2.05	2.79

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

30-day outlook for June calls for a return to near normal temperatures and precipitation. Further ahead, the latest 90-day outlook for the traditional June-August summer period is for near to below normal temperatures and near to above normal precipitation.

Dry Conditions a Growing Concern

Michigan

Farmers across the state were looking for much needed rain to activate herbicides and germinate late planted crops, according to the Michigan Ag Statistics Service. As of June 5, moisture conditions were rated 85 percent short and 15 percent adequate.

In addition to sporadic germination and weak chemical activity, hay tonnage was also reportedly suffering due to lack of moisture. Planting was basically complete for most major crops. Nearly 10 percent of the wheat crop was reportedly abandoned for various reasons.

Fruit: Dry weather was also impacting fruit tree plantings, with active irrigation in many locations reported. Disease and insect infestations were low, with some hail damage reported near Fenton, just south of Flint.

Vegetables: Dry conditions were also prompting irrigation of new plantings and, in many cases, in fields prior to planting. High winds were also a problem. Asparagus harvest was at 60 percent complete, well behind the five-year average of 80 percent.

Ohio

Dry weather was starting to leave its mark in Ohio as well, with moisture conditions rated 61 percent short and 39 percent adequate. Herbicide activity was slow, and lack of rain was prompting talk of needed replanting, according to the Ohio Ag Statistics Service.

Corn was rated 9 percent excellent, 49 percent good, 33 percent fair, 9 percent poor or very poor. Soybeans were rated 7 percent excellent, 48 percent good, 37 percent fair, and 8 percent poor or very poor. Wheat was reportedly doing well despite the dry weather, and was 88 percent headed compared to 75 percent on average.

Indiana

Planting was completed in most parts of the state, with a lack of moisture reported as a concern in most areas, according to the Indiana Ag Statistics Service. Moisture was rated 78 percent short and 22 percent adequate. Northern Indiana was worse off than the southern portions, with soil moisture rated 90 percent short.

Corn was rated 40 percent good, 54 percent fair and 6 percent poor, with several reports of

replanting due to poor emergence and germination. Soybeans were rated 35 percent good, 59 percent fair, and 6 percent poor. Wheat was rated 8 percent excellent, 66 percent good, 24 percent fair, and 2 percent poor.

Illinois

Northern portions of the state were suffering from dry weather, while other portions of the state had just received much needed rain. Moisture levels were ranked 45 percent short, 52 percent adequate, and 3 percent surplus statewide, while northern portions were ranked 90 percent short.

Corn was rated 4 percent excellent, 72 percent good, and 24 percent fair. Serious cutworm damage had prompted considerable replanting in southern portions of the state. Wheat was rated 1 percent excellent, 58 percent good, 36 percent fair, and 5 percent poor or very poor, with army worm outbreaks reported.

Iowa

What a difference a year can make! Many areas of the state were grateful for a 1-1/4" rainfall they had just received, according to the Iowa Ag Statistics Service. Showers were very spotty, resulting in uneven stands of corn and beans. Moisture was rated 37 percent short, 55 percent adequate, and 8 percent surplus.

Corn height averaged 8 inches, with the crop rated 8 percent excellent, 77 percent good and 15 percent fair. Soybeans were 9 percent excellent, 75 percent good, and 16 percent fair. Wheat was 19 percent excellent, 67 percent good, and 14 percent fair.

T - Temp.	6/15.....	6/30	6/15.....	8/31
P - Precip.	T.....	P	T.....	P
Michigan	A.....	A	B.....	A
W. Corn Belt	N.....	N	B.....	A/N
E. Corn Belt	N.....	N/B	N.....	N
Wint. Wheat Belt	N.....	N	N.....	A/N
Spr. Wheat Belt	A.....	N	B/N.....	N
Pac. NW Wheat	N.....	N	N.....	N
Delta	N/A.....	N	N.....	N
Southeast	A.....	B	A.....	N/B
San Joaquin	N.....	N	A.....	N

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



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

Station	City	Frequency	Morning Farm	Noon Farm
WABJ	Adrian	1490	5:45 am	11:50 am
WATZ	Alpena	1450	5:30 am	11:30 am
WTKA	Ann Arbor	1050	6:05 am	12:05 pm
WLEW	Bad Axe	1340	6:30 am	12:50 pm
WHFB	Benton Harbor			12:30 pm
WKYO	Caro	1360	6:15 am	12:15 pm
WKJF	Cadillac	1370	5:55 am	11:20 am
WTVB	Coldwater	1590	5:45 am	12:20 pm
WDOW	Dowagiac	1440	6:05 am	12:15 pm
WGHN	Grand Haven	1370/92.1	5:45 am	12:15 pm
WPLB	Greenville	1380	6:15 am	11:45am
WBCH	Hastings	1220	6:15 am	12:30 pm
WCSR	Hillsdale	1340	6:45 am	12:45 pm
WHTC	Holland	1450		12:15 pm
WKZO	Kalamazoo	590	5:15 am	
WLSP	Lapeer	1530	7:20 am	11:50 am
WOAP	Owosso	1080	6:15 am	12:30 pm
WHAK	Rogers City	960		12:15 pm
WSJ	St. Johns	1580	6:15 am	12:15 pm
WMLM	St. Louis	1540	6:05 am	12:20 pm
WSGW	Saginaw	790	5:55 am	12:20 pm
WMIC	Sandusky	660	6:15 am	12:45 pm
WCSY	South Haven	940		12:15 pm
WKJC	Tawas City	104.7		12:45 pm
WLKM	Three Rivers	1510/95.9	6:15 am	12:15 pm
WTCM	Traverse City	580	5:55 am	11:20 am

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

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'95 FARM BILL

David B. Schweikhardt
and Sandra S. Batie
Department of Agricultural Economics
Michigan State University

Commodity programs will again be at the center of the debate as consideration of the 1995 farm bill begins. Three questions will dominate this debate: How can USDA's declining budget resources be used to stabilize farmers' income? How can farm programs help farmers respond to market signals? And how can farm programs help accomplish environmental objectives?

A wide range of alternatives have already been proposed, and more will be forthcoming as 1995 approaches. Each of these proposals would affect Michigan farmers, regardless of whether they participate in existing farm programs.

Setting the Stage

Q. How well has the 1990 farm bill performed?

A. The debate over the Food, Agriculture, Conservation and Trade Act of 1990 was dominated by budget concerns. The budget cost of the 1985 farm bill had been greater than expected and, by 1990, Congress' main objective was to reduce the cost of farm programs while providing farmers with greater flexibility to respond to market signals.

The means of achieving these objectives was the introduction of "flex acreage," which eliminated deficiency payments on 15 percent of each farmer's base acreage. Farmers were permitted to plant other crops on this portion of their base with no reduction in their program base. Flex acres provided greater opportunities to use crop rotations without losing program base, which was applauded by the environmental community.

While the cost of farm programs under the 1990 bill is less than in the mid-1980s, the average budget cost since 1991 is actually greater than the cost of programs during 1988-90. Farm program expenditures for 1988-90 averaged \$10 billion annually, while the cost of farm programs is expected to average \$11 billion for the 1991-95 period (Figure 1).

Much of this increase is the result of increased expenditures on export subsidies and disaster assistance programs. At the same time, farmers, environmental organizations, and members of Congress are all questioning whether the existing farm program should undergo only minor modification or whether these programs should be restructured to accomplish a broader range of objectives.

Option 1 -- Modify Existing Programs

If the agriculture committees in Congress are forced to reduce farm program spending, the first alternative would be to modify the existing farm programs. The most likely alternative would be to increase flex acres beyond the current 15 percent of each farmer's base.

Analysis by the Congressional Budget Office indicates that increasing flex acres to 25 percent would reduce the annual cost of farm programs by \$900 million. This would result in lower deficiency payments for farmers and provide greater flexibility in planting decisions.

A second alternative would be to eliminate the Acreage Reduction Program (ARP) setaside requirements contained in the 1990 farm bill. The ARP provisions specify the portion of each farmer's base acreage that must be idled in order to receive deficiency payments.

The ARP requirements for all program crops decreased following the introduction of flex acreage in the 1990 bill. Since flex acres receive no deficiency payments, USDA does not have to use large setasides to reduce budget costs.

Consequently, ARP requirements have been reduced in recent years, giving rise to suggestions that the ARP might be eliminated entirely or replaced with a "flexible flex" provision that would allow the USDA to announce an annual flex requirement rather than announcing both flex acres and an ARP requirement.

Which Direction for Commodity Programs?

5

For example, under the "flexible flex" alternative, the USDA might announce that the flex acreage would be 25 percent of each farmer's base rather than requiring a 15 percent flex and a 10 percent ARP setaside. This alternative could allow greater flexibility for farmers and continue to provide USDA with a tool for achieving annual budget savings.

Another alternative is the elimination of crop program bases and the "decoupling" of program payments from the program base. This alternative, previously considered in both 1985 and 1990, would allow farmers to continue receiving deficiency payments for the existing program crop, but would allow program participants to plant any crop of their choice on their base acres.

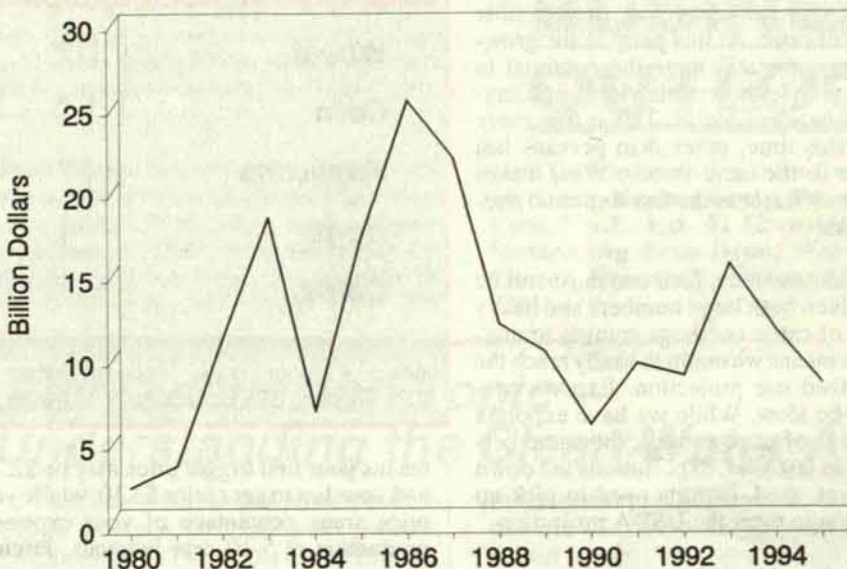
This approach would give farmers the maximum freedom to modify their production plans, but would probably not result in significant budget savings unless it was combined with a reduction in the number of acres on which payments were made.

Other Farm Program Options
Option 2 - Revenue Protection
see page 8
Option 3 - Green Payment Programs
see page 8
Common Program Questions
see page 8

Questions about the equity of such a program would arise if farmers with a program base receive program payments, while farmers pro-

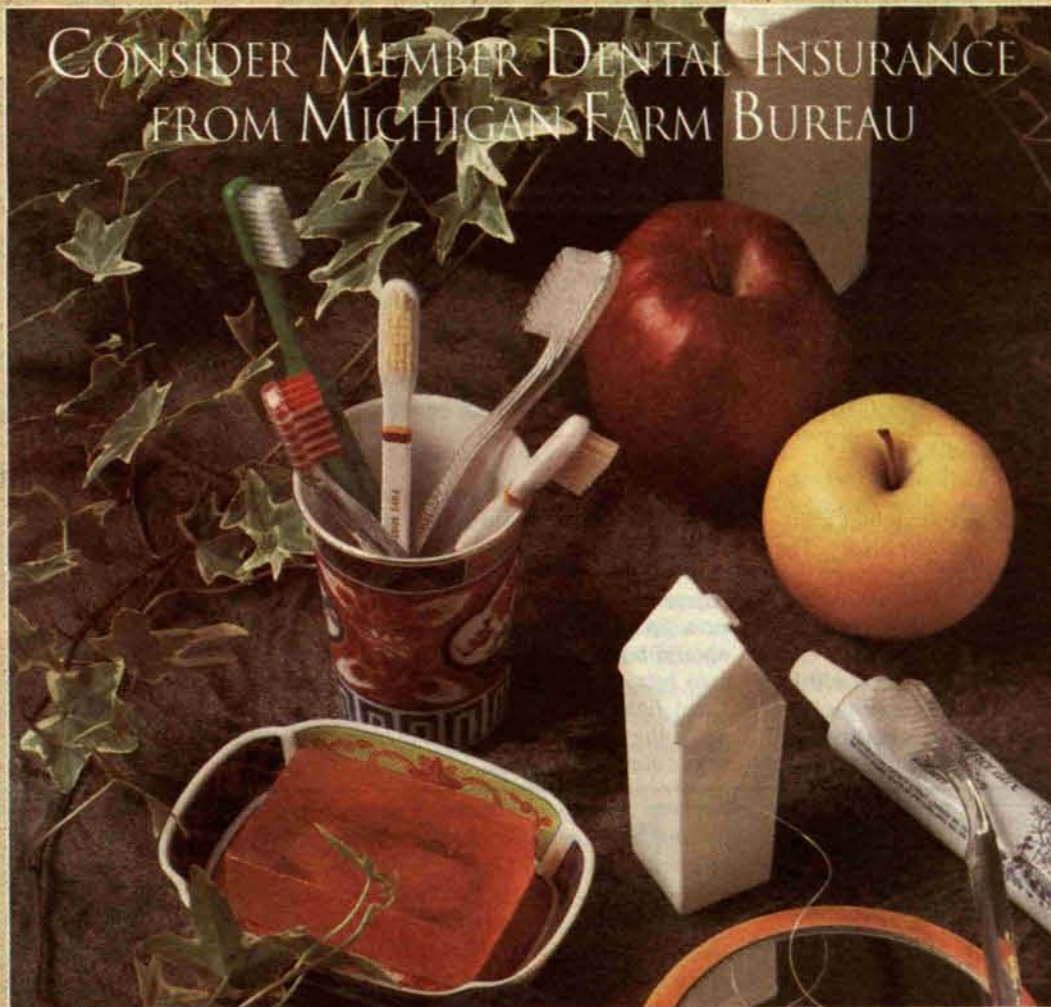
ducing the same crop without a program base did not receive payments.

Figure 1. Cost of USDA Price Support, Deficiency Payment, and Export Subsidy Programs



Source: USDA 1994-95 Estimated

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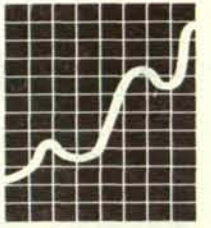
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Market Outlook...



FARM BUSINESS OUTLOOK

CORN

As you look at the price trend charts, you probably are wondering how I can project CORN? It's called being in a weather market with very low carryover, or very little margin for error. At this point in the growing season, we still have the potential to have record yields, terrible yields, and anywhere in between yields. This is true every year at this time, other than perhaps last year due to the early floods. What makes this year different is the low expected ending stocks.

On the demand side, feed use must still be heavy given both large numbers and heavy weights of cattle and hogs coming to market. This means we ought to easily reach the USDA feed use projection. Exports continue to be slow. While we have exported 81 percent of expectations, the same percentage as last year, expectations are down 25 percent. And, exports need to pick up some even to meet the USDA projection.

Because there is no way to forecast the weather, there is no way to perfectly forecast prices. You have to set some pricing goals, and when and if the market reaches them, go ahead and price. Two pieces of advice: one is don't set your lowest price goal too high so you don't price any; and two, don't set your highest price goal too low so you miss all of the potential.

For example, let's say your overall goal is to average \$2.45 on new crop corn. This

Seasonal Commodity Price Trends

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

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

means your first trigger price may be \$2.35 and your last trigger price \$3.10, where you price some percentage of your expected production at 5-10 cent intervals. Pricing goals will vary between producers due to different financial situations.

Strategy: The old crop basis is tight. Consider moving any remaining corn in storage to a basis contract or a MPC if you want to stay in the market. The new crop basis being offered is on the wide side. Consider a HTA versus a forward contract. This means you may have to base your trigger prices on futures versus cash and you must have a handle on your local basis.

year which ended May 31 hardly reached projections. And that was down almost 10 percent from the previous year. The 1994-95 year doesn't look any better. USDA projects wheat exports will be down another 4 percent and export sales have been running very slow.

If cash forward contracts reach the \$3.15-\$3.25 level, let's not plan on storing it all.

far from what fundamentals would suggest given the larger supplies; slaughter weights are up somewhat as well.

There is not a whole lot you can do right now in the forward pricing arena. We should have some seasonal price increase into July. While you won't want to market them light, given this upwards trend, the last thing we need are a bunch of over-ready pigs coming to market.

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

SOYBEANS

As I say in about every issue lately, the soybean situation is much like that of corn. The whole growing season is in front of us and projected ending stocks are tight. Plantings were very timely for the country as a whole and subsoil moisture as a whole was decent. The question is, will we get the timely rains we now need? If the corn and soybean belt has not received decent rains since the first of June, by now we are probably looking at some pricing opportunities.

On the use side, exports continue to be slow and will have to pick up their pace in order to reach USDA projections which are expected to be down 23 percent from last year. While crush is running a little behind last year, it is still doing well considering the

CATTLE

The May 1 USDA monthly 7-State Cattle-On-Feed Report, released May 23, showed cattle on feed 3 percent above a year ago, the largest on feed number since 1973. Placements in April were up 7 percent from 1993 and 1 percent from 1992. April marketings were up 2 percent.

What this is saying is that we have a lot of cattle coming for a while and this is not likely to change much until late summer, and that may not be much of a change.

A couple of other problems in the cattle market is the heavy weights coming in (50 pounds over a year ago), the larger than

EGGS

Henry Larzelere, Dept. of Agricultural Economics, MSU

Egg prices at the end of May were about 5 cents a dozen below last year. Feed ingredient prices were nearly 2 cents per dozen eggs above a year ago.

June egg prices will likely be similar to the May average. Wholesale prices in New York for Grade A large white eggs in cartons will probably average in the low 70s during the July, August and September quarter.

The number of layers on farms on May 1 was up 2 percent from a year earlier. Table egg production in April was also up 2 per-

lower supplies and the resulting higher prices.

Strategy: The old crop soybean basis levels seem fairly strong. Finish up your old crop pricing on the next strong rally. Don't pay storage in any form including lost interest. The new crop soybean basis seems very weak. Price the futures when you like them, but don't price the basis at this time, unless they have tightened up. You can use HTA's or put options to get this job done.

expected number of hogs, and the continuing increase in broiler production.

Is this enough to explain fed steer prices dropping off \$10 per cwt. in such a short time? No, in a fundamental sense, it is not. They could explain around 50-65 percent of the lower than expected prices.

The remaining drop-off is hard to explain. Part of it has to do with the lower steer prices not being transferred to lower beef prices for the consumer. Packer and retail margins are excellent. What we need, at a minimum, is competitive pricing at the retail level, and there usually is a lag time, and we could use some lighter cattle.

cent from April 1993. A month earlier, these percentages were both up 3 percent from a year ago.

There are further signs of moderation in production. The egg-type chick hatch in April was down 4 percent from April 1993. Layer type eggs in incubators on May 1 were down 6 percent from last year.

The future of egg prices is becoming bright with fewer new pullets coming into production than last year. At the same time, the slaughter of spent hens is about comparable with a year ago. Also, demand strength seems to be holding up well. Feed ingredient prices will be determined by weather conditions in the coming months.

WHEAT

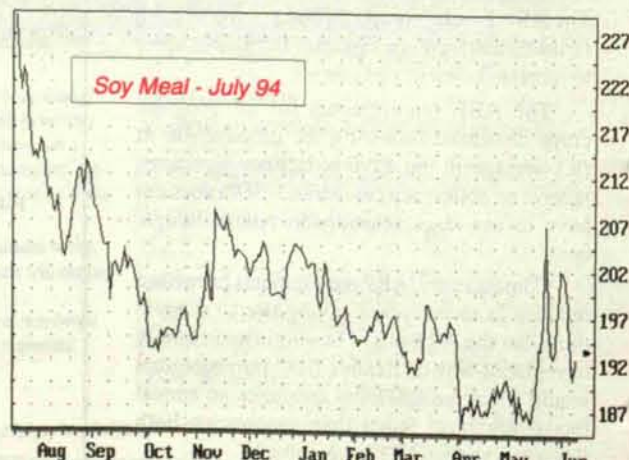
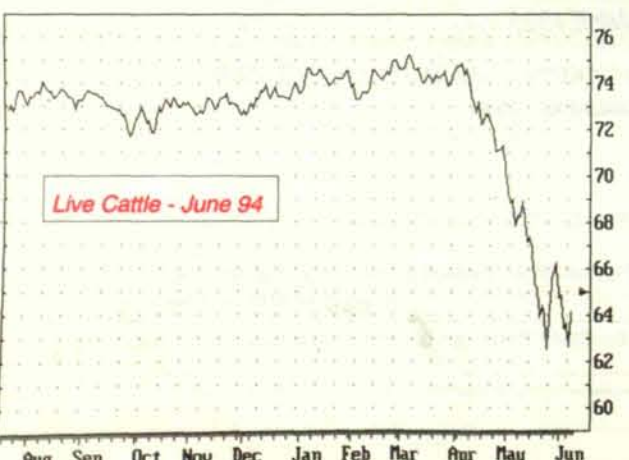
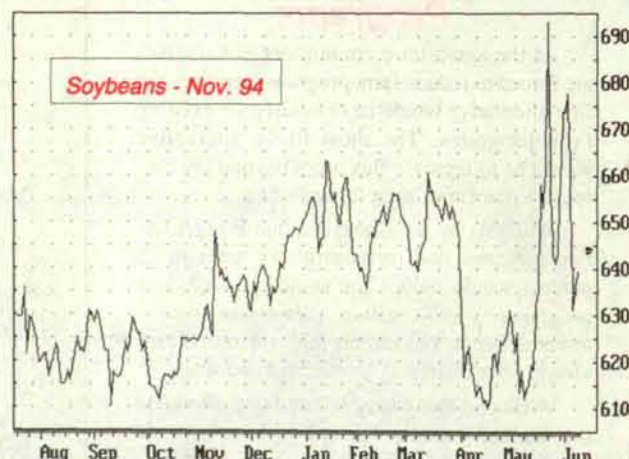
New crop wheat prices at around \$3 (\$3.25 for July futures), as of the first of June, are very near what fundamentals would project.

However, there's a little more upside potential than downside risk due to the unknowns with spring wheat and corn. But carryover is more than adequate without a real disaster which will put somewhat of a lid on prices. Wheat exports for the 1993-94 marketing

HOGS

Higher than expected hog slaughter translates into lower than expected prices. The March Hogs and Pigs Report indicated that slaughter would be down 1-2 percent at this time and it has been running up 2-4 percent.

The next Hogs and Pigs Report will be released June 30. The structure of the hog sector is changing so rapidly, it is very hard to keep up with the numbers. Prices are not



7 Have You Considered Heifer Contracting?

Dr. Sherrill B. Nott,
Department of Agricultural Economics, MSU

There's a different way to handle the growing of heifers which should interest both current and prospective farmers. It's called contracting, or custom raising dairy replacement animals.

Dairy managers fully committed to their milking herd, but short of feed and/or labor to raise heifers, may find contracting a profitable relief. Owners of modest amounts of land and barns might find custom growing heifers an attractive source of part or full time employment.

Table 1:

	0-2 months	3-12 months	13-24 months
Hay	60 lbs.	1,900 lbs.	2,000 lbs.
Labor	8 hrs.	6 hrs.	5.5 hrs.
Vet, Med.	\$11	\$25	\$10

There are several pros and cons for both dairy farmers and growers. The major ones usually come down to costs. If a contractor can make enough to put their barns, land and labor to use at a total cost less than what the manager with the milking herd will spend on growing their own heifers, a deal can be struck.

The cost of growing heifers is not something many farmers attempt to identify from their own records. Instead, they rely on estimated enterprise budgets published by universities. In recent years, it has been common to split the cost of growing a heifer from birth to freshening into three unequal time periods. In Table 1 these are birth to 2 months, 3-12, and 13-24 months.

Table 1 is from Washington in 1992. The total cost for one heifer freshening at 24 months of age was \$1,242. Even if these

cost items don't fit your farm, the allocations among age groups will.

If a dairy farmer has plenty of roughage but is short of labor, Table 1 suggests a contractor be found to take over growing during the first 2 months of age. The labor need is heaviest and the hay need the lowest.

On the other hand, a farm family with lots of help who enjoys raising calves, but is short of feed, might better find a contractor to raise the heifers from 13 months to freshening. The larger veterinary expense at 3-12 months implies the need for special attention to vaccinations and treatments. This would be a topic for the written contract to cover in detail. Recognize special costs would be involved.

Price setting between the milking herd owner and the heifer grower can be a major stumbling block. Cost break-downs like Table 1 have been awkward to use in price setting. Pricing based on pounds of gain and the local beef market have been helpful. In the last two years, there have been articles suggesting that setting the price on a per heifer grown per day basis is the easiest to use.

Table 2 is from a 1990 New York survey. The first column is the average cost per day per animal. The right two columns of numbers represent a middle range of reported costs. Half the farms were included within this range. There were 25 percent of the farms with higher values and 25 percent with lower values for each item.

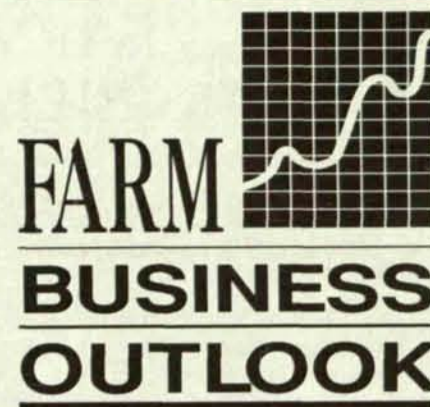
The table row of "Weeks on Farm" shows how long the animal is a part of the heifer raising enterprise. It does not represent how long the animal is raised until it calves. The majority of these farms are custom growers of heifers and the animal is sold, or sent back to the owner, before it calves.

Table 2

	Average	Range
Number of Animals	178	103 - 228
Weeks on Farm	83	81-95
Cost Per Day Per Animal		
Feed	.87	.74 - 1.00
Bedding	.04	.02 - .07
Health	.02	.01 - .03
Breeding	.04	.01 - .06
Labor	.24	.10 - .35
Trucking	.01	.00 - .01
Machinery Operation	.04	.01 - .06
Machinery Overhead	.04	.01 - .04
Building Operation	.02	.00 - .04
Building Overhead	.07	.03 - .09
Death Loss	.00	.00 - .00
Interest on Investment	.02	.01 - .02
Total Cost/Day/Animal	\$1.42	\$1.24 - \$1.52

It may be easier to think about heifer costs on a per day basis. Table 2 shows the average farm spent \$1.42 per heifer per day. That would translate into \$42.60 per 30 day month. Heifer contractors often bill monthly based on a detailed animal inventory. This daily/monthly costing and billing is relatively simple. I recommend you try it! Michigan's dairy industry could use more custom heifer growers.

If you want to find out more, write for the two studies mentioned above. The budget came from "1992 Dairy Heifer Enterprise Budget," EB1319; write to Gayle S. Willett, Ag Econ Dept., Washington St. Univ., Pullman, WA 99164-6210. The



New York information came from "Raising Dairy Replacements: Practices and Costs," A.E. Ext. 91-12; write to B. F. Stanton, Ag Econ Dept., Warren Hall, Cornell University, Ithaca, NY 14853-7801.

July Discussion Topic -- Understanding the Clean Water Act

The Clean Water Act (CWA) was passed in 1972 as the nation's primary water pollution prevention statute. Throughout the last 20 years, the emphasis has been on cleaning up the "point sources" of pollution. These are the traditional and easily recognized sources where pollutants come from a specific point, such as factories and sewage treatment plants. The attention is now shifting toward the remaining pollution sources, known as "non-point" sources.

Non-point sources are less obvious, and challenge the traditional way of thinking about pollutants. They do not come from a specific point, but rather are comprised of run-off from city and suburban streets, construction sites, mining, logging and agriculture. The pollutants may consist of sediments, nutrients, pathogens, oil, grease and chemicals. It is often difficult to distinguish between naturally occurring pollutants and those resulting from human activity.

Efforts to reauthorize the Clean Water Act are actively underway in both the U.S. Senate and House. The Senate Environment and Public Works Committee has reported S. 1114, and floor action is expected soon. Farm Bureau does not support S. 1114 and is seeking a number of amendments.

After trying and failing to find agreement that would allow them to proceed to mark-up on H.R. 3948, the House Public Works and Transportation Committee will hold additional hearings and may consider a bi-partisan alternative bill that has broad-based support within the committee as well as from agriculture, state governments, cities, and the business community.

To effectively address the issue of non-point pollution, Farm Bureau is seeking amendments that reflect the following principles in the Clean Water Act reauthorization.

*** State Primacy:** Authority for determining impaired waters, establishing standards and criteria, and developing and implementing appropriate response programs and plans should remain the responsibility of the states. Site-specific problems require site-specific responses. Development of state plans should rely on local input.

*** Voluntary Programs are Desired:** The diffuse nature of non-point run-off dictates that

strict regulatory programs would be less efficient than a flexible, locally designed and adequately funded effort. Non-point source programs should emphasize voluntary adoption of best management practices (BMPs) by landowners, with adequate cost-sharing.

*** Information, Cost-Sharing and Technical Assistance are Needed:** Farmers and ranchers are willing participants in efforts to curb non-point run-off. Site-specific information, technical assistance and cost-sharing is needed to assist landowners in implementing BMPs.

*** Programs Need a Watershed Focus:** Efforts to address non-point run-off and water quality programs should be targeted toward impaired watersheds using a "worst case first" approach.

*** Increased Monitoring and Evaluation:** A concurrent part of any effort to improve water quality is better information to determine the extent and sources of pollution, as well as accurate methods to evaluate the effectiveness of implemented BMPs.

*** Protect State Water Rights:** Reauthorization of the Clean Water Act should not alter state water rights and water allocation systems.

*** Retain Current Scope of CWA:** The current focus of the CWA should remain that of achieving water quality and should not be expanded to one of restoring biological diversity by revising water quality criteria and standards. Although perhaps desirable in the abstract, it would be elusive and impossible to achieve.

*** Reform Wetlands Policy:** Any CWA reauthorization should include reform of Section 404 provisions affecting wetlands. Clear policy needs to be established regarding a broad array of issues including the scope of jurisdiction, classification of wetlands, compensation for lost property rights, restoration and mitigation, and exempt activities.

*** Protection of Property Rights:** The CWA reauthorization should establish a non-judicial means so that landowners who believe their property rights have been significantly reduced by regulation can obtain compensation.

Discussion Topic Questions:

1. What are the most common non-point sources for water pollution in your community?
2. Farm Bureau is seeking a "State Primacy" amendment in the current proposed legislation. This would put responsibility on the states rather than the federal government for determining rules and implementing a Clean Water Act. What unique characteristics does Michigan have that makes this amendment important in our state?
3. What incentives could be offered to farmers to encourage better management practices which would result in cleaner water?
4. What incentives or programs should be offered in local communities to encourage citizens to work toward cleaner water?

Dairy Outlook - Cheese Price Drop Could Mean a \$2.10 Hit on M&W Eventually

Dr. Larry G. Hamm, Dept. of
Agricultural Economics, MSU

The wholesale cheese markets have been in a free-fall and farm pay prices will follow. Only the lagged effect of Federal Order advance pricing will help cushion the financial blow to the Michigan dairy producer's income.

During the period of April 16 to May 27, 1994, the wholesale price of 40 pound blocks of cheddar cheese traded on the National Cheese Exchange fell from \$1.3975 per pound to \$1.1850. This drop of \$.2125 per pound is historically one of the largest short period drops in wholesale cheese prices.

The rule of thumb is that a 1 cent change in cheese price equals about a 10 cent change in the Minnesota-Wisconsin (M-W) price. If that rule holds, the M-W will fall \$2.10 per hundred-weight (cwt.) in the very near future.

The April 1994 M-W peaked at \$12.99 per cwt. None of the cheese market drop was yet factored into the M-W. This means that the May M-W (announced June 4) will drop dramatically. The June M-W could drop by \$1.50 or more.

The largest decline in the M-W occurred between September and October of 1990 when the M-W dropped \$2.02 per cwt. The upcoming drop in the M-W between April and May of 1994 will likely be the second largest drop in M-W history.

Farm pay prices will not fall as fast because the Federal Order system prices fluid milk (Class I) and soft manufactured milk (Class II) are based on market conditions two months and one month earlier, respectively. This means that farm pay prices will go down much less than the M-W's drop. But this is just a delay due to the

pricing calculation procedures. Eventually, farm prices will reflect nearly all of the M-W drop.

Currently, the wholesale cheese (40 pound blocks) prices are \$.0650 above the USDA CCC support price of \$1.12. If the cheese markets hold, the M-W will stop its fall before reaching the support price of \$10.00 (for 3.5 percent test milk).

The July cheddar cheese futures contracts for July are currently trading around \$1.18 per pound. Later contracts (September and November) are trading higher. Hopefully, the futures market is correctly reflecting market conditions and the wholesale market price drop is over.

If that holds, the M-W will stop falling at around a level of \$10.50 to \$10.75. This, however, will be little comfort for producers trying to manage their cash flows over the summer.

'95 FARM BILL

Option 2 -- Revenue Protection Programs

A variety of revenue protection programs will be considered in 1995. While each has its own details, all are designed to provide protection of farmers' revenue rather than protecting farmers from low prices through deficiency payments. Most of these programs would make payments to farmers only if their revenue fell below a designated level.

The first alternative is the "revenue assurance" program proposed by the Iowa Farm Bill Study Team. This program would make payments to farmers only if their revenue fell below 70 percent of their "normal" crop revenue (normal revenue is defined as the producer's average yield for the previous five years times the average county price for the previous five years).

Such a program would eliminate deficiency payments, ARP set-asides, flex acres and disaster payments. Payments would be made to farmers regardless of the cause of the revenue shortfall. That is, farmers would be eligible for revenue

Which Direction For Commodity Programs?

8

assurance payments if their revenue fell below 70 percent of the normal benchmark, regardless of whether the revenue shortfall was due to decreases in prices or yields.

A revenue assurance program would shift the focus of commodity programs from price protection, through deficiency payments, to income protection through revenue assurance payments. Rather than making deficiency payments to all farmers when the market price falls below the target price, the revenue assurance program would make payments only to those whose revenue fell below the benchmark level.

Another form of revenue protection is a "targeted revenue" program. Under this alternative, the existing deficiency payment program would be replaced with a system of payments based on average county revenue. Each county's "target revenue" per acre would be calculated using the average yield, market price and deficiency payment in that county.

If the county's average revenue per acre fell below this level in the future, farmers in that county would receive a payment equal to the difference between the target revenue and the actual revenue. Farmers in those counties where the actual revenue exceeded the target revenue would receive no payments.

Option 3 -- Green Payment Programs

A third option would be to replace existing deficiency payments with a system of payments designed to compensate farmers for the use of designated farming practices that prevent environmental damage. Though no specific green payment program has been proposed, the concept of green payments is being discussed, and might have three components.

First, while such a program could be designed to operate outside the traditional deficiency payment program, budget constraints

A targeted revenue program based on historical county data would yield the same average payments over time as the existing deficiency payment program, but the distribution of payments among years would vary as the revenue in the county varied.

This alternative would also result in a wider variation in payments across counties. As with the revenue assurance program, this alternative would provide payments regardless of whether the shortfall in revenue was caused by decreases in prices or yields.

would probably dictate that a green payment program would have to replace the existing deficiency payment program.

Second, a green payment program would have to establish a schedule of practices and payments aimed at addressing specific environmental problems.

Third, such a program would have to be tailored to specific local conditions and would probably have to include a wider range of commodities than traditional commodity programs if high priority environmental problems are to be addressed.

While a green payments program might attract broader public support in the long run for farm programs, the use of a green payment program might result in a different distribution of payments than under the current program.

In most versions of this program, green payments would be distributed based on type and severity of environmental problems rather than being determined by base acreage enrolled in the deficiency payment program. However, green payments could be distributed to all program participants using best management practices regardless of whether environment problems are associated with a specific farm.

A green payment program might result in a shift in payments among regions or, if other commodities are permitted in this program, payments might be shifted from existing participants to producers of non-program crops that do not receive payments under the existing program. Because the objective of this program is to accomplish environmental objectives rather than farm income objectives, a green payment program would probably do little to stabilize farm income or farm revenue.

If a program based on environmental objectives is adopted, Michigan farmers who produce non-program crops and do not receive deficiency payments might become eligible for green payments.

Some Common Questions for all Program Options

The 1995 farm bill is already shaping up as one of the most important in history. Fundamental questions are being raised about the objectives and structure of farm programs. When such drastic change is proposed, some common questions ought to be asked about each alternative:

- What is the objective of commodity programs -- protection of farm income, maintenance of environmental quality, or both? Which of these objectives will each alternative accomplish?
- How would major changes in programs change the distribution of payments among existing program participants and producers of non-program crops who do not participate in existing programs?
- Should the USDA's limited budget for farm programs be distributed among farmers according to existing crop acreage bases or to protect farm revenue?
- Should only the existing program crops be eligible for programs such as revenue protection or green payments, or should all crops be eligible? What would be the budget cost of an expansion in the number of crops eligible for such payments?

Few states will be as affected by this debate as Michigan will be. In addition to the impact on grain farmers, this debate will affect the future of disaster programs, crop insurance and environmental compensation -- all of which affect producers of other commodities.

Staying informed about the debate, analyzing each alternative, and expressing preferences about desired policies will be critical for Michigan farmers during the coming year.



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JULY 19 - 21

MICHIGAN STATE UNIVERSITY

June 24, 1994

Ag Expo Field Demonstrations to Focus on Precision Pesticide Application

More than 335 exhibitors from 20 states and the Canadian provinces are already registered for the 15th annual MSU Ag Expo event July 19, 20 and 21. The field demonstrations will focus on precision pesticide application and storage, according to field demonstrations organizer, Tim Harrigan.

The demonstrations will run from 10 a.m. to 4 p.m., July 19 and 20, and from 10 a.m. to 3 p.m. on July 21. Free bus shuttles will run between Ag Expo's parking lot and the demonstration site every 15 minutes. The pesticide handling and application demonstrations will consist of two concurrent sessions; recommended pesticide storage and handling facilities; and precision application demonstrations featuring about a dozen types of application units.

"The purpose of this year's field demonstrations is to show farmers the methods for handling, storing and applying pesticides in ways that are safe for the applicator and the environment," Harrigan said. "The emphasis will be on personal and environmental safety from the time the chemical is brought to the farm until it is used in the field."

Harrigan explained that the first session, held at the University Farm's new pesticide storage facility, will focus on chemical storage, mixing, rinsing and residue retrieval and disposal. There will also be demonstrations on sprayer calibration and how various sprayer nozzles affect chemical distribution in the field.

Air-assist technology, such as this sprayer from Hardi, will be demonstrated during field demonstrations to help producers identify ways they can improve pesticide application.



The second session will focus on more effective chemical application while minimizing the amount used.

These demonstrations will include chemical banding, anti-drift control, air-assist applications, on-the-go adjustment of chemical use, and injection units. Harrigan explains that the injection units provide

chemical and water mixing at the time of application, eliminating the need to dispose of unneeded chemicals.

The line up also includes demonstrations of foam markers to help growers prevent gaps or overlap in chemical applications, and hydraulic boom controls for adjustment depending on obstacles or crop height.

Animal Handling Demonstrations Add New Dimension

New to this year's Ag Expo is the animal handling demonstrations which will focus on animal behavior, animal facility design, layout and animal restraint systems.

Among the speakers will be Dr. Jack Albright, a Purdue University animal scientist who has studied animal behavior for more than 30 years. He will focus on getting farmers to improve the performance of their animals by understanding their behavior. "The key to understanding animals is to take time to observe them," Albright said. "It is essential to not only watch what the animal does, but how and when it acts in certain ways."

Two times each day, at 11a.m. and 1:30 p.m., participants will be able to observe Albright working with 600 pound Holstein steers in a corral livestock handling system designed by Montel Livestock Equipment, and equipped with squeeze chutes from Rohn Agri Products, Palco Incorporated, and Priefert Mfg. Co., Inc.

After the demonstrations are completed, individuals will be allowed to observe the equipment up close and talk to the various company representatives about their equipment.

Why Focus on Precision Pesticide Application?

"Considering the intense economic pressure on agriculture today, the high cost of required pesticides, and the need to protect the environment, there is great incentive for farmers to do their very best when handling and applying pesticides.

"Even so, applicators can make errors both in mixing chemicals and in applying them, through calibration and equipment errors. Studies have shown that approximately 60 percent of the applicators either over or under-apply by more than 10 percent of their intended rate. Many are in error by more than 30 percent.

"One study showed that four out of five sprayers had calibration errors and one out of three had mixture errors. Educational programs have helped and are continuing to improve these situations, but there is still room for improvement," Bob Wilkinson, MSU Ag Engineering Department.

A Picture of Pesticide Exposure

If you're going to MSU's Ag Expo field demonstrations, you'll get a chance to see the risk you run everytime you handle pesticides without the proper gear.

This photo, utilizing blank insecticide granules mixed with a fluorescent tracer (white specks), shows the exposure this worker received handling corn insecticide from filling eight boxes with a conventional open bag system. The worker wore typical farmworker attire - blue jeans and a cotton T-shirt.

The tracer was quite evident on the worker's back as well as the neck and hairline. Studies have shown that pesticides are often absorbed at different rates depending on the area of the body exposed. The scalp, forehead and ear canal absorb pesticides 4 to 5-1/2 times faster than skin on the forearm. For more details and photos, see page 8.

Photo: University of Illinois

Ag Expo - July 19-21 - at MSU Open at 9 a.m. Each Day

Bill Bickert, Ag Expo Chairperson

Ag Expo 1994 may very well be our best year for Ag Expo ever. From the inception of the show, exhibitor numbers have steadily increased each year, which we attribute to the environmental setting and the services we offer, and most importantly, the number of farm families that return year after year to the show.

Included in the 35 acres of new equipment exhibits and service displays will be a wide range of demonstrations and information centers in "education row."

This is a cluster of tents at the western end of the site which represents MSU's departments of Ag Engineering, Animal Sciences, Crop and Soil Sciences, Fisheries and Wildlife, Telfarm, Forestry, Institute of Water Research, and the College of Veterinary Medicine.

The size of the show enables farm families to get around to all the exhibits and spend time with company representatives - an important information exchange for both. Instead of being confronted by a constant stream of smiling faces, Ag Expo's setting provides exhibitors the opportunity to learn about and discuss the farm family's goals and ideas.

We have a reputation for providing an enjoyable setting where visitors can make evaluations, develop ideas, and talk with university and industry experts about opportunities to improve their farm business.

Ag Expo is the only place in Michigan where farm families can, in a single setting, see as wide a range of new agricultural technology and services.

We're confident that farm families will enjoy a trip to Ag Expo because of its variety of things to see and do in a safe, clean and friendly environment.



2 Raven Chemical Injection Spray Systems Part of Ag Expo Field Demos

Possibly one of the hottest advancements in spray systems are chemical injection systems. Chemical injection spraying differs from conventional spraying in one major way: Instead of mixing the chemical with water in the sprayer tank, injection spraying meters a precise amount of chemical into the line carrying water to the booms.

University and independent research support injection systems and there is proof that such a system is the optimum method for applying chemicals. The injection systems are cost effective for everyone from the average farmer to the larger custom applicator, anyone who has to work with tight schedules or a variety of chemicals and jobs.

Advantages of injection system sprayers in comparison to traditional spraying systems.

1. Improved Spraying Efficiency

The economics of injection systems are centered around two areas. First, you will no longer have left-over tank mix at the end of a job, nor will you run short. You will use the exact amount of chemical required to complete the job with no chemical waste. Second, a substantial amount of time will be saved by eliminating the need to mix chemicals. Further, spray pressure and volume are kept constant and the rate of chemical injection is regulated, maintaining the same spray pattern regardless of speed or terrain.

2. Maximum Operating Flexibility

One of the maximum benefits of chemical injection sprayers is the time saved in changing chemicals. Injection systems offer a valve to shut off the chemical and allow water to flow until the line is flushed. Unused chemical in the injector tank is drained back into its original container, thus

reducing the environmental exposure of chemical wastes.

There is no need to rinse the spray tank and because only water goes into the spray tank, there is no chance of back siphoning spray solution into your water supply. In conventional spraying, certain chemicals are incompatible and cannot be sprayed together; however, with the injection system, each chemical is held in separate containers and only contact each other briefly in the spray line.

The Raven chemical injection system is monitored by a control console which can be mounted in a truck or tractor. The console automatically monitors and controls the precise amount of chemical being injected. It will control injection of two separate rates of application simultaneously.

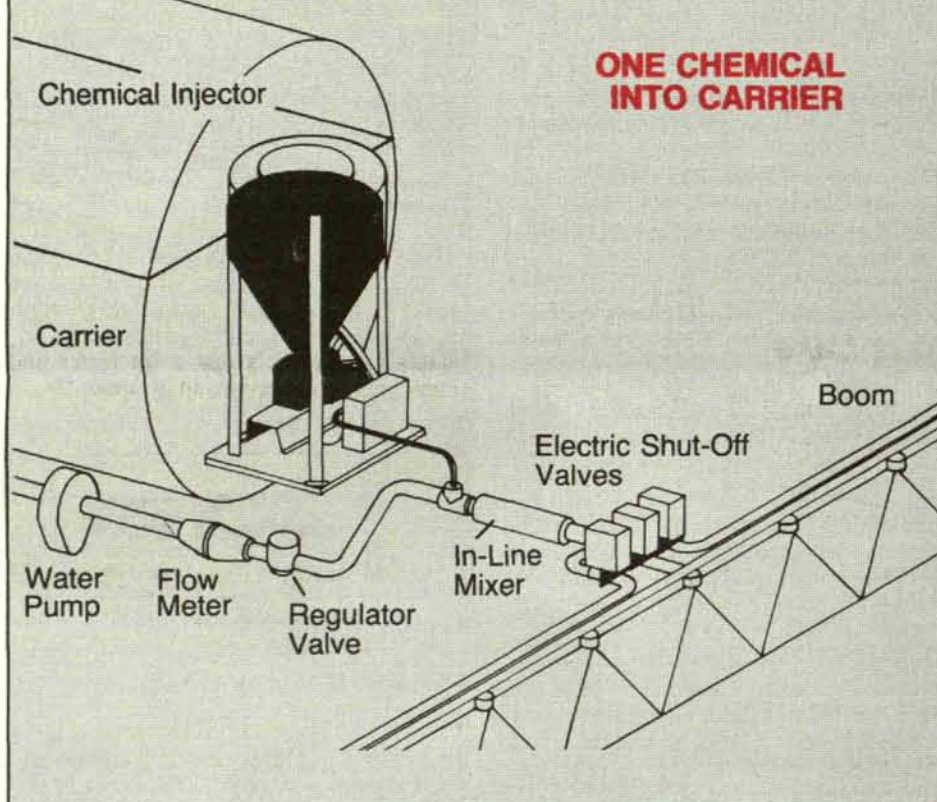
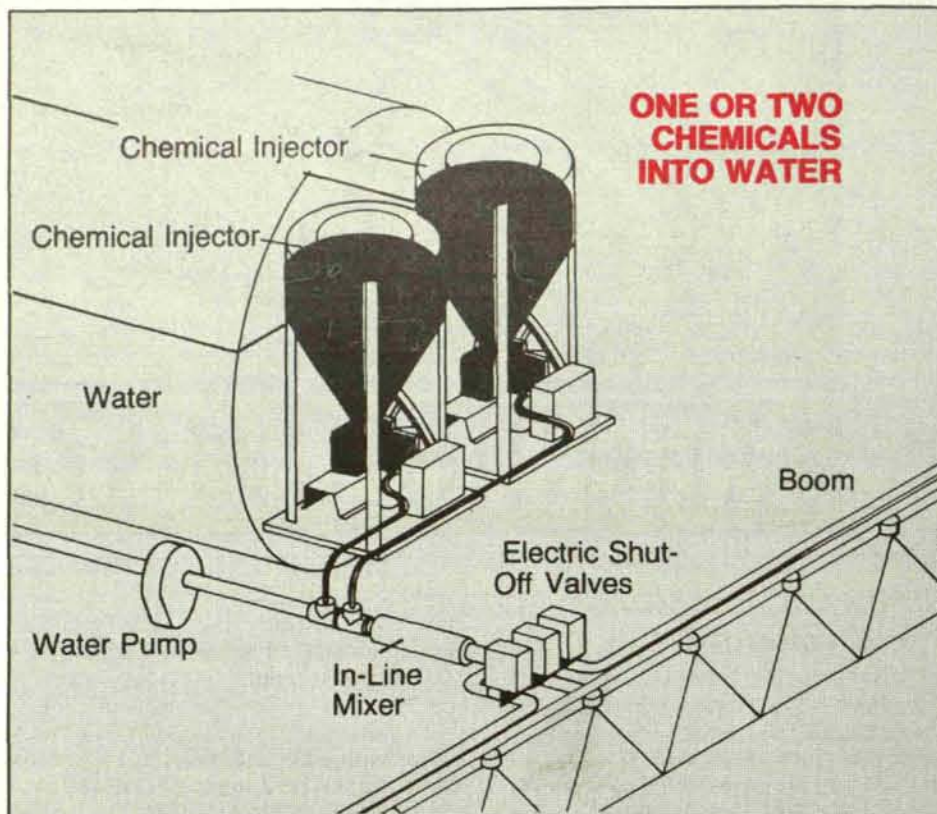
Once the application rate has been determined, the control console maintains that rate on every acre. Changes in vehicle speed are immediately sensed. The control console also provides instant read-outs of total acres, total ounces, vehicle speed, distance traveled, and the amount of chemical left in the tank.

Other features of the chemical injection system are a positive displacement metering pump with a flow sensor. The sensors monitor pump RPM speed. The control console then converts RPM to chemical flow rate which ensures accurate delivery of chemical at the pre-determined rate. The pumps are belt-driven by a 12-volt motor.

A motor control, which receives an electronic signal from the control console, varies the pump speed to maintain chemical injection rate at the preset amount.

Additional features are 15 or 30 gallon polyethylene chemical tanks, vehicle speed sensors, magnetic type which is bolted to a non-driven wheel, speedometer type which connects to the vehicle speedometer or radar-type for installation on four wheel drive tractors, in-line mixer and optional tip monitors that detect plugged tips and display the location of the plugged tip on the control console.

Raven SCS700 chemical injection spray systems are available in three different configurations: 1) one chemical into water; 2) two chemicals into water; or 3) single chemical into carrier.



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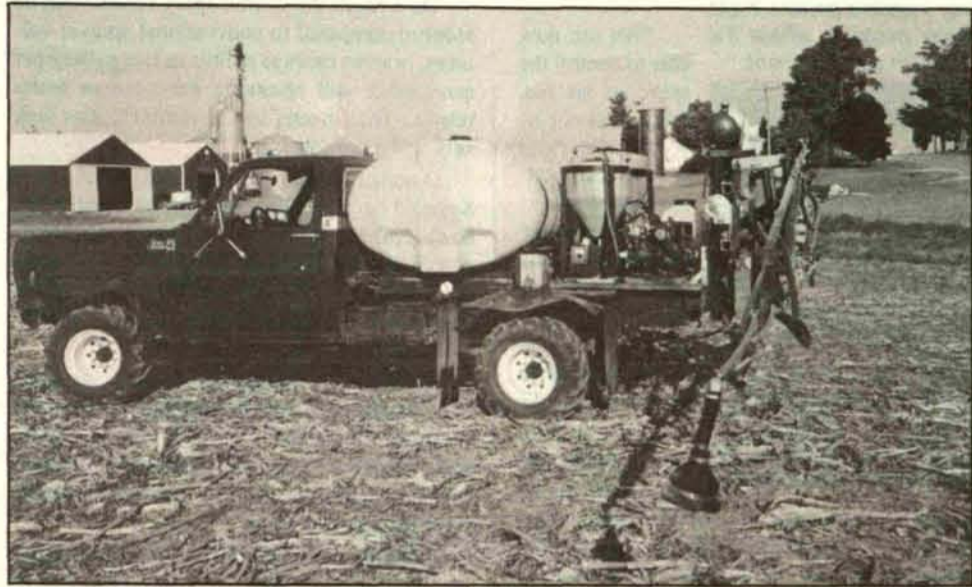
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Injection System Producer Profiles:



Shady Lodge Farms, Clinton County

For Shady Lodge Farms, owned by Jim Lonier and sons in Lansing, the dual-injection system has been their choice of a chemical injection system. The Raven chemical injection system saves time and improves accuracy.

This is the fourth year they have utilized the Raven chemical injection system on their 3,000 acre farm. The system used by Loniers has two flow injectors, with a 15 gallon and a 30 gallon tank. Water is pumped with an eight horse gas engine. The entire system is mounted on a heavy-duty pick-up.

USDA Research Station, Rose Lake

The Rose Lake USDA Research Station utilizes a single injection chemical spray system for both herbicides and insecticides, according to Maria Kramer. The facility produces plants for conservation purposes.

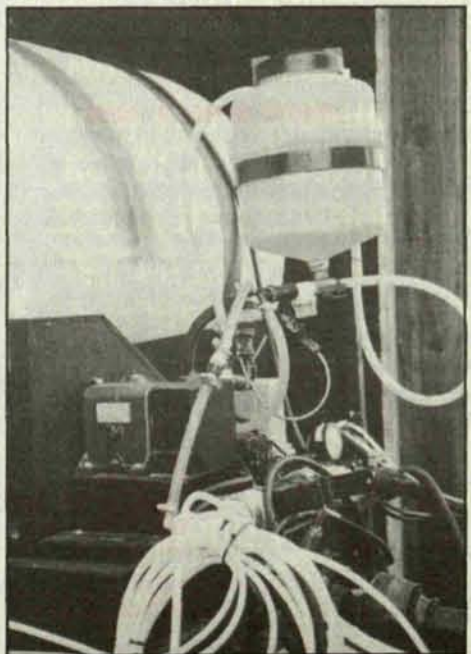
Kramer explains the system increases the evenness of the chemical and eliminates the worry of getting rid of mixed-up chemical that isn't needed at the end of a field.

The research facility has been using the system (pictured below) for three years. The four gallon chemical tank size enables them to easily switch chemicals and adjust for the small plot size. The sprayer system is also equipped with tip monitors.

"I think the system is good, mainly because you're not wasting chemical and I figure the least chemical that is used to get rid of weeds, the better it is ... a lot of integrated pest management idea is integrated with this system."

In addition to the tip monitors, this system has also been equipped with foam markers.

According to Kramer, "This is a nice device ... because you do not get overlap and you do not have big gaps."



"I would recommend the system to anyone serious about their herbicide program - it's well worth the money," said Steve Lonier.

"The system is very accurate. We are really happy with it. We can self-test ourselves by checking the field area sprayed and then checking out our volume we have put on and we can tell exactly how many ounces of that chemical we have put on per acre of the whole farm."

Lonier explains that the advantages of having the system mounted on the pick-up versus a tractor/trailer type are the speed and operator comfort.

"We can cover a lot more acres a day than a tractor/trailer type sprayer can, since we spray at 12 miles per hour, where a tractor sprayer is more around six miles per hour," states Lonier. "It's just a lot faster and convenient to jump in and go spray."

Chemical Loading and Rinse Pads Featured at Ag Expo

3

If you are looking for a low-cost way to construct and use rinse and load pads to achieve appropriate safety measures in your chemical applications, be sure to catch this year's field demonstrations at Ag Expo.

One of the items scheduled to be on display at the field demonstrations will be a pool liner type portable rinse and load/mixing pad that can be carried out to and used in the field on-site. The structure has an inflatable ring around it that can be filled with air or water, creating a berm that you can drive over to enter or leave the pad. Once you're parked inside of the pad, you can mix and load your chemical on it and then you can drive out.

"We try to convince the farmer of the environmental importance of these types of structures and that it does not need to take away from other activities," says Ben Darling, agri-chemicals coordinator at the Michigan Department of Agriculture.

Darling explains that a prepared area is needed in the field for the pad to sit on to prevent puncturing the liner with stones or other debris as the tractor and sprayer are driven onto the pad.

"I try to keep people realizing that you don't need to buy the Cadillac when you can get by with something else and not shortchange what we are trying to do," said



Darling. "It doesn't have to be high-tech material...it needs to be imperious and it needs to hold up."

According to Darling, there are several different alternatives to storing, loading and mixing chemicals. Permanent structures can be as simple as a storage shed on a concrete pad; old truck bodies and other alternatives are much better solutions to storing pesticides than storing the product in the basement.

"One thing we do try to do is let them know that we're not building a tank, something that has to hold material forever. This is an emergency catch net. If there is a problem, you can catch it and take care of it," said Darling.

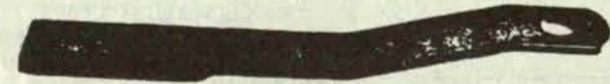
For more information about permanent and portable pesticide structures, plan on attending the field demonstrations at Ag Expo.

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4 Air-Assist Sprayers - Overcoming the Forces of Nature

Tired of the constant battle with spring winds and the loss of precious time for getting your herbicides on? If so, you're not alone. Using a "fight fire with fire" philosophy, Hardi Inc., a sprayer equipment manufacturer based out of Davenport, Iowa, is using a relatively new concept that may solve that dilemma.

Farmers attending the MSU Ag Expo field demonstration can watch and inspect the concept, known as air-assist, which provides a current of air that helps to place the chemical where you want it, while reducing drift by up to 90 percent.

Although available in the U.S. for just four years, the Hardi "Twin System" has been produced and sold in Europe for over seven years, according to Hardi Sales Manager Randy Kuhlmann. He says, however, that the air-assist sprayer has application in just about any operation and has caught on rather quickly in the U.S.

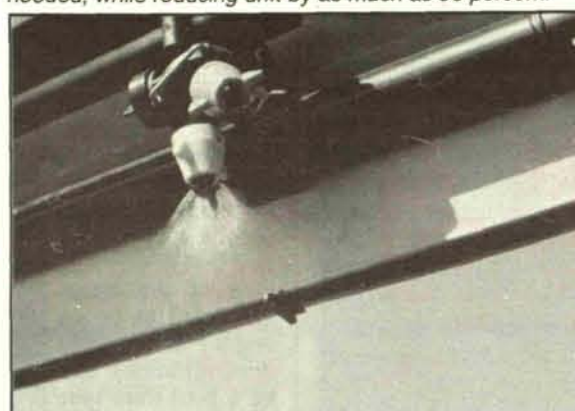
"We see a call for this system wherever there's a concern about accurate chemical application," said Kuhlmann. "The air assist will open up any canopied crop, and it allows you to get the chemical where you want it, all while elimi-

nating drift, which opens up the windows of opportunity for chemical application in windier conditions."

A large axial fan at the back of the sprayer feeds an air bag that runs the full length of the sprayer boom to deliver the air current through a slot that is 7-1/2 inches below regular spray nozzles. When the air current meets with the spray pattern, the air current takes over the pattern and directs the chemical where it's needed.

The air speed and volume of air from the axial fan can be infinitely varied to obtain maximum efficiency, which depends on natural wind speed, crop density, and tractor speed.

A current of air picks up the spray nozzle's pattern 7-1/2 inches below the tip to deliver the pesticide where it's needed, while reducing drift by as much as 90 percent.



"We are now able to control the speed of the fan, which was not always the case with typical air assist sprayers," explains Kuhlmann. "We can vary the speed of the air current from basically zero m.p.h. all the way up to 70 m.p.h."

The air bag, the slot and the nozzles are linked

together mechanically so that the entire boom can be angled hydraulically +/- 30 degrees from the operator's seat, while on the go, to compensate for wind speed and direction. This feature ensures maximum crop penetration and deposit while reducing wind drift by as much as 90 percent.

As a result the overall spray volume can be reduced compared to conventional sprayer volumes, in some cases to as little as five gallons per acre, while still obtaining the same or better results. That means lower volumes, less tank fills, and a time savings.

Another unique feature to the Hardi "Twin System" (so named because the air current can be shut off and the sprayer operated conventionally) is the new patented COLOR TIPS. It combines three nozzles into one body that can be equipped with specific nozzles based on individual application needs.

Kuhlmann predicts that air-assist sprayers will quickly become the normal method for chemical application in the U.S. as regulations and legislation continue to become stricter, which explains the sprayer's widespread acceptance and use in Europe.

"There's no doubt about it," said Kuhlmann. "We've only seen the tip of the iceberg here compared to what farmers in Europe are already dealing with. The issue and concern of chemical use and drift are something that we're going to have to learn to live with in the very near future."

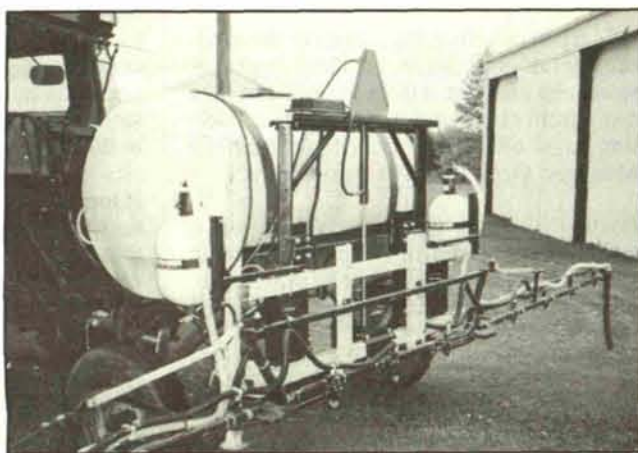
Foam Marking Systems Part of Ag Expo Field Demos

If you've been wondering if a foam marking system can work in your spraying operation, you'll have a first-hand opportunity to learn more during MSU Ag Expo's field demonstrations. The RICHWAY Foam Marking System, known as TRAC MASTER, will be exhibited.

The TRAC MASTER is designed and built for rugged use, and is leading the way for literally thousands of farmers. You'll get more acres of dependable, trouble-free use, while taking the guesswork out of spraying and planting.

All TRAC MASTER models feature a simple tank-mix foam generation system which use a liquid concentrate similar to soap. Polyethylene tanks and high capacity foam hoses assure you long-life performance, while the heavy duty 12 volt rotary cane compressor and aeration system is designed for continuous use with minimum maintenance.

TRAC MASTER systems are available in a variety of models, each designed to fit a producer's individual needs, including large and small operations. The Model TM-300, the most versatile model, gives maximum convenience and high capacity for high demanding operations. It features a 10 gallon tank for 3-4 hours of



spraying and collector heads for large long lasting foam balls.

Richway now offers new TURBO TRAC foam marking systems that provide maximum foam volume, fast and responsive foam-side switching and on-the-go foam frequency control. A variety of models are available to fit your sprayer type and you can choose from a 10, 13, or 40 gallon tank.

TURBO TRAC systems are available in non-electric and electric power units. Non-electric units use your vehicle's air source for foam generation, while electric units use a 12 volt air compressor for foam generation. TRAC MASTER foam markers will be provided by Farmo Distributing Inc. of DeWitt.



AG EXPO AUCTION 1994

Don't miss your chance to bid on the following items Tuesday and Wednesday, July 19 and 20, on the Ag Expo grounds! All proceeds will benefit the FFA Foundation.

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Dairyland Seed Company	2 Bags Magnum III Alfalfa Seed	Tent A
DTN Corporation	6 Months DTN Ag Daily 6001 Color Information System	Tent B
Farm Bureau Member Travel Service	Grand Traverse Resort Golf/Ski Weekend Package	248
Farmers Petroleum Cooperative	1 Pair 6 Ply 18x4x38' Agri Power Plus Bias Rear Tractor Tires	248
Foxworthy Supply	8 Ft. Heavy Duty Round Bale Feeder	807
Gilbert Sales & Service	Landa J.V.T. Hot Pressure Washer	822
Growe Systems, Inc.	2 Calf/Hog Huts	207
MFB Group Purchasing & Hi-Grade Nut & Bolt Company	40 Hole Bolt Bin with Bolts	248
Michigan State Seed	300 Lbs. Spartan Pasture Mix	751
Na-Churs Plant Food Co.	200 Gallons 9-18-9-0 Liquid Fertilizer	111
Quality Stores Inc.	To Be Announced	755
Skory Communications	GE Hand-Held Swatt, 10 Channel, Synthesized Radio	Tent A

More items to be announced at Ag Expo!

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Maximize your Corn productivity with



Roots To Profitability

ACA on Corn

Since its introduction, ACA has demonstrated its ability to enhance plant vigor and help the plant overcome environmental stress during plant development. Seed tolerance studies have shown ACA to be completely safe to germinating corn seedlings when placed in direct contact with the corn seed in-furrow.

Identifiable Performance Parameters on Corn

The following are frequently observed plant responses from soil applications of ACA on corn.

Visual Response

- Vigorous early plant growth.
- More fibrous and extensive root system
- Wider, darker green leaves (ACA-treated plants often fill the row sooner)
- Larger diameter stalk
- Taller plant (ACA-treated plants often tassel sooner)
- Heavier ear and kernel weight
- Grain dries down quicker

Observation Timing¹ (Stage of Growth)

- VE to V3
- Early-V1 to V5
- Late-10 days after silking
- V12 to V17
- V12 to maturity
- V12 to tasseling
- Maturity (Harvest)
- Maturity (Harvest)

The staging of development described above is adapted from "How a Corn Plant Develops," Special Report No. 48, Iowa State University. V represents a leaf stage on corn where the leaf has a fully expanded leaf collar. V1 represents a corn plant with one leaf with fully expanded collar.

The identified performance parameters typically result in:

- Increased uptake of soil nutrients
- Increased utilization of sunlight in photosynthesis
- Improved standability and ease of harvest
- Reduced grain moisture at harvest
- Increased uptake of soil moisture
- Reduced leaf rolling during moisture stress
- Higher yields and/or test weight

Yield Information Field Corn (1993)

- 37 total studies
- 6.9 bushel per acre increase
- 5.8% increase in yield
- Return on ACA investment of \$12.09 (1/2 pint/acre) or \$10.37 (2/3 pint/acre)
- 1/2 pint ACA per acre in-furrow [Corn at \$2.25/bushel x 6.9 bushel increase/acre = \$15.53 - ACA investment of \$3.44/acre (1/2 pint/acre) = \$12.09 R.O.I./acre]
- 2/3 pint ACA per acre broadcast [Corn at \$2.25/bushel x 6.9 bushel increase/acre = \$15.53 - ACA investment of \$5.16/acre (2/3 pint/acre) = \$10.37 R.O.I./acre]

Application Techniques/Procedures

Test results have shown that ACA works best injected as a pure product in-furrow, or when the fertilizer that contains ACA is either injected or incorporated into the soil prior to, at, or soon after planting. The incorporation of movement of ACA into the soil profile can be by tillage, rainfall, or irrigation. This positions the ACA near the developing root system of the plant.

Methods of Application

- ACA mixes easily with and fits into the following fertilizer programs:
- Anhydrous ammonia
- Nitrogen solutions
- Mixed liquid starter fertilizers
- Dry blended broadcast or starter fertilizers
- Soil applied (weed & feed herbicide/fertilizer solutions or dry)

Other application methods:

- Soil applied broadcast with water as the carrier, with or without a herbicide
- Direct injection of undiluted ACA in-furrow

Application Rates

For in-furrow injection or banded (2" to side and 2" down), apply ACA at 5.33 to 8 fluid ounces (1/3 to 1/2 pint) per acre. Field studies of band or in-furrow applications have shown more consistent results at the 1/2 pint per acre rate. The rate for broadcast application is 10.66 fluid ounces (2/3 pint) per acre.

The rate of addition of ACA to anhydrous ammonia is one gallon of ACA per 3,589 lbs. anhydrous ammonia. This translates to 0.0434 fluid ounces of ACA per pound of contained nitrogen or 0.557 gallons (71.32 fluid ounces) per ton of ammonia. A typical 1,000 gallon anhydrous ammonia nurse tank filled to 85% of capacity would require 156 fluid ounces of ACA.



Contact your local Clean Crop Dealer or call 1-800-292-2701 for additional information on THE ACA ADVANTAGE

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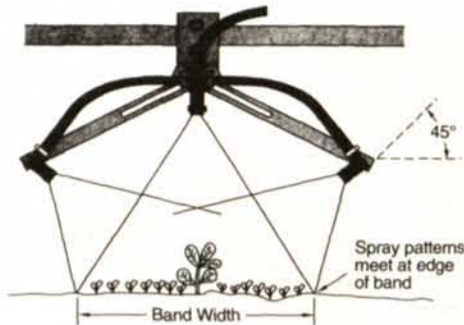
* This cash back offer is valid for members of participating Farm Bureaus, expires 12/31/94, and may not be used in combination with any other Chrysler Corporation certificate program or certain other special programs. Ask for restrictions and details.



THE NEW DODGE
A DIVISION OF THE CHRYSLER CORPORATION

6 Consider the Economics of Herbicide Banding for Weed Control in Corn

Lynnae Jess, Michigan State University
Pesticide Education Office



There is renewed interest in herbicide banding with cultivation on Michigan farms as a method of reducing pesticide use. Farmers want to use as little pesticide as possible for both economic and environmental reasons. Row crop cultivation controls weeds, breaks up and aerates crusted soil, and improves water infiltration between rows, while herbicide banding controls the weeds in the row.

Research conducted by Lynnae Jess, Jason Woods, Jim Kells and Scott Swinton at MSU from 1988-1992 examined the economics of herbicide and broadcast herbicide along with zero, one and two cultivations,

compared against using preemergence and postemergence herbicides.

An economic analysis was conducted on the corn yields for each herbicide and cultivation system to project net returns. The economic analysis was based on machinery costs from the MACHSEL computer program, available field time for cultivation, and costs to grow the corn.

Projected net returns for a 200, 600 and 1,200 acre farm using a preemergence herbicide were calculated. The farms were assumed to have a corn-soybean-wheat rotation with corn grown on 1/3 of the acres.

With an optimal machinery complement, a weed control system involving herbicide banding and cultivation produced net returns comparable to systems involving a broadcast herbicide (Table 1).

complete cultivations on a timely basis (Table 2). Weed control systems and the banded herbicide systems with cultivation produced the most consistent net returns.

The results of this study indicate that herbicide banding combined with cultivation is an economically feasible approach to reducing herbicide input for corn production. For banded herbicide systems to obtain net returns similar to broadcast herbicide systems, adequate equipment and labor must be available to complete cultivation on a timely basis.

Double Piston Ground Driven Pump to be Featured at Ag Expo Field Demonstrations

With a marginal machinery complement, net returns with systems involving herbicide banding were reduced due to the inability to



Desperate for another method of powering a fertilizer or herbicide pump, but short on power options? You could find the answer to your dilemma during MSU Ag Expo's field demonstrations where you'll have a chance to see the latest in ground driven pumps from Lil' Thumper ground driven pump systems.

The Lil' Thumper piston pumps and ground drive system can be mounted to your corn planter, your sprayer, your cultivator or any other piece of application equipment that requires a pump for herbicide and/or chemical application.

The ground wheel drive assures accurate rate of application regardless of your speed, and the rate can easily be adjusted by simply setting a dial pointer.

For Clinton County farmer Bob Reese, the Lil' Thumper double piston ground driven pump offers ease of adjustment and a constant rate of 28 percent fertilizer applied, through his 12-row, no-till Kinze planter.

Reese cash crops about 1,000 acres. He chose this kind of pump compared to other pumps because "it's ground driven, so as you speed up or slow down, it will simply re-adjust the rate of fertilizer applied," said Reese. "The ease of rate adjustment is also a big bonus. Just loosen up two bolts and rotate the dial, and that's all there is for adjusting the rate."

In the second year of use, Reese reports no maintenance problems on the pump system. All working parts in contact with solution are various types of reinforced synthetic materials and stainless steel for unequalled corrosion resistance and years of service. Two self-tightening stack-packing glands and drive case seal, with a drain, give excellent crankcase protection.

The pumps are also available with a hydraulic clutch, 12 volt electric clutch, or a manually operated throw-out clutch. The ground driven pump can be mounted on most trailer sprayers and is adaptable to other application equipment.

Ground driven pump systems will be provided by Farmco Distributing Inc., of DeWitt, Michigan. For more information, stop by the Farmco booth at Expo or contact Mike or Jerry Emery at (517) 669-8391.

Table 1. Projected Net Returns Based on Optimal Equipment for a Preemergence Herbicide System

Herbicide	Cultivation	Projected Net Returns (\$/A)		
		200 A	600 A	1200 A
NONE	0	-84	-12	-3
	1	34	108	114
	2	37	113	119
BANDED	0	16	90	96
	1	104	179	185
	2	113	185	196
BROADCAST	0	108	182	188
	1	117	194	200
	2	119	196	202

Table 2. Projected Yield and Net Return Per Acre for a 1,200 Acre Farm Based on Optimal and Marginal Machinery Complements

Preemergence Herbicide	Projected Yield (Bu/A)		Projected Net Return (\$/A)	
	Optimal Machinery	Marginal Machinery	Optimal Machinery	Marginal Machinery
NONE	127	120	114	98
BANDED	163	157	185	173
BROADCAST	176	175	200	197

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Current Health Insurance _____

Number of Full Time Employees _____

Sole proprietor
(1 person group)

2-4 5-9

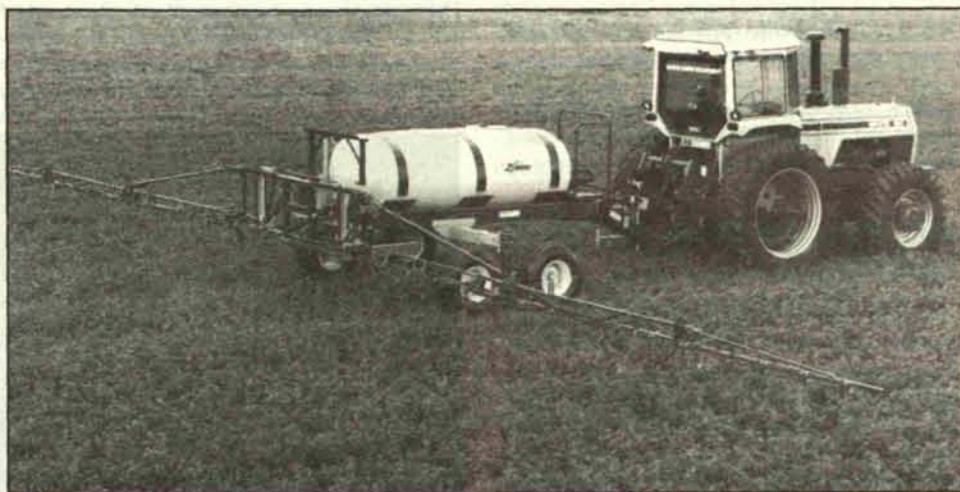
10-24 25 and over

Field of Dreams - Building the "Ideal" Sprayer

Now that you have read about the spray systems and some of the optional equipment available, you may have asked yourself, "If I had an unlimited budget, what should I include on my 'ideal' sprayer?"

Michigan Farm News asked that very question of Mike Emery from Farmco Distributing, Inc. of DeWitt. Farmco will be supplying a number of the items used during the field demonstrations this year at Ag Expo. Mike came up with the following list of spray system equipment options that, combined together, would create the "ideal" sprayer.

- Tank Capacity:** A 750-1,000 gallon tank size to accommodate larger operations and boom sizes.
- Booms:** A 60' hydraulic folding boom with leveling and suspension system, electronic sensors for automatic wing tip height adjustment. A 60' width will cover an eight row planter pattern with the advantage of driving on the same center wheel tracks.
- Nozzles:** Nozzle bodies that have a rotating head to allow selection of the proper sized nozzle with the twist-of-the-wrist. Commonly referred to as "triplets."
- Marking System:** Commonly a liquid foam (soap) is used to help eliminate streaks or gaps - especially in hard to see areas such as wheat, alfalfa, or burn-down situations.
- System Rinse Tank:** Usually a separate tank on board of 50-80 gallons in size. A system rinse tank would be used as a source of clean water directly tied into the sprayer's plumbing system to flush clean



water throughout the entire sprayer while still in the field.

- Proper Pump Selection:** A pump suitable for your spraying requirements will vary from producer to producer. Some people need higher pressure, some need higher volume, some need both.
- Chemical Inductor:** Sometimes located on the sprayer, it could also be at a stationary/permanent installation or a mobile nurse tank truck/trailer. Used for loading chemical into tank from a location more convenient than the top of the tank. This is usually 15-30 gallons in size and if on the sprayer, located on the pumps suction side.
- Quick Fill:** Generally a separate location (sometimes also used for tank drain) that allows a nurse tank transfer pump to be easily attached. Also rigid attachment

ensures fill hose will not fall out of tank top lid.

- Self-cleaning Filter:** A secondary filter that returns filtered material to tank and aids in dissolving of tougher powder and dry flowable materials. This filter also serves as a safety item. The operator does not have to clean nozzles nearly as often.
- Rate Control:** An "automatic rate controlled system." This can either be done electronically (such as computer controllers) or mechanically with ground driven pumps. If an electronic version is used, it should include full monitoring system capabilities (such as total gallons applied, field gallons applied, total acres and field acres) which are required for certain pesticides. Some controllers can control chemical injection, which allows an operator to carry clean water in tank (or

possibly fertilizer) and "direct inject" chemicals at proper rates in the boom, alleviating chemical waste.

- Radar:** Radar is an ideal means of measuring ground speed. Most electronic controllers can interface with existing radar systems on tractor, enhancing exact chemical application.

While these recommendations may not meet the needs of every producer, they will meet the needs of most corn, beans and beet growers.

According to Emery, one should keep in mind the above items are based on the assumption that money is no object. All items may not be necessary but could be of benefit.

"There is no packaged sprayer that comes equipped with all of these features, but we commonly sell these items as accessories which are being asked for more and more by producers," Emery concluded.

MFB's Summerfest and Ag Expo - A Great Combination!

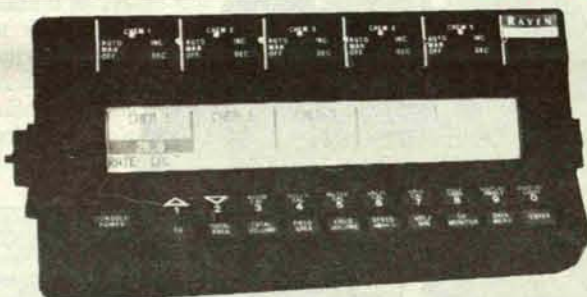
It's going to be a celebration at Farm Bureau Center in Lansing on July 20, starting at 3 p.m. The festive Summerfest event includes a char-broiled beef or pork dinner with all the trimmings, cold drinks, apple pie and other sweet treats, games, an antique tractor show and country music. To get an added extra during your trip to Ag Expo, send in your ticket order form today along with a check or money order. See the order form in the Summerfest ad on page 13 of this Michigan Farm News Ag Expo Extra!

Ag Expo '94 will provide the MFB Family of Companies an opportunity to showcase their many products and services to an expected 50,000 farmers who attend the three-day trade show. The theme for this year's MFB big tent display will help celebrate Michigan Farm Bureau's 75th Anniversary. The 60' x 90' red and white striped tent will be located on our traditional lots in the heart of the Expo grounds at the corner of Second Street and Avenue D on lots 248, 249, 348 and 349 (see map on page 12).

Under the big top, members will find Farm Bureau staff ready to answer questions on everything from health care to diesel fuel. The attraction will include a display of organizational and agricultural history, including a fully restored COOP tractor that's always been owned by a Michigan Farm Bureau member.

Don't miss the most exciting spot on the Expo grounds - the Farm Bureau Family of Companies' display!

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8 A Picture of Insecticide Exposure

Editor's Note: With Ag Expo field demonstrations focusing on pesticide application, storage and handling, here's your opportunity to visually see the importance of protective equipment.

This article reprinted from Successful Farming magazine, copyright Meredith Corporation, and photos clearly illustrate the need for protective equipment and the hidden hazards of pesticide and insecticide exposure. For more information about handling and storage of pesticides, be sure to attend the field demonstrations at Ag Expo.

You probably know someone who has developed a sensitivity to one or more insecticides. Although we can't say for sure, that may be the price they are paying for not handling insecticides with the proper respect.

The signal words on the labels of most common corn rootworm insecticides range from "caution" to "warning" to "danger" and call attention to the need for protective equipment. Many farmers - often urged by their spouses - are starting to heed the warnings. Too often, however, these warnings are being ignored. After all, pouring insecticide into your planter boxes seems a fairly innocuous job.

"We feel many farmers are still not wearing the appropriate protective clothing when they mix and load pesticides," says Loren

Bode, Extension ag engineer at the University of Illinois.

A recent survey of the *Successful Farming* reader panel backs up Bode's impression. Only 44 percent of those who apply their own pesticides say they always wear rubber gloves when mixing and handling chemicals. Only 22 percent always wear eye protection and 8 percent wear breathing protection. An additional 8 percent always wear chemical-resistant coveralls or an apron. Some pesticides do not call for breathing protection or chemical-resistant coveralls, but it's safe to say that protective equipment is not being worn often enough.

In the spring of 1992, *Successful Farming* cooperated with University of Illinois ag engineers and students to show how much

Continued on next page

This person was photographed after using the American Cyanamid's Lock'n Load system, without the recommended protective gear. Although his face and neck were relatively free of contamination - he inadvertently scratched his nose during the loading process, demonstrating that contamination can still result regardless of the handling system, and the need to make sure hands are dressed properly and washed before eating or drinking.



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A Picture of Insecticide Exposure (continued from previous page)

9

chemical contamination you might be exposed to when you load insecticides in your planter. The project was supported by a grant from the Illinois Department of Agriculture.

Using "blank" insecticide granules with a fluorescent tracer mixed in, we loaded eight insecticide boxes using four different levels of protective equipment. In two situations, the granules were poured from bags—once with no protection and the other with recommended levels of protective gear. For the other two situations, we used American Cyanamid's Lock'n Load System, with and without additional protection.

"Closed systems like the Lock'n Load claim to offer more protection," says Bode, "but we had no way of knowing just how effective they might be."

The goal of the project was to simulate the exposure you might expect from loading insecticides during one day of planting. In reality, we should have filled the planter two to three times to represent the total exposure for one typical day.

The student "farmers" were photographed before and after loading the boxes under ultraviolet lights (black lights), which showed where the tracer was deposited on their skin and clothing.

Showing, Not Measuring

We made no attempt to quantify the amount of exposure under the various systems. We were simply trying to demonstrate how protective equipment and various handling systems influence exposure to insecticides.

We also changed boxes and lids for each situation to assure that any contamination that showed up was from the material loaded in that situation. That may not be a realistic indication of the exposure a farmer would face, since his boxes and lids would most likely be contaminated by insecticide. You would not expect a grower to start

every day with clean insecticide boxes and lids.

Successful Farming was involved in a similar project several years ago where the tracer was mixed with herbicides before being sprayed. This was our first experience mixing the tracer with a granular product. Bode noted that the tracer is an extremely fine powder which may have a tendency to contaminate more areas than the actual pesticide.

"We don't have any way of knowing how well the tracer actually represents the activity of an insecticide," Bode says. He felt it is a reasonable representation of the exposure to an insecticide.

The photos dramatically show the effect of wearing protective equipment or using a closed transfer system such as the Lock'n Load. Wearing protective equipment while pouring from bags kept the dust out of the eyes, nose and mouth compared to using no protection. The neck and ears were not really protected, which points out the importance of washing thoroughly after handling pesticides.

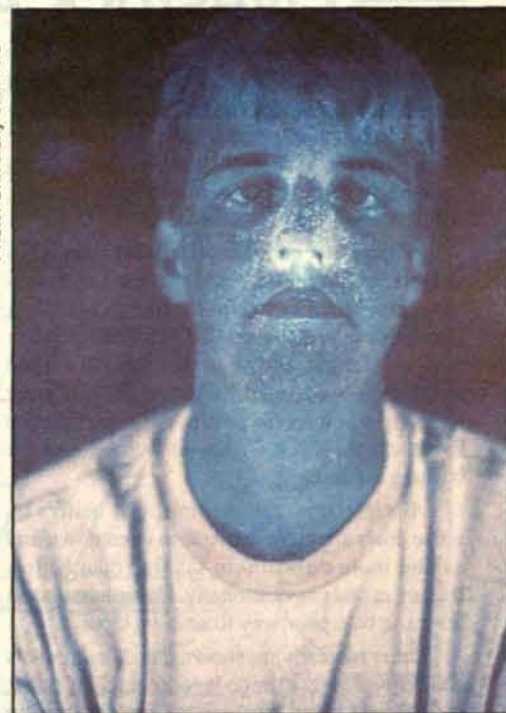
Both situations using the Lock'n Load resulted in substantially less contamination compared to pouring from bags—even when wearing the protective equipment. The Lock'n Load can produce some contamination if you don't wear minimal protective equipment.

One final point: If you suspect that your hands are contaminated from handling insecticide, wash them thoroughly before touching parts of your body that absorb chemicals most quickly.

This applicator was photographed after filling just eight insecticide boxes with bags, while wearing typical clothing and no protective gear. The contamination from the dust has accumulated around the nose, indicating air-borne contamination.

Only an airtight respirator with the correct cartridges recommended for the chemical being handled can effectively protect against inhalation exposure. Generally, its recommended the cartridge be replaced if you can smell the chemical or at the end of each day.

Photo: University of Illinois



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Electronic Sprayer Control Systems to be Featured in Ag Expo Field Demo

Electronic control systems, the most advanced way to control your spraying system, will be featured in the field demonstrations. Those on display are from Raven Industries, which offers control systems, chemical injector systems and a manual sprayer control system to meet the needs of every spraying operation.

Advanced technology makes the Raven SCS 440 the ultimate sprayer control. The controller is available in three or six boom switch controls and can be installed on any type of vehicle for agricultural, roadside, or turf spraying.

Set your application rate and the SCS 440 automatically maintains that rate throughout the entire spraying job. The system can be programmed to automatically control the following application rates: volume per hectare, volume per acre, or volume per thousand square feet, regardless of vehicle speed or terrain.

The SCS 500 also provides "on command" display of distance traveled, speed, total volume and total area worked.

Other sprayer control systems include the SCS 203 MG and the SCS 303 EG. Both provide on/off control of spray booms, plus control of sprayer pressure from the driver's seat. Individual booms are controlled with a separate switch.

Sprayer control systems will be provided by Farmco Distributing, Inc., of DeWitt, Michigan. For more information, stop by the Farmco booth at Expo or contact Mike or Jerry Emery at (517) 669-8391.

10 Purdue's Jack Albright - Are You Watching What Your Livestock Are Telling You? Don't Miss Him at Ag Expo 94!

As livestock producers strive to improve their bottom line, sometimes the simplest and yet most profitable things can be overlooked. Livestock observation, interpretation and corrective measures can pay big dividends if they help to improve the cow's environment, says Dr. Jack Albright of Purdue University.

He says that understanding what certain behaviors mean and what caused them can have a beneficial effect on business profits. "Handling livestock requires that they be out-smarted rather than out-fought and that they be out-waited rather than out-hurried," Albright said. "Proper handling will increase profits, but if we mistreat livestock, they don't respond as well and we become the loser."

Albright says, for example, that heifers on nurse cows are more difficult to calm down and exhibit more difficulty in milking than heifers that are raised conventionally. Using nurse cows seems to be a poor way to save on labor.

Other research has shown that dairy animals should be fed at a floor-level fence line rather than a feed bunk, because the natural grazing position encourages the cow to eat 26 percent longer and causes the cow to produce an extra

17 percent saliva, which results in a better functioning rumen. Cows fed at fence line, floor-level bunks did not toss feed, as was the case with elevated bunks.

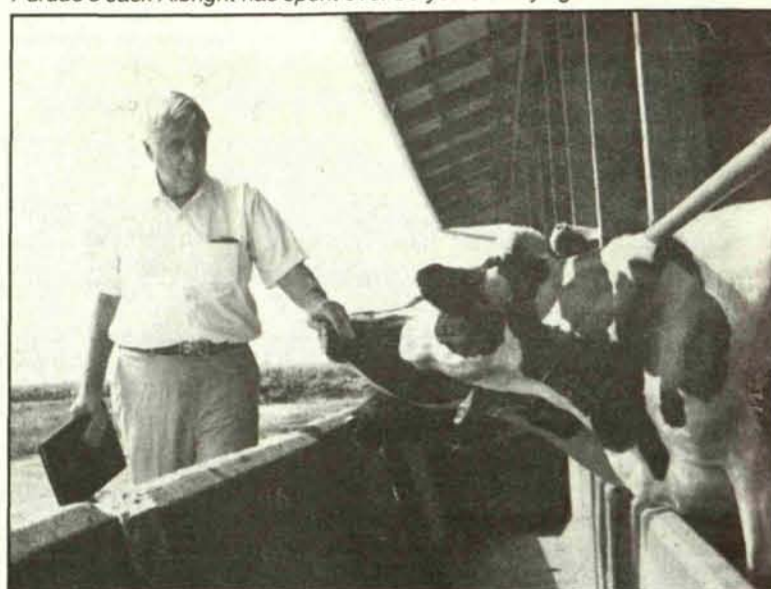
Other Observations

- When the cow's tail is hanging straight down, the cow is relaxed, grazing or walking, but when the tail is tucked between the legs, the animal is cold, sick, or frightened.
- Cows prefer free stalls with sand rather than concrete, indoor-outdoor carpeting, rubber mats or steel bases.
- Cows react favorably to country and classical music, but don't like rock music.
- Cows that calve during daylight hours have fewer stillborn calves. Normally 52 percent of the cows calve during daylight hours. By feeding a total mixed ration once per day at 10 a.m., the number of cows calving during daylight hours rose from 52 percent to 62 percent.
- High producing cows tend to dominate herd mates. They're generally the first to

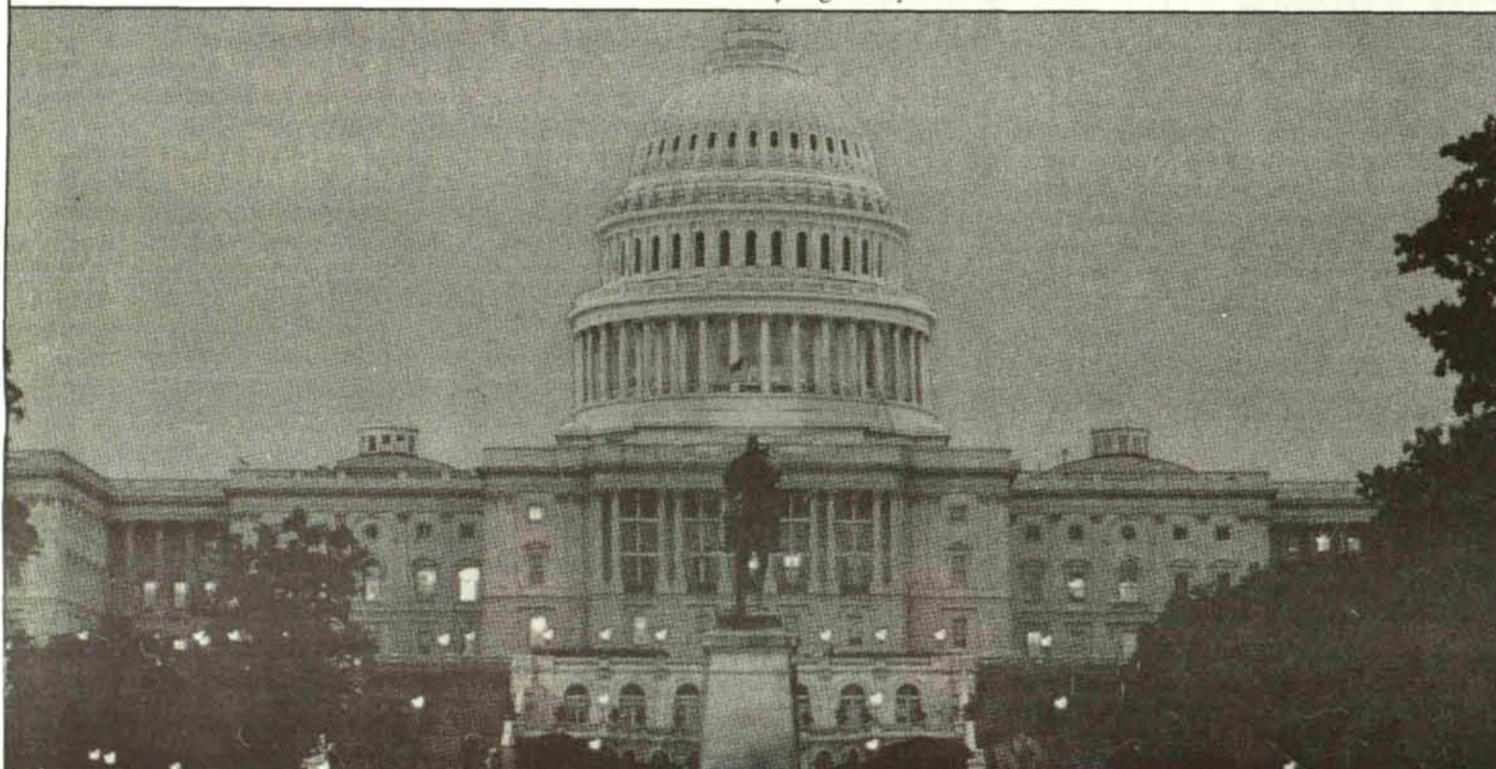
enter the parlor, are more aggressive eaters, and generally less fearful of people.

- During hot weather, cows remain in estrus longer, but exhibit less mounting, and display more rubbing and licking. The time between mounts is 23 minutes in cold weather, and 39 minutes in warm weather.
- When allowed to choose, cows prefer being under a roof in a freestall barn during hot weather. However, without adequate ventilation

Purdue's Jack Albright has spent over 30 years studying animal behavior.



and air movement, cows preferred to lay in the alleys rather than the freestalls. Providing wall openings in front of the freestalls caused the cows to leave the concrete alley and use the freestall instead.



Quality Assurance and Livestock Handling - A Bigger Piece of Your Operating Margin in the Future?

Quality product and proper livestock handling go hand in hand with profitability and, says Dr. Steve Rust of MSU's Animal Science Department, the industry needs a system in place that allows for feedback from the consumer, to the processor and the producer. He believes that Michigan's livestock industry can ill afford to be without a viable quality assurance program.

"We know that when we have to cut out a bruise, for instance, that instead of the meat being sold at a \$1 a pound, it has to be sold at five to ten cents a pound," said Rust. "That's a substantial loss to the packer, and ultimately to the producer, because the packers have to prorate their prices to compensate for that loss."

Rust, who will be a part of the animal handling demonstrations during MSU's Ag Expo, says that the dairy industry has a model system in place that the swine and cattle industry are starting to imitate.

With the trend toward continued vertical integration, especially in the swine industry, Rust expects quality assurance programs to flourish.

"The demonstration of livestock equipment and the discussion of livestock behavior at Ag Expo is another portion of the educational effort to assist producers in implementing quality assurance programs," said Rust. "The demonstrations will focus on types and proper use of head gates, chutes, and alleyways to enhance animal movement. Properly designed facilities improve the well-being of the animal and the working environment for the employee."

The Employee Factor

Rust believes that an often over-looked factor in proper animal handling is the farm employee's attitude and temperament. If the employee is in bad mood, that could ultimately hit your pocket book in more ways than one.

"Perhaps as the manager of an operation, the most important thing you can do to make sure your animals are handled properly is to make sure the working environment is friendly for the employee," Rust said.

"If he or she is happy, they're more likely to treat your animals right. If, on the other hand, they're unhappy, your cattle and your pocket book could suffer. As operating margins continue to get smaller and these operations integrate, only the strong and profitable will survive," Rust concluded.

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Montel Livestock Equipment - Utilizing a Total Systems Concept in Livestock Facility Design

11

Is a major building or expansion plan in your future? If so, you may want to make sure you enlist the services of Montel Livestock Equipment as one of the first steps in that planning process.

The company, based out of North Manchester, Ind., has been in business for over 31 years, according to company Co-Owner and Design Engineer Don Rinearson. The company, which designed 15 swine and veal facilities in Michigan last year, will be responsible for coordinating the livestock handling systems design at this year's MSU Ag Expo.

"We sell equipment, but we're not a manufacturer," explained Rinearson. "We'll be putting together the designs and sending out the copies to the other three companies that will have equipment there, to make sure that everything gets there, and it all works."

Rinearson said that the design will show participants how a properly designed system and equipment can reduce stress levels of livestock while undergoing treatments,

vaccinations, dehorning, and/or pregnancy checks.

The exhibit at Ag Expo will use 600 pound steers in exhibiting a holding area utilizing a "sweep system" that eliminates corners and uses a gate that swings 180 degrees to help move cattle; a runway system into a squeeze chute from three different manufacturers; and a demonstration by Purdue University's Dr. Jack Albright, a renowned animal behavior researcher, in proper animal handling procedures including identification of "flight zones."

"We plan to do this twice a day, all under a tent located right on the Ag Expo exhibit grounds, where we'll have bleachers so that people can come in and watch the demonstrations," Rinearson said. "Once the demonstration is complete, people can come down and look at the features of the specific pieces of equipment and facility design. They can also talk with manufacturer representatives and university personnel to get additional information and details."

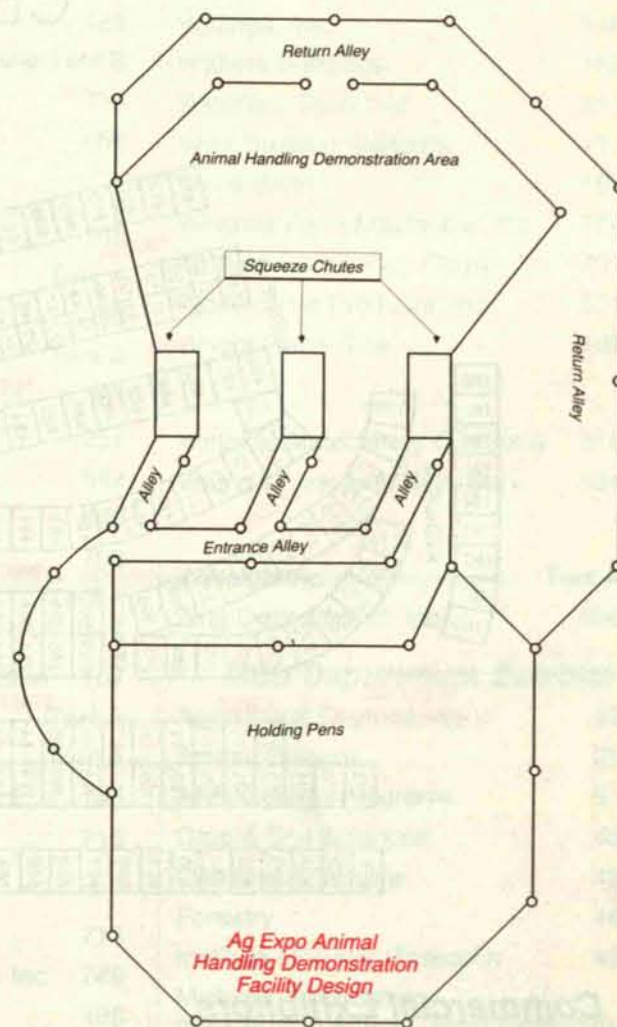
Rinearson expects that the need for consulting services in designing livestock facilities will continue to grow, especially with the renewed interest in Michigan's livestock industry and the drive to improve overall profitability.

"One of the things we see again and again, whether it's sorting and moving hogs or treating cattle, are producers who want to know what other people have because they all feel their operations are too labor intensive," Rinearson said. "They want something that's really going to work for them, with a minimum amount of labor. I guess they're tired of driving in posts and nails and building something that doesn't work the way they expected it to."

Rinearson said that although Montel was founded and operated as a company strictly interested in selling livestock equipment, the company has made moves over the past two years to provide a "turnkey" service that includes systems design, cost estimating, and ultimately, livestock equipment sales, if the company carries it.

Rinearson explained that for their investment, livestock operators get a personal visit, a site inspection, an evaluation, a set of blueprints, and drawings that consider aspects such as waste removal, ventilation, and feeding systems.

"At that point, we also give the producer a total estimate sheet right down to every 2x4, every nail, every piece of steel, nipple water - basically everything that would go into that building," Rinearson said. "We

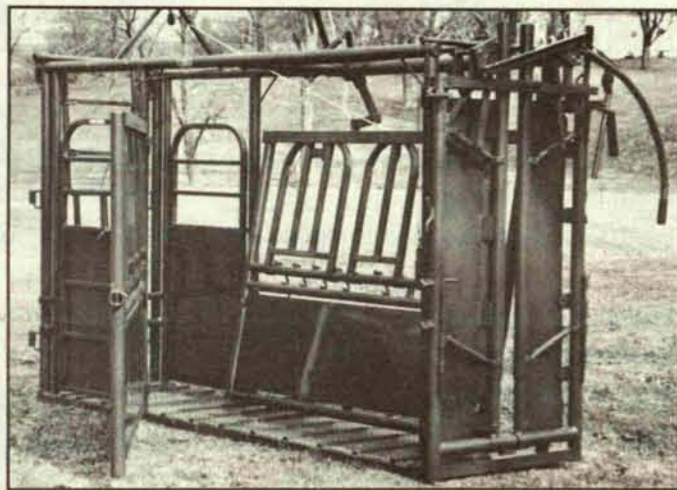


also price out the equipment that we handle so that a producer can then go out shopping, and compare apples to apples."

If a producer opts to purchase their equipment through Montel, then a percentage of the design costs will be rebated back to the producer, based on their purchase. The 15 facilities Montel designed in Michigan last year were primarily for swine farrow to finish confinement operations, ranging in size from 100 sows to 600 sows. **For more information, call Rinearson at (219) 982-6298 or (219) 982-7597.**

Palco, Inc.'s Cattle Master 900 Squeeze Chute Featured in Animal Handling Demonstrations

You should plan on visiting the 1994 Ag-Expo animal handling demonstration if you are looking for an easier and safer way to handle your cattle. Palco, Inc. will be among the three equipment manufacturers included in the animal handling demonstration, supplying one of the three squeeze chutes that will be included in the demonstration set-up.



The Cattle Master 900 Squeeze Chute offers a heavy duty manual headgate, side exit, palpation cage, branding windows, chute controls, lower access panel, squeeze side, humping bar and an attached wheel assembly is also available.

With the 900 squeeze chute side exit feature, you can exit your cattle on the side with convenient opening and closing levers on the operator's side close to the headgate. This enables one person to operate the squeeze side and the sorting gate.

To further enhance the ease of operation, the palpation cage feature has entrance doors on both sides. The doors can be easily unlatched by bumping from the outside, leaving both of your hands free.

The Cattle Master 900 features six drop down branding windows that fold flat against the lower panel allowing access to any size animal. Steel, full length, lower access panels fold out to allow you full access to the lower parts of the

animal. Quick release latches provide strength and quickness.

Ease of animal handling is further aided by a squeeze side and a humping bar that provides five different adjustments to accommodate the small and large animal. The humping bar also assists with crowding the animal forward.

In addition to the squeeze chute, Palco will have other cattle handling equipment on display including a crowding tub, corral panels, flex and lift cutting panels, a completely portable unit. All of these features can be added or subtracted to a set-up, while allowing producers to create the design that best fits their needs.

For more information, write MIMA Products, 3925 McNally Road, Coleman, MI 48618, or call (517) 465-9841, FAX (517) 465-1710.

Priefert Mfg. Co's Model 91 Squeeze Chute Featured in Animal Handling Demonstrations

As part of the animal handling demonstration at MSU's Ag Expo, Priefert Mfg. Co., Inc. will be one of three companies demonstrating a squeeze chute system for handling cattle. The company, based out of Mt. Pleasant, Texas, will be operating its improved Model 91 Chute.

An automatic head-gate setting allows adjustment for the size of livestock being handled, and will automatically quickly lock in any position, on any size of cattle. The headgate system reduces the chance of neck injury and locks the neck tighter and safer. Animals can exit the chute by simply raising a single handle, leaving the headgate automatically set for the next animal.

A full height tail-gate allows for easier animal entry, and can be opened and closed from two locations. The tailgate automatically locks either in the open or closed position, providing an extra margin of safety for the handler and the livestock.

A convenient foot-operated cam action lever provides the squeeze action for the chute. The contoured sides, shaped the way an animal is

shaped, gives maximum restraint with minimum stress to the animal. This contouring virtually eliminates cattle going down in the chute.

Steel side panels also fold out, allowing safer and more convenient access to the lower portion of the animal. A quick release, self-locking mechanism allows the panels to be removed or lowered. Three gates on each side of the animal provides the operator with complete access to any area of the animal's body. The gates can be opened and closed quickly, thanks to a positive slam lock.

Another unique feature of the Priefert Model 91 chute is the full side exit for improved safety of the departing animal. The entire side can be opened with the use of a convenient foot pedal - no ropes, no pulleys. The double action head-gate also provides a safer exit through the front.

For more information, call or write Priefert Mfg. Co., Inc., P.O. Box 1540, Mt. Pleasant, TX 75456-1540, Phone: 1-800-527-8616.

ROHN Agri-Product's Hot-Dip Galvanized Squeeze Chute Featured in Animal Handling Demonstrations

The animal handling demonstration at Ag Expo will demonstrate the safe way to handle animals while having the newest handling systems on display. ROHN Agri Products is another one of three manufacturers having equipment in the demonstration.

ROHN Agri Products handles a complete line of cattle handling equipment. The company offers a complete handling system which includes squeeze chutes, headgates, working tubs, working alleys and corral panels.

"We recognize the needs of cattle handlers and have designed equipment built to last and to resist rust. Our line is geared to these benefits and to permit livestock handling with ease and safety," states Richard Rohn, president of ROHN Agri Products.

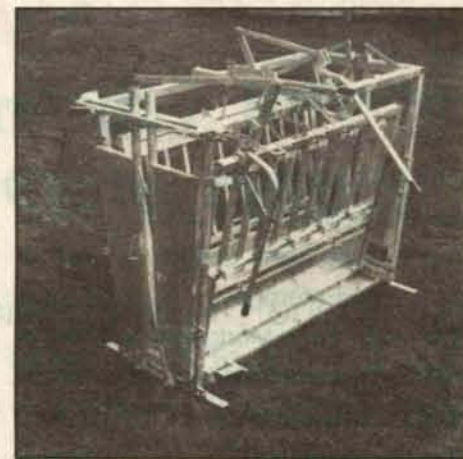
All ROHN squeeze chutes, working tubs, working alleys and corral panels are hot-dip zinc galvanized after fabrication for the ultimate rust protection and longer lasting equipment.

ROHN will have the only hot-dip galvanized after fabrication squeeze chute in the cattle industry included in the animal handling demonstration at Ag Expo.

The chute is designed and built to meet the needs of the modern day cattle producer. The flexibility of this chute allows cattle producers to control and hold any size cattle.

The chute design offers ease of operation. The controls are easy to reach from one position. Both sides of the chute squeeze for better animal control. A wishbone trailer is available to make the chute portable.

The straight-through design of the cattle handling system allows for easy animal movement. The system includes five drop down pan-



els, removable hoof panels, (ratchet and dog controls) and a humping bar. A palpation cage and 4-way cut out unit are also available.

The ROHN working tub is available in a 20' or 30' design and offers a double squeeze gate design. Curved panels and squeeze gates are fabricated for 1-1/2" square tube and heavy gage sheet metal.

The 20' and 30' working alley is designed with drop pin connection for easy set-up and tear-down. The alleys can be adjusted from 16" to 31" wide for all size animals.

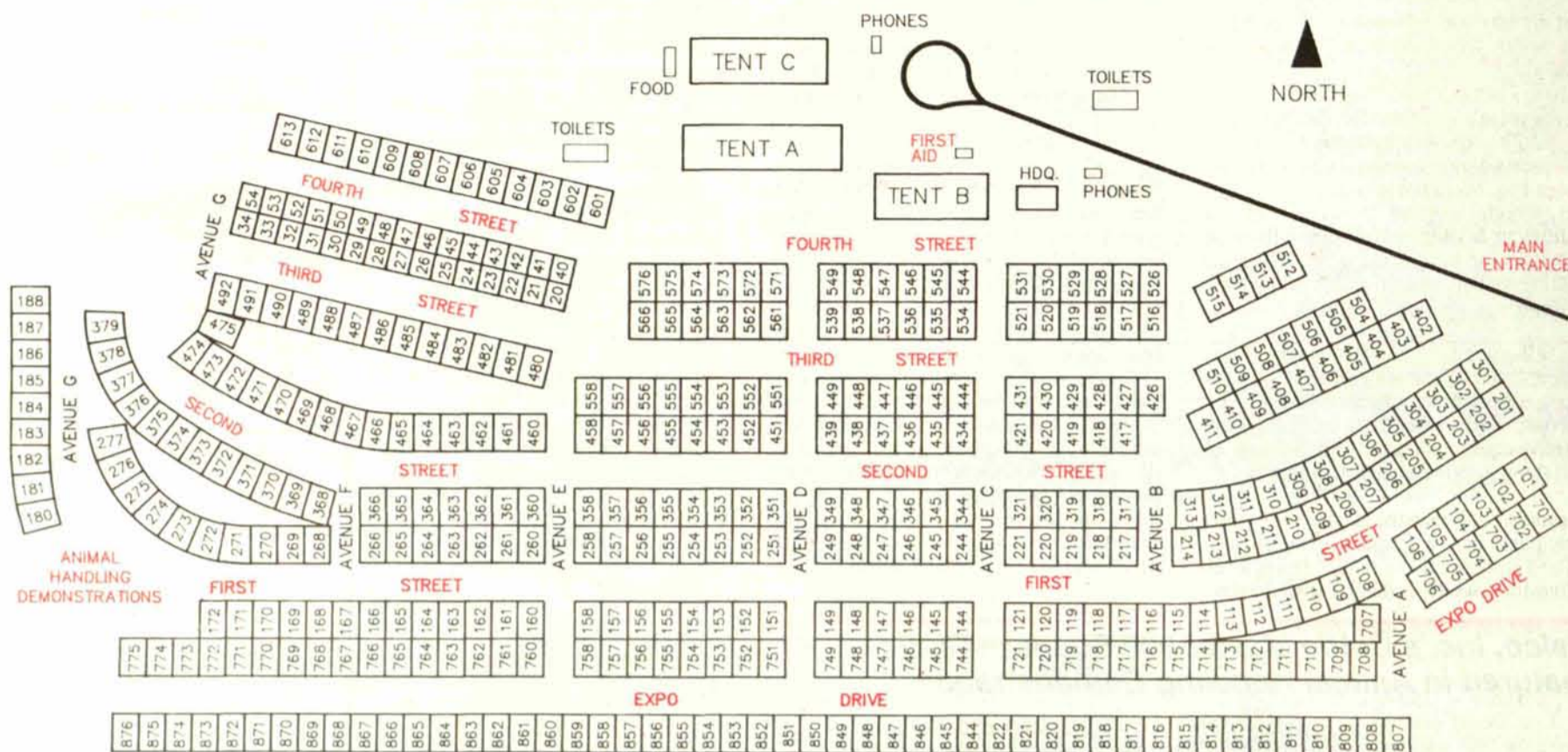
The system is completed with heavy weight corral panels with bow gates and combo panels to fit the individual cattle producer's needs.

ROHN Agri Products have produced livestock equipment for over 32 years. For more information, write: ROHN Agri Products P.O. Box 2000, Peoria, IL 61656 or call 1-800-447-2264.



Companies Applying For Space At Ag Expo 1994

CENTRAL EXHIBIT AREA



Commercial Exhibitors

— A —	
Absolute Cleaning Systems	747
ADL Ag Sales, Inc.	260
Aer-Way Holland Equipment Ltd.	213
Aerotech	206
Ag-Chem Equipment Co., Inc.	820
Ag/Hap, Inc.	Tent B
AgCorp	852
Agri Sales Associates, Inc.	Tent B
Agri-Pro Seeds	Tent B
Agro-Culture Liquid Fertilizers	444
Airco Gas & Gear	170
AIS Companies	510
Alfa Laval Agri	561
Alliflex USA Inc.	Tent A
Alloway Mfg. Inc.	604
Alo North America	452
Alpine Plant Foods, Ltd.	353
AmCorn Hybrids, Inc.	482
American Breeders Service	Tent B
Amer. Dairy Assn. of Mich.	Tent B
American Enterprise	Tent B
American Farm Mortgage Co.	Tent A
Applied Biochemists Inc.	Tent B
Aqua II Mfg. Inc.	445
Asgrow Seed Co.	Tent A
— B —	
Babson Bros. Co. "Surge"	345
Badger Northland, Inc.	318
Baker Mfg. Inc.	473
Beard Industries	149
Bender Machine Works, Inc.	Tent A
BJ Hydraulics Inc.	Tent A
Bluewater Distillers, Inc.	Tent A
Bob Equipment Co. Inc.	418
Bou-Matic	246
Bridon Cordage	Tent A
Brookside Laboratories, Inc.	718
Brown Drilling Co. Inc.	Tent B
Buffalo Equip. (Fleischer Mfg.)	255
Bush Hog	402

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Cagle Manufacturing Co. Inc.	163
Callahan Seeds	Tent A
Carey Precast Concrete Co.	253
Cargill Hybrid Seeds	535
Central Michigan Tractor Parts	420
Central Petroleum Co.	252
Chemical Fertilizer Supply	468
Chrouch Communications, Inc.	Tent A
Cole Swine Farms, Inc.	Tent B
Consumers Power Co.	Tent B
Coomer Seeds, Inc.	Tent B
Corland Seeds Ltd.	Tent B
Countrymark Co-op	512
Crow's Hybrid Corn Co.	609
Crustbuster/Speed King, Inc.	147
Cummins Michigan Inc.	484
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D & K Truck Co.	447
Dairyland Seed Co. Inc.	Tent A
Dan's Truck Eqt./Fold-A-Way Tow	219
Decker & Co., Inc.	160
Dekalb Plant Genetics	Tent B
Dekalb Swine Breeders, Inc.	470
Dellinger's Trailer Sales	463
Demott Enterprises	146
Detroit Edison	Tent A
DHIA	Tent A
Dick Meyer Co., Inc.	Tent A
Diesel Equip. Sales & Service	Tent A
DMI, Inc.	113
Don Themm Enterprises, Inc.	320
Donahue Corporation	144
Driall Inc	752
DTN Corp.	Tent B
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E-Z Brush & Oiler	Tent A
Eby, M. H., Inc.	262
Eldred Farm Shop, Inc.	438
Enviroland Inc./Bio Gro Sys.	Tent B
Express Flighting Supply	Tent A

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Farmhand/Glencoe	717
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Four Star Services, Inc.	Tent A
Foxworthy Supply	807
Freeman	602
Furst-McNess/Miracle Feeds	Tent A
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GEHL Company	565
General Genetics	Tent B
Germania Dairy Automation, Inc.	460
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Gilbert Sales & Service	822
Gillings, Bauer & Co.	Tent B
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Great Lakes Emu Assn.	821
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Henke Machine/Husky Farm Eqt.	810

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Holstein Association	Tent B
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John Deere Company	504
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Real Estate

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18
Antiques/Collectibles

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19
General

1986 FORD F-250, 4x4 extended cab pickup for sale. Excellent condition! Loaded, \$6500 or best offer. Call 1-313-439-1744.

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General

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21
Special Events

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22
Recreation

LAKE MICHIGAN Vacation Rental Home: Wooded, 3-bedroom, sleeps 8. Located halfway between Charlevoix and Petoskey, lake access. Available 6-15-94 through 10-15-94. \$600 weekly. 1-616-588-2003.

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16 Tips for Handling Pesticide-Soiled Clothing

Proper handling and washing of pesticide-soiled clothing are important to your health and the health of your family. You can help reduce exposure to pesticides by following these laundry recommendations:

- Store and wash pesticide-soiled clothing separately from other family laundry. Otherwise, the pesticide removed from soiled clothing can be deposited on other clothes in the wash.
- Prerinse clothing before washing. Prerinse helps remove a large amount of the pesticide, especially if it is a wettable powder. Prerinse can be done with a hose outdoors, or in a container, or in the washing machine.
- Wash pesticide-soiled clothing in hot water. Water 140 degrees or higher removes more pesticide than water at other wash temperatures.

- Use a full tub of water and a regular wash cycle. Water should circulate freely to remove as much of the pesticide as possible.
- Use a heavy-duty liquid detergent. Heavy-duty liquids are better at removing problem pesticides. They are especially helpful in removing oil-based pesticides. Use the amount of detergent recommended on the bottle. Neither bleach nor ammonia seems to affect pesticide removal.
- Wash the clothing two or three times. Repeated washings are necessary if the pesticide used is highly toxic or if large areas of the garment are soaked.
- Line dry whenever possible. Exposure to sunlight may help break down pesticides.
- Clean the laundry equipment. Run an empty load using hot

water and detergent. Wipe the inside of the dryer with a damp cloth.

- Launder clothing after each day's wear. When clothing is repeatedly soiled before it is laundered, more pesticide remains in the clothing after washing – and there are higher concentrations of chemicals in the rinse water.
- Discard clothing that is heavily contaminated with a highly toxic pesticide. However, clothing soiled by low-toxicity pesticides can be laundered effectively and safely even if large areas are heavily soiled. In general, as the concentration of the active ingredient in the pesticide increases, the removal of pesticide by laundering decreases.

Additional Tips

Remember that pesticides can be absorbed through the skin – so you should . . .



- Wear rubber gloves to handle pesticide-soiled clothing.
- Make a disposable hamper by lining a cardboard box with a garbage bag to use only for pesticide-soiled clothing.
- Dispose of the gloves and the disposable hamper at the end of the pesticide season in the same way you do with pesticide containers.
- Minimize exposure to pesticides. Encourage everyone who handles them to practice good safety and

Calendar of Events

June 20-24, Young People's Citizenship Seminar, Calvin College, Grand Rapids, 1-800-292-2680, ext. 3234.

June 28, State Dairy Farm Tour, 10 a.m. to 3 p.m., Battle Creek area, contact your local Extension office for details.

June 29, MSU Weed Day, Botany and Plant Pathology Farm, East Lansing, call Jim Kells, (517) 355-2173.

July 19-21, MSU-AG Expo, Michigan State University.

July 20, Summerfest, MFB Center, Lansing, call Kevin Kirk, (517) 323-7000, ext. 2024.

July 23, Forage Field Day, Lake City Agriculture Experiment Station, 9:30 a.m. to 3 p.m., call Harlan Ritchie, (517) 355-8409.

July 26, Plant Problem Diagnosis Field Day, Michigan State University, call Jim Kells, (517) 355-2173.

July 26, KBS Agricultural Open House (gather at Kellogg Dairy), Kellogg Biological Station, Hickory Corners, 6 p.m. to 8 p.m., call Jim Bronson, (616) 671-2515.

July 27, MSU Muck Research Farm Field Day, Laingsburg, 1 p.m., call Darryl Warnke, (517) 355-0210.

July 29-31, ASA Soybean Expo 94, Kansas City, Mo., contact the American Society of Agronomy Office, 1-800-688-7692.

August 5-7, Llamafest, Kalamazoo Fairgrounds, Kalamazoo. Fourth annual meeting includes workshops, demonstrations, show and sale for Llamas. Call Leah Bird, (616) 657-6379, for more information.

August 17 & 18, Potato Field Day, Pig/Beef Roast, and Potato Variety Tour, MSU Montcalm Research Farm, Entrican, call Dick Chase, (517) 355-0206.

August 23, Saginaw Valley Research Farm Field Day, Saginaw Valley Bean and Beet Research Farm, 9:30 - noon, call Don Christenson, (517) 353-4594.

Nov. 28 - Dec. 1, MFB Annual Meeting, Westin Hotel, Detroit.

Mail or FAX information (include contact name and phone number) three weeks in advance to:

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