Third Annual Pesticide Container Recycling Program Gearing Up in Michigan

Thanks to a growing interest both from agricultural producers and chemical manufacturers, nearly 25 percent of the plastic pesticide containers used in Michigan will be recycled through 85 locations across the state. That means nearly 229,000 containers will be ground and reused, instead of ending up in a landfill.

The Pesticide Container Recycling program, spearheaded by Grower Service, in cooperation with the Michigan Department of Agriculture, and the Michigan Agri-Business Association, has seen tremendous growth since its first year in a pilot program when just 21,000 pounds were collected, according to Grower Service, Inc. Operations Manager Greg Vicary.

"It's a greater expansion this year, not only in numbers, but also in education and chemical industry affiliation," Vicary explained. "We have representation this year from Terra, Wilbur Ellis, Helena, and CountryMark, and numerous other agricultural dealers, all of which will contribute labor, staff time and promotion to develop this program even further. We've also received tremendous support from MSU Extension in educating farmers about the program."

Each of the 85 Michigan facilities will have an appointed day for area farmers to deliver their cleaned agricultural plastic containers for recycling (see list for location and phone numbers to call for exact dates). Although there's no direct charge to the farmers for participating in the program, there is a requirement that the containers be triple rinsed or pressure cleaned, labels and foil removed, and the containers be dry.

According to MDA's Agricultural and Environmental Coordinator, Dr. Chuck Cubbage, MDA inspectors, with the assistance of 70 trained members of the Michigan Agri-Business Association, will both be on hand at each facility to inspect containers before they can be accepted. If the containers don't pass inspection, farmers can expect to take their containers back home with them.

"When we first started this program, we had a 14 percent rejection rate on the approximate

Continued on page 11, see Pesticide Container Recycling

Partial Delay Only in Farm Worker Protection Standards

Make sure you understand what's required now and what's not, cautions Michigan Farm Bureau's Al Almy.

Congress has approved and President Clinton has signed legislation delaying implementation from April 1, 1994 to Jan. 1, 1995 of new EPA regulations regarding farm worker pesticide protection standards. However, the delay affects only the "Generic" provisions of the worker protection standards (WPS), advises MFB Public Affairs Director Al Almy.

Label Specific Requirements Not Delayed

"The bill does not delay compliance and enforcement of specific worker protection requirements that appear directly on the pesticide label or labeling," Almy explained. "These include personal protective equipment, reentry and label notification requirements."

Sugar Situation Does Not Merit Marketing Allotment

The USDA announced that, based on estimated sugar production and imports, it will not issue sugar marketing allotments for the third quarter of fiscal 1994, according to a Knight-Ridder News report.

Under marketing allotments, USDA limits the amount of sugar sold to ensure that imports from developing nations remain stable. The department said further estimates will be made in June to determine if marketing allotments should be revised later in the fiscal year, which ends Sept. 30.

According to MFB Commodity Specialist Bob Boehm, the news is good news for Michigan producers. "The recent decision by USDA means that the sugar supply and demand situation is positive for producers and processors," Boehm said.

At right, Ed Szekely of Saginaw County makes a test run with his new planter in preparation for planting his 150 acres of sugar beets, in addition to corn, navies and soybeans.
"YPCS: An Investment in Citizenship"

If you’re concerned about improving the caliber of people we have involved in the political process, make an investment for the future by encouraging a high school student from your county to attend the 1994 Michigan Farm Bureau Young People’s Citizenship Seminar. The program will take place June 20-24 at Calvin College in Grand Rapids.

For the past 30 years, the seminar has presented some of the best high school juniors and seniors in the state with a top-notch introduction to the workings and purpose of our country’s political system. Each year, outstanding speakers discuss current political and economic issues. But the best part of the seminar is the opportunity the young people have to organize campaigns for mock political offices. They learn a tremendous amount about building coalitions, developing party unity, carrying out an effective campaign and getting voters to the polls.

At the conclusion of the program, the students use real voting machines to cast their ballots for the candidates of their choice. The winners get certificates of appreciation from Michigan Farm Bureau to recognize their "victory."

Why does Farm Bureau invest considerable staff and volunteer time in the seminar? We do it because it’s a sad fact of political life that the 18-to-24 age group is the group of voters least likely to show up at the polls. Anything we can do to help motivate young people to not only vote, but also get actively involved in the political process in their own communities, will be tremendously positive for our cities, state and nation.

Plus, you never know when you’re going to get that special student who takes his or her seminar experience and is inspired to pursue a career in public service. One such person is Senate Majority Leader Dick Posthumus, who attended the seminar when he was in high school.

Help support the seminar by surfacing and sponsoring several high school juniors or seniors from your county who you think will really benefit from a week of outstanding citizenship education. And if you don't attend the seminar, be sure to invite them to address your county annual meeting in the fall to share their experiences with your entire membership.

The Young People’s Citizenship Seminar registration forms are due May 10. Please don’t overlook this opportunity to positively affect the future of a young person in your county.

The Sheriff Wants to Talk to You!

Approximately 30 Washtenaw County Farm Bureau members took advantage of a recent Local Affairs Committee-sponsored meeting with the county Sheriff’s Department and their local prosecutor. According to Committee Chairman Luke Schaible, the event afforded many members an opportunity to address key issues, including property owner notification in the event of vandalism to field crops and personal property, 911 response times and priorities, and investigation procedures by the prosecutor’s office. Schaible, a cash crop and sheep farmer, said the county Farm Bureau generally tries to sponsor this type of meeting once a year, so that members can meet and talk directly with officials on local issues.

Michigan Farmland Task Force Schedules Hearings

The Michigan Farmland and Agriculture Development Task Force recently appointed by Gov. John Engler will hold the first of three public hearings and workshops on May 10 from 1:30 p.m. to 4 p.m., at the Eberhard Center on the downtown campus of Grand Valley State University in Grand Rapids.

The Michigan Farmland and Agriculture Development Task Force has been charged by Gov. Engler with drafting a report on the nature and extent of loss of agricultural land in the state, and to make policy recommendations for strengthening the agricultural industry and maintaining land in agricultural production.

The task force will hold three public hearings and workshops in locations where agriculture has seen the greatest threat from land fragmentation. In addition to Grand Rapids, other hearings will take place July 11 in Traverse City and in Oakland County in September.

The task force welcomes written comments and input. All written correspondence can be sent to: Michigan Farmland and Agriculture Development Task Force, 600 West St. Joseph, Suite 10, Lansing, MI 48933 or call (517) 484-4954.

In Brief...

Burning Permit Moratorium in Effect

Despite an agricultural exemption in the state Forest Fire Law, farmers are encouraged to hold off on burning until after June 30, the local burning permitting deadline. According to MFB Legislative Counsel Vicki Ponz, the Department of Natural Resources permit moratorium applies to all permits issued under the state Forest Fire Law.

"Spring is typically the most critical time of year for wildfires in Michigan," Ponz explained. "Nearly 37 percent of the wildfires responded to will be caused by the outdoor burning of yard and household debris. More importantly, however, nearly two-thirds of the large wildfires -- those that burn over 100 acres -- have historically occurred during this period of time."

Local fire departments or townships are allowed to issue burning permits under the state, and to make policy recommendations for strengthening the agricultural industry and maintaining land in agricultural production.

Your Farm Pesticide Records Subject to Audit

The Michigan Department of Agriculture inspectors will be conducting 150 inspections from May 1, 1994 to Feb. 28, 1995 to check grower compliance with federal record keeping requirements for restricted use pesticides. The law requires a private applicator (a farmer) to make a written record of:

1. The brand name or product name of the restricted use pesticide and its Environment Protection Agency registration number.
2. The total amount of the actual product used.
3. The size of the area treated in a unit of measure, such as acre, linear foot, cubic foot, number of animals treated, etc.
4. The crop, commodity, stored product, or other product to which pesticide was applied.
5. The specific location of the actual application.
6. The month, day, and year of application.
7. The name and certification number (if applicable) of the applicator or applicator’s supervisor.

Records must be maintained for two years from the date of the last application. Record keeping forms are available from your local Extension office.

Secchia Commission Hearings on State Government’s Service to Rural Michigan Scheduled

The Secchia Commission Task Force on the Delivery of State Government Services to Rural Michigan, headed by former Ambassador Peter Secchia of Grand Rapids, will be hosting a series of hearings around Michigan over the next several months, according to MFB Legislative Counsel Howard Kowalski.

Hearings are scheduled May 23 in Benton Harbor, June 27 in Grayling, July 25 and 26 at undisclosed locations in the Upper Peninsula, and on Aug. 22 in the Saginaw Valley area at a location to be determined.

If you are unable to attend a hearing, but would like to share your comments in writing with the task force, direct them to: The Secchia Commission, P.O. Box 300226, Lansing, MI 48909. For more information about the hearing dates, and to learn more about the Secchia Commission, contact Kelly at 1-800-292-2680 ext. 2044.

No Agreement on Wheat Reached with Canada Yet

The U.S. and Canadian negotiators still haven’t reached an agreement on how much wheat Canada can export to the U.S., according to Canadian Trade Minister Roy MacLaren. A top Clinton administration official said the U.S. had set an April 22 deadline for resolving the rift. Canadian wheat sales to the United States, Canada is expected to exceed 2.5 million metric tons of wheat to this country in 1993-94, while the U.S. wants that figure lowered. U.S. Trade Representative Mickey Kantor warned that time is running out for a solution to the U.S./Canadian grain dispute.

Study Finds Little Pesticide Residues in Food

A study done in 1992, but just made public in April, found traces of pesticides on fruits and vegetables, but not in amounts to cause harm. USDA said there were traces of some pesticides on produce even after they were washed, peeled or cored, "but in amounts well below legal limits." They did leave the door open for more discussion by saying the limits may be outdated and said the Clinton administration would seek to lower the limits, especially for children. William Franks, director of the USDA Agricultural Marketing Service said more residues are being found because researchers "set their equipment to spot even the tiniest amounts of residues."

The MICHIGAN FARM NEWS (ISSN 0741-9882) is published semi-monthly except in the months of November, December, January, June and July when only one issue is printed, as a service to 15,000 members, by Michigan Farm Bureau, 7727 West Saginaw Highway, Lansing, MI 48917. Membership subscription price of $1.50 included in annual dues of Michigan Farm Bureau regular members. Additional subscription fees required for mailing Michigan Farm News to non-members and outside the continental U.S.A. Second-Class Postage paid at Lansing, MI and additional mailing offices. Letters to the editor and unsigned news articles should be sent to: Editor, Michigan Farm News, P.O. Box 300269, Lansing, MI 48909-8400. POSTMASTER: Send address changes to Michigan Farm News, P.O. Box 300269, Lansing, MI 48909-8400.

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Michigan Farm News
Private Property Rights

**MFB POSITION**
The bill is supported by Farm Bureau. Included among the several co-sponsors is Michigan Congressman Bart Stupak (D-Menominee).

**MFB CONTACT**
Al Almy, Ext. 2040

H.R. 3875, known as the Private Property Owners Bill of Rights, has been introduced by Congressman Tauzin (D-Louisiana). The bill would:

• Require compensation to owners deprived of 50 percent or more of the fair market value of their property, or of the economically viable use of that property by federal actions.

• Require federal agencies to comply with state and tribal property laws.

• Require federal agencies to get written permission from landowners before entering private property to gather information.

• Set up an administratively appealing procedure for private property owners affected by "adverse" endangered species or wetlands rulings.

OSHA Reform

**MFB POSITION**
The bill opposes both bills.

**MFB CONTACT**
Al Almy, Ext. 2040

Legislation has been introduced in both the U.S. House of Representatives and the U.S. Senate to reform OSHA. The bills, H.R. 1280 introduced by Congressman Ford (D-Mich.) and S. 575 introduced by Sen. Kennedy (D-Mass.), specifically target agriculture for the new workplace standards. The bills contain the following major provisions:

• Requires farmers to devise safety and health committees and provide medical monitoring of all employees.

• Requires farm employers to advise employees in writing of exposure to chemicals and keep records of chemical use where worker exposure may be involved.

• Requires farm employers to develop safety and health programs and provide annual training for every worker at each worksite.

Clean Water Act Reauthorization

**MFB POSITION**
The bill does not support.

**MFB CONTACT**
Al Almy, Ext. 2040

H.R. 2945 is extremely harsh and punitive and, if enacted, would affect every farmer. It gives no recognition to the progress farmers have made to date in using good soil conservation practices.

The EPA, through state agencies, would set terms and conditions for farm plans and have primary enforcement authority. The following is a summary of some of the troubling provisions in the legislation:

• Every farm, regardless of location and the current condition of water quality, is required to have a comprehensive water quality plan approved by the state.

• Each plan must, at a minimum, conform to a list of soil, water, nutrient and land-use Best Management Practices (BMP's) developed by EPA. Each plan must be enforceable with, at a minimum, injunctive enforcement authority.

• Raises penalties to $100,000 per day per violation. It authorizes and funds citizen enforcement authority.

• Requires farmers to keep records of chemical use where worker exposure may be involved.

• Requires farm employers to advise employees in writing of exposure to chemicals and keep records of chemical use where worker exposure may be involved.

• Requires farm employers to develop safety and health programs and provide annual training for every worker at each worksite.

and setting concurrently with the implementation of BMP's. In short, farm management plans will be chasing a moving and increasingly stringent set of standards.

• Establishes flishable, swimmable and "drinkable" as a new national policy goal that ALL surface and groundwater be protected and managed to achieve a level of quality appropriate as a source of water for human consumption.*

• Ignores the fact that over 70 percent of our waters meet the flishable/swimmable goal of the current law and that the trendline continues to improve. Of the 30 percent that are a problem, agriculture is a factor in only half of the waters that currently do not meet designated uses.

• Fails to recognize that nonpoint source runoff does not pose the same acute threat to health and the environment that point source pollution does. It is a manageable problem, not a crisis.

The tremendous investment in conservation made by farmers over the last decade is not credited nor is it understood that time is required for these efforts to produce water quality improvements.

Equate Liability

**MFB POSITION**
The bill appears to conform to Farm Bureau policy on equitable liability.

**MFB CONTACT**
Ron Nelson, Ext. 2043

Rep. Llewellyn (R-Fremont) is sponsoring H.B. 5006, which would limit the liability for equine owners. Although the bill does not provide total liability exemption, it does provide that "innocent equine owners" are protected in all circumstances, unless there was negligence or the users were not advised of the potential risk.

P.A. 232 Amendments

**MFB POSITION**
Farm Bureau opposes the bill as written with the 10 percent requirement. Farm Bureau policy specifically states the 25 percent or 200 minimum requirement for any changes to P.A. 232.

**MFB CONTACT**
Ron Nelson, Ext. 2043

H.B. 5393, introduced by Rep. Gnodtke, would revise several sections of P.A. 232, known as "The Agricultural Risk Management Act." The bill has been opposed by farmers and others concerned that the bill would not provide adequate protection for farmers and would require the Michigan Department of Agriculture to follow up on complaints, investigate and carry out court action if necessary.

Appropriations - DNR - P.A. 116

The Appropriations Committee has discussed at some length the appropriates for administration of P.A. 116, which have grown rapidly. The proposal for Fiscal Year 1994-95 is $60,000. Funding comes from the payback of credits received when the agreement is terminated.

When funding was shifted from general funds to the payback fund, appropriations increased approximately $35,000. Legislators are questioning the $60,000 appropriation since there is very little new land entering the program to justify increased funding.

Garbage Feeding Permit Repeal Proposed

Rep. Ray has introduced legislation calling for the repeal of the permit process for feeding garbage to hogs. In a meeting with representatives from Michigan Farm Bureau, Michigan Pork Producers Association and Michigan Department of Agriculture officials, opposition was voiced to the proposal, since without the permitting process, there would be no guidelines for feeding garbage to hogs. Without those guidelines, there was fear about public reaction to the practice, and control of trichinosis and hog cholera.

H.B. 5353 Worker's Disability Compensation

**MFB POSITION**
The bill has been supported by Farm Bureau. The bill would revision the current law eliminating the so-called "primary care provider" rule. Current law permits any worker, employed in any occupation, regardless of the nature of injury, to assume responsibility for the treatment and care of the employee. The person that provides such treatment is given immunity from liability. The bill would make the insurance policy the primary source of payment for such treatment. The bill would also revise the "exclusive remedy" clause of existing law. Farm Bureau strongly supported bills diluting this exclusivity clause.

**MFB CONTACT**
Howard Kelly, Ext. 2044

Legislation co-sponsored by Reps. Oshove, Rivers, Parks, DeMars, Freeman and Wendt, would eliminate the prohibition against employees filing a claim for recovery from an employer for the job injury. Currently, Workers Compensation is an employee's exclusive remedy against an employer for a personal injury or occupational disease.

This bill would add additional exceptions to the only current exception of intentional tort. The new language would allow a lawsuit in which a personal injury or occupational disease is caused by a defective machine or a defective or employer-modified piece of equipment for which the employee was previously issued a citation by OSHA (Occupational Safety and Health Administration) or MOIAH, and failed to report the machine or equipment before the date of the personal injury or occupational disease.

This bill is a part of a package of bills addressing product liability issues. They are reported to, in part, be designed, to "facilitate the reporting of agricultural-related accidents."

H.B. 5351 is called the "sunshine in litigation act," which applies to civil actions, and, in effect, mandates that facts about any device, instrument, person, procedure, or product that causes, or is likely to cause, personal injury, or the pollution, impairment, or destruction of air, water, or other natural resources, cannot be prohibited from disclosure.

H.B. 5355 makes it a felony for a person who causes a dangerous defective product or device to be manufactured or distributed in Michigan. The penalty is up to five years in prison and $1 million fine. The definition of dangerous is any product that is "designed or constructed in such a manner as to be dangerous... when used in any manner for which the product or device is intended to be used or may foreseeably be used."
Vegetation began to grow across much of the state during the past week or two as some areas were dry to normal and air temperatures and soil temperatures (rising into the 40s and 50s) led to the first appreciable growing degree days accumulations of the season.

One likely contributing factor to the warm soil temperatures was drier than normal soils, the result of below normal precipitation for much of the past several weeks. A series of strong cold fronts and associated precipitation including thundershowers, brought surface soil moisture levels back up to more normal levels in spots recently, although some parts of the state remain drier than normal (especially in the north).

The new National Weather Service 30-day outlook calls for a weak ridge to cover the middle of the U.S., resulting in warmer and drier than normal conditions across Michigan. Before dreaming of early spring planting, however, I would consider the following: the jet stream flow during the past two or three weeks has been very erratic and unpredictable, making forecasts more than a few days in advance very difficult.

Secondly, the accuracy of long range outlooks at this time of the year is the lowest of any time of year. While we are likely to see more of the up and down temperature pattern of the past week or two, my guess is that overall means during the next few weeks will still trend somewhat lower than normal as a source of cold air persists just across the border in Canada.

Soil Moisture is Key to Seed Germination

Adequate soil moisture is vital to achieving maximum germination in corn fields, says Win Johnson, Northrup King Co. senior agronomist. He notes that seed with good vigor contain an ample supply of key sugars. When the seed absorbs water, it reacts with these sugars, immediately triggering germination. Experts believe seeds that are slow to germinate suffer from a shortage of these important sugars.

A seed must absorb about 50 percent of its weight in water to achieve good germination, the Northrup King agronomist says. When planting corn on irrigated ground, soil moisture should be in the range of 70 percent to 100 percent of field capacity for rapid seed absorption of water. Soil moisture in the 10 percent to 12 percent range is typically too dry for germination.

To determine if soil moisture is adequate, Johnson suggests growers squeeze a handful of soil. If the seed sticks together, moisture levels are probably about right for planting. If the soil is muddy, it’s probably too wet for planting. If it falls apart, it is too dry to germinate seed satisfactorily.

Many growers plant by the calendar. Johnson advises growers to plant as early as possible and suggests that conditions are best when the soil temperature is 55 degrees Fahrenheit at four inches deep at 8 a.m.

Ideal seeding depth also depends on soil conditions, he says. In cold, moist soils, planting shallow to one and-one-half inches is generally sufficient. However, even in drier soils, two and-one-half inches is considered maximum depth. Johnson explains that when planted deeper, the seed may not be able to push the coldseeds out of the ground.

Pesticide Registration Update for Grapes

According to the MSU Cat Alert, Fruit edition, registration has been granted to DowElanco for Lorsban 4E use on grapes, effective until Feb. 14, 1999. Lorsban 4E is recommended for controlling root borer control. The section 24(c) label must be in possession of the user at the time of application.

Discover the Distinct Advantage!

- **50 Year Protection** Against snow-loading damage to the structure with no wind limit.
- **50 Year Protection** Against decay or impact attack on preservative-treated columns and preservative treated lumber.
- **20 Year Protection** Houghing against red rust Mercerization damage caused by atmospheric pollutants.
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*Adrian, MI (517) 263-5041 - Brown City, MI (810) 346-2702 - Kankakee, MI (517) 260-2580

Morton, IL (815) 274-6440 - Three Rivers, MI (616) 796-2771

April 30, 1994
Herbicide Applications - Debunking the Water pH Myth

Despite what you may have read in major farm publications, or heard from salesmen recently about lowering your herbicide spray water pH levels, you may want to re-check your facts. According to MSU Extension weed specialist Jim Kells.

He says much of the talk of lowering water pH levels applies only to those situations where sulfonyleurea herbicide spray solutions, such as Classic, Pinnacle, Acrobat, and Beacon, would be left on the spray tank for an extended period of time — overnight for example.

"In those cases, the recommendation is very simple. Do all possible, spray the mixtures the same day that you mix it up," Kells explained. "If you get caught where you can't spray the same day, the label then recommends adding a pound of sodium bicarbonate or baking soda per 100 gallons of spray solution to neutralize the pH, to keep the spray solution more stable overnight. But for any soil applied herbicide, this idea of modifying the pH to get maximum activity just isn't valid."

Roundup Confusion
Kells suspects that much of the confusion about pH levels results from the common practice of adding ammonium sulfate or food-grade citric acid to water in combination with Roundup. Either of these two ingredients are suggested in hard water conditions, to overcome "hard water antagonism."

"Food-grade citric acid does lower the pH of the water, but the primary benefit is that the citric acid binds with the calcium and magnesium, so they can't react with the Roundup," Kells said.

Calcium and magnesium salts in hard water are positively charged and soluble in the water. When a negatively charged herbicide such as Roundup is added to the spray tank, the positively charged salts are attracted to the negatively charged herbicide. Ultimately, this reduces the herbicide's absorption into the plant leaf.

"It's recommended on the Roundup label that 17 pounds of dry ammonium sulfate per 100 gallons of water be added to overcome the hard water antagonism," Kells said. "The other approach is to use citric acid to tie up the calcium and magnesium in the water."

Kells suggests that farmers have their water tested by their local health departments for hardness. Generally, water with calcium and magnesium levels exceeding 250 parts per million is considered objectionable as drinking water.

Last, but not least, if you determine that you must add ammonium sulfate or citric acid as combat hard water antagonism in Roundup solutions, then make sure you add them to the solution prior to adding the Roundup.

"If you put the Roundup in first, it will react with the calcium and magnesium, before the additive has a chance to do anything," Kells cautioned. "Put the ammonium sulfate or citric acid in first. After you've tied up the calcium and magnesium, then add the Roundup."

How You Can Reduce Hard Water Antagonism
Several approaches can be utilized to adjust the spray tank chemistry to overcome the reduced control from hard water antagonism of Roundup herbicide.

Ammonium Sulfate: Ammonium sulfate has been used successfully in increasing Roundup efficacy on a broad spectrum of weed species.

The Roundup label recommends the addition of 2 percent ammonium sulfate by weight or 17 pounds of dry ammonium sulfate per 100 gallons of water for most applications. Ammonium sulfate should be added to the water prior to the Roundup.

Organic Acids: A common practice to reduce hard water antagonism is the use of organic acids, such as food-grade citric acid. The organic acid should be added to the water prior to the addition of the Roundup.

A use rate of 2.2 pounds per 100 gallons should be adequate for water with 250 parts per million of calcium. Acidifiers should not be used in conjunction with organic-silicone adjuvants as increased acidity may enhance chemical breakdown of the organic-silicone adjuvant.

Urea-Ammonium Nitrate (28% Liquid N): Urea-ammonium nitrate or 28% liquid N will also increase Roundup efficacy on many grassy weeds. However, ammonium sulfate is preferred over 28%.

Low Volume Rates: Decreasing the spray carrier volume has also been found to reduce hard water antagonism simply because the calcium and magnesium are proportionally reduced with lower water volumes. However, adding ammonium sulfate or organic acid in addition to a non-ionic surfactant is still recommended under hard water conditions.

Soft Water: Water treated with ion exchange water softeners contains monovalent sodium in place of calcium and magnesium found in hard water. Although not as antagonistic as hard water, water softeners have still been found to antagonize Roundup activity.

Surface Water Sources: Surface water sources generally have significant levels of dissolved solids and organic particulate matter.

These soil particles decrease Roundup activity on most weed species. However, they will not overcome hard water antagonism.

Non-Ionic Surfactants: These soil particles will generally enhance Roundup activity on most weed species. Therefore, under hard water conditions, ammonium sulfate or organic acids should be used in conjunction with non-ionic surfactants to maximize Roundup absorption.

Source: Crop and Soil Sciences, Kurt Thelen

Worker Protection Standards

Worker Protection Standards (continued from page 1)

Generic Provisions Delayed
According to Craig Anderson, manager of the Regulatory Compliance Assistance Program (RCAP), the "Generic" provisions are delayed until Jan. 1, 1995. These are the requirements referenced, but not specified on the label. The RCAP provides hazard training for agricultural workers and pesticide handlers, providing of decontamination supplies - towels, soap, water, change of clothing, decontamination stations, etc., for workers. The training is for the 300 acres per person, the 100 acres per person or the 5 acres per person.

Application Techniques/Procedures
These tests 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, or soon after planting.

Worker Protection Standards, contact Anderson at 1-800-782-6432.

AACA on Corn
Since its introduction, AACA has demonstrated its ability to enhance plant vigor and help in-have plant applications has shown most consistent crop plant development. Seed tolerance studies have shown AACA to be completely safe in eliminating corn seedlings when placed in direct contact with the corn seed in-furrow.

Identifiable Performance Parameters on Corn

Visual Response
• Vigorous early plant growth.
• More root and extensive root system.

Observing Timing/Stage of Growth
• V2 to V3
• Early-V1 to V5
• Late-10 days after silking
• V12 to V17

Yield Information Field Corn (1993)
• 37 total studies • 6.9 bushel per acre increase • 5.6% increase in yield
• Return on ACA investment of $19.00 (1.0 percent) to $19.37 (2.0 percent)
• 1/2 pint ACA per acre in-furrow [Corn, 22.5 bushels per acre] • 6.9 bushel increase/acre • $15.50 - ACA Investment of $3.44/acre (1.0 percent) • $12.96 (5.0 percent)
• 1/2 pint ACA per acre broadcast [Corn, 22.5 bushel/acre] • 6.9 bushel increase/acre • $15.50 - ACA Investment of $5.00 (1.0 percent) • $10.01 (20.0 percent)

Application Procedures/Techniques
• Application:
  - Soil broadcast with water as the carrier, with or without a herbicide
  - Pre-plant broadcast with seed

Method of Application
• AACA must be neat with and fits into the following fertilizer programs:
  - Anhydrous ammonia
  - Nitrogen solutions
  - Dry blended starter fertilizers
  - Slow applied (weed & feed herbicide/fertilizer solutions or dry)

Application Rates
• For in-furrow (broadcast or larbed (2" to side and 2" down), apply ACA at 5.33 to 8 fluid ounces (1/2 to 1 pint) per acre. Field studies of broadcast and in-furrow application of in-furrow applications have shown consistent applications of 1/2 pint per acre. The rate for broadcast application is 10.66 fluid ounces (3/4 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 0.004 fluid ounces of ACA per pound of contained nitrogen or 0.537 gallons (1/2 fluid ounce) per ton of ammonia. A typical 1,000 gallon anhydrous ammonia tank filled to 80% of capacity would require 156 fluid ounces of ACA.

Maximize your Corn productivity with AACA

Corrections
Route To Profitability

Michigan Farm News
April 30, 1994
CORN

The USDA updated their Supply/Demand Report on April 12 to include the information for the Stocks Report discussed in the last issue. Their update is shown in the first two columns of Table 1. Given that stocks were somewhat lower than expected, some thought projected 1993-94 feed use would be lowered while due to tight stocks somewhat. However, USDA must feel second half use will make up for this and animal numbers would support this. They did lower export projection for 1993-94 by 25 million bushels due to the slow export pace to this point and lack of future sales on the books. However, it does appear that we should reach this new lower projection if things pick up just a bit as expected. While this change did increase the ending stocks projection, stocks are still quite tight.

Strategy: Most of the potential weather scares are still in front of us; so given the tight stocks, I feel there is more upside potential than downside risk. As of mid-April, new crop prices were near what my WHEAT

The USDA also made some changes in its 1993-94 wheat supply/demand estimates as shown in Table 2. The 1993-94 projections are mine; the USDA will issue their first projections of 1994-95 in the May update. The USDA raised wheat feed use 25 million bushels due to the less than expected stocks reported last month. However, they did not raise it as much as many in the trade expected. Exports for the 1993-94 marketing year, which runs through June 1, look like they are on track to match the 1992-93 level of 2.6 billion bushels.

Strategy: New crop wheat prices are just above my expectations. However, if we have a rally, strongly consider pricing a significant portion of your production; otherwise, we may have to keep it for a December rally. It may not stay around long.

While the supply of cattle will likely be sufficient this summer, last fall’s placements being down 6 percent and January’s being down 5 percent, so tender the seasonal summer price decline. This, along with good income projections, i.e., good demand, should keep many feedlots near break-even the remainder of this year.

Strategy: While this change did increase the ending stocks projection, stocks are still quite tight. Consider holding off sales of both old and new crop until we rally from the mid-April trend. Then be ready to price into the possible rally. It may not stay around long.

Table 1: Supply/Demand Balance Sheet For CORN

Table 2: Supply/Demand Balance Sheet For WHEAT

Table 3: Supply/Demand Balance Sheet For SOYBEANS

SOYBEANS

The USDA raised its 1993-94 crush projection 10 million bushels and lowered its 1993-94 export projection 15 million bushels to leave 1993-94 soybeans in a tight stock situation as shown in Table 3. Both exports and weather may be big market movers for soybeans as we move through the spring and summer. The tight 1993-94 ending stocks projections puts us in a position where a fairly small pick-up in export expectations would be very positive.

As seen in my 1994-95 supply/demand estimates in the last column of Table 3, mid-April new crop prices are very near what fundamentals would project.

What surprised me was how fast they got there after the stocks and planting intentions came out. I expected the market to be HOGS

How many hogs are out there is still clearly the most controversial part of my projections. While ending stocks were lowered marginally, stocks are ample.

Strategy: As of mid-April, hog futures were near their lows. If this situation persists, just hold off and price at market time. However, if year-to-year slaughter does fall off and futures rally anywhere near previous highs, consider forward pricing significant amounts of your future production.

The turmoil in September results from the layer number and egg production being about 2 percent less last year through August. The egg type chick hatch in January and February was 2 percent and 8 percent, respectively, below a year earlier for the first time in about a year. Further, layer type eggs in incubators on March 1 were considerably below March 1, 1993 (80 percent of 1993). These figures will trigger higher egg prices in September.

Another price strengthening factor is the trend toward an increase from the previous year in the slaughter of spent hens. As the crop season progresses, feed price ingredient costs will probably move lower than last year.
White Mold Research Leads Michigan Soybean Research Funding

During a recent directors' meeting of seven soybean farmers, it was decided that $40,720 of producer checkoff funds will be used to further White Mold research efforts at MSU in 1994, according to Michigan Soybean Promotion Committee Executive Director Keith Reinholt.

In total, the committee allocated just over $200,000 for various research projects. "White Mold is becoming a larger and larger problem in the state of Michigan for soybeans, and has been in dry beans, for quite some time," Reinholt explained. "We've got three projects that will be addressing White Mold, including the breeding aspect, and resistant varieties."

White Mold spores, which actually survive in the soil, infect the soybean plant through the flower, eventually infecting the stems of the plant, and seriously reducing yields. In many cases, the mold can actually kill the plant.

Reinholt says that White Mold has become a common problem in southern and central Michigan, in Irenna, Ingham and Washtenaw counties. "We're hoping that as more university researchers get involved, we'll get this issue resolved quicker through resistant varieties, and/or sprays that will lessen the infestation," he said.

Soybean Cyst Nematode research at MSU also received $19,000 in funding for 1994. MSU researchers Fred Warner and Dr. George Bird, have been conducting research on this growing problem for the past several years, and will continue efforts this year to identify methods for control and testing, according to Reinholt.

In addition to several agronomic type research projects at MSU, Reinholt said the committee made a $9,000 research allocation to Western Michigan University for additional soy ink research and a $1,000 allocation to Michigan Technological University for a new soy uses project.

"We had several demonstrations last summer that indicated this new uses product for soybean oil byproduct was effective in dual control, but we need to continue researching it," Reinholt said. "We have to do some environmental impact studies, and we need to assess the supply and demand of such a product."

To receive funding, researchers must first submit a research proposal within a given time frame. The proposals are all forwarded to the Research Department of the American Soybean Association (ASA) for comparison with other research projects elsewhere in the country to avoid duplication of efforts, Reinholt said.

ASA then returns a two-page evaluation on each proposal to the Michigan Soybean Promotion Committee, where directors then have a chance to interview researchers.

"Directors then pretty much ask the researchers to point blank how their respective project is going to help soybean growers in the state of Michigan," Reinholt said. "The directors then rank each project in terms of importance and dollar impact, before making their final allocations based on the total available budget."


• "Management of the Soybean Cyst Nematode in Michigan/"$19,000

• "Phytophthora Root Rot of Soybean: Factors Controlling Infestation and Symptom Expression/"$15,500

Michigan Specific Breeding

• "Genetic Diversity of Northern Soybean Lines Using RAPD Markers/"$4,950

• "Breeding, Testing, and the Development of Specific Use Soybean Varieties for Michigan Environments/"$26,250

Variety/Tillage Studies

• Increased Soybean Profitability With Reduced Tillage Practices/"$6,000

Extension Service/Soil Conservation Service

• "Soybean Plots/Educational Projects," Gratiot County/"$2,300

• "Reduce the Use of Chemicals in a No-Till System Using Narrow Rows, Band Spraying, and Mechanical Cultivation in the River Raisin Basin Demonstration Plots/"$4,435

White Mold Research Leads Michigan Soybean Research Funding

Since 1976, Michigan soybean producers have opened the door to further research of their crop. Members of the Michigan Soybean Promotion Committee have approved funding for projects over the years with the goal of improving the soybean farmer's bottom line. Nearly $200,000 of funds have been appropriated.

Weed Control Research

• "Field Evaluation of WEEDSIM Weed Management Model in a Corn-Soybean Rotation in Michigan/"$7,263

• "Weed Control in Glyphosate Tolerant Soybeans in No-Till and Conventional Tillage Production Systems/"$9,228

• "Using Reduced Rates of Postemergence Herbicides in Drilled and Row Soybeans/"$7,350

• "Wild Carrot Management in Michigan No-Till Soybean Production/"$50,000

• "Value-Added Recycling: Evaluation of New Soybean-Based Adjacent for Use With Postemergence Herbicides in Soybeans/"$50,000

Disease/Insect Research

• "Practical Strategies for Managing White Mold in Soybeans/"$1,800

• "White Mold in Soybeans: Development of Resistant Varieties, Testing of Varieties for Resistance and the Testing of a Resistance Inducing Chemical/"$15,520

• "Management of the Soybean Cyst Nematode in Michigan/"$19,000

• "Phytophthora Root Rot of Soybean: Factors Controlling Infestation and Symptom Expression/"$15,500

• "Genetic Diversity of Northern Soybean Lines Using RAPD Markers/"$4,950

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Charts Provided by Knight-Ridder Financial
No matter how busy you are, take time for safety and proper training on your farm. It will always be a worthwhile investment — because you’ll experience fewer errors, higher productivity, and a reduced risk of accidents. So take time to:

- Make safety and health a priority. They are necessary for success in farming and in life.
- Follow safety and health recommendations in operator’s, owner’s, or instruction manuals and product labels.
- Know how to prevent farm injuries and illnesses. And put your knowledge into practice.
- Be prepared for each thing you do during your day. Have the right tools, equipment, and supplies at hand. Know and respect your limitations as well as your strengths.
- Inspect all equipment and facilities for hazards. Correct them without delay and know how to cope with hazards that can’t be eliminated.
- Maintain your equipment. Make sure all PTO shafts, V-belt drives, and augers are protected by properly installed and operating shields and guards. Don’t allow your employees to operate equipment without safety devices in place.
- Make sure all family members and employed workers are properly trained and equipped for their jobs.
- Protect children, the elderly, and others in your care. For example, don’t let children ride on farm equipment — and give them only work suitable for their age and development.
- Follow label directions and take all recommended precautions when handling and applying chemicals. Keep them stored in original containers away from children. Dispose of unused chemicals and empty containers as recommended by label instructions or according to EPA guidelines.
- Provide proper protective equipment — including appropriate masks, gloves, and clothing — for yourself and any workers who handle hazardous products or work under conditions that require extra protection.
- Care for your health. Stay fit, eat properly, and avoid crash diets. Exercise to maintain fitness, muscle tone, and agility.
- Be prepared for emergencies. Learn first aid and CPR. Post emergency numbers at every phone. And learn the procedures for notifying local authorities of a hazardous material exposure or accident.

Calendar of Events

May 23-24, National Agricultural Biotechnology Conference, MSU Kellogg Center, call Eddie Hansen, (517) 355-0123.

May 28-29, Michigan Horse Drawn Vehicle Association Clinic and Show, Barry County Fairground in Marshall, contact Berndine Karns, (616) 781-5515.

June 20-24, Young People’s Citizenship Seminar, Aquinas College, Grand Rapids, 1-800-292-2588, ext. 324.

June 22-24, College Week, Michigan State University.

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

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

July 20, Summerfest, MFB Center, Lansing.

July 23, Forage Field Day, Lake City Agriculture Experiment Station.

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

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


Aug. 5-7, Llamafest, Kalamazoo County Fairground, Kalamazoo. Fourth annual meeting includes workshops, demonstrations, show and sale for Llamas, call Leah Bird Hansen, (517) 355-0123.

Aug. 22-24, College Week, Michigan State University.

Aug. 29-31, MSU Muck Research Farm Field Day, Lake City, call Darryl Warnke, (517) 355-0210.

Aug. 17, Potato Field Day, Pig/Beef Roast, and potatoes variety tour, MSU Montcalm Research Farm, Edenville, call Dick Chase, (517) 355-0206.

Aug. 23, Saginaw Valley Research Farm Field Day, Saginaw Valley Bean and Beet Research Farm, 9 a.m., call Don Christenson, (517) 355-4594.

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 Michigan Farm News P.O. Box 30960 Lansing, MI 48909-3460 FAX: (517) 323-6793

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Evaluating Your Alfalfa Stands? Count Stems!

The life of a productive alfalfa stand varies considerably—from one to seven years—and is affected by several factors including traits of variety, geography and soil type, fertility, pH levels, weather extremes, and the presence of insect or disease conditions. Any of these factors can help prolong or shorten stand life.

How can you tell if your alfalfa stand is past its prime?Researchers and growers have wrestled with the determination of this critical "point in time" for years. Several evaluation methods and theories have surfaced, but only recently has an accurate and easy-to-use method emerged.

Accuracy is Key

"Historically, most states have recommended making decisions on alfalfa stands based on plant count," says Dr. Dan Undersander, University of Wisconsin forage specialist. This method involves physically counting crowns of surviving alfalfa plants in a square-foot area, while evaluating age of the stand, plant condition, and stand uniformity. Recent research shows this may not be a reliable method of estimating yield potential.

"Stem count now appears to be a more accurate method of estimating yield potential of an alfalfa field," Undersander continues. "If you count only the crowns, you don't get the whole picture."

Dr. Marvin Hall, forage specialist with Pennsylvania State University, agrees. "We're now looking at stem count as a better method of evaluating stands," he says. "Mature alfalfa crowns can actually compensate for fewer plants per square foot by producing more stems, or shoots, per plant. The plant count method doesn't take this into consideration."

Research Supports Stem Count Method

Research conducted the past three years at the University of Wisconsin shows a direct correlation between stem density and yield potential. Studies conducted in 20 fields near Madison and River Falls, Wis., showed little relationship between plant count and actual yield, thus supporting the accuracy of the stem count method.

Undersander mentions that yield potential, as projected by stem count, does not equal actual yield. "Actual yield will probably be less than the yield potential," he explains. "The potential shows all that is possible, but actual yield is dependent on favorable growing conditions and grower management programs including soil fertility levels and insect and disease controls."

Varietal selection is another important component of grower management. Continuous, intensive research conducted by America's Alfalfa makes it possible for growers to select alfalfa varieties based on dormancy rating, winter-hardiness, and disease and pest resistance. These traits can dramatically impact the persistence and yield potential of an alfalfa stand.

Evaluation is Simple

For quick assessment using the stem count method, Undersander recommends growers construct a square box or outline (approximately 1.4 feet by 1.4 feet). Walk the field and place the box on the ground in three to four widely separated locations.

Count the stems within the box, divide by two to get average stems per square foot, and then evaluate stand density. If the stem count is 55+ average/square feet, there is no change in yield potential; 40-55 average/square feet, there is some yield reduction; and 0-39 average/square feet, there is extreme yield reduction/consider plowing stand under.

Use these figures as a guide, but also consider yield history of the field and other alternatives for hay or haylage production, Undersander advises.

To further assess health of the stand, Undersander recommends growers dig alfalfa plants to examine roots for crown and stem rot. If a root shows evidence of crown rot not extending over two inches into the root, or if root discoloration spreads over four inches into the root, the plant is likely to die within the next year. He says this evaluation is helpful in making a final decision on the future of a field.

Evaluate Your Stand

Use a square box or outline measuring approximately 17 inches x 17 inches, for counting stems in three or four different locations in your field. After counting the number of stems in the box, divide by two to get the average stems per square foot. Evaluate stand density based on the following:

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<th>Stem Count</th>
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<td>55+</td>
<td>No change</td>
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If stem count is:

- 55+ = No change in yield potential
- 40-55 = Some yield reduction
- 0-39 = Extreme yield reduction/consider plowing under

These steps are consistent with Hall's recommendation of a pro-active approach to alfalfa management. "If you wait to make your stand evaluation or replant decision until yields drop, it's too late," says Hall. "You must make your time during the growing season. He cautions that spring counts should not be made until alfalfa has grown at least six inches.

"The optimum time for evaluation would be in late summer," Cosgrove says. "This gives alfalfa growers time to assess their findings and make plans for spring planting."

Management Made Easier

Proper stand evaluation is essential to profitability of a grower's operation. But Undersander says an evaluation technique can't be effective if growers don't use it.

"Our goal is to establish a method that is accurate and easy to use. The stem count method is quicker than counting crowns and it's easier since you don't need to get down on your hands and knees," he says. "After you've done a few evaluations and get your eyes calibrated, you can actually look at a field and visually make your evaluation."

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**Preying on Insects: A Form of Pest Control**

The corn borer wasp parasitize borers by inserting their eggs into borer larvae. As the wasps develop, they feed on the corn borer larvae, ultimately killing them.

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Michigan Agricultural Experiment Station Researcher Doug Landis, assistant professor of entomology at Michigan State University, is studying ways to increase natural predators of insect crop pests, and an answer may be in the landscape.

"Predators and parasites frequently need different resources than the pests they attack," said Landis. "While the crop fields may be ideal for the pest, unfarmed areas such as fence rows, stream banks and follow fields are vital for natural enemies to survive. Farmers should not discount the benefits they could be getting from some of these natural areas."

Landis believes the imported European corn borer is the second biggest field crop pest in the Midwest, causing millions of dollars in yield decreases each year and more damage in the past 10 years than the corn rootworm. The borer is not affected by crop rotation because it can fly to any field to lay its eggs, and chemical control has not proven to be completely effective.

To control this and similar problems, the USDA launched a classical biological control program. It began with visits to the pests' countries of origin to find their natural enemies.

Through this program, about 25 natural enemies of insect pests were imported and released. The corn borer wasp and the seven-spotted lady beetle became established in the Midwest.

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**Insects: A Form of Pest Control**

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**Michigan Farm News**

April 30, 1994
**Proper Rinsing Critical to Recycling Pesticide Containers**

Pesticide containers that are disposed of improperly can contaminate our environment. When pesticide containers are taken to approved landfills, the container material still is not reused. Container disposal is also becoming more difficult with the number of approved landfills declining. Open burning of pesticide containers is not legal in Michigan.

Recycling allows the container material to be reused, which saves resources, reduces demand for landfill space, and shows all of Michigan that you, as a pesticide applicator, are concerned about the environment.

Why Rinse Containers?

Rinsing containers immediately and adding the rinse to the spray mixture reduces environmental risks and it also ensures that any pesticide residue is removed completely. Properly rinsed containers may be accepted after passing normal inspection, thus reducing the rejection rate. Proper rinsing also reduces the amount of water needed to clean the spray tank with the cap removed.

There are two approved methods of rinsing pesticide containers: triple rinsing and pressure rinsing.

**Triple Rinsing:**

1. Remove the cover from the container and empty it into the sprayer. Once the container has been emptied, let it drain for 30 seconds.
2. Fill the empty container about 1/4 full with water and replace the cap securely.
3. Repeat the steps above two more times.
4. Inspect the container to make sure it's clean.

**Pressure Rinsing:**

Pressure rinsing removes pesticide from containers by using a special nozzle attached to the end of a hose. It may be faster and easier than triple rinsing, and it can be used with plastic and non-pressurized metal pesticide containers.

**To Properly Pressure Rinse:**

1. Remove the cover from the container and empty it into the sprayer. Once the container has been emptied, let it drain for 30 seconds.
2. Insert the pressure rinse nozzle by puncturing the lower part of the container.
3. Hold the container upside down over the spray tank with the cap removed. Allow pressurized water to clean the inside surfaces while the rinsate flows into the spray tank.
4. Rinse the container for at least 30 seconds making sure to rotate the nozzle so that it rinses all the inside surfaces.
5. Inspect the container after rinsing to make sure it is clean.

Pesticide Container Recycling

continued from page 1

32,000 containers that were delivered," Cahage said. "This year, the rejection rate was just 9 percent on 72,000 containers, so that's a very positive aspect of this program." Vicary suggested that growers wanting to participate in the program, utilize large plastic bags, to store the containers once they're cleaned and dried until the local recycling date.

The program will be accepting plastic one gallon and 2 1/2 gallon agricultural containers (pesticides, herbicides, additives, surfactants etc.), and five gallon paqs from agricultural uses only. Vicary said that although 20 gallon and 55 gallon plastic drums from agricultural purposes will be accepted after passing normal inspection, the larger units do pose additional staff time and special grinding arrangements. "We would like to encourage producers to shift to reusable/returnable program on the larger units," he said.

Most of the ground up plastic will be sent to St. Louis, Mo., for use in waste energy recovery, such as cement manufacturing, since the product is considered a high BTU energy source. Industry efforts continue on a national basis to find alternative uses for the product to help underwrite the costs of container recycling.

Nationally, chemical manufacturers commit $1.75 million to collection and recycling of the pestcide program last year, which averages approximately 85 cents per pound of plastic recycled. Costs of the program are charged back to chemical manufacturers based on the percentage of their containers on the market.

We're looking at uses such as plastic pallets, which could eat up 5 million pounds of plastic in a hurry, if that were proven to be a workable process," Vicary explained. "If we can take a service and product costing a $1.25 per pound and make it into a reusable and profitable product, then we've changed the cost equation of this program considerably."
Looking for a way to preserve residue levels, while improving water and fertilizer infiltration, and speeding up root on crop stability? The Aer Way, manufactured by Holland Equipment, may just be the solution you’ve been looking for.

Michigan sales representative Jerry Neyer says the Aer Way is an aeration tool used in no-till, minimum till, and pasture and hay stand renovation. The tool’s design helps to aerate and remove compaction from the upper eight inches of the soil profile.

The tool, which looks like a rotary hoe at first glance, is set up with eight inch blades mounted to a rolling gang similar to a disc. Each gang can be swung from zero degrees of angle to 10 degrees to increase the aggressiveness of the tool, depending on soil conditions and desired cultivation.

"As each knife enters into the soil, it causes a fracturing action that shatters the soil structure and allows air and water to move both into the slit and laterally into fractures," Neyer explained. "That way your fertilizers, water, and air uptake is more natural and enhances the soil’s natural activity."

In his first two years of selling the Aer Way, Neyer says most are being used in minimum till, no-till and in orchard operations to relieve compaction in heavy traffic areas. More and more livestock operators are finding a use for the Aer Way to increase liquid manure application rates, without experiencing piling and runoff, while also meeting minimum residue requirements for farm program benefits.

Livestock Operations

"When the ground is loosened up a full eight inches deep, and there’s no hardpan like you would encounter with discing, manure absorption and application rates are comparable to conventional tillage methods," Neyer said. "With the Aer Way, you’re going to lose less than 10 percent of the current residue with one pass, which leaves you a number of options to go either minimum till or no-till."

Neyer speaks from experience, since his father Davis, brother Brian and uncles Bill and Tim use a 16 foot model ahead of their 3,000 and 6,000 gallon liquid manure spreaders, on the family’s 300 cow dairy operation.

The operation switched from manure stack to liquid manure, and needed something to replace the 12 foot chisel plow they had been using. They found the chisel plow was simply too rough on the sides of their spreaders. With the Aer Way, Neyer says they’ve been able to maintain absorption rates, while maintaining a smoother soil surface and higher residue levels.

Cropping Application

Many no-tillers use the Aer Way ahead of their planters to help incorporate residue, fertilizers, herbicides, plus save wear and tear on the planter. Since the Aer Way is a multi-weight, many no-tillers use it to carry herbicides or 28 percent to supply the planter, plus add weight to the machine.

"Since the Aer Way is not a power-driven tool, we depend on weight to keep the machine in the ground in severe compaction situations," Neyer said. "With the extra weight, you can also speed up the machine, without it riding out of the ground."

Typically, Neyer recommends 50 to 100 pounds per working foot. Average operating speed is 6 miles per hour, requiring five to 6.5 horsepower per foot depending on angle setting.

The Aer Way is a low maintenance tool, with just two bearing per roller, and knives that generally outlast other tillage parts. Neyer says that the family’s 16 foot model has cut down over 2,000 acres without knife replacement.

Adjustments are a piece of cake too, since only two pins have to be pulled to adjust the degree of the gangs, according to Neyer. "It takes longer to get off the tractor than it does to make the adjustment," he said.

A zero degree setting allows just a slight fracture of the soil, while a five degree setting makes an ideal setting for pasture and hay stand renovation. A 10 degree setting helps to start to bury residue and is commonly used in minimum till and no-till operations.

Orchard Application

Orchard operators and blueberry growers are also using the Aer Way as a tool to help compaction due to sprayers, and harvest equipment.

"With the extra weight, you can also run your sprayers deeper for water, so they’re not running their irrigation systems nearly as much," Neyer said. "They also find that their fertilizer fork stuck in the top two inches - it’s now moving down into the root zone, ultimately costing less and making better use of nutrients."

Pasture and Hay Renovation

Many farmers wanting to maintain or improve pasture or existing hay stands use the Aer Way to alleviate compaction, while also opening the surface up for possible overseeding applications either in the fall or spring.

"Generally, in pasture or grazing renovations, farmers will spread their alfalfa, clover, or grass, in combination with their fertilizer application," Neyer explained. "Then they’ll follow up with the Aer Way set at a five degree angle to loosen the ground, followed with a chain harrow to help incorporate their seed with fertilizer."

The Aer Way is available in 6-foot, 8, 10, 16, 20, 24, and now 30-foot widths. A three point hitch, and two bearing per roller makes the tool available that can be bolted right onto the three point equipment in their orchards. But more importantly, says Neyer, orchard operators find that the Aer Way reduces irrigation costs considerably.

"The Aer Way, as opposed to a disc, allows deeper penetration for water, so they’re not running their irrigation systems nearly as much," Neyer said. "They also find that their fertilizer fork stuck in the top two inches - it’s now moving down into the root zone, ultimately costing less and making better use of nutrients."

For more information, call Neyer at (517) 644-3647.
Corn Soil Insecticides: When are They Needed?

Doug Landis & Mike Haas, MSU Entomologists

One of the first post-management questions corn producers must answer each season is:

Should I use a soil insecticide? To help answer the question, it is useful to first think about the pests you are targeting. Typically, growers say they want to control corn rootworm, European corn borer, cutworm, wireworms, seedcorn maggot and anything else that might be out there. While this is certainly a comprehensive approach, it is probably not a realistic one. In order to be effective, the insecticide must be economically, let's break it down by insect.

Corn Rootworms

Western and Northern corn rootworms are considered the number one insect problem by Michigan corn growers. However, they are only a pest where corn follows corn in a rotation. Approximately 50% of corn crops in Michigan are rotated annually and does not require insecticide for corn rootworms.

However, even where corn does follow corn, not every field will be treated with an insecticide. Scouting data from 1991-1993 indicate that only about one in 10 second-year corn fields will require the use of a corn rootworm insecticide. For fields that are treated at planting, about one-third of them will require a rootworm treatment. The number of eggs laid in a field the previous year, how many of them survive to become larvae, and how the well the plant tolerates root damage all interact to determine the impact of a rootworm population.

Determining if a field is at risk from corn rootworm is accomplished by scouting for the adults in late summer. If a field exceeds an average of one beetle per plant, then the following year it should be rotated to a crop other than corn, or a rootworm insecticide should be used.

Other factors should also be considered. Has past experience shown that corn rootworms are a problem in your area? There are parts of the state that do not have problems with corn rootworms. What's your soil type? Rootworm larvae and egg survival are lower in sandy soils than it is in the heavier soils. Also, hybrids differ in their ability to regenerate new roots to replace the ones that were destroyed by rootworm feeding.

By choosing a hybrid that has good root regeneration capabilities, a higher level of root feeding, and a lower amount of second- generation corn rootworm, then insecticide resistance is a consideration. For first-generation European corn borer (ECB), however, entomologists agree that currently registered soil insecticides applied at-planting do not provide reliable protection against ECB.

We will be conducting a field trial in 1994 to provide Michigan growers data regarding this question. The experiment will examine both at-planting and post-plant-applied insecticides of insecticides recommended for control of corn rootworms, for fields that are treated at planting. Insects are monitored for population levels.

Wireworms and White Grubs

Both of these pests are typically a problem when corn follows a grass crop, pasture, or a heavy grass weed infestation. The adult females for both of these beetles prefer to lay eggs in the soil in dense strips of grass. Infections seldom occur in a normal corn, soybean, wheat rotation.

Seedcorn Maggots

A minor pest that is most troublesome in cool, wet springs when corn germinates slowly. Fields with green plant material incorporated into the soil just prior to planting are most susceptible to seedcorn maggot infestations. If seedcorn maggots are controlled a threat, the most economical way to control them is with seed treatment at planting.

Once the risk of the various pest pests have been identified, the most appropriate product and rate can be used to manage them. The subject of reduced rates of soil-applied corn rootworm insecticides for the past five years.

In our trials, soil insecticide performance at reduced rates was evaluated only for corn rootworms. Performance was determined by examining root systems for corn rootworm feeding and assigning a damage rating from one (no damage) to six (three or more nodes of corn rootworm damage as well as root stunting) for all larvae in the 0.5-inch zone of the plant. This rating system is referred to as the "Iowa" root rating.

Percent of Fields Scouted That Require a Corn Rootworm Insecticide if Planted to Corn in the Following Year

<table>
<thead>
<tr>
<th>Year</th>
<th>All Fields (3,705 acres)</th>
<th>1st year corn in 1991 (2,711 acres)</th>
<th>2nd year (or greater) corn in 1990 (1,054 acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>21%</td>
<td>11%</td>
<td>47%</td>
</tr>
<tr>
<td>1992</td>
<td>12%</td>
<td>6%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Evaluations based on scouting 3,000 acres of corn in each of the last three years by Dr. Vernon Meintz, Agribusiness Consultants, East Lansing, Michigan.

Only tests having untreated plots with significant root damage (root rating equal to or greater than 3.0 on the "Iowa" scale) were included in this summary. It's generally accepted that an insecticide that keeps rootworm feeding damage below a rating of 3.0 will provide adequate root protection, while root ratings of 3.0 or more may affect yield depending on environmental conditions.

In five years of full and reduced rate studies, soil insecticides applied at full (10 tests) and three-quarter (eight tests) rates at-planting in a T-band were checked. It is clear that when averaged over several years, all of the products keep rootworm damage to an acceptable level at either rate.

While Michigan State University currently does not recommend the use of below label rates of corn rootworm insecticides, it is not illegal for producers to do so. However, producers should be aware that the manufacturer is not responsible for claims against product performance if label directions are not followed.

MSU recommends that rotation is still the best way to avoid problems with corn rootworm. If rotation is not possible, then fields that will be corn-on-corn should be selected to determine the need for a rootworm insecticide at planting.

For those growers wishing to try a reduced application rate of corn rootworm insecticide, several guidelines have been suggested:

- First, calibration of granular insecticide applicators becomes even more critical if application rates are lowered. Under-application due to mis-calibration is more likely to result in loss of control at the three-quarter or full rate.
- Producers may wish to try first reduced rates on a limited portion of their acres.
- Also, check-strips of full rate and no insecticide should be left in the same field for comparison. If check-strips are not present, it is impossible to interpret the results of the experiment.

Producers are not advised to go lower than three-quarters of the full labeled rate. Also, we would not suggest using phorate (Timetrol) at less than the full rate, since it has not provided as consistent control as other products.

Reprinted from MSU Field CAT Alert

Michigan Farm News

Maximize your Sugarbeet productivity with AOA ACA on Sugarbeets

ACA applied preplant incorporated or in-furrow has shown improved productivity of sugarbeets. ACA applications can be made with fertilizer or water as the carrier.

Identifiable Performance Parameters on Sugarbeets

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

Visual Response

- Vigorous early growth
- Darker green more erect leaves and full canopy
- More extensive hair root

Performance parameters typically result in:

- Increased uptake of soil nutrients
- Increased utilization of sunlight in photosynthesis
- Increased productivity (recoverable sugar per acre)

Yield Information

Soil application to Sugarbeets (1993)

- 34 total evaluations (University and grower studies)
- 7.3% increase in extractable sucrose (224 pound extractable sucrose increase/Acre)
- Return on ACA investment of $75.68 (10 pint/Acre) or $29.64 (1 pint/Acre)
- 1 pint/ACA per acre broadcast [Sugar at $.13/lb (grower net) x 224 lbs increase/acre] = $29.12
- ACA investment of $3.44/i.pint = $22.24 R.O.I./Acre
- ACA investment of $6.88/i.pint broadcast [Sugar at $.13/lb (grower net) x 224 lbs increase/acre] = $29.68
- AKIA investment of $1.16/l.pint = $22.44 R.O.I./Acre

Application Techniques/Procedures

Test results have shown that ACA can be applied either broadcast incorporated or in-furrow. ACA can be broadcast incorporated into the soil with water or a fertilizer solution as a carrier. The incorporation of rootworm or ACA into the soil profile can be by tillage, rainfall, or irrigation. This will position the ACA near the developing root system of the plant.

Methods of Application

- AGA mixed easily and fits into the following fertilizer programs:
- Soil Applications:
  - Soil broadcast applied with liquid fertilizers
  - Soil applied broadcast with liquid fertilizers
  - Soil broadcast applied (weed & feed herbicide/fertilizer solution or dry)
  - Band with liquid fertilizer
  - In-furrow application with liquid fertilizer (Contingent on local sugarbeet company recommendations)

Application Rates

- The application rate for ACA soil broadcast is 16 fluid ounces (1 pint) per acre. With in-furrow injected applications, apply at 8 fluid ounces (0.5 pint) per acre.

Wood Michigan Farm Bureau's April Volunteer of the Month Winner

Ollie Wood of Sanilac County received honors as a MFBF Volunteer of the Month for his efforts in membership and spearheading an information meeting on Proposal-A.

Wood and his wife Dorothy operate a dairy farm near Mariette. Between the two of them, they have 12 Farm Bureau members, 11 of which were regular (farmer) members. Wood also serves on the Sanilac County Farm Bureau Board of Directors, and has been very active in local affairs by meeting with the county road commission, drain commission, MSU Extension and county commissioners.

Michigan Farm News

April 30, 1994
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New Restrictions on Cyanazine (Bladex)

Jim Kells, Michigan State University, Crop & Soil Sciences

In late 1993, EPA approved new restrictions on all cyanazine product labels. These changes affect all cyanazine products including Bladex, Extrazine and Cycle. The new restrictions fall in two categories:

(1) application rate and
(2) set-back requirements.

Application Rates

The new label restricts cyanazine application to a maximum annual rate of 6.5 lbs. active ingredient/acre on all soils except those classified as highly erodable (by the Soil Conservation Service) with less than 30 percent residue cover. On highly erodable land (greater than 30 percent cover), the maximum annual application rate is 3.0 pounds/acre. These maximum rates are generally higher than typical application rates in Michigan.

Therefore, these new rates should not require significant changes in cyanazine use rates for weed control in corn.

Set-Back Requirements

The new cyanazine labels require buffer zones identical to those on atrazine labels:

1. The labels prohibit mixing and loading within 50 feet of wells unless conducted on a properly constructed impervious pad.
2. Application is not allowed within 200 feet of lakes or reservoirs. Farm ponds are exempt from this set-back requirement if they meet the following three criteria:
   a. They are totally within the landowner's property.
   b. They are not used as a source of human drinking water, and
   c. Does not discharge directly into a perennial or intermittent river or stream.
3. A 66-foot set-back is required from points of entry (including standpipes) into perennial or intermittent rivers or streams. On highly erodable land, the buffer strip must be planted to a crop or cover crop.

There are several strategies that growers can consider to comply with the 66-foot set-back requirement. The following are a few ideas.

Establish a grass waterway at least 132 feet wide and 66 feet long from each point where surface water exits the field into a river, stream, or major drainage ditch.

This would be a logical alternative in fields with a small number of well-defined points of surface water runoff. Check with the county ASCS office for cost share programs for filter strips or grass waterways.

Plant a crop other than corn along the field border. Several crops may be feasible options including soybeans and small grains. One option that appears to be an excellent system for many situations is to establish alfalfa in the 66 foot (or wider) area along the field border (provided the topography will allow hay harvest).

Plant a 66 foot (or wider) strip along the field border with a cover crop. This alternative may be particularly desirable on sites that have many points of surface water runoff. In the future, these buffer strips may be eligible for government reserve (set aside) programs.

Select a herbicide program for the set-back area which does not include atrazine or cyanazine. This may be a reasonable short-term solution; however, if other herbicides have similar restrictions in the future, this option will become less feasible.

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Beef Industry Council Sets Priorities

Advertising campaigns and consumer education received consideration and a substantial budget recommendation from a number of Beef Industry Council (BIC) committees responsible for promotion, consumer information and research. Directors met recently to approve programs and budgets for the 1995 fiscal year. Included in the budget are:

* A promotion budget of $33.8 million to continue the "Beef - It's What's for Dinner" advertising campaign, supported by recipe distribution and partnerships at retail and food-service levels.

* A consumer information budget of $7.1 million.

* A budget of $7.3 million for research to build on existing knowledge, including in-depth market research of beef's target audience; work in product technology area to improve the safety of beef; introduction of the Nutri-Facts program and other research knowledge to position beef as part of a healthful diet; and meat science research to provide consumers with value-added products.

The BIC is a federation of 44 state beef councils and a division of the National Live Stock and Meat Board. Michigan is represented by Wanda Cooper of Oceana County, and Pam Bontekoe of Montcalm County.

Bontekoe represents Michigan as a beef director on the BIC. She was the previous executive vice president of the Michigan Cattlemen's Association and has been active in the Michigan Milk Producers Association and Michigan Farm Bureau.

Cooper serves on the BIC board as co-vice chairperson of the Veal Committee and is on the Deli/Prepared Meats and the BIC Budget Committees. Cooper works in veal production and has participated in several veal industry organizations. She's a previous secretary of the Michigan Veal Growers Association and is currently secretary of the Michigan Veal Committee.