January - February 1998

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Comments from the Coordinator

In this issue, we welcome **Carolyn Randall** to the Pesticide Education Program. Carolyn will be working with the Michigan Department of Agriculture on pesticide manual development, as well as coordinating the fall Inservice Training Program, the Operation SAFE education meeting, and production of Pesticide Notes. Carolyn comes to our program with a strong background in horticulture and forestry. She has a B.S. in floriculture/ greenhouse, a M.S. in urban forestry, and a Ph.D. in forest pathology, all from Michigan State University. In the past, she worked for University of Massachusetts in an extension capacity, and also worked recently with Michigan DEQ writing and editing technical reports. Carolyn can be reached at 517-353-5147 in our office.

In this January/February issue, we usually run the Michigan Restricted Use Pesticide list, provided by Robin Rosenbaum at the Department of Agriculture. Robin's pesticide database system is in the process of being upgraded, so we will postpone the RUP list until the next issue of Pesticide Notes. However, Dr. Kurunthachalam Kannan of MSU's Food Safety and Toxicology Center has kindly provided a feature article on OP and PCB levels in food from Asia and the South Pacific. The article is a summary of a review paper he recently published with Dr. John Giesy. Dr. Kannan's review is particularly timely—as FQPA may eliminate pesticides from the US market and potentially increase imports of fruits and vegetables from other countries, it is interesting to examine the residue levels on foreign foodstuffs.

Christina DiFonzo
Pesticide Education Coordinator/Field Crop Entomologist

Organocholorine Pesticides and Polychlorinated Biphenyls in Foodstuffs from Asian and Oceanic Countries

Kurunthachalam Kannan and John P. Giesy, National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI 48824

Organochlorine compounds including pesticides such as DDT, HCH, aldrin, dieldrin, chlordanes and heptachlor and industrial chemicals such as polychlorinated biphenyls (PCBs) have received considerable attention in recent years due to their adverse biological effects. These compounds have been reported as endocrine disrupters, carcinogens, teratogens and immunotoxicants in humans and wildlife. The use of these compounds was banned in the United States and in several other developed nations two decades ago. However, due to their persistence, exposure to humans and wildlife continues to occur even after the ban, although at a lesser extent than in the 1970s. Notwithstanding the adverse effects, organochlorine pesticides are still being used for agricultural and public health programs in developing countries in Asia and the South Pacific. As a consequence, humans in these regions are exposed to greater dietary levels of organochlorines. Kannan and his coworkers conducted extensive studies on human exposure to organochlorines in developing countries. In their recent publication, information on contamination levels has been reviewed; human exposure to organochlorines and risk associated with such exposures have been examined (Kannan, et al., 1997). Their findings are briefly summarized below.

Among various developing countries in Asia, considerable information on organochlorines in foodstuffs has been available from India since the late 1960s. DDT and HCH are the major insecticides in Indian foodstuffs. Concentrations of these insecticides have declined more than two orders of magnitude in farm products, such as food grains and vegetables, in the last two decades. However, the overall concentrations of organochlorines in Indian foodstuffs are still 100- to 1000-fold greater than in U.S. foodstuffs. Milk and milk products are the major sources of dietary exposure to DDT and HCH in India. The residues of these insecticides in dairy products are close to or above the maximum residue limits (MRLs) of the Food and Agriculture Organization/World Health Organization (FAO/WHO) of the United Nations. Dietary intake of DDT and HCH by Indians is >100 fold of that in the U.S. Greater concentrations (> 1μg/g) of aldrin, dieldrin, and heptachlor have been measured in Indian vegetables. Untreated surface waters could be a potential source of DDT and HCH exposure.

In most Southeast Asian countries, DDT has been a common contaminant in animal-origin foodstuffs. Dietary intakes of DDT and HCH in Southeast Asia are an order of magnitude less than those of Indians but 5- to 10-fold greater than in more developed nations. In addition to DDT, aldrin and dieldrin are prominent contaminants in meat collected from Thailand and Malaysia. Aquatic food products from more industrialized countries, such as Japan, South Korea, Hong Kong and Taiwan, contain significant levels of PCBs. In South Pacific countries, particularly in Australia and New Zealand, chlordanes and PCBs are the most prevalent organochlorines in foodstuffs. Food contamination by DDT, HCH, aldrin, and dieldrin is less than in developing countries in Asia but greater than in the U.S. and Japan. Intake of PCBs in Australia is greater than in the U.S. Meat and fish are the major sources of organochlorine exposure by Australians.

Human dietary intake of organochlorines has been declining more slowly in developing countries in Asia. Current intakes were at least 5- to 100-fold greater than those in more developed nations, suggesting a greater risk from organochlorine exposure. Factors such as malnutrition, common among rural poor in developing nations, can increase these risks. Of greatest concern is the magnitude of exposure to organochlorines to which infants and children are subjected through human and dairy milk. The estimated intake of DDT by infants was at least 100-fold greater than the average daily intake (ADI) of the FAO/WHO. In addition to DDT, excessive exposures to HCH and dieldrin are found in several incidences, which may cause potential health effects in infants because they are more vulnerable to toxic effects. The estimates of cancer risks due to the consumption of organochlorine-contaminated foods in India are great.

This article suggests the need for the restriction on the inadvertent use of toxic contaminants in developing countries. Humans in this region are at a great risk from exposure to toxic chemicals. Authors cite increasing cancer rates and other human health effects in developing countries in recent years. The design and implementation of appropriate epidemiological studies and their integration with monitoring of human, food, and environmental samples would be a major step in assessing the risk of organochlorine residues in foods and controlling or eliminating them. With the continued globalization of trade in food products, and the concomitant risk that food contaminated through point-source pollution may be widely distributed, identification of sources and their control should be matters of international concern, research, and action. International health organizations and the developed nations that are importing a variety of foodstuffs from the developing countries and concomitantly exporting pesticides (FASE 1996) should elaborate counter measures for preventing global human toxification.

For a complete reprint of this article as published in the Review of Environmental Contamination and Toxicology, contact Dr. K. Kannan, National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI 48824, Tel: 517-353-9195.

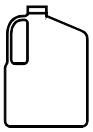
References

FASE (1996) Exporting risk: pesticide exports from US ports, 1992-1994. Foundation for Advancements in Science and Education Research, Los Angeles, CA.

Kannan, K., Tanabe, S., Giesy, J.P. and Tatsukawa, R. (1997). Organochlorine pesticides and polychlorinated biphenyls is foodstuffs from Asian and Oceanic countries. Rev Environ. Contam. Toxicol, 152:1-55.

Chemical Update

The following information provides registration status of particular pesticides and should not be considered as pesticide recommendations by MSU Extension.



INSECTICIDES:

Ammo (cypermethrin)—Label Additions
Broccoli, Brussels sprouts and cauliflower were added to FMC's Ammo insecticide label (Ag Chem News, 1/15/98).

B.t. European Corn Borer Control Protein—Registration Proposed
Novartis proposed to the EPA that popcorn be added to the presently registered use of this product on field corn (Federal Register, 12/9/1997).

Imidacloprid—Tolerance Extension
The EPA extended the tolerances for residues of the insecticide imidacloprid at 0.3 ppm for beet and turnip roots and at 3.5 ppm for beet and turnip tops for an additional 1-year period until November 29, 1998 (EPA emergency exemption, Sect. 18, FIFRA).

Kyrocide (cryolite)—Label Addition/Deletion
Eggplant was added to the label of Elf Atochem's Kyrocide and use on mustard was deleted (Ag Chem News, 1/15/98).

Meta Systox R (oxydemeton-methyl)—Label Addition
As a result of the IR-4 Project, Gowan can now add use on spruce trees to their label (Ag Chem News, 1/15/98).

Methamidophos—Termination of Use on All Crops Except Cotton and Potatoes and Food-Use on Tomatoes Only.
The use of methamidophos on broccoli, Brussels sprouts, cabbage, cauliflower, celery and sugar beets, melons, cucumbers, lettuce, alfalfa, Bermuda grass, peppers, clover, and eggplant were canceled. The cancellation was partially due to EPA data from California and nationwide which indicated acute worker exposure incidents associated with methamidophos use. The producers of methamidophos, Bayer Corporation and Valent USA, agreed to the cancellations. Methamidophos producers may no longer sell methamidophos products containing any terminated uses effective December 31, 1997. However, stores may sell and growers may spray their remaining stocks of methamidophos products after December 31, 1997 (Federal Register, Dec.23, 1997).

Pyramite (pyridaben)—Expected Registration
Currently registered on apples and pears, BASF's Pyramite is expected to be registered on grapes, strawberries and stone fruits in 1998 (Ag Chem News, 1/15/98).

Regent (fipronil)—Expected Registration
Registration is expected next year for usage on potatoes. Rhone Poulenc's Regent is currently registered on corn for rootworm and first generation corn borer control (Ag Chem News, 1/15/98).

Vydate (oxamyl)—Label Addition/Deletion
DuPont deleted from their label the use of Vydate on nursery grown strawberries and added the usage on mint (Ag Chem News, 1/15/98).

HERBICIDES:

Accent Gold (nicosulfuron/rimsulfuron/flumetsulam/clopyralid)—Expected Registration
DuPont's new 4-way herbicide (the first of its kind) will be registered on corn for the 1998 season. It is designed as an alternative to atrazine for broad spectrum weed control (Ag Chem News, 1/15/98).

Field Master (glyphosate/acetochlor/atrazine)—New Registration
Monsanto's new 3-way herbicide was recently registered for use on corn as a preemergence burndown treatment. It

can be tank mixed with 2,4-D, atrazine, Princep, Bladex, Roundup or Harness (Ag Chem News, 1/15/98).

FirstRate (cloransulam methyl)—New Registration
The EPA recently announced approval of applications by DowElanco to conditionally register FirstRate Herbicide for broadleaf weed control in soybeans (EPA Reg. No. 62719-275) (Federal Register, 1/9/98).

S-Metolachlor—New Registration
An enhanced form of metolachlor recently registered by EPA, it controls the same spectrum of weeds as metolachlor but at 2/3 the rate. Novartis will market S-metolachlor as Dual Magnum, Dual Magnum II, Dual II Magnum SI, Bicep II Magnum and Bicep Lite II Magnum. These will be available nationwide in 1998 (Ag Chem News, 1/15/98).

Sencor (metribuzin)—Label Addition
Tank mix with Resource and Scorpion III for postemergence field corn was added to the label of Bayer's Sencor (Ag Chem News, 1/15/98).

FUNGICIDES:

Benlate (benomyl)—Label Addition
DuPont added control of white mold on radishes grown for seed to the Benlate label (Ag Chem News, 1/15/98).

Benlate (benomyl)—Label Additions
DuPont added use on conifers, wheat, conifer seedling treatment and seed treatment on cole crops, canola, chickpeas, spinach, wheat, barley, oats and rye to the Benlate label (Ag Chem News, 1/15/98).

Kocide LF (copper hydroxide)—Label Additions
Blueberries, table beets, mustard greens, turnip greens, and ornamentals added to Griffin's Kocide LF label (Ag Chem News, 1/15/98).

Ziram—Label Additions
UCB Chemical Co. added grapes and tomatoes to the Ziram label (Ag Chem News, 1/15/98).

MISCELLANEOUS:

Triclopyr and Clopyralid Herbicides—Marketing
DowElanco signed a partnership agreement with Riverdale Chemical to exclusively market triclopyr and clopyralid herbicides in phenoxy combination products for turf and consumer markets (Ag Chem News, 1/15/98).

G-Stac—New Corn Hybrid Seed
Garst Seed Co. signed an agreement with Agr Evo to become the first to market the new B.t./Liberty Link corn hybrid seed. Introduction of four hybrids is planned this spring under the tradename G-Stac (Ag Chem News, 1/15/98).

Roundup Ready soybeans—Patent Enforced
Monsanto plans to enforce its patent on Roundup Ready soybeans. It is a patent violation for growers to save and replant Roundup Ready soybeans (Ag Chem News, 1/15/98).

Monsanto—Seed Corn Company Acquisition
Monsanto has acquired control of the seed corn company Sementes Agroceres SA which controls over 30% of the seed corn business in Brazil (Ag Chem News, 1/15/98).

Terra—Fertilizer Company Acquisition
Terra will purchase ICI's United Kingdom nitrogen fertilizer business for $340 million. This is Terra's first expansion outside the U.S. (Ag Chem News, 1/15/98).

Zeneca—Business Expansion
Zeneca has purchased a 20% interest in Ex Seed Genetics who provide products to the milling industry, the feed industry, and to food processors (Ag Chem News, 1/15/98).

Zeneca—Fungicide Company Acquisition
Zeneca has signed an agreement with Ishika Sangyo Kaisha Ltd of Japan (ISK) to acquire their worldwide chlorothalonil fungicide business for $410 million. This includes ISK Bio Sciences manufacturing facility in Texas. For an additional $90 million, Zeneca will also acquire distribution rights outside the Asia Pacific region for four of ISK's recently introduced products: Fosthiazate, a broad spectrum nematacide; Fluazinam, a fungicide on vegetable crops; Flazasulfuron, a herbicide for sugarcane and grapes; and nicsulfuron, a herbicide for corn (Ag Chem News, 1/15/98).

Stop Sale Issued for Household Products
On January 14, EPA ordered seven companies to stop selling and distributing kitchen and household products that make false and misleading health claims. The companies produce household items, such as kitchen utensils, sponges, and cutting boards, that claim to protect consumers from food-borne disease by killing bacteria and viruses. A product that makes such claims must be registered with EPA and bears an EPA registration number on its label. The seven companies, targeted by the "stop sale" order out of EPA's Chicago office, have not proven to EPA that their kitchen products prevent bacterial growth as claimed (EPA press release, Jan. 23, 1998).

News Extras

Senate Bill Proposes a "Super Agency" for Food Safety

Senators Richard Durbin (D-Ill) and Robert Toricelli (D-NJ) recently introduced a bill to create a new federal agency to oversee food safety regulation. The proposed agency, the Federal Food Safety Administration, would take the food safety roles of EPA (regulation of pesticides used in food production), FDA (fresh produce safety), and USDA (meat and poultry safety), and combine them into a single administrative unit. At least 10,000 employees would be included in the new agency. Currently, 12 different federal agencies and numerous separate laws govern food safety in the U.S.. Supporters say it is time to bring all food safety issues into a single agency, while critics claim the reorganization will be costly and disrupt the agencies involved. Food safety is sure to be a major issue in Washington over the coming year—stay tuned for further developments.

Study Examines Mortality of Lawn Care Pesticide Applicators

A recent paper published in the Journal of Occupational and Environmental Medicine reports on causes of death among 32,600 employees of ChemLawn (now TruGreen-ChemLawn). The author examined employee records from the founding of the company in 1969 through 1990 for a connection between pesticide application and categories of mortality.

A previous study conducted of Kansas farmers in 1986 had reported a link between one type of cancer, non-Hodgkin's lymphoma (NHL) and 2,4-D. 2,4-D is a commonly used herbicide in agricultural crops such as corn and small grains, on range and pastureland, in forestry, on rights-of-way, and on lawns and turf. Increased NHL associated with frequent exposure to 2,4-D and other phenoxy herbicides was also reported in later research from Nebraska, Australia, and Canada; other studies (Iowa, Minnesota) did not support the link. The Kansas study prompted ChemLawn to request an examination of the mortality of its employees over the last 20 years, since its employees may have received significant exposure to 2,4-D in lawn care applications.

Results of the ChemLawn study showed that the majority of the employees were young and employed on a seasonal basis. Compared to the U.S. population, the employees had significantly reduced mortality from all causes of death combined, from arteriosclerosis, and from accidents. There was significantly greater mortality from bladder cancer in the ChemLawn group (n=3), but 2 of these deaths were part-time office staff with no job-related pesticide exposure who had worked less than half a year. There was no significant difference in any other cause of mortality. However, the level of NHL was elevated in the lawn applicator group compared to the general population, consistent with previous studies of farmers and 2,4-D exposure (S. Zahm, JOEM, 1997, Vol. 39, pp. 1055-1067).

Transgenic Crops in the News

A coalition of environmental groups, including Greenpeace, has filed a petition against EPA's policy on genetically transformed Bt producing plants. The petition asks that EPA cancel registration of all genetically plants that produce Bt, cease and desist from any new registrations, do a Special Review of all currently registered Bt expressing plants, and do a program impact statement of EPA's policy towards registration of Bt crops. EPA's interim response in December 1997 was simply that its final response on the petition will be published in spring of 1998. If EPA rejects Greenpeace petition, it may be sued. (NC205/NCR46 meeting, Omaha, Jan. 1998).

Meanwhile, Maine has decided to not allow registration of Bt corn in that state. The registration was supported by the Maine Farm Bureau and individual farmers, but was opposed by organic growers and the Maine Green Party. This is the first time Bt corn has been prohibited from a state in the U.S.

Finally, EPA has decided not to extend the tolerance for bromoxynil herbicide (Buctril) on transgenic cotton for the 1998 field season. Use of bromoxynil on cotton after January 1998 will result in residues on cotton commodities that will be considered illegal. The tolerance was necessary for use of the herbicide on BXN transgenic cotton resistant to bromoxynil. Growers can still plant BXN cotton, but they cannot use Buctril for weed control. Cotton producers argued that the bromoxynil resistant cotton would allow them to reduce herbicide use and implement conservation tillage. However, EPA based its decision on the developmental and cancer concerns associated with bromoxynil and its metabolite, and decided the use on cotton exceeded the risk cup. Compared to the cotton crop as a whole, BXN had a small share in the market in 1997. Overall, approximately 25% of the U.S. cotton crop in 1997 was planted to genetically engineered cotton—2.5 million acres of Bt "Bollgard" cotton, 900,000 acres of Round-Up resistant, and 300,000 acres of BXN cotton. That percentage is expected to rise, with projections of additional Bollgard acreage, over 4 million acres of Round-Up Ready cotton,

and 1 million acres of "gene stacked" Round-Up Ready / Bt cotton. (Pest. Tox. Chem. News, Vol 26, Jan. 7, 1998.)

MDA/DEQ Announce New Pollution Prevention Strategy

On January 19, the Michigan Department of Agriculture (MDA) in conjunction with the Department of Environmental Quality (DEQ) announced a new pollution prevention strategy for Michigan. The initiative focuses on nonpoint source pollution from farms. Although most farmers do not contribute significantly to nonpoint pollution, MDA says the initiative will direct resources towards specific farming practices that could impact the environment. Specific initiatives include targeting pollution control strategies at key environmental points, like wetlands; expanding the state Revolving Loan fund to make farmers eligible for low-interest loans to install nonpoint source pollution prevention practices; and replacing mercury-containing vacuum gauges on farms with mercury-free gauges for no charge.

'Organic' Farming Standards Proposed by USDA

Agriculture Secretary Dan Glickman has called for federal regulations that will define "organic" standards on agricultural products. This proposal results from seven years of negotiations directed toward implementing the Organic Foods Protection Act of 1990, adopted as part of the 1990 Farm Bill. The proposed standards will include residue tolerance levels allowed on organic produce. According to the USDA, the organic label certifies that an organic farming and handling system produced the food. The USDA will not guarantee that the food is free of *all* pesticide residues. This is due to the unavoidable presence of minute quantities of residual chemical residues in soil, water, and air.

Traditional farmers have noted that the new regulations proposed by the USDA do not imply that organic foods are safer than foods which are grown using synthetic pesticides. The new standard is being well received by growers and retail groups who wish to bring uniformity to the "hodge-podge" of state and private definitions of what constitutes organic food (Pest. & Tox. Chem. News, 12/17/97).

More Methyl Parathion Legal Action

In November 1997 James Allen of Chicago, Illinois, was charged with illegally purchasing and transporting methyl parathion from Mississippi to Illinois. He could be sentenced to two years in jail or a fine up to $20,000. Allen and others purchased almost 500 gallons of methyl parathion in the South in 1993 and 1994, and brought the pesticide to Chicago to spray in homes and businesses for roach control. Methyl parathion is used frequently in the southern U.S. in production of cotton and other field crops. It is registered only for outdoor use, and breaks down slowly indoors. Nearly 1000 homes in Chicago were illegally treated—the Region V EPA office in Chicago is still investigating (Pest. & Tox. Chem. NewsVol. 26(8), 1997).

EPA Reorganizes Again

EPA head Lynn Goldman has reorganized EPA once again, this time targeting the Office of Prevention, Pesticides, and Toxic Substances (OPPTS). This restructuring is supposed to help EPA meet its commitments to FQPA and consumer right-to-know issues, but is predicted to further slow review of pesticide registrations and Section 18s.

OPPTS will be structured as follows:

OPPTS Immediate Office: program management, budget, and operations; pollution prevention policy; Federal Register publications (55 members).

Office of Science Coordination and Policy: science policy of pesticides and toxics; coordinating development of testing guidelines; labeling issues (35 members).

Office of Pollution Prevention and Toxics: pollution prevention; testing of existing chemicals; new chemicals; risk management; Toxics Substances Control Act reporting (340 members).

Office of Pesticide Programs (OPP): registration and reregistration of active ingredients and products (except antimicrobial compounds and consumer products); special reviews of pesticides; biopesticides; pesticide benefits assessments; tolerance reassessments; FQPA implementation; food safety; environmental stewardship program (545 members). OPP has a new director, Marcia Mulkey, formerly of the EPA Region 3 office. Mulkey replaces Dan Barolo, who resigned last fall.

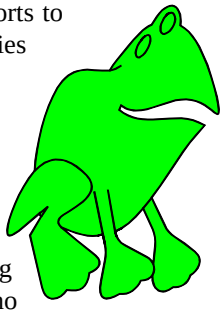
Office of Consumer Safety and Right-to-Know: worker protection; registration and reregistration of consumer products and antimicrobial pesticides; consumer labeling issues; assessment of exposure to chemicals, including pesticides; reports of adverse health effects and poisonings due to pesticides; food safety brochure mandated by FQPA (~400 members). This is a newly formed office in OPPTS, and will be lead by Steve Johnson, the former acting director of OPP (Pest. & Tox. Chem. NewsVol. 26(8), 1997).

Deformed-Frog Studies: Quebec and Minnesota

A Canadian study has shown that green frogs collected from farm ponds and ditches in Quebec had DNA damage and in some cases abnormal limbs, while frogs from nonagricultural areas were normal and healthy. Martin Ouellet, a researcher for the Canadian Wildlife Service, found the problems "only in sites subject to pesticides." However, Ouelett also stated that the study sample size was low (100 green frogs taken from eight study areas in 1993) and suggested replicating the study before considering taking some action in the St. Lawrence River Valley. Ouelett also indicated that there were abnormalities in the DNA pattern of blood cells taken from frogs from pesticide-exposed sites.

Ouelett had published an earlier study showing that hundreds of frogs collected in the early 1990s from sites in the St. Lawrence River Valley tended to be deformed if they were collected from agricultural areas where pesticides were used regularly versus non-agricultural areas. In a more recent, yet-to-be published study, Ouelett said that different classes of DNA damage documented suggest that here may be several causes, including the accumulation of several year's worth of contaminants, and for others, a more acute dose of a particular chemical.

In Minnesota, two agencies, the Minnesota Pollution Control Agency, and the Minnesota Health Department, are expanding their efforts to understand what is causing deformities in frog by focusing their studies on water quality. Preliminary tests suggested that ponds, ground water, and drinking water, at a handful of Minnesota sites, seemed to contain something that caused deformities in laboratory frog eggs. In testing the drinking water, no unusual levels of chemicals or metals were detected.



The National Institute of Environmental Health Sciences (NIEHS) is conducting further tests of Minnesota water and sediment samples. George Lucier, director of the Institute's Environmental Toxicology Program, said there will probably prove to be multiple causes for the various eye, limb and internal organ deformities in frogs that have shown up most frequently in Minnesota, but also in Vermont, Quebec and other areas.

In regard to public concerns about the safety of drinking water, Ken Sexton, environmental health professor at the University of Minnesota, said "If we had in place some kind of an information system in Minnesota that recorded human birth defects, and we had some information on status and trends over a few years, that would be immensely useful at this point—but we don't."

Minnesota has more confirmed reports of deformed frogs than any other state, Doug Johnson, director of the North American Reporting Center for Amphibian Malformations, said that abnormal frogs have been documented this year at about 200 sites in counties across Minnesota. Overall nearly 1,000 deformed frogs and about 11,000 normal amphibians have been documented in Minnesota. Clusters of deformed frogs have been reported in Vermont and Wisconsin and researchers in Quebec have documented hundreds of deformed frogs since 1992.

Some have speculated that methoprene, a relatively common pesticide used to control mosquitoes and other insects might be causing some of the deformities. Other researchers have detected traces of pesticides in water where deformed frogs were found, but the amounts have been in the parts per trillion. Researchers are also examining tissue from Minnesota frogs for evidence of pesticides or other chemicals. At the National Wildlife Health Center, about 50 frogs were examined for parasites, viruses and diseases and no significant differences were found between normal and deformed frogs.

Further information on deformed frog research is at the following Web sites:

University of Minnesota: http://www.umn.edu/urelate/frogs.html

A Thousand Friends of Frogs: http://cgee.hamline.edu/frogs

Minnesota Pollution Control Agency: http://www.pca.state.mn.us/

Reports of deformed frogs can be made through the North American reporting center on the Northern Prairie Science Center site at http://www.npwrc.org/narcam.

(Adapted from *Star Tribune*, Newspaper of the Twin Cities, 12/5/97 and 12/6/97).

Upcoming Conference

The North American Conference on Pesticide Spray Drift Management will be held March 29-April 1, 1998 in Portland, Maine. The registration fee is $125 before February 28, and $175 after February 28. The conference is limited to 400 participants. Some of the agenda items include:

- Laws, legal issues and drift case studies
- Weather effects on drift
- Nozzles/droplet effect on drift
- Adjuvants and formulation
- Insurance issues
- Drift control equipment
- Breakout sessions on applicator equipment and drift management for aerial (fixed wing), aerial (rotary), airblast, boom sprayers and hand held sprayers.

For further information contact the Maine Pest Management Office at 207-581-3880 or visit the website at http://www.state.me.us/agriculture/pesticides/drift.

Michigan Clean Sweep Contacts

The proper disposal of unused and unwanted pesticides is the goal of the Clean Sweep program in Michigan. The Michigan Groundwater Stewardship Program in cooperation with county and local units of government is establishing 11 permanent Clean Sweep sites located through out the state. Seven of these sites are currently operating, with the remaining four scheduled to open in the summer of 1998.

Individual Michigan residents may dispose of unused and unwanted pesticides by taking them to one of these Clean Sweep sites where they will be collected, packaged for shipping, and disposed of properly. There is no charge for this service. Program costs are covered by the Michigan Groundwater Stewardship Program, a grant from the U.S.Environmental Protection Agency, and services provided by the local cooperators.

Pesticide dealers and individuals that sell and/or apply pesticides for hire may also, at the Clean Sweep site manager's discretion, dispose of unused or unwanted pesticides at cost. This cost is typically less that 20% of the normal cost of pesticide waste disposal because of economies of scale and competitive biding of waste disposal costs. Persons interested in participating in the Clean Sweep program may contact the site coordinator at the location nearest to them:

John Gruchot
Berrien County Dept. of Planning, Public Works & Land Description
811 Port Street Room 105
St. Joseph, MI 49085
(616) 983-7111, Ext. 8617

Brian Horst*, Treasurer
Delta Solid Waste Management Authority
1100 Delta Avenue
Gladstone, MI 49837
(906) 428-2311

Randall Smith*
Grand Traverse County
400 Boardman Avenue
Traverse City, MI 49684
(616) 922-4576

Donald Lehman
Ionia County Resource Recovery Project
100 Library
Ionia, MI 48846
(616) 527-5357

Dawn George
Isabella County Recycling Program
4208 East River Road
Mt. Pleasant, MI 48858
(517) 733-9631

Tom Dewhirst
Kalamazoo County Human Services Department
Household Hazardous Waste Center
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(616) 383-8741

Chip Hughes
Lapeer County Health Department
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Lapeer, MI 48446
(810) 667-0391

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Macomb County Health Department
43525 Elizabeth
Mt. Clemens, MI 48043
(810) 469-5235

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Environmental Health Division
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(616) 393-5645.

Thomas G. Waffen
SOCRRA
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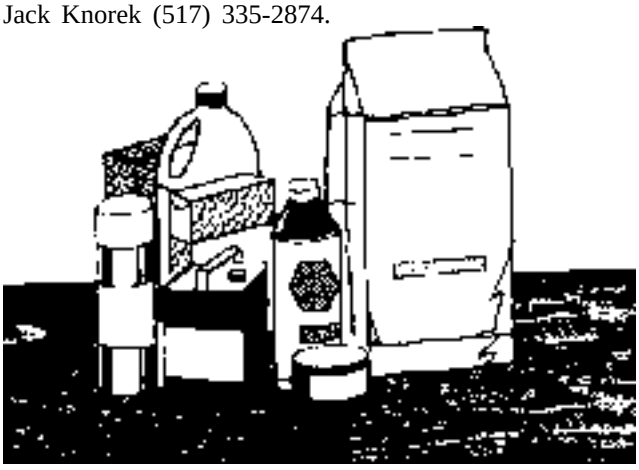
Royal Oak, MI 48073-6764
(248) 288-5150

Steve Kunselman*
Sumpter Township
23480 Sumpter Road
Belleville, MI 48111
(313) 461-6201

*Site scheduled for construction in the summer of 1998.

For further information on Clean Sweep or the Michigan Groundwater Stewardship Program, contact Jack Knorek (517) 335-2874.



Food Quality Protection Act Information

For more information, contact a regional MDA office or Dr. Christina DiFonzo MSU Pesticide Education Program (517) 353-5328.

EPA Cuts Backlog of Antimicrobial Registrations

Under FQPA, a separate division for antimicrobial registrations was created in the Office of Pesticide Programs. The idea was to streamline the registration process for antimicrobial products and review registrations in a timely fashion. Apparently the new division is making an impact. At the end of 1996, there was a backlog of 388 antimicrobial registrations waiting for action. By the middle of 1997, that number had been cut to 90 registrations. By the end of 1997, that backlog was likely reduced even further (numbers not yet available). By May 1998, the antimicrobial division must meet a number of "fast-track" goals mandated under FQPA, including these target times for product registration:

- new active ingredients, 18 months;
- new uses of currently registered active ingredi ent, 9 months;
- new product identical/ very similar to a regis tered product, 3 months;
- new product different a registered product in ways that will not impact the environment, 3 months;
- amendments to registered products, 3-9 months.

(Pest. Tox Chem. News Vol 26, Jan. 7 ,1998)

Pyrethroid Tolerances Undergo EPA Review

EPA recently completed review of tolerances for ten pyrethroids using new guidelines established by the Food Quality Protection Act (FQPA). The ten pyrethroid active ingredients (and some product names) are: bifenthrin (Talstar, Capture, Brigade), cyfluthrin (Baythroid, Aztec, Tempo), cypermethrin (Ammo, Barricade, Cymbush), zeta-cyperethrin (Fury, Mustang), deltamethrin (Intercept, Decis), esfenvalerate (Asana), fenpropathrin (Tame), lambda-cyhalothrin (Warrior, Scimitar, Karate, Commodore), tralomethrin (Scout X-TRA), tefluthrin (Force).

The assessment, amounting to review of 273 individual tolerances, was the largest since FQPA became law in August 1996, and was necessary in order for EPA to renew conditional registration of the ten products under FQPA guidelines. EPA was required to assess the aggregate exposure to the ten products via dietary and non-dietary sources.

Conditional registrations were renewed for three years since all insecticides met FQPA standards. The renewal will give registrants time to generate data on risk to aquatic organisms.

FQPA Releases Draft of Consumer Brochure

Under FQPA, EPA was told to develop a consumer Right-to-Know brochure about pesticides in food. The brochure was supposed to discuss such topics as the health effect of pesticides and tips for reducing residues on food. The committee charged with developing the pamphlet recently released two draft versions identical in text, but with different graphics. The brochure drafts can be accessed and printed off EPA's web site (http://www.epa.gov/docs/fedrgstr/EPA-PEST/1998/January/Day-14/6020.pdf). Briefly, the draft brochure discusses, in simplistic terms, what are pesticides, why they are used, and if pesticides are harmful. It focuses on the possibility that infants and children may be more sensitive to pesticides and describes what the government does to protect consumers from harmful levels of pesticides in food, including new FQPA standards. On the benefits side, the draft points out that a diet high in fruits and vegetables outweighs the risks of low amounts of pesticide in the diet. However, it also discusses ways consumers can further reduce these levels. Tips to reduce pesticides on food include

- washing and scrubbing all fruit and vegetables,
- peeling fruit and vegetables and trimming fat from meat,
- cooking/baking foods to decrease residue absorbed into fresh produce,
- and buying "organic" foods.

An explanation of organic food standards and a contact address for the USDA National Organic Program is included. Finally the draft brochure gives a page of contact information for pesticide and food safety.

The final brochure, due out in August 1998, is targeted for large retail groceries, for example, Kroger or Meijer's in Michigan. While FQPA mandates the development and production of the brochure, it does not mandate where, or even if, the pamphlet is actually displayed in stores.

EPA's Priority Crops for Pesticide Use Data

Below is a list of EPA's priority crops for pesticide use information for tolerance reassessment over the next several years. These crops are priority

because they are important in the diet of infants and children, a sensitive group mandated for protection from pesticide residues under FQPA.

- apples
- oranges
- peaches
- soybean
- pears
- carrots
- rice
- beef (boneless/lean)
- coconut oil
- corn (field, sweet, popcorn)
- potatoes
- bananas
- wheat
- sugarcane
- beans (green/succulent)
- oats
- eggs
- tomatoes
- peas (garden)
- chicken (flesh)

Report Claims One-Million Kids Exposed to Unsafe OP Levels

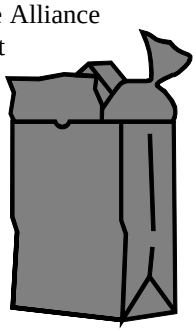
The Environmental Working Group (EWG) held a press conference on January 29 to introduce its report on organophosphate levels in fruits, vegetable, and baby food. The report, "Overexposed: Organophosphate Insecticides in Children's Food", is in response to provisions in FQPA which require that residue tolerances protect infants and children by reflecting aggregate exposure to pesticides with common mechanisms of toxicity. The EWG analyzed OP exposure to children through the U.S. food supply by using USDA and FDA data on food consumption patterns of children and pesticide residue sampling of foodstuffs. EWG used this data in a simulation analysis (Monte-Carlo analysis) to estimate real-world dietary exposure; these estimates were compared to an OP reference dose developed by EWG from EPA's reference doses of individual OPs. Based on this analysis, the EWG report claims among other things that:

- each day, more than 1 million children under 5 years of age (1 out of 20) eat an unsafe dose of OPs, including 77,000 infants under 1 year of age;
- the foods that cause most children under 5 to exceed a safe daily dose of OPs are apples, apple sauce, peaches, popcorn, grapes, corn chips, and apple juice;
- a child eating a peach has a 25% chance of getting an unsafe OP dose;
- a child eating and apple has a 12% chance of getting an unsafe OP dose;
- for infants under 1 year old, commercial baby food, especially apple juice, apple sauce, pears, and peaches, is the major source of unsafe levels of OPs.

Based on its findings, the EWG made the following recommendations:

- ban 5 agriculture related OPs immediately: azinphosmethyl (Guthion), chlorpyrifos (Lorsban), dimethoate (Cygon), methyl par athion (m.p., Penncap), and pirimiphos methyl (Actellic);
- ban all home/ structural uses of OPs;
- ban all OP uses that might end up in baby food;
- lower OP food tolerance to levels safe for infants and children;
- require neuro-toxicity studies of all remaining OPs.

Reaction to the EWG report was swift. The National Food Processors Association, Grocery Manufacturers of America, and American Crop Protection Association all said on January 29 that U.S. food meets strict federal guidelines and is safe for children. The Alliance for Food and Fiber released a statement that EWG "is sending out a report without peer-review, which presents extrapolated data with the purpose of triggering a particular political agenda." Further criticism came from Dr. Carl Winter, Director of the Food Safety Program at University of California, who said EWG used "an interesting, but questionable approach" to determining level of OP exposure in the study. He pointed out that the EWG analysis partially rested on samples from the FDA pesticide surveillance program, a program designed to maximize the chances of detecting illegal residues and therefore this does not represent random samples of food from the marketplace. Winter also pointed out that EPA has not issued a cumulative OP safety factor, and that the cumulative standard used in the report was one of EWG's own manufacture.



EWG and its critics did agree on one thing—that it is important that fruits and vegetables remain a major component in the diets of children. For more information, or to download a complete copy of "Overexposed", visit the EWG web site at http://www.ewg.org (multiple AP Press releases, Jan. 29, 1998).

Resources

Change in CAT Alert Newsletter

Starting March 1998 current issues of the Michigan State University CAT Alert newsletter may be found on the IPM web site at http://www.msue.msu.edu/ipm. This includes field crop, fruit, landscape and vegetable editions. The free web access comes thanks to a grant from the Michigan Department of Agriculture. Hard copies of the alerts are still available through the mail for $35/year from the Michigan State University IPM Program (517-432-2203).

Beneficial Insects Source Information

California EPA is offering a booklet listing 142 commercial sources for beneficial insects. Single free copies of "Suppliers of Beneficial Organisms in North America", is available from Cal/EPA DPR, 1020 N Street, Room 161, Sacramento, CA 95814-5624 Attn: Beneficial Organisms or call 916-324-4100 (Pest. Tox. Chem. NewsVol. 26(8), 1997).

New Extension Bulletin: Michigan Field Crop Ecology

This book is intended for those who are interested in gaining a basic understanding of how biological processes function within Michigan field crop systems. Chapter titles include: Soil Ecosystems, Carbon, Nitrogen, Pest Ecology and Management, Cover Crops, Insects, and Nematodes. The information should be useful to producers interested in changing to more sustainable agricultural systems. Michigan Field Crop Ecology: Managing biological processes of productivity and environmental quality (Extension Bulletin E-2646) will be available in Extension offices in early February, or may be purchased from the MSU Bulletin Office, 517-355-0240.

Pesticide Applicator Recertification Seminars

This partial listing of recertification seminars was provided by MDA. Certified applicators and registered technicians may earn recertification credits by attending these programs. For additional information, call the MDA Lansing office at (517) 373-1087.

NOTE: Renewal of pesticide applicator certification credentials can be done by taking the appropriate exam(s) or by obtaining the necessary number of recertification credits by

2/10	Grwr Mtg Varietal Sel/Soil Pert	Merrill, MI	2	Priv, Com Core, 1A	(517)695-2269
2/12-13	Prof App Institute	Indianapolis, IN	4	Priv, Com Core,1A	(800)844-4900
2/13	'98 Gypsy Moth Cntrl	Ann Arbor, MI	1	Priv, 2, 3B	(313)971-0079
2/13	Agri-Dealer Asst. Day	Alpena, MI	2	Priv., 1A, 1B	(517)356-6038
2/13	Managing Farm Foes	Clarksville, MI	3	Priv,1A	(616)336-3265
2/16-17	CSI Wood Preservers Conf	Palm Springs, CA	1	Com Core, 2A	(800)421-8661
2/16-17	Professional Applicators Inst.	Springfield, IL	4	Priv. Com Core, 1A	(800)844-4900
2/17	Grower Mtg GPA Grid Sampl	Merrill, MI	2	Priv, Com Core, 1A	(517)695-2269
2/17	Weed Cntrl & Herb. Update	Standish, MI	4	Priv, Com Core, 1A	(517)846-4111
2/17	Weed Cntrl Meeting	Hillsdale, MI	4	Priv, 1A	(517)788-4292
2/17	Pesticide Study Session	Gaylord, MI	1	Any	(517)731-0272
2/17	Recert. Training Seminar	Bay City, MI	2	Private, 1A	(517)697-5941
2/17-2/18	Prof Lawn Care Assessmnt	Columbus, OH	6	3A	(614)292-7457
2/18	Disease & Insect Mngmt	Pontiac, MI	4	3A,B	(248)858-0887
2/18	Restrict Use Pest App Train	Paw Paw, MI	2	Any	(616)657-7745
2/18	Wheat 2000 Meeting	Kalamazoo, MI	2	Priv, Com Core, 1A	(810)667-0341
2/18	Ingham Cnty Soybean Day	Mason, MI	4	Priv, 1A, 1B	(517)676-7207
2/18	SE Mich. Agronomy Update	Tecumse, MI	3	Priv, 1A	(517)264-5300
2/18	Shemin Univ. Recert. Day	Taylor, MI	4	Com Core, 3A, 3B	(313)291-1200
2/18	Enviro Sound Consulting	Kingston, MI	2	Priv, 1A, 1B, 1C	(517)635-5030
2/18	Rutgers 3-wk Pro Golf Turf	New Brunswick, NJ	9	3A	(908)932-9271

2/18	X-mas Tree Mgmt Short Crse	State College, PA	4	Priv, Com Core, 2	(717)787-4843
2/19	X-mas Tree Mgmt Short Crse	State College, PA	4	Priv, Com Core, 2	(717)787-4843
2/19	Grower Mtg	Merrill, MI	2	Priv,1A,1B	(517)695-2269
2/19	98' Weed Cntrl Mtg	Obly Heights, MI	3	Priv, Com Core	(517)269-9949
2/19	High Yield Wheat Prod.	Birch Run, MI	1	Priv, 1A	(517)624-9321
2/19	Clinton Crop Farmer Mtg.	Pewamo, MI	1	Priv, 1A, 1B	(517)593-3330
2/19	Pesticide Study Session	Gaylord, MI	1	Any	(517)731-0272
2/20	X-mas Tree Mgmt Short Crse	State College, PA	4	Priv, Com Core, 2	(717)787-4843
2/20	Corn & Soybean Production	Akron, MI	1	Priv, 1A, 1B	(517)883-3030
2/20	Grain Storge & Pest Cntrl	Ann Arbor, MI	1	Priv, 1A	(313)971-0079
2/21	Environ Quality Incentive	Allendale, MI	2	Priv, 1A, 1B	(616)846-8770
2/21-23	SAF's 14th Annual Conf.	Del Mar, CA	10	Priv. Com Core, 3B	(703)836-8700
2/23	Field Crops Update	Burnips, MI	2	Priv, 1A	(616)673-0370
2/23-24	Prof. Applicators Inst.	Boise, ID	4	Priv, Com Core, 1A	(800)844-4900
2/23-27	Good Mnftrng Practices-Food	Danville, IL	14	7A	(217)442-1800
2/2-27	Davey Inst. Tree Sciences	Kent, OH	15	Com Core, 3A, 3B, 6	(330)673-9511
2/24	1998 Core Manual Review	Ann Arbor, MI	1	Any	(313)971-0079
2/24	Pesticide Study Session	Gaylord, MI	1	Any	(517)731-0272
2/25	Field Crops Weed Cntrl	Lapeer, MI	2	Priv, Com Core, 1A	(810)667-0341
2/25	Grower Service Grwr Mtg	Wyman, MI	3	Priv, 1A, 1B, 1C	(616)823-2620
2/26	Pest Review Session	Hastings, MI	2	Any	(616)673-0370
2/26	Mauget Seminar/Workshop	Novi, MI	2	Priv,2,3B	(616)364-7503
2/26	Midland Cnty Pest. Training	Midland, MI	2	Any	(517)772-0911
2/26	Handling Pesticides Safely	Grand Rapids, MI	2	Any	(616)336-3265
2/26	Drybean & Sugar Beet Prod.	Akron, MI	2	Priv, 1A	(517)883-3030
2/26	Pesticide Study Session	Gaylord, MI	1	Any	(517)731-0272
2/27	'98 Soils, Water & Pesticds	Ann Arbor, MI	1	Any	(313)971-0079
2/27	Veg Prod Using Plasticulture	Grand Rapids, MI	2	Priv 1B,SO	(810)469-6440
2/27	Insect/Weed Cntrl Update	Mt Pleasant, MI	4	Priv, 1A, 1B	(517)772-0911
2/28	Veg Prod Using Plasticulture	Novi, MI	2	Priv 1B,SO	(810)469-6440
3/2	Pest Recert Review Train	Grant, MI	3	Any	(616)924-0500
3/2	Pest App Review Session	Monroe, MI	3	Any	(313)243-7113
3/2-3	Prof. Applicators Inst.	Willmar, MN	4	Priv, Com Core, 1A	(800)844-4900
3/2	MFPA Wntr Conf-Pest Prob.	Lansing, MI	1	2, 3A, 3B, 5, 6	(517)482-5530
3/2	MFPA Wntr Conf-Mthds/Equip	Lansing, MI	1	6	(517)482-5530
3/2	MFPA Wntr Conf-Tree Dis.	Lansing, MI	1	6, 2, 3B	(517)482-5530
3/2	MFPA Wntr Conf-Urban Tree	Lansing, MI	1	6, 2, 3B	(517)482-5530
3/2	MFPA Wntr Conf-Cert Prog.	Lansing, MI	1	Any	(517)482-5530
3/2	MFPA Wntr Conf-Cameraria.	Lansing, MI	1	2, 3B	(517)482-5530
3/2	MFPA Wntr Conf-Chemicals.	Lansing, MI	1	Any	(517)482-5530
3/2	MFPA Wntr Conf-Row Rsch	Lansing, MI	1	Com Core, 6	(517)482-5530
3/2	MFPA Wntr Conf-Mech/Herb	Lansing, MI	1	Com Core, 6	(517)482-5530
3/3	MFPA Wntr Conf-Wildflwr	Lansing, MI	1	Com Core, 6	(517)482-5530
3/3	MFPA Wntr Conf-Herb Tools	Lansing, MI	1	Com Core, 6	(517)482-5530
3/3	Basic Field Crop Mngmt	Vicksburg, MI	1	Priv, 1A	(616)383-8830
3/3	In-Depth Look-Lndscpe Paths.	Grand Rapids, MI	1	3B	(616)336-3265
3/3	Proper Pesticide Appl.	Akron, MI	2	Priv, Com Core, 1A	(517)883-3030
3/3-4	Veg Mngmt Assoc of Ky	Lexington, KY	4	Com Core, 6	(606)928-6343
3/5	B&W Coop Grower Mtg.	Mt Pleasant, M	1	Priv, 1A, 1B, 1C	(517)842-3104
3/5	Aldermans Sprayer Clinic	Lennon, MI	2	Priv, 1A, 1B, 1C	(810)621-4201
3/9	Pest Cert Program	Clinton Twp, MI	2	Any	(810)469-5180
3/10	Cert/Recertification Session	Kalamazoo, MI	2	Any	(616)383-8830
3/10	Pest. Recert. Update	Adrian, MI	2	Any	(517)264-5300
3/10	Basic Field Crop Mngmnt	Vicksburg, MI	1	Priv, 1A	(616)383-8830
3/10	B&W Coop Grower Mtg	North Star, MI	1	Priv, 1A, 1B, 1C	(517)842-3104
3/10	Raven Spray Cntrler Clinic	Akron, MI	1	Priv, Com Core, 1A	(517)883-3030

3/11	Pest Review Session	Allendale, MI	2	Any	(616)673-0370
3/11	Advanced Field Crop IPM	E. Lansing, MI	4	Priv, 1A	(616)671-2412
3/12	Clare/Gladwin Cnty Pest. Trng	Harrison, MI	2	Any	(517)772-0911
Winter	Rutgers Pro Golf Turf School	New Brunswick, NJ	18	3A	(906)932-9271
3/17	Basic Field Crop Mngmnt	Vicksburg, MI	1	Priv, 1A	(616)383-8830
3/17-19	Food Safety Sanitation	Olathe, KS	12	Com Core, 7A	(913)782-6399
3/18	Benzie-Manistee Hort Show	Thompsonville, MI	2	Priv, 1C	(616)882-0025
3/19	Sprayer/Spreader Calibrate	Stanwood, MI	2	Priv, Com Core, 1A	(616)592-0792
3/24	Pest Review Session	Allegan, MI	2	Any	(616)673-0730
3/24	Basic Field Crop Mngmnt	Vicksburg, MI	1	Priv, 1A	(616)383-8830
3/24	Pest Cntrl-Interior Plntscpe	Toledo, OH	4	Com Core, 7E	(313)833-3412
3/26	Restrict Use Pest App Train	Paw Paw, MI	2	Any	(616)657-7745
3/26	Raven Spray Cntrllr Clinic	Akron, MI	1	Priv, Com Core, 1A	(517)883-3030
3/26	Amish Dairy Herd Health	Stanwood, MI	2	Priv, 1D	(616)593-0792
3/30-4/3	Good Mnftrg Pract-Food Indus	Danville, IL	14	7A	(217)442-1800
3/31	Basic Field Crop Mngmnt	Vicksburg, MI	1	Priv, 1A	(616)383-8830
4/6	Pesticide Cert. Program	Clinton Twp, MI	2	Com Core, 5	(810)469-5180
4/6	Pest. Appl. Review	Monroe, MI	3	Any	(313)243-7113
4/7	Cert/Recert Session	Kalamazoo, MI	2	Any	(616)383-8830
4/16	Degesh America Recert Trng	Charlottesville, VA	4	ST, CM, SO, GH	(540)234-9281
5/11-15	Good Mnftrg Pract-Food Indus	Danville, IL	14	7A	(217)442-1800

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