



We hope you enjoy the new look of our quarterly North Central IPM Center Connection newsletter. We will feature information about the Center and its associated activities in our new column “Center Updates and Activities.” We also will include a column “Emerging Pesticide Issues in EPA” authored by Lynnae Jess. In addition, we will highlight new web sites in our “Spidering the Web” column and recently developed educational materials in the “Resource Corner.” We welcome input to any of these columns as well as featuring events you would like us to highlight. We encourage you to share information contained in the Connection in your own newsletters if you think the content would be of interest to your readership.

Susan Ratcliffe, Co-Director

CENTER UPDATES AND ACTIVITIES

“Establishing a Midwest Corn Earworm Migration and Insecticide Resistance Monitoring Network”

Lead Project Investigator: William Hutchison, University of Minnesota

Co-Project Investigators: Rick Weinzierl, University of Illinois; Rick Foster, Purdue University; Shelby Fleischer, Penn State University

The North Central IPM Center has begun funding IPM implementation and enhancement grants. We recently heard from Bill Hutchison who is providing leadership for a project focusing on corn earworm migration and insecticide resistance monitoring in the Midwest. Dr. Hutchison indicated “The cooperation among all collaborators, including several from the private sector, has been excellent and clearly exceeded my expectations!” North Central IPM Center funds have been effectively leveraged to support additional projects and funding from other agencies. Based on new cooperators from the Northeastern U.S., Canada, and the Southern U.S., several discussions are underway to formally expand the moth flight and resistance monitoring efforts to several southern states. This project has resulted in more timely information delivery and decision-support for the vegetable processing, seed corn, and associated industries.

For more information, you can view two web sites:

a) Overview of the project, 2006 CEW Pest Alert; and new supporters: <http://www.vegedge.umn.edu/MNFruit&VegNews/vol3/803zeamap.htm>

b) The New “ZEA-MAP” Network Web Site, operational since July 1, 2006 (with much more to add; “under construction”): <http://www.vegedge.umn.edu/ZeaMap/zeamap.htm>

Working Group Updates

The NC IPM Center established seven multi-disciplinary and multi-state Working Groups that will identify and prioritize IPM needs, build partnerships with key stakeholders, increase communication between team members and address the goals of the National Roadmap for IPM including evaluation of IPM successes. In addition, each working group leader serves on the North Central IPM Center Stakeholder Panel.

The **Ornamental Pest Working Group** organized a mini-symposium that was held at the Fifth National IPM Symposium titled, “Are Alternative IPM Approaches for Greenhouse and Nursery Pests Feasible?” In essence, the session’s goal was two-fold: First, to review the status and challenges of doing modern integrated pest management in U.S. greenhouses. Second, to compare the complex and manifold factors that are similar or different when developing IPM programs in the

United States vs. Europe. Factors include economic incentives, proximity of greenhouse producers to insectaries where beneficial arthropods are produced, familiarity and historical use of alternative IPM approaches in Europe. By examining these factors, we hope to be able to better understand and categorize which problems can be addressed relatively easily, and which will be more difficult to overcome.

The **Great Lakes Vegetable Working Group** (GLVWG) has been busy collecting and summarizing information from the online IPM surveys administered in 2005–2006. Of the 14 surveys developed, at least 8 of the surveys appear to have enough data to begin analyzing grower practices. The regional pumpkin survey recorded 82 growers from 6 states and Ontario, Canada. We anticipate receiving more surveys from late pumpkin field days. Results from all the vegetable surveys will be distributed to GLVWG members and stakeholders.

Through the summer, the GLVWG listserv has maintained communication between specialists on issues such as downy mildew on cucurbits, state pest updates and newsletter dissemination. In conjunction with the recently established Midwest Corn Earworm Monitoring and Resistance Network, several GLVWG members have posted information relative to this pest's flight activity and preliminary resistance findings on the listserv.

As we head into the fall and winter, we have a committee appointed to begin organizing our annual meeting, which will be held February 28–March 1, 2007 in Ontario, Canada. Details concerning registration and accommodations will be forthcoming. Watch the GLVWG website (<http://glvwg.ag.ohio-state.edu/>) for the latest information.

The **Potato Working Group** focused its work on monitoring pesticide resistance in key insect and disease pests. In 2006, the Vegetable Entomology program at Michigan State University continued its Colorado potato beetle neonicotinoid resistance monitoring program. A total of 46 populations were assayed this summer from 7 different states (29 from Michigan, 5 from Wisconsin, 4 from Maine, 3 from Minnesota, 2 each from Delaware and Massachusetts, and 1 from Washington). Data analysis is ongoing, so specific results are not available at this time.

To investigate the resistance of early blight to strobilurin fungicides, disease samples were collected in fields throughout the region (Michigan, Wisconsin, Minnesota, and North Dakota). DNA isolates will be analyzed for the loci that lead to strobilurin resistance by the North Dakota State University Plant Pathology department.

The Potato Working Group will compare results from these two studies with 2005 baseline data, discuss the economic impact, and prepare regional IPM responses. The Working Group will meet February 8, 2007 in Stevens Point, Wisconsin following the Wisconsin Potato Education meetings. Growers and chemical industry representatives will be invited to join the discussions.

The **Pulse Crops Working Group** continues to work toward completing project activities. During the past year, the project funded seven participants from the region to participate in the development of a national Pest Management Strategic Plan for pulse crop production. In that document, the primary need for education identified was a single, point source website for pulse crops information. The web page framework is completed and the website URL will be <http://www.pulse-cropinfo.org>. Current activities for the project are to gather information on pulse crop production and pest management to populate this website, to post this information to the website and develop a method to maintain the data in the most current form possible. Public access to the website is expected by the end of November, 2006. The project also maintains a list serve for information exchange in the pulse crop production and pest management fields. There are currently approximately 60 members on the listserv.

The purpose of the **Measurement and Evaluation Working Group** is to develop a consistent and coordinated effort to measure IPM outcomes on a regional level. This working group is collaborating with the North Central IPM Extension Coordinators to develop a regional IPM program evaluation and cooperating with the regional working groups to develop survey tools to measure the adoption of IPM.

Specific activities that have been accomplished include the following:

Iowa State University developed a standardized measurement tool to examine the adoption of IPM. This survey instrument was tested on corn and soybean in Iowa and cotton in Texas. It was then used to measure IPM adoption in corn and soybeans in Iowa. During the past two years, Kansas State University used this standardized measurement tool to examine the adoption of IPM in sorghum and sunflowers in Kansas. These data have been entered and will be analyzed in the near future.

The working group is coordinating a regional level evaluation to assess the environmental or economic impacts associated with adoption of IPM in the North Central Region. Efforts thus far have included analyses of current impact level evaluations on the state level and examination of the Performance Planning and Reporting System. These sources of information are useful in the development of a recommendation for a future regional level evaluation.

The Great Lakes Vegetable Working Group has completed on-line surveys to measure adoption of IPM in asparagus in Michigan, carrots in Michigan, horseradish in Illinois, sweet corn in Illinois, melons in Indiana, peppers in Ohio and Kentucky, tomatoes in Indiana and Ontario, and pumpkins throughout the region. The Evaluation & Measurement Group has completed data analyses and a summary report for the regional pumpkin survey. The Great Lakes Vegetable Working Group continues to gather survey data at field days throughout the region. Once these data are collected, additional analyses will be conducted.

On September 7, 2006, the North Central IPM Center sponsored a Measurement and Evaluation Teleconference. Participants at the two-hour teleconference presented information on the importance of evaluation, the use of the Logic Model for program evaluation, a “real world example of impact evaluation” and additional sources of information for program evaluation. Over 100 sites throughout the United States participated in this teleconference.

IPM/NRCS Collaboration Working Group is a new work group focusing on Natural Resources Conservation Services and IPM with leadership provided by Mike Brewer of Michigan State University and Tom Green of the IPM Institute of North America. The group aims to increase collaboration between IPM and NRCS professionals in the region to help achieve common goals. The work group will hold its first meeting in St. Louis on November 16-17 of this year. To date, the group has contacted IPM coordinators throughout the North Central Region and requested their participation and others from NRCS, crop production, crop advisory and related professions.

The meeting will include presentations on the missions and roles of the USDA national IPM program, the North Central Region IPM Center, state IPM coordinators and NRCS. Additional presentations will cover successful collaborations between IPM and NRCS both from within and from outside the region. A workgroup website is under construction.

The **Great Lakes Fruit IPM Working Group** (GLFW-IPM WG) was created in May 2006, with the goal of expanding a previously informal group of researchers and extension personnel from Michigan, Ontario, and New York to now include others from Wisconsin, Illinois, Indiana, Ohio, and Pennsylvania, as appropriate to fruit IPM issues in the Great Lakes region. The group has a current list serve of about 150 members and is developing a website to serve as both an internal organizational information exchange (including a member directory) as well as a venue for public dissemination of pertinent IPM information concerning fruit production. Such information is envisioned to include an IPM calendar; regional IPM guidelines, projects and collaborations; a bulletin board of IPM issues/alerts/strategies; and links to IPM resources and newsletters. The Working Group is organizing a meeting of representatives from member states, to be held November 8-10, 2006 at Ithaca (NY) to share IPM technologies, report recent research results and extension efforts, and identify and prioritize IPM needs and collaborative opportunities. A compendium of research and extension reports presented at the annual meeting will be compiled and distributed to members. David Epstein (MSU) has agreed to represent the group on the NC-IPM Center Stakeholder Panel.

North Central Region Extension Entomology Teleconferences

The North Central Region IPM Center is providing funds to cover teleconference charges for field crop extension entomologists to share entomological observations and discuss pest management recommendations. Thus far, six teleconferences have been conducted: May 16, May 23, June 6, June 20, July 18 and July 25, 2006. The 1-hour long teleconferences serve to strengthen this network of extension entomologists and improve communication among this group of potentially important pest infestations across the region. Ultimately, producers benefit from this enhanced level of communication. Mike Gray serves as the organizer of these teleconferences.

Potato Wart Recovery Plan

USDA is providing funds to develop recovery plans for a series of serious plant diseases of national importance. NC IPMC staff members at Michigan State University are developing the recovery plan for potato wart (*Synchytrium endobioticum*). The goal of a recovery plan is to review the current status and develop a plan to manage the disease in the event that it enters the United States. Several drafts of the Potato Recovery Plan have been reviewed and updated. The final version is due to be completed within the next month.

Update on Pest Alert and Training CDs

The development of regional and national pest alerts, in addition to training CDs has continued to address numerous IPM related issues. To date, over 1.5 million copies of eleven national and five regional pest alerts have been distributed by the

regional IPM Centers with the assistance of the Land-Grant Universities, the National Plant Diagnostic Network, APHIS, ARS, U.S. Forest Service, the National Plant Health Board, and CSREES. New pest alerts are under development for Whitefly Q Biotype (national requested by Lance Osborne), Citrus Greening (regional requested by Southern Plant Diagnostic Network), Chili Thrips (regional requested by Southern Plant Diagnostic Network), Plum Pox (National requested by North Central region, Lynnae Jess coordinating and authoring), Rocky Mountain Spotted Fever (National requested by EPA), Bedbugs (National requested by Northeastern region), Giant Hogweed (National requested by North Central CAPS program).

Project Accomplishments

Abstracts and final reports for all projects awarded through the North Central IPM Center from 2001 to the present have been added to the national Integrated Pest Management web site at <http://www.ipmcenters.org/research/pmcprojects/pmcprojects1.cfm?USDARegion=National%20Site>.

NATIONAL PROGRAM ACTIVITIES

Legume Pest Information Platform for Extension and Education (PIPE)

A folder containing educational and outreach materials developed in cooperation with USDA CSREES, Risk Management Agency, Agricultural Research Service, Animal and Plant Health Inspection Service, the Regional IPM Centers, the National Plant Diagnostic Network, the 1862 Land-Grant University System, the NC504 Soybean Rust Technical Committee, the United Soybean Board and the North Central Soybean Board to address soybean rust and soybean aphid management issues in the United States, Mexico and Canada will be sent to each of the researchers and specialists involved in the (PIPE) sentinel plot project for evaluation and modification suggestions. In addition, the folder will be distributed to governmental agency and congressional members to illustrate the collaborative outreach efforts resulting from the funding.

Items contained in the folder include:

- Using the PIPE to address on-farm management issues video on CD
- Soybean Rust: Scout before your spray video on CD
- Soybean Aphid: Scout before you spray video on CD
- Soybean Rust/Soybean Aphid magnetic ruler (50,000 distributed)
- Soybean Rust/Soybean Aphid post card (25,000 distributed)
- Soybean Rust Identification card, English version (775,000 distributed)
- Soybean Rust Identification card, Spanish version (3,000 distributed)
- Soybean Rust Pest Alert, English version (475,000 distributed)
- Soybean Rust Pest Alert, Spanish version (25,000 distributed)
- Soybean Aphid Pest Alert, English version 105,000 distributed)
- Using Foliar Fungicides to Manage Soybean Rust (175,000 distributed)

PIPE and the associated outreach efforts will expand in 2007 to include more soybean and other legume pests and diseases. The North Central IPM Center is currently working with members of NCERA 200, ARS and Virginia Tech to develop additional educational materials and training.

EMERGING PESTICIDE ISSUES IN EPA

Registrants Request Cancellation of All Remaining Lindane Uses and Registrations

The remaining uses of lindane will soon be canceled in the United States, as a result of voluntary requests by the registrants to cancel all remaining pesticide registrations of this organochlorine pesticide. The Agency plans to accept the producers' voluntary cancellation requests after announcing these requests in the Federal Register. The costs of continued lindane registration outweigh the benefits of the remaining seed treatment uses for barley, corn, oats, rye, sorghum, and wheat, according to EPA analysis. Cancellation of these uses is expected to result in no significant loss to U.S. agriculture due to the successful development and registration in recent years of safer alternative pesticides. Once the cancellation process is complete, EPA will propose to revoke the existing tolerances or limits for residues of lindane in animal fat.

Risk Management and Tolerance Reassessment Decisions Announced for Resmethrin

EPA has determined that resmethrin-containing insecticide products are eligible for reregistration, provided that the risk mitigation measures identified in the reregistration eligibility decision (RED) document are adopted and labels are amended accordingly.

Residential risks have been mitigated by improved warning labels and mandatory conveyance of proper use information. Occupational handler risks have been mitigated through personal protective equipment and a Restricted Entry Interval. Ecological risks have been addressed through maximum application rates, adding product stewardship statements to the labels, and amending use patterns. Resmethrin is a member of the pyrethroid class of pesticides and was first registered in 1967. It is a broad spectrum, non-systemic, synthetic pyrethroid insecticide. Resmethrin is registered for use as a wide area mosquito abatement insecticide, for use on livestock and in livestock housing, in food item transportation vehicles, structures, buildings (including food handling establishments), and for residential use to control flying and crawling insects.

Many Uses of Organochlorine Fungicide PCNB Will No Longer Be Allowed, Risk Mitigation Proposed for Other Uses

EPA has completed its review of the organochlorine fungicide, pentachloronitrobenzene, or PCNB, and has determined that most uses are not eligible for reregistration. The eligible uses are: cole crops (for treatment of clubroot only), ornamental bulbs in commercial production, and seed treatments. This decision is based on ecological risks of concern and the impact of PCNB's ability to persist in the environment. Dietary risks are not of concern for the general population or for children. The Agency has identified a number of measures that it believes are necessary to reduce risks associated with the remaining uses of PCNB.

PCNB is used to control diseases on vegetables (predominantly green beans and cole crops), field crops (cotton, potatoes, and peanuts), turf, ornamentals, and seeds (seed treatments of barley, beans, corn, cotton, oats, peas, peanut, potato, rice, safflower, sorghum, soybean, sugar beet, and wheat). The Agency has reassessed the 14 tolerances (maximum allowable residue levels) established for PCNB.

Risk Management and Tolerance Reassessment Decisions Announced for Malathion

EPA has determined that pesticide products containing malathion are eligible for reregistration, provided that risk mitigation measures identified in the Reregistration Eligibility Decision (RED) document are adopted and product labels are amended accordingly. With mitigation measures described in the RED document, malathion tolerances meet safety standards established by the Food Quality Protection Act (FQPA).

Malathion is a broad-spectrum organophosphate (OP) insecticide first registered in 1956. It is used widely in agriculture on over 100 food and feed crops, for homeowner outdoor uses, ornamental nursery stock, building perimeters, pastures and rangeland, and regional pest eradication programs including USDA's Boll Weevil Eradication Program, USDA's Medfly Eradication Program, and regional public health mosquito control programs. Previous risk assessments indicated some drinking water, residential bystander, occupational handler and post-application, and ecological risks of concern.

Drinking water and residential bystander risk estimates have been revised, and are no longer of concern, based on refinements to the risk assessments and/or risk mitigation measures:

- * 4 crop uses require reduced maximum application rates only.
- * 69 crop uses require reduced maximum allowed number of applications per year only.
- * 29 crop uses require both reduced maximum application rates and maximum number of applications allowed per year.

Occupational risks have been mitigated through personal protective equipment (PPE) or engineering control requirements on the labels and extending restricted-entry intervals (REIs) for some sites:

- * PPE is specified for flaggers and applicators using motorized ground equipment, for mixers and loaders, for handlers of dust formulations, dip applications, airblast applications, and others.
- * Closed mixing systems are required for all ultra low volume (ULV) applications.
- * All wettable powder formulations must be packaged in water soluble packaging.
- * Enclosed cockpits are required for all aerial applications.

- * REIs are extended for 46 agricultural crops. Most are 12-24 hours, though some crops require 2-day (48-hour) or 3-day (72-hour) REIs.

Ecological risks have been addressed by adding buffer zone and spray drift requirements to the labels, and amending use patterns for many uses:

- * Buffer zones of 25 feet are required along all water bodies for all aerial non-ULV agricultural applications.
- * Buffer zones of 50 feet are required along all water bodies for all aerial ULV agricultural applications.
- * Spray drift management language is to be added specific to Boll Weevil Eradication Program (BWEP) and non-BWEP product labels.
- * Lower maximum application rates and/or reduced maximum numbers of applications per year for many agricultural applications as described above will help reduce ecological risks.

Risk Management and Tolerance Reassessment Decisions Announced for Methyl Bromide Commodity Uses

EPA has completed its review of the commodity uses of the fumigant methyl bromide. To reduce potential risks of concern to workers and bystanders from acute inhalation exposure, the Agency is requiring a number of mitigation measures, including site-specific fumigant management plans, respiratory protection, buffer zones, posting, and notification. Combined with the methyl bromide phase-out mandated by the Montreal Protocol, many of these measures will further reduce potential health risks from ozone depletion, such as skin cancer. EPA has determined that methyl bromide's commodity uses are eli-

gible for reregistration and its tolerances meet FQPA safety standards, provided that risk mitigation measures identified in the methyl bromide decision document are adopted and product labels are amended accordingly.

Methyl bromide is a broad-spectrum fumigant with a variety of pest control uses. Its use is being phased out under the Montreal Protocol; however, critical use exemptions will still be available under special circumstances. While most often used as a soil fumigant, methyl bromide also is used as a structural fumigant and for post-harvest treatment of commodities. The current decision document covers methyl bromide uses that have accompanying food residue tolerances for post-harvest fumigation of food commodities in chambers at ports, or specialized structural fumigations at food processing facilities. Although some methyl bromide uses such as fumigation of timber, wood products, and industrial equipment do not require a food residue tolerance, the Agency has included them in the current decision since they are performed in similar facilities and were assessed using a similar risk assessment methodology.

EPA is currently assessing risks and will be developing risk management decisions for five soil fumigant pesticides: chloropicrin, dazomet, metam sodium, methyl bromide, and a new active ingredient, iodomethane. Risks of a sixth soil fumigant, 1,3-D (Telone), will be discussed for comparative purposes; the Telone risk management decision was completed in 1998. The Agency is evaluating these soil fumigants concurrently to ensure that human health risk assessment approaches are consistent, and that risk tradeoffs and economic outcomes can be considered appropriately in reaching risk management decisions. A decision on the reregistration of methyl bromide's pre-plant soil fumigation uses is scheduled to be completed in 2007 with the other soil fumigants.



Internet Center for Wildlife Damage Management

The Internet Center for Wildlife Damage Management (<http://icwdm.org>) attempts to consolidate existing and future information on integrated pest management (IPM) in wildlife damage management. Its goal is to increase adoption of IPM practices in wildlife damage management by centralizing resources.

This web site was funded through a grant of the National IPM Network and CSREES Regional IPM Grant Program. The principle investigators are Scott Hygnstrom, Professor and Extension Specialist of Wildlife Damage at the University of Nebraska, Paul Curtis, Assistant Professor of Wildlife Damage Management at Cornell University, New York, Robert Schmidt, Associate Professor & Wildlife Damage Specialist at Utah State University, and Greg Yarrow, Associate Professor of Wildlife, Clemson University, South Carolina.

The current web site coordinator is Stephen Vantasel, Project Coordinator in Distance Education and Wildlife Damage Management, at the University of Nebraska.

Landscape with Native Plants

Interested in landscaping with native plants? Then visit the Environmental Protection site located at: <http://www.epa.gov/region5/pesticides/nativeplant.html>.

Risk Management and Tolerance Reassessment Decision Announced for Metaldehyde

EPA has completed its review of the supported uses of metaldehyde, a molluscicide used to control snails and slugs on a wide variety of sites including turf, ornamentals, berries, citrus, and vegetables. The Agency has determined that all of metaldehyde's supported uses, except turf and dichondra lawns, are eligible for reregistration; and, its sole tolerance meets the FQPA safety standard, provided that risk mitigation measures identified in the Metaldehyde Reregistration Eligibility Decision (RED) are adopted and product labels are amended accordingly. Registrants also must submit confirmatory data and domestic animal incident monitoring results to help the Agency determine whether the risk mitigation adequately reduces pesticide poisonings among domestic animals.

Metaldehyde poses no dietary, residential, or worker human health risks of concern. To further deter children and toddlers from accidental ingestion, a bittering agent currently in some products will be included in all residential use products. However, incident information suggests that many domestic animals, mainly dogs, are poisoned after ingesting metaldehyde pellets applied to home lawns and gardens as snail and slug baits. Birds and animals are also assumed to be at risk. To reduce risks to dogs, other domestic animals, and wildlife, the Agency is requiring a number of mitigation measures for residential use products, including:

- * reduce numbers of applications and application rates
- * add minimum retreatment intervals
- * prohibit broadcast and foliar applications
- * update product warnings and use directions
- * provide information on cultural practices to reduce damage from snails and slugs
- * always include bittering agents
- * to discourage animals from mistaking metaldehyde pellets for food, formulate granular products at a rate of fewer than 35 pellets per gram
- * submit data on the efficacy of metaldehyde products formulated with non-food-based inerts and bulking agents

EPA Finds Organic Arsenical Herbicides Ineligible for Reregistration

EPA has announced its decision that all uses of the organic arsenic herbicides—MSMA, DSMA, CAMA, and cacodylic acid—are not eligible for reregistration. The Agency's primary concern is the potential for applied organic arsenical products to transform to a more toxic inorganic form of arsenic in soil and subsequently be transported to drinking water.

The Agency's risk assessment, supported by field monitoring data in both surface and ground water, estimates levels of inorganic arsenic in drinking water from the pesticide use that raise a concern for cancer risk. Given this risk, EPA has determined that the tolerances for the organic arsenic herbicides do not meet the safety standard of the Federal Food, Drug, and Cosmetic Act (FFDCA). In addition, because there are readily available alternatives, EPA believes continued registration of the organic arsenic herbicides will pose an unreasonable risk under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

The element arsenic is found naturally in the environment. Through erosion and industrial activities, arsenic is transported into water, air, food, and soil. As a result, people are exposed to small amounts of arsenic every day. EPA and other federal and state agencies have regulations in place that aim to reduce or limit arsenic exposure to individuals. In light of these facts, and given that alternative herbicides are readily available, EPA believes additional exposure to arsenic from the organic arsenic herbicides is unnecessary.

The organic arsenic herbicides are used primarily on cotton and turf, including golf courses, home lawns, recreational areas such as school yards and athletic fields, and rights-of-way. Overall, use in the U.S. appears to be declining, and alternative weed controls are available for each of these uses.

Pesticide Program Announces Risk Management Decisions for Copper (cupric ion)

EPA has determined that the agricultural uses of copper-containing pesticide products are eligible for reregistration provided that data needs are addressed, certain risk mitigation measures are adopted, and labels are amended accordingly.

The Agency has determined that there are no dietary, residential or occupational risks of concern resulting from exposure to copper products. Based on conservative assumptions on how coppers were applied to assess potential exposure to non-target organisms, EPA's ecological assessment indicated that copper can pose acute risks to various organisms, with

the greatest risk to certain aquatic species resulting from direct applications and runoff from fields adjacent to water bodies. Based on information from the user community that indicated that most typical use rates are significantly lower than the labeled maximum use rates, the manufacturers have agreed to refine their pesticide labels by reducing application rates, defining application intervals, and determining seasonal maximum application rates.

Copper pesticides (copper or cupric ion) are extensively used in various agricultural settings including citrus, tree nuts, tomato, pepper, grape, berries and peach. Copper is a broad-spectrum fungicide used on many food and ornamental crops, aquaculture, and also is used to control algae, aquatic weeds, bacteria, and mollusks. The continued use of copper pesticides on agricultural crops to control fungus and bacteria is significant because such products are generally cost-effective, broad-spectrum, and in some cases the only available pesticide to manage the target pests. Coppers are also among the few pesticides that are permitted for use on crops with organic certifications. Copper-based pesticides are also used around the home as garden and lawn fungicides and as root-killers in sewer systems. Coppers are also registered for antimicrobial applications, including uses as an anti-foulant and preservative on wood and other materials.

Public Comment Period Open for Tolerance Reassessment Decision for Ethylene Oxide Pesticide

EPA has concluded its tolerance reassessment for the pesticide ethylene oxide (ETO) and has determined that with certain exposure mitigation measures, there is reasonable certainty that no harm to people will result from dietary or bystander exposure to ETO or its reaction products, ethylene chlorohydrin (ECH) and ethylene glycol (EG). Therefore, the four tolerances (maximum allowable residue limits) established for ETO are now considered reassessed as safe under federal law.

ETO is used in the U.S. for commercial fumigation/sterilization, mostly for sterilizing medical and laboratory items/equipment. A much smaller use is for fumigating herbs and spices, and black walnuts. ETO residues decline rapidly after sterilization and are unlikely to be found in spices available for consumption. To alleviate potential dietary risk concerns for basil, the registrants submitted voluntary cancellation requests for this use. Additional mitigation includes the use of new technology to reduce residues on other herbs, spices and walnuts. The registrants have agreed to amend their labels to mandate use of such methods.

In 2007, EPA plans to complete a Reregistration Eligibility Decision (RED) for ETO after the Agency completes its reassessment of an appropriate cancer risk model. The RED document will summarize the findings and reflect the Agency's decisions on risk assessment and risk management for the uses of ETO. The RED will also include an occupational assessment which is typically not included in a TRED. The RED document will also address ETO's status in special review - a process through which pesticides suspected of posing unreasonable risks to human health, the environment, or non-target organisms are referred for review. In 1978, ETO was placed on special review status based on predicted developmental toxicity, mutagenicity, and neurotoxic effects in workers. In the early 1980s, the carcinogenicity of ETO emerged as an issue and was included as a special review concern. The Agency intends to complete the special review for ETO in 2007 after completing the RED.

Atrazine Effects Determination for the Barton Springs Salamander

August 21 - EPA has met the first court-ordered deadline pursuant to a Settlement Agreement signed on August 22, 2005, with the Center for Biological Diversity and the Save Our Springs Alliance. The Agency is releasing its effects determination for atrazine as it relates to the Barton Springs salamander. EPA has concluded that atrazine is "not likely to adversely affect" the Barton Springs salamander. This is the first effects determination made under the provisions of the Fish and Wildlife Service's (FWS) and National Marine Fisheries Service's (jointly, Services') Counterpart Regulations.

As background, on January 26, 2004, the Center for Biological Diversity and the Save Our Springs Alliance (jointly, plaintiffs) filed a lawsuit in federal district court for the District of Columbia alleging that EPA failed to comply with sections 7(a)(1) and 7(a)(2) of the Endangered Species Act (ESA) (CBD v. EPA, Case No. 1:04-cv-00126-CKK - District Court for the District of Columbia). The federal government negotiated a settlement in this case that committed the Agency to review the potential effects of six pesticide active ingredients on the endangered Barton Springs salamander and if adverse effects are expected, to initiate "consultation" with FWS under provisions of the ESA.

To determine atrazine's potential to affect the Barton Springs salamander, the Agency reviewed all available information (including species life history information, species range, toxicity data, and atrazine use information, among other things).

The risk assessment and effects determination were conducted consistent with EPA's "Technical Overview of the Risk Assessment Process," (Overview Document) meaning that EPA has fulfilled its obligations under the Counterpart Regulations and does not need to enter into further consultation with FWS.

The Services have reviewed EPA's risk assessment process for endangered species and concluded that EPA can make "not likely to adversely affect" determinations without any further consultation, when that risk assessment is performed consistent with the procedures outlined in the Overview Document. If EPA determines that a pesticide is "likely to adversely affect" a species, EPA still must then enter into formal consultation with the Services.

The next deadline under this settlement agreement is May 2007, by which EPA must make effects determinations for two additional pesticide active ingredients.

Schedule for First Four Years of Registration Review Available

EPA has issued a schedule for the registration review program, the periodic review of all registered pesticides mandated by section 3(g) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The schedule takes effect on October 10, 2006, the effective date of the registration review program.

This schedule is a timetable for opening dockets for the first four years of the registration review program and shows how EPA plans to begin meeting its statutory goal of reviewing all registered pesticides every 15 years. EPA expects a total of about 676 registration review cases, comprising about 1,075 pesticide active ingredients, to undergo registration review. To review each of these pesticides every 15 years, the Agency plans to make decisions on 45 or more registration review cases (about 70 pesticide active ingredients) each year.

Each pesticide's place on the schedule is generally determined by its baseline date—the date of its last substantive review—with the oldest cases going first. The baseline date for a pesticide that was subject to reregistration is the date of the Reregistration Eligibility Decision (RED) or Interim RED. The baseline date for pesticides that were not subject to reregistration is the registration date of the first product containing the active ingredient. Although the schedule generally is constructed chronologically, some registration review cases in years two through four are grouped in the schedule for greater efficiency. For example, pesticides that are chemically related or use-related (e.g., organophosphate and carbamate chemical classes, the coppers group, and the pyrethroids, pyrethrins, and synergists group) would be reviewed during the same time frame.

EPA is announcing this schedule as provided in Sections 155.42(d) and 155.44 of the Procedural Regulations for Registration Review: Final Rule (<http://www.epa.gov/fedrgstr/EPA-PEST/2006/August/Day-09/p12904.htm>). The Agency may consider issues raised by the public or registrant when reviewing a posted schedule, to schedule a pesticide registration review, or to modify the schedule of a pesticide registration review as appropriate. This schedule will be updated at least once every year.

Background information on the program is provided at: http://www.epa.gov/oppsrd1/registration_review/

An explanation of the schedule is at: http://www.epa.gov/oppsrd1/registration_review/explanation.htm

The current schedule is available at: http://www.epa.gov/oppsrd1/registration_review/schedule.htm



The Ohio State University 2006 Publications

506A2 Commercial Tree Fruit Spray Guide, 2006 \$8.75

506B2 Midwest Commercial Small Fruit and Grape Spray Guide, 2006 \$4.00

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