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PEP-TALK

OSU Pesticide Education Programs

THE OHIO STATE UNIVERSITY EXTENSION

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Section 18 Actions in OH

SECTION 18 ACTIONS IN OHIO

On Monday, May 5, ODA declared a Crisis for the use of Dual on transplanted tomatoes. EPA okayed the Crisis declaration but no tolerance has yet been established for metolachlor in tomatoes. EPA has assured ODA that the tolerance will be in place by the time of harvest, but there is still a whiff of uncertainty in the air. The reason for the Crisis is the inability of registered alternatives to control Black Nightshade. Growers flooded the ODA office with demands for Dual the week of April 28. The Crisis exemption has been supplied, but growers now also have to assume a bit of the gamble involved. If EPA does not follow through with the residue tolerance establishment, growers will not be able to market their crop. Processors (Heinz, Tip Top, Red Gold) are warning their contracted growers of the risk involved with using Dual. A few of the processors were considering banning the use of Dual by their contracted growers. (Tom Harrison, ODA, Fax, May 9, 1997)

Also this week, ODA received the approval from EPA for the Section 18 use of three fungicides to help in the battle against the new strains of Late Blight of Potato. Cymoxanil (Curzate M-8), dimethomorph (Acrobat MZ), and propamocarb hydrochloride (Tattoo C) can be used this year in fungicide programs to prevent Late Blight. So far, Ohio has been lucky in avoiding outbreaks of the new devastating strains of the Phytophora fungus. (Tom Harrison, ODA, Fax, May 9, 1997)

On May 7, 1997 EPA approved ODA's section 18 request for the use of dimethomorph to control blue mold in tobacco. Acrobat MZ can now be used in Ohio on Tobacco. Some of the conditions and restrictions are as follows:

1. ODA is responsible for making sure provisions of this specific exemption are met.

2. Acrobat MZ, ai 9% dimethomorph and 60% mancozeb, (American Cyanamid Co.) may be used.

3. A maximum of 10, 858 acres may be treated.

4. Any adverse effects resulting from use this product must be immediately reported to EPA.

5. No field applications will be made after September 30, 1997, but applications may be made to tobacco used as a research and education plant until December 31, 1997.

PLEASE NOTE: ODA will be very dependant on county agents to report usage in their county of these section 18 products. It is important that county agents in Ohio are aware of usage, successes or problems of these products as ODA must submit this data to the EPA. Agents can be of help to Tom Harrison and others in the department by being prepared to provide this information. (Tom Camm, ODA, Fax, May 9, 1997)

Pesticides and Myths

PESTICIDE REGULATORY POLICY DRIVEN BY SCIENTIFIC MYTHS

"Pesticide regulatory policies that seek to eliminate minuscule levels of synthetic chemicals are unnecessarily expensive and driven by a series of scientific misconceptions, University of California-Berkeley researchers Bruce Ames and Lois Gold said in a paper delivered at an American Chemical society meeting April 13-17 in San Francisco.

In "Pollution, Pesticides and Cancer: Misconceptions," Ames and Gold contended that some scientific theories are myths, such as the premises that environmental synthetic chemicals are an important cause of human cancer, that reducing pesticide residues is an effective way to prevent diet-related cancer, and that human exposure to carcinogens and other potential hazards is usually due to synthetic chemicals.

They also rejected the notions that cancer risks to humans can be assessed by standard high-dose animal cancer tests, that synthetic chemicals pose greater carcinogenic hazards than natural chemicals, and that the toxicology of synthetic chemicals is different from that of natural chemicals.

Environmental synthetic chemicals are not a source of human cancer, according to Ames' and Gold's presentation. Instead, epidemiological studies have identified other factors that are likely to have a major effect on reducing rates of cancer. These factors are reductions of smoking, improving the diet by eating more fruits and vegetables and controlling infections.

Attacking the idea that reducing pesticide residues would prevent diet-related cancer, Ames and Gold argued that reducing use of pesticides would instead increase cancer by making fruits and vegetables more expensive. "People with low incomes eat fewer fruits and vegetables and spend a higher percentage of their income on food," the researchers said.

Ames and Gold stated that human exposure to synthetic chemicals in food was a lot lower than to "natural" chemicals in food, and added that "rodent carcinogens are ubiquitous in fruits, vegetables, herbs and spices." The notion that the toxicology of synthetic chemicals is different from that of natural chemicals "is flawed for several reasons," the two researchers said. Humans have many natural defenses that make them "well buffered against normal exposures to toxins," they said. Also, Ames and Gold said, natural toxins are just as likely to cause cancer as synthetic ones. Humans have not had more time to adjust to natural changes in their diet during the past two thousand years than they have had to adjust to synthetic chemicals, they concluded." (Pesticide and Toxic Chemical News, April 23, 1997)

WPS Glove Requirements

WORKER PROTECTION STANDARD GLOVE REQUIREMENTS

The Administrator of EPA has forwarded a proposed regulation to the Secretary of Agriculture. The proposed rule would, first, revise the Worker Protection Standard to allow separable absorbent liners to be worn beneath chemical-resistant gloves. Second, it would eliminate the requirement that chemical-resistant gloves be worn by pilots when entering or exiting aircraft used to apply pesticides. (Federal Register, April 21, 1997)

Chemical & Label Update

CHEMICAL & LABEL UPDATE

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

FIELD CROPS

Paraquat-- This regulation establishes time-limited tolerances for residues of the herbicide paraquat in or on the food commodities sorghum grain, forage, fodder and aspirated grain fractions, corn grain, forage, fodder, flour, and poultry byproducts in connection with EPA's granting of an emergency exemption authorizing use of paraquat on sorghum and corn in Louisiana. The tolerances will expire and are revoked on April 14, 1998. (Federal Register, May 2, 1997)

Voluntary Cancellation of Methyl Parathion Pesticide Products--This notice announces EPA's receipt of requests from certain registrants to voluntarily cancel registrations of certain pesticide products containing methyl parathion (O,O-dimethyl-O-(p-nitrophenyl)phosphorothioate). These requests are the result of an agreement between the Agency and the registrants to restrict the terms and conditions for the sale and use of certain methyl parathion products in the United States in order to curb illegal use. EPA is granting the requests for voluntary cancellation effective April 30, 1997. Sale, distribution, and use of canceled methyl parathion products will only be permitted if such sale, distribution, or use is consistent with the terms of the Cancellation Order. The cancellations became effective on April 30, 1997. For more information regarding the EPA agreement with registrants of methyl parathion, see PEP-TALK Vol 2 Issue 1 January 1997. (Federal Register, April 30, 1997)

FRUIT

Aminoethoxyvinylglycine--Abbott Laboratories--Time-limited tolerances were established for residues of the plant regulator aminoethoxyvinylglycine in or on the food commodities apples and pears. The tolerances expire on and will be revoked by EPA on April 1, 2001. (Federal Register, May 7, 1997)

Clomazone--A time-limited tolerance was established for residues of the herbicide clomazone in or on the food commodity watermelons in connection with EPA's granting of emergency exemptions under section 18 authorizing use of clomazone on watermelons in Delaware, Virginia, and Maryland. This tolerance will expire and is revoked on May 30, 1998. (Federal Register, May 2, 1997)

MISC.

Plant Extract ---Appropriate Technologies--A tolerance exemption was granted for residues of the biochemical pesticide plant extract derived from prickly pear cactus, Red oak, sumac, and mangrove in or on all raw agricultural commodities (RACs), when applied as a nematicide/plant regulator in accordance with good agricultural practices. (Federal Register, May 7, 1997)

Protection of Children

PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

President Clinton issued an Executive Order last week designed to protect children. The new policy states: "A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves.

Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency: (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

Each independent regulatory agency is encouraged to participate in the implementation of this order and comply with its provisions."

"Environmental health risks and safety risks" mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breath, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to).

The order also established the Task Force on Environmental Health Risks and Safety Risks to Children. The Task Force will report to the President in consultation with the Domestic Policy Council, the National Science and Technology Council, the Council on Environmental Quality, and the Office of Management and Budget (OMB).

The Task Force shall recommend to the President Federal strategies for children's environmental health and safety and will exist for a period of four years. (John Ward, USEPA, E-mail, May 12, 1997)

Lawn Waste and Pesticide

TESTING LAWN WASTE COMPOST FOR PESTICIDES IN LINCOLN, NEBRASKA

As more and more cities recycle lawn wastes by composting, concerns grow about pesticides used on lawns becoming an ingredient in the finished product.

When researchers tested lawn waste compost from Lincoln Nebraska's municipal recycling program, they found residues of eight pesticides. Only one, however, was in amounts greater than the health-based screening values (HSV) used to determine risk. That pesticide, dieldrin, barely exceeded the HSV. Similar pesticides and amounts have been found in compost in other urban areas.

"Lincoln's compost is safe to use, and adding it to garden soil may even help reduce the pesticides concentrations already there by diluting them," said Pat Shea, pesticide residue researcher. Shea and Research Technologist Cindy Stuefer-Powell tested compost for 24 pesticides. They found DDT, DDE, DDD, chlordanes, heptachlor, heptachlor epoxide, dieldrin and endrin in the compost.

These compounds haven't been in general use for a long time, but they can be very persistent in soil, Shea said.
Most of the pesticides commonly used on home lawns today, such as 2,4-D or diazinon, weren't found in the compost. They did find DDT, banned in 1972, largely because of its persistence in the food chain. "DDE and DDD are produced when DDT degrades, so it is breaking down, but it's an extremely slow process, especially compared to newer pesticides," Stuefer Powell said.

Two compounds generally not found in compost, chlorpyrifos and pendimethalin, turned up in some of the soil samples.

Chlorpyrifos is an insecticide commonly used to treat foundation areas. Pendimethalin is a spring-applied herbicide used to control crabgrass and other weeds. "While these pesticides may find their way into fresh compost, our data indicated they're not persisting through the composting process," Shea said.

Adding compost to garden beds is unlikely to taint vegetables with pesticides. Stuefer-Powell and Horticulturist Laurie Hodges grew radishes and carrots in various soil/compost mixes and analyzed the peelings and pulp for pesticide residue. While small amounts of some pesticides were found in peelings, they found no residues in peeled root vegetables that were grown in soil mixed with compost, the common home garden situation.

"We think our research will eventually show that compost helps dilute these compounds in the soil, and speeds up their decomposition," Stuefer-Powell said. (Pesticide Coordinator Report, April 1997)

Pesticide Injuries in California

PESTICIDE INJURIES CONTINUE TO DECLINE IN CALIFORNIA

The Worker Health and Safety Branch of the Department of Pesticide Regulation (DPR) released the 1994 California Pesticide Illness Surveillance Program Summary Report on Dec. 12. This report documents a continued decline in suspected or actual pesticide related illnesses and injuries. The drop began in 1990 and continues now for the fifth consecutive year. In fact, DPR's report states that "...fewer pesticide-related cases were reported in 1994 than in any other year since automated recordkeeping began in 1982."

DPR classified a total of 1,332 cases as "...possibly, probably, or definitely related to pesticide exposure..." in 1994. About one-third of these cases (448) involved exposure to agricultural pesticides.

Although several factors could account for this drop. DPR speculates that it may be due to "...stricter regulatory control leading to better work practices." The authors also correlate the drop with the "...withdrawal of the insecticide phosalone (Zolone) from use, and action by DPR to lengthen the reentry intervals for the pesticides methomyl (Lannate), and propargite (Omite, Comite)."

Worker training programs in California have also been greatly expanded and emphasized by agricultural employers. Workers compensation insurance companies, the Farm Bureau's Farm Employer's Labor Service (FELS), professional organizations, and several private training companies have joined with UC Cooperative Extension offices and the Pesticide Education Program to deliver pesticide safety training to all corners of the state. These efforts have contributed to lowering exposure risks to ag. workers. (Targeting Pesticide Safety, Winter 1997)

Genetically Altered Plants

INTRODUCING GENETICALLY ENGINEERED PLANTS SIMPLIFIED

(WASHINGTON, May 1, 1997) The U.S. Department of Agriculture is amending its regulations pertaining to genetically engineered plants introduced under USDA's notification and petition regulatory processes.

The amended regulations will allow a broader application of existing simplified procedures for requests for movement or field testing of genetically engineered plants. They will also streamline the determination of nonregulated status for plant varieties that closely resemble other varieties that have already been through the determination process. For plants that are being evaluated in field tests, reporting requirements have been made more consistent. (ISB News Report, May 5, 1997)

Litigating Bt Patents

LITIGATING BT PATENTS FOR MARKETSHARE

A January 23, 1997 press release headline stated that Mycogen Corporation filed suit in San Diego Federal Court claiming that a new bioinsecticide developed by Ecogen Inc. infringes Mycogen patents covering Bacillus thuringiensis (Bt) gene technology. There have been so many lawsuits in recent years over claimed infringements relating to Bt that even industry insiders who keep a close watch on these activities have a hard time keeping track of who is suing whom.

It's not just the Bt genes themselves, but every aspect of the technology relating to Bt genes, including the promoters, selectable markers, full-length versus truncated and synthetic versions, transformation methods, etc. The fact that litigation is extremely expensive and time consuming suggests that the stakes are high for the participants.

These disputes are to be settled in court. Why can't the companies sit down at a table and find an amicable solution? Depending on who you ask, the following answers are given:

> These disputes reflect the novelty of this technology to the seed industry. The situation is reminiscent of the learning process which the chemical and pharmaceutical industries went through in past years.
>
> There is much at stake financially because the new technology generates a lot of added value and all the players believe they are entitled to a big piece.
>
> Extended litigation saps the financial resources of weaker companies, assisting in further consolidation of agbiotech companies, to the advantage of the financially stronger companies even though their patent claims might be weaker.

There is a lot of pressure on companies to maintain their stock value which is partially based on claimed property rights.

Some of the players have big egos. Monsanto's CEO Robert Shapiro will kick butt in the marketplace in order to get environmentally better products that people want to market faster at lower costs (Fortune 4/16/96, p116).

The good news is that, in spite of the litigation, corn, cotton, and potato modified with the Bt gene technology are being aggressively commercialized. Several companies have already brought products into the market place. There are many examples of research collaborations and licensing agreements which allow other interested parties access to the patented materials.

On the negative side, farmers, who will benefit from the new technology through reduced pesticide use and increased yield, will likely pay the price of the lawsuits in the cost of the value-added seed. Another negative impact, according to Brent McCown (University of Wisconsin), is that commercialization of genetically modified minor crops has been prevented or delayed due to conflicts over proprietary rights.
(Excerpted from, Jan Klein, ISB News Report, April 1997)

EU Stop Sale on Corn

EUROPEAN UNION DEMANDS STOP SALE ON GENE-ALTERED MAIZE

(Reuter) The European Union Parliament stated that the European Commission should have analyzed the long-term effects of importing Ciba-Geigy's Bt corn. Approval for importing the corn came last December by the EC. Parliament said that the EC had put industry interests before the public, that new evidence about risks from the genetically altered corn have been found, and that the EU's farmers have been put in "an extremely disadvantageous competitive position" because the corn is not on the EU's list of new plant species and cannot be grown by European farmers. (Adapted from P & T Chem News, April 9, 1997)

Chemical Signaling

NEW INSIGHT INTO CHEMICAL SIGNALING

An interesting study from the laboratory of Ilya Raskin at Rutgers University shows how sick plants can communicate with neighboring plants, in a way that may help the healthy plants avoid disease. The study, reported in the February 20, 1997 issue of Nature, found that tobacco plants infected with tobacco mosaic virus (TMV) emit distress signals by releasing an oil of wintergreen (volatile methyl salicylate) into the air. When neighboring plants absorb the chemical, synthesis of antiviral proteins is triggered making them better able to resist virus infection. (C. S. Prakash, ISB News Report, May 5, 1997)

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