



# KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • AGRONOMY

On line at - <http://www.uky.edu/Agriculture/kpn/kpnhome.htm>

Number 832

November 9, 1998

## STORED GRAIN

- Check your grain bins for moisture and insects
- Methyl bromide phaseout changes
- Fungicides used on tobacco require additional and special tests before labeling
- Fall-fumigation of float-trays

## TOBACCO

## VEGETABLES

- Sanitation controls diseases in the home vegetable garden

## HOUSEHOLD

- There's a hole in my sweater!
- DIAGNOSTIC LAB HIGHLIGHTS  
PESTICIDE NEWS AND VIEWS

## STORED GRAIN

### CHECK YOUR GRAIN BINS FOR MOISTURE AND INSECTS

By Doug Johnson

Until recently, it has been a warm dry fall. Large changes in temperature and humidity can produce several problems inside grain bins. Combine this with the large on-farm holdings for the 98 season, and you have a situation that deserves considerable attention.

In general, you should change grain temperature in keeping with that of the outside air. AEN-20, an Agricultural Engineering publication, provides information on how to do this over the course of the year. Obviously, this is important in relation to grain storage but it also impacts insect infestations. In turn, insect infestations can keep you from properly regulating grain temperature and humidity. Take control of the situation before a problem occurs and keep your eye open for problems as the season progresses.

Probably the most common insect problem at this time of year is the Indian meal moth (IMM). Often, the most common storage problem is sprouted grain, especially when rainfall follows a long dry spell. Detecting both of these problems can be relatively simple. Open the top bin hatch and look

and SMELL inside. Be sure to do this before even considering entering the bins. (Which by the way can be very dangerous. Make sure you know what you are doing. Cut the power to the bins and have a partner BEFORE entering a bin). A foul or musty odor is a very good tip that something is wrong.

Sprouted grain is usually pretty obvious. IMM also may be obvious but if the infestation is in an early stage, you may not notice it. The larvae prefer to feed on fines or damaged kernels. Infestations are most common in the upper four to six inches of grain in a bin. These insects become active in early spring because surface grain is usually the first to warm. The larvae produce silken threads which result in "caking" or "crusting" of the surface grain. Their frass (waste), cast exoskeletons (exterior skin-like covering) and silk contaminate the grain. If this is the case, then look for the presence of larvae crawling among the mess. The larvae are the feeding stage and are caterpillars that may range from yellow white to pink to light green with a light brown head. Full grown larvae are about 0.7 inch long.

However, you may first notice small moths flying in and around the grain bins. Indianmeal moths at rest with wings folded over their backs are about 0.4 inch long. The wingspan is about 0.6 inch. The outer portion of the front pair of wings is copper; however, this color may be lost as the moth loses its scales. The inner half of the wing near the body is

light gray. The hind wings are gray and have no distinctive markings.

Female moths deposit from 60 to 300 eggs, singly or in groups on or within the upper surface of the grain mass. The larvae move about in the upper grain mass, feeding on fines and cracked kernels and producing a silken webbing as they feed. Full grown caterpillars may leave their food source and climb up walls to pupate. The life cycle from egg to adult takes about six to eight weeks during warm weather. There are usually four to six generations per year depending on food supply and temperature.

The difficulty in controlling this pest is very dependent upon how bad the problem is when you find it. If an infestation is present but a mess of spoilage and silk is not yet present, you may get control by applying a "cap-out" treatment to the surface of the grain. A list of insecticides labeled for use can be found in the annual insect control recommendations for the appropriate crop. If the mess is already present, then spoiled grain, and insect mess must be removed before an application can be made. Be sure to check for any crusting. As always getting a handle on the situation before it gets bad is the key to good economic control.

## **TOBACCO**

### **METHYL BROMIDE PHASEOUT CHANGES**

Due to recent legislative actions by the U.S. Congress, the methyl bromide phase out in the U.S. has been changed. Methyl bromide production and importation will be reduced from 1991 levels as follows:

- 25% reduction in 1999
- 50% reduction in 2001
- 70% reduction in 2003
- 100% reduction in 2005

Preshipment and quarantine uses exempt

Critical agricultural uses allocated after 2005

Congress attached an amendment to the Fiscal Year 1999 (FY99) Appropriations bill that makes specific changes to the Clean Air Act. The amendment will require that the EPA make regulatory changes to the U.S. phase out of methyl bromide. These changes will essentially "harmonize" the U.S. phaseout of methyl bromide with the Montreal Protocol phaseout schedule for developed countries. This schedule, agreed to by the Parties to the Montreal Protocol in 1997, involves graduated

reductions in methyl bromide consumption (production plus imports minus exports based on 1991 levels) and a 2005 phase out. In addition to these reductions in methyl bromide consumption, the Parties to the Montreal Protocol exempted from any control measures quarantine and pre-shipment uses of methyl bromide.

For more information see:

[www.epa.gov/ozone/mbr/harmoniz.html](http://www.epa.gov/ozone/mbr/harmoniz.html)  
(NAPIAP Reregistration Notification Network, Oct. 28, 1998).

### **FUNGICIDES USED ON TOBACCO REQUIRE ADDITIONAL AND SPECIAL TESTS BEFORE LABELING - RESPECT THIS!**

**By William Nesmith**

There is concern about the amount of off-label fungicides use by tobacco growers. One area of special concern relates to the use of fungicides that may be labeled for use on other crops (such as food crops) but which are not labeled for use on tobacco. Tobacco growers find this difficult to accept and some resort to using a product on tobacco without a label. They justify their actions with statements like this: "If it is safe enough for tomatoes it must be safe to use on tobacco".

Oh, how wrong is this position! For example, there is one fungicide group being widely used legally in tomatoes and many other food crops for disease control that is NOT labeled for tobacco for very good reasons. Why? When that fungicide is used in tobacco for foliar disease control, the cured tobacco during smoking releases toxic volatile compounds that would cause immediate damage to the smoker. There are other fungicides, also labeled on tomatoes and other food crops, that present no known toxic metabolites in the tobacco smoke, but their use in tobacco production is unacceptable because they result in off-favors (objectionable flavors) in the smoke.

Therefore, before a fungicide is labeled for use in tobacco production, special tests are required, over and above what are needed for most other crop uses. Some of those tests are: Smoke Inhalation and Pyrolytic products Analysis, designed to evaluate potential toxins produced in the smoke generated at 200, 400, and 800 C, temperatures normally experienced during the burn associated with cigarette smoking. Another important test is the

Smoke Panel Taste Evaluations of Cigarettes Made from Experimental-Pesticide Treated Tobacco. This smoke flavor test is usually the final test conducted before labeling. It is designed to detect objectionable or other off-flavors associated with the cigarettes made from tobacco treated with the candidate pesticide at rates being considered in the proposed/expected label.

It is important for all in the tobacco industry to understand that these special tests are usually not conducted with the pesticide until after efficacy testing (to determine pest control potential) has been completed or at least is well underway. These special tobacco tests are expensive and no pesticide manufacturer will conduct them, for economic reasons, until they have abundant data to support that the compound is efficacious and that a favorable market window exists. Furthermore, all must come to appreciate that a significant number of pesticide compounds that are safe to use in other crops FAIL to pass the critical additional tests needed to protect the safe use of pesticides in tobacco.

My advice to tobacco growers is to respect that they are best served by using only fungicides specifically labeled for their crop and site. Off-labeled use of fungicides and other pesticides has the potential to create serious problems for the tobacco industry.

### **FALL-FUMIGATION OF FLOAT-TRAYS** **By William Nesmith**

Several growers have tried fumigation of float trays with methyl bromide as a means of tray sanitation. Their results have been mixed, with some reporting excellent success while others report failure. Researchers from NC State University and the University of Kentucky have demonstrated that methyl bromide can be an effective means of disinfecting float trays, especially for the control of *Rhizoctonia*, but significant *Pythium* survives even when fumigation efforts are ideal. So it is not the perfect tray sanitation system that some want to make it out to be.

In visiting with growers from both the success and failure sides of this issue, the following points were learned.

\* Some have experienced personal injury, mainly to feet, when removing the trays from their fumigation chamber. Please urge all operators using this product to read and follow the label. Fumigation of

contaminated soil and trays is implied under section F of the methyl bromide label (Potting Mix Fumigation Directions).

In many cases, these injuries occurred when using fumigation chambers that were planned to be reused, such as polytubes. Some occurred when the chamber was located on unlevel sites. Because methyl bromide is a heavier-than-air gas, it will concentrate on the floor and move downhill. Use level sites and be able to fully ventilate the entire chamber before entry - including ALL of the floor.

\* Low temperature during fumigation was a major reason for failure. Most failures were associated with fumigating during cold weather in February and March.

The temperature in the fumigation chamber should be 60F or above, at the coolest point. It is difficult to obtain such temperatures outside when fumigating in February or March in Kentucky. Growers may have more success in obtaining acceptable fumigation temperatures if they make some appropriate modifications. First, select an outdoor site with southern exposure, away from the shade of buildings, etc. Fumigate in the fall, when higher temperatures are more likely. Clear plastic (at least 4 mils thick) should be used over the top to enclose the trays and allow sunlight to penetrate and heat the system. There may be an advantage to using dark plastic on the bottom (floor) to absorb the heat. Allow the system to reach 60F before releasing the gas. Also, allow at least a 48-hour fumigation period, before starting the aeration events.

\* Growers substituting fumigation for all other steps in tray sanitation usually reported failure, while most cases of success involved washing the trays followed by fumigation after the trays had dried. A 10% bleach/fumigation event incorporated before or after methyl bromide-fumigation has proved beneficial in some studies.

## **VEGETABLES**

### **SANITATION CONTROLS DISEASES IN THE HOME VEGETABLE GARDEN** **By John Hartman**

At the end of the growing season, often after the first hard frost, it is time to clean up the garden. Garden clean-up done well is an exercise in

sanitation, and is an excellent and effective plant disease control practice. If not cleaned up, the infected or contaminated remains of the previous crop may provide an abundant source of disease-causing microbes the next year.

Many disease-causing fungi and bacteria can live over the winter on diseased roots, stems, leaves, or fruits. These microbes survive in several different ways:

- Some fungi, such as those causing tomato early blight and powdery mildew survive until next season on dead host plant tissues, even vegetation broken off and left behind as debris.
- Others, such as downy mildew, an obligate parasite, may develop on live suckers growing from stems and roots which, even with the tops cut off, can survive mild winters and allow the pathogens to grow. In addition to obligate parasites, other pathogens could also survive or even increase on such overwintering hosts. Even weeds such as winter annuals can harbor diseases.
- The gray mold fungus and the Rhizoctonia and Pythium root rot fungi can live as saprophytes on garden plant debris.
- Pathogens such as root knot nematode and the fungi causing Fusarium and Verticillium wilt produce resting structures that can survive well in the soil even after the plant tissue has completely decayed.

In autumn, remove all the plants (except cover crops or winter vegetables) from the vegetable garden. Be sure to carefully dig up the roots and take them away as well. Roots left to decompose in the soil can release microbes that will survive there. If plants are not being removed, then till the garden in the fall to break the dead plant material into smaller pieces and to turn them under. Buried plant debris decomposes faster than plant debris left on the surface. This will reduce the population of disease-causing microbes left in the garden to attack next year's crop.

What is to be done with all this plant debris? If the gardener has a good compost pile that heats up and completely decomposes plant remains over a period of a few years, most of the disease-causing pathogens will also be destroyed. This, then, completes the process of garden plant disease control by sanitation. If heat development in the composting process is not possible where there is a concern about survival of root knot, or Fusarium

and Verticillium wilt pathogens, infected plant parts should be removed from the garden and placed where they would not be recycled back into the garden.

## HOUSEHOLD

### THERE'S A HOLE IN MY SWEATER!

By Mike Potter

With the onset of cold weather, clients will be calling about 'bugs' infesting their clothing and other items unpacked from storage. These are probably clothes moths or carpet beetles. Besides damaging fabric, these insects will feed on any item composed of animal fibers, e.g., wool, fur, silk, feathers, felt or leather. Items commonly infested include wool sweaters, coats, blankets, carpets, down pillows and comforters, upholstered furniture, toys and animal trophies. Synthetic fabrics such as polyester and rayon are rarely attacked unless blended with wool, or if they are heavily soiled with food stains or body oils. Serious infestations of clothes moths and carpet beetles can develop undetected in a home, often causing irreparable damage to clothing, bedding, rugs, and other articles.

#### THE CULPRITS

Carpet beetles - Larvae are about 1/8 to 1/4-inch long, tan to brownish in color, and *densely covered with hairs or bristles*. This is the life stage likely to be encountered now since only the larvae feed on fabrics and cause damage. Oftentimes, only the shed (molted) skins of the larvae are present on the damaged item. Adult carpet beetles feed primarily on flowers and are usually discovered indoors during the spring. The adult beetles are small (1/16 to 1/8-inch) and oval-shaped, ranging in color from black- to various patterns of white, brown, yellow and orange. Large numbers may be spotted around light fixtures and windows, indicating that an infestation is present somewhere within the structure.

Clothes moths- Clothes moths are small (1/2-inch), buff-colored moths with narrow wings fringed with hairs. Like carpet beetles, they damage fabric only in the larval stage. Adult clothes moths are seldom seen because they avoid light, preferring to hide in dark places such as the backs of closets. *Clients who report seeing tiny moths in the kitchen and other well-lighted areas are probably seeing grain moths originating from stored foods, e.g., cereal, dried fruit,*

*nuts, or pet food.* Clothes moth larvae spin silken feeding tubes or patches of webbing as they move about on the surface of fabrics. They also deposit tiny fecal pellets similar in color to the fabric.

#### THE SOLUTION

Current infestations- *Controlling an existing fabric pest problem requires diligence and a thorough inspection to locate all infested items and areas of infestation.* The source may be an old woolen scarf at the back of a closet, a fur hat in a box, an unused remnant of wool carpeting, or an abandoned bird or squirrel nest up in the attic. Larvae prefer to feed in dark, undisturbed areas where susceptible items are stored for long periods. Larvae also may be found living beneath the edges of carpeting (use needle-nose pliers to lift the edge of the carpet from the tack strip along baseboards), underneath and within upholstered furniture, or inside heat ducts and floor vents, feeding on accumulations of lint, pet hair and other bits of debris. Occasionally, infestations may originate from bird or animal nests or carcasses present in an attic, chimney or wall void. Carpet beetles, in particular, will also feed on pet food, bird seed, and cereal products associated with the kitchen, basement or garage.

Infested items should be laundered, drycleaned or thrown out. Laundering (hot cycle) or drycleaning kills any eggs or larvae that may be present. Vacuuming floors, carpets, and heating vents effectively removes larvae as well as hair and lint which could support future infestations. Be sure to vacuum the edges of carpets, along baseboards, underneath furniture and stored items, and inside closets and 'quiet' areas where carpet beetles and clothes moths prefer to feed.

Insecticides applied to infested areas may be helpful as a supplement to good housekeeping. Products containing active ingredients labeled for flea control (e.g., permethrin) are effective. Sprays may be applied to carpets, especially along and beneath edges adjacent to baseboards, underneath furniture, and other likely areas of infestation where prolonged contact with humans is unlikely. Clothing and bedding should not be sprayed with household insecticides and should be removed before treatment.

Avoiding future problems- The best way to avoid future problems with fabric pests is through prevention. Woolens and other susceptible fabrics

should be drycleaned or laundered before being stored for long periods. Cleaning kills any eggs or larvae that may be present and also removes perspiration odors that are attractive to the pests. Articles to be stored should then be packed in tight-fitting containers with moth balls or flakes containing paradichlorobenzene (PDB) or naphthalene. The vapors from these materials are only effective if maintained at sufficient concentrations. Effective concentrations can best be achieved by sealing susceptible items (with the manufacturers' recommended dosage of moth crystals) in large plastic bags, and then storing the bagged articles in tight-fitting trunks, boxes or chests. Contrary to popular belief, cedar closets or chests are seldom effective by themselves because the seal is insufficient to maintain lethal or repellent concentrations of the volatile oil of cedar.

Conventional household insecticides should not be used to treat clothing; however, mothproofing solutions may be applied to susceptible clothing by professional dry cleaners. Valuable garments such as furs can be protected from these pests by storing them in cold vaults — a service offered by some furriers and department stores.

Additional tips on fabric pest prevention, control, and repair of damage can be found in the publication IP-50, *Fabric Insect Pests*. Elimination of widespread, persistent infestations of carpet beetles and clothes moths in a home or commercial establishment may require the services of a professional pest control operator.

### PESTICIDE NEWS AND VIEWS

From the American Crop Protection Association.  
FQPA SPOTLIGHT/OCTOBER 30, 1998/VOLUME 2, ISSUE 21

### EWG PULLS OUT OF TRAC AND PPDC

In an October 26 letter to Vice President Gore, the Environmental Working Group's Ken Cook announced the resignation of EWG from both the Tolerance Reassessment Advisory and Pesticide Program Dialogue Committees. EWG earlier had threatened such action when TRAC Co-Chairs Rominger (USDA) and Hansen (EPA) extended the life of TRAC for two more meetings to be held in early '99. In his letter, Cook complained that, although "EWG staff members...have devoted hundreds of hours to prepare for or attend TRAC and PPDC sessions...we cannot point to any tangible [administration] action to actually protect children from pesticides." He also deplored the administration's acceptance of recent legislation to delay the phase-out of

methyl bromide, and its unwillingness to "act to reduce [pesticide risks] in deference to economic concerns of agribusiness groups, pesticide companies and food processors."

ACPA, in comments to members and allies, pledged to continue to work with the TRAC process and echoed the feelings of most TRAC members that past meetings have been worthwhile with all stakeholders given ample time to express views in open, transparent sessions. Most notably, the TRAC process has resulted in the public comment opportunity on soon-to-be-released policies (see next item) that are key to full and fair FQPA implementation. Such policies, if based on sound science, will lead to increased public confidence and, in some cases, further improvements in food safety for all, including children. In the meantime, ACPA noted that the current pesticide regulatory system is protective of public health and specifically evaluates potential risks to children.

### **NOTICE ISSUED ON SCHEDULE AND FRAMEWORK FOR FQPA POLICIES**

Published in the October 29 Federal Register was a schedule and framework for issuance of a series of nine science policies to implement FQPA provisions. (The policy issues are outlined in TRAC staff paper #26.) EPA noted that the action was a direct result of TRAC discussions and that comments on each interim science policy document will be invited through separate notices in the Federal Register, as outlined in the framework. The document, "Framework for Addressing Key Science Issues Presented by the Food Quality Protection Act as Developed Through the Tolerance Reassessment Committee," is available on ACPA's fax on demand (888/587-0438) as document #254. EPA /OPP contact: Jeff Kempter, (703) 305-5448; kempter.carlton@epa.gov.

### **WESTERN STATES ZERO IN ON NONFOOD USES**

An effort to remove a number of non-crop pesticide uses from consideration under FQPA has been launched by the Risk Assessment Subcommittee of the Western States FQPA Coalition. The subcommittee is preparing an issue paper that will ask EPA to remove nonfood and nonfood type uses from risk cup calculations. Nonfood uses include crops grown for seed, ornamental nursery stock, sod production, and seed treatments, among others. Key to the position is that nonfood uses do not pose a dietary risk and their elimination would allow for more efficient implementation of FQPA.

### **ENVIRO STUDIES GAIN LITTLE NEWS**

## **MEDIA COVERAGE**

Two recent reports, one by Environmental Working Group on chemically tainted Ohio drinking water, and one by Natural Resources Defense Council on pesticide effects on children on or near farms, appear to have gained little news media coverage. One Ohio account noted some skepticism related to EWG's water study. A telling comment by EWG head, Ken Cook, may explain why. He admitted to the study having "very weak data as to what's in the water." And, he noted that, because of the high \$1,500-per-sample cost, EWG could afford only one sample for each of the dozen Ohio communities covered.

As for NRDC's report, many farm families may feel the same as Sheila Massey of Women Involved in Farm Economics (WIFE). As she told the TRAC group recently, "We have raised three extremely healthy children [who] have lived around [and helped with] pesticide application their entire lives, and none has had a health related problem due to pesticide exposure." Her comment points up the fact that pesticide use does not mean pesticide exposure.

FQPA Spotlight is published biweekly by the American Crop Protection Association, 1156 15th St., NW, Washington, DC. Don Collins, Margaret Speich, editors; (202) 872-3863; don@acpa.org; margaret@acpa.org.

### **DIAGNOSTIC LAB HIGHLIGHTS by Julie Beale and Paul Bachi**

Most of the recent laboratory samples have been from the landscape. We are seeing powdery mildew on euonymus, oak, lilac, etc., plus stress symptoms on many landscape trees, particularly conifers. One symptom, often confused with stress, is the normal yellowing and loss of last year's needles on white pine. We have also seen Volutella blight on pachysandra and Phoma stem blight on vinca.

Disease problems of greenhouse ornamentals have included Colletotrichum leaf spot on pansy and Pythium root rot on pansy and poinsettia. Leaf mold on greenhouse tomatoes was also observed last week.

---

**Lee Townsend, Extension Entomologist**

COOPERATIVE EXTENSION SERVICE  
U.S. DEPARTMENT OF AGRICULTURE  
UNIVERSITY OF KENTUCKY  
COLLEGE OF AGRICULTURE  
LEXINGTON, KENTUCKY 40546

AN EQUAL OPPORTUNITY EMPLOYER

BULK RATE  
POSTAGE & FEES PAID  
USDA  
PERMIT No. G268

---

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300