ANNOUNCEMENTS

UPCOMING PESTICIDE TRAINING MEETINGS

These meetings start at 9 am local time and end about 3 pm.

- **Jan 29** – Somerset, Pulaski Co Extension Office
  (6 general hours) 3, 10, 12, 18, 19, 20, Testing
- **Feb 5** – Mayfield, Graves Co Extension Office
  (4 gen + 2 specific) 1a, 1b, 10, 12 No test
- **Feb 7** – Burlington, Boone Co Extension Office
  (6 general hours) 3, 10, 12, 18, 19, 20, Testing
- **Feb 10** – Lexington, Fayette Co Extension Office
  (4 gen + 2 specific) 1a, 1b, 10, 12 No test
- **Feb 11** – Louisville, KFACA - Executive Inn
  (4 gen + 2 specific) 1a, 1b, 10, 12 No test
- **Feb 26** – Elizabethtown, Hardin Co Extension Office
  (4 gen + 2 specific) 1a, 1b, 10, 12 No test

**Structural and Public Health Pest Control**

These meetings start at 8:15 am local time and end at 3:30 pm. They are approved for continuing education hours in Categories 7, 7a, and 8. Testing is available at the end of these meetings.

- **Jan 21** – Fayette Co Extension Office
- **Jan 22** – Hardin Co Elizabethtown Tourism and Convention Center
- **Jan 23** – Caldwell Co UK Research and Education Center, Princeton

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ANNOUNCEMENTS

SHADE TREES & ORNAMENTALS

- fungicides for use on ornamental plants - common names and trade names
- **HOUSEHOLD**
  - fungus gnats and stored product pests top problems
- **PESTICIDE NEWS & VIEWS**
  - combating insect resistance

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RANDOM CHECKS OF PRIVATE APPLICATOR PESTICIDE RECORDS AND WPS COMPLIANCE

Inspectors from the Ag Branch of the Kentucky Division of Pesticide Regulation will check the pesticide records and Worker Protection Standards compliance of approximately 200 randomly-selected private applicators this winter. Farmers will receive and advance written notice. During the visit, the inspector will provide the farmer with information on recordkeeping requirements, review pesticide application records, and provide compliance assistance, if needed. This is a national program to see how well private applicators are complying with the law. Individual farmers’ names or certification numbers will not appear on the inspection sheets. Identity and results of individual inspections will remain confidential.

Keeping pesticide records is good business practice and has numerous benefits! Here are a few examples: **Saves money** - Accurate pesticide records will enable you to know and buy the correct amount of pesticides for each growing season. **Shows what is working** - Good records will help you determine how a pesticide application achieved the best results or why a pesticide may have performed poorly and prevent future repeated failures. **Documents correct use** - Should a question arise concerning pesticide use, your records may provide liability protection. **Improves management decisions** - Since some pesticides have restrictions on what can be planted the following year in the same field, good records can help you plan your crop rotations.
CORRECTION

by Paul Vincelli

In the last issue of Kentucky Pest News (18 Nov 02), I reported on recent research results with fungicides for control of gray leaf spot of perennial ryegrass. One of the conclusions given in the article was incorrect. I compared tank-mixes of propiconazole plus chlorothalonil from different manufacturers (Banner MAXX plus Daconil Ultrex to PropiMax plus Echo 720), and I noted that they did not perform equally. Although both active ingredients were at equivalent rates in both treatments, they were not tested at the same spray interval, an important detail which I had inadvertently overlooked when reviewing the data. Thus, no direct comparison among these two mixtures is possible in this test.

LIVESTOCK

USE NON-SYSTEMIC INSECTICIDES TO TREAT BEEF CATTLE FOR LICE

by Lee Townsend

Lice thrive in the winter and can spread easily through the herd as cattle bunch together in response to cold temperatures. Steps taken now with newly purchased cattle can reduce problems later. Keep new animals separate from the rest of your herd until after they have had a thorough louse treatment. This generally means two applications of a pour-on contact insecticide. The first kills active adult and immature lice but does not kill nits or eggs on the hide. The second application is targeted at new hatchlings from the nits and any escapees that may still be around. After the treatment course, the new animals can be added to the herd with a minimal chance of problems. See ENT-11 for louse control options.

Application of systemic insecticides to cattle now can cause host-parasite reactions if cattle grubs are present. Cattle grubs are migrating through the bodies of infested animals now. Depending on the cattle grub species present, the maggots can be in or near the spinal canal or the walls of the esophagus at this time of year. Cattle may have an adverse reaction if the grubs are killed by a systemic insecticide while in these sensitive areas. No grub treatments should be applied now. Unless certified as treated, any animals purchased at this time of year should be treated twice for cattle lice before being added to the herd. If a grub treatment was not applied, be sure to use a non-systemic insecticide. Products containing permethrin or cyfluthrin are examples of safe choices. If the treatment history of the animals in not known, assume that cattle grubs are present and do not use a systemic product.

LAWN & TURF

PHOSPHOROUS PRODUCTS FOR TURF DISEASE CONTROL?

by Paul Vincelli

In response to questions received from golf course superintendents, I recently reviewed a substantial amount of literature regarding phosphorous acid (=phosphonate) materials and their disease control potential. Consider this as a “status report”, since this topic is somewhat complex, interesting, and important. I plan to continue to investigate it further in the future, as I have more to learn about these materials.

Fosetyl Al (the active ingredient in Chipco Aliette) breaks down in the plant to phosphite (PO3–), which in some way is the active component. Phosphite is thought to stimulate plant defenses as well as to be directly toxic to fungi (in at least some circumstances). Now that the patent on fosetyl Al has expired, other manufacturers are interested in selling phosphonate products which are being represented as having the same disease control activity. This claim may or may not be true.

I reviewed six years of reports in Fungicide and Nematicide Tests, published by the American Phytopathological Society. This journal is not limited to turf disease control but includes studies on all crops. I was very surprised and disappointed to see how little research has been conducted on phosphonate products. For turf diseases, this is all I can say about the following products:

Fosphite (contains phosphorous acid) provided no control of anthracnose on annual bluegrass in the only report I could find on turfgrass disease control.

Prophyt (contains potassium phosphite, monobasic) was included in one test on turfgrass, for control of Pythium cottony blight. The product provided excellent preventive control for 20 days under high disease pressure.

Biophos L (a composted solid organic phosphate fertilizer): I could find only one report for turfgrass disease control with this product; at a high (12 fl oz/1000 sq ft) rate applied 2 wk before inoculation, it provided good control of Pythium cottony blight for 20 days. I could find no published reports of turfgrass research on products such as Magellan, Phosguard, Nutrol, Ele-Max, Nutri-Grow, and Prudent Plus. There likely are other such products than those listed above; manufacturers are invited to contact me and provide technical information. A few products have been tested thoroughly on other
crops, like Nutrol and Prophyt, but the above is still a pretty disappointing summary relative to turfgrass disease control. There are plenty of researchers in the turf disease control arena who are qualified to properly assess their potential. The products simply aren’t being tested. Why not?

With the exception of the fungicide Magellan, none of the phosphonate products are labeled for turf disease control, to my knowledge. Several are sold as fertilizers only, and as such cannot be represented as disease control chemicals. To do so would be a violation of federal law. Furthermore, it appears in some instances that manufacturers may be avoiding taking the steps necessary to register their product as a phosphorous fertilizer with extremely low use rates rather than as a disease control chemical, perhaps hoping to avoid EPA regulations.

The chemistry of phosphorous in the soil and the plant is complex. For example, phosphite (H₃PO₃) applied to soil can be converted by microbes to phosphate (H₃PO₄) under oxidizing conditions and, in some soils, it can be converted back to phosphate and then to hypophosphite (H₃PO₂) under reducing conditions. Another example: some studies suggest that the ratio of phosphite to phosphate that the pathogen is exposed to determines how toxic the phosphite is to the fungus.

From a practical standpoint, the complexity of phosphorous chemistry reinforces the need for research on these products to find out how well and how consistently they control turf diseases. Maybe that is self-serving; I am an Extension Specialist. I feel a lot better about predicting how well a fungicide might work when there is a solid database of research to draw on. These transformations also suggest that phosphonate materials should be applied directly to plants and not watered into the soil, where they may undergo chemical changes.

Also, excess phosphite is phytotoxic, although reportedly at rates and formulations not reflective of the current generation of products. Nevertheless, this buttresses the need for research with the current phosphonate products. Be a skeptic: ask for the data.

**SHADE TREES & ORNAMENTALS**

**FUNGICIDES FOR USE ON ORNAMENTAL PLANTS - COMMON NAMES AND TRADE NAMES**

by John Hartman

County Extension Agents are often asked to provide names of fungicides for use in managing diseases of ornamental plants. The following (not all inclusive) list of trade names are those most-readily available for use on ornamental plants in the greenhouse, landscape and nursery. These products are labeled for ornamental use and may not be labeled for field crops and food crops. For example, tomato transplants grown with ornamentals in the greenhouse are not ornamentals! Some years ago, there was a case in Kentucky where iprodione was used inadvertently on tomato transplants growing in the greenhouse. The fungicide was detected in the tomato crop in the field and traced back to the greenhouse of the ornamental bedding plant grower. Be sure to check the label to verify that the ornamental species to be treated is listed on the fungicide label.

*Agrobacterium radiobacter*(strain 84) - Galltrol-A

*Amphelomyces quisqualis* M-10 - AQ10

azoxystrobin - Heritage, Quadris (commercial use only)

benomyl - Benlate SP

captan - Captan 50W, Captan 50 Wettl Powder,

Copper-Count-N (professional use only)

Copper oxychloride - C-O-C-S WDG

Copper salts of fatty and rosin acids - Camelot

Copper sulfate - Phyton 27

dichloropropene (soil fumigants) - Telone C-17, Telone II

etridiazole - Terrazole (nursery and greenhouse only),

Truban

fenolprimol - Rubigan A.S.

fenamiphos - Nemacur 10% T&O (special use label required)

fenhexamid - Decree (not for use on landscapes)

ferbam - Ferbam Granuno

fludioxonil - Medallion

flutolanil - Contrast

fosetyl-Al - Aliette T&O, Chipco Aliette WDG, Prodigy
Gliocladium virens GL-21 - SoilGard12G
hydrogen dioxide - ZeroTol
iprodiene - Chipco 26019
kresoxim-methyl - Cygnus (commercial use only)
lime-sulfur - Dormant Disease Control (outdoors only)
mancozeb - 4 Flowable Mancozeb, Dithane WF (professional use only), Dithane WF Rainshield (professional use only), Dithane T 10 Rainshield NT (professional use only), Equus 720 (conifers only), Fore FloXL, Fore Rainshield NT (professional use only), Fore WSP, Junction, Mancozeb DG, Maneb plus Zinc F4, Manzate 80WP, Penncote 75DF (Christmas trees only), Penncote 80WP (Christmas trees only), Pentathlon, Pentathlon DF, LF, Protect T/O
mancozeb + myclobutanil - Manhandle
maneb - Maneb 75DF (commercial use only), Maneb 80WP (commercial use only)
mefenoxam - Subdue 2X WSP, Subdue MAXX, Quell, Mefanoxam 2
metalaxyl - Pythium Control
metam-sodium - Vapam 3.3 EC (soil fumigant)
myclobutanil - Eagle WSP (not for greenhouse or nursery use), KGRO, Immunox, Nova 40W (conifer nursery use only), Systhane
neem oil - Triact90EC
paraffinic oil - JMStylet-Oil, SunSpray Ultra-Fine Spray Oil, Ultra-Fine Oil
PCNB (quintozene) - Defend, Engage 10 G, 75W, Revere WSP , 10 G, Terraclor 75% WP, Terraclor 400, Turfcide 10%, 40% Granular
piperlin - Pipron 2LC (enclosed structures only)
potassium bicarbonate - Armicarb 100, FirstStep, Kaligreen (not for use on landscapes)
potassium salts of fatty acids - DeMoss
propamocarb hydrochloride, Banol, Banol G, LescoPar
propiconazole - Alamo (tree injection), Banner Maxx, Propiconazole Pro
Streptomyces griseoviridis K61 - Mycostop (not for use on landscapes)
Sulfur dusting sulfur, wettable sulfur, Microthiol Special, Suffa
thiabendazole - Arbotect 20 S, Mertect 340-F
thiophanate-methyl - Cavalier 2G; 50WSP; Flowable, Cleary’s 3336, Domain, Fungo Flo, Fungo 50 WSB, Systec 1998, Topsin
thiophanate-methyl + chlorothalonil - ConSyst WDG, Spectro 90WDG
thiophanate-methyl + etridiazole - Banrot
thiophanate-methyl + iprodiene - Benefit
thiophanate-methyl + mancozeb - Zyban
thiophanate-methyl + metalaxyl - Cleary’s DrenchPak
triadimefon - Bayleton 50 T&0 (non-commercial use only), Bayleton 50 DF, WSP, Strike 25WDG, Systemic Fungicide (non-commercial use only)
Trichoderma harzianum KRL-AG2 - Rootshield (not for use on landscapes), TopShield (not for use on landscapes), T-22 Drench (not for use on landscapes)
trifloxystrobin - Compass, Compass 0 50WDG
triflumizole - Terraguard (enclosed structures only)
triforine - Funginex, RosePride Orthex Insect & Disease Control (outdoor use only), RosePride Funginex Rose & Shrub Disease Control (outdoor use only)
vinclozolin - Curalan DF, Vorlan DF, Touche 4F, Touche EG (professional use only)
Ziram - Ziram 76DF, Ziram Granuflo

No endorsement of named products is intended, nor is criticism implied of similar products not named. This information was adapted from an article written for the Rutgers University Plant and Pest Advisory newsletter by Ann Brooks Gould, Extension Plant Pathologist, Rutgers University.

HOUSEHOLD INSECTS

FUNGUS GNATS AND STORED PRODUCT PESTS TOP PROBLEMS
by Lee Townsend

Fungus gnats include several kinds of small dark flies that typically breed in moist soil with a fair amount of organic matter. The adults don’t bite people or even feed on anything. They only live for a few days before dying unspectacularly on windowsills. Before that, they may have been flying lazily about but headed in the general direction of daylight. Thus, the windowsill becomes their next to last resting place. Most likely, these gnats came from potted houseplants that have chronically wet soil. Eggs are laid and the gnat larvae develop in moist areas with a lot of organic matter, frequently potted houseplants. The gnats typically live only a few days and die. They can be dealt with using a soapy rag to wipe them off of window sills or table tops. Long term management means letting potted plants dry out more between waterings to make the soil less favorable for the larvae.

Indian meal moths, flour beetles, and drugstore beetles are common stored product insects throughout the country. If small moths are flying in the house or caterpillars are crawling up walls across ceilings, the Indian meal moth is probably the culprit. Small reddish brown beetles crawling across counter tops and pantry shelves could be any of the beetles listed above. Typically, these little insects develop in processed foods that have been partially used, then relegated to the back of the shelf. EntFact 612 gives more information on the management of these common pests.

PESTICIDE NEWS & VIEWS
COMBATING INSECT RESISTANCE
by Ric Bessin

Often times we fall into the trap of tackling a problem with the same solution time after time. While this may work well in many situations, in agriculture it’s the wrong way to control insect pests. Given enough time, this often results in the pest population becoming resistant to the particular control action. Unfortunately we are fighting human nature, that is, when we find a tool that works, we continue to use it until it does work any longer and then we search for a new tool and the process begins again.

Many insect pest populations are successful because they have the ability to adapt to many different agricultural practices. This includes planting dates, varieties, and pest control tactics. Recent history shows hundreds of examples of various insect pest populations developing resistance to control tactics.

For example, during the past twenty-five years, the western corn rootworm was controlled in field corn through crop rotation. The females laid their eggs in corn fields and the eggs would hatch the following spring, so it was only a pest of continuous corn. But a new biotype has emerged in parts of the Midwest. The some of the female beetles no longer lay their eggs in corn, they move to soybeans to deposit their eggs. The following year, when the field is planted with corn, the eggs hatch and the larvae attack the corn.

So how do we avoid creating these resistant pest populations? The key is to take an integrated approach to pest management. We must avoid over-reliance on a single type of pesticide or control action. A general rule of thumb is that we should not use insecticides with the same mode of action against a pest for more than one generation of the pest. With the next generation of the pest we need to use a pesticide with a different mode of action or a different type of control tactic. If the pest has a life cycle that is complete in thirty days, the control tactics should be changed monthly.

Another way to prevent or delay the development of resistance to insecticides is to avoid using these products unless absolutely necessary. Grower should scout their fields regularly and use economic thresholds to decide if action is necessary.

Lee Townsend, Extension Entomologist

NOTE: Trade names are used to simplify the information presented in this newsletter. No endorsement by the Cooperative Extension Service is intended, nor is criticism implied of similar products that are not named.