UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

LEXINGTON, KY 40546

# KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE
On line at: www.uky.edu/Agriculture/kpn/kpnhome.htm

**Number 1165** **June 9, 2008**



## WATCH FOR:

APHIDS on ornamentals; BUDWORMS on tobacco; SAN JOSE scale crawlers; BAGWORM egg hatch; SOD WEBWORM moth flight; CORN LEAF APHIDS in whorls

## ARMYWORMS

### HAVE YOU SEEN ARMYWORMS IN KENTUCKY?

Since early March, Kentucky Pest News and the IPM web site have provided weekly trap counts for armyworms. This year the trap counts indicated a high probability that armyworms could be a problem this season. If you have looked for armyworms in crops, fields, pastures or other areas, we would like to ask you to help us collect information on the 2008 armyworm population. You can do this by answering a few short questions at http://ces.ca.uky.edu/kyipm/armyworm08c.asp.

You can also access the questionnaire from the opening page of the IPM website, http://www.uky.edu/Ag/IPM/ipm.htm. From the opening page, a link to view a map of Kentucky counties with outbreaks of armyworms confirmed by county agents, consultants, producers or agribusinesses is available.

Being able to confirm that armyworms have or have not been a problem this season will help the trapping project in many ways. We especially need to know if the alerts issued for armyworms were correct.

## TOBACCO

### BLUE MOLD REPORTED ON TOBACCO IN SOUTH GEORGIA
**by Kenny Seebold**

For the first time in several years, blue mold did not appear on tobacco transplants in the month of May, even though the disease had been found in Florida back in March. This is good news because blue mold tends to be more difficult to deal with in years when it shows up on transplants - we wind up fighting it all summer if we get spells of cool and rainy weather.

As we move from the float bed to the field, growers need to be on the lookout for blue mold. We received a report on June 4th that the disease was found at two locations in south GA. There's no imminent threat to tobacco in the field right now, since our weather has been on the warm side. But with an active source to our south, blue mold could become a problem later this summer if conditions favor disease.

The best way to manage blue mold is to think preventively. Here are some key things to consider when developing a plan to manage blue mold once in the field:

1. Scout the crop regularly for symptoms of blue mold, particularly in low or shaded areas.
2. Begin a preventive fungicide program as soon as conditions favor disease and the blue mold pathogen threatens our area. Blue mold is more likely to occur during periods of cool, wet, and overcast conditions and is less active during hot and sunny weather. Local news media may alert you to the threat of blue mold in

your region, or you can contact your local UK Cooperative Extension agent to find this information.

3. Recommended products for controlling blue mold on tobacco include Actigard (0.5 oz/A), Acrobat (2-8 oz/A) or Forum (2-8 fl oz/A) plus Dithane DF or Manzate Pro-Stick (both at 1.5-2 lb/A), and Quadris (6-12 fl oz/A). Each of these materials is effective, but work best if applied preventively.
4. If using Actigard, remember to apply to burley that is at least 18 inches tall or to dark tobacco that is at least 12 inches to avoid injury. We know from experience that 2-3 applications of this product made 10 days apart can give good protection against blue mold until topping. Never apply this product to plants that are stressed by heat or drought. Actigard must be applied 4 to 5 days before exposure to blue mold to work effectively. If you find active blue mold before a spray program has begun, use either Quadris, or Acrobat or Forum plus Dithane or Manzate and follow with Actigard after the disease has been brought under control.
5. Quadris can be used to manage blue mold effectively, and will give control of target spot as well. Consider this option if target spot is a concern.
6. Apply fungicides at regular intervals while conditions favor disease. Follow fungicide labels carefully and do not exceed seasonal limits or pre-harvest restrictions.
7. Alert your local county agent if you find or suspect blue mold in your area. Our alerting systems only work if we know where and when blue mold shows up in Kentucky.

For more information on the status of blue mold in the US and recommended controls, visit the Kentucky Tobacco Disease Information Page online or contact your local Cooperative Extension office.

## CANOLA

### REGLONE CRISIS EXEMPTION FOR CANOLA by Jim Marin, Extension Weed Scientist

The Kentucky Department Agriculture has declared a Crisis Exemption to permit the use of Reglone (active ingredient diquat) as a desiccant and harvest aid for canola. The EPA has approved the Exemption for the period from June 6 through June 20, 2008.

The justification for the Crisis Exemption is based on the effects the wet weather has had on extending the flowering period and prolonging the maturation process of canola. Applying Reglone at 24 to 30 fl oz/A when 60 to 75% of canola seed turn green to brown will enhance the drying of seed for direct combining of the crop. A Pre Harvest Interval (PHI) of 7 days is required. In order to avoid excessive pod shatter and / or seed loss, it is recommended to harvest no later than 14 days after application.

## CORN

### STINK BUG DAMAGE TO CORN APPEARING by Ric Bessin

Cool, wet weather in May set the stage for increased stink bug injury in to corn. That period of cool weather slowed the development of corn keeping it small and vulnerable to attack by stink bugs. There have been scattered reports of stink bug damage to young corn across the state.

The brown stink bug is the most common stink bug found attacking corn. These insects are 1/2-inch long, shield shaped insects with piercing-sucking mouthparts. They feed at the base of very young corn. While feeding they inject enzymes into the plants that affect development. These enzymes aid in digestion and sap removal. If they feed directly on the growing point, the growing point may be killed and the plant may tiller excessively.

They are a wide range of symptoms that occur with stink bug feeding. This includes excessive tillering and leaves not able to emerge properly from the whorl resulting in a plant that resembles a buggy whip. Damaged plants may develop misshapen ears in place of the tassel. Some herbicides can cause similar injury to developing corn and distinguishing between stink bug and herbicide damage can be difficult. To identify stink bug damage in the field, look for a row of oval holes with yellow borders across the unwrapped leaves of damaged plants. This row results from the single feeding puncture that penetrates the wrapped leaves. The holes will not have distinct margins such as those caused by corn borers, rather they look like the margins have been dissolved. A slimy, decaying area may be found in the stalk where the stink bug has fed.

Stink bug damage is most severe in no-till fields. In some cases, the damage can be found throughout the field, often with areas of more intense damage. Frequently these are near wooded areas. Stink bug damage can be found in conventional fields, but the incidence of damaged plants is low and usually frequently limited to the border rows.

Scouting is a effective way to manage stink bugs, but you need to scout for the insect, not the damage. The symptoms often appear long after the insect has done its damage. Spraying to control stink bugs after the damage appears is of minimal benefit. The two weeks following corn emergence is the critical time to be watching for stink bugs. Scout the field as you would for cutworms. In addition to looking for cut plants, the symptom of cutworm activity, look for stink bugs. Stink bugs tend to

feed at the base of corn plants, usually an inch above the soil surface. Special attention should be given to no-till fields and where stink bug injury has been seen in past years.

## FORAGE CROPS

### SPRING DEAD SPOT OF FORAGE BERMUDAGRASS
**by Paul Vincelli, Extension Plant Pathologist and Ray Smith, Extension Forage Agronomist**

Last week, we diagnosed a case of spring dead spot from a bermudagrass hayfield in central Kentucky. With increasing interest in bermudagrass for forage production in the region, this is a disease producers should be aware of.

**Symptoms**
The disease appears in the springtime as dead patches of varying size that often are roughly circular. These patches simply fail to green up in the spring. When symptoms are severe, the patches can blend together, leaving large areas of dead forage. Bermudagrass will fill in the dead areas as the summer progresses, but regrowth can often be slow and weeds will compete to grow in the dead patches.

Symptoms of the disease result from fungal infection in the roots, rhizomes and stolons which occurred during late summer and autumn of the previous year. The infections don't kill the bermudagrass directly, but they predispose these infected patches to the cold temperatures that normally occur during Kentucky winters.

**Management**
Thus far, we have no direct research experience on spring dead spot in forage bermudagrass, but we have a fair amount of experience in research and management of this disease on turf-type bermudagrasses. In turfgrass situations, we know that one of the best practices the turf manager can do is to lower the pH of the soil, which significantly reduces disease activity (probably by enhancing resistance of the roots to fungal infection). However, we also know that, if the pH gets too low, forage bermudagrass becomes less productive and potassium and phosphorous become less available. The recommended pH for forage bermudagrass Is 6.0 and above. If a forage producer has a severe enough problem with this disease, it may help to take a soil test and reduce the pH slightly, although it is important not to let the pH drop below 5.5-5.6.

In turfgrass settings, we often see the disease diminish greatly from one year to the next, all on its own, through forces of nature that we do not fully understand. (It might be a form of natural biological control that is occurring in the complex microbial environment of the soil.) Thus, one option for a forage producer is to simply let the disease run its course, though it is important to recognize that disease severity could be higher next spring instead of lower.

Producers of forage bermudagrass in Kentucky should be sure to select a variety that is proven to be winterhardy. 'Wrangler' is the only seeded variety proven to meet this standard. Examples of sprigged forage bermudagrasses proven to be winterhardy include 'Tifton 44' and 'Quickstand'.

## FRUIT CROPS

### APPLES INJURED BY GRAPE FUNGICIDE
**by John Hartman**

A case of azoxystrobin fungicide toxicity was noticed in a central Kentucky apple orchard last week. The phytotoxicity developed as a result of a sprayer being used first on grapes and then on apples, even after emptying and rinsing between uses. Azoxystrobin is the active ingredient in the fungicide Abound, a fungicide used widely on grapes for management of black rot, powdery mildew and downy mildew. This fungicide is also sold as Quadris, which is used on vegetables, tobacco, and soybeans, and Heritage, which is used on landscape ornamentals.

Phytotoxicity symptoms observed on apple trees included leaf distortion and chlorotic (yellow) blotches as well as fruit russeting. In more severe cases, leaf and twig necrosis (dead tissue), leaf drop and fruit drop can also occur. Chlorotic spots can occur when tiny spray droplets applied nearby drift into the orchard. Not all apple varieties were affected; indeed some trees in the orchard, located adjacent to affected trees showed no effect. In the case recently observed, the episode occurred a few weeks ago and now new shoot growth with normal leaves is appearing. Nevertheless, for the sensitive varieties, the injury will adversely affect fruit production.

As it happens, only apple varieties genetically related to the variety MacIntosh are affected. Thus, apple varieties known to be adversely affected are Akane, Asahi, Bramley, Cortland, Cox's Orange Pippin, Cox, Delbarestival, Discovery, Gala, Galaxy, Grimes, Imperial Gala, Kent, Kizashi, Lurared, McCoun, MacIntosh, Molly Delicious, Mondial Gala, Ontario, Queen Cox, Royal Gala, Spartan, Stark Gala, Starkspur Mac, Summared, Warabi, Worcester, and Pearmain (information from Ohio State University sources). We also noticed phytotoxicity on the variety Honey Crisp.

Conditions favorable for drift have caused problems to apples elsewhere, e.g., azoxystrobin used in grape vineyards adjacent to apple orchards. The current label warns about spray drift and prohibits sprayers used with azoxystrobin for subsequent spraying of apple trees. Use of Quadris for soybean rust management or for foliar diseases of corn could cause problems for apple orchards or backyard trees adjacent to soybean fields, especially under unanticipated conditions favorable for drift.

Apple growers who are also growing vegetables or grapes need to be aware of azoxystrobin phytotoxicity that can occur from use of a contaminated sprayer or from spray drift. In such cases, a separate sprayer for apples or the other crop might be a good solution along with spraying only on very still days. Apple growers will also want to communicate with nearby farmers who might be using azoxystrobin fungicide in their vineyards, on vegetable plantings or on fields of soybean or corn.

## SOYBEAN

### FUNGICIDE BASICS
### by Paul Vincelli and Donald Hershman

The following article was written by Drs. Anne Dorrance, Pierce Paul, and Dennis Mills of The Ohio State University. It was published in the *Crop Observation and Recommendation Network Newsletter (*2008-16, June 2, 2008 - June 10, 2008). The article is well-written and applies to our situation in Kentucky. Although the content of the article is more directly linked to fungicide use on soybean than on any other crop, the principles outlined here are applicable to essentially any crop we grow in Kentucky.

**Some fungicide application basics – how not to blow a great tool**
*by Anne Dorrance, Pierce Paul, Dennis Mills*

We have learned of some interesting new practices for fungicide applications this season and while not directly "off-label" they are cause for concern. As plant pathologists that utilize these tools and depend on these tools at times to manage epidemics caused by fungi – we thought this would be a good time for a few reminders.

1. What is fungicide? This is a compound applied to crops to manage a multitude of fungal and fungal-like plant pathogens. Fungicides have been instrumental in managing late blight of potato, apple scab in apples, powdery mildews in wheat, cucurbits, and apples. Fungicides are primarily needed when a susceptible host is grown and the environment is highly favorable. Both conditions must occur at the same time. Better weather models, and now predictive models, disease scouting are all used to save producers monies in that the fungicides will be applied only as needed. Many crops now have resistance to many of these pathogens and so the use of these fungicides is not warranted.

2. There are different classes of fungicides – basically this means that there are different chemistries and these have different features – ie: systemic movement in plants – some move up and down a few leaves, some don't move at all. Some can be applied shortly after infection has started and have a "curative" effect – but none can be applied after the field has high levels of disease and lots of spore production. Know your chemistry so you know how to use it correctly. Don't know what your chemistry is? Check out these resources for more information:

http://oardc.osu.edu/soyrust/ - Chapter 7 has a nice discussion on fungicide basics.

3. Do fungicides provide a "plant health" benefit? This is questionable for Ohio. Across the US from a number of University based studies in fields with out disease, there has been both a negative and positive response. For our data to get the dramatic yield results – disease was always present. Another fact hidden in some data was insect pressure. Many of the strategies that have been promoted are an insecticide/fungicide combination and again where most of the dramatic results come from pertains to fields where insects had become an issue. Remember those aphid years of 2003 and 2005?

4. Timing is critical. Fungi (including the water molds) only have certain life stages that are vulnerable to fungicides. If the fungicide is applied too early – it is not effective; if the fungicide is applied to late – it is not effective. The recommendations and guidelines are based on the most up-to-date compilation of studies to optimize the best timing. Read the labels – if the recommendation says to apply at flowering – then a week earlier will not work nor will a week later.

5. The other fact about fungicides – is they don't last. Many fungi have developed resistance to these very important tools. Based on history – some things that favor fungicide resistance are i) overuse or repeated applications of one chemistry – constantly apply one type of chemistry repeatedly – even if it is a different product (a strobilurin is a strobilurin is a strobilurin no matter who makes it! And don't forget the mixtures – a strobilurin combined with a triazole is still applying a strobilurin and not rotating) ii) half rates – we don't know who came up with this idea but it is a really bad one. A half rate won't be effective in killing the pathogens that you are trying to manage. The pathogens that survive this application have a high potential to be less sensitive to the fungicide the next time around; iii) applying fungicides when pathogen populations/disease levels are already high – this

increases the chance that some will survive. You can't rescue a bad field – let it go and learn the lesson to have better scouting and timing next time.

6. Fungicides don't cure environmental problems – fungicides are not the answer for poor fertility, flooding, freeze, frost or hail damage, herbicide mistakes, or anything else. This is not the "take an aspirin" and it will feel better; fungicides are not placebos. If you've got a bad field – go home and forget about it, call the insurance guy and learn from it—don't spray it."

## SHADE TREES & ORANMENTALS

### INSECTICIDE PHYTOTOXICITY
**By Lee Townsend**

Phytotoxicity is general term used to indicate spray injury to plants. The signs (chlorosis, burning, tissue distortion, or plant death) may appear from within a few days of application to several weeks later. This article only considers phytotoxicity due to insecticide applications but injury can result from application of other pesticides, nutrients, or other substances. Some plant species or varieties are sensitive to particular chemicals, in other cases, injury occurs only under certain environmental conditions.

Here is an overview of phytotoxicity base on major contributing factors.

1) Some species or cultivars are highly sensitive to particular active ingredients, or inert ingredients in some formulations.

2) Applying more than the labeled rate at one time or treating at very close intervals.

3) Tank mixing several pesticides. Synergism or antagonism from combinations in spray tanks can result in injury. Some formulations contain ingredients that interact with ingredients in other products.

4) Pesticide applied at a susceptible growth stage – around bud break or during flower development.

5) Stressful environmental conditions – especially during periods of excessively high temperatures, while plants are under drought stress, or when sensitive foliage is wet longer than normal.

**Reducing phytotoxicity**

- Be aware of susceptible species or cultivars for the products you use.
- Use separate tanks / sprayers for herbicides, insecticides, fungicides as practical.
- Read the label before application – especially check for instructions on tank mixes and potential for plant injury. Follow application rates and retreatment intervals.
- Avoid adding adjuvants (spreaders, stickers, wetting agents, etc.) unless their use is specifically stated on the label.
- Treat small numbers of plants with tank mixes and watch for symptoms before treating large areas or numbers of plants.
- Don't treat under adverse environmental conditions (temperature, humidity) or when plants are under stress.
- Select formulations carefully. Solvents in emulsifiable concentrates (EC) formulations tend to have a much higher potential for damaging plant tissue than wettable powder (WP) or flowable (F) formulations.
- Be aware of pest damage or abiotic conditions that can cause injury that resembles phytotoxicity. Patterns and timing or appearance of symptoms may be helpful in identifying potential causes of injury.
- In some cases, pH of water used in the spray tank may affect pesticide performance.

**Example label statements for selected insecticides**

**Horticultural oil** – Do not apply during periods of drought or when plants exhibit moisture stress. Injury may occur on the most oil tolerant plants if relative humidity is low and wind and temperature are high. Summer spray oils should not be applied when the temperature is 90F or above or when the humidity is high. Blue spruce may lose its blue color for a few years after an oil spray.

**Insecticidal Soap** – Do not spray when plants are under stress. Avoid spraying during full sun. Spray early in the morning or evening, or when overcast. Soap spray may cause marking of some varieties.

**Malathion** – Injury may occur on certain ferns including Boston, Maidenhair, and *Pteris*, as well as some species of *Crassula*. Before using Malathion EC alone or with any other material, make a test application on a few plants and observe for 7 to 10 days prior to treating large areas to reduce the possibility of plant injury.

**Orthene 75% Turf Tree, and Ornamental Spray** (acephate) – Do not apply to Huckleberry, Balm of Gilead, cottonwood, Lombardy poplar, and *Viburnum suspensum*.

- Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, *Malus floribunda*, Pink Perfection, Red Wine and Snow Cloud.
- Phytotoxicity has occurred on *Bletchum gibbum, Cissus antarctica, Ficus triangularis, Fittonia verschaffeltii,*

*Maranta leuconeura kerchoveana, Pachystachya lutea,, Plectranthus australis, Polypodium aureus, Polystichum, Pteris ensiformis, Tolmiea menziesii*. A spray on *Poinsettia* after bract formation may result in phytotoxicity on certain varieties.
- Phytotoxicity has occurred on the following Chrysanthemum varieties: Albatross, Bonnie Jean, Dixie, Garland, Gem, Iceberg, Pride, Showoff, Statesman, Tally Ho, Westward Ho, and Wild Honey. Do not apply to Chrysanthemums and Roses with open flowers.
- Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of the user, applicator, applicator/advisor.

**Sevin** (carbaryl) Application to wet foliage or during periods of high humidity may cause injury to tender foliage.
- Do not use on Boston ivy, Virginia creeper, and maidenhair fern as injury may result. Carbaryl may also injure Virginia and sand pines. The use of adjuvants may increase the potential for crop injury to sensitive crops.

**General statement –** It is impossible to eliminate all risks associated with the use of as product, Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials or the manner of user application, all of which are beyond the control of the manufacturer. All such risks shall be assumed by the user or buyer.

## HOUSEHOLD

### MOSQUITO OPTIONS FOR HOUSEHOLDERS by Mike Potter

Despite the state-wide lack of moisture, mosquito season is in full swing throughout the Commonwealth. Mosquitoes are a perennial nuisance for which there is no easy solution. As summer continues, there will be an abundance of misinformation about what works and what doesn't. The following measures can afford some relief.

*Eliminate Breeding Sites* – Mosquitoes need quiet, non-flowing water for their development and periodic summer storms provide just such conditions. Eliminating large sources of standing water may require community-wide effort. Nonetheless, homeowners can take steps to prevent mosquitoes from breeding on their property:

1. Dispose of old tires, buckets, aluminum cans, plastic sheeting or other refuse that can hold water. Empty accumulated water from trashcans, boats, wheelbarrows, pet dishes, and flowerpot bottoms, and if possible turn them over when not in use.

2. Clean debris from rain gutters and unclog obstructed down spouts. Clogged or damaged rain gutters are one of the most overlooked mosquito breeding sites around homes.

3. Change water in birdbaths and wading pools at least weekly, and keep swimming pools clean, chlorinated or covered when not in use. Ornamental pools can be aerated or stocked with mosquito-eating fish. Aeration and water movement helps because mosquitoes prefer quiet, non-flowing water for egg laying and development.

4. Fill or drain ditches, swampy areas, and other soil depressions and remove, drain or fill tree holes and stumps with mortar to prevent water accumulation. Eliminate standing water and seepage around animal watering troughs, cisterns, and septic tanks. Be sure cistern screens are intact and access covers fit tightly.

*Larval Control* - Use of a mosquito larvicide can be beneficial when it is impractical to eliminate a breeding site. Larvicides are insecticides used to control immature mosquitoes before they have a chance to develop into biting adults. Most larvicides sold to homeowners contain either the ingredient methoprene, or the bacterium Bacillus thuringiensis israelensis (Bti). Neither active ingredient is harmful to fish, waterfowl, pets or humans when used according to label directions. Many products and formulations containing methoprene (Altosid®) and Bti (Bactimos®, Vectobac®) are used by mosquito abatement agencies and other professionals. Homeowners can purchase the methoprene-based larvicide, PreStrike™ in hardware stores. PreStrike is formulated as a granule and comes in a shaker bottle. Various products containing the mosquito- specific bacterium, Bti, are also sold to homeowners. Mosquito Dunks® and Quick Kill® Mosquito Granules, for example, can be found at hardware and discount stores.

*Adult Control* - Adult mosquitoes prefer to rest in moist, shady areas such as dense vegetation during the daytime. Consequently, homeowners should remove tall weeds and overgrown vegetation from their yards. To further reduce intolerable levels of biting adult mosquitoes, residual insecticides can be applied to shrubs, hedges and other shaded areas, such as under decks and along foundations. Recent research by University of Kentucky entomologists indicates that such treatments effectively suppress nuisance, biting mosquitoes for about a month. Residual mosquito sprays are often best applied by professional pest control firms. Homeowners opting to try this themselves should use lawn and garden insecticides containing permethrin (e.g., Ortho Mosquito B Gone,

Spectracide Mosquito Stop), cyfluthrin (Bayer Advanced Powerforce Mosquito Killer), bifenthrin (e.g., Ortho Home Defense Max), or lambda cyhalothrin (Spectracide Triazicide). For homeowners, a hose-end sprayer is usually most effective for making such applications.

*Exclusion* - Mosquitoes can be kept out of homes by securely screening windows, doors and porches. The occasional mosquito found indoors can be eliminated with a fly swatter. Aerosol-type insecticides labeled for mosquitoes, gnats, and other flying insects seldom provide much relief at the dosages applied by householders.

*Topically-Applied Repellents* - Repellents will help prevent bites when spending time outdoors. Traditionally, the most effective mosquito repellents contained the active ingredient diethyl toluamide (DEET) ranging from 5% to 40%. Higher percentages of DEET in the ingredients provide longer protection. Low -percentage formulations (10% or less) are suitable for shorter periods outdoors (e.g., 1 to 2 hrs), and are recommended for use with young children. Earlier this year, two new mosquito repellents were registered by the U.S. Environmental Protection Agency and recommended as alternatives to DEET by the Centers for Disease Control and Prevention. Picaridin (*7% Cutter Advanced*) and Lemon eucalyptus oil (*30% Repel Lemon Eucalyptus*) provide relief for about 2 to 4 hrs. Unlike DEET-based repellents, Picaridin is essentially odorless and Lemon eucalyptus oil has a lemon scent. For many people, the new products will also have a more pleasing feel on the skin. Both repellents should be appearing on store shelves soon. Always read and follow directions on the container.

*Other Control Possibilities* - Many consumer products claim to attract, repel, capture or kill mosquitoes. Most of these devices do not appreciably reduce mosquito abundance or incidence of bites, or else their claims are unproven. Electrocuting devices or "bug zappers" using ultraviolet light as an attractant are generally ineffective in reducing outdoor populations of mosquitoes and their biting activity. Studies indicate that mosquitoes make up only a tiny percentage of the insects captured in such traps. The majority are moths, beetles and other harmless night flying insects. Other types of mosquito traps utilize carbon dioxide, warmth, light, and various chemicals (e.g. octenol) as attractants and claim to capture tremendous numbers of adult mosquitoes. Such devices can be quite expensive. Performance claims to the contrary, such traps seldom have been shown to reduce populations of biting mosquitoes on one's property, or the frequency of bites. In some situations, they could even attract more mosquitoes into the area they were meant to protect.

Advertisements for portable electronic devices using high frequency, ultrasonic sound routinely appear in magazines, claiming to keep mosquitoes and other pests at bay. Some supposedly repel mosquitoes by mimicking the wing beat frequency of a hungry dragonfly. Scientific studies have repeatedly shown these devices to be of negligible benefit in deterring mosquitoes and reducing bites. Save your money, as these devices seldom if ever provide any appreciable measure of protection.

Citronella oil does have mosquito-repelling properties and the scented candles can provide some protection. For maximum effect, use multiple candles placed close (within a few feet) of where people are sitting. A single candle located at the center or edge of a picnic blanket probably will not provide much benefit other than atmosphere. Mosquito-repellent plants, garlic, and other oft-advertised botanical products generally are ineffective.

Bats and certain types of birds (e.g. purple martins) are often cited as effective natural agents for managing outdoor mosquitoes. Conservation groups and nature magazines often suggest building bat and birdhouses on one's property to promote nesting and to protect against mosquitoes. Although insectivorous bats and birds do eat mosquitoes, they make up only a very small portion of their natural diet. Much like the mechanical "bug zappers," bats and birds capture all manner of other flying insects also. Efforts to colonize and conserve these animals should not be done with the primary intent of diminishing biting mosquitoes.

When it comes to managing mosquitoes, a good rule of thumb is if the approach or device sounds too good to be true — it probably is.

## DIAGNOSTIC LAB-HIGHLIGHTS

**by Julie Beale and Paul Bachi**

During the past week, the PDDL received samples of herbicide injury, hail injury, and magnesium, potassium and zinc deficiencies on corn; head blight on wheat; target spot, Pythium root rot and Rhizoctonia stem rot on tobacco.

On fruits and vegetables, we diagnosed iron deficiency on blueberry; leaf spot (Mycosphaerella) and leaf blight (Phomopsis) on strawberry; Phomopsis cane and leaf spot on grape; fire blight and frogeye leaf spot on apple; black root rot and leaf spot (Ascochyta) on bean; bacterial wilt on cantaloupe; bacterial spot and speck, Pythium root rot and phosphorus deficiency on tomato; and Pythium root rot on watermelon.

On ornamentals and turf, we have seen Rhizoctonia stem rot on petunia; leaf streak on daylily; leaf/flower gall on

azalea; black spot on rose; scab and powdery mildew on crabapple; fire blight on pear; anthracnose on sycamore and maple; Botryosphaeria dieback and leaf blister on oak; leaf blotch on redbud; dollar spot on fescue; brown patch and Pythium root dysfunction on bentgrass; and spring dead spot on bermudagrass.

## INSECT TRAP COUNTS

May 30-June 6, 2008

►***Princeton, KY***

| | |
|---|---|
| Black cutworm | 0 |
| True armyworm | 3 |
| Corn earworm | 41 |
| European corn borer | 0 |
| Southwestern corn borer | 1 |
| Fall armyworm | 0 |

►***Lexington, KY***

| | |
|---|---|
| Black cutworm | 24 |
| True armyworm | 480 |
| Corn earworm | 206 |
| European corn borer | 0 |
| Southwestern corn borer | 0 |
| Fall armyworm | 0 |

Graphs of insect trap counts are available on the IPM web site at -http://www.uky.edu/Ag/IPM/ipm.htm.
View trap counts for Fulton County, Kentucky at - http://ces.ca.uky.edu/fulton/anr/

Lee Townsend

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.*

COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY
College of Agriculture

Cooperative Extension Service
University of Kentucky
Entomology Department
Ag Distribution Center
229 Stadium View Road
Lexington KY 40546-0229

Official Business