ANNOUNCEMENT

LAST CALL FOR UK AUTOGRAPHED BASKETBALL

One lucky person completing a 2006 Pest Management survey will receive a Tubby Smith autographed UK basketball. If you would like to complete a survey, just go to our web site at http://ces.ca.uky.edu/kyipm/opening.htm or you can request that a copy be mailed to you. If you wish to be included in the random drawing to receive the basketball, just enter your e-mail address at the end of the web survey or a telephone number if you are completing a mailed copy. Surveys will be accepted until August 30. The basketball will be given away on August 31.

E-mail addresses and telephone numbers provided will be confidential, will be used only to select a winner for the basketball and will be removed from your answers. To request a mailed copy of this survey or if you have questions about this survey or the research you can contact Patty Lucas, P.O. Box 469, Princeton, KY 42445 or telephone at (270) 365-7541 extension 218 or e-mail at plucas@uky.edu

If you have already completed a survey, thank you.

TOBACCO

LATE-SEASON BACTERIAL DISEASES by Kenny Seebold

As a consequence of the wet weather we’ve encountered during parts of the growing season, increased activity from a bacterium called *Erwinia carotovora* subsp. *carotovora* (Ecc) may occur. This bacterium, an inhabitant of soils and also common on plant surfaces, causes blackleg in transplants, hollow stalk in the stems, and bacterial soft rot/drop of leaves. All occur in the form of a slimy, foul-smelling rot that develops rapidly under ideal (warm and wet) conditions. Houseburn of tobacco can also be caused by Ecc, particularly if the pathogen is active on harvested tobacco.

Hollow stalk in the field occurs normally between topping and cutting. The bulk of infections occur during or after wounding which results from topping; however, other types of injury (hail, disease, sucker control) can also promote hollow stalk. The stalk-rot bacterium enters wounds and begins to rot the pith, and will spread down the stalk very quickly. Leaves typically wilt and droop, beginning at the top of the plant. Most leaves on infected plants drop off before or during cutting. Blackened areas are usually visible on the stalk.

Bacterial soft rot occurs on leaves at any stalk position, but is very likely to appear on lower leaves. Symptomatic leaves normally drop before Ecc can invade the stalk. However, under ideal conditions, Ecc will move into the stem before leaves drop, producing cankers and hollow pith in the lower parts of the plant.

Bacterial soft rots are hard to control, and no ‘rescue’ treatments are available. Over-fertilized plants are particularly susceptible to bacterial soft rots, as are wounded plants (as mentioned previously). Take all precautions to manage fertility properly and minimize wounding. Top tobacco in a timely manner and control sucker growth promptly. Large suckers killed by sucker control chemicals are ideal targets for Ecc. Topping when large flower heads are present normally creates a wound that can hold water. Remove older tops with a knife, an angled cut that slopes downward and towards the sunny side of the plant to promote drying. Avoid topping when weather is rainy or damp and cloudy, or in the morning when plants are wet. Workers who rub soil on their hands to remove tobacco resin are likely to spread Ecc., especially if working plants when they are wet. Avoid topping obviously infected plants to avoid spread to healthy plants.  

Tobacco
control chemicals tend to increase hollow stalk in wet seasons, and bacterial soft rot of leaves has been observed on crops damaged by excessive MH-30.

Another bacterial disease that may be present when warm and rainy weather occurs is angular leaf spot (wildfire), caused by *Pseudomonas syringae* pv. *tabaci* (Pst). Damaging levels of this disease can occur in Kentucky, although severity tends to be low in most years. Cultural controls, particularly proper nitrogen fertility, can aid in suppressing angular leaf spot. Agricultural streptomycin can be applied at 100-200 ppm (0.5-1 lb per 100 gallons of water) to manage this disease; however, this chemical will have little effect on bacterial soft rots. Begin applications when symptoms first appear and make follow-up applications as needed. Streptomycin can be applied up to the day of harvest.

**CORN**

**SCOUTING FOR STALK ROTS**
by Paul Vincelli

I’ve received preliminary reports of stalk lodging problems in some parts of Western Kentucky. With near-record yields forecasted, this is not surprising. Maybe this seems paradoxical, but a bumper crop is at more risk of stalk rot than a normal crop. This is because corn plants in high-yielding fields—especially if they are crowded together in excessive populations—often fill out the grain by removing carbohydrates from the stalk. This can result in poor stalk strength.

When stalk rot strikes, we’ll often find several stalk rot fungi attacking a severely lodged field. Stalk rot diseases are the result of opportunistic infections. What this means is that certain stress factors, such as low carbohydrate status in the stalk, predispose the plant to infection, and the first fungus to attack a particular plant is the one we find there. What this also means is that the most important thing to do from a production standpoint when stalk rots attack is to evaluate one’s cultural program and see if there are particular agronomic stresses that might be alleviated. Factors that might enhance stalk rot problems include: excessive plant population, excessive N (especially if potash levels are not also high), high N levels early in the season followed by N loss through leaching or denitrification, low stalk strength ratings of hybrids planted, and severe leaf disease or leaf damage. Ear set in a high position on the plant can also increase the risk, by making the plant top-heavy. Producers may wish to evaluate these factors to see if there are ways to reduce the risk of stalk lodging in future years.

Producers should consider scouting corn crops for lodging potential as they approach maturity. This practice helps identify fields that should be harvested early and dried down. A simple way to scout for lodging potential is to walk the field and push plants 12-18 inches from vertical at about chest height. Stalks that don’t spring back have the potential to lodge. If 10-15% of the field shows such lodging potential, plan on harvesting the field soon after the grain is physiologically mature (development of black layer, about 30-35% grain moisture).

**SOUTHERN RUST**
by Paul Vincelli

I have received reports of occasional outbreaks of southern rust of corn in western Kentucky. We have not confirmed this yet in our own diagnostic laboratories, but producers should be aware of this potential concern. Few corn hybrids have significant resistance to this disease, and there is still plenty of summertime left during which this disease can cause damage to late crops.

Southern rust is distinct from common rust. Pustules of common rust (*Puccinia sorghi*) tend to be sparsely scattered on both leaf surfaces, elongate in shape (up to 1/8 inch), and cinnamon-brown in color. Pustules of southern rust (*Puccinia polysora*) are densely scattered on the upper leaf surface, with few on the lower surface; they tend to be more oval and are orangish-brown. A side-by-side image of these two diseases can be found online at http://www.ca.uky.edu/agc/pubs/id/id139/ID139.PDF. Recent outbreaks of rust in corn should be sent to the UK Diagnostic Labs for confirmation.

Spores of both fungi are carried on springtime winds from southern areas of the U.S, where they overwinter. Common rust is active during cool (60°-75°F), humid weather; southern rust is most active during warm (80°F), humid conditions. Both fungi infect leaves when spores are present and leaf surfaces are wet.

The greatest loss of grain yield occurs in susceptible hybrids when outbreaks begin during early grain fill. In silage crops, harvest before the moisture level drops below the 60-65% recommended for silage, as southern rust will desiccate the crop quickly. Leaf rust diseases of forage grasses have been shown to reduce digestibility and in-vitro digestible dry matter, so the same may be true of corn silage. However, the good news is that there are no known mycotoxins (toxins produced by fungi) by the rust fungi.

If southern rust is not present in a corn crop, fungicides should not even be considered, for reasons of economics and environmental protection. However, if southern rust is detected in a high-yielding crop that is still early in the grain-fill stage, some producers may consider making a fungicide application to protect the crop. If so, perhaps the best option is Headline® (active ingredient *pyraclostrobin*, 7 day pre-harvest interval). Quadris® (*azoxystrobin*) and Stratego® (a premix of *propiconazole* and *trifloxystrobin*) are labeled for common rust but not for southern rust, so neither product is a control option. Tilt® and PropiMax® (active ingredient *propiconazole* in both products) are labeled for southern rust control but those product labels do not allow application past the silking stage. The label for Quit®, a combination of *azox*-
**ystrobin** and **propiconazole**, indicates it is not to be applied “after brown silk”, a vague guideline that is impossible to interpret with precision. Contact fungicides are not expected to provide adequate control when applied to corn crops by commercial spray equipment.

### TREE FRUITS

**ROOT AND TRUNK DISEASES AND DISORDERS CAUSE DECLINE**

by John Hartman

Kentucky fruit trees were placed under a great deal of stress during recent periods of hot, dry weather. Under these stressful conditions, symptoms of root and collar rot diseases quickly appeared. Growers might have noticed that foliage was not as green as normal, with many leaves turning yellow and dropping. Perhaps over-all growth has been reduced for this season and some twigs and branches are dying back. To determine the reason for this gradual decline growers need to look at the roots and lower trunk for possible causes. Fruit trees in decline may be suffering from a root decay or lower trunk decay or injury problem.

Candidate maladies include: **Phytophthora** collar rot, southern stem blight, **Armillaria** root rot, *Xylaria* root rot, mower damage and vole injury. All of these will cause yellowing of leaves, premature defoliation, decline, and death of trees. In most of these instances, the bark of the lower trunk is decayed or removed so that phloem tissues located in the inner bark are destroyed and phloem function is disrupted. This disruption means that phloem tissues are no longer carrying food made in the leaves back to the roots and when this happens, the roots gradually starve. Starving roots cannot be expected to take up water and mineral elements efficiently enough to sustain the tree through hot, dry weather. Thus the gradual decline being observed now is evident in orchards or landscapes where these diseases occur.

- If collar rot, caused by species of **Phytophthora**, is the problem, growers can often recognize the symptoms by cutting into the bark at the base of a declining tree. The bark of the diseased trunk and buttress roots just below ground or at the ground level will be soft and the inner bark tissues reddish brown instead of white. A laboratory culture can confirm the presence of Phytophthora. Poor soil drainage or over-watering will provide the moist conditions necessary for Phytophthora to thrive.
- For southern stem blight, caused by the fungus **Sclerotium rolfsii**, growers should be able to observe white fungal mycelium on the bark surface on the part of the trunk just underground or at ground level. Small mustard seed-sized sclerotia embedded in the fungal mycelium may also be visible. Southern stem blight usually only attacks young trees during their first few years in the orchard. Laboratory analysis and culture can confirm presence of this fungus.
- **Armillaria** root rot, caused by the fungus **Armillaria**

### HOUSEHOLD PESTS

**FRUIT FLIES**

by Mike Potter

Hot weather and over-ripe fruits and vegetables can mean fruit flies. Information on this common pest is available in Entfact 621 [http://www.uky.edu/Ag/Entomology/entfacts/struct/ef621.htm](http://www.uky.edu/Ag/Entomology/entfacts/struct/ef621.htm). Here are the basics for those who have thriving infestations that need immediate attention: Once a structure is infested with fruit flies, all potential breeding areas must be located and eliminated. Unless the breeding sites are removed or cleaned, the problem will continue no matter how often insecticides are applied to control the adults. Finding the source(s) of attraction and breeding can be very challenging and often will require much thought and persistence. Potential breeding sites which are inaccessible (e.g., garbage disposals and drains) can be inspected by taping a clear plastic food storage bag over the opening overnight. If flies are breeding in these areas, the adults will emerge and be caught in the bag.

After the source of attraction and breeding is eliminated, a pyrethrum-based, aerosol insecticide may be used to kill any remaining adult flies in the area.

A better approach, however, is to construct a trap by placing a paper funnel (rolled from a sheet of notebook paper) into a jar which is then baited with a few ounces of cider vinegar. Place the jar trap(s) wherever fruit flies are seen. This simple but effective trap will soon catch any remaining adult flies.

### DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

Recent agronomic samples in the PDDL have included gray leaf spot (Cercospora) on corn; downy mildew and potassium deficiency on soybean; black shank, soreshin, blue mold, manganese toxicity, tobacco ringspot virus and bacterial hollow stalk on tobacco.

On fruit and vegetable samples, we have seen **Phoma** leaf spot on blackberry; nitrogen deficiency on blueberry; anthracose, black rot, and downy mildew on grape; cedar-apple rust on apple; Entomosporium leaf spot and cork spot on pear; angular leaf spot on bean; Botrytis neck rot.
on onion; southern blight on pepper; Alternaria leaf blight on muskmelon; bacterial wilt on pumpkin; early blight, Septoria leaf spot, tomato spotted wilt virus, bacterial spot and Botrytis gray mold on tomato.

On ornamental and turf samples, we have diagnosed Pythium root rot on chrysanthemum, delphinium and petunia; dodder on impatiens; Volutella blight on pachysandra; Cladosporium blotch on peony; southern blight on hosta and crabapple; Phyllosticta leaf spot on birch and maple; spot anthracnose and Septoria leaf spot on dogwood; black root rot on holly; bacterial scorch on hackberry, oak and maple; Cylindrocladium root rot on oak; Botryosphaeria canker on rhododendron; Cylindrosporum leaf spot on walnut; brown patch and Pythium root rot on bentgrass; and summer patch on bluegrass.

INSECT TRAP COUNTS
UKREC, Princeton KY

August 4-11, 2006
Black cutworm .................................................2
True Armyworm ................................................34
European Corn Borer .......................................2
Southwestern Corn Borer ..................................64
Corn Earworm ................................................241
Fall Armyworm .............................................0

View UKREC trap counts for the entire 2006 season at –
http://www.uky.edu/Ag/IPMPrinceton/COUNTS/2006trapsfp.htm

View trap counts for Fulton County, Kentucky at -
http://ces.ca.uky.edu/fulton/anr/Insect%20Trap%20Counts.htm

For information on trap counts in southern Illinois visit the Hines Report at –
http://www.ipm.uiuc.edu/pubs/hines_report/comments.html

The Hines Report is posted weekly by Ron Hines, Senior Research Specialist, at the University of Illinois Dixon Springs Agricultural Center.

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.