## TOBACCO

### BLACK SHANK AND DRY WEATHER

by Kenny Seebold

The current dry spell is beginning to take its toll on Kentucky’s tobacco crop. Fields around the Commonwealth not equipped with irrigation are showing symptoms of drought stress. We have also seen a significant increase in the number of reports of black shank in the past week. As of June 6, no samples of tobacco with black shank had come through our clinics; by June 16, we recorded 7 cases and had diagnosed 24 samples with black shank by June 23. Rainfall during this period, however, remained at or below normal. Since we think of black shank as a wet-weather disease, why are we having problems during a drought? The issue here is one of perception. The plants that are now dying from black shank were likely infected several weeks ago when moisture was more plentiful. Expression of symptoms, though, can be accelerated when plants are drought-stressed. Under dry conditions, even plants with mild infections will not be able to take up enough water to survive and will wilt quickly. Once wilted, heat and a lack of soil moisture result in sudden and widespread mortality of plants. Wilting and death can be so sudden that plants remain green when they die, failing to exhibit the yellowing that is characteristic of black shank. The classic blackening of the stem from which black shank takes its name can be less pronounced as well during a drought because of the quick response to stress.

At this point in the season, growers with black shank should consider applying the soil fungicide mefenoxam as a rescue treatment. Two products, Ridomil Gold EC and Ultra Flourish, are available and can be applied at first cultivation (if applicable) and at layby. The rate for Ridomil Gold is 1 pt/A (per treatment), while Ultra Flourish, which contains half the amount of mefenoxam found in Ridomil Gold, is labeled at 1 qt/A (per treatment). Applications should be directed at the soil and stems of plants. Mefenoxam needs adequate moisture in soil for maximum efficacy and should be incorporated after application with 1 inch of water if soils are dry. The fungicide should be incorporated as quickly after application as possible. Secondary spread of black shank is considerably less likely in a drought than in rainy weather; however, heavy rains or irrigation could result in heavy losses to black shank in fields with even low levels of disease, so mefenoxam should be applied in advance of anticipated moisture events. The black shank pathogen can be moved easily on equipment and feet! Growers need to sanitize properly when moving between infested and clean fields.

### STILL NO BLUE MOLD!

Blue mold has not been reported in the United States as of June 26. Trajectory models from the National Plant Disease Forecasting Center indicate that any blue mold spores present in traditional source areas such as Pinar del Rio, Cuba and Uvalde, Texas will not affect U.S. production areas. Generally, the state has been experiencing...
hot, dry weather, conditions not conducive to blue mold. Nonetheless, growers still need to scout fields regularly for symptoms of blue mold and other diseases. Please check the KY Blue Mold Warning System page for regular updates (http://www.uky.edu/Agriculture/kpn/kyblue/kyblue.htm).

**TOBACCO INSECTS ARRIVE**
by Lee Townsend

Tobacco hornworm eggs were found while checking plants in Fayette County late last week (6/24). This marks the first of two generations that occur each year. While the number of eggs laid for the first generation usually is not great, damage in some fields can be significant because plants are small and hornworm appetites are large. Hornworms hang on the underside of leaves and chew smoothly-rounded holes. It is easy to overlook damage caused by young larvae but their feeding rate soon increases and only bare mid-ribs are left behind. The treatment guideline is 5 or more hornworm larvae per 50 plants. Fortunately, they are easy to control with any of the insecticides listed for worm control in ENT 15 – Insecticide Recommendations for Tobacco Beds and Fields.

Female hornworm moths fly at night and glue individual eggs to lower leaf surfaces of tobacco and related plants. A single female can lay as many as 2,000 eggs and as many as 5 per plant. At that rate, it doesn’t take too many moths to create a serious infestation. Eggs hatch in about 4 days and individual larvae feed for about 3 weeks. Considering the length of moth flight, the hornworm feeding period in a field is probably spread out over a 5- to 6-weeks. Mature hornworm larvae enter the soil to pupate. The moths will emerge and lay eggs from late July through August.

Tobacco budworms are active now, too. Earliest set fields have the greatest potential for infestation. Careful inspection of the bud on randomly selected plants is a good way to detect budworms. An insecticide application is recommended if you find 5 or more budworms per 50 plants.

Budworm moths also fly at night and glue individual eggs to the undersurface of bud leaves. The larvae feed for just over 2 weeks, primarily on the terminal tissue but can tunnel into the stalk. Control can be a challenge. Orthene and Tracer have been effective insecticides in UK field trials but in some years 60% control must be considered to be “good”. Hot temperatures affect budworm control because leaves will tend to close to protect the plant bud. This can mean reduced coverage and poor control.

Winged tobacco aphids and some small colonies were found on untreated tobacco, also. The period of potential concern is from 4 to 6 weeks after transplant until the crop is topped. Infestations begin when the darker, winged aphids land on plants. They will probe the plant with their mouthparts and deposit a few live young (nymphs) if they like what they taste. These nymphs will mature in about a week and begin producing their own offspring. Aphid populations can build rapidly. During that time, sap feeding by aphids can cause significant yield and quality reductions. An insecticide application is recommended if 20% or more of the plants in a field are infested. An infested plant has a colony (50+ wingless aphids).

Be sure to check the WPS section of the label to determine re-entry intervals following any pesticide application.

**SOYBEAN**

**SOYBEAN APHID HAS ARRIVED IN KENTUCKY**
by Doug Johnson

This past week I received reports of the soybean aphid, *Aphis glycines*, in Estill and Fayette County soybean fields. As yet we have not had any confirmed sighting is western Kentucky but this may be because no one has looked for them. Additionally, Dr. Scott Stewart (UT - Jackson) is fairly confident that he observed soybean aphid last week in Franklin, Rutherford and Gibson counties in Tennessee. It is a bit harder to know for sure in the states south of us because the soybean aphid can be mistaken for the cotton (aka melon) aphid, *Aphis gossypii* (aka: melon aphid).

There is little surprise that soybean aphid is in Kentucky because it has been found in our soybean production area every year since its initial discovery in 2000. Nor is the date any particular surprise, although this probably varies with weather, especially temperature, every year. So, what is to be done?

Be watchful. That is the key to managing this pest. It will be present, but if history is a predictor, it is very unlikely to cause economic damage on full season beans and fairly unlikely to cause economic damage on any of our beans. The beans most at risk are late planted and/or late developing, with full season bean varieties planted late having the greatest risk of all.

The economic threshold for this pest is an average of 250 aphids per plant during the vegetative stages through
reproductive stage “beginning seed” (R5). This is based on a 30 plant per field sample, and allows for a week to get a treatment on if needed. There is a quicker sampling method that you might wish to consider using. To get information on this faster sampling method and other current soybean aphid information go to the IPM web pages at: [http://www.uky.edu/Agriculture/IPM/ipm.htm](http://www.uky.edu/Agriculture/IPM/ipm.htm) and “click” on the soybean aphid at the bottom of the page.

If you are scouting for soybean rust you will want to keep the soybean aphid in mind. It will take very little more effort to look for both.

**FRUIT CROPS**

**CHERRY LEAF SPOT**

by John Hartman

Cherry leaf spot is appearing in backyard cherry trees in Kentucky. Cherry leaf spot can be a serious disease of sour cherries and can cause extensive defoliation. Sweet cherry and wild black cherry are also affected. Cool, moist weather early this spring may have favored early infections. Loss of leaves reduces size and quality of the cherry crop, reduces flower bud set for next year, weakens trees, and increases sensitivity to winter injury. Cherry leaf spot is caused by a fungus called *Blumeriella jaapi*, formerly known as *Coccomyces hiemalis*.

**Symptoms.** Small purple spots 1/8 to 1/4 inch in diameter appear on the leaves. On the under surfaces of the leaves, following heavy dew or rains, a white fungal growth (white spore masses called acervuli) may develop. Affected leaves turn yellow and fall off early in the season, thereby reducing the vigor of the tree. In severe cases, trees may become nearly defoliated by midseason. In years when the disease is very active, it is not uncommon to see yellow leaves littering a lawn in the summer under a sour cherry or a black cherry tree.

On some species such as plum, the infected spots drop out leaving a shot-hole symptom. Another leaf spot with circular brown lesions larger than those of cherry leaf spot is also currently being seen in the plant disease diagnostic laboratory. This spot, affecting mainly sweet cherry, is thought to be caused by one of the anthracnose fungi.

**Disease Management.** Sprays for control of this disease are usually begun in spring, just after bloom, and are continued regularly until one or two weeks after harvest.

Fungicides containing dodine, fenarimol, fenbuconazole, pyraclostrobin + boscalid, tebuconazole or triflumizole are effective in control of this disease. For current fungicide recommendations, consult U.K. publication ID-92, “2005 Commercial Tree Fruit Spray Guide.” In small plantings, leaves should be raked up and destroyed to reduce inoculum for the next season.

**SHADE TREES & ORNAMENTALS**

**DRY WEATHER WORSENS DOGWOOD POWDERY MILDEW SYMPTOMS**

by John Hartman

Dogwoods infected with powdery mildew appear to be faring worse during the recent bout of dry weather in many parts of Kentucky. Other trees in the same landscapes are still holding up while the dogwoods with powdery mildew wilt. Even dogwood leaves without visible signs of the powdery mildew fungus on the surface are noticeably drooped, or flaccid, during this hot, dry weather. One could surmise that water loss is greater for infected leaves because powdery mildew infections, including those not yet visible, disrupt the cuticle on the surface of the leaf. Let’s hope that rain and some cool weather will improve the health of those wilting dogwoods.

**THRIPS, MITES, AND FLECKED OR SPOTTED LEAVES**

by Lee Townsend

Small white flecks or tiny white spots on plant leaves or flowers may be the result of feeding by thrips or mites. The perpetrators are small and often unnoticed until plant foliage is obviously bleached or bronzed, if leaves are falling prematurely, or if buds and flowers are distorted. The small size of these creatures and their sheltered feeding sites makes them easy to overlook and affects success of control measures.

Thrips and mites tend to be more abundant during hot, dry periods so signs of their presence may be assumed to be caused by drought stress. Caught in time, reduction of thrips or mite control can remove one serious stress on plants that are suffering from water deprivation. Recognition of early signs produced by these small pests, and use of a hand magnifying lens to confirm identification, are key to short-circuiting problems. Tap or shake leaves or branches over a piece of white paper and examine it closely for mites and thrips.
Thrips are tiny, elongate insects (1/8” long or less) that use rasping mouthparts to tear leaves and flower petals, leaving small pale flecks. Feeding by some species may produce distorted leaves or flowers. Thrips may live on the underside of leaves or within the confines of buds and flowers. A few species are vectors of plant viruses so they can cause much more than aesthetic damage.

Mites are very small arthropods that use needle-like mouthparts to remove the contents of individual plant cells. Once green cells are left empty and white; in time, they will turn yellow, then brown. Initial signs of mite feeding appear as scattered, pin-prick sized spots. These spots coalesce as mite numbers and feeding increases. Mites usually live on the lower surface of leaves and, in the case of spider mites, may produce fine silk webbing all over infested areas.

**Controlling Thrips and Mites**

Good spray coverage is essential to controlling thrips and mites. The foliage should be wetted thoroughly with particular attention to the lower surfaces of leaves. At least one additional application will be needed 5 to 7 days later to kill individuals that were not in vulnerable stages at the time of the first treatment. The webbing of spider mites can reduce spray coverage, breaking it up with a strong stream of water before treatment may improve your results.

Here are some examples of product groups that can be used for thrips and mites.

1) Insecticidal soaps can be used to reduce thrips and mite numbers on a wide range of plants. They contain fatty acid salts that commonly come from plant or animal fats and oils. The soaps must be sprayed directly onto soft-bodied creatures, such as thrips and mites. Once on the target, the soap penetrates to damage cell membranes and may interfere with respiration. There is no residual effect so repeated applications usually are necessary. Some products also contain pyrethrins to aid in knockdown and control of the pests. Check the label carefully; some plants can be very sensitive to these sprays under extreme conditions, such as very high temperatures.

2) Some formulations based on neem plant extracts (azadirachtin), such as Bon-Neem, are labeled for thrips and mites. In some cases, the product acts as a feeding deterrent, in other cases, it interferes with growth and development of the pests. Check the label to see that your target pests are covered.

3) Pyrethrin-based sprays are very broad spectrum products. They typically act as contact poisons and paralyze the pest almost immediately. However, pyrethrins are broken down quickly by sunlight and provide no residual protection. Concentrate and Ready To Use formulations are widely available under a variety of brand names.

4) Organophosphate insecticides, such as acephate (Orthene) dimethoate (Cygon), or malathion, provide knockdown plus a short period of residual protection against mites and thrips.

5) All Season Spray Oils are labeled for control of mites and thrips on a range of shrubs, trees, and ornamentals. These should be ultrafine oils with specific directions for foliar application during the growing season.

6) Several pyrethroid products are labeled for thrips and mites. Most are effective against thrips while performance against mites can vary. Products containing the active ingredient bifenthrin have good activity against mites (e.g. Ortho Houseplant & Garden Insect Control). Products containing permethrin are more commonly available but may not be as effective.

**FALL WEBWORM TYING UP BRANCH TIPS – MORE LATER**
by Lee Townsend

Fall webworms are fuzzy caterpillars that work together to build unsightly nests at the end of branches of a number of shade, fruit, and ornamental trees, especially American elm, maples, hickory, and sweetgum. Aside from aesthetic considerations, the only real cause for concern would be when there are enough caterpillars to defoliate small trees. Small accessible nests can be removed and destroyed. Insecticides labeled for caterpillar control on the appropriate tree species can be applied if needed. A second generation will appear in August or September. Control of the first generation may have no impact on the second generation in a landscape because moths can fly in from nearby areas to lay eggs.
INSECT TRAP COUNTS
June 17—24, 2005

UKREC, Princeton KY
Black Cutworm ................................................................. 1
True Armyworm ............................................................... 2
Corn earworm ................................................................. 0
European corn borer ......................................................... 0
Southwestern corn borer .................................................... 0
Fall armyworm ............................................................... 2

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

Lee Townsend, Extension Entomologist

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