



KENTUCKY PEST NEWS

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Number 927

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TOBACCO

- Field survey for tobacco blue mold oospores required to trade with china

CORN

- Scout for stalk rots
- Sweet corn insect control critical in late summer

FORAGE CROPS

- Seed alfalfa early if fall-seeding

SHADE TREES & ORNAMENTALS

- Boxwood - volutella stem and leaf blight

HOUSEHOLD

- Danger zone: eliminating wasp and hornet nests

DIAGNOSTIC LAB-HIGHLIGHTS

TOBACCO

FIELD SURVEY FOR TOBACCO BLUE MOLD OOSPORES REQUIRED TO TRADE WITH CHINA

by William Nesmith

Earlier this year, the United States and China announced that they had established an agreement that would allow U.S. flue-cured and burley tobacco to be imported into China. Those protocols allow China to import dried U.S. tobacco that is free of active tobacco blue mold oospores. This spore stage is the product of sexual reproduction by the agent causing blue mold, *Peronospora tabacina*. Fortunately, the oospore stage is not commonly found in US tobacco during blue mold epidemics, but it does occur sometimes. Consequently, it is required that all U.S. tobacco exported to China will be inspected for blue mold oospores at two points before shipment.

One inspection is a field survey taken during active epidemics of blue mold and done in a way that the samples will be representative of the marketing area. The other inspection will involve the processed tobacco ready for shipment. In the field

survey, which must be completed soon, the sample will be connected directly to a specific field location. Samples will include a minimum of 25 leaves containing blue mold lesions, collected from at least five different plants in that field. The field will be identified by the grower's identity and the field location description (written directions and by GPS coordinate description).

This field survey will require cooperation and coordination within the tobacco production community, in order to get it completed on time and without undo burden on the system. This is a required step, so keep in mind that if it is not done, tobacco cannot be exported from this region to China, even if oospores are not present in the tobacco. USDA-APHIS-PPQ has established the protocols for conducting the field survey and recently forwarded it to the states. They and each state's plant pest regulatory personnel will cooperate in conducting the survey and collecting the actual samples for submission to a certified laboratory. The local office of the USDA Farm Service Agency will select the farm to be surveyed, but local County Extension Offices will probably need to assist them in identifying communities with active blue mold.

Furthermore, since tobacco from states other than Kentucky are mixed with our tobacco, it is equally important that all burley producing states participate in this field survey. Because this field survey is required to export tobacco to China, and since the burley tobacco going into any particular container for shipment could be produced in any tobacco producing county, one county's crop could impact the export potential of all the crop.

CORN

SCOUT FOR STALK ROTS

by Paul Vincelli

An Extension agent in the Green River Extension Area has reported very tall corn and high ear sets (in some cases over his head) in corn fields he has visited. In particular, high ear set is a factor that could predispose plants to lodging (they become top-heavy), and this may also be true of tall corn.

Last year's serious problems with stalk rots and stalk lodging has many growers concerned about avoiding that possibility again. Some will want to gear up to dry corn if there is a risk of a repeat of last year. While we do not have as much stress from common rust this year as last, which may have been a factor in the high stalk rot levels observed in 2000, the above observations raise some concern.

Other factors that could increase the potential for a stalk rots and stalk lodging problem include the following:

High yield potential: large ears can potentially pull carbohydrates from stalks, thus weakening them and allowing invasion of stalk rot organisms.

High plant populations: high populations have been shown to enhance the risk of stalk rots in numerous studies. Experienced corn agronomists feel that many growers are 2000 plants per acre higher than they need to be for optimal yields.

Leaf disease: severe leaf disease can stress the plants and cause them to pull carbohydrates from the stalks.

Extended periods of cloudy weather during grain fill. Not only does this stress the corn, but the wet weather that many areas received in the past week

may have favored stalk infections at the nodes by Gibberella.

Excess nitrogen.

Temporary drought at silking.

SCOUTING: A very simple way to scout for lodging potential is to walk the field and push plants at least 12 inches from vertical at about chest height. Stalks that don't spring back have high 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% grain moisture).

SWEET CORN INSECT CONTROL CRITICAL IN LATE SUMMER

by Ric Bessin

In Kentucky, many sweet corn producers plant their sweet corn early so that they can harvest it early. By doing this they can escape much of the insect pressure from the pests that attack the ear. Producers that have sequential plantings of sweet corn find that those that are planted later often suffer more ear damage. Last year, late summer sweet corn suffered serious corn earworm losses in some fields. The key to good insect control is proper timing and coverage of insecticide sprays.

Currently, second generation European corn borer activity is underway and the moth flight for southwestern corn borer is peaking. These two pests along with corn earworm and fall armyworm constitute the ear-feeding pests. Unlike the corn borers, corn earworm and fall armyworm do not have distinct generations. Rather their numbers gradually increase throughout the summer with several overlapping generations. In western Kentucky last year, the most intense corn earworm activity occurred when field corn began to dry down and corn earworm moths were emerging from the same. The moths emerging from a large field corn acreage were concentrating on small sweet corn fields. In addition, under high temperatures some of the insecticides, the pyrethroid based sprays, don't perform as well.

Sweet corn producers need to adjust their insect management program to meet the insect pressure and the needs of their market. For example, those

growing for home use or roadside markets may be able to tolerate more damage than those trying to meet the US fancy standard of less than ten percent damage. Those growing for home use may benefit from using as little as a single insecticide application when the ears approach 100 percent silking, particularly early in the season. Those needing to meet the US fancy standard will need to begin with the first spray when ten percent of the ears begin to silk and repeat applications on a 2 to 5 day interval while the silks are fresh. As soon as the silks dry, insecticide applications are no longer necessary. Generally, during periods of cooler weather and lower insect pressure, a 5 day interval is sufficient. Later in the season, intervals may be shortened to as little as 2 to 3 days as insect pressure increases, and as temperatures rise. To determine insect pressure, pheromone traps are available to monitor for corn earworm, European corn borer, southwestern corn borer, and fall armyworm.

Insecticide coverage is also important. Sprays should be directed toward the center third of the plant. Sprays directed over the top of the plants will not be as effective as those from drop nozzles from the side.

FORAGE CROPS

SEED ALFALFA EARLY IF FALL-SEEDING by Paul Vincelli

Most of the region east of I-65 as well as the Purchase area have received heavy rainfall in the last seven days, so there is a good chance of favorable soil moisture levels for alfalfa seedings made in early August. This is important because one of the few ways alfalfa producers can reduce the risk of serious stand loss from *Sclerotinia* crown and stem rot is to seed as early in the late-summer seeding window as possible.

Sclerotinia crown and stem rot is caused by *Sclerotinia trifoliorum*. This fungus only attacks forage legumes grown in Kentucky and is distinct from the *Sclerotinia* that causes white mold of tobacco and vegetables.

S. trifoliorum is a very common fungus in fields and pastures with a history of production of forage legumes. In contrast to most plant pathogenic fungi, this fungus does not overwinter—it

oversummers in a dormant state, and then begins infection activity in the fall, usually around or shortly before Halloween. Alfalfa crops seeded in the spring of the year usually have developed adequate resistance by this time. However, alfalfa seeded in late summer is often still young and susceptible by the time infections begin. Thus, fall seeded crops are much more at risk from severe stand loss from this disease.

The older and more developed a crop is going into the fall, the less risk there is from the disease. That is why producers who wish to seed alfalfa this fall should consider doing so as soon as possible. Early seeding doesn't completely eliminate the risk, but research shows that early seeding (before mid-August) can substantially reduce the risk of stand loss, especially in comparison to a seeding after Labor Day. One of the things that often limits an August seeding of alfalfa is a lack of sufficient soil moisture, which is certainly not a problem for many areas of the state right now.

One more point about *Sclerotinia* in alfalfa: several alfalfa varieties are being marketed as having resistance to this disease. While it is true that these varieties have shown some resistance to *Sclerotinia* in some regions of the country, their performance in research trials in Kentucky has been disappointing. Based on our research, I believe that our state (and possibly our neighbors to the south in Tennessee) have probably about the highest pressure from *S. trifoliorum* in the country. Consequently, varieties that have performed well elsewhere have shown little to no benefit here. Thus, do not expect that seeding one of these "Sclerotinia-resistant" varieties will take care of your problem. It may help just a tiny bit in getting a good stand (and for some varieties, it may not help at all), but time of seeding is still a much more effective way to reduce the risk of this disease than is variety selection.

More information on evaluating the risk of *Sclerotinia* crown and stem rot can be found in the Extension publication "[Risk Factors for Sclerotinia Crown and Stem Rot in Fall-seeded Alfalfa](#)" (PPFS-AG-F-2), available in county Extension offices at www.ca.uky.edu/agcollege/plantpathology/PPAExten/PPFShtml/ppfsagf2.htm.

To end this article on a positive note, I am optimistic that alfalfa varieties with adequate resistance for our conditions will ultimately become

available. Several alfalfa seed companies are working very hard on this issue, and so are we at UK. The Departments of Plant Pathology and Agronomy have an ongoing, joint project to seed experimental alfalfa selections in a site with high Sclerotinia pressure. After the epidemic has run its course, we invite plant breeders to dig up and bring home the surviving plants, to use in the breeding program. In this way, we hope to facilitate the eventual development of alfalfa varieties with adequate resistance for Kentucky farms.

SHADE TREES & ORNAMENTALS

BOXWOOD - VOLUTELLA STEM AND LEAF BLIGHT

by John Hartman

During recent weeks we have seen a number of cases of boxwoods declining in the landscape. Many of these cases involve leaf and stem blight caused by the fungus *Volutella buxi*. This is a common disease of English and American boxwoods.

Symptoms. The most striking symptom is the appearance of dead branches with straw-colored leaves in the middle or top of the plant. At first, growth may be stunted and when dieback occurs, young foliage turns gray-green or bronze and finally straw color. Infected old leaves fall prematurely and stems die back. Sunken cankers may form at the soil line or on branches in the crotches where dead leaves accumulate. Wood under the sunken canker is blackened. The disease is easily recognized by the appearance of clusters of conidia which are pink to cream-colored on the lower leaf surfaces. On blighted stems, cushions of small, salmon-colored spore masses erupt through the epidermis. *Volutella* blight usually doesn't kill boxwoods, but after dead branches are pruned out, the plant has lost the symmetry of shape for which it is planted.

Disease management. *Volutella* stem blight is common in unthrifty boxwoods but occasionally occurs in apparently healthy specimens. Thus, role of the fungus *Volutella* as the primary cause of decline of boxwood is sometimes open to question. Winter injury causes foliar symptoms similar to those caused by *Volutella* blight, and *Volutella* infection often follows winter or frost injury. If

winter injury alone is the problem, new, healthy leaves should appear in spring and eventually hide the bronze-colored leaves. To manage stem and leaf blight:

- Maintain plant vigor throughout the growing season.
- Prune out infected branches back to healthy tissue. Discard all prunings.
- Fungicides are not available for the control of this disease.
- There are no resistant boxwoods.

Other boxwood diseases. Be aware that other disease problems can also cause loss of foliage and dieback symptoms on boxwood. Any of several root problems would also likely exacerbate a *Volutella* stem blight problem. For example, boxwood is very susceptible to *Phytophthora* root and crown rot disease caused by *Phytophthora cinnimomi* and *P. parasitica*. Root and crown rot will result in branch dieback. Root-knot nematodes (*Meloidogyne* spp.) and lesion nematodes (*Pratylenchys vulnus*) weaken boxwood plants and cause branch dieback. Boxwood leaves that die as a result of various root diseases or environmental stresses are frequently colonized by the fungus *Macrophoma*. This fungus produces numerous black fruiting bodies, which can be seen as dark specks on dead leaves. It is a secondary colonizer of dead leaves and its presence indicates that the plant is stressed by some other factor. Providing good growing conditions seems to be a common thread in maintaining healthy boxwoods.

HOUSEHOLD

DANGER ZONE: ELIMINATING WASP AND HORNET NESTS

by Mike Potter

Wasp stings are a serious health threat to humans and animals. Hundreds, if not thousands of people in the United States die each year from allergic reactions to the venom of these insects. Paper wasps, hornets and yellowjackets are more dangerous and unpredictable than honey bees. Workers foraging away from the nest are seldom aggressive, but nests should be eliminated with great care and in a specific manner. "Folk" remedies, such as dousing nests with gasoline or a garden hose, seldom work and can result in multiple stings.

Paper Wasps - Paper wasps (as well as hornets and yellowjackets) construct nests of a paper-like material containing finely chewed wood fragments and salivary secretions of the wasps. Paper wasps typically build their umbrella-shaped nests under eaves and ledges. These brownish wasps are not as aggressive as yellowjackets or hornets, and can be eliminated rather easily with a wasp and hornet spray sold at most retail stores. One advantage of these formulations is that they can be sprayed as far as 20 feet. Although it is best to treat all wasps at night, paper wasps can be eliminated during the daytime *provided you do not stand directly below the nest during treatment*. Most wasp sprays cause insects to drop instantly. Standing directly under a nest increases the risk of being stung. After treatment, wait a day to ensure that the colony is destroyed, then scrape or knock down the nest.

Hornets - Hornets are far more difficult and dangerous to control than paper wasps. The nests resemble a large, gray, bloated football, which typically is attached to a tree, bush or side of a building. Oftentimes the nest is concealed amongst branches, especially in densely canopied trees such as Bradford pear. Hornet nests may contain thousands of wasps which are extremely aggressive when disturbed. The nests often are located out of reach and removal is best accomplished by a professional pest control firm.

Treat hornet nests at night when most insects are within the nest and less active (follow night treatment precautions discussed below for yellowjackets). A full wasp suit, sealed at the wrists, ankles and collar, is recommended. Apply an aerosol-type wasp and hornet spray, or dust formulation (Sevin, Drione, DeltaDust) directly into the nest opening. Hornet nests generally have a single opening, usually toward the bottom, where the wasps enter and exit. *It is crucial that the paper envelope of the nest not be broken during treatment or the irritated wasps will scatter in all directions, causing even greater problems*. Following treatment, wait at least 2-3 days before removing the nest to ensure that all of the wasps are killed. If hornets continue to be seen, the application may need to be repeated.

If the nest is located away from frequently used areas, another option is to wait and do nothing. In Kentucky, wasp, hornet, yellowjacket, and bumble bee colonies die naturally after the weather turns

cold, and the paper carton disintegrates over the winter months.

Yellowjackets - Yellowjackets are probably the most dangerous stinging insects in the United States. They tend to be unpredictable and usually will sting if the nest is disturbed. Yellowjacket nests are often located underground in old animal burrows (especially chipmunks), or beneath rocks or landscape timbers. Yellowjackets also build nests in walls, attics, crawlspaces, and behind the siding of buildings.

If the nest can be located, it often can be eliminated by applying an aerosol-type wasp and hornet spray into the nest opening. Insecticide dust formulations containing Sevin (sold in lawn and garden shops), DeltaDust, or Drione, are especially effective but require a handduster to dispense several puffs of the dust into the nest opening. In lieu of a commercial duster, a workable alternative is to use a dry, empty liquid detergent bottle filled with a few inches of dust. A few pebbles or marbles added to the bottom prevents the dust from caking, and the bottle should be shaken before dispensing. (Remember to dispose of the bottle after use or store it away from children and pets.) Dusts tend to be more effective than aerosols when the nest itself is located some distance from the entrance hole – as often occurs when yellowjackets construct nests behind house siding or deep within abandoned animal burrows. Insecticide dust blown into the opening penetrates further than sprays, and is also carried throughout the nest on the bodies of the workers.

Ideally, treatment should be performed at night, when most of the yellowjackets are in the nest and less active. Pinpoint the nest opening during the daytime, so you will remember where to direct your treatment after dark. Approach the nest slowly and do not shine the beam of your flashlight directly into the nest entrance as this may startle the wasps; instead, cast the beam to the side to illuminate the nest indirectly. If possible, place the light on the ground rather than in your hand.

When contemplating extermination of a yellowjacket or hornet nest, clients should be informed that they are entering a DANGER ZONE – there is no pest control scenario more frightening than a ‘blown’ wasp or hornet treatment. Consequently, it is often prudent to refer

homeowners to a professional, especially when access to the nest is difficult.

Wasp, hornet and yellowjacket stings can be life-threatening to persons who are allergic to the venom. People who develop hives, dizziness, difficulty breathing or swallowing, wheezing, or similar symptoms of allergic reaction should seek medical attention immediately. Itching, pain, and localized swelling can be reduced with antihistamines and an ice pack.

DIAGNOSTIC LAB HIGHLIGHTS

by Julie Beale and Paul Bachi

Samples diagnosed during the past week included brown stripe on orchardgrass; gray leaf spot on millet; blue mold, black shank, black root rot, soreshin, herbicide injury, tobacco ringspot virus, tomato spotted wilt virus, tobacco mosaic virus and cucumber mosaic virus on tobacco.

On fruits and vegetables, we diagnosed psyllid injury on blackberry; frog-eye leaf spot on apple; common blight (*Xanthomonas*) and rust on bean; *Pylosticta* leaf spot, *Rhizoctonia* stem rot, *Pythium* root rot, tomato spotted wilt virus, alfalfa mosaic virus, potyvirus complex, and cucumber mosaic virus on pepper; bacterial wilt on pumpkin and squash; bacterial canker, "yellow shoulders" (physiological) and blossom end rot on tomato; and blossom end rot on watermelon.

Samples of ornamentals were numerous and included leaf and stem blight (*Glomerella*) on clematis; powdery mildew on phlox; anthracnose and bacterial blight (*Xanthomonas*) on hosta; loose smut on bermudagrass; leaf spot (*Bipolaris*) and brown patch on bentgrass; anthracnose and brown patch on tall fescue; slime molds growing on mulch and turfgrass in lawns; *Pseudonectria* canker on boxwood; *Entomosporium* leaf spot on photinia and serviceberry; *Verticillium* wilt on catalpa; powdery mildew on dogwood; cedar-quince rust on hawthorn; *Pythium* and *Rhizoctonia* root rot on holly; *Cercospora* leaf spot on mulberry; rosette disease on rose; and *Rhizosphaera* needle cast on spruce.

INSECT TRAP COUNTS

UKREC, Princeton, KY, July 20 - 27

True armyworm	4
Fall armyworm	3
Beet armyworm	0
Corn earworm	49
European corn borer	1
Southwestern corn borer	160

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.