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University of Kentucky – College of Agriculture

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KENTUCKY PEST NEWS

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SOYBEAN

Soybean Aphid Making an Appearance – But Not In Kentucky

By Doug Johnson

Figure 1. An individual soybean aphid.

Soybean aphid has been showing up in the upper mid-west for several weeks. This pest can be a big problem in soybean production, but has not historically been so in Kentucky. We hope, and in the short run expect, that this will remain the same, at least for the 2009 season. It is, however, important to remember that this pest can and does infest Kentucky-grown soybeans. If its biology and/or our weather patterns change then we may see more of this pest than we like.

There are two main reasons why we do not expect to see large populations in any given year. First, the insect cannot overwinter in Kentucky. The aphid's life cycle is very complex, but basically it requires a particular plant on which to overwinter, the common buckthorn. That plant is not present or is present in very low numbers in Kentucky. This means the pest must migrate into the state each year from the north central states. The second reason soybean aphids are rare in Kentucky is our summer heat. Temperatures above 85° F reduce the soybean aphid's reproduction rate. So, their populations grow more slowly. Kentucky's summers have plenty of days when the temperature is well above 85° F.

For the moment we have not found any soybean aphids in our sentinel plot system. The aphid suction traps in Lexington and Princeton have not captured any soybean aphids. Additionally, I have not received any reports from agents or consultants (who often find the first aphids). This bodes well for us. Unfortunately, this is not the end of the story.

Even though we have not yet seen any soybean aphids in KY, it is still very early in the season. Typically, we will not get any sightings of this aphid until July or August, and the larger populations occur in September and October. Normally, we would expect "full season" beans to be all but completely safe from this pest, with later planted "double-crop" beans at higher risk. This year planting has been significantly delayed due to late spring rains. This may push development of soybeans later into the year than we would usually expect. It is these beans that will be at risk of soybean aphid infestation.

So, for the moment we are in good shape with reference to soybean aphid. I see no reason, except the late plantings, to assume that anything other than the norm will occur this year. However, it is important to remember that the insect will be here and to keep an eye open for its presence. You are encouraged to report finding soybean aphid to me at: doug.johnson@uky.edu. I will use your reports to help us all stay well-informed about this pest.

You can follow the progression of the soybean aphid on the web through the SoybeanPIPE. Look at: http://sbr.ipmpipe.org/cgi-bin/sbr/public.cgi. The site will open with Soybean Rust (which you should be watching as well!). Go to the upper right hand corner where it says Soybean Rust and "click" on that pull-down menu to select soybean aphid. This will give you a national overview of both soybean pests. For general pest / crop management info don't forget to view our blog at: http://graincrops.blogspot.com/.

TOBACCO

Update on Blue Mold

By Kenny Seebold

As of June 30, blue mold has been found in two counties in southeastern Pennsylvania (Chester and Lancaster). Additionally, blue mold was reported in a 5-acre field in western North Carolina.
The overall blue mold risk remains low through the beginning of next week for Kentucky. Fungicide applications targeted at blue mold are not needed; however, those seeing target spot may consider making an application of Quadris at 8 fl oz/A around layby for protection against this disease. If the blue mold situation changes, we'll post an alert through the Kentucky Blue Mold Warning System and on the Kentucky Tobacco Disease Information Page (www.uky.edu/Ag/KPN/kyblue/kyblue.htm). Please let me know if you suspect or find blue mold in your area.

FRUIT CROPS

Pierce's Disease of Grapes Detected

By John Hartman

Pierce's Disease was confirmed this past week on a Cabernet Franc grapevine growing in a Fayette County grape planting. The cause of the disease, a bacterium called *Xylella fastidiosa*, was detected in the U.K. Plant Disease Diagnostic Laboratory using an enzyme-linked immuno-sorbant assay (ELISA) test which detects proteins specific for the suspect bacteria (Figure 2). In past years, ELISA-positive specimens were further analyzed using a rapid-cycle polymerase chain reaction (PCR) test for presence of suspect bacterial DNA to confirm that the ELISA test was working properly. Thus, the laboratory ELISA test used in the laboratory is reliable. The infected plant has been destroyed.

Figure 2. ELISA test showing results of positive (yellow) and negative (clear) reactions for *Xylella fastidiosa*.

Symptoms of Pierce's Disease. Symptoms vary with different grape species and cultivars. In spring and early summer grapevines may show delayed shoot growth, leaf mottling, and dwarfing of new shoots. Late summer and fall symptoms are more dramatic and include distinct reddish-brown scorching and burning of leaf margins with the part of the leaf blade nearest the petiole and the main veins remaining green or sometimes yellow (Figures 3 & 4). Normally, scorch symptoms appear in late July or August, so in this case, the appearance of scorch now, in June, is somewhat surprising. As summer progresses into fall, scorching progressively spreads inward in concentric zones until the entire leaf blade is affected. During a drought, leaf scorching symptoms due to lack of water can be confused

Figure 3. Grape leaf with Pierce's disease scorch symptoms.

Figure 4. Pierce's disease infected grape leaves with scorch symptoms.

with Pierce's disease. Thus, use of the ELISA test is important for diagnosis.

Figure 5. Leaf petioles still attached to the grapevine after leaves have dropped due to Pierce's disease.

The disease progresses along the grape vine with symptoms developing in adjacent leaves along the shoot both above and below the point of initial infection. Leaves often fall from the vine at the point of attachment to the petiole, leaving the petiole still attached to the shoot like matchsticks stuck along the vine (Figure 5). (However, this can sometimes also happen in the absence of Pierce's Disease.) Late in the season, wood on affected canes fails to mature normally and some infected stems will develop an alternating green and brown banding along the affected grapevine (Figure 6). This uneven maturation of the vine may even persist into the dormant season. Initially, only one or a few canes on a vine show foliar and wood symptoms. Symptoms are more pronounced in vines that are stressed by high temperatures and drought conditions.

Figure 6. Grapevine bands of green nodes and brown internodes associated with Pierce's disease.

Grape susceptibility and disease spread. Pierce's disease has occurred only rarely in Kentucky, having been found in one vineyard in western Kentucky in 2001 and in Fayette County in 2007. In both cases, infected grapevines were promptly destroyed. Some grape cultivars are very susceptible, usually dying within two years. Most French (vinifera) varieties die within two to five years while American (labrusca) varieties often live longer than five years. Pierce's disease is spread by several types of sharpshooter leafhoppers, by spittlebugs, and by grafting. In other regions of the U.S., the Pierce's disease organism *X. fastidiosa* is distributed in a wide range of monocot and dicot native plants, which are infected, but not showing symptoms. We do not know if this bacterium has become established in other plants here. In Kentucky, bacterial leaf scorch of landscape trees such as oaks and maples is caused by a related strain of *X. fastidiosa*. Although the pathogen and symptoms are similar, Pierce's disease is not caused by the same strain of *Xylella* as bacterial leaf scorch. Both diseases are favored by the hot weather found in the southeastern U.S. The fact that bacterial leaf scorch can be so devastating to landscape trees here suggests that if the *Xylella* causing Pierce's disease became widespread in Kentucky, it would thrive.

With an emerging grape industry developing in Kentucky, it is important that growers and County Extension Agents be on the lookout for this disease. Personnel in the U.K. Plant Disease Diagnostic Laboratory can run specialized tests to determine the presence of the Pierce's disease bacterium in infected grapevines. Growers and agents are urged to begin examining grapevines for leaf scorch symptoms now and in the coming months. Where the disease is isolated, removal of infected vines should keep further spread to a minimum.

LAWN & TURF

Brown Patch Activity

By Paul Vincelli

Brown patch disease was very active last week, especially in tall fescue. Warm, humid weather will continue to promote brown patch activity on cool-season turfgrasses. Perennial ryegrass is probably the most susceptible host; creeping bentgrass and tall fescue are both relatively susceptible. Sometimes we see brown patch on Kentucky bluegrass, as well.

On all grasses, affected patches are often somewhat circular and can range from several inches to two or more feet in size. On tall fescue and Kentucky bluegrass, leaves exhibit tan, irregular lesions with a thin, brown border (see Figures 7 and 8). On creeping bentgrass and perennial ryegrass, a ring of olive- green leaf blades appears on the outside margin of the patch (Figure 9); these blighted leaf blades dry to a tan color. On humid mornings, the mycelium of the fungus often appears as a sparse, very light tan webbing in the lower canopy. This can be best seen with a hand lens. In some situations on perennial ryegrass, the mycelium can

be quite dense, cottony, and fluffy, and grow all over the leaf blades. In this condition, it can look quite a bit like Pythium cottony blight. Since different fungicides are used against Pythium cottony blight and Rhizoctonia brown patch, knowing the identity of the disease can be quite important from a management standpoint. Laboratory diagnosis is the best option if a case of perennial ryegrass has dense mycelium that looks like Pythium blight.

Management
During the next 8-10 weeks or so, be careful with postemergence herbicides, some of which have been shown to increase brown patch activity on cool-season turfgrasses.

Tall fescue. Generally brown patch can be managed through cultural means in established tall fescue lawns. However, recent seedings of tall fescue often can suffer severe outbreaks of the disease during humid weather in summer months. These should be monitored carefully and treated with fungicide if necessary. Once these swards make it through their first summer and are well-established, they often do not need fungicide treatment to maintain sward density, although fungicides do improve overall greenness during summer. Be aware that products containing chlorothalonil and iprodione are no longer labeled for use on home lawns. More information on brown patch management in Kentucky lawns can be found in the Extension publication, Brown Patch in Kentucky Lawns, available at http://www.ca.uky.edu/agc/pubs/id/id112/id112.htm .

Kentucky bluegrass. Although brown patch may be active in adapted varieties of Kentucky bluegrass, brown patch rarely develops aggressively enough on this host to justify fungicide treatment.

Perennial ryegrass and creeping bentgrass. High-maintenance perennial ryegrass and creeping bentgrass swards should have preventive fungicide applications on at this point, and putting greens should continue to receive preventive applications for brown patch control through August (and possibly later, depending on weather). There is a wide selection of fungicides with very good activity for brown patch control. See the Extension publication PPA-1, Chemical Control of Turfgrass Diseases (http://www.ca.uky.edu/agc/pubs/ppa/ppa1/ppa1.pdf) for options.

Figure 7. Symptoms of brown patch on tall fescue.

Figure 8. Symptoms of brown patch on tall fescue (and the onset of symptoms in white clover, upper left of image).

Figure 9. Brown patch on creeping bentgrass putting green.

DIAGNOSTIC LAB HIGHLIGHTS

By Julie Beale and Paul Bachi

Recent agronomic samples in the PDDL have included potassium and magnesium deficiencies and problems from low soil pH and compaction on corn; spring black stem on alfalfa; Stemphylium leaf spot on clover; Rhizoctonia stem/root rot on soybean; black shank, soreshin, Pythium root rot, target spot, phosphorus deficiency, flooding damage, tobacco streak virus and tomato spotted wilt virus on tobacco.

On fruit, vegetable and herb samples, we have diagnosed iron deficiency on blueberry; pollination problems and Septoria leaf spot on blackberry; black rot, crown gall and Pierce's disease on grape; fire blight, frogeye leaf spot and cedar-apple rust on apple; Rhizoctonia root/stem rot and southern blight on bean; anthracnose on cucumber; bacterial wilt on cantaloupe; Pythium cottony leak and Rhizoctonia stem rot on squash; leaf mold, Botrytis stem canker, bacterial spot, Pythium root rot and Fusarium wilt on tomato; and Alternaria leaf blight on ginseng.

On ornamentals and turf, we have seen Botrytis blight on lily; Phytophthora leaf blight on rhododendron; powdery mildew and Botrytis blight on rose; scab on crabapple; fire blight on Nanking cherry; black root rot on holly; anthracnose on ash and maple; Phyllosticta leaf spot on lilac and hydrangea; anthracnose on bentgrass; brown patch on fescue and ryegrass; and dollar spot on fescue.

INSECT TRAP COUNT
June 19-26

Location	Princeton, KY	Lexington, KY
Black cutworm	15	16
Armyworm	74	389
Corn earworm	95	19
European corn borer	0	0
Southwestern corn borer	5	0
Fall armyworm	0	0

Graphs of insect trap counts for the 2008 season 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://ces2.ca.uky.edu/fulton/InsectTraps

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