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WATCH FOR

Watch for Fall Armyworm and Corn Earworm in Late-Planted Soybean and Corn

By Doug Johnson

I am still receiving reports of problems with corn earworm and fall armyworm in mid-south soybean. While we have had a few reports of fall armyworm in corn, we have not seen widespread problems with these insects in either corn or soybean. However, we do have considerable acreages of late-planted corn and soybeans in Kentucky this year and these are still at risk for an outbreak of these pests.

Our UK-IPM pheromone-baited traps in Princeton have not reflected an abnormal increase in either of these pests. However, the corn earworm trap in Lexington has produced a decidedly large increase in captured moths this week (253 compared to 28 last week). Given the limited data set we have for Lexington, it is not possible to say whether or not this increase is important. In previous years we have certainly caught much larger numbers without a known outbreak. (See: http://www.uky.edu/Ag/IPMPrinceton/counts/cew/cewgraph.htm) However, this is the largest capture we have seen this year. Trap captures in Princeton have not produced unusually large numbers of moths thus far.

The significant damage caused by corn earworm and fall armyworm in Arkansas, and to some extent in Tennessee, could be caused in part by the difference in crop mix. Primarily, this would cotton in Tennessee and Arkansas. (Note: the corn earworm will be called the boll worm when speaking of cotton pests.) Both of these insects are often found as pests in cotton and the combination of crops could be producing larger than average populations in those states. Since we do not have any cotton to speak of in Kentucky, we may escape this problem. However, unlike corn earworm, fall armyworm is a migratory pest and this could produce additional risks for us.

Fall armyworm is in Kentucky every year but rarely produces economically important populations. The two key items that counter this situation are late-planted crops, especially corn, and a large influx of fall armyworm moths. Late-planted corn should be examined closely for fall armyworm. While it is relatively easily controlled in soybean, it is very difficult to control in corn once the worms move down into the whorl.

Corn and soybean should be monitored regularly for both of these pests. The greatest chance for economic infestations are in: late planting / maturing corn and soybean (fall armyworm); immature soybeans located near maturing corn (corn earworm); and soybeans that have an open canopy (corn earworm). The geographic areas most likely to have problems are the Purchase and Pennyrile counties that border Tennessee. Those with field crop interests in this geographic area may want to check the University of Tennessee IPM Newsletter: http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/ipmnewsletters.htm, as well as the Kentucky Pest News.

ALFALFA

Disease Risks in Late Summer Seeding of Alfalfa

By Paul Vincelli

This article is just a quick reminder that later-summer plantings of alfalfa offer several agronomic advantages over spring seedings, particularly when soil moisture is adequate. However, these seedings are also much more susceptible to the fungus that causes Sclerotinia crown and stem rot. This fungus is distinct from the Sclerotinia white mold disease that attacks many crops including tobacco. The Sclerotinia fungus that attacks alfalfa becomes active in mid to late autumn, and young alfalfa seedlings are often highly susceptible to the disease. The stand losses it can cause vary from minor to very severe (Figure 1).

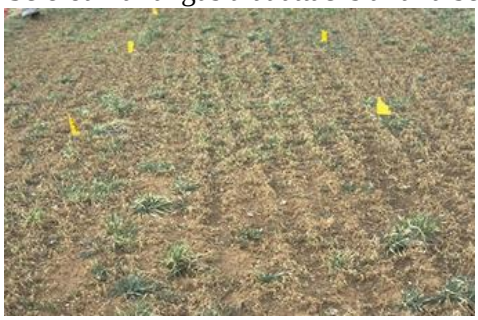

Figure 1. Complete stand loss from a severe outbreak of Sclerotinia crown and stem rot of alfalfa.

There are a few alfalfa varieties that show partial resistance to this disease. Complete resistance is not available in commercial varieties, but partial resistance can reduce stand loss caused by this disease. If considering a late-summer seeding, it is important to use a variety that has been shown to exhibit ***partial resistance under field conditions in Kentucky***. This is important because some of the worst disease pressure from Sclerotinia crown and stem rot in the nation is in Kentucky. Variety evaluations conducted in other states are useful, but if a variety hasn't been tested for resistance under Kentucky conditions, it hasn't been adequately tested for use in Kentucky.

The variety **Phoenix** has been shown to have a significant level of Sclerotinia resistance under Kentucky conditions, so that is certainly one to consider for late-summer plantings. **Cimarron SR** is also a good choice from the standpoint of Sclerotinia. Beyond that, I am unaware of other varieties that have held up against the severe disease pressure we sometimes get in Kentucky. Be aware that these varieties can still suffer stand loss from the disease, but they will suffer considerably less stand loss than the many susceptible varieties on the market.

CORN

Late-Season Observations on Corn Diseases

By Paul Vincelli

Last week I made a whirlwind tour inspecting corn diseases through western Kentucky as far west as the Mississippi River and here is a quick summary with comments.

1. **Southern rust** is prevalent in Kentucky, having been found in Fayette County and every western Kentucky field inspected. See most recent article in Kentucky Pest News, http://www.uky.edu/Ag/kpn/kpn_09/pn_090818.html. This disease can progress very rapidly on corn, since almost all corn

hybrids vary from moderately susceptible to highly susceptible. However, incidence and severity varied widely from field to field. In some fields, it was hard to find; in others, many plants showed leaf reddening and desiccation in the lower canopy and the upper canopy had a few pustules. It is always difficult to decide when to pull the trigger on spraying fungicide, if for no other reason than to protect stalk health. Most fields I inspected were at early dent which, in my opinion, would be too late to treat with fungicides. If there are any fields still in early dough, they might be candidates for treatment, but only if rust is present, easy to find, and producing abundant reddish sporulation and leaf desiccation in at least some spots in the field. Cool weather for the past 4-5 days undoubtedly slowed disease progress substantially, which is good news. The main point I would pass on to growers is to consider scouting all fields for stalk health as they mature, and schedule early harvests on those fields with weak stalks. In most cases, spending money on propane for grain drying makes more sense than a fungicide application.

2. **Northern leaf blight** was widespread but not generally at levels that will affect yields. There is also another look-alike out there.
3. **Diplodia leaf streak**.

Figure 2. Diplodia leaf streak of corn. Image by Carl Bradley, University of Illinois (http://ipm.illinois.edu/bulletin/print.php?id=1020).

This disease has lesions that look somewhat like Northern leaf blight, but the edges of the lesions are wavy like Stewart's wilt (Figure 2). Also, the lesions sometimes follow the secondary views as they do in Stewart's wilt. Very tiny black spots are visible within the lesion, which are fruiting bodies of the fungus. Lab diagnosis can confirm this disease. The fungus that causes Diplodia leaf streak (*Diplodia macrospora*) is distinct from the common one that causes Diplodia ear rot and stalk rot (*Diplodia maydis*), but *Diplodia macrospora* will also cause ear rot and stalk rot. *Diplodia macrospora* may be increasing in occurrence in Kentucky; seed companies will want to keep an eye on this.

TOBACCO

Update on Blue Mold

By Kenny Seebold

The blue mold epidemic that has hit parts of Kentucky has finally begun to subside. For the most part, our weather over the past week or so has not been as favorable for the development and spread of blue mold and a lot of our crop has been topped, making it generally less susceptible to the disease. As of August 24, the total counties in Kentucky in which we've confirmed blue mold is 18 with three unconfirmed. Three counties in southern Ohio have been affected as well. With clear days in the forecast, warmer temperatures, and a crop less susceptible to disease, we should be past the worst.

At this point in the season, most growers should not need to continue fungicide programs. As mentioned previously, weather in the short term should not be conducive to development and spread of blue mold; those with crops more than a week away from topping should monitor weather and be prepared to apply fungicides should blue mold-favorable conditions be forecasted or develop.

Please keep a close watch on later-set tobacco in your area, and alert us if you find or suspect blue mold. Check the Kentucky Blue Mold Warning System and on the Kentucky Tobacco Disease Information Page (www.uky.edu/Ag/KPN/kyblue/kyblue.htm) for updates.

WHEAT

Selecting Head Scab Resistant Wheat Varieties

By Dave Van Sanford[1] and Bill Bruening[2]
[1]Wheat breeder, Dept of Plant and Soil Sciences
[2]Variety Testing Specialist

Selection of wheat varieties is one of the most critical management decisions Kentucky wheat producers will make. The decision is complicated this fall by the fact that 2009 was a year in which Fusarium head blight (FHB) or head scab, was a problem for KY wheat growers. The real question is "how important is head scab resistance?" Clearly, in a bad head scab year, growers recognize that FHB resistance is very important. After a year or two with little or no head scab, however, farmers tend to underestimate the value of scab resistance. In any given year, how likely is it that head scab will be a serious disease in Kentucky? We know that with our corn-wheat-soybean rotation we will always have plenty of inoculum. Although we don't know if the moisture requirements of the disease will be met when the crop is flowering, it is reasonable to assume that we will always have a chance of seeing FHB in our Kentucky wheat crop. How serious is the disease? In addition to reducing yield and test weight, the thing that sets FHB apart is the toxin (DON or vomitoxin) that is produced by the fungus. Elevated DON levels can result in serious discounts or even rejection of loads at the elevator or mill. For this reason alone,we need to take head scab very seriously.

Resistant Varieties

The best known and most widely studied genetic resistance comes from Sumai 3, a Chinese spring wheat variety. Pioneer Brand 25R18 is an example of an older soft red winter wheat variety that has Sumai 3 resistance. This is Type II resistance, or resistance to spread of the fungus in the head which means that under heavy FHB pressure, there might be many heads that are infected, but the severity of infection on each head will be low. In addition to the Sumai 3 resistance source, there are numerous adapted SRW varieties with varying levels of scab resistance. Truman and Bess are two varieties released by the University of Missouri which have good scab resistance that is not derived from Sumari 3. Due to the heavy scab pressure throughout Kentucky in 2009, we had a good opportunity to rate scab symptoms on all 88 entries in the state variety trial (Table 1). Keep in mind that these ratings are based on chaff symptoms observed between flowering and physiological maturity. These symptoms often provide a good indication of kernel damage that is likely to occur, but the relationship is not perfect.

Combining Resistance with Fungicides

When we define FHB resistance, our targets include a low level of infection, plump kernels with no yield or test weight reduction and low DON levels in the grain. In a year like 2009 under heavy scab pressure, it takes a combination of good genetic resistance and a well-timed fungicide application to hit these targets. In Table 2 we present two years of data from our inoculated scab nursery at Princeton, KY where varieties and breeding lines were evaluated with and without a fungicide application. Scab is a difficult disease for farmers, millers and researchers. It takes several years of testing and retesting to really get to know the scab profile of a variety. For this reason, the data in Tables 1 and 2 should be studied very carefully before deciding which wheat varieties to plant this fall. It is also important to apply the other risk management strategies that we have discussed in previous variety selection articles. In particular it is important to remember that wheat growers can minimize their risks by planting several varieties with good yield and test weight potential that complement one another for disease resistance and maturity. Choosing varieties of differing maturities makes sense for a number of reasons, but it is especially important when considering head scab. In those years when head scab is problematic, if the early flowering varieties are hit hard, then the later flowering types often face less scab pressure, and vice versa. A final suggestion is to avoid planting varieties that appear to be very susceptible to head scab. If a variety completely lacks genetic resistance, a fungicide application will not be sufficient to prevent yield loss and elevated toxin levels during an epidemic scab year.

Variety	Head Scab
AgriPro Branson	6.6
AgriPro COKER 9511	3.9
AgriPro COKER Oakes	5.5
AgriPro W1104	4.5
AgriPro W1377	5.4
AgriPro W1566	6.1
ARMOR 360Z	6.4
ARMOR ARX 6202	6.3
ARMOR ARX 840	6.8
ARMOR GOLD	7.0
ARMOR RENEGADE	5.0
Beck 113	5.3
Beck 122	5.7
Bess	4.0
Clark	5.7
Cumberland	6.0
Delta Grow 1600	5.8
Delta Grow 4500	6.2
Delta Grow 5200	5.8
Delta King 9108	5.9
Delta King 9577	7.1
Dixie 907	5.9
Dixie 940	5.9
Dixie 989	6.4
Dyna-Gro 9911	5.3
Dyna-Gro 9922	5.3
Dyna-Gro Shirley	6.0
Dyna-Gro V9710	6.5
Dyna-Gro V9723	5.6
Dyna-Gro V9812	6.6
EXCEL 163	6.9
EXCEL 234	4.2
EXCEL 341	5.6
Exsegen Anna	6.4
Exsegen Candace	6.2
Exsegen Dinah	4.8
Exsegen Lois	5.6
Exsegen Lydia	6.5
Jamestown	6.3
KAS 5003	6.0
KAS 5058	4.9
KAS 7700	5.9
KY 00C-2059-24	5.7
KY 00C-2109-01	7.3
KY 00C-2175-10	6.0
KY 00C-2567-01	6.5
KY 00C-2697-04	5.9
KY 97C-0321-02-01	6.9
KY 97C-0508-01-01A-1	5.6
KY 97C-0519-04-07	6.1
KY 97C-0540-01-03	5.7
KY 97C-0574-01-04	5.4
Merl	7.1
Milton	5.7
Pembroke	5.1
Pioneer variety 25R63	5.0
Pioneer variety 25R78	7.1
Pioneer variety 26R15	5.5
Pioneer variety 26R22	6.4
Pioneer variety XW07B	7.1
Pioneer variety XW07X	3.5
PROGENY 117	5.5
PROGENY 119	5.5
PROGENY 130	5.3
PROGENY 136	6.8
PROGENY 166	6.3
PROGENY 185	5.9
Red Ruby	6.2
SC 1298	5.8
SC 1318	6.7
SC 1325	5.6
SC 1328B	5.4
SC 1339	7.0
SC 1348	6.0
SS 520	8.0
SS 5205	6.4
SS 548	7.0
SS 8302	4.9
SS 8309	4.4
SS 8404	5.9
SS 8641	7.6
SS MPV-57	6.0
Steyer Geary	6.5
Steyer Jordan	5.4
Steyer Nofziger	6.2
Truman	2.6
USG 3350	6.0
VA 04W-90	5.7
Average	5.9

Table 1. Scab Ratings (1=excellent; 9=poor) Based on Chaff Symptoms; Each Value Represents the Average of Ratings at 6 Variety Trial Locations in Kentucky, 2009

	Fungicide Treated			Untreated		
Entry	Yield (bu/a)	Test Wt (lb/bu)	Scabby Seed (%)	Yield (bu/a)	Test Wt (lb/bu)	Scabby Seed (%)
AgriPro Branson	77.2	51.3	5.4	60.3	48.1	9.6
AgriPro COKER 9511	75.2	57.9	1.9	67.9	57.0	2.8
AgriPro W1377	69.7	55.8	4.5	56.1	52.2	7.5
Bess	78.8	56.9	2.4	61.9	54.6	5.9
Clark	62.5	54.2	2.7	53.5	51.0	6.7
Cumberland	74.2	52.0	5.6	56.9	47.8	14.9
Delta Grow 1600	70.3	51.5	7.5	50.4	48.5	9.9
Delta King 9577	61.8	49.6	7.2	45.7	45.7	16.6
KY97C-0508-01-01A-1	76.6	53.5	4.2	53.3	49.7	10.7
KY97C-0540-01-03	59.9	51.9	4.8	53.9	50.4	13.8
KY97C-0574-01-04	67.0	53.2	5.2	41.1	47.8	14.9
MO 011126	63.8	54.5	3.8	51.1	50.8	7.7
Pembroke	77.2	54.3	4.1	53.6	50.9	5.6
Pioneer variety 26R15	80.2	51.6	7.0	69.0	49.9	8.3
Pioneer variety 26R22	62.2	50.0	4.8	45.1	44.8	17.0
SS 520	63.0	52.1	5.2	50.4	47.3	12.7
SS 8302	70.1	54.3	2.9	63.8	51.9	8.0
SS 8309	77.2	53.4	3.5	58.5	49.6	8.5
SS 8404	67.0	54.0	3.8	54.0	49.6	11.5
SS MPV-57	65.2	51.6	5.7	57.0	47.2	14.5
Truman	82.5	56.0	3.0	72.9	54.5	3.8
Average	70.5	53.3	4.5	56.0	50.0	10.0

Table 2. Two Year Comparison of Wheat Varieties and Breeding Lines Treated VS Untreated with Prosaro Fungicide in Princeton Inoculated Scab Nursery, 2008-09. (DON data not available at press time)

VEGETABLES

Downy Mildew Found on Cucurbits in Kentucky
By Kenny Seebold

During the week of August 17, downy mildew was confirmed in several locations in Kentucky. In collaboration with North Carolina State University, we maintain sentinel plots in Breathitt, Fayette, and McLean Counties. Downy mildew was confirmed in each of these sets of sentinel plots during this time frame, and in two gardens in western Kentucky. Our sentinel plots are planted with several cucurbit types to help determine when the disease appears, and which strains of the downy mildew pathogen, *Pseudoperonospora cubensis*, are moving in. There are five known pathotypes, all of which go to cucumber and netted melons. Pumpkins, squash, and watermelons differ in sensitivity to the different pathotypes. Cucumber only was affected in western Kentucky and in Fayette County, but the disease was found on cucumber and butternut squash in Breathitt County. With two pathotypes active in Kentucky, it is inevitable at this point that late-season cucurbits like pumpkins and winter squash will be affected by downy mildew. The extent will be determined by the weather; in general, frequent rains and moderate temperatures favor this disease. Timely action now can help stave off severe losses to downy mildew later. Downy mildew is an explosive disease. Entire plantings can be lost to this disease within a week after symptoms first appear if fungicides are not applied.

We've had favorable weather over the past week, and likely movement of inoculum into western, central, and eastern Kentucky from sources in Tennessee and Georgia. Fortunately, the forecast for the next 5 days indicates less-than-favorable conditions for downy mildew. However, given the presence of the disease across a large swath of Kentucky, producers should be applying a protectant fungicide (chlorothalonil or mancozeb) to cucurbits for downy mildew. We know that, sooner or later, downy mildew (and other diseases) are likely to strike – we just don't know when with any certainty. The beauty of being on a preventive program with materials like chlorothalonil or mancozeb is that a baseline level of protection is in place to help against downy mildew and other diseases, such as powdery mildew (which is very active as well). Compared to untreated plantings, those being treated preventively suffer much less damage after initial exposures to downy mildew, giving the producer time to add downy mildew-specific fungicides and still have a chance of getting things under control.

Refer to Kentucky Pest News No. 1207 http://www.uky.edu/Ag/kpn/kpn_09/pn_090804.html) to see a recap of control options. You can also check ID-36 for rates and a full list of chemicals available to commercial growers. I have summarized a few suggestions to control both powdery and downy mildew for organic growers and homeowners as well:

Home gardeners: Use good management practices, including adequate fertility and irrigation management (water early if irrigating overhead). In the case of powdery mildew, removal of heavily affected foliage (assuming the entire plant is not consumed) can remove a substantial amount of inoculum. Homeowners can use over-the-counter vegetable fungicides that contain chlorothalonil, mancozeb or maneb (maneb only on pumpkins and winter squashes), or fixed copper. Sulfur products are also very effective against powdery mildew, and downy mildew to a lesser extent. Just be mindful that sulfur can burn foliage if the air temperatures exceed 90 F. Another, easy-to-use remedy is baking soda. Add 1-3 tsp. per gallon of water for best results. With all fungicides, regular applications are critical. During favorable weather, spray every 5-7 days and during drier and hot weather, extend the schedule to every 7-10 days. Coverage of upper and lower leaf surfaces is important to achieve good control, as is starting the spray program before disease is seen, or when symptoms first appear. The latter will serve for powdery mildew; however, for downy mildew, preventive sprays are a must. Controlling downy mildew will require some type of fungicidal spray; products that will provide some control include chlorothalonil, mancozeb or maneb, and fixed copper. Sulfur is somewhat suppressive as well.

Organic Producers: Follow the guidelines as listed above for good management practices. OMRI-approved fungicides are limited to some sulfurs, some fixed coppers, and potassium

bicarbonates. Check product labels to verify that they are approved for organic production. Powdery mildew will be controlled with sulfur and suppressed by fixed copper if the materials are applied preventively and in a timely fashion. Potassium bicarbonates are also effective against powdery mildew, but have no residual activity and must be applied regularly. Against downy mildew, fixed copper will be the best bet. There are also biopesticides and biorationals such as Serenade (*Bacillus subtilis*) and neem oil that show some suppressive activity. With all products available to organic producers, as with home gardeners, good coverage and timeliness are critical to have any hope of controlling either powdery or downy mildew effectively.

Please keep a close watch on this situation, and let us know if you find downy mildew on cucurbits in your area.

SHADE TREES & ORNAMENTALS

Diplodia Tip Blight Is Causing Dead Shoots on Pines

By John Hartman

Austrian and Mugo pines growing in Kentucky landscapes are showing the effects of infections by the Diplodia tip blight fungus, *Diplodia pinea*. The disease is noticeable in landscape pines now and, in recent weeks, diseased specimens have been appearing in the U.K. Plant Disease Diagnostic Laboratory. Austrian, Mugo, and Scots pines are often planted in Kentucky landscapes and plantations because of their dense, green foliage and symmetrical shape. When healthy, a grouping of Austrian pines can form an attractive year-round screen. Diplodia tip blight, also known as pine tip blight, or Sphaeropsis tip blight, is a devastating disease worldwide, but especially here in Kentucky on exotic two-needle pines such as Austrian pine (*Pinus nigra*), Mugo pine (*P. mugo*) and Scots pine (*P. sylvestris*) in landscape settings and Christmas tree plantations.

Tip blight symptoms on Austrian pines first appear on the newly elongating candles (shoots) in late April to early May. As its name indicates, the shoot tips are killed very quickly and by late May, the diseased tips are noticeably necrotic and stunted (Figure 3). Needles, even before they are out of the needle sheaths, start to turn a straw brown color and droplets of resin can be seen exuding from these dead needles. Some of the diseased needles may begin to break out of their sheaths, but often their growth is halted resulting in stunted, dead needles.

Figure 3. Multiple stunted and necrotic Austrian pine shoots infected with Diplodia.

Symptoms on Austrian pines are most characterized as progressing from the shoot tip inward. Over a few days to a week all of the needles on infected candles will turn brown and die and shoots will appear brown through late summer (Figure 4). The candle as a whole will be stunted, necrotic, and eventually brittle from resin exudation. The necrotic shoot and needles can sometimes give these dead tips a gray color.

Figure 4. Brown shoot tips killed by Diplodia as they would appear in summer.

As the fungus progresses from the tip back towards the trunk, older needles will turn straw color and die. This generally happens later in the year or the following year. Progression of the fungus can lead to branch dieback and eventually death of the tree. These

Figure 5. Dead lower branches of Austrian pine infected by Diplodia tip blight.

Figure 6. Diplodia tip blight has nearly killed this landscape Austrian pine.

symptoms typically start in lower branches of the tree (Figure 5) and progress toward higher branches year after year until the tree dies or is so damaged it needs to be removed (Figure 6). On landscape Austrian pines in Kentucky, disease symptoms generally begin to appear after trees reach cone-bearing age, typically 12-13 years old.

Close examination of infected shoots will often reveal the presence of tiny black dots (pycnidia) on the base of infected needles (Figure 7). Pycnidia are black fungal structures embedded in and protruding through the host tissue, and in *D. pinea* are only produced on dead host tissue, such as cone scales (Figure 8) and dead needles. Pycnidia are tiny but can be seen with the naked eye, resembling black pepper sprinkled on the dead cones and needles. It is not uncommon to see dead cones and needles from infected trees covered with pycnidia. The pycnidia release spores in warm, rainy spring and summer weather which we have had in abundance this year. These spores are dispersed by rain splash and windblown rain. Pines are most susceptible to *D. pinea* infection in spring when shoots are just elongating and not yet lignified. As the fungus colonizes the host, it kills the host cells resulting in necrotic symptoms and sometimes resin production. An additional field symptom, canker disease, also is often accompanied by excess resin (Figure 9). After the fungus has killed the host tissue, it can produce pycnidia which can overwinter and be a source of inoculum the following spring.

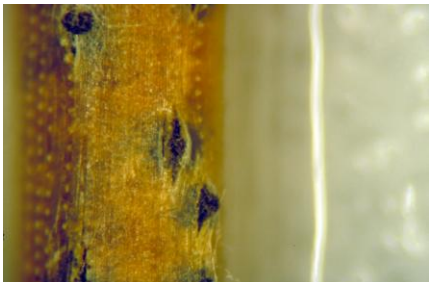

Figure 7. Close-up of Austrian pine needle with pycnidia.

Figure 8. Austrian pine cone scale with Diplodia pycnidia.

Figure 9. Diplodia-caused canker and excess resin production on Austrian pine branch.

Annual or Dog-Day Cicadas

By Lee Townsend

Figure 10. Annual cicada.

Annual or dog-day cicadas are active every year in late summer. They are a relief after dealing with the recent mass emergence of periodical cicadas. Annuals are much larger and marked with green rather that the orange of the periodical species. As with periodical cicadas, the males rest high in trees and sing during the day. There are far fewer of them so the sound is easier on the ear. There are several species and the life cycles include several years in the ground as nymphs feeding on sap from tree roots but their emergence is not synchronized like that of the periodical, some emerge every year.

Fall Webworm Tents
By Lee Townsend

Figure 11. Fall webworm tip at end of branch.

The light gray silk tents of fall webworm caterpillars, recently hatched from masses of 400 or so eggs, are visible at the ends of tree branches. These caterpillars are covered with long white to yellow-tan hairs. They feed on over 100 species of deciduous trees, including black cherry, walnut, hickory and mulberry.

Fall webworm larvae incorporate the leaves they are eating into their tent. The tent is expanded to include more leaves as needed. They can be numerous enough to completely defoliate trees but this is not common. Usually, little real damage is done to trees but the ugly webs detract from their aesthetic value. Accessible nests can be pruned out and discarded. But insecticides are effective on small larvae if chemical control is necessary and the sprayer can reach foliage around the nest. There are two generations in Kentucky each year- from mid-June to early July and again in August.

LAWN & TURF

Velvet Ants
By Lee Townsend

Figure 12. Velvet ant.

Velvet ants belong to a family of "furry" wasps that resemble ants. There are several species in Kentucky; the most striking is a large, bright red insect with black legs and a black band across the abdomen (top picture). Several species are orange-brown and black. These distinctive warning patterns are backed up by long stingers with potent venoms. The red and black species has earned the nickname "cowkiller".

Figure 13. Velvet ant, too.

Velvet ants can be found wandering across turf areas during late summer and early fall. These solitary wasps are not aggressive but will defend themselves if handled or stepped on accidentally. Usually, this happens only once. These free-living wasps wander in search of bumble bee nests or the burrows of other ground-dwelling insects that are hosts for their larvae. There is no concentration or nest to try to eliminate as with hornets or yellowjackets. The best course is to be aware of them to train children playing in areas where the wasps are present to leave them alone.

DIAGNOSTIC LAB HIGHLIGHTS

By Julie Beale and Paul Bachi

Recent agronomic samples in the PDDL have included frogeye leaf spot, downy mildew, Cercospora leaf spot and sudden death syndrome on soybean; black shank, blue mold, target spot, brown spot, frogeye, soreshin and frenching on tobacco.

On fruit and vegetable samples, we have diagnosed black rot and Pierce's disease on grape; anthracnose on blackberry; cedar-apple rust, frogeye and powdery mildew on apple; brown rot on peach; powdery mildew on cherry; Stewart's wilt on sweet corn; anthracnose on cucumber and melon; bacterial wilt on melon; southern blight on peanut; early blight, Septoria leaf spot, leaf mold, late blight, target spot and blossom end rot on tomato.

On ornamentals and turf, we have seen rust on aster; bacterial spot on chrysanthemum; aster yellows on coneflower; Cladosporium leaf blotch on peony; Rhizoctonia and Fusarium root/stem rots on petunia; lacebug injury on azalea; bacterial leaf scorch on lilac; leaf hopper injury, tar spot and

bacterial leaf scorch on maple; Actinopelte leaf spot, jumping oak gall, anthracnose and bacterial leaf scorch on oak; tip blight on pine; Cytospora canker on spruce; dollar spot, summer patch and take-all patch on bentgrass; anthracnose, Drechslera leaf spot and rust on perennial ryegrass; and large patch on zoysiagrass.

INSECT TRAP COUNTS
August 14-21

By Patricia Lucas

Location	Princeton, KY	Lexington, KY
Black cutworm	46	5
Armyworm	93	132
Corn earworm	39	253
European corn borer	0	0
Southwestern corn borer	3	1
Fall armyworm	20	1

Graphs of insect trap counts for the 2009 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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