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FORAGE CROPS

SCLEROTINIA RISK IN FALL-SEEDED ALFALFA
by Paul Vincelli

Most of the region east of I-65 as well as the Purchase area have received 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 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 not a problem for some 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 sow experimental alfalfa selections in a site with high Sclerotinia pressure. After the epidemic has run it's 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. This project is on a temporary hold because the current hiring freeze prevents the filling of a key technical position, but the project should eventually resume once that position is filled.

INSECTS AND SUCH IN HAY
By Lee Townsend

Blister beetles are at the top of the list when it comes to concerns about insects found in alfalfa hay. Fortunately, this is very rare in Kentucky. Information on blister beetle biology and management is available at www.uky.edu/Agriculture/Entomology/entfacts/fldcrops/ef102.htm

Other insects and their relatives can be present. A sample of alfalfa hay purchased from outside the state was sent to the Insect ID lab late last week because it contained many small, brown beetles, identified as foreign grain beetles. Here is some information on them and other potential hay-dwellers:

1) The sample contained many foreign grain beetles which are common from July through early September - usually from new or recently renovated homes or buildings. They are fungus beetles that feed on molds that grow in humid areas, such as wall voids. Moisture or high humidity in hay or storage areas supports mold growth that can result in large numbers of these insects.

There is one generation a year with adults active in late summer. Foreign grain beetles are strong fliers and are attracted to lights. The adults will leave the hay and disperse. They are an indication that hay condition may be deteriorating but are not known to pose any threat to animals. More information on them can be found at: www.uky.edu/Agriculture/Entomology/entfacts/struct/ef610.htm

2) Mealworms (adults called darkling beetles) also can occur in hay. The elongate, hard-bodied larvae (1 to 1.25 inches long when full grown) look like wireworms; adults are dark beetles. These insects feed on broken seeds and other vegetable matter in cured hay, as well as animal feed. They pose no known threat to livestock.

3) The final entry on this list is the straw itch mite. These tiny creatures are about 6 to 9/1,000 inch long. The odds of seeing them are very low but the memory of an encounter can last a lifetime. Itch mite bites are painless at the time but become noticeable in a few hours. They can cause a dermatitis that includes red welts with a small white pustule in the center and itching that can last for a week or more. Reactions to severe infestations can include vomiting and joint pain, and scratching the bites can mean a nasty infection.

These tiny mites can live in pasture grasses where they feed as external parasites on the myriad of small creatures that live there. Their numbers are greatest in years where weather conditions favor a wide range of insects. That means more food for the mites and more offspring are produced. Itch mites also can live in some dried foodstuffs - especially cereals. This has been one of those years.

Human encounters result from handling hay or just spending time in tall unmowed grassy areas. People handling square bale hay can unknowingly pick get bitten by the mites present in curing hay. Also people picking up a few bales to mulch gardens or yards, make decorative Halloween displays, etc. can find themselves itch mite victims. There have been instances of equine dermatitis when horses were given mite-infested hay.

There is no way to evaluate bales for the presence or absence of mites and no good control alternatives for mites in infested bales. Humans can gain some protection by application of a repellent, such as deet, and a thorough washing with soap and water immediately after possible exposure.

FRUIT CROPS

MATING DISRUPTION IN KENTUCKY ORCHARDS
by Ric Bessin

A few Kentucky fruit growers have successfully used mating disruption for insect control in their orchards. This year, growers have used this technique to control codling moth in some orchards and Oriental fruit moth in others. Several years ago, the only way to apply mating disruption was to hang several hundred dispensers per acre, a very time consuming process. Growers now have microencapsulated formulations that can be sprayed over the orchard like other pesticides.

The decision to use mating disruption for codling moth in one orchard was prompted by the poor control by standard insecticide sprays. With Oriental fruit moth, there have been resistance issues and limited insecticide availability to manage the 7 or more generations that appear each summer.

Mating disruption uses the chemicals that the female moths release to attract the male moths at night. Each species of moth has a different blend of chemicals that it uses to attract its mate. These chemicals are called pheromones. Growers apply these chemicals over large blocks of trees before the moths have had a chance to mate. The air in the orchard is filled with the scent the female moth releases so that the male moths cannot find the females. The females cannot mate and cannot lay fertilized eggs. Growers can measure the effectiveness of mating disruption by hanging pheromone traps in the orchard. If the traps capture any of the target moths, then the mating disruption is not working and the pheromone needs to be reapplied.

Mating disruption is not effective for small orchards or individual trees. It requires that the sprayed area be at least five acres, preferably larger. The sprays must be applied prior to mating, this is earlier than when we would apply insecticides to protect the fruit. This technique does not work if there is a source of mated females outside of the orchard that can migrate in, such as an abandoned adjacent orchard. The microencapsulated formulation must be reapplied periodically as it lasts about two weeks depending on rainfall.

Mating disruption differs considerably from insecticides in that the pest insects are not killed. There is no toxin that is applied. Growers using this technique need to monitor for other pests not controlled by the mating disruption. Other sprays may be needed for those pests.

SOYBEANS

JAPANESE BEETLE IN SOYBEANS — MAJOR DECLINE IN POPULATION!
by Doug Johnson, Extension Entomologist

I have received a number of calls about treating soybeans for defoliation due to Japanese beetle feeding. Fortunately, most of the situations I have seen do not warrant control. However, a number of fields probably should have been sprayed but were not. So, do we do it now? It is probably too late for insecticidal control of Japanese beetle to make any difference.

First, in the last two weeks, Japanese beetle populations have taken a marked decrease in size. Although the beetle may be found for several more weeks, their populations are definitely on the decline. This is an annual population, so when it is gone, these insects are not going to reappear. However, remember that they are not going to disappear all at once, and the timing will vary by location. I doubt very much if one will see any further populations of economic importance this year.

Second, several fields I scouted did have sufficient defoliation to warrant application. However, that application should have been made a week or two ago. Yes, the beetles were still present, and the defoliation warranted control, but the loss had already occurred. Insecticides are very good at what they do, but they will not put foliage (yield potential) back on the plants.

It appears that, in the major soybean production area, producers should be evaluating soybeans for Japanese beetle damage from mid-June to mid-July. Additionally, it appears to me that fields that are entering the R1 to R4 stages during this period are most at risk. When you do your scouting, remember that this insect has a very "clumped" distribution and loves field edges.

SHADE TREES & ORNAMENTALS

MIMOSA TREES SHOWING SYMPTOMS OF FUSARIUM WILT
by John Hartman

Mimosa trees in bloom have graced Kentucky landscapes and roadsides for the past several weeks. Mimosa (*Albizia julibrissin*), also called silk-tree, is planted for its early to mid summer pink flowers and semi-tropical appearance. The tree suffers dieback when winter temperatures drop below -5 F for an extended period and they die practically to the ground when temperatures are much colder. In the winter of 1994, temperatures in Lexington reached -20 F, so many of the Mimosa trees seen now are 1994 or later seedlings or re-sprouted trees with about 10 years of growth on them, enough to be very visible in the landscape during bloom.

This summer, wilt, leaf drop, and dieback of mimosa trees is being seen on trees in the field and via photographs submitted to our College of Agriculture internal digital consulting system. Most of the wilt symptoms appear to be due to Fusarium wilt disease caused by the fungus *Fusarium oxysporum* f.sp. *perniciosum*. This disease can be very destructive to mimosa plantings.

Symptoms. On diseased trees, leaves wilt and turn yellow on individual branches during mid-summer. Leaves may turn light green, yellow or brown and drop or they may wilt and cling to the branch for a time. The disease progresses branch-by-branch over a period of several months and the whole tree dies, usually within a year or so. Brown streaks can be found by cutting away the bark and examining the outer ring of sapwood. These streaks are most prominent in lower limb or trunk tissues on the side of the tree that is wilting first. In lenticels on the surface limbs and branches of dying trees, the fungus produces spore-producing structures called sporodochia, visible with a hand lens. These spores can be the means of spread of the disease. Infections begin in the roots from fungal chlamydospores persistent in the soil.

Disease Management. This disease is difficult to control and diseased trees cannot be cured. Dead and dying trees should be removed and destroyed. Three wilt resistant cultivars, 'Charlotte,' 'Tryon,' and 'Union' are available, but resistance for the first two has already been overcome by the fungus in some locations. Susceptible mimosa trees can be grown, but they should not be grown in a site where a mimosa has already died from Fusarium wilt. The easily transplantable mimosa seedlings that persistently appear in flower beds and other growing areas in the landscape should be considered disease susceptible. This disease is specific to *Albizia* species and possibly to *Ailanthus* species, so other species may be planted into sites formerly occupied by mimosa.

ASIAN AMBROSIA BEETLE—NEW TREE AND WOODY SHRUB PEST FOUND
by Lee Townsend

The Asian ambrosia beetle (AAB), *Xylosandrus crassiusculus*, has been identified from tree samples taken this summer in Anderson (dogwood) and Woodford (paw paw) counties. The AAB was first detected in the U.S. in 1974 in infested peach trees in Charleston, SC. States in which it is now found include Alabama, Mississippi, North Carolina, Georgia, Florida, Louisiana, Ohio, Tennessee, Virginia, Missouri, Oklahoma, and east Texas. Much of the spread is through the movement of infested nursery stock. This tiny (1/16 inch long) beetle with a stout reddish brown body is a pest of woody ornamentals, fruit, and nut trees. The even smaller, flightless males have a more hunch-backed appearance.

Trees that are attacked do not initially show many symptoms. The insects are so tiny that their entry holes into a host's trunk are inconspicuous. Infestations can be identified by toothpick-like strands of sawdust that protrude up to 1.5 inches from the host plant. Females produce the strands as they excavate galleries into twigs, branches or small trunks. These fragile strands are easily broken off by wind or rain leaving only pencil-lead sized holes in the bark.

Asian ambrosia beetles can attack many hosts and can cause significant damage in nursery and orchard settings. Attacks occur on stressed, transplanted, freshly cut hosts, and even on apparently healthy trees. High humidity is required for successful reproduction. In Ohio, pecan, walnut, American elm, hickory, fruit trees and some maples are preferred hosts. Persimmon and sweetgum are attacked in southern Ohio. The trunk

diameter of acceptable hosts can range from approximately 0.8 inch to 11.8 inches. The insects do not attack a tree randomly. More than 80% of the borer holes were made at the sites of lenticels, areas on the tree's surface where the cells are loosely packed and presumably easier to penetrate

AAB adults become active about the first of March or earlier in North Carolina with peak activity in early April. Females enter trees and bore into the plant to lay eggs in the tunnels that they excavate. The legless grub-like larvae and pupae live in the tunnels and emerge as adults after about 55 days. There may be two generations a year because small numbers of adults can be found during summer and into the fall.

Ambrosia beetles are associated with a symbiotic fungus that females carry to the tree. Both adults and larvae feed on the growing fungus, not on the wood. The tunneling of AAB in trees generally is not as serious as the effect of the fungus on the plant. The fungus usually darkly stains the wood of ambrosia-beetle infested wood and may be largely responsible for plant death.

Prevention is the best cure. Keep trees healthy and avoid any unnecessary tree stress (drought, injury, nutrition, etc.). Larger spacing in nurseries may help slow the spread from plant to plant. Plants that survive attack often can recover with age.

Heavily infested plants or plant parts should be removed and destroyed. Once a tree is attacked, it becomes more attractive to other AAB females. This can be used to advantage by leaving these trees in place to serve as “trap trees”. Waiting 3 to4 weeks after trees are attacked to remove them can concentrate and destroy the greatest number of beetles. If infested trees are removed and burned before the 55 day life cycle is completed, they should not be a source of beetles.

Neither AAB nor the fungus can be killed within the plant by insecticides or fungicides. Protective sprays on trunks may be attempted on susceptible nearby plants. Products labeled for shade trees and ornamentals which contain the active ingredients permethrin or cyfluthrin are the best choices. Applications at regular intervals may be needed. Trees become less attractive to beetles once leaves are fully expanded, so spray intervals can be extended or other pesticides may be used then. There is no need to spray once flight stops, nor are sprays recommended in the fall. These insects do not consume plant material as they create their galleries, so the systemic insecticide imidicloprid (Merit) is not effective.

Information in this article came from a variety of sources, including from ENT/ort 111 The Asian Ambrosia Beetle NC State.

FALL WEBWORM TENTS APPEARING
by Lee Townsend

The tents of fall webworm caterpillars, recently hatched from masses of 400 or so eggs laid in July, are beginning to appear at the ends of tree branches. FWW feeds on over 85 species of deciduous trees – but black cherry, walnut, hickory and mulberry are favorites. Occasionally, 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 aesthetic value of the tree. Accessible nests can be pruned out. Bt insecticides are effective on small larvae if chemical control is necessary and the sprayer can reach foliage around the nest.

PESTS OF HUMANS

BE READY FOR SEED TICKS
By Lee Townsend

Lone star tick larvae and nymphs (immature stages) are very abundant now. Earlier in the summer, female ticks deposited masses of several thousand eggs on the ground. Anyone unfortunate enough to stand in or to pass through such a site can easily pick up dozens (and dozens) of larvae. A sample that arrived this week contained 104 pin- head sized ticks picked off of a 4-year old.

These tiny, 6 or 8-legged creatures, also called "seed ticks, sometimes turkey mites", are most active between July and October. During this time, the larvae climb low vegetation and wait with outstretched front legs to latch on to passing animals or humans. Once "on board", they crawl around to find a suitable place to attach and feed. The painful feeding site can be irritating for days after the tick has detached or been removed.

Hikers, hunters, and persons working outdoors should be aware that seed ticks apparently are much more abundant than normal this year. Use repellents and check regularly for ticks. See ENT- 35 for more information.

Clothing repellents that contain permethrin (eg Permanone) can greatly reduce, but not necessarily eliminate encounters with ticks. These products are for clothing not application to the skin. See www.uky.edu/Agriculture/Entomology/entfacts/struct/ef618.htm Ticks and Disease for more information.

DIAGNOSTIC LAB HIGHLIGHTS
by Julie Beale and Paul Bachi

Recent samples in the Diagnostic lab have included brown spot (Septoria), downy mildew, and Fusarium root rot on soybean; stinkbug and herbicide injury on corn; black shank, soreshin, blue mold, frogeye leaf spot, target spot, tomato spotted wilt virus, potash and temporary phosphorus deficiency and weather fleck on tobacco.

On fruits and vegetables, we have diagnosed Botryosphaeria canker on blackberry; iron deficiency and manganese toxicity on blueberry; anthracnose (Colletotrichum) crown rot on strawberry; Phytophthora root rot on cherry; scab and brown rot on peach; anthracnose on bean; gummy stem blight on watermelon; Alternaria leaf blight on cantaloupe and pumpkin; Rhizoctonia and Pythium root rots on zucchini; smut on sweet corn; bacterial canker, bacterial speck, Septoria leaf spot and Fusarium wilt on tomato.

On ornamentals and turf, we have seen southern blight on hosta; Phytophthora aerial blight and Pythium root rot on vinca; Coniothyrium canker and Phytophthora root rot on rose; Cercospora leaf spot on maple; Actinopelte leaf spot and iron deficiency on oak; Phyllosticta leaf spot on pawpaw; powdery mildew on

crepe myrtle; and Pythium root dysfunction on bentgrass.

INSECT TRAP COUNTS

UKREC, Princeton, KY – July 16-23, 2004

True armyworm 10
Corn earworm 35
European corn borer 1
Southwestern corn borer 49
Fall armyworm 1

To view previous trap counts for Fulton County, Kentucky go to - http://ces.ca.uky.edu/fulton/anr/ and click on "Insect Trap Counts".

For information on trap counts in southern Illinois visit the Hines Report at - http://www.ipm.uiuc.edu/pubs/hines_report/index.html. The Hines Report is posted weekly by Ron Hines, Senior Research Specialist, at the University of Illinois Dixon Springs Agricultural Center.

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