

# KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE

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**Number 966**

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## ANNOUNCEMENT

The 32nd Annual UK Pest Control Short Course will be held September 24-26, 2002. Call or e-mail Darlene Thorpe for more information, 859-257-5955 or [dthorpe@uky.edu](mailto:dthorpe@uky.edu).

## TOBACCO

### LEAF SPOTTING DISEASES “TRASHING” TOBACCO CROPS

by William Nesmith

A number of leaf spotting/blighting diseases are active in many tobacco crops about the state, especially in crops that have been allowed to become over-mature. Brown spot, frog-eye, and ragged leaf spot are the major diseases involved. We see these diseases every year, but they are causing more damage than normal due to stress-related events in the crop. As the leaf senesces (from age or other physiological stresses) it becomes increasingly susceptible to these fungal leaf spots. These diseases usually work from the bottom of the plant toward the top, except in cases where the top foliage has been damaged by sucker control chemicals.

Timely harvest is the most important action that can be taken to reduce losses from these diseases for this season, as no fungicides are labeled. Fields with significant leaf spot disease activity should not be left standing long after the sucker-control preharvest interval has been met. Fields should be evaluated at least weekly for the progress of leaf

spotting diseases, because under the current stress and weather events, a crop can be “trashed” within a week or so.

## CORN

### WATCH FOR EAR ROTS

by Paul Vincelli

Some corn fields are showing ear and kernel rot--moldy growth on ears and kernels. Helpful distinguishing features for the ear rots are:

**Fusarium kernel and ear rot.** Whitish, pink to lavender mold growing on individual kernels or small clusters of kernels. May occasionally be heavy at ear tip, particularly if kernels there are damaged.

**Diplodia ear rot.** White mold growth between kernels, usually progressing from base of ear. May result in contamination with vomitoxin (=DON, deoxynivalenol) and zearalenone, although it has probably been too warm this season for widespread problems with this ear rot.

**Gibberella ear rot.** Pink to reddish mold growth, often progressing from ear tip.

**Penicillium kernel rot.** Green or blue-green powdery mold on and between kernels, often at the ear tip.

**Aspergillus kernel and ear rot.** Greenish-yellow mold on

and between kernels. May result in contamination with aflatoxins.

It is always advisable to scout fields for developing ear rot problems. Those that have significant levels of ear rot should be scheduled for early harvest and dry-down to below 16% moisture, to prevent the molds from developing any further. A number of Extension publications on ear and kernel rots of corn are available on the web at [www.ca.uky.edu/agcollege/plantpathology/PPAExten/ppublin.htm#Corn%20and%20Sorghum](http://www.ca.uky.edu/agcollege/plantpathology/PPAExten/ppublin.htm#Corn%20and%20Sorghum).

One publication in particular that is worth highlighting is a list of laboratories where one can have suspect grain tested for possible mycotoxin contamination. That publication is available on the above web site, as well.

## **LATE SEASON CORN BORER TRAP COUNTS VERY HIGH**

**by Ric Bessin**

Pheromone trap count captures of both European and southwestern corn borers have been very high over the past few weeks in parts of western Kentucky and southern Illinois. There was a report of a European corn borer trap capture of 170 moths per trap in a pepper field in the Green River area, and of 1000+ southwestern corn borer moths in Illinois. While it is too late for these moths to do much damage to corn that is close to harvest, this could be a harvest loss problem for late planted corn that may not be shelled until late September or October. For pepper producers this will be a serious situation over the next few weeks. It becomes very difficult to prevent insect damage when pest populations are at these levels, but here are some guidelines to review to make sure that sprays are applied properly.

*Review your spray interval.* Generally with pepper production, producers apply corn borer sprays at 7 day intervals during those periods when corn borers are active. Sprays must be applied preventively, as once the borer enters the pepper, there is nothing we can use to kill it. During this period of intense corn borer activity, intervals may need to be shortened. With higher temperatures pests may develop faster and intervals may need to be shortened as well.

*Consider your insecticide carefully.* Some insecticides provide better control of corn borers than others, but not under all conditions. For example, the pyrethroid insecticides generally don't work as well under high temperatures as they do under cool to normal conditions. We have had high temperatures the past few weeks, so use of another class of insecticide may be necessary until the weather moderates.

*Coverage is critical.* Pepper plants are about as big and dense with foliage as they will get this season. Sprays must be able to penetrate and cover all parts of the interior of the plant. This requires high pressure, high volume sprays, and one to two drop nozzles on each side of the row. I would suggest that 80 psi and 40 gallons per acre to be the minimum for coverage if everything is working properly. In terms of drop nozzles, the taller the plant, the more drop nozzles that are needed. As more drop nozzles are added, the volume of spray will need to be increased. How do you evaluate your coverage? The best method is through the use of water sensitive spray paper. This should be placed in various places on the plants (top vs. bottom, inside vs. outside) to assess whether coverage is adequate.

*Adjust insecticide rate accordingly.* Most insecticides provide a range of rates that can be used for a particular pest on a single crop. Generally, under low pressure with small stages of the pest, the low rate in the range should be used. However, under high pest pressure or when dealing with large stages of the pest then the high rate should be employed. To accurately apply any pesticide spray, the spray must be calibrated properly. Changes to tractor speed, nozzle type or number, spray pressure will all affect calibration.

## **LAWN & TURF**

### **MANAGING LARGE PATCH OF ZOYSIA**

**by Paul Vincelli**

In the past few years, large patch of zoysia, caused by strains of the soilborne fungus *Rhizoctonia solani*, has been reported more frequently with more severe cases than a decade ago. It is possible that the recent spate of mild winters is causing an increase in this very destructive disease; this is another example how the effects of global warming are becoming a concern for an ever wider range of people.

An ongoing research program by Ned Tisserat at Kansas State University has provided the basis of solid management recommendations. Cultural practices that contribute to disease control include: improving drainage by filling in low areas or installing tile drains; avoiding overirrigation, especially in spring and autumn; and raising the mowing height by 1/4 inch in mid- to late-September. Dr. Tisserat's studies indicate that nitrogen rate or source, and pre-emergence herbicides, have no influence on disease development.

Fungicide applications are an option for high-maintenance swards. Heritage, Prostar, PCNB, and Bayleton have all provided excellent control repeatedly in his field tests. Usually one application is all that is needed. Best results can be expected when the application is made when the

thatch temperatures drop below 70EF, usually in mid- to late-September. Use the highest rate of the product selected, and apply it in at least 2.5 gallons per thousand square feet; a follow-up syringing or irrigation is neither recommended nor desirable. I know the temptation is to use low gallonages, but consider that you are trying to treat the leaf sheaths as well as the top of the thatch. If you have insufficient gallonage, you'll have poor coverage and therefore poor control. If you irrigate after applying the product, you'll wash it off the sheaths, probably resulting in poor control. If the turf is worth treating, it is worth treating right.

**DRY AIR SUPPRESSES GRAY LEAF SPOT OF PERENNIAL RYEGRASS**  
by Paul Vincelli

Although indications in July suggested the potential for an epidemic year from gray leaf spot in our region, disease pressure has been moderate (with plenty of damage in localized areas, to be sure, but not complete loss of turf over most of a region). I suspected it was the dry air masses the region has experienced since about Independence Day; some quantitative proof of that came from a curious golf course superintendent. Ken Rue compiled data available from the UK Agricultural Weather Center from a weather station near the Griffin Gate Golf Course, where we have had ongoing research on this disease since the epidemic of 1995.

The data, presented in Table 1, confirm my suspicions. The weather data indicate no significant difference between August of 1995 (an epidemic year, when the disease was destructive early in the month) and this past August (this year, significant gray leaf spot activity was not present until the last week of the month). The data show reduced rainfall, but even more importantly, lower relative humidities. These data indicate that, in August of 2002, the relative humidity at night was typically quite a bit below 99-100%. High relative humidity at night is so important for foliar disease like gray leaf spot, because it provides the humidity that favors sporulation as well as the leaf wetness that favors infection.

Although the weather early this week is forecasted to be hot, cool, dry weather expected later this week will help suppress disease activity.

Table 1. Summarized weather for UK Spindletop Farm.\*

Month	Mean max temp (°F)	Mean min temp (°F)	Total precip (in.)	Mean max RH (%)
Aug 1995	89	69	4.61	99
Aug 2002	89	67	1.99	89

Aug 1995	89	69	4.61	99
Aug 2002	89	67	1.99	89

\*Compiled by Mr. Ken Rue

**SHADE TREES & ORNAMENTALS**

**BOTRYOSPHAERIA CANKER OF REDBUD AND OTHER WOODY PLANTS**  
by John Hartman

Redbuds in many Kentucky landscapes are suffering dieback of individual branches and in some cases, the whole tree due to Botryosphaeria canker. Trees growing in locations where drought stress is severe are especially hard hit. The following information was derived from an article written by Dr. Ann Gould, Rutgers University, for their Plant and Pest Advisory newsletter.

Botryosphaeria canker disease affects woody plants in over 100 genera. The disease can be troublesome in ornamental species such as ash, birch, cotoneaster, crabapple, dogwood, elm, firethorn, hop hornbeam, mountain laurel, locust, magnolia, mimosa, photinia, pieris, privet, rhododendron, and wax myrtle. The causal agent, *Botryosphaeria dothidea*, is an opportunistic fungus that attacks trees and shrubs wounded or weakened by environmental stress, particularly drought. Botryosphaeria canker is quite evident now on older, stressed redbuds.

Symptoms. Symptoms of Botryosphaeria canker vary with the species and age of the host and the severity of the predisposing stress. The fungus kills bark and sapwood tissue, causing areas of dead tissue called cankers to form. Cankers range from small, elliptical lesions that coalesce into large diffuse areas of blighted tissue, to large elongate cankers delimited by callus tissue. Affected bark turns dark, rough, and may peel away. Multiple cankers of various sizes often develop on branch tissue, growing slowly until the limb is girdled and killed. The entire plant may be killed once the canker moves from the branch into the main stem.

Disease cycle. *B. dothidea* survives the winter in small, round "fruiting bodies," structures that produce spores (conidia) embedded near the surface of cankered tissue. Infections occur when conidia are splashed by rain from these fruiting bodies to susceptible tissue. Spore dispersal can occur during most of the year, but is most extensive during late spring and early summer. Infection occurs

when fungal spores penetrate wounds or other openings in the bark. Pruning wounds, cracks, leaf scars, sunscald lesions, and senescent branches are all good entry sites for the fungus. Symptom development can take anywhere from 3 months to a year.

**Disease management.** Most healthy, vigorous plants are resistant to Botryosphaeria canker. Environmental stress, however, can readily predispose plants to attack. Healthy trees and shrubs can resist infection and will slow or prevent spread of the disease throughout the branch. When planting new trees and shrubs, choose a site that is suitable to the horticultural requirements of the species. For example, planting sun-loving plants in shady locations or placing plants outside their natural range can predispose these plants to canker disease. With older, established trees, maintain or improve plant vigor with proper pruning, fertilization, and irrigation. Since drought stress predisposes trees to canker development, watering trees during times of drought is particularly important. Since *B. dothidea* is an opportunistic fungus that infects stressed plants through existing openings, it is important to protect plants by carefully avoiding all unnecessary wounding. Closely monitor and control insects, mites, and other potential disease problems. Branches with symptoms of canker should be promptly pruned during dry weather at least 6 to 8 inches below affected tissue. If possible, remove the branch from the tree by properly cutting the limb just outside the branch collar, not flush to the trunk. To prevent the spread of this disease on pruning tools, surface-sterilize tools between cuts with denatured alcohol or 10% bleach. Since the fungus can persist and sporulate in dead plant material for extended periods, branches cut from diseased trees should be taken from the site and, if possible, composted. Fungicides or wound paints have not proven to be an effective control of most canker diseases and are not recommended.

## **MORE LANDSCAPE TREES AFFECTED BY BACTERIAL LEAF SCORCH**

**by John Hartman**

Bacterial leaf scorch, caused by *Xylella fastidiosa*, continues to cause decline and gradual death of many landscape trees. This past week, we have found this disease on two new host plants. Scarlet oak (*Quercus coccinea*) and hackberry (*Celtis occidentalis*) were found to be infected with the bacterium based on laboratory tests (ELISA, a serological assay). Further tests using PCR (polymerase chain reaction) will be needed to confirm these results.

Other Kentucky oaks previously testing positive for *X. fastidiosa* include red, pin, bur, shingle, white, and willow oaks. Maples include red, silver, and sugar maples. The disease has also been found in sweetgum, sycamore,

London plane, and elm in Kentucky.

## **HUMAN**

### **“SEED TICKS” SERIOUS PESTS NOW by Lee Townsend**

Lone star tick larvae are very abundant now. Earlier in the summer, female ticks deposited masses of several thousand eggs on the ground. Anyone unfortunate enough to pass through such a site can easily pick up dozens of larvae. These tiny, 6-legged creatures, also called “seed ticks”, 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.

## **MISCELLANEOUS**

### **DON'T GET SADDLED BY THE STING OF A SADDLEBACK!**

**by Ric Bessin**

Saddleback caterpillars are common in parts of the state, particularly in corn fields in west central Kentucky, according to Rod Grusy, Hardin County agent for agriculture and natural resources. Once you have encountered a saddleback caterpillar, its an experience your not likely to forget soon. This is one of the true stinging caterpillars in the state. These caterpillars are defended by hundreds of poison filled quills. Most encounters with stinging caterpillars result from accidently brushing against leaves on which they are feeding. The chances of running into these insects are relatively low, but occasionally one species may be very abundant as they are at this time of year in corn. If you find one on yourself, don't brush it off or slap it with a bare hand. Use a stick or other object to remove it carefully. Hollow spines may break off in clothing or gloves.

No really effective home first aid treatments for caterpillar stings are available. Adhesive tape or transparent tape may be used to pull out some of the broken spines in the sting area. Washing the area thoroughly with soap and water may help remove some of the irritating venom. Prompt application of an cool wet cloth or baking soda may help to reduce pain and prevent swelling. Antihistaminic drugs, often administered for bee and wasp stings, are reportedly

ineffective. See a physician if severe reactions occur. Very young, aged or persons in poor health are more likely to suffer severe reaction symptoms.

## **DIAGNOSTIC LAB HIGHLIGHTS**

**by Julie Beale and Paul Bachi**

Recent samples in the Diagnostic Lab have included Rhizoctonia root rot, Thielaviopsis root rot, Pythium root rot, stem canker, charcoal rot, soybean cyst nematode, sudden death syndrome, frogeye leaf spot, downy mildew, brown spot and potassium deficiency on soybean; black shank, Rhizoctonia root rot and frogeye leaf spot on tobacco.

Fruit and vegetable samples have included ozone injury, downy mildew, and crown gall on grape; Cytospora canker on cherry; brown rot on peach; anthracnose on cucumber; gummy stem blight, yellow vine decline, squash vine borer, and the potyvirus complex on pumpkin; and early blight on tomato.

On ornamentals, we have diagnosed Rhizoctonia root rot on chrysanthemum; powdery mildew on rudbeckia; Cercospora leaf spot on spathiphyllum; black root rot on galardia; gray leaf spot on ryegrass; Septoria leaf spot on birch; Botryosphaeria canker on ash; rose mosaic on rose; and Cercospora leaf spot on redbud.

## **INSECT TRAP COUNTS**

### **UKREC, Princeton, KY --August 23-30**

Corn earworm .....	94
European corn borer .....	2
Southwestern corn borer .....	251
Fall Armyworm .....	6

### **August 30-September 6**

Corn earworm .....	141
European corn borer .....	2
Southwestern corn borer .....	118
Fall Armyworm .....	16

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.