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KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE
On line at: www.uky.edu/Agriculture/kpn/kpnhome.htm

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WATCH FOR:

WATCH FOR: The branch end nests of FALL WEBWORMS on many types of trees; the opportunity for CATTLE GRUB control begins; WHITE GRUB damage starting in turf; FLEA problems increase on pets; TWIG GIRDLERS active on oaks

GENERAL CROPS

WEED CONTROL AND BORING INSECTS
by Lee Townsend

Insects that feed on weeds don't get much attention unless they devastate the plants or apparently adversely affect weed control in some way. This has happened several times with weeds that apparently escape glyphosate treatment with some assistance from insects. Stalk borers, soybean stem borers, and European corn borers are among the insects that can be found tunneling in large plants. Often, the tops of the plants are necrotic but the lower portions appear to be uninjured and are producing new growth.

Tissue damage by these borers may be disrupting the movement of systemic herbicides with a consequent reduction in control. Some field work with giant ragweed reported from the University of Illinois showed the relationship between plant size and stalk borer infestation. Less than 10% of 3" tall giant ragweed was found to be infested, while 6" and 12" plants had infestation rates of 65% and 85%, respectively. As pointed out by Hartzler in the Iowa State article below, delaying a herbicide application may not only mean increased insect infestation levels that may reduce herbicide effectiveness but also the crop has been subjected to reduced yields from early season weed competition.

The articles below provide more information.
Illinois 2002, stalk borers, Lisus species weevil, larvae, and soybean stem borers in giant ragweed, Pennsylvania smartweed, marestail, common lambsquasters and common water-hemp - http://ipm.uiuc.edu/bulletin/pastpest/articles/200304h.html

Indiana 2003, stalk borers in marestail and giant ragweed- http://www.btny.purdue.edu/WeedScience/2003/Articles/insects03.pdf

Iowa 2004, stalk borers and giant ragweed - http://www.weeds.iastate.edu/mgmt/2004/insect.shtml

LAWN & TURF

LIMITED SCIENTIFIC PROOF THAT ZEROTOL™ CONTROLS TURF DISEASES
by Paul Vincelli

Zerotol™ is a product sold as a preventive treatment for control of diseases of ornamentals and turfgrass. As far as turfgrass diseases, the Zerotol™ label indicates effectiveness against anthracnose, dollar spot, copper spot, fairy ring, pink snow mold, Pythium, summer patch, Fusarium blight, stripe smut, and leaf spot.

The active ingredient in Zerotol™ is hydrogen dioxide. Hydrogen dioxide kills fungi on contact so, in theory, it could help to control diseases caused by fungi, which are common on turfgrasses. However, university-based plant pathologists typically have doubts that the hydrogen dioxide persists for long on the leaf surface, so many scientists question whether this product is effective in controlling diseases in the field. It is one thing to control fungi in the laboratory or in the greenhouse, but it is quite another to actually control diseases in the field.

I have looked at all the published research reports on Zerotol™ efficacy I could find which met the following conditions:

1. They were conducted by independent third parties;
2. They were valid field experiments with proper experimental procedure;
3. They focused on turfgrass diseases.

All reports accessible to me focused on two important turfgrass diseases: dollar spot and brown patch. (I am unaware of published results where Zerotol™ was tested against other turfgrass diseases.)

In the tests I examined, the performance of Zerotol™ was erratic. Usually its performance was miserable, with no difference between the Zerotol™-treated plots and the untreated control plots. On a few occasions, it provided moderate to even high levels of disease control.

Overall, these results indicate that Zerotol™ provides erratic disease control at best. There are numerous products which provide more consistent disease control than this one.

SODWEB WORMS MOTHS TERRORIZED BY LAWNMOWERS
by Lee Townsend

Small tan moths can come boiling out of the grass as lawnmowers move relentlessly towards them. Several species of sod webworms occur in Kentucky and occasionally they can damage turf, especially on steep, sunny, south-facing slopes that tend to be dry and hot. Damage appears as small areas of dead turf that may spread. Most damage occurs in August when grass grows slowly and the injury can be misidentified as drought stress or grub damage.

Sod webworm infestations can be identified by the small particles of green frass left on the ground where the gray caterpillars have been feeding. They clip off grass blades so their injury is like a scalping of the turf, the root system is not damaged and the sod does not pull up easily as seen with grub feeding.

Frequently, the sod webworm feeding period is over before the cause of the damage is determined. The grass can recover if it receives plenty of water and fertilized appropriately.

SHADE TREES & ORNAMENTALS

LARGE JUMPS IN HEMLOCK WOOLLY ADELGID DISTRIBUTION
by Lee Townsend

The hemlock woolly adelgid has been found and reported from Bell, Harlan, Leslie, Letcher counties during the past year. While this has not been good news, it does appear to be the result of a natural spread from nearby known infestations. Unfortunately, the insect has been found and confirmed from a landscape setting in Oldham county and probably (poor specimen condition) from a home in Grayson county. Both came from unintentional movement of infested hemlocks. However, one was the result of plantings by an unknown landscaper who may have moved a significant number of infested hemlocks four years ago.

Information on the HWA is available at http://pest.ca.uky.edu/EXT/HWA/welcome.html. This is just one several invasive species that are continuing to extend there range in Kentucky.

WOUNDS AND WOOD DECAY OF TREES
by John Hartman

Windstorms, snow loads, and layers of ice are occasional features of Kentucky weather that can result in many broken tree limbs and downed trees in the landscape. Much of the fallen wood comes down because the interior of the branch or tree was decayed, but branches with no decay also break and fall. Wood decay in trees almost always begins with an injury to the tree.

Wounds of many types can occur on landscape trees. Weather-related broken branches are significant, but bark injuries, pruning stubs, "too flush" pruning cuts, and cut or damaged roots are also associated with decay problems. One of the most frequent causes of damage to trees in the landscape comes from lawn equipment. Mowers and string trimmers can damage the bark, and if continued, will result in visible wounds at the base of the trunk. Besides restricting the movement of water and nutrients, these wounds become points of entry for insects and wood decay microorganisms.

When an injury or break in the bark exposes the underlying wood, bacteria and fungi in the air, in nearby soil, and on the bark contaminate the wound surface. At the same time, the tree responds to the wound by producing chemical and physical barriers in an attempt to block the invasion of microorganisms and to seal off the damaged area. Organisms which are able to overcome these protective barriers can then colonize and invade the

wounded tissues. Among these organisms are the wood decay fungi.

Not all wounds result in extensive decay since trees are frequently able to successfully "compartmentalize" or "wall-off" the decayed area. In many cases, the formation of internal barriers to fungal movement and infection can prevent the decay fungi from spreading. The ability of a tree to internally compartmentalize decay differs from one individual tree to another, although it is also influenced to some extent by tree vigor. Wound-wood provides an external barrier to decay once the wound has completely closed over. The formation of wound-wood may be an indicator of relative tree vigor but it is not necessarily indicative of the tree's resistance to the internal spread of decay. Extensive internal decay may exist behind a well-sealed wound.

The severity of the wound, the tree's vigor and the tree's inherent ability to compartmentalize are important factors in determining the rate the tree is able to seal off the wounded area. Other factors such as time of the year, type of organisms present, and position of the wound also play a role. A healthy tree will normally respond more quickly than one that is stressed. Small wounds may take a growing season to close, while larger wounds may require several growing seasons to close.

The presence of mushrooms at the base of the tree, or conks (bracket or shelf-like fungal structures) on the trunk or branches are the most certain indicators of decay. The absence of these obvious fungal structures (also referred to as "fruiting bodies"), however, does not mean the tree is free of decay; fruiting bodies of some decay organisms do not appear until decay is well advanced while others may go unnoticed because they are small, short-lived, hidden or produced infrequently. Other indicators of decay include old wounds, hollowed out areas, and abnormal swellings or bulges. Decayed wood is usually soft, white, spongy, stringy, and friable; or brown and brittle. Since decay structurally weakens the wood, affected trees become susceptible to wind or other storm damage.

Control. There are no controls or cures once wood decay has begun. Decaying trees should be removed when they become potentially hazardous.

Preventive Measures.

- Protect trees and shrubs from injuries due to human activities: Choose a planting site that is away from potential causes of wounds (i.e., away from walkways, driveways, roads). Give the tree plenty of space for growth to maturity. Protect the tree from lawn equipment by controlling the grass and weed growth at the base of the tree. Hand weeding is good, but labor intensive; applying a layer of mulch around, but not against the trunk is most helpful. A plastic tree guard will also protect the trunk, but it should be removed when the trunk diameter approaches that of the tree guard.
- Use proper pruning techniques: Prune out injured and diseased branches as soon as they are found. Prune as close as possible to the connecting branch or trunk without cutting into the branch collar. Never leave pruning stubs because these will seldom close over. Do not top trees (refer to the UK publication, ID-55, "WARNING: Topping is Hazardous to Your Tree's Health!").
- Practice sanitation: Remove prunings from the tree and do not leave dead wood nearby.

Treat wounds properly and immediately.

- Treating recent incidental wounds:
  - If immediately after the wounding event, the bark and cambium are still moist, carefully press the bark back onto the trunk, making sure the pieces are fitted Into their original positions on the tree. If possible, cover the wound with plastic and shade it from the sun to keep it from drying. Secure the bark piece(s) in place using soft cloth strips tied around the tree.
  - Carefully break away any dry, loose, injured bark. Using a sharp knife, cut back to healthy bark. Make a clean edge between the vigorous bark and exposed wood; even if the wound shape is irregu lar, avoid cutting into healthy bark.

- Treating pruning wounds:
  - Wound dressings are primarily cosmetic and do not stop decay. A product called Lac Balsam is used by some arborists and may stimulate callus formation. Dressings are needed where spread of oak wilt disease is probable. Otherwise, painting over wounds is generally not recommended.

- Treating old wounds:
  - If callus (wound-wood) has begun to form, carefully remove the old bark until the wound-wood zone is found. Do not cut into the fresh growth or shape the wound.
  - If wound-wood is absent, treat the wound as if it were a recent injury.

DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

Agronomic samples over the past week included potassium deficiency in corn; growth regulator injury on soybean; black shank, tomato spotted wilt virus, potassium

deficiency, manganese toxicity, and frenching on tobacco.

On fruit and vegetable samples we have diagnosed black rot and deficiencies of potassium and phosphorus on grape; anthracnose on bean; bacterial canker on eggplant; bacterial wilt and magnesium deficiency on melon; bacterial wilt and manganese toxicity on pumpkin; blossom end rot and ozone injury on watermelon; bacterial canker and walnut wilt on tomato.

On ornamentals and turf we have seen Pythium on chrysanthemum; scab on crabapple; Entomosporium leaf spot on photinia; powdery mildew on dogwood and tuliptree; bacterial scorch on oak; fire blight on pear; iron deficiency on birch; and brown patch and Drechslera leaf spot on fescue.

TRAP COUNTS
UKREC, Princeton KY
Kentucky — Tennessee
July 20-27, 2007

►***Jackson, TN***
Black cutworm....0
True armyworm....0
Corn earworm....0
European corn borer....0
Southwestern corn borer....0
Fall armyworm....0

►***Milan, TN***
Black cutworm....10
True armyworm....0
Corn earworm....0
European corn borer....0
Southwestern corn borer....0
Fall armyworm....0

►***Princeton, KY***
Black cutworm....20
True armyworm....4
Corn earworm....13
European corn borer....0
Southwestern corn borer....86
Fall armyworm....0

►***Lexington, KY***
Black cutworm....136
True armyworm....223
Corn earworm....204
European corn borer....3
Southwestern corn borer....1
Fall armyworm....0

This season insect trap counts will be provided for locations in Kentucky and Tennessee.
View trap counts for past seasons and the entire 2007 season at –
http://www.uky.edu/Ag/IPMPrinceton/Counts/2006trapsfp.htm
View trap counts for Fulton County, Kentucky at -
http://ces.ca.uky.edu/fulton/anr/
For information on trap counts in southern Illinois visit the Hines Report at –
http://www.ipm.uiuc.edu/pubs/hines_report/comments.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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