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COOPERATIVE EXTENSION SERVICE

KENTUCKY PEST NEWS

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ANNOUNCEMENTS

KPN PUBLICATION SCHEDULE CHANGE

Beginning with this issue, the Kentucky Pest News will be published on an alternate week basis and will be mailed 3rd Class mail rather than 1st Class. Special issues will be prepared if the need arises**.**

COMMERCIAL PESTICIDE TRAINING MEETINGS

Commercial pesticide training meetings are scheduled for September 20, 2000 at the Fayette County Extension office in Lexington and October 12, 2000 at the UK Research and Education Center in Princeton. Training for Categories 1 (Ag Plant), 4 (Seed Treatment), 10 (Demonstration and Research, and 12 (Pesticide Dealer) begin at 8:30 am and end at 11:40 am (local time).

Training for Categories 2a (Forest Pest) and 3 (Ornamental and Turf) begin at 9:45 am and end at 1:15 pm. Applicators or dealers certified in categories 10 and 12 with primary interest in these categories should attend this session.

Testing for commercial certification will be held at 1:30 pm.

Call Monte Johnson (859) 257-6693 for meeting information. Contact Darlene Thorpe (859) 257-5955 for training packets. If you have questions concerning certification credits that you have earned or laws and regulations, call the Division of Pesticides (Ky Department of Agriculture) (502) 564-7274.

Visit the Pesticide Applicator Training page for the latest information on training and testing opportunities- www.uky.edu/Agriculture/PAT/welcome.htm

TOBACCO

CURRENT BLUE MOLD STATUS
By William Nesmith

As of mid August, much of Kentucky's tobacco crop has already been topped or harvested. Crops in the western half of Kentucky have not experienced damaging levels of blue mold at any time this season, while some portion in the eastern half has. The impact of blue mold on the early crop in the eastern half of Kentucky is highly variable from farm to farm, ranging from mostly little or no damage to a small percentage with serious damage. However, much more damage has occurred to that portion of the crop

that has not reached the topping stage, especially in eastern and northern Kentucky. Foliar and systemic blue mold has caused significant damage on many farms. With extensive rain and high humidity, the old blue mold lesions are serving as ideal infection sites for a number of bacterial and fungal diseases - angular leaf spot, bacterial soft rot, frogeye, target spot, brown spot, and ragged leaf spot. In addition to direct losses from damaged leaf and lower leaf weights, lodging of the crops with systemic blue mold is creating added costs and burdens with topping and harvesting operations. The virus complex is also very active in the eastern half of Kentucky, and there are many over-lapping symptoms between systemic blue mold and the virus complex.

Sporulation and new infections of blue mold slowed significantly for several days in early August, but with the cool and foggy weather since August 10, aggressive blue mold activity will return to eastern and northern Kentucky, southern Ohio, and western West Virginia. Very heavy sporulation was occurring again on August 11 in eastern Kentucky.

Controls/Management: Continued fungicide sprays are still appropriate only for that portion of the crop that has not reached topping. Nearly all those crops needing fungicides, warrant the full rate: Acrobat MZ at 2.5 lbs /100 gallons of water per acre. Do not exceed the limit of 10 lbs of Acrobat MZ per season per crop or spray closer than 30 days to harvest.

By the way, Actigard was labeled for blue mold control late last week. However, this label has arrived too late to help us this season on tobacco. I will share more information on this product and how it should be used this fall and winter, because we have conducted extensive testing with it and similar compounds since 1980.

ALFALFA

PESTS OF FALL SEEDINGS
by Lee Townsend

Several insects feed on fall-seeded alfalfa, and if numerous and unnoticed, may produce significant stand loss. The most common culprits are fall armyworms, grasshoppers and crickets. Occasionally, Mexican bean beetles and spotted cucumber beetles (southern corn rootworm beetles). Regular inspection of new seedings will allow early detection of pest problems, assessment of damage, and treatment if necessary.

Fall armyworm infestations will tend to be clumped and intense because each female can lay 100 or more eggs in a mass. The small larvae will move out from this focus as they grow and consume all of the nearby plants. Look for roughly circular areas of missing plants. Examine the soil surface for the striped larvae. If needed, spot treatments can be used to deal with the problem.

Grasshoppers and crickets can graze off small seedlings. Damage should appear at the edges of the field and progress across it. These insects will move readily so feeding should be more diffuse over an area. Mexican bean beetles and spotted cucumber beetles also may move in and feed. Their activity should be spread over the field as well.

Evaluate injury carefully. Low rates and spot treatments may be all that is needed to deal with pest activity. See ENT-17 for control recommendations.

SOYBEAN

Sudden Death Syndrome Explosion
By Don Hershman

Late last week we began to receive reports about certain soybean fields with serious sudden death syndrome (SDS) problems. Most of the reports have been from the Green River Area. It is too early to tell how extensive and damaging SDS will be in Kentucky this season.

In a recent Kentucky Pest News Article (July 31, 2000) I described, in detail, the symptoms associated with SDS. The purpose of this article is to shed light on the relationship between symptom expression and yield loss.

The bottom line is this: If foliar symptoms are widespread and severe in a field prior to the mid-pod fill stage of development, then the likelihood that serious yield damage will occur is very high. In contrast, if the same level of disease exists in a field after mid-pod fill, then expect direct damage to be minimal. I say “direct loss” because even late SDS symptom expression will result in some indirect losses. Specifically, plants that are prematurely killed by SDS are prone to experience yield and quality problems due to pod and stem blight and shattering. These situations have to do with the fact that prematurely-killed plants cannot be harvested until the rest of the field is ready to be harvested. As a result, prematurely-killed plants are left standing in fields longer than is desirable and, thus, experience problems normally associated with delayed harvest.

The key to yield loss due to SDS is timing, incidence and severity of foliar symptom expression. When SDS foliar symptoms develop prior to mid-pod fill, diseased plants will abort significant numbers flowers and developing pods. In addition, seed produced will be smaller than normal. However, once plants have reached the mid-pod fill stage or later, pod and flower abortion tend to be significantly reduced. In fact, I have seen fields that began to express severe and widespread SDS foliar symptoms at full-pod, and some of those fields produced near record crops. But, in most of those cases, the fields looked very, very rough and a casual observation would have not produced thoughts of record crop yields.

Keep in mind that most fields begin to express SDS in "hot spots". Depending on the size, frequency and symptom severity of these spots, overall yield in a field can be drastically reduced...as much as 80%....if enough of the crop is damaged early. However, my experience is that in most fields, symptoms may be severe across a relatively small percentage of the field early, but by the time symptoms become widespread, the crop is too far along to be seriously damaged. This is the more common scenario. I say this recognizing that we have also experienced years (1984 and 1985) where near total crop failures due to SDS were not hard to come by. This may be one of those years, but before you jump to any negative conclusions, scout your field and observe the true extent of damage relative to crop growth stage. You may be pleasantly surprised.

SHADE TREES AND ORNAMENTALS

Walnuts Causing Wilt in the Garden
by John Hartman

Walnut, especially black walnut (*Juglans nigra*) and butternut (*Juglans cinerea*), is associated with an often difficult-to-diagnose wilt of plants in the garden and landscape. Affected plants growing near walnuts are exposed to juglone, a toxin which can cause plants to yellow, suddenly wilt, and die. Wilting plants often show a staining of the vascular system similar to that caused by other wilt diseases. Observed in the plant disease diagnostic laboratory are tomatoes, azaleas and rhododendrons, the most common victims of wilt caused by this walnut-produced toxin. Juglone, and its precursor, hydrojuglone can be found in all parts of black walnut including leaves, stems, fruit hulls, inner bark, and roots. Other walnuts and related trees such as hickories and pecans also produce juglone, but in much lower amounts.

Juglone can affect other plants in the garden and landscape through roots via contact, leakage, and decay; from rainwater leaching from leaves and branches; and from falling and decaying leaves. Plants located beneath the canopy of walnut trees are at greatest risk because juglone from roots and fallen leaves accumulates there - be aware that walnut roots extend well beyond the drip line of the tree and may affect plants at a distance equal to the height of the tree. Juglone can be toxic in very low doses and plant roots can encounter the juglone from a walnut root or, in some cases from a decomposing root of a walnut cut down several years before, by growing within a half-inch of the walnut root.

Walnut-associated wilt affects other trees such as apple, birch, cherry (sour), linden, pear, and pine. Shrubs such as azalea, mountain laurel, and rhododendron are sensitive as are flowers and herbs such as chrysanthemum, crocus (autumn), forget-me-not, lily-of-the-valley, peony, and thyme. Fruits and vegetables such as blackberry, blueberry, cabbage, grape, pea, potato, and tomato will also turn yellow and wilt due to juglone exposure. In agricultural settings, alfalfa is also sensitive to the walnut toxin.

The toxic effects of juglone can be reduced by regularly raking up all fallen leaves and fruit from around black walnut trees, especially keeping debris away from sensitive landscape plants. Walnut debris may be detoxified by composting - walnut debris should not be used for mulch unless it has been composted. Maintain high soil organic matter levels so that active soil microbial populations can metabolize the toxin. Use tolerant plants in the landscape. Kentucky bluegrass and tall fescue are not affected by juglone. Except for the sensitive species listed above, most trees, shrubs, vines, ground covers, fruits, vegetables, and flowers are also tolerant.

WHEEL BUGS
By Lee Townsend

Wheel bugs can be found prowling the foliage of trees and shrubs throughout Kentucky during August and September. Their common name comes from the wheel- shaped projection behind the head. These gray insects with long grasping front legs have a strange and intimidating appearance. However, they are beneficial insects that feed on a wide range of insects. Wheel bugs can bite if handled but the painful reaction usually goes away in a few hours.

Eggs of the wheel-bug are attached to twigs of shrubs and trees in the fall. In the early spring, the small, red nymphs are active. Wheel bugs undergo incomplete metamorphosis developing slowly into the winged

adult.

LAWN AND TURF

DECISION-MAKING TIME FOR WHITE GRUBS
By Mike Potter

White grubs are the most important insect pests of lawn grasses in Kentucky. Several different kinds of white grubs, in particular, the larvae of masked chafers and Japanese beetles can cause damage. Turf is damaged when the grubs feed on the grass roots. The cutting of the roots kills the grass and loosens the turf so that it can be rolled back like a carpet.

Although this year's adult Japanese beetle flight was light in some areas, masked chafers were abundant and may warrant treatment. Homeowners or turf managers considering a curative insecticide application for white grubs should first confirm that treatment is justified.

Diagnosis -- Drought stressed or diseased turf can easily be mistaken for grub damage. Early symptoms of white grubs include gradual thinning, yellowing, and weakening of the grass stand followed by the appearance of scattered, irregular dead patches. As damage continues, the dead patches may increase in size, and apparently healthy turf areas may suddenly wilt. The turf may feel spongy as you walk over the infested area.

Sod that is heavily grub-damaged is not well anchored and can be pulled loose from the soil like a carpet, exposing the white, C-shaped larvae. If the brown patches do not pull up easily, the problem is usually related to other causes. Another indication that white grubs may be present is if moles, skunks or flocks of blackbirds find the turf attractive. White grubs should also be suspected if adult beetles were abundant in the area in June and July, or if you had a serious grub problem last year.

To determine the degree of infestation, sample the lawn in several spots. In each area, cut out a square-foot piece of sod and inspect the roots closely for grubs. Any grubs that are present in mid-August will be small -- about 1/4 to 1/2-inch. After examining the sample, tamp it back into place and water it well to encourage recovery. An average of eight or more grubs per sample may indicate a need for treatment. Healthy, vigorous, well-watered turf often will tolerate higher grub densities (10-15 per sq. ft.) without showing damage.

Control -- If damaging numbers are present, the ideal time to treat curatively is now, while the grubs are still small. Grubs are still vulnerable to most insecticides in September, but treatment should not be made any later than mid-October. Normally the entire lawn will not need to be treated. Grub "hot spots," which can be confirmed by sampling, are most likely to be in full sun, lawns seeded with Kentucky bluegrass, lawns that were heavily irrigated during June and July, and turf areas that were damaged by grubs in previous years.

For best results, mow the lawn and rake out dead grass and thatch before treatment. Water the lawn immediately after application to wash the insecticide down into the root zone where the grubs are feeding. Watering in is especially important for spray applications; once spray residues dry on foliage, they cannot be washed into the root zone by later drenchings. For this reason, granular formulations may be easier to use since timing of irrigation is not so critical. Treated areas should be drenched with 1/2 - 1 inch of water, using a lawn sprinkler. The required amount of water can be determined by placing a disposable pan or rain gauge in the treated area.

Several products are labeled for curative control of white grubs on home lawns. Dylox 6.2G has worked particularly well in University of Kentucky tests; Oftanol, diazinon and Sevin have also given adequate control, whereas products containing Dursban performed poorly.

Merit (active ingredient imidacloprid) is labeled for use on both golf courses and home lawns. The product is marketed to homeowners under the brand name GrubX. Merit/GrubX is highly effective, but works best when applied against very young grubs (between early June and late July in Kentucky). Thus, the effective period for using this product has already passed. Mach 2 (halofenozide) is another effective new product for treatment of golf courses, sod farms and home lawns (professional use only). Similar to Merit, Mach 2 is most efficacious when applied earlier in the season against smaller grubs. At this stage, better results may be obtained using Dylox or one of the other curative products previously mentioned.

Milky disease products (Doom) have performed poorly in research trials in Kentucky. Formulations containing insect-parasitic nematodes also cannot yet be recommended as reliable alternatives to conventional grubicides.

For more information, consult the product labels and

ENT-10, Controlling White Grubs In Turfgrass.

CRICKET WARS
by Mike Potter

Warm, humid conditions often produce outbreaks of field crickets during late summer in Kentucky. Infestations are especially common around buildings that are heavily mulched, landscaped or overgrown. Crickets lay their eggs in moist soil, and the immatures (nymphs) pass through several instars. There may be 1-3 generations per year.

Management

Field crickets are basically a nuisance pest, i.e., they do not bite, transmit diseases or infest foodstuffs. Since they are dependent upon moisture, they typically do not survive indoors more than a few days. One option, therefore, is to do nothing other than vacuum or sweep up those that manage to get inside. Removing excess amounts of mulch, weeds and debris close to the foundation will make the area less attractive to crickets. Installing tight-fitting door sweeps, sealing cracks, and other forms of exclusion (see Entfact-641 How to Pest-Proof Your Home), will further limit the entry of crickets, spiders, and other miscellaneous outdoor arthropods.

For clients demanding immediate relief, pest proofing can be supplemented by an exterior treatment with an insecticide. Homeowners will get the most for their efforts by applying longer-lasting liquid formulations containing synthetic pyrethriods (e.g., Spectracide Bug Stop(R)) or microencapsulated (slow-release) Dursban, stocked by some hardware/ lawn and garden shops. Apply with a compressed air or hose end sprayer, treating along the base of exterior doors, up underneath siding, and around the outside perimeter of the foundation in a 2 to 6-foot wide band along the ground, and 2-3 feet up the foundation wall. Homeowners or businesses who choose not to tackle these activities may wish to hire a professional pest control firm. Cricket problems ultimately "fix themselves," with the onset of cold weather.

HOUSEHOLD

PHENDING OFF PHRUIT PHLIES
by Mike Potter

Fruit flies can be a problem year round, but are especially common this time of year because they are attracted to ripened or fermenting fruits and vegetables. Tomatoes, melons, squash, grapes and other perishable items brought in from the garden are often the cause of an infestation developing indoors. Fruit flies are also attracted to rotting bananas, potatoes, onions, and other unrefrigerated produce purchased at the grocery store. This column will explain how infestations originate and how they can be prevented in your clients' homes and businesses. Description and Habits- Fruit flies are common in homes, restaurants, supermarkets and wherever else food is allowed to rot and ferment. Adults are about 1/8 inch long and usually have red eyes. The front portion of the body is tan and the rear portion is black. Fruit flies lay their eggs near the surface of fermenting foods or other moist, organic materials. Upon emerging, the tiny larvae continue to feed near the surface of the fermenting mass. The surface feeding behavior of larvae is significant in that damaged or over-ripened portions of fruits and vegetables can be cut away without having to discard the remainder for fear of retaining any developing larvae.

The reproductive potential of fruit flies is enormous; given the opportunity, they will lay about 500 eggs. The entire life cycle (egg to adult) can be completed in about a week.

Fruit flies are especially attracted to ripened fruits and vegetables in the kitchen. They also will breed in drains, garbage disposals, empty bottles and cans, trash containers, mops and cleaning rags. All that is needed for development is a moist film of fermenting material. Infestations can originate from over-ripened fruits or vegetables that were previously infested and brought into the home. The adults can also fly in from outside through inadequately screened windows and doors.

Fruit flies are primarily nuisance pests. However, they also have the potential to contaminate food with bacteria and other dis ease-producing organisms.

Prevention- The best way to avoid problems with fruit flies is to eliminate sources of attraction. Produce that has ripened should be eaten, discarded or refrigerated. Cracked or damaged portions of fruits and vegetables should be cut away and discarded in the event that eggs or larvae are present in the wounded area. A single rotting potato or onion forgotten at the back of a closet, or fruit juice spillage under a refrigerator can breed thousands of fruit flies. So can a recycling bin in the basement that is never emptied or cleaned.

People who process their own fruits and vegetables, or make wine, cider or beer should ensure that the

containers are well sealed; otherwise, fruit flies will lay their eggs under the lid and the tiny larvae will enter the container upon hatching. Windows and doors should be equipped with tight-fitting (16 mesh) screens to help prevent adult fruit flies from entering from outdoors.

Eradication- Once a structure is infested with fruit flies, all potential breeding areas must be located and eliminated. Unless the breeding sites are removed or cleaned, the problem will continue no matter how often insecticides are applied to control the adults. Finding the source(s) of attraction and breeding can be very challenging, and will require persistence on the part of the client -- guided by your suggestions as to where these areas might be. Potential breeding sites that are inaccessible (e.g., garbage disposals and drains) can be inspected by taping a clear plastic food storage bag over the opening overnight. If flies are breeding in these areas, the adults will emerge and be caught in the bag.

After the source of attraction / breeding is eliminated, a pyre thrum-based, aerosol insecticide may be used to kill any remaining adult flies in the area. A better approach, though, is to construct a trap by placing a paper funnel (rolled from a sheet of notebook paper) into a jar which is then baited with a few ounces of cider vinegar or a slice of banana. This simple but effective trap will soon catch any remaining adults. Faster results can be achieved by installing additional traps. Since more fruit flies will be caught in traps closest to the breeding source, the technique can also help pinpoint the source of the problem. Adult fruit flies caught in traps can be killed or released outdoors.

DIAGNOSTIC LAB HIGHLIGHTS
By Julie Beale and Paul Bachi

In the Diagnostic Lab this past week we have seen gray leaf spot and pollination problems on corn; potassium deficiency and sudden death syndrome on soybean; black shank, blue mold, bacterial hollow stalk, target spot, lightning damage, and the virus complex on tobacco.

On fruits and vegetables, we have seen sooty blotch, necrotic leaf blotch, cedar-apple rust, and fireblight on apple; scab on peach; bacterial spot on plum; gummy stem blight, powdery mildew and virus complex on pumpkin; scab on potato; bacterial spot on pepper; and bacterial pith necrosis on tomato.

On ornamentals, we have seen bacterial blight on geranium; bacterial leaf spot on Rudbeckia; brown patch on tall fescue; gray leaf spot on perennial ryegrass; anthracnose on bentgrass; powdery mildew on dogwood, crepe myrtle, rose, and euonymus; Pseudonectria canker on boxwood; Phytophthora root and crown rot on walnut (seedlings); and bacterial leaf scorch on oak.

INSECT TRAP COUNTS

UKREC, Princeton, KY - August 4 - 11, 2000

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.