ANNOUNCEMENT

WATCH YOUR MAIL FOR COMMERCIAL APPLICATOR LICENSE RENEWAL FORM by Lee Townsend

Licenses of commercial or non-commercial pesticide applicators are valid for one year and expire on December 31. Watch the mail for your renewal form, follow the instructions, make a copy of the form for your records, and return the original promptly. If your license expires, so does your certification and this means taking the test again.

The license renewal form also lets you know how many continuing education credits you have accumulated towards recertification. Recertification requires 9 hours of general credits and 3 hours of category specific information in 3 years. The certification for commercial and non-commercial pesticide applicators, which is different from the annual license, is valid for 3 years. They are tied together so if your license is not renewed, then certification is lost even if your card shows that it is still in effect.

ANNOUNCEMENT

SHADE TREES & ORNAMENTALS

What's wrong with my taxus?
That's one big aphid!
There's a hole in my sweater!

November 22, 2004

CORN

CONSIDERATIONS ON THE USE OF FUNGICIDES NEXT YEAR AGAINST NORTHERN LEAF BLIGHT by Paul Vincelli

In recent issues of Kentucky Pest News, I discussed the potential for localized epidemics of northern leaf blight (NLB) in 2005, and I encouraged producers to use hybrids with adequate levels of NLB resistance for the upcoming season. The question has been raised, where do fungicides fit for the control of NLB in typical field corn?

A Possible Scenario
As of this time, I see no reason why most fields would need to be treated with fungicide. In most fields, a combination of rotation and selection of a hybrid with moderate to high resistance should help keep NLB from causing damaging yield losses.

However, there could be isolated instances where the producer may see a benefit to the application of a fungicide next year. For example, imagine a field sown to a susceptible hybrid that has a 180+ bushel/acre yield potential within two weeks on either side of tasseling. If that field is showing large (3-6 inches) lesions indicative of a susceptible reaction of NLB on or above the ear leaf, and the long-term forecast calls for continued cool, wet weather, it may be worthwhile to protect the high yield potential by applying a fungicide. Such cases would be few in number, but they may occur next year, depending on the weather.

Fungicide Options

There are several fungicides labeled for use against NLB. Based on the research I have seen, the most effective against this disease is Quadris Flowable®. If applied once at 9.2 to 15.4 fl oz/acre rate, a producer would pay about $23 to $39 for the product and approximately $7.50 to $8.00 per acre for aerial application (assumes a product price of $322/gal). Be aware that the label requires a minimum application volume of 5 gal/acre in grain crops. I’ve seen indications of yield losses of anywhere from 5 bu/acre to 50 bu/acre from NLB on susceptible and moderately susceptible hybrids during the 2004 season. Given the above cost estimates for applying Quadris®, one would have to avert a yield loss of at least 14-21 bu/acre to break even for the costs of applying fungicide (assuming a $2.25 /bu crop value). Quadris® has a seven-day pre-harvest interval for field corn.

Tilt® also can be applied for control of NLB, but in the research I have seen indicates, Tilt® is not consistently as effective as Quadris®. When applied once at 2-4 fl oz/acre, a producer would pay approximately $6-12 /acre for the Tilt® and $7.50-8.00 for application costs (assumes a product price of $367/gal). Like Quadris®, Tilt® has a restriction of a minimum of 5 gal/acre when applied aerially. Other important label restrictions include: (1) Tilt® may not be applied after silking, and (2) there is a 30-day pre-harvest interval in field corn.

Products containing chlorothalonil (Bravo®, for example) or mancozeb (Dithane®, etc) are labeled for NLB control. However, research shows these contact fungicides are not as effective as either systemic fungicide listed above. Furthermore, it seems likely that the incomplete coverage of leaf surfaces that one expects...
with aerial applications would be a serious limitation for these two contact fungicides.

Note that for several of these fungicides, the disease is called "Helminthosporium leaf blight" caused by "Helminthosporium turcicum", an old name for the fungus that causes NLB.

Potential Benefits of Fungicide Application in Limited Instances

In the situation of high disease pressure described above, one would probably at least recoup the cost of a fungicide application, and exceed it in some instances. In addition to protection of yield, if NLB is "brewing" in a susceptible hybrid, a fungicide application could help protect test weight and stalk quality. When leaves are blighted during grain fill, the corn plant draws reserves out of the stalk in order to fill the grain. This results in weak stalks susceptible to lodging. Thus, some producers may feel a fungicide treatment is justified on the basis of retention of stalk quality. The application might allow the planter to let the crop dry down for a time in the field, instead of having to rush in to harvest at black layer and dry the corn down from 30-35% moisture content, resulting in less flexibility in scheduling harvests, higher drying costs, and increased risk of stress cracks from drying operations.

There are no simple answers as to whether a fungicide application will be worth applying. So much depends on complex factors that are often unpredictable. However, perhaps these comments will help producers think through some of the ramifications of applying a fungicide if faced with a NLB outbreak next year.

SOYBEAN

ASIAN SOYBEAN RUST IS HERE: WHAT’S NEXT?
by Don Hershman

On November 10, 2004, the United States Department of Agricultural Animal Plant and Heath Inspection Service (APHIS) announced that Asian soybean rust (ASR) had been confirmed in the continental United States. The initial find was on November 6 in Louisiana, in two production fields on LSU research facilities near Baton Rouge. The disease has since been confirmed in the Florida panhandle, and in southwest portions of Alabama, Georgia, and southwest Mississippi. No other finds have been confirmed as of November 22, but additional finds are likely. Experts believe that the ASR causal organism, Phakopsora pachyrhizi, blew in from South America in the winds of hurricane Ivan in mid-September.

All evidence suggests that P. pachyrhizi is now firmly established in the continental U.S.: the fungus exists over a very wide area, and as been found in kudzu in Florida. The find in kudzu suggests that legume weed hosts are now involved, which points to a high probability that P. pachyrhizi will successfully overwinter somewhere in the southern U.S..

Obviously, there are a great many unknowns at this time. Yes, the overwintering prospects for the causal organism are high, but how this impacts Kentucky soybean in 2005 is far from certain. I can envision various scenarios that would result in high ASR levels in Kentucky next summer. Likewise, I can envision scenarios that would limit the impact of ASR next summer. With this uncertainty in mind, it will be very important for us to stay in close touch with disease monitoring efforts and reports from states to our south. What happens in those states will indicate, if not determine, the ASR risk status for Kentucky. We will be part of the monitoring activities for the U.S. in that states to our north will be watching very closely what happens in Kentucky. We are the gateway to millions of soybean acres to our north. I suppose the bottom line is that we are all in this together. As such, there will be extensive lines of communication open from state to state as ASR survival, movement, and impact are closely monitored and documented system-wide. This should drastically reduce the possibility that ASR will take Kentucky soybean producers by surprise next summer.

What are we doing, specifically, to address ASR in Kentucky? Speaking for myself, I am committed to bringing you the most up-to-date information possible. As such, look for regular ASR updates in the Kentucky Pest News, the UK Corn and Soybean Science Newsletter, and our soybean rust website (http://www.ca.uky.edu/agcollege/plantpathology/PP AExten/SoybeanRust.htm). I am also scheduled to make ASR presentations at numerous grower and commodity meetings late this year and early 2005. Also, look for updates and information from other UK specialists. Secondly, very shortly we will be announcing dates for numerous area-wide ASR training meetings that will be conducted across the state. These meetings will be sponsored by the Kentucky Soybean Association and the UK College of Agriculture. The purpose of these meetings will be to bring soybean producers “up to speed” on the latest ASR information and, more importantly, to discuss management options. Because ASR has been around for quite some time, and has been the focus of very large programs in Africa, China, and Brazil, there is quite a bit of information to extend. In addition, a significant amount of groundwork had been laid in the U.S knowing that ASR would arrive soon. The result is that new fungicides have been made available, and we have sufficient knowledge on how to achieve good ASR control using fungicides. All is not doom and gloom! Other countries have learned to live with ASR and so can we. As I write this, a group of soybean scientists from across the U.S. are developing some very excellent ASR educational materials, including soybean leaves with ASR embedded in resin. Growers will be able to see ASR first-hand. Our aim is to conduct ASR training meetings well before the production season, but after these training and informational materials are made available. Meetings will probably be held in February and March. The actual dates will be announced in early December.

Finally, I am in the process of developing fungicide research protocols for next summer and finalizing plans for a Kentucky sentinel plot system. Sentinel plots are blocks of soybean planted well before the main soybean crop. They are planted solely for the purpose of scouting for ASR. Sentinel plots may be planted when corn is planted and will involve early-maturing cultivars. The blocks are observed weekly. If we can get enough people interested in planting and monitoring sentinel plots in Kentucky, we should be able to catch early movement of ASR into Kentucky next summer. Training programs on how to scout for and detect ASR will be part of the
sentinel plot plan of attack. The ultimate goal of sentinel plots is to assist growers in making appropriate fungicide spray decisions. States to our south will also have an extensive network of sentinel plots, and we are certain to benefit from those activities.

The arrival of ASR will result in new challenges for Kentucky soybean producers. I am confident, however, that everyone will rise to the challenge and find ways to successfully deal with ASR in Kentucky and the U.S.

SHADE TREES & ORNAMENTALS

WHAT'S WRONG WITH MY TAXUS?
by John Hartman

*Taxus* (yew) is a popular landscape shrub in Kentucky, but occasionally homeowners have difficulty growing yews in the landscape. Sometimes the problems associated with *Taxus* are related to infectious disease or insects. More frequently, however, the problem is due to adverse growing conditions. Unfortunately, there are numerous conditions that can cause *Taxus* to exhibit yellowing and browning. A thorough examination of the affected shrub, an investigation of the surrounding area and a knowledge of possible environmental stresses are often necessary to diagnose *Taxus* problems. The following are questions that are sometimes posed to county Extension agents by clients inquiring about the health of their yews. The answers may help Agents to assist their clients in determining the cause of their shrub's decline.

1. **Question: Why are the tips of the branches of *Taxus* shrubs turning brown?**
   
   **Answer:** There are multiple causes for death of taxus shoot tips in the landscape and they range from disease to weather.
   
   • Examine the trunk and branches for wounds from physical injury. *Taxus* cannot tolerate much injury and is easily damaged. Children falling into the shrubs or snow and ice sliding off the roof into shrubs can cause injury. Bark torn from as little as one-third the circumference of a branch may cause the branch to die from that point all the way to the growing tip. Also, look for nursery tags wired to a branch which may eventually constrict its growth. Even termites, which can build their mud tunnels up the trunk and branches of *Taxus*, can kill parts of the shrub due to feeding activity. Injured branches often do not die immediately but dead branches may be evident the following summer. Dead twigs should be pruned back to healthy tissue.
   
   • Twig blight on scattered branches can result from canker diseases. Cankers (dead, sunken areas) may be associated with various fungi (*Pestalotia, Physalospora, and Sphaeropsis*.) These fungal cankers can girdle twigs and branches, causing them to die back from the tip. Where canker disease is present, dead twigs should be pruned out and destroyed.
   
   • Browning tips of individual branches can be due to cold temperature injury. Tender new growth in late spring or current season's growth in fall may show damage shortly after a frost. The plant usually grows out of this condition.
   
   • Browning and death of 1-year-old or older foliage can be due to winter injury. Symptoms become evident on older needles in spring, while new growth is unaffected. Damage may occur mainly on portions of the shrub exposed to prevailing winds. This condition occurs as the result of moisture lost from foliage on warm, windy days in winter. Because the ground is frozen, moisture cannot be replenished rapidly enough and needles dry out. *Taxus* should be watered as needed up until the ground freezes. Avoid planting *Taxus* on sites that are exposed to drying winter winds.

2. **Question: Why are major branches or even the whole *Taxus* shrub turning yellow, then brown, and dying?**
   
   **Answer:** There are several causes for decline and death of *Taxus* in the landscape. They range from excess soil moisture to mechanical injury to the roots.
   
   • Probably the most common cause of problems is excessive soil moisture. Where the shrub bed soil is poorly drained, where plants are overwatered, or where a downspout from the house empties into the bed, taxus plants often turn yellow, then brown and die. In a taxus hedge, it is usually the plant in the lowest part of the hedge that dies. Wet soil provides conditions favorable for root decay caused by the fungus *Phytophthora*. Infected roots will be brown and rotted; sometimes the disease progresses to and decays the lower trunk of the plant. When roots fail to function, the *Taxus* plant declines and eventually dies. Gardeners should avoid this "wet feet" condition by planting *Taxus* shrubs in well-drained sites away from a downspout.
   
   • *Taxus* can also turn yellow, decline and die over a period of several months or years when growing in soil where pH is unfavorable. *Taxus* is often planted near ornamentals in the heath family (e.g. andromeda, azalea, laurel, rhododendron). Species in this group are considered "acid-loving" plants and prefer a soil pH of 4.5 to 5.5. *Taxus*, on the other hand, requires a less acid soil (pH 6.0 to 6.5). Fertilizers prepared specifically for plants in the heath family tend to make soil more acidic. This can cause nearby *Taxus* shrubs to turn yellow and die. Soil which is naturally too acidic will also cause problems. Gardeners will want to have shrub bed soil tested to be sure that the pH is optimum for the plants being grown. Contact your county Extension office for details on the correct procedure for collecting a soil sample. Your county Extension agent will advise you on how to raise the soil pH with ground limestone, should this be necessary.
   
   • Other stresses can cause *Taxus* to die in the landscape. Shrubs that die a year or two after transplanting may have been killed by transplant shock, that is, the stress of moving from one environment to another. New transplants often pass through a period of shock, regardless of the care taken. However, by following correct cultural procedures for transplanting, this stress can be minimized. Planting too deeply is a common transplanting problem that must be avoided.
   
   • Additional stresses causing yellowing, browning and death include holes or ditches dug for gas and sewer lines or during home construction that can result in damage to *Taxus* roots. Digging within several feet of the shrub may damage roots that supply water and nutrients to the plant. Injured plants turn yellow, wilt and can eventually die. Even tunnels dug through the root zone by chipmunks or moles may damage roots sufficiently to cause top symptoms.
   
   • If only inside foliage turns yellow in late summer or early fall it may be due to normal needle drop. At this time, 3 to 5-year-old needles may suddenly turn
yellow. Needles remain on the shrub for several weeks and then drop. This is a normal process and should not cause concern.

For more information on solving Taxus problems, consult U.K. Cooperative Extension Service publication What’s wrong with my Taxus? (ID-72), available at County Extension Offices.

THAT’S ONE BIG APHID!
by Lee Townsend

As the largest aphid in North America, the giant bark aphid comes by its name legitimately. It is found over most of the US and can develop on basswood, hickory, oak, pecan, sycamore, and walnut. Typically, aphids feed on terminal leaves but giant bark aphids feed through the bark on twigs and branches. Colonies are most noticeable during the cool weather in the fall and spring. These sap feeders excrete large volumes of sugar-rich waste (honeydew). The sticky honeydew accumulates on limbs or objects beneath the infestation and can support the growth of a blackish sooty mold. Abnormally black limbs or branches can be the first visible sign of giant bark aphids. Usually they do not cause serious damage but feeding by large numbers of them can kill individual twig or branches.

These aphids occur in clusters or colonies. Wingless forms of the aphid are about 1/4 inch long and light to dark brown with some black spots. The winged forms have dark head and thorax. Much of the abdomen is white with 2 rows of black spots. Identification isn’t much of a problem.

Lady beetles and other natural enemies can keep this aphid in check when temperatures are warm but cool temperatures slow them down and surviving aphids can thrive. Direct application of insecticidal soap can be effective but repeated applications may be needed.

HOUSEHOLD

THERE’S A HOLE IN MY SWEATER!
by Mike Potter

Now is the time when clients begin calling about ‘bugs’ infesting clothing, blankets, etc., unpacked from storage. These are probably clothes moths or carpet beetles. Besides damaging fabric, these insects will feed on any item composed of animal fibers, e.g., wool, fur, silk, feathers, felt or leather. Items commonly infested include wool sweaters, coats, blankets, carpets, down pillows and comforters, upholstered furniture, toys and animal trophies. Cotton and synthetic fabrics such as polyester and rayon are rarely attacked unless blended with wool, or if they are heavily soiled with food stains or body oils. Serious infestations of clothes moths and carpet beetles can develop undetected inside a home, often causing irreparable damage to clothing, bedding, rugs, and other articles.

THE CULPRITS

Carpet beetles - Carpet beetles are common in buildings, and can infest many items in addition to fabrics. Larvae are about 1/8 to 1/4-inch long, tan to brownish in color, and densely covered with hairs or bristles. This is the life stage likely to be encountered now, since only the larvae feed on fabrics and cause damage. Oftentimes only the shed (molted) skins of the larvae are present on the damaged item. Adult carpet beetles feed mainly on flowers and are usually discovered indoors during the springtime. The adult beetles are small (1/16 to 1/8-inch) and oval-shaped, ranging in color from black- to various patterns of white, brown, yellow and orange. Large numbers may be spotted around light fixtures and windows, indicating that an infestation is present somewhere within the home.

Clothes moths - Clothes moths are small, 1/2-inch, buff-colored moths with narrow wings fringed with hairs. Like carpet beetles, they damage fabric only in the larval stage. Adult clothes moths are seldom seen because they avoid light, preferring to hide in dark places such as the backs of closets. Clients who report seeing tiny moths in the kitchen and other well-lighted areas are probably seeing grain moths originating from stored foods, e.g., cereal, dried fruit, nuts, or pet food. Clothes moth larvae spin silken feeding tubes or patches of webbing as they move about on the surface of fabrics. They also deposit tiny fecal pellets similar in color to the fabric.

THE SOLUTION

Current infestations - Controlling an existing fabric pest problem requires a thorough inspection to locate all infested items and locations. The source may be an old woolen scarf at the back of a closet, a fur or felt hat in a box, an unused remnant of wool carpeting, or an abandoned bird or squirrel nest up in the attic. Larvae prefer to feed in dark, undisturbed areas where susceptible items are stored for long periods. Larvae also may be found living beneath the edges of carpeting (use needle-nose pliers to lift the outer edge of the carpet from the back strip along baseboards), underneath and within upholstered furniture, or inside heat ducts and floor vents where they often feed on accumulations of lint, pet hair and other organic debris. Occasionally, infestations may originate from bird or animal nests or carcasses in an attic, chimney, or wall void. Carpet beetles, in particular, will also feed on pet food, bird seed, and grain/cereal products associated with the kitchen, basement or garage.

Infested items should be laundered, dry-cleaned or thrown out. Laundering (hot cycle) or dry-cleaning kills any eggs or larvae that may be present. Vacuuming floors, carpets, and inside heating vents effectively removes larvae as well as hair and lint which could support future infestations. Be sure to vacuum along and beneath edges of carpets, along baseboards, underneath furniture and stored items, and inside closets and quiet areas where carpet beetles and clothes moths prefer to feed.

Insecticides, applied to infested areas such as carpets, may be helpful as a supplement to good housekeeping. Products containing active ingredients labeled for flea control (e.g., permethrin), or with fabric pests listed on the label are effective. Sprays may be applied to carpets, especially along and beneath edges adjacent to baseboards, underneath furniture, and other likely areas of infestation where prolonged contact with humans is unlikely. Infested clothing or bedding should not be sprayed with household insecticides and should instead be laundered or dry cleaned.

Avoiding future problems - The best way to avoid future problems with fabric pests is through prevention.
Woolens and other susceptible items should be dry-cleaned or laundered before being stored for long periods. Cleaning kills any eggs or larvae that may be present, and also removes perspiration odors that tend to attract pests. Articles to be stored should then be packed in tight-fitting containers. Customers choosing to use moth balls or flakes should be encouraged to read and follow label directions. The vapors from these materials are only effective if maintained at sufficient concentrations. Effective concentrations can best be achieved by sealing susceptible items (with the manufacturers’ recommended dosage of moth crystals) in large plastic bags, and then storing the bagged articles in tight-fitting trunks, boxes or chests. Contrary to popular belief, cedar closets or chests are seldom effective by themselves because the seal is insufficient to maintain lethal or repellent concentrations of the volatile oil of cedar.

Conventional household insecticides should not be used to treat clothing. Moth-proofing solutions, however, may be applied to susceptible clothing by professional dry cleaners. Valuable garments such as furs can further be protected by cold storage — a service offered by some furriers and department stores.

Additional tips on fabric pest prevention, control, and repair of damaged items can be found in the publication IP-50, Fabric Insect Pests. Elimination of widespread, persistent infestations of carpet beetles and clothes moths in a home or business may require the services of a professional pest control firm.

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.