UNSEASONABLY WARM WEATHER THIS FALL COULD CAUSE PROBLEMS FOR THE 2006 CROP
by Kenny Seebold

As the sun sets on the 2005 tobacco season, the only reminder of the crop in the harvested fields is row upon row of old stalks. Regrowth from these stalks is not uncommon, but a good frost normally kills off any new growth. This year, though, we’ve had a good bit of unseasonable warm weather, and as a result, there’s a lot of “ratoon” tobacco in the fields – in some places plants have 4-6 leaves on them. Cold weather will come eventually and will kill off this new growth; however, actively growing tobacco at this time of year poses a risk to next year’s crop in a number of ways. Nematodes can reproduce only on living tissue; thus, re-growth from old stalks provides the living host that will permit the populations of these pests, if present, to increase in a field. Soilborne organisms such as Pythium spp. and the black shank pathogen can also increase and spread, creating problems for subsequent tobacco crops in the field. A more remote (but possible) threat is the potential for systemic blue mold to survive if the coming winter proves to be mild. Overwintering inoculum of the blue mold pathogen could serve as a source of outbreaks in transplant houses next spring or in transplanted tobacco later on.

We have always recommended that growers clear fields of residue from a harvested tobacco crop as quickly as possible to prevent the problems described above. That warm weather is causing large numbers of stalks to sprout and thrive should be the cue that our growers need to get into the field now and clean things up. Turning crop residue under in the fall gives plenty of time for decomposition before planting in the spring. If plants growing from old stalks are allowed to grow for very long, though, mowing may be required before the crop residue is turned under, adding to the fuel costs required for the job. This is also a good time to talk about crop rotation (as a plant pathologist, I would be delinquent in my responsibilities if I didn’t mention rotation at least once in an article…). Pathogens that have built up on a tobacco crop will likely cause problems if tobacco is planted in the same field next year, and may also affect certain crops that may be rotated with tobacco (particularly relatives of tobacco like pepper and tomato). Crop rotation is an effective way to reduce pathogen populations in the field, but consider the effects that the previous crop might have on the rotational crop when planning for the 2006 season.

Please check the KY Blue Mold Warning System page in the coming months for reports on our 2005 fungicide trials, as well as management tips and other news relating to tobacco diseases (http://www.uky.edu/Agriculture/kpn/kyblue/kyblue.htm).
SOYBEAN

SOYBEAN “BLACK SEED” by Don Hershman

With the droughty conditions we experienced in many parts of the state this year, charcoal rot, caused by *Macrophomina phaseolina*, was extensive in many fields. Late-season moisture saved many fields from experiencing devastating yield effects; however, I am now receiving reports that some grain loads are being severely docked at the point of sale due to extensive “black seed”. In some instances, producers are being told by buyers not to bring them any more loads of grain “like that”. Black seed is simply the phase where the charcoal rot infects and damages soybean grain. Infected seed are black, crusty, and shriveled.

There is nothing that a producer could have done to help prevent the black seed situation. Charcoal rot/black seed is closely linked to growing conditions, especially extreme soil moisture deficits. There are no resistant varieties, and even fungicides would be ineffective. The only thing that might have helped is timely irrigation.

*Macrophomina phaseolina* is very widespread in agricultural soils in Kentucky. That fact that we had a lot of charcoal rot (and black seed) this season, does not mean we are more or less likely to experience a similar problem next year. The weather will determine that. Fields that have adequate or above soil moisture will not experience significant charcoal rot/black seed next year.

Black seed should be covered under most crop loss insurance policies since the disease (and yield loss) is totally outside the control of the producer.

PUTTING 2005 SOYBEAN RUST SPORE TRAPPING EFFORTS INTO PROPER PERSPECTIVE by Don Hershman

As many of you know, Syngenta Crop Protection, Inc., in cooperation with Dr. John Rupe, a soybean research pathologist at the University of Arkansas, and numerous state extension specialists, implemented a network of passive spore traps throughout the south and Midwest in 2005, aimed at picking up spores of the soybean rust fungus in advance of disease symptoms becoming evident in nearby fields. Kentucky had ten such traps, located in ten different counties. The table below indicates the location of the traps and the detection results for 2005.

Data on spore finds were available throughout the season at www.soybeanrust.com. More detailed information on this network and other spore trapping efforts can be gleaned by going to the USDA public soybean rust website (www.sbrusa.net) and clicking on the USDA link “USDA Position on Spore Trapping”. This USDA position document was spawned by the incredible amount of interest (to say the least) in positive spore finds by just about everyone having anything to do with soybean in the U.S. Initially, many individuals erroneously equated spore finds with finding soybean rust. This generated substantial and widespread fear within the soybean industry and, as a result, quite a few acres of soybean were sprayed with fungicides. As the season progressed, this became much less of an issue and spore finds were taken with a grain of salt, and in a much more cavalier manner.

As can be seen in the table below, seven of 10 trap sites in Kentucky had multiple hits and three trap sites did not have any. The main educational point I wish to make is that despite finding what appeared to be spores of the soybean rust fungus, soybean rust was not detected at any site in Kentucky, at any time, during the 2005 growing season. If, in fact, we were detecting spores of the soybean rust fungus, it simply confirms what plant pathologists have taught for decades about the importance of the disease triangle in disease development. That is, that disease (in this case soybean rust) can only exist when three highly specific conditions are met: 1) the disease organism must be present and capable of infecting the host (soybean in this case); 2) the plant must be present and susceptible to infection (it was in all cases); and 3) the environmental conditions (at macro and micro climate levels) must support both infection of the host and subsequent disease development.

There is a possibility that some, or even all, of the spores observed this year were not those of the soybean rust fungus, *Phakopsora pachyrhizi*. That said, I have high confidence in Dr. Rupe who managed the reading of the slides. He would be the first to say that he cannot be sure that what he was picking up was the soybean rust pathogen. However, he would also say that what he was seeing fit the reported characteristics for spores of *P. pachyrhizi*, and were dissimilar from spores of other common rust fungi. So, if we assume that we were picking up spores of the rust pathogen, and we know that soybean is uniformly susceptible to SBR, that leaves the weather as the probable reason why we did not pick up infections in 2005.

The weather could have significantly influenced any number of different aspects of the disease triangle. We know, for example, that much of Kentucky was under drought or near-drought conditions for much of the season. The hot, dry weather could have killed spores out-
right, or they may have died while they were “waiting” for moisture and temperature conditions to occur that would support infection. Another possibility is that infection did occur, but the numbers were so low that no amount of scouting would have detected infections. Rather, detection would be dependent on additional disease cycles (additional infections) taking place and these would have almost certainly been hindered by the hot, dry weather.

The take home message in all of this is that spore trap data, even if it were possible to identify spores with 100% certainty, will never provide more than one “corner” of the disease triangle. However, spore trapping may be very useful for letting us know where and when we should ramp up scouting for soybean rust. Eventually, when all the bugs are worked out, spore trapping data may also be very useful (even essential) in disease prediction models.

<table>
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<tr>
<th>County</th>
<th># Times positive</th>
<th>Positive Dates</th>
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<tr>
<td>Ballard</td>
<td>2</td>
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</tr>
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<td>No</td>
</tr>
<tr>
<td>Hardin</td>
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<td>—</td>
<td>No</td>
</tr>
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<tr>
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<td>—</td>
<td>No</td>
</tr>
<tr>
<td>Warren</td>
<td>5</td>
<td>7/6, 9/7, 9/13, 9/20, 9/27</td>
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</table>

**LIVESTOCK**

**CATTLE LICE CONTROL - PART OF A TOTAL HERD HEALTH PROGRAM**

by Lee Townsend

Biting and sucking lice can cause slow weight gain or even a gradual loss, louse-induced anemia, or lowered resistance to stresses, such as cold, wet weather. A carefully planned and timely louse control program will cut losses greatly.

Both types can occur in a herd. Typically, only a small number of animals are heavily infested. A few lice survive the hot summer months on these "carrier" animals, usually bulls or old cows. The bull's longer, denser coat and heavier neck and shoulders prevent him from grooming efficiently. Self-grooming helps to reduce louse numbers. Nutrition, general health, and reduced effectiveness of the immune system of older cows can predispose them to louse infestations.

During the cool fall and cold winter months, lice numbers increase. They spread from carrier or reservoir animals to the rest of the herd as the animals bunch together. In time, the whole herd may become infested but usually only a few animals become extremely lousy. Infested animals rub and scratch excessively in response to the irritation caused by lice.

Confirm a suspected louse infestation by a careful examination of the most agitated animals. Part the hair at points along the neck, head and around the eyes, on the withers, brisket, and shoulders to look for nits (eggs) and lice. Sucking lice can occur in patches. They have narrow, pointed heads and tend to remain attached to the animal. Chewing lice are more active and have a wider, triangular head.

There are several control options for lice but the list of options narrows, especially at this time of year. We are beyond the treatment date for cattle grubs, so a systemic insecticide (fenthion, prolate) should not be used unless a grub treatment was applied earlier.

— A whole animal spray gives the good coverage needed for effective louse control and is also one of the cheapest treatments.
— This leaves pour-ons and dusts as relatively "dry" alternatives.

Check the label carefully before you buy. For example,
you may find different costs for products containing the same concentration a specific active ingredient. Also, look at the application rate and method. Some products have an applicator or measuring device to help deliver accurate doses. This is very helpful when dose rates are just a few cc's per head. Note other cautions or restrictions on the label. Especially important are the time to wait between applications (two are needed for louse control because the egg or nit stage is not killed) and protective equipment to be used during application.

Here are some non-systemic pour-on formulations of insecticides that can be used to control lice on beef cattle. Check the label for specific directions. Products are listed by active ingredient.

(permethrin) - Atroban, Back Side, Back Side Plus, Boss, Brute, DeLice, Ecto Zap, Expar, Permectrin, Permethrin CDS, Ultra Boss , and many other brand names; (cyfluthrin) - CyLence 1%; (spinosad) Elector, and (lambda-cyhalothrin) Sabre 1%.

**THE SOLUTION**

**Current infestations**- Controlling an existing problem requires a thorough inspection to locate all infested items and locations. The primary 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 woolens and other susceptible items are stored for long periods. When inspecting clothing, pay attention to seams, folds, and creases (e.g. cuffs and collars) where larvae often prefer to feed. Larvae also may be found along and beneath edges of rugs and carpeting. Use needle-nose pliers to lift the outer edge of wall-to-wall carpet from the tack strip along baseboards. Other possible locations include beneath/within upholstered furniture or inside heat ducts and floor vents with accumulations of pet hair and lint. Occasionally, infestations may originate from bird or animal nests in an attic, chimney, or wall cavity. Carpet beetles, in particular, will also feed on pet food, birdseed, and grain/cereal products associated with kitchens, basements or garages.

Infested items should be laundered, dry-cleaned or discarded. Laundering (warm 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 rugs and carpets may be
helpful as a supplement to good housekeeping. Sprays containing active ingredients labeled for flea control (e.g., permethrin) or with fabric insects listed on the label are effective. When treating, pay particular attention to carpet edges, floor/wall junctions, beneath furniture, and bottoms of closets. Infested clothing or bedding should not be sprayed with insecticides and should instead be laundered or dry-cleaned.

Avoiding future problems. The best way to avoid future problems with fabric pests is 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 removes perspiration odors that tend to attract pests. Articles to be stored should then be packed in tight-fitting plastic bags or containers. Customers choosing to use mothballs 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 within 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. 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 entomology publications Carpet Beetles and Clothes Moths, or IP-50, Fabric Insect Pests. Elimination of persistent infestations in a home or business may require the help of a professional pest control firm.

HOUSEPLANT INSECT AND MITE CONTROL by Lee Townsend

Houseplants enjoy time outdoors during the summer. It’s a tough world out there and more than a few plants develop insect or mite infestations while they are basking in the summer sun. A few weeks indoors can allow pests to increase while the plants adjust to indoor conditions and symptoms become more apparent.

Your options and the likelihood of a happy outcome depend in great part upon the resilience of the plant and the type of pest that is involved. Plants suspected of being infested should be isolated from other plants to reduce the chances of an expanded infestation. Inspect them carefully to determine if an insect or mite is causing the problem and identify it or get help from your county extension office. Common culprits include aphids, mealybugs, scales, spider mites, thrips, and soil-dwelling fungus gnats.

Pressure washing, hand picking, and pruning are among the quickest and easiest ways to deal with some problems, others require a long-term approach.

In some cases, and insecticide may be the best way to bring an infestation under control. Products with the following active ingredients (and example brand names) are labeled for a variety of houseplant pests: bifenthrin, cyfluthrin (Bayer Rose & Flower Insect Killer Ready-to-use, permethrin (Eight, pyrethrins (Spectracide Bug Stop for gardens), Insecticidal soap (Garden Safe Brand Insecticidal Soap), and neem (Bon-Neem).

More information on houseplant insect control can be found in Entfact 406, Houseplant insect control. www.uky.edu/Agriculture/Entomology/entfacts/trees/ef406.h

MISCELLANEOUS

STATUS OF THE SMALL HIVE BEETLE IN KENTUCKY by Phil Craft, State Apiarist and Lee Townsend

The small hive beetle, Aethina tumida, belongs to the family Nitidulidae, a group often referred to as sap beetles. This species, known from southern regions of Africa, was first discovered in Florida in 1998. Since then, it has been found in Georgia, South Carolina, North Carolina, Pennsylvania, and Ohio. Specimens were collected from Kentucky hives (Bourbon, Livingston, and Scott counties) in 2002 but the spread has been relatively slow. Counties with at least one confirmed or suspected infestation are listed below. Presence on the list does not mean that most are all hives in a county harbor the beetle.


The brown, ¼ inch-long adults are relatively easy to spot but the less obvious elongate white larvae cause damage. They eat live brood and honey. Larval defecation in the honey promotes fermentation, the odor of which may be the first sign of their presence. Bees often abandon the
frothy, fermented honey. Fortunately, the small hive beetle has caused only minor damage in Kentucky beehives. Its pest status is similar to the wax moths, weak or failing colonies are at greatest risk. Even in infested hives, beetle numbers tend to be low. It is common to see only five or six beetles in an infested hive. Apparently, the small hive beetle does not seem to be reproducing extensively in the state.

For more information on the small hive beetle and other beekeeping topics, contact Phil Craft, State Apiarist, Kentucky Dept. of Agriculture, 100 Fair Oaks, Suite 252, Frankfort, KY 40601 phil.craft@ky.gov

**DIAGNOSTIC LAB-HIGHLIGHTS**
by Julie Beale and Paul Bachi

Recent samples in the Diagnostic Laboratory have included Northern leaf blight on corn; storage mold on tobacco; and charcoal rot on soybean. On fruit and vegetable samples, we have diagnosed cedar-apple rust and frogeye leaf spot on apple; scab on peach; twig girdler insect on persimmon; Fusarium fruit decay on pumpkin; and Phomopsis leaf blight on strawberry.

On ornamentals and turf, we have seen Pythium root rot and Cercospora leaf spot on poinsettia; Pythium root rot and Macrophoma leaf spot on holly; bacterial leaf scorch and Hypoxylon canker on oak; Rhizosphaera needle cast on blue spruce; and anthracnose on bentgrass.

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.