



# KENTUCKY PEST NEWS

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## TOBACCO

### CURRENT BLUE MOLD STATUS

By William Nesmith

Active blue mold has not been reported from Kentucky or any neighboring state as of April 26. The North American Blue Mold Forecast Center at North Carolina State University continues to predict only low-level risks for transport of blue mold spores into Kentucky via windborne routes. However, conditions remain favorable for continued localized development of blue mold in the southeast, which means the sources of spores remain, and could serve as a potential threat with changing weather events.

Kentucky's weather early in the week of April 26 is expected to be cool and wet, and thus ideal for blue mold to develop if the pathogen is present. Therefore, keep all transplant production systems protected with regular fungicide sprays (with either Dithane or Ferbam). Manage greenhouse heating and ventilation systems to keep plants dry. Also, use recommended clipping practices to help to open the canopy and improve fungicide coverage.

Late last week, several calls were received concerning use of the new fungicide Ultra Flourish for blue mold control. Apparently, some have become confused about what strains of blue mold this new fungicide will control. Our preliminary diagnosis of barley yellow dwarf (BYD)

Somehow the idea of "new fungicide" is becoming linked with "new strains", leaving the implication that Ultra Flourish will control the new (metalaxyl-resistant) strains. The bottom line is that this new fungicide contains the same active ingredient as is in Ridomil Gold. There is no reason to expect it will control any strains of blue mold not controlled by Ridomil Gold. It is also expected that Ultra Flourish will fail to control the same strains not controlled by Ridomil Gold.

## WHEAT

### CAUSE OF YELLOW WHEAT

by Don Hershman and Doug Johnson

About the middle of last week we began to see yellowing in some wheat fields throughout west Kentucky. In general, the second leaf from the top (the F-1 leaf) is yellow from the tip to about one-third of the way back; the flag leaf has a very slight yellow cast. Most of the affected fields are between full flag leaf emergence and early heading; symptoms developed very rapidly, over a two- or three-day period. The extent of the symptoms in affected fields is highly variable. This problem is widespread, but there are also more healthy, non-yellowed fields based on our observations.

has recently been confirmed by ELISA tests. You may

recall the barley yellow dwarf virus, the cause of BYD, is transmitted to wheat by various species of aphids. Preliminary observations suggest that we are dealing with fall infections and that early planting dates are the most impacted. The appearance of BYD is not surprising since we frequently have at least low levels of the disease every year. However, the low aphid levels this fall lead us to believe that the potential for BYD was relatively low compared to most years. Obviously, wheat scientists have a great deal to learn about the relationship between aphid numbers in a crop and BYD. In any event, this situation drives home the importance of not planting wheat too early. For example, here at the Research and Education Center, the only wheat showing extensive symptoms is the wheat planted in early October. Wheat planted during mid- to late-October is showing very little BYD. A clearer picture of the extent of BYD in Kentucky will develop over the next two weeks. We intend to gather as much information about planting dates and insecticide use in affected and healthy fields as possible to learn more about cause of the highly variable BYD situation across the state.

As far as yield effects go, our research indicates that you can expect reductions in the range of 10-20% in areas of the field which express BYD prior to head emergence. Of course the overall extent of yield loss will depend upon the incidence of symptoms across the field. Yield effects will be reduced significantly if symptoms appear after crop head emergence.

## **MANAGING GLUME BLOTCH WITH FOLIAR FUNGICIDES**

**By Don Hershman**

Leaf and glume blotch, caused by the fungus *Stagonospora nodorum*, is the most consistently destructive wheat disease in Kentucky. With the new label status of Tilt and Quadris, and the ability to legally apply these fungicides until crop flowering, farmers now have the fungicide tool needed to do an excellent job of managing leaf and glume blotch in susceptible varieties. There is a major hitch, however. That being that glume blotch control efforts must be employed before glume blotch is evident. It is not possible to wait until you see symptoms on the heads to make a fungicide application and get acceptable disease control. By that time, the damage is well established and the fungicides will be of no value. Thus, the only effective way to manage glume blotch is to make a fungicide use decision based upon what you see when scouting for *S. nodorum* on the leaves (i.e., leaf blotch). For example, if a crop is in the boot stage to early heading, and lesions of leaf blotch are common on the F-2 leaf or above, then a fungicide spray is indicated. The spray threshold is reached when 25% or more of the leaves scouted show leaf blotch lesions. As long as no symptoms are evident on the heads, an application of either Tilt or Quadris at this level. Now on to Johnson's #1 Axiom: If there are no insects present (or in this case very few), then insecticides work

of infection will effectively control glume blotch. Best results, of course, will be achieved if at least part of the head is out when the fungicide is applied. A word of caution: yield loss due to leaf blotch can be significant and there is little to be gained by managing glume blotch, but waiting too late to spray for leaf blotch. In other words, if the leaf blotch threshold is reached before the heads emerge, it would be advisable to spray even though you would have preferred to delay the application in order to achieve better glume blotch control.

## **COVERING SPRAYS ON WHEAT AT HEADING** **by Doug Johnson**

A number of individuals have asked about spraying wheat at heading time to prevent insect problems for the remainder of the season. This is a convenient time, especially if producers are applying a fungicide for control of various foliar diseases.

There are two questions to consider; 1) *Will it work?* and 2) *Is it needed?* As for the first, the long residual life of many insecticides does provide a good degree of preventive control against several insects. There is only one generation of the cereal leaf beetle (CLB) each year and it is most important during the life of the flag leaf. There are several generations of armyworms each year but once again it is the protection of the Flag and F1 leaves during grain fill that is the most important. As a warning however, it is always possible that an insecticide application at this time will destroy all the natural predators and parasitoids that generally keep our wheat pests under control. That means there is always the possibility of a resurgence of an existing pest or emergence of a secondary pest.

In Kentucky however, the second question, *Do I need this application?*, is more important. Without question there will be some armyworms almost all Kentucky wheat fields. However, will there be enough to cause an economic loss? Historical data and experience tells me that this pest rarely reaches levels of economic importance.

Now don't get me wrong, there are times when armyworms have been a real problem, it is just that these instances are few and far between. It seems that historic data is telling us the same thing.

I have reviewed IPM sampling data for armyworms in Kentucky wheat fields for the years 1986 -1993. (The years 1988 and 1991 were not considered because only 4 wheat fields were checked). Over the 6 years 8,462 acres were scouted in 271 fields (a yearly average of 1,410 acres in 45 fields, in 10 counties).

None of the fields had armyworm numbers that reached the Treatment Threshold of 16 worms per 4 square feet.

perfectly!! In the main, it is not a question of whether or not the insecticide application will work. Modern

insecticides are very good at what they are designed to do. The real question is Do you need the insecticide? In most cases in wheat for armyworm, you do not.

## CORN

### EARLY-SEASON WEED MANAGEMENT TIPS FOR CORN AND SOYBEAN PRODUCERS

by J. D. Green

One of the critical inputs in crop production is adequate weed control. Therefore, herbicides are used in corn and soybean production to maintain economical weed control throughout the growing season. Highlighted below are some important aspects to consider when implementing our weed management programs.

1) **Choosing the right herbicide or herbicide combination.** The most effective herbicide product(s) to use will depend on the type of weeds present. Knowing the field history of past weed problems will enable crop producers to pick herbicide products that will be the most effective for both the common and most troublesome weeds that are present in each field. For no-till fields it is important to choose a “burndown” herbicide option that will adequately control the vegetation that is present at the time of corn or soybean planting.

2) **Application Rate.** The application rate for each herbicide depends on the soil characteristics, the type of weeds present, the tank mixture, and/or the stage of crop growth. In addition, the spray volume (or gallons per acre) may need to be altered depending on the herbicide products to be applied.

3) **Timing of the herbicide application.** With the wide array of herbicides available crop producers can choose either between weed control programs that rely more on a soil-applied or mostly a postemergence method of application, or a combination of both. In general, soil-applied herbicides must be applied before weeds emerge; whereas, optimum control with postemergence herbicides are obtained when applied to weeds that are small and actively growing. Applying herbicide treatments at the right time is just as important as picking the right herbicide or combination of herbicide products to use.

4) **Use of herbicide tolerant crops as weed management tools.** There has been an increasing interest in planting crops that are genetically tolerant to use of specific herbicides. It is extremely important to mark fields and keep good records of where these crops are planted. A misapplied herbicide to a non-tolerant field can result in severe crop damage or even a total crop loss.

5) **Environmental conditions.** Weeds that are stressed due to hot/dry weather can be harder to kill. Also, crops under stress have a greater potential for herbicide injury. A postemergence application of Accent may limit further

Other extremes in environmental conditions, such as wet field conditions can prevent applications from being made on a timely basis. Expected rainfall soon after application can wash the herbicide off the plant; thus, reducing the effectiveness of some postemergence products. The rain-free period suggested for many products range from 1 to 8 hours, depending on the herbicide.

6) **Drift and nearby susceptible plants.** As a general rule, avoid herbicide applications when wind speed exceeds 10 MPH or air temperatures are above 85 F. Under these conditions the potential risk of herbicide injury to nearby susceptible plants is greatly increased due to volatility and/or drift from certain herbicides.

7) **Sprayer cleanup.** Immediately following a herbicide application the spray equipment should be thoroughly rinsed and cleaned. This includes flushing the tank, hoses, screens, and nozzles with clean water. In some cases running a cleaning solution, such as household ammonia, through the system is needed. Many of the herbicide labels discuss proper sprayer cleanup after use of a product. Sprayer cleanup is critically important when applying a herbicide on one crop and using the same equipment to treat another crop.

In summary, herbicide applications are an effective and economical tool for combating weed problems. However, it is important to select the right herbicide products for the problem weeds in each field, as well as, making the application at the right time. Finally, be aware of environmental conditions before and after the herbicide application, including the potential for off-site spray drift.

### ITALIAN RYEGRASS IN NO-TILL CORN

By James R. Martin

Italian ryegrass (also known as annual ryegrass) has been increasing as a problem weed in no-till corn. Although this species is a cool-season annual, it becomes very difficult to control once plants have overwintered. Sequential applications of “burndown” herbicides have been successful and are usually recommended for managing this weed before planting.

There may be instances where corn has been planted and the initial “burndown” treatment was not applied. In this situation the use of Roundup Ultra at 3 pt/A as the “burndown” treatment may aid in the control Italian ryegrass.

Fields with a history of annual ryegrass should be checked to determine if the burndown was successful in managing this problem weed. The recent rainfall will likely encourage regrowth if the burndown herbicide treatment did not control emerged plants.

regrowth, however, growers should not expect complete

control of Italian ryegrass plants at this time of year. The success of Accent will likely depend on how much regrowth has occurred since the burndown was applied. Plants with well developed crown tissue are likely to have more regrowth and be more difficult to control compared with plants with just a few tillers emerging from the crown.

## VEGETABLES

### TOMATO SPOTTED WILT AND IMPATIENS NECROTIC SPOT VIRUSES IN PEPPERS

By William Nesmith

The thrips-transmitted viruses, Tomato Spotted Wilt Virus (TSWV) and Impatiens Necrotic Spot Virus (INSV) can be severe on peppers during both transplant and field production. Outbreaks of both viruses have been observed in transplants this spring in Kentucky. We have had more experience with TSWV in Kentucky peppers and know it can cause very severe losses in the field when infected transplants are used, although time of infection and differences among strains impacts the disease severity. We have much less experience with INSV in peppers. Information available from our colleagues in key vegetable production states, however, indicates that although INSV and TSWV cause similar symptoms in peppers, INSV in general usually causes less severe damage and impact on production of both the transplant and field plant, but they too admit having limited experience with INSV and peppers. Therefore, making decisions at this time of year on what to do with INSV-infected lots of pepper transplants is difficult because of the number of unknowns.

Our Plant Disease Diagnostic Laboratories can assist you with correct diagnoses of these and other viruses in peppers, so please use this service.

The following have been the control recommendations for several years concerning thrips-borne viruses in solanaceous vegetables:

- \* To avoid serious losses in the field, avoid introduction of these viruses into the transplants.
- \* Ensure that transplants are from fields or greenhouses certified/inspected to be free of TSWV/INSV.
- \* Local transplant producers should take steps to reduce spread of TSWV and INSV by following recommended thrips control and not producing pepper transplants in houses where ornamentals are being produced or sold.
- \* In both transplant and field production phases, rogue out infected plants as soon as they are found and maintain a thrips control program.

Should Kentucky growers use Quadris to control strawberry anthracnose disease? Should we propose a crisis exemption that would allow emergency use of

## FRUIT CROPS

### CODLING MOTH BECOMING ACTIVE

By Ric Bessin

Codling moths have been slow to show up in pheromone traps this spring, but they are now beginning to appear. Now is the critical time to monitor for the moths in commercial orchards. Be sure that traps have fresh pheromone lure (less than one month old) and check traps daily until the biofix is reached. The biofix is the date when the fifth codling moth is trapped.

After the biofix has occurred, degree days are calculated on a daily basis and a running total is kept (see *Predicting Insect Development Using Degree Days* in ENTFACT-201). The codling moth has a 50°F threshold temperature. These degree day accumulations are summed until they reach 250. At 250 DD an insecticide is applied for control which coincides with egg hatch. If codling moth are abundant (more than 10 per trap per week), a second spray may be necessary 7 to 10 days later.

Codling moth trap catch records need to be maintained throughout the summer to monitor additional generations. However, after the initial biofix it is only necessary to examine the traps twice a week. A threshold of five moths per trap per week is used to determine if there are sufficient levels of moths to warrant an insecticide application.

### NO QUADRIS FOR STRAWBERRIES IN KENTUCKY

by John Hartman

Some of our fruit growers may be aware that strawberry growers in Tennessee may now use the fungicide Quadris (azoxystrobin) for control of anthracnose disease. We were made aware of the situation from an article written by Dr. Steve Bost for the weekly University of Tennessee Entomology and Plant Pathology newsletter "What's Happening?" Strawberry anthracnose disease is favored by warm, wet weather, causing fruit decay as well as attacking vegetative parts of the plant. This disease has been a problem for Tennessee strawberry growers and Dr. Bost has done much field testing of fungicides for anthracnose control.

According to Dr. Bost, the Tennessee Department of Agriculture issued a crisis exemption for use of this fungicide following a request to EPA for a section 18 emergency-use label. Under this crisis exemption, growers would use Quadris to prevent the fruit rot phase of the disease before harvest and through the season to control the vegetative phase of the disease.

Quadris in our strawberry fields? While Kentucky growers may wish to have additional chemistry available for disease control, there is an important reason why

Quadris will not be cleared for use on Kentucky strawberries this year. There is no emergency here; we receive few inquiries about strawberry anthracnose, we have observed little problem in the field, and we have diagnosed only an occasional specimen with anthracnose on strawberries submitted to our plant disease diagnostic laboratories. We cannot justify to regulatory authorities the issuance of an emergency or crisis exemption unless we can document that an emergency exists and that there has been economic damage to the crop.

It is likely that anthracnose exists in Kentucky. We just have not seen it at high enough levels for growers to be too concerned about it. The last two spring seasons have been relatively cool and wet, with later summers dry. If prolonged, warm wet weather should occur we could see more anthracnose on strawberries in Kentucky.

Our current recommendations call for application of captan at 7-day intervals before and through harvest. Even if we determine that there is a need for Quadris in future years, there is an additional reason for caution in its use. Quadris has the same active ingredient as the fungicide Abound. Since many of our strawberry producers also use the same spray equipment to spray fruit trees, they should be aware that Quadris, like Abound is phytotoxic to certain apple varieties.

## **SHADE TREES AND ORNAMENTALS ORNAMENTAL PEST ALERT by Mike Potter**

Warm weather is triggering emergence of several key horticultural pests. If control is warranted, the time for action is now when pest life stages are most vulnerable. (For tips on predicting the emergence of future pests, refer to ENT-66, *Timing Control Actions for Landscape Insect Pests.*)

**Honeylocust plant bug** - Eggs have hatched and the young nymphs are feeding on the expanding leaves of honeylocust. Feeding by the small, pale green insects causes distortion, stunting and discoloration of the foliage. Leaf damage persists throughout the season. Nymphs transform into adults by mid-May, and lay eggs in woody tissues. Winter is passed in the egg stage.

Damage from honeylocust plant bug rarely endangers tree health, but can be a concern in terms of cosmetics. Early activity is often overlooked and infestations are not recognized until symptoms appear. *By this time, control efforts are no longer effective.* Nurseries who want to avoid cosmetic damage should examine expanding leaflets for the small, green nymphs and treat while the insects are still active. Insecticidal soap, 2% horticultural oil, or conventional insecticides (e.g., Sevin, Dursban, Tempo, Talstar, Scimitar) are effective. Check the foliage 7 to 10

## **SAWFLIES ACTIVE ON PINES By Lee Townsend**

days after the first treatment to determine whether or not another application is needed. There is only one generation each year.

**Hawthorn Lace Bug** - Egg hatch has begun and nymphs are feeding on the undersides of hawthorn leaves. Lace bugs suck plant sap and cell contents, producing yellowish stippling on the upper leaf surface. In addition, dark, shiny spots of excrement are excreted on the leaf undersurface. The injury, in addition to being unsightly, can reduce plant vigor. Lace bugs may have two or more generations each year, each requiring about 30 days. Insecticides such as Orthene, malathion, Dursban, and synthetic pyrethroids (e.g., Tempo, Talstar, Scimitar) may be used for control. Thorough coverage of leaf under sides is important.

**Oystershell Scale** - Crawlers of the oystershell scale also have begun to hatch. Susceptible hosts include lilac, willow, maple, ash, apple, dogwood and others. Infested limbs and twigs are encrusted with 1/8-inch long curved scales that resemble miniature oystershells. Crawlers are susceptible to sprays of 2% horticultural oil, insecticidal soap, Tempo, malathion, and a variety of other conventional insecticides.

**Lilac borer/Lesser peachtree borer**- Adults of both species are delicate, day-flying moths that resemble wasps. Principal hosts for lilac borer include lilac, ash and privet; for lesser peachtree borer, peach, plum, and flowering cherry. Wood borers are among the most destructive and difficult to control pests of landscape plants. The larvae tunnel and feed under the bark of trees and shrubs, destroying water and sap-conducting tissues. This causes a loss of vigor and overall weakening that can eventually kill the tree. Infestation sites also provide entry points for disease organisms. Symptoms include dieback, cankers or cracked bark, and accumulations of sawdust-like frass on the bark or at the base of the tree.

Controlling borers is difficult because there is only a narrow window of opportunity for treatment. Eggs are laid on the bark of preferred hosts, and within 1 to 2 weeks the young borer larvae emerge and quickly tunnel inward. Once inside the tree, the larvae are protected from insecticide sprays. Therefore the key to control is having a lethal residue of insecticide on the bark to intercept newly-hatched borers *before* they burrow into the tree. *The optimum treatment window for lilac and peachtree borers this year is about now (late April).* Lindane and chlorpyrifos (Dursban) are registered for borer control. The trunk and major limbs of susceptible trees should be sprayed to runoff as specified on the label.

Sawflies are beginning to feed on several species of pine

now. Masses of small, light green Virginia pine sawflies were seen on pines in Madison County late last week.

## LAWN AND TURF

### KEY LOW-MAINTENANCE LAWN PRACTICES AND DISEASE CONTROL

By Paul Vincelli

Low-maintenance lawn care offers certain benefits, such as minimal pesticide use, reduced fertilizer input, less need for irrigation, and reduced mowing frequency. Low-maintenance approaches to mowing and fertility practices can influence disease development in the lawn, so a few appropriate comments are provided here. Start by recognizing that, in a low-maintenance yard, the lawn will not offer the same dark-green, uniform sward of turf that is seen under a high-maintenance lawn-care program.

#### Fertility

Autumn and early winter are the best times of year to apply fertilizers to cool-season grasses like tall fescue and Kentucky bluegrass, which are by far the predominant grasses in Kentucky lawns. In response to fall fertilization, the turf develops a better root system and becomes very dense. It also recovers better from summertime diseases and other stresses when fertilized in the fall.

UK recommends applying 1.0 to 1.5 pounds of actual nitrogen per thousand square feet of lawn once or twice during the period from mid-September through early December. The UK Extension publication "Lawn Fertilization in Kentucky," AGR-53, offers good information on determining fertilizer application rates.

Heavy fertilizer use during spring and summer can actually increase the risk of several destructive diseases that occur during the summertime. Brown patch is the most common and destructive disease of tall fescue, the preferred grass for Kentucky lawns. The severity of brown patch usually is proportional to the level of spring and summer fertility. This means that, the more fertilizer you apply in spring and summer, the worse the disease becomes. In Kentucky bluegrass, a very destructive disease called summer patch is often more severe in over-fertilized lawns. High fertility in spring and summer also reduces tolerance of the turf to summer stresses, and increases the need for frequent mowing.

#### Mowing

A mowing height somewhere in the range of two to three inches is commonly recommended for a typical Kentucky lawn. For a low-maintenance lawn, a mowing height towards 3 inches is preferable. High mowing heights result in a more competitive grass and more shading of the soil, which reduces weed competition. Grass under a high mowing height will produce a deeper root system, making Preventive flea control has been made possible by new product innovations and insights into flea biology. We now know that adult fleas (the biting stage) spend

it more tolerant of stressful conditions, particularly drought and root rots. Kentucky bluegrass lawns under a high mowing height are significantly less susceptible to summer patch.

Another benefit of a high mowing height is that the lawn doesn't need to be mowed as often. Mowing more than 1/3 to 1/2 of the length of the leaf blade at any one cutting stresses the grass. Thus, a lawn mowed at two inches must be mowed when only one inch of new growth appears, whereas a lawn mowed at three inches can accumulate 1.5 inches of growth before mowing is needed again. Mowing less often yields benefits such as less use of fossil fuels, less air and noise pollution relating to mowing, and more time for other activities of personal interest.

There are certain drawbacks to a high mowing height. One is that the turfgrass will not be as dense and uniform as a closely mowed lawn, which is often considered more aesthetically pleasing. Another drawback is increased temporary, cosmetic damage from brown patch in tall fescue. During an outbreak of brown patch, leaf damage from the disease is less severe in closely mowed tall fescue. Outweighing this, however, is the fact that closely mowed turf suffers more root rot and plant death from brown patch, which actually is a more destructive problem to the turf than is brown patch damage on the leaves. Thus, on balance, a mowing height of close to three inches for tall fescue is ideal for a low-maintenance lawn.

Homeowners often question the practice of leaving vs. removing (bagging) grass clippings when mowing. Without question, returning clippings to the lawn is preferable for general lawn maintenance. In most situations, leaving grass clippings does very little to enhance disease development in turf. During an active outbreak of brown patch in hot, humid weather, clipping removal may help eliminate a food base for the fungus, especially in an over-fertilized lawn. However, in most instances, returning clippings to the lawn is a beneficial practice that returns nutrients to the soil. It is also a fallacy that grass clippings contribute a great deal to thatch accumulations. Heavy thatch problems are usually related to excessive nitrogen applications and/or pesticide applications that reduce thatch-feeding earthworms, microbes, and insects.

## HOUSEHOLD

### TAKE ACTION NOW FOR A FLEA-FREE SUMMER

By Mike Potter

Anyone who has ever battled fleas knows how difficult they are to eradicate. Once a home becomes infested, control can be difficult, time-consuming and expensive.

virtually their entire life on the pet, not in the carpet. Eggs are laid on the fur and fall off into carpeting, beneath furniture cushions, and wherever else the pet lays, sleeps

or spends time. After hatching, the eggs transform into larvae, pupae, and eventually adults to renew the cycle.

Pet owners can break the cycle of flea development and prevent future generations by killing the eggs as they're laid on the pet, or by eliminating the egg-laying adults. *The easiest way to do this is to take action now, before flea problems get out of control.* Several products are available through veterinarians and retail outlets which are convenient and effective.

**The "Pill" (Program®)**-This product prevents flea eggs from hatching when administered orally to pets once a month at mealtime. Dogs are fed Program in tablet form, whereas cats are fed a liquid suspension mixed with their food. Different tablet sizes and suspension doses are prescribed according to the weight of the animal. When an adult female flea bites a Program-treated dog or cat, the flea ingests the active ingredient (lufenuron) which then passes into her eggs and prevents them from hatching. Program is dispensed only through veterinarians. A companion product, Sentinel®, contains both the flea control ingredient and heartworm medication all in one dosage.

**"Egg-Stopper" Collars**- Unlike conventional flea collars, these contain an insect growth regulating ingredient (methoprene or pyriproxyfen) which prevents egg hatch for several months. Thus, the overall effect is much like the "pill." *Pet owners should carefully read the "active ingredients" panel on the package of the collar to verify that methoprene or pyriproxyfen are present.* One such brand, the Ovitrol/Ovitrol Plus® Flea Egg Collar is available through veterinarians. Retail versions include the Fleatrol® Flea Egg Collar and Relieve® Collar, sold in pet stores and discount chains. Once installed, the egg-inhibiting substance releases from the collar and rapidly distributes over the fur of the entire animal, killing flea eggs on contact. This breaks the life cycle and infestations never become established. The methoprene/pyriproxyfen-impregnated collars are virtually 100% effective at preventing new flea eggs from hatching for at least 6 months (essentially season-long) on both dogs and cats.

**Spot-Ons**- A final treatment method involves applying a few droplets of material between the shoulder blades of the animal. Two veterinarian-supplied products, Advantage® and Frontline®, control adult fleas on pets for at least 1 month. On dogs, Frontline Top Spot lasts up to 3 months and also controls ticks. Another "spot-on" product available through retail stores is Biospot® which contains the egg-inhibiting ingredient pyriproxyfen. *The best way to use any of the above-mentioned products is to begin now, before flea season "begins."* By doing so, you will

greatly reduce the chances of developing a serious flea problem later in the summer. Any stray fleas the pet happens to pick up around the home or at the kennel will not be able to lay viable eggs. Breaking the cycle of flea development on the pet also reduces the need to apply insecticides throughout the living areas of the home. (Each of these on-animal products is of negligible hazard to people and pets, and there is no adverse reaction with other medications.) Methoprene or pyriproxyfen-based products may need to be supplemented periodically with a topical spray or dip to knock down any adult fleas irritating the pet, especially if the animal is flea allergic. This should not be necessary with Advantage and Frontline.

In Kentucky, the preventive regimen need not be maintained beyond November unless fleas continue to be a problem. Always read and follow label directions and the advice of your veterinarian.

## DIAGNOSTIC LAB - HIGHLIGHTS

By Julie Beale

Samples of agronomic crops in the diagnostic labs last week have included: powdery mildew, wheat spindle streak virus and barley yellow dwarf virus on wheat; Rhizoctonia damping-off, Pythium root rot, cold injury and herbicide damage on tobacco.

On ornamentals, we have seen yellow patch (Rhizoctonia cerealis) on bentgrass; Volutella blight on pachysandra; crown gall on wysteria; herbicide damage on various herbaceous ornamentals; and spider mite damage on spruce.

On vegetable crops, we have diagnosed impatiens necrotic spot virus on pepper transplants and potassium deficiency on tomato transplants.

## INSECT TRAP COUNTS

UKREC, Princeton, KY, April 16-23

Black cutworm .....	14
True armyworm .....	80

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Lee Townsend, Extension Entomologist