

# KENTUCKY PEST NEWS

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### WATCH FOR:

CEREAL LEAF BEETLES begin to feed on oats and wheat; 1<sup>st</sup> generation EUROPEAN CORN BORER moth flight begins soon; IMPORTED CABBAGEWORMS on cole crops; STALK BORER damage appears along field borders; PINE NEEDLE SCALE and EUONYMUS SCALE crawlers active soon this is the best time for treatment; early to mid-May treatment for BOXWOOD LEAFMINERS

## ARMYWORMS

### TRUE ARMYWORM MOTH CAPTURE DECREASING

by Doug Johnson

Captures of True armyworm moths in the IPM pheromone baited cone traps appear to be decreasing, finally! Counts for the week ending 28 April were 246 and 236 for an average of 241. This is a decrease in captures in both traps and an average decrease of 99 moths per-trap-week from the previous week. It is important to remember that even though the moth flight is decreasing, these numbers are still much greater than are present in non-outbreak years.

We know that worm activity is occurring both north and south of us and that several consultants have reported seeing small numbers of worms in Kentucky. It appears at present that this population, though much larger than normal, is not escaping the control of its natural enemies. Certainly, we hope that this continues to be the case.

However, you can NOT count on this alone. You must scout your fields to determine if the worms are present.

We are still in the early portion of the development of the worm population. You will have to be watchful for several weeks to come. Using our day degree model we can estimate that caterpillars hatching from eggs produced from last week's moth flight will not appear until about 13 May and will not complete their worm stage until 05 June.

The reality is that scouting of susceptible host crops for this first generation of true armyworm will need to be done through the entire month of May.

You may see trap counts for all insects monitored by the UK-IPM program at: <http://www.uky.edu/Ag/IPM/trapdata/trapdata.htm>

## TOBACCO

### BLUE MOLD UPDATE

by Kenny Seebold

As of 28 April 2006, blue mold has been reported only in western Cuba and western Mexico. Current forecasts project a low threat to U.S. production areas at this time. Blue mold remains unreported in the U.S. at this time.

## CORN

### MONITOR FOR CUTWORMS

by Ric Bessin

Growers should be monitoring their corn for cutworm activity over the next few weeks. While seed treatments do aid in reducing cutworm damage, they can provide erratic control, so growers should still monitor fields where seed treatments were used as large cutworms or large cutworm populations can still cause economic injury. Herculex I Bt corn does provide cutworm control, while Yieldgard Bt corn does not have activity against black cutworm.

When scouting for cutworms, growers should be careful to not mistake southern corn leaf beetle injury for that of cutworms as the damage is very similar. Often the southern corn leaf beetles are overlooked due to their small size and that they are the same color as the soil. Both cutworms and the southern corn leaf beetle can clip the whorl out of very young seedlings.

Currently, we are using 3% cut plants and 2 or more live cutworms 1 inch or smaller as a guideline for treatment. High or low stand counts can be used to adjust this economic threshold. While monitoring for cutworms, growers can also assess stand counts, flea beetle injury, and wireworm losses.

## SMALL GRAINS

### CEREAL LEAF BEETLE ACTIVE IN SMALL GRAINS

by Doug Johnson

Cereal leaf beetle larvae are actively feeding in small grains. Most of the larvae are very small but they will increase in size very rapidly over the next week or so. The larvae are pale yellow to dark and soft bodied. They look like small slugs. The often "glue" pieces of trash on their bodies as camouflage. This often makes them look like bird droppings.

Cereal leaf damage is much like a "giant flea beetle". They eat out long narrow strips of tissue between leaf veins. This leaves long scratches or white streaks on the leaves. The most important leaves to protect are the flag and F1 leaves. These are top two leaves on the plant and produce much of the nutrition that heads will use to fill.

Check plants by examining the leaves of 10 head bearing stems per location. Examine one location for each 10

acres of field size. Look carefully at the top three leaves for larvae and damage.

You may need to consider an insecticidal application if ON AVERAGE you find ½ larvae (or adult) per head bearing stem. This would be five Cereal leaf beetles per 10 stem sample.

It is common to find these insects in our wheat fields but unusual to find an economically important population. However, it does happen somewhere in KY almost every year. Cereal leaf beetles are relatively easy to control. However, knowing "if" and "when" to control is much more important than know how to control.

## VEGETABLES

### GRAY MOLD ON GREENHOUSE LETTUCE AND TOMATOES

by Kenny Seebold

In the past month, we've documented cases of gray mold, caused by *Botrytis cinerea*, on lettuce and tomatoes grown in the greenhouse. This disease can be difficult to control once it gains a foothold, and fungicide options for greenhouse use are limited.

Gray mold usually appears on tomato foliage as necrotic spots that enlarge over time. The pathogen will also infect petioles and stems. The resulting lesions may girdle stems, causing wilting above the girdled area. Senescent tissues, such as older flowers, are extremely susceptible to gray mold. These tissues are readily colonized by *B. cinerea*, which will then move into healthy portions of the plant, such as immature fruit. Symptoms on fruit include a soft rot and "ghost spots", whitish halos that arise from aborted fungal infections. Abundant sporulation from necrotic tissue is a classic sign and is normally gray-to-brown in color with a fuzzy appearance.

On succulent plants such as lettuce, infection normally begins at the margins of leaves and eventually rots the entire plant, which takes on a brownish and slimy appearance. Rotted areas exhibit abundant sporulation as with tomato. Tight-headed varieties of lettuce and leaf varieties with a closed growth habit tend to be more prone to gray mold than leaf varieties with an open leaf architecture. As with tomato, necrotic areas will have noticeable sporulation of the gray mold pathogen.

*Botrytis cinerea* is a common pathogen in the greenhouse environment and is widely present in nature. There are many hosts of this pathogen inside and outside the greenhouse, providing a consistent source of inoculum for outbreaks under favorable conditions. We normally think of

*B. cinerea* as a weak pathogen that can also live as a saprophyte (colonizes organic matter). It is common for *B. cinerea* to invade senescent or injured tissues initially and then move on to younger healthier portions of a plant when inoculum is produced at high levels. Cool conditions in the greenhouse favor outbreaks of gray mold, along with moderate-to-high relative humidity.

Gray mold can be difficult to manage in the winter and early spring when greenhouses are kept closed and humidity levels rise. Adequate ventilation and proper plant spacing promote air movement in the greenhouse and can be important in suppressing gray mold. Symptomatic plants should be removed immediately and destroyed to reduce inoculum levels. The fungicide Botran 75W can be used on greenhouse-grown lettuce and tomatoes to manage gray mold. Applications should be initiated prior to the development of a dense canopy. For lettuce, apply 1 oz of Botran 75W per 1,000 sq. ft. beginning 7 days after transplanting. A second application can be made when plants are half-mature. Do not apply to lettuce within 14 days of harvest. For tomato, apply 1/3 of an ounce per 1,000 sq. ft. to control stem canker caused by *B. cinerea*. Treat plants from ground level to a height of 18-24 in. and continue on a weekly basis as needed (do not exceed 4 applications). Botran 75W cannot be applied to tomatoes within 10 days of harvest. Refer to the product label for specific instructions and precautions.

## LAWN & TURF

### TICKS ARE OUT by Mike Potter

Few outdoor encounters are as troubling as finding an attached tick. Besides being repulsive, tick bites cause itching and irritation. A small percentage may also transmit diseases affecting people, pets and farm animals. This column will help you answer some of the more common questions about ticks and the diseases they may transmit.

#### **Q: Where do ticks come from and how can I avoid them?**

**A:** Ticks thrive in woods, uncut fields and brush. They climb onto lower portions of vegetation and attach to a suitable host passing by. To reduce tick encounters, follow these precautions:

1. Don't walk through uncut fields, brush, and overgrown areas, especially during April-July. Walk in the center of mowed trails to avoid brushing up against vegetation. When hiking or camping in tick-infested areas, wear light-colored clothing and long pants tucked into boots or socks, and consider using tick repellent.

2. Inspect family and pets after being in tick-prone areas. Ticks often attach at the waist, armpit, neck and scalp, but can attach virtually anywhere. Promptly remove any ticks, using the method discussed below.

3. Keep grass and shrubs trimmed, and clear overgrown vegetation from edges of your property. Ticks and their wild hosts will not normally infest areas that are well maintained. Treating the lawn with insecticides is of little benefit since mowed areas are not normally infested. If insecticides are used, treatment should be concentrated mainly along borders and fences, and between overgrown areas and the lawn. A good way to confirm if ticks are present is to drag a white flannel cloth or sheet through suspected areas. Ticks will attach and be visible against the white background.

Insecticide sprays containing pyrethroid active ingredients permethrin, cyfluthrin, bifenthrin or lambda-cyhalothrin (e.g., Bayer Advanced Home/Garden™ Multi-Insect Killer, Spectracide Triazicide™, Ortho Home Defense System™) or carbaryl (Sevin) are effective. Such products are sold at hardware and lawn and garden shops. For better wetting and coverage of vegetation, it's often best to purchase these products as concentrates so that they can be diluted and applied with a hose end or pump up sprayer. One to two applications during late April/May and perhaps mid-summer is often all that's required.

4. Free-roaming pets are more likely to become infested than if confined. Ticks on pets can be controlled or prevented using sprays, spot-ons, and insecticide-impregnated collars. See your veterinarian for appropriate products.

#### **Q: What's the best way to remove an attached tick?**

**A:** Using a tweezers, grasp the tick as close to the skin as possible and pull it straight out with gentle even pressure. Petroleum jelly, hot matches and other 'folk' methods of removal should be avoided. Wash the bite area, apply antiseptic and cover with a Band-Aid. Attached ticks should be removed promptly to reduce the chance of infection and disease transmission.

#### **Q: Some clients use the terms "deer tick" or "turkey mite" ... what are they referring to?**

**A:** These terms are often used when referring to immature (larval) lone star ticks, a common tick throughout much of Kentucky. A person who walks through infested vegetation may find hundreds of the tiny ticks (about the size of the period at the end of this sentence) crawling on them. Unattached larvae can be removed by bathing or showering. However, once ticks are attached, removal is

difficult, and their bite can be very irritating. The lone star tick is not considered to be a vector of Lyme disease, although it can transmit Rocky Mountain spotted fever.

**Q: Should I be concerned about getting Lyme disease or Rocky Mountain spotted fever?**

**A:** Each year about 15 to 30 cases of Lyme disease and Rocky Mountain spotted fever are reported statewide. Some of these victims may have been infected while traveling out-of-state. In Kentucky, probably tens of thousands of people are bitten by ticks each year; so the likelihood of contracting a disease is very low. In most cases, a tick must be attached for at least 18 to 24 hours for infection to occur. One cannot become infected simply by having a tick crawl over their skin or clothing. Concerned callers should be informed of the early symptoms of tick-borne disease so they will know whether to seek medical attention. When in doubt, it probably pays to see a physician.

**Q: What are the symptoms of Lyme disease?**

**A:** Lyme disease is difficult to diagnose clinically because early symptoms mimic the flu, e.g., fatigue, headache, fever, or swollen glands, pain or stiffness in the neck, muscles or joints. The most definitive early symptom is a gradually expanding, circular or oval-shaped red rash, often (but not always) at the site of the bite. This rash only develops in about 70% of infected individuals, however, and may be overlooked. Persons, who experience any of the above symptoms after being bitten by a tick, or after spending time in an area where ticks are abundant, should see a physician immediately. In the early stages, Lyme disease can be successfully treated with antibiotics.

The mechanism by which Lyme disease is transmitted in Kentucky is unclear. The primary tick vector, *Ixodes scapularis*, has rarely been found here, although several of the ticks were found a few years ago while surveying deer herds in southeastern Kentucky. More probably will be found in the future.

**Q: What are the symptoms of Rocky Mountain spotted fever?**

**A:** Symptoms of RMSF are flu-like, accompanied by headaches and a very high fever (104-106 degrees F), two to 12 days after being bitten by a tick. The most characteristic sign of RMSF is a rash that appears on about the second to fifth day on wrists and ankles, later spreading to other parts of the body. When promptly diagnosed, RMSF can be successfully treated with antibiotics. In the absence of treatment, victims may die.

**Q: Are there other tick-borne diseases I should be concerned about?**

**A:** Tick bites can result in diseases other than Lyme dis-

ease and Rocky Mountain spotted fever. *Human ehrlichiosis* is another important disease complex, believed to be transmitted by the species of ticks common in Kentucky. Symptoms of ehrlichiosis in humans include fever, headache, chills, muscle aches, nausea, and vomiting. *There usually is no rash.* Early intervention with antibiotics is generally prescribed.

**Q: Can the tick that was attached to me be checked for disease?**

**A:** Clients often wonder if the tick they removed was harboring any pathogens — and if the specimen can be sent somewhere for analysis. While such diagnostic capabilities exist, they are costly and more importantly, time consuming. Since most tick-transmitted diseases are preventable when treated early, physicians often prescribe antibiotics rather than wait on the results of a test which may take weeks to get analyzed, and ultimately may prove inconclusive.

(For more information on this topic, see ENT-35, *Ticks & Disease in Kentucky*).

## SHADE AND FOREST TREES & ORNAMENTALS

### *Phytophthora ramorum* UPDATE FOR 2006 by Patricia de Sá

*Phytophthora ramorum* is the cause of Ramorum blight diseases on ornamental plants like camellias and rhododendrons and Sudden Oak Death on tanoak and oak trees. It can be spread by irrigation water and rain-splash, and can be transported long distance in infected plants, plant parts and soil. It is becoming increasingly evident through research and survey finds that *P. ramorum* can also be transported in water in streams. During 2006, streams in several states across the country are going to be tested for the presence of *P. ramorum* by using rhododendron leaves as baits. A stream baiting pilot project will also be carried out in Kentucky to bait for *Phytophthora* species in water, initially we are interested in finding if *P. ramorum* or any other *Phytophthora* species can be found in some selected streams.

*Phytophthora ramorum* has not been found in Kentucky, but many people in Kentucky are familiar with other species of *Phytophthora*, particularly *Phytophthora parasitica* var *nicotianae*, the cause of black shank of tobacco, that also seems to be spread by irrigation water from one tobacco field to another.

According to the California Oak Mortality Task Force report, results of National Surveys in nurseries and forest areas during 2005 indicated that although no *P. ramorum*

was found in forests outside California and Oregon, seven states had *P. ramorum* positive finds in nursery-related materials: California, Oregon, Washington, Georgia, Louisiana, South Carolina and Tennessee. As for the findings in 2006 up to the end of April, positive finds were made in eight nurseries in California during inspections associated with compliance agreements, annual inspections and one site visit by a California Department of Food and Agriculture. In seven of these nurseries the positive finds were made on *Camellia* plants. Some of these nurseries ship interstate and trace forward and trace-back investigations are being conducted and the nurseries are undergoing the confirmed nursery protocol.

The Department of Plant Industry of the Florida Department of Agriculture and Consumer Services released information that 23 *Camellia* plants were found to be positive for *P. ramorum* in two nurseries in Tallahassee, Florida. All the positive plants and adjacent plants, totaling 2,570 plants were destroyed and both nurseries are now open for business. The USDA is conducting trace back investigations to determine where the infected plants came from.

It is important for the Kentucky nursery and landscape industry to know what host plants are susceptible to *P. ramorum* and what the symptoms look like, and to obtain plants that are free of *P. ramorum*. For more information visit the USDA APHIS PPQ website at: [www.aphis.usda.gov/ppq/ispm/pramorom/](http://www.aphis.usda.gov/ppq/ispm/pramorom/)

As research efforts increase and produce new results, new hosts and associated plants are found and confirmed, and are added to the APHIS list which is updated periodically. Six plants were added to the list in February 2006; the infected plants were found in one nursery in British Columbia in Canada. They are: David's maple (*Acer davidii*); marlberry or Japanese Ardisia (*Ardisia japonica*); spreading Eouonymus (*Euonymus kiautschovicus*); salal (*Gaultheria shallon*); hybrid witchhazel (*Hamamelis X intermedia*); and coast Leucothoe (*Leucothoe axillaris*).

It is also important to understand that not all necrotic spots and tree cankers are caused by *P. ramorum*. There are approximately 65 species of *Phytophthora* and it is only possible to identify the species *P. ramorum* by doing a PCR assay in the lab or to grow it in culture and examine its morphology.

## **GLADIOLUS RUST FOUND IN THE U.S. IN APRIL**

**by John Hartman**

The following information is adapted from communica-

tions received recently from the USDA Animal Plant Health Inspection Service - Plant Protection and Quarantine and the National Plant Diagnostic Network.

Gladiolus rust, caused by the fungus *Uromyces transversalis*, is of plant quarantine importance in Europe and the United States. This fungus primarily attacks hybrid cultivars of gladiolus grown for flower production and could have significant impact if it became established or was transported into greenhouses or nurseries. This rust is apparently indigenous to eastern and southern Africa. It has also been reported from other parts of Africa, Europe, South America, Australia, and New Zealand, and has recently been intercepted from Mexico. The fungus name, *U. transversalis* is derived from the transverse arrangement of pustules that develop across the width of the leaves, as compared to most rusts on monocots whose pustules burst through longitudinally along the veins of the leaf.

Gladiolus rust was found in April, 2006 in Hawaii on leaves of cut gladiolus flowers coming from Florida. Dr. Mary Palm, USDA National Mycologist, confirmed this initial identification. Trace-back of the interception in Hawaii indicated that the rust-infected gladiolus originated from a gladiolus production farm located in Florida. PPQ authorities and Florida Department of Plant Industries officials found rust-infected gladiolus plants in much of a grower facility. This is the first find of gladiolus rust in Florida. A group of quarantine experts is being convened to provide technical support for mitigation and eradication of the rust. In addition, local survey and trace-back activities are underway.

Kentucky nursery and greenhouse flower growers will want to inspect gladiolus plants for rust diseases. Be especially vigilant for rust on gladiolus plants being shipped to the nursery or greenhouse. Rusts generally are recognized by the formation of leaf pustules producing orange spores. Pustules can also form on the inflorescence and flower spike of gladiolus. Gladiolus rust disease has resulted in 100% losses and has made production of gladiolus for cut flowers almost impossible without fungicide use in parts of Africa.

The initial gladiolus rust pest alert is posted on the internet at: [<http://www.pestalert.org/oprDetail.cfm?oprID=198>].

For more information and photographs of gladiolus rust on the internet, consult the following (long) URL: [<http://nt.ars-grin.gov/taxadescriptions/factsheets/index.cfm?thisapp=Uromycestransversalis>].

For information on quarantines and rust diseases of ornamental plants on the internet, consult the following: [http://www.apsnet.org/online/feature/quarantine/].

## INSECT PESTS OF HUMANS

### 2006 WEST NILE VIRUS OUTLOOK by Lee Townsend

The 2006 West Nile virus - mosquito season is underway. According to data on the CDC web site as of April 18, 2006, bird, mosquito, or animal infections have been reported from California and Florida. One human case has been reported from Mississippi.

West Nile virus is established as a seasonal epidemic disease in North America that flares up in the summer and continues into the fall. WNV affects the central nervous system. Most people exposed will not show any symptoms. However, mild symptoms may include slight fever and/or headache, possibly with skin rash and swollen lymph glands. A rapid onset of high fever with head and body aches, neck stiffness, disorientation, stupor and muscle weakness marks more severe infections. Those who may be most at risk are persons over the age of 50 and those with compromised immune systems.

According to the Centers for Disease Control (CDC) less than 1 percent of the people infected with the disease develop a serious illness, about 20 percent display mild symptoms and 80 percent will not show any symptoms.

There has been a dramatic decrease in Kentucky cases since the 2002 outbreak year. Below is a summary of West Nile virus activity in Kentucky from 2002 - 2005. These data came from the Ky Cabinet for Health Services, Dept of Public Health and are available at <http://chfs.ky.gov/dph/epi/westnile.htm>. Mosquito pools refer to groups of mosquitoes collected by trapping programs. These mosquitoes are identified to species and tested in groups (pools) of 50 individuals. A positive pool means at least one mosquito in the group gave a

Positives	2002	2003	2004	2005
Horses	513 (78)*	102 (54)	8 (8)	9 (7)
Birds	603 (101)	111 (46)	22 (12)	2 (2)
Mosquito pools	55 (10)	10 (5)	4 (2)	1 (1)
Human cases	55 (10)	10 (5)	4 (2)	1 (1)

positive response in the test.

\*# cases (# counties)

The keys to reducing the risk of mosquito-borne diseases

are 1) use mosquito repellent, 2) reduce mosquito breeding sites in your area, 3) install or repair window and door screens, and 4) support community-based mosquito control programs.

## DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

On tobacco samples received in the PDDL this past week we have diagnosed Rhizoctonia damping off, Pythium root rot, target spot, sclerotinia collar rot and heat damage.

Other samples have included Barley Yellow Dwarf Virus on wheat; leaf curl (Taphrina) on peach; winter injury on magnolia and holly; air pollution (ozone) damage to white pine; black root rot on petunia; Pythium root rot on petunia and verbena; powdery mildew on rose and bluegrass; dollar spot on bentgrass; Botryosphaeria canker on tree lilac; Exobasidium leaf and flower gall on azalea; Diplodia tip blight on Scots pine and Rose Rosette Virus on rose.

## INSECT TRAP COUNTS UKREC, Princeton KY

April 14-21, 2006

Black cutworm..... 2  
True Armyworm..... 340  
European Corn Borer..... 0  
Corn Earworm..... 22

View trap counts for the entire 2006 season at -  
<http://www.uky.edu/Ag/IPMPrinceton/Counts/2006trapsfp.htm>

For information on trap counts in southern Illinois visit the Hines Report at -  
[http://www.ipm.uiuc.edu/pubs/hines\\_report/comments.html](http://www.ipm.uiuc.edu/pubs/hines_report/comments.html)

The Hines Report is posted weekly by Ron Hines, Senior Research Specialist, at the University of Illinois Dixon Springs Agricultural Center.

  
Lee Townsend, Extension Entomologist

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.



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