UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

LEXINGTON, KY 40546

KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE
On line at: www.uky.edu/Agriculture/kpn/kpnhome.htm

Number 1158 **April 21, 2008**

WATCH FOR:

Soon time to control **PINE BARK ADELGID**, a follow-up treatment may be needed in July; **COLORADO POTATO BEETLES** will be leaving overwintering sites; **MAPLE PETIOLE BORERS** may cause leaf drop of maples; **EUROPEAN PINE SAWFLY** larvae may be found feeding on conifers; **GIANT BARK APHIDS** on oaks and other shade trees; **SPRUCE SPIDER MITES** can cause yellowing of spruce, hemlock, arborvitae, and other hosts.

ARMYWORMS

ARMYWORM MOTH FLIGHT INCREASING RAPIDLY
by Doug Johnson

Capture of armyworm moths in the IPM pheromone-baited traps at the UK-REC (Princeton, KY) site has increased substantially. The number of captured moths for the week ending 18 April 08 was well in excess of 300 moths / trap week. These counts are on a par with the 2006 "outbreak year" numbers and are well above the rolling five year average. You may see a graphic display of these results by going the IPM web pages at: http://www.uky.edu/Ag/IPM/ipm.htm . Look at the bottom of the page and "click" on "True Armyworm".

Capture numbers for the Spindletop Farm (Lexington, KY) have not increased as rapidly. On the other hand, the Spindletop location is always a bit behind the Princeton location because of temperature differences.

Remember, these are captures of moths (adults) which are not the damaging stage. It will be a week to several weeks before the caterpillars (damaging stage) begin to appear, depending upon temperature. Nevertheless, this should serve as an alert that: 1.) the numbers are greater than usual, and 2.) the insect is active.

Producers, consultants, Ag-Extension Agents, and Ag-Business should be aware of the possibility of damage from these insects. Continue to watch the trap counts and check the Kentucky Pest News for further developments. I will be using a temperature driven model to predict the appearance of the caterpillars.

Armyworms are predominantly "grass loving" insects. They will feed on broad leaf plants including soybean, but damage to broad leaf agricultural crops in Kentucky is very rare. Be especially watchful on grass for hay / pasture and small grains.

The caterpillars populations will appear in small numbers, reach a peak population, then begin to decline. Caterpillars are greenish brown, with a narrow strip down the middle of the back, and two orange stripes along each side. The head is yellowish with honeycombed dark lines. A newly emerged caterpillar will be quite tiny but may reach a size of 1-1/2" in length. Caterpillars (that don't get eaten or parasitized!) could be expected to live on average about 18 days at 80^{o}F to 26 days at 70^{o}F.

The following is based on the Princeton Site-

At present, with the temperature data available, caterpillars from the moths flying between 12 Apr and 18 Apr

2008 should be appearing about 04 to 06 May. Of course not all the caterpillars will appear at the same time. Remember there were some moths flying before these dates.

TOBACCO

BLUE MOLD UPDATE
by Kenny Seebold

As of April 21, 2008, active blue mold has been confirmed in western Cuba (Pinar del Rio) and north-central Florida. Conditions were favorable late in the previous week for transport of inoculum from the two known sources into GA. Blue mold, however, has not been reported from these areas to date. The threat to production areas in KY is low at this time, according to the North American Plant Disease Forecast Center (www.ces.ncsu.edu/depts/pp/bluemold).

For up-to-date reports on the status of blue mold and other tobacco disease information, check the KY Blue Mold Warning System online at www.uky.edu/Agriculture/kpn/kyblue/kyblue.htm.

DAMPING-OFF AND TARGET SPOT CAUSED BY RHIZOCTONIA SOLANI: MANAGEMENT IN THE FLOAT SYSTEM
by Kenny Seebold

We're a month into spring, and the weather has been cool and wet in general. Conditions over the past week, however, have been a little warmer and sunnier, and our diagnostic labs in Lexington and Princeton are beginning to report a few diseases on tobacco transplants. Along with a number of environmental disorders, we have found a few cases of damping-off caused by *Rhizoctonia solani*. This week's article will focus on Rhizoctonia damping-off and a related disease, target spot, and management options for these problems.

Damping-off

The float-system environment is near-ideal for *Rhizoctonia solani* AG (anastomosis group)-4, the causal agent of damping-off (or soreshin) to grow and infect tobacco seedlings. Damping-off usually occurs early in the development of the tobacco seedling and first appears as a water-soaked lesion at the base of the plant. Later, the lesion will take on a sunken, brown appearance and will eventually girdle the plant. Girdled seedlings will fall over and eventually die. Occasionally, the entire stem of affected plants may show discoloration, and decay may spread into leaves. Leaves in contact with the surface of Styrofoam trays or peat-based media can become infected and will first develop water-soaked lesions that enlarge over time, often spreading to the stems on young seedlings. Seedlings with mild infections of *R. solani* that are later transplanted may contribute to large-scale outbreaks of soreshin in the field, and may also be more susceptible to black shank and Fusarium wilt.

High humidity and temperatures above 70 °F are optimal for growth of *R. solani*. A common inhabitant of agricultural soils, *R. solani* can survive on organic matter and will colonize growth media used in tobacco transplant production. Primary infections occur when actively growing hyphae, or fungal threads, come in contact with roots or stems. Hyphae then form microscopic infection cushions that produce enzymes that will degrade plant tissues. Infections can spread from plant to plant, and organic matter (plant debris) can serve as a bridge between infected and healthy seedlings. Survival structures called sclerotia are formed after the food source has been exhausted.

Infested soil or Styrofoam trays are the most common sources of *R. solani* in transplant production. Dormant hyphae associated with organic debris and sclerotia are the principal resting structures of *R. solani*. These can be found easily on the surfaces of infested trays and in cracks and crevices in older Styrofoam trays. Infested trays thus become a source of inoculum in subsequent years if not sanitized properly or replaced.

Good sanitation is the best way to manage soreshin in the float system. The first step is to limit the amount of fungal inoculum in the transplant system. New trays will all but eliminate the risk of carrying over inoculum from previous transplant cycles, but this option can be expensive and may create issues with disposal of old trays. Used trays should be steam-heated to 165-170 °F for 30 minutes (after the heating chamber reaches operating temperature). Dipping used trays in bleach or other disinfectants will not eliminate *R. solani* from old trays because the chemicals cannot penetrate and reach inoculum associated with deep cracks and crevices in the Styrofoam substrate. Proper ventilation, which minimizes leaf and stem wetness, and maintenance of fertility are important considerations as well. Complete control of soreshin with fungicides is not possible; however, some suppression can be achieved with the mancozeb-based fungicides Dithane DF or Manzate Pro-Stick. These products can be applied at a rate of 0.5 lb/100 gallons of finished spray solution (or 1 level teaspoon per gallon) once plants have reached the size of a dime. Use 3-5 gallons of the fungicide solution per 1000 square feet, applied as a fine spray (to ensure good coverage) on younger plants; and increase spray volume to 6-12 gallons on older plants. Begin applications before symptoms develop, or immediately after the first symptoms are observed at the latest, and continue on a 5-7 day schedule until plants are ready to go to the field.

Target Spot

Target spot is caused by the sexual stage of *R. solani* AG-3, known as *Thanatephorus cucumeris*. Target spot begins in localized areas, or foci, and commonly occurs after the plant canopy has fully formed. Small, water-soaked lesions appear on leaves and will expand rapidly under conditions of warm temperatures (> 75 °F) and high humidity. Lesions normally have a transparent-light green appearance and may be surrounded by a chlorotic (yellow) halo. Dead leaves will turn brown and adhere to the float tray. Web-like strands (mycelia) of fungal growth may be present on leaves, stems, and growth media when humidity is high. The target spot pathogen will damp-off younger transplants as well. Seedlings with target spot that are transplanted can contribute to epidemics in the field later in the season.

Inoculum carried over in infested trays is the most common way for the *T. cucumeris* to enter the float system, although inoculum may move in on air from sources outside the transplant facility. Basidospores generated by *T. cucumeris* are released under favorable conditions and contribute to spread of the disease within the float system.

As with soreshin, sanitation and good growing practices are the best defense against target spot. Research suggests that plants that are nitrogen-deficient show increased susceptibility to target spot. Severe outbreaks of target spot have occurred in cases where nitrogen has dropped below 50 ppm, particularly common in outdoor float beds that have received significant rainfall which can dilute fertilizer levels. Maintaining nitrogen within the recommended range of 75-125 ppm will help suppress, but not eliminate, this disease. Reasonable control of target spot can be obtained with Dithane DF or Manzate Pro-Stick, as described for damping-off.

MANAGING SCLEROTINIA COLLAR ROT AND BLACKLEG (BACTERIAL SOFT ROT) OF TOBACCO IN THE FLOAT SYSTEM

by Kenny Seebold

We've had a pretty light season thus far in terms of diseases on tobacco transplants; however, reports of disease are beginning to trickle in. The cool and wet conditions that have predominated across much of Kentucky this spring have been ideal for *Sclerotinia sclerotiorum*, the causal agent of collar rot. Warmer conditions later this spring will favor *Erwinia carotovora*, which causes blackleg, or bacterial soft rot. In this week's article, we'll take a closer look at collar rot and blackleg, and will discuss options for their management in the float system.

Sclerotinia Collar Rot

Collar rot (sometimes called stem rot) was relatively uncommon before adoption of the float-system, but has become a serious problem in float-bed transplants. Collar rot first appears as small, dark green, water-soaked lesions at the base of stems. Clusters of infected transplants will appear and will have a yellow, wilted, and unthrifty appearance. The size of the cluster, or "focus", is usually grapefruit-sized (4-6" in diameter). Signs of the fungus are found normally at the base of plants or on debris in float trays and include a white, cottony mycelium (fungal mass), present if humidity is high, and irregularly shaped, black sclerotia. Sclerotia resemble seeds or rodent droppings and are the primary survival structure of *S. sclerotiorum*. Sclerotia are the primary source of inoculum for outbreaks in subsequent years.

Collar rot is favored by cool (temperatures ranging from 65 to 75 ºF), wet weather (overcast days) and is most likely to affect rapidly growing plants (5-7 weeks after germination). The disease often develops after the canopy closes in float beds, approximately 10 days after the first clipping. High humidity and long periods (>16 hours) of leaf wetness play a major role in the development of disease. *S. sclerotiorum* is an efficient colonizer of dead plant matter and weakened plants, using these types of tissues as a bridge to infect healthy plants.

Collar rot becomes established in float beds when sclerotia on old plant debris germinate in spring and produce cup-shaped fruiting bodies called apothecia. Apothecia then produce spores (ascospores) that are dispersed on wind currents. When ascospores land on susceptible tissue, they germinate in water films on leaf surfaces. Germinated ascospores produce hyphae (fungal "threads") that penetrate tissue and begin the infection process.

There are no fungicides labeled for control of Sclerotinia collar rot on tobacco transplants, making this disease one of the most difficult to manage in float beds. Because of the lack of fungicide options, extra emphasis should be placed on prevention of this disease. Growers should attempt to create an environment in the transplant system that is less favorable to *Sclerotinia*. Measures aimed at minimizing periods of leaf wetness, essentially promoting good airflow, will go a long way in keeping collar rot in check. Ways to improve airflow in float systems include the following: proper use of fans and side vents, using reduced plant populations, and maintaining an adequate level of water in float bays. The latter helps improve the flow of air by making sure that the tops of trays ride above the side boards of float bays, keeping air from pooling above the trays and aiding cross-ventilation. Adequate ventilation, along with proper heating and cooling, will also minimize injury to developing seedlings. Fertility should be kept at around 100 ppm (N); excessive levels of N can lead to a lush, dense canopy that will take longer to dry and will be more susceptible to attack by the collar rot pathogen. Plant debris should not be allowed to build up in transplant trays or remain in contact with seedlings. Clip seedlings at a low blade speed with a well-sharpened, high-vacuum mower to ensure complete removal of leaf pieces in the least injurious way possible. Frequent clippings will reduce the amount of tissue that must be removed by the mower and will cause less plant injury and lead to less leaf material left on the transplants. Clippings and diseased plants should be discarded a minimum of 100 yards from the transplant facility, or buried. Home gardens should not be planted near transplant facilities, and keep a weed-free zone around float beds. Over 300 species of plants, including many weeds, are hosts to *S. sclerotiorum*, making many weeds potential hosts for this pathogen.

Blackleg

Warm, humid conditions in the float bed are the ideal environment for *Erwinia carotovora* subsp. *carotovora* and other bacterial species that cause blackleg, or bacterial soft rot. Seedlings with bacterial soft rot take on a decayed, slimy appearance and a foul smell may accompany these symptoms. Systemic infections cause a darkening of the stem that tends to move up one side of the seedling primarily, hence the name "blackleg".

The bacteria that cause blackleg are essentially parasites of wounded or stressed tissue, and are plentiful in soil and on leaf surfaces. Initial infections often take place on necrotic tissue or older, weakened leaves. Factors that may lead to outbreaks of blackleg include: high nitrogen levels (> 150 ppm), warm temperatures (>75 °F), high humidity, long periods of leaf wetness, and plant injury (stress and wounding). The latter occurs routinely during clipping and can lead to rapid spread of bacterial soft rot if carried out when plants are wet.

Cultural practices are the most important ways to prevent of bacterial diseases. Provide adequate ventilation to shorten the length of time that foliage stays wet. Avoid over-fertilizing, a practice referred to as "pushing" seedlings, as this leads to dense, lush growth that is more susceptible to disease and takes longer to dry. Clip and handle plants only after they have been allowed to dry properly. Leaf debris left behind after clipping can serve as a starting point for the pathogens that cause blackleg and should be removed promptly. Chemical options for control of blackleg are limited. Streptomycin can be used in outdoor plant beds to suppress bacterial diseases, but is not specifically labeled for use in transplant facilities. Because the use of agricultural streptomycin is not expressly prohibited in transplant production, however, EPA rules dictate that this material can be used legally in the float system. Growers who choose to apply streptomycin in the greenhouse must accept all liability. Apply 3-5 gallons of a 100-200 ppm solution of streptomycin to 1000 sq. feet of float bed. This use rate translates to 0.5-1 lb per 100 gallons of water, or 1-2 teaspoons per gallon. Apply streptomycin before symptoms appear for best results, using the lowest rate. Use the 200-ppm rate immediately after the appearance of symptoms of blackleg. Some plant injury may be observed when applying the higher rate. Refer to the product label and the "2008 KY Tobacco Production Guide" (ID-160) for more information. The guide can be found online at www.uky.edu/Ag/TobaccoProd/pubs/id160.pdf.

ALFALFA

WATCH FOR ALFALFA WEEVIL LARVAE
by Lee Townsend

This is the time to check established alfalfa fields for tip-feeding damage. Small alfalfa weevil larvae initially chew pin head-sized holes in folded leaves. Hole size and damage increase as the larvae grow. Fields with high weevil numbers will take on a gray or frosted appearance as defoliation increases and yields will be lower and of poorer quality. The trick is to check on weevils now and avoid an unpleasant surprise later.

LAWN & TURF

NEW WEB SITE FOR PREDICTING SELECTED TURF DISEASES
by Paul Vincelli

The University of Kentucky Agricultural Weather Center has posted a new web resource which provides information on whether selected turfgrass diseases are expected to be active. Predictive models are available for three diseases: brown patch, Pythium cottony blight, and foliar anthracnose. The URL of the new site is http://wwwagwx.ca.uky.edu/cgi-bin/grass_disease.pl

These models attempt to provide weather-based forecasts for several turfgrass diseases important in Kentucky. All are based on research published in scientific journals and are thus considered to be founded on sound science. We are making these models available on this web site for two reasons: to provide disease-prediction tools that might be useful to turf managers, particularly golf course superintendents; and to solicit feedback on how these models have performed under your local conditions.

Use the predictions of these models with a certain degree of caution, for the following reasons.

1. Valid models that are effective on some sites may not p form well in others.
2. All of these models are weather-based; none can account for how one's management practices influence disease, which can have a profound impact on disease development.
3. None of these models has yet received adequate validation under Kentucky conditions. As noted above, this is one of our objectives in making these available to the public.

Water on leaf surfaces (from dew or rainfall) is required for infection of turfgrass leaves by fungi. Several of the models use relative humidity data to estimate leaf wetness duration, since direct measurements of leaf wetness usually are not available. Conditions in the turfgrass canopy are usually more conducive to dew formation than conditions at eye level (the height of standard weather monitoring equipment), because temperatures are usually cooler at ground level. Thus, these forecasting models may become more accurate if one selects a lower "threshold value" for relative humidity than called for by the models themselves. For most cases, we suggest using the value called for by the original model. However, the web site provides the option for users to adjust the threshold to a lower value, should a particular model issue too many "false negatives" (a forecast of no disease when the disease is visually active on your golf course). If you conduct such comparisons, your feedback is welcome.

Send any and all comments on the performance of these models to me at pvincell@uky.edu.

SHADE TREES & ORNAMENTALS

2007 & 2008 PLANT DISEASE MANAGEMENT REPORTS FOR ORNAMENTALS
by John Hartman

The on-line Plant Disease Management Reports (PDMR) series of publications contains useful information for Kentucky County Extension Agents and Extension Specialists. PDMR consists of brief reports of field and greenhouse trials testing cultivar reactions to disease, chemical control evaluations, and cultural practices. A list of recent reports for ornamental crops is presented below. Other crop sections of PDMR are equally full of useful fungicide and variety tests for disease management. In addition to the two volumes of PDMR (2007 & 2008), pre-2007 disease management test reports can be found in the many volumes of Fungicide and Nematicide Tests (F&N Tests) and Biological and Cultural Tests (B&C Tests), also available on-line through the Plant Management Network (PMN).

Because the University of Kentucky is a partner in the PMN, County Extension Agents and State Extension Specialists have access to the on-line PMN and its resources. The PMN, providing science-based plant and crop information, makes available many useful resources for Extension personnel and plant scientists worldwide. One of the PMN resources available to U.K. employees is the Efficacy Trials which include: Variety Trials, Arthropod Management Tests, and PDMR. Agents and specialists are urged to go to (http://www.plantmanagementnetwork.org/) and click under Resources to find the PDMR reports. Remember that once you have registered in PMN, your uky.edu address automatically grants you access to these resources. Our University of Kentucky IPM program provides the funds to make PMN resources available.

Once the user is in PDMR, the menu choice "Reports by Sections" is most useful. Clicking there provides choices of groups of plants or crops to narrow down the choices of reports. In choosing the ornamentals and trees section, the following titles emerge:

- Fungicidal control of Phytophthora root and crown rot on calibrachoa, 2007.
- Evaluation of fungicides for the control of downy mildew on Coleus, 2007.
- Reaction of crapemyrtle cultivars to Cercospora leaf spot, 2006.
- Fungicides compared for control of Cercospora leaf spot on crapemyrtle, 2006
- Reaction of daylily cultivars to natural rust infection, 2006.
- Reaction of daylily cultivars to leaf streak infection, 2006.
- Reaction of flowering and Stellar hybrid dogwoods to diseases in south Alabama, 2006.
- Instrata 3.61SE evaluated for powdery mildew control on flowering dogwood, 2007.
- Stellar hybrid and flowering dogwood cultivar reaction to diseases compared in North Alabama, 2007.
- Efficacy of microbial inoculants for control of blackleg disease of geranium in different soil-less potting mixes, 2006.
- Efficacy of fungicides for controlling Pythium root rot of geranium, 2007.
- Effect of increasing rates of acibenzolar-S-methyl on

Fusarium corm rot of gladiolus, 2006.
- Reaction of African and French Dwarf marigold cultivars to Alternaria leaf spot, 2005.
- Biopesticides and fungicides for control of Phytophthora aerial blight of petunia, 2006.
- Fungicides compared for control of Entomosporium leaf spot on photinia, 2005.
- Drench and foliar applied fungicides compared for Entomosporium leaf spot control on photinia, 2006.
- Control of Pythium root rot of poinsettia with fungicide drenches, 2006.
- Evaluation of fungicides for the control of black spot of rose, 2006.
- Field evaluation of fungicides for control of downy mildew on rose, 2006.
- Field evaluation of registered fungicides for control of downy mildew on rose, 2006.
- Fungicide drenches and control of black spot on a hybrid tea rose, 2005.
- Evaluation of fungicides for control of Botrytis blight of rose, 2006.
- Evaluation of pre- and post-harvest fungicide treatments for control of Botrytis blight of rose, 2006.
- Reaction of shrub-type roses to two foliar diseases in North Alabama, 2007.
- Control of black spot on rose.
- Evaluation of fungicides for the control of black spot and powdery mildew of rose, 2007.
  Evaluation of fungicides for control of Sclerotinia rot of stock, 2006.
- Comparison of verbena cultivars for susceptibility to powdery mildew, 2007.
- Reaction of zinnia cultivars to bacterial leaf spot, 2006.
- Control of bacterial leaf spot of zinnia in a simulated landscape planting, 2005.
- Incidence of leaf spot diseases on field-grown zinnia, 2006.

Agents dealing with growers of specialty ornamental crops may want to be able to provide unique disease management information for those growers. Useful science-based information just may be available on PMN. Look it up and see for yourself.

EASTERN TENT CATERPILLAR STATUS
by Lee Townsend

Eastern tent caterpillars are in the 1-inch range and tents should be easy to see. Wild cherry trees along pasture fence lines should checked now to determine if management is needed. The caterpillars will be moving from scattered tents on limbs to join in large clusters at main branch crotches. Unless they defoliate the tree and are forced to move, they will remain in those larger tents until feeding is complete. If management is necessary, it should be done before the caterpillars disperse. Caterpillars in accessible tents can be removed or destroyed. Bt insecticides can be applied to foliage around the tents where treated foliage can be eaten by the caterpillars. Pyrethroid insecticides can be sprayed directly on caterpillars in tents or on foliage. It appears that general populations are low to moderate but there usually are some local "hot spots".

PESTICIDES

THE IR-4 PROJECT: FILLING A NEEDED ROLE
by Ric Bessin

Since the early 1960's, the IR-4 Project has been the major resource for supplying pest management tools for specialty crop growers by developing research data to support new EPA tolerances and labeled product uses. The IR-4 Project is a cooperative program of the USDA, and Land Grant Universities, with the principle goal of developing data to support and to expedite regulatory clearances of newer, reduced risk pest control products for specialty crop growers. The IR-4 Project provides the field trial and laboratory residue data necessary for EPA clearance of minor crop tolerances, and approval of new uses for pesticide labels. By securing tolerance clearances and label registrations for pesticides, the IR-4 Project is filling the gaps in pest management tools for specialty crop growers. The IR-4 Project has provided the necessary field and residue data to account for about 50% of EPA's annual workplan and new clearances in recent years.

The IR-4 Project has proven instrumental in helping curtail substantial economic losses to the agricultural sector when stricter standards of food safety were imposed with the passage of the Food Quality Protection Act of 1996 (FQPA). This act imposed added protections from pesticide exposure on food, especially for infants and children, and forced several critical pesticides off the market or substantially restricted their use. The IR-4 Project proactively established an operating strategic plan to facilitate registering new, safer alternatives for minor use pest management prior to the passage of FQPA; reducing the impact of FQPA on the farm community.

Working closely with growers and commodity groups, university extension and researchers, USDA scientists, the agrichemical industry, and EPA, the IR-4 Project assures that alternative pest control products are available that are safer and more efficient than existing products. To be sure, over 80 percent of IR-4 Projects support registration of reduced-risk pesticides that substantially reduce the risk to human and environmental health relative to existing or recently de-registered products. Since its inception, the IR-4 Project has achieved over 10,000 pest control clearances on food crops and over 10,000 clearances on ornamental crops.

New Tolerances Established Through the IR-4 Project (June 07-Nov 07)

Note that these represent new tolerances and this is one step in the process of the development of a pesticide label. Be sure to obtain current information about usage regulations and examine a current product label before applying any
chemical.

Bifenthrin (Brigade,Capture): Root vegetables (except sugar beet), Soybean, Peanut, Pistachio, Mayhaw, Groundcherry, Pepino
Buprofezin (Applaud, Courier): Stone fruit, Grape (increased tolerance), Mango, Papaya, Black sapote, Canistel, Mamey sapote, Sapodilla, Star apple
Cymoxanil (Curzate): Caneberry (subgroup 13A), Grape, Hop
Desmedipham (Betanal,Betanex): Garden beet Spinach
Dimethenamid (Frontier): Grasses grown for seed
Diuron (Seduron,Karmex): Prickly pear cactus, Mint
Fenamidone (Reason): Leafy vegetables (except Brassica), Head and stem Brassica, Brassica leafy greens, Fruiting vegetables, Carrot, Strawberry, Sunflower
Fluazinam (Allegro, Omega): Bushberries, Edible podded legume vegetables (except pea), Succulent shelled beans, Dry shelled beans except soybean, Brassica leafy vegetables, Turnip greens, Ginseng
Foramsulfuron (Option): Sweet Corn, Popcorn (both crops—exemption from the requirement of a tolerance)
Glufosinate-aluminum (Buster, Challenge, Conquest, Final, Liberty, Rely, Remove): Pistachio
Imidacloprid (Admire, Confidor, Gaucho, Provado): Caneberry subgroup 13A, Wild raspberry, Peanut, Kava, Pearl millet, Proso millet, Oat
Indoxacarb (Avaunt,Steward): Tuberous and corm vegetables (subgroup 1C), Leafy vegetables (except Brassica), Leafy Brassica vegetables, Turnip greens, Cucurbit vegetables, Pome fruit (except pear), Oriental pear, Stone fruit, Southern pea, Okra, Cranberry, Mint
Isoxadifen-ethyl (herbicide safener): Sweet corn, Popcorn, Field corn
Lactofen (Cobra, Phoenix): Fruiting vegetables, Okra
Lambda-Cyhalothrin (Karate, Matador, Warrior): Barley, Buckwheat, Oat, Rye, Wild rice, Pistachio
Linuron (Afalon, Linurex, Norunil): Celeriac, Rhubarb
Oxytetracycline: Apple
Pendimethalin (Prowl,Pendulum, Stomp): Globe artichoke, Asparagus, Head and stem Brassica, Grape
Pyriproxyfen (Distance, Esteem, Knack): Root and tuber vegetable, Bulb vegetables (except dry bulb onion), Caneberry (subgroup 13A), Cereal grain (groups 15 and 16), Animal nongrass feed (group 18), Banana, Plantain, Cacao bean, Canola, Coffee, Cranberry, Date, Pawpaw, Peanut, Pineapple, Pomegranate, Safflower, Sesame, Sugarcane, Tea
Thiamethoxam (Actara, Cruiser, Platinum): Caneberry (subgroup 13A), Globe artichoke, Hop, Barley (increased tolerances)

DIAGNOSTIC LAB-HIGHLIGHTS
by Julie Beale and Paul Bachi

During the past week, the PDDL received samples of wheat spindle streak mosaic virus, nitrogen and phosphorus deficiency, and environmental stress symptoms on wheat; and Rhizoctonia damping off and fertilizer burn on tobacco seedlings.

On fruit and vegetable samples, we diagnosed cane blight (*Leptosphaeria*) and spur blight (*Didymella*) on blackberry; bacterial canker on sweet cherry; and black knot on plum.

On ornamentals and turf, we diagnosed iron deficiency and thrips injury on calibrachoa; powdery mildew on phlox; Botrytis blight on zinnia; Pythium root rot on orchid; bacterial soft rot on iris; bud blast (due to environmental stress) on daffodil; Botryosphaeria canker on holly; winter drying on rhododendron; iron deficiency on azalea; and dollar spot on bentgrass.

INSECT TRAP COUNTS
April 11-18, 2008

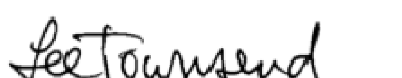
►Princeton, KY

Black cutworm	9
True armyworm	322
Corn earworm	0
European corn borer	0
Southwestern corn borer	0
Fall armyworm	0

►Lexington, KY

Black cutworm	1
True armyworm	27
Corn earworm	0
European corn borer	1
Southwestern corn borer	0
Fall armyworm	0

Graphs of insect trap counts are available on the IPM web site at -http://www.uky.edu/Ag/IPM/ipm.htm.
View trap counts for Fulton County, Kentucky at - http://ces.ca.uky.edu/fulton/anr/



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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