Pests susceptible to control-based on degree day forecasts ( )=Degree day ranges

- Oystershell scale (7-91)
- White Pine Aphid (7-121)
- Fletcher scale (35-148)
- Honeylocust plant bug (58-246)
- Eastern tent caterpillar (90-190)
- Black vine weevil (148-240)
- Lilac borer (148-299)
- Dogwood borer (148-700)
- Birch leafminer (190-290)
- Holly leafminer (192-290)
- Lace bugs (239-363)
- Boxwood psyllid (290-440)
- Pine needle scale (298-448)
- No degree day information is available on these pests:
  - Inkberry leafminer
  - Magnolia weevil
  - Lesser peach tree borer
  - American plum borer

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Termites In New Orleans Mulch A Non-Issue

by Mike Potter, Extension Urban Entomologist, UK

Recent questions have been raised about buying wood mulch that might be infested with Formosan subterranean termites from New Orleans. A rumor has been spreading over the internet that after hurricanes Katrina and Rita, termite-infested wood is being chipped into mulch and being shipped to retail outlets throughout the country. The rumor further warns that if you buy this cheap mulch, the termites will eat your house down and there is no effective solution. Non-sense!

It is extremely unlikely that this will be a problem in Kentucky or other states for the following reasons:

1. In October 2005, the Louisiana Department of Agriculture and Forestry imposed a quarantine to prevent the accidental spread of Formosan termites to other areas. All wood debris in parishes affected by the hurricanes
**Termites in Mulch (con’t)**

must be discarded in approved landfills within the quarantine area. This regulation is being strictly enforced and no mulch is being permitted to leave the area.

2. Even if wood mulch were to leave the area, it is highly unlikely that Formosan subterranean termites would survive the chipping, shredding, packaging, and shipment process, bagged or otherwise.

3. Kentucky is generally thought to be too far north to sustain colonies of this particular termite which is adapted to more southern locales. Winter temperatures at locations north of Memphis, TN (35° N latitude) are thought to be too low for permanent establishment of Formosan subterranean termites.

4. Although the Formosan termite is a serious pest of structures, contrary to the misinformation being disseminated, effective treatments are available in the exceedingly unlikely event that an infestation were discovered.

The bottom line is that termite-infested mulch from New Orleans should not be a significant concern in Kentucky or other states. Another take-home message: don’t believe everything you read on the internet.

For additional information see: http://www.snopes.com/inboxer/household/termites.asp

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**Eastern Tent Caterpillar**

Katherine Mazey, Penn State Extension Program Assistant & Michael Masiuk, Extension Agent, Penn State Univ.

The Eastern Tent Caterpillar, Malacosoma americanum (Fabricius) is reported to have been present in the United States since the 1600’s, and is responsible for forming unsightly silk-webbed nests at branch forks. Their population peaks every 8 to 10 years, when large infestations can completely defoliate trees in late spring/early summer.

**Plants Attacked**

Eastern tent caterpillar’s primary host plants are wild cherry (Prunus pensylvanica), apple (Malus) and crabapple (Malus). Occasionally, they feed on deciduous forest and ornamental trees such as ash (Fraxinus), birch (Betula), blackgum (Nyssa sylvatica), willow (Salix), witch-hazel (Hamamelis), maple (Acer), oak (Quercus), poplar (Populus), cherry (Prunus), peach (Prunus), and plum (Prunus).

**Insect Identification**

The eastern tent caterpillar lays a mass of eggs that encircles the twigs of the host plant. The dark brown, oval mass contains between 150 - 350 eggs, and is varnished in appearance. While young larvae are uniformly black in color, later instar caterpillars are hairy and black with white, brown, and yellow stripes and blue spots on their sides. Fully grown larvae are approximately two inches long. The caterpillars pupate inside white cocoons and emerge as reddish brown moths with white stripes on the forewings and a one and a half inch wingspan.

**Life History**

**Overwinter:** Egg mass overwinters on twigs

**Spring:** The larvae hatch when the wild cherry leaves begin to unfold. The young caterpillars move to a fork in the branch spinning fine strands of silk wherever they crawl. They build a web (tent) and begin feeding on new leaves for 6 to 8 weeks. The web increases in size as the caterpillars feed and grow in size, until the tent is nearly a foot long.

**Summer:** When the larvae are fully grown, they leave the host tree and find a place to spin cocoons. They pupate inside the cocoons for about 3 weeks before transforming into reddish brown moths. After mating, the females deposit egg masses around small twigs on host plants. There is only one generation per year.

**Mechanical:** Pruning and disposing of small twigs that hold egg masses, before egg hatch, is an effective way of reducing populations the following year.

**Chemical:** Registered insecticides should be applied when the caterpillars are first noticed, with sprays directed to the foliage surrounding the tent. It is important to note that the caterpillars leave the tent during the day to feed on foliage and return at night and during rainy weather.
Chemical Control of Eastern Tent Caterpillar:

Formulations of acephate (Orthene), azadirachtin (Azatin), Bacillus thuringiensis (and Match), Beauveria bassiana (Naturalis T&O only), bifenthrin (Lawn & Tree Flowable and GC Flowable only), carbaryl (Sevin), chlorpyrifos (Dursban TNP and Dursban 50W only), cyfluthrin (Tempo), deltamethrin (5SC only), diflubenzuron (Dimilin), insecticidal soap, lambda-cyhalothrin (Scimitar), malathion (5 EC and 5 lb Spray only), permethrin (Astro Insecticide only), pyrethrins and piperonyl butoxide, pyrethrins and rotenone, and spinosad are labeled for tent caterpillar management.

Management hints: Spray areas around web when first noticed; late March through April. Do not apply acephate more often than 3 times in a growing season at a 4-week interval. Phytotoxicity has occurred from acephate on the following crabapple varieties: Hopa, Ichonoski, Malus floribunda, Pink Perfection, Red Wine, and Snow Cloud.

Prune viable egg masses from small twigs during the winter.

Oedema Can Damage Landscape Ornamentals & House Plants

John Hartman, Extension Plant Pathologist, Univ. of Kentucky

Oedema is a non-parasitic disorder which, under the right environmental conditions, can affect a wide variety of herbaceous plants. This problem is frequently observed on indoor plants, such as dracaena, geranium and schefflera. Oedema tends to be more of a problem in greenhouses, but it may also occur on plants grown in homes and offices as well as in the landscape. It was recently diagnosed on an English ivy specimen sent to the plant disease diagnostic laboratory. The plants were growing under irrigation and in a shady location. Field and garden grown crops, such as cabbage, may also be affected.

Cause and Symptoms. Oedema results when there is a physiological upset in the water balance in a plant. It is likely to develop when the soil is moist and warm and the air is moist and cool. These conditions are likely to exist in homes and greenhouses during periods of prolonged cool, cloudy weather in winter and early spring. A drop in air temperatures after several warm, muggy days provides ideal conditions for oedema to develop in the field. In these situations the plant absorbs water from the soil more rapidly than is lost through the leaves through transpiration. Water pressure builds up in the leaf cells, causing them to swell and to protrude as small bumps on the lower leaf surface. The cells eventually burst, giving a water-soaked appearance to the swollen areas. These swellings later become tan or brown and corky. In severe cases the corky, wart-like areas can also form on petioles and stems. If injury continues, the leaves will turn yellow, droop and fall from the plant. Plants with chronic oedema are not very valuable as house plants or landscape ornamentals.

Oedema management. Oedema can be reduced in landscapes, homes, and greenhouses by following proper cultural practices. Overwatering, high humidity and low light intensities promote the development of oedema. Therefore, avoid overwatering plants, especially during periods of cloudy weather. Improving the airflow around plants by providing adequate spacing and by regulating ventilation will help to reduce humidity. Increasing the plant’s exposure to light will also be beneficial. Affected plants usually recover under favorable growing conditions.

Inspector For Eastern Kentucky

This summer, Janet Lensing will be assisting in nursery inspections in the eastern half of Kentucky.

Janet is a native of Little Rock, Arkansas and recently completed her PhD in entomology. Her work centered on the interaction of rainfall amounts with arthropods associated in the leaf litter of forests.

Janet enjoys hiking, traveling (well suited for this job) and reading.
How Did All These “New” Pests Arrive?
Joe Collins, Senior Nursery Inspector

Plants have always been exposed to pest problems. Whether it be insects, weeds, diseases or the environment, there has always been some element that causes some level of stress in plants. What has changed however, is the type of insects and diseases that are attacking the plants. In today’s world of international trade, pest problems are being spread at an alarming rate. The most obvious scenario is where plants are grown in other countries then shipped to the United States. When these plants arrive, sometimes there are pests hitchhikers. The most recent occurrence of this was in 2003 and 2004, when geranium cuttings accidentally became infested with a strain of Ralstonia (a bacterial disease) which was not know to be established in the US. Thousands of plants all had to be destroyed and greenhouses had to be disinfected.

Another way that pests arrive in the United States is via wood crating. When large products arrive in the US from manufacturers overseas, often these items are boxed in wood crates. The wood was low quality and was sometimes full of insects. It has been widely theorized that this is how emerald ash borer, Asian longhorned beetles, and others have arrived. Beginning in September 2004, the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) began implementing new measures that will hopefully reduce the incidence of these pests being brought to the United States. Now, wood packing materials must be “appropriately treated and marked under an official program developed and overseen by the National Plant Protection Organization (NPPO) in the country of export.” If this is not done, then the material will be re-exported back to the originating country.

A third method of pests arriving is one that many may not think of...Christmas decorations and other small items from foreign lands. There has been several instances where artificial Christmas trees have harbored wood boring insects. But how can this be? They are artificial. Yes, the branches are not real but often the center stem is made from an actual log. The only sign that these logs were infested was the presence of sawdust made by the borer as it chewed the inside of the log. Yet another Christmas item implicated in the past has been bagged pine cones (from another country). Some of these bags were found to be harboring Lepidoptera (caterpillars). The USDA, APHIS issued a recall and all bags were pulled from store shelves and destroyed.

So, how is Kentucky helping in this situation? As nursery inspectors, we are also state cooperators with the USDA. Often we are called to assist them in handling different situations. Over the years, we have developed a very good working relationship and stay in contact on different pest situations.

Pests like emerald ash borer and Asian longhorned beetles generate concern (and calls) from the nursery industry and public alike. We are developing educational materials that describe these important pests and who to call if one is found. Each year we assist the USDA with both exotic and domestic pest trapping. Some examples are exotic bark beetle, pine shoot beetle, and gypsy moth. In particular, UK, USDA and the Kentucky Division of Forestry place nearly 10,000 traps annually to monitor for gypsy moth.

However, the main focus of our job is to interact with the nursery industry. But, as inspectors, we are unable to be in all places at all times. That is why we developed the newsletter, website and other educational materials, so that you, the nursery industry, would have a reference for pest problems. If you ever feel that you have an incidence of an exotic pest, please call our office. More times than not, it is the industry and/or public that finds these pests first.
How Will The Drought of 2005 Affect Landscape Plant Diseases?
John Hartman, Extension Plant Pathologist, Univ. of Kentucky

Much of the bluegrass and eastern parts of Kentucky suffered dry weather during 2005. Rainfall in most Kentucky locations was below normal every month except January and August. August would have been more deficient except for the rainy aftermath of Hurricanes Dennis and Katrina. Indeed, the Bluegrass region suffered moderate to severe drought for most of the summer and eastern Kentucky was in a state of severe drought by summer’s end. Even now, in late winter, Bluegrass and eastern regions are in a state of mild drought.

Woody plants. Wilt and leaf scorch symptoms are often associated with dry weather. In addition, drought-stressed plants lose their stomata which reduces their rate of photosynthesis. Reduction in photosynthesis may not kill a tree or shrub, but it means fewer carbohydrates are made and stored for future use. In the landscape, seedlings and recently transplanted trees and shrubs were at greatest risk because they lacked extensive root systems.

With drought, there are some fungal diseases of landscape trees and shrubs that often do not show symptoms until the following season, after the drought has passed. The role of water stress in encouraging opportunistic plant pathogens is unclear. It is possible that the stress condition interferes with the plant’s defense against such pathogens, or possibly, the reduced carbohydrate reserve allows the plant little energy to fight invasion by pathogens.

Expect certain fungi such as Phytophthora, primarily an oak pathogen, and Armillaria, which attacks many woody plants, to appear in 2006 because of the 2005 drought stress. In addition expect symptoms of diseases caused by other fungi such as Thyrone, (honey locust canker); Cytospora or Valsa, (cankers on prunus, poplar, willow, maple, spruce and other conifers); Diplodia, (pine tip blight); and Botryosphaeria and Nectria (cankers of many woody plants such as rhododendrons, crabapples, dogwoods, maples, and others) to appear the season following the dry weather.

In searching for water, some woody plants could have sacrificed surface roots to the drought while relying more heavily on roots that were deeper in the soil. If excessive rains return, partial flooding could render these deeper roots more prone to root rot diseases, thus leaving the woody plants with fewer functional roots. Thus, expect additional woody plant death when the drought breaks.

One possible benefit of the drought could be the reduction in foliar diseases this year. There could be less carry-over inoculum from shade tree anthracnose diseases, crabapple scab or rose black spot, for example. The benefit could be short-lived, however if spring weather is wet and rapidly repeating cycles of these diseases occur. Looking ahead even farther, the rust infections of cedar that should have occurred, but didn’t, during the dry 2005 summer might result in fewer cedar galls in the spring of 2007 and less rust on crabapples and hawthorns that same summer.

Herbaceous ornamentals. Perennial flowers and ground covers, like their woody counterparts could have reduced energy reserves due to the drought. This could make them more susceptible to cankers and to root, corm, or bulb rot diseases. There is not much research on the role of stress on diseases of herbaceous ornamentals, so it is difficult to know how the drought will affect these plants. A few diseases such as Volutella blight of Pachysandra, are known to be more severe on stressed plants, but most likely the disease would have appeared during the drought. For foliar diseases, the situation is similar to that of woody plants - reduced primary inoculum might result in less disease, at first.

Tree fruits. Tree fruits in the landscape and orchard are subject to many of the same diseases as shade trees. Fungi such as Nectria, Cytospora and Botryosphaeria cause cankers of tree fruits suffering from drought stress. The effects are likely to be the same as for landscape trees. As for reduced inoculum for foliar diseases such as apple scab or cherry leaf spot, again the response should be about the same as for landscape trees.

Small fruits. Blueberries and brambles in the garden are especially susceptible to fungal cankers, and grapes also can become cankered. They are likely to react to drought in a similar way as woody landscape plants. Reduced foliar diseases could also be expected for these crops, at first. Strawberries that were not watered probably died last summer from lack of water or from the black root rot complex which is usually more severe on drought-stressed crops. On the other hand, if they did survive, this season could bring a reduced threat from leaf spot and anthracnose diseases, at least at first.
Honeylocust Plant Bug
Excerpt from Insect & Mite Pests of Honeylocust no.5.571
Whitney Cranshaw, Colorado State Univ.

Honeylocust plant bugs are truly a here-today-gone-tomorrow kind of pest. They emerge to feed exclusively on the new growth of honeylocusts and are gone by mid- to late-June. These light-green bugs are about three-eighths of an inch long and are highly active. Shaking a branch over a sheet of paper easily reveals their presence.

Honeylocust plant bugs lacerate growth. They suck plant juices, producing scattered brown spots and distorted growth. Young leaves can be killed. Unless infestations are severe, some damage can be tolerated by trees. A significant plant bug population is generally considered to be six or more insects shaken from six to eight inches of new growth on a branch. In these cases, the terminal growth will appear visibly damaged and insecticide treatments should be considered.

Any spraying should be done when insects are small and when spring growth is seriously threatened. Mature bugs in the last stages of an infestation are hard to kill and will disappear shortly anyway. Insecticidal soaps, Orthene, carbaryl (Sevin, tree and ornamental spray, etc.) and pyrethroid insecticides (permethrin, bifenthrin, cyhalothrin) have been shown to control honeylocust plant bugs.

Degree Day Totals
One very important fact to remember is that degree days can vary widely across the state. Calculating degree days for your local area is the best way to prepare for spray programs.

Degree Day Totals through March 27, 2006

- Bardstown—110
- Bowling Green—173
- Covington—58
- Henderson—116
- Huntington WV—116
- Lexington—93
- London—138
- Louisville—104
- Mayfield—113
- Paducah—179
- Princeton—193
- Quicksand—122
- Somerset—96
- Degree Day Totals through March 24, 2005
  - Bardstown—73
  - Bowling Green—108
  - Covington—41
  - Henderson—87
  - Huntington WV—91
  - Lexington—67
  - London—82
  - Louisville—66
  - Mayfield—69
  - Paducah—115
  - Princeton—94
  - Quicksand—86
  - Somerset—77