Educational programs of the Kentucky Cooperative Extension Service serve all people regardless of race, color, age, sex, religion, disability, or national origin. UNIVERSITY OF KENTUCKY, KENTUCKY STATE UNIVERSITY, U.S. DEPARTMENT OF AGRICULTURE, AND KENTUCKY COUNTIES, COOPERATING

KENTUCKY PEST NEWS

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

Number 967

FRUIT

• Large caterpillars take grape bite

VEGETABLES

Root knot nematodes increasing in kentucky's vegetable crops

SHADE TREES & ORNAMENTALS

• Zone injury is present in the landscape

September 23, 2002

TURF

- Green June beetles backstroke across turf
 HOUSEHOLD
- Mosquito breeding continues
- House centipedes active
- Large spiders abound can be part of fall invaders

DIAGNOSTIC LAB - HIGHLIGHTS INSECT TRAP COUNTS

FRUIT

LARGE CATERPILLARS TAKE GRAPE BITE by Lee Townsend

Specimens of two species of hornworm (sphinx moth) caterpillars were collected from grapes this week. Full grown larvae are about the size of full grown tobacco hornworms but have very different markings. The pandora sphinx caterpillar is bright green early in its life and reddish brown in the last stage. There are small white to yellow spots on the thoracic segments and larger white oval spots on the sides of the abdomen. They feed on plants in the grape family. There are two generations each year and can be found from June until October. Color of the whitelined sphinx caterpillar can vary from light to dark. The light form yellow-green, with dark lines down the back bordered below by a series of eye-like spots. The horn is yellow. There are two generations so the insect can be found from May through September. This caterpillar can feed on a variety of trees and can feed on grapes, as well. The caterpillars were full grown so most of their feeding is over for the season.

VEGETABLES

ROOT KNOT NEMATODES INCREASING IN KENTUCKY'S VEGETABLE CROPS by William Nesmith

Kentucky's vegetable producers in the system for many years have experienced few problems with nematodes where they have practiced crop rotation to non-host crops, especially when the field was rotated to corn, small grains, or grasses for at least two years. When nematode problems have developed, they have mostly occurred in sandy or rocky soils where inadequate rotation has occurred for the site. However, with many new vegetable growers entering the system and planting vegetables without rotation to non-host crops, damaging levels of root knot nematode are becoming more common. Without sound rotational approaches growers should expect nematode problems to become increasingly significantly, and crop limiting - especially in fields continuously planted to tobacco. This summer I have diagnosed several serious cases of root knot nematode in former tobacco fields on tomatoes, squash, pumpkin, and melons. The worse cases have involved lighter textured soils, but damaging cases have also been observed in clay-based soils, especially planted in late spring.

Root knot nematodes are microscopic roundworms that feed mainly on plant roots. They cause damage in vegetables by reducing root health, reducing the quality of root crops, and increasing susceptibility to



UK <u>COOPERATIVE EXTENSION SERVICE</u> University of Kentucky - College of Agriculture

other diseases—especially to the vascular wilts. Poor uptake of nutrients and water are usually the most common symptoms. Unthrifty, stunted, or wilting plants and/or distorted roots should be examined for nematodes when symptoms are noticed, for the best diagnostic results. Root galling is usually present if root knot nematode is involved, but even that symptoms may not be obvious to some. Late summer and early fall are still good times to find root symptoms of root knot nematodes by examination of roots prior to destroying crop residues and the planting of cover crops. Submit samples of the root systems to the diagnostic labs if confirmation is needed.

See ID-36 "Vegetable Production Guide for Commercial Growers" for more details on root knot nematode. Check both the general disease management section in the front of the book, plus the disease section under each crop, for appropriate management guidelines.

SHADE TREES & ORNAMENTALS

OZONE INJURY IS PRESENT IN THE LANDSCAPE by John Hartman

Frequent episodes of high ozone air pollution occurred this summer in Kentucky during the many hot, hazy humid days we experienced over the past several months. These episodes, often during periods of air stagnation, very likely resulted in injury to certain landscape plants. Ozone injury to plants has been observed this season in Kentucky.

Ozone air pollution sources. Ozone is an air pollutant (in the lower atmosphere, at least) formed from the reactions of hydrocarbons and nitrous oxides in the presence of sunlight. Automobile engines and industrial processes produce most of the compounds that result in ozone. Injury to vegetation from ozone can occur at long distances from the hydrocarbon source so ozone air pollution injury is not confined to urban landscapes. Natural sources of ozone exist, but they are minor compared to those resulting from man-made sources. The ozone in the upper atmosphere is the same chemical compound, but serves as a protective layer that shields the earth from harmful ultraviolet rays.

<u>Ozone air pollution effects</u>. There is increasing concern about how lower atmospheric ozone is influencing the health of our landscape plants. From July through September, many deciduous plant species that are sensitive to ozone will show visible

injury symptoms on the upper leaf surfaces. Ozone pollution results in a breakdown of chlorophyll causing small flecks or stippling. The color of the ozone injured leaf surfaces may show white, yellow, red, purple or brown stippled color. Fleck or stipple is the discoloration of small groups of cells between the veins, appearing as tiny uniformly sized spots. Affected plants may also drop their leaves early. In conifers yellow flecks frequently occur on affected needles; sometimes the flecks become yellow bands girdling the needle, causing the tips to die. In addition to visible symptoms, plants affected by ozone may be smaller and produce fewer healthy seeds. Ozone injury may stress plants in other ways, making them more susceptible to other problems such as insects and infectious diseases. In general, herbaceous plants are more sensitive to ozone pollution than are woody plants. Sometimes, adjacent plants of the same species react differently to ozone. Plants show a wide range of sensitivity to ozone because of differences in maturity, genetics, growing site, and moisture availability.

<u>Plants sensitive to ozone</u>. Plants thought to be more sensitive to ozone than others include: ailanthus, alder, ash (green, white) blackberry, black cherry, box elder, boxwood, carnation, catalpa, chrysanthemum, crabapple, grape, honeylocust, larch, lilac, linden, maple (silver), milkweed, mulberry, oak (white), petunia, pine (Austrian, Scots, White), poplar, privet, showberry, spirea, sweetgum, sycamore, tuliptree, willow, and zelkova. With careful observations, these plants can be used as bioindicators of air quality in Kentucky.

Ozone injury symptoms are most visible from July through September on leaves that are exposed to full sunlight. Care must be taken to avoid mistaking ozone injury with stippling caused by insects such as lacebugs, premature defoliation due to disease or drought, mechanical damage, herbicides, or fertilizer applications. There are no cures for ozone injury once the symptoms appear. Experience in recognizing ozone injury symptoms should help agents and other landscape plant advisors to give appropriate advice to their clients.

TURF

GREEN JUNE BEETLES BACKSTROKE ACROSS TURF by Lee Townsend

Green June beetle grubs can be found along sidewalks and driveways. These large white grubs are unusual in that they move to the surface of the soil and will crawl along the ground on their backs. They can "get stuck" and accumulate in strange places. Most of our white grub species remain below the surface where they feed on gras roots. The green June beetle feeds on organic matter in the soil but can uproot new seedings. Sweep them up and discard them if practical.

HOUSEHOLD

MOSQUITO BREEDING CONTINUES by Lee Townsend

In general, standing, stagnant water is the preferred breeding site for mosquitoes. Late last week, close examination of a leaf-clogged outdoor sink showed well over 200 immature mosquitoes (Asian tiger mosquito and northern house mosquito), ranging from newly hatched larvae to pupae. Had the sink not been drained, it would have continued to produce mosquitoes over the next few weeks.

The Asian tiger mosquito (Aedes albopictus) was first discovered in Kentucky in 1987. This species has several generations each year. It is a container breeder that can use very small accumulations of water, as little as 1/4 inch deep, in artificial and natural containers. Discarded tires are common breeding sites but crushed aluminum drink cans are suitable. Since this mosquito feeds on birds and can find breeding sites easily in developed areas, it poses a potential public health threat. It has a very limited flight range (100 to 300 yards). This mosquito is an aggressive day biter, most active in early morning and late afternoon.

The northern house mosquito (Culex pipiens) commonly enters houses. The larvae breed in rain barrels, tin cans, tires, storm sewer catch basins, gutters, and polluted ground pools. The eggs are laid in rafts that float on the water surface. This species breeds throughout summer. Adults usually stay near the breeding site and are active at night but can move 1,000 yards in a single night. They tend to rest in and around shelters and buildings near breeding sites.

Mosquito season is not over yet. Continue to watch for and eliminate breeding sites. Also, there have been several questions regarding mosquito breeding in cisterns and control alternatives. There are no treatments for cistern water. The Mosquito Dunktype products are registered for use in "birdbaths, rain barrels, ponds, ditches, tree holes, roof gutters, unused swimming pools", etc. Check gutters that feed cisterns for leaf accumulation and stagnant water. Be sure screens are intact and cistern covers fit tightly to exclude mosquitoes.

HOUSE CENTIPEDES ACTIVE by Lee Townsend

Centipedes or "hundred-leggers" are predators that feed on insects or other small creatures. They have fang-like mouthparts and inject venom to immobilize their prey. The fangs of large centipedes can break the skin and produce a painful bite similar to a bee sting. The long-legged house centipede is much less likely to bite than the short-legged *Scolopendra* centipede. Both types are active at night.

In nature, centipedes live in humid areas such as under loose bark, in rotting logs, under rocks, or in mulch. Indoors, they may be anywhere in the house but favor bathrooms, damp basements, crawl spaces, or damp closets. They can survive on flies and spiders.

Control outdoors involves removing harborage areas such as accumulations of leaves, grass clippings, rocks, etc. Indoors, a vacuum or swatter can be used to eliminate occasional centipedes that are seen. Try to ventilate infested areas to reduce humidity. Use of residual "ant and roach" aerosol sprays into cracks and crevices of infested areas can help to control centipedes and their prey. Areas under bathroom sinks and cabinets are places where centipedes can hide during the day.

LARGE SPIDERS ABOUND - CAN BE PART OF FALL INVADERS by Mike Potter and Lee Townsend

Large spiders, such as the orb weavers, the black and yellow argiope, and funnel web spiders, are plentiful at this time of year. Some of these, along with boxelder bugs, cluster flies, and lady beetles will be entering homes as the temperatures cool. Pestproofing, or cutting down on entry ways can reduce problems with them indoors. Here are six useful tips for pest proofing. Steps 1-3

will also conserve energy and increase the comfort level during winter and summer. Equipment and materials mentioned can be purchased at most hardware or home improvement stores.

1. *Install door sweeps or thresholds* at the base of all exterior entry doors. While laying on the floor, check for light filtering under doors. Gaps of 1/16" or less will permit entry of insects and spiders; 1/4"-wide

gaps (the diameter of a pencil) are large enough for entry of mice; "" gaps are adequate for rats. Pay particular attention to the bottom corners as this is often where rodents and insects enter.

Apply caulk (see #3 below) along bottom outside edge and sides of door thresholds to exclude ants and other small insects. Garage doors should be fitted with a bottom seal constructed of rubber (vinyl weatherstripping seals poorly in cold weather). Gaps under sliding glass doors can be sealed by lining the bottom track with " to 3/4 inch-wide foam weatherstripping.

2. Seal utility openings where pipes and wires enter the foundation and siding, such as around outdoor faucets, receptacles, gas meters, clothes dryer vents, and telephone/cable TV wires. These are common entry points for rodents, ants, spiders, yellowjackets and other pests. Holes can be plugged with caulk, cement, urethane expandable foam, steel wool, copper mesh, or other suitable sealant.

3. *Caulk cracks* around windows, doors, fascia boards, etc. Use a good quality silicone or acrylic latex caulk. Although somewhat less flexible than pure silicone, latex-type caulks clean up easily with water and are paintable. Caulks that dry clear are often easier to use than pigmented caulks since they don't show mistakes.

Buy a good caulking gun. Features to look for include a back-off trigger to halt the flow of caulk when desired, a built-in "slicer" for cutting the tip off of new caulking tubes, and a nail for puncturing the seal within. Hardware stores sell guns with these features for less than \$10.00. Prior to sealing, cracks should be cleaned and any peeling caulk removed to aid adhesion. For a professional look, smooth the bead of caulk with a damp rag or a moistened finger after application.

4. *Repair gaps and tears* in window and door screens. Doing so will help reduce entry of flies, gnats, mosquitoes and midges during summer, and cluster flies, lady beetles, and other overwintering pests in autumn. Certain insects, in particular leafhoppers and hackberry psyllids, are small enough to fit through standard mesh window screen. The only way to deny entry of these tiny insects is to keep windows closed during periods of adult emergence.

5. *Install 1/4-inch wire mesh* (hardware cloth) over attic, roof, and crawl space vents in order to prevent entry of birds, bats, squirrels, rodents, and other wildlife. Be sure to wear gloves when cutting and installing hardware cloth, as the wire edges are razor sharp.

Invest in a chimney cap to exclude birds, squirrels, raccoons and other nuisance wildlife.

6. *Consider applying an exterior (barrier) insecticide treatment.* While sealing is the more permanent way to exclude pests originating from outdoors, comprehensive pest-proofing is labor-intensive and sometimes impractical. For clients requiring an alternative, pest proofing can be supplemented by an exterior treatment with an insecticide. Homeowners will get the most for their efforts by applying longerlasting liquid formulations containing synthetic pyrethroids (e.g., Bayer Advanced Home/Garden Multi-Insect Killer, Spectracide Bug Stop , Ortho Home Defense System) sold at hardware/lawn and garden shops.

Apply with a pump up sprayer, hose end sprayer, etc., treating at the base of all exterior doors, garage and crawl space entrances, around foundation vents and utility openings, and up underneath siding. It may also be useful to treat around the outside perimeter of the foundation in a 2 to 6-foot-wide band along the ground, and 2-3 feet up the foundation wall.

Clients who choose not to tackle these activities may wish to hire a professional pest control firm. Many firms now offer pest proofing as an adjunct to other services. When all else fails, a vacuum cleaner or broom is often the best response to the occasional bug that wanders in from outdoors.

DIAGNOSTIC LAB HIGHLIGHTS by Julie Beale and Paul Bachi

Recent samples in the Diagnostic Lab have included gray leaf spot and poor pollination on corn; root knot nematode, frogeye leaf spot, downy mildew and sudden death syndrome on soybean; black shank, blue mold and frogeye leaf spot on tobacco; frogeye leaf spot (Botryosphaeria) on apple; virus complex on squash; Rhizoctonia stem rot on cabbage; scab on potato; buckeye rot and Septoria leaf spot on tomato; Rhizoctonia root rot on begonia; Pythium root rot on chrysanthemum; Cercospora leaf spot and Pythium root rot on pansy; Volutella blight on pachysandra; Nectria canker on oak; Botryosphaeria canker (bleeding necrosis) on sweetgum; Cytospora canker on holly; and bacterial scorch on sycamore.

INSECT TRAP COUNTS

UKREC, Princeton, KY --September 6-13

Corn earworm	36
European corn borer	. 0
Southwestern corn borer	47
Fall Armyworm	12

September 13-20

Corn earworm	27
European corn borer	. 0
Southwestern corn borer	25
Fall Armyworm	20

Les 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.