FOREIGN GRAIN BEETLE ADULTS, PESTS IN NEWLY-CONSTRUCTED HOMES, ARE ACTIVE!

by Karen M. Vail

Our first foreign grain beetle to be identified at the Urban IPM lab this year arrived on July 16, 2003 - nine days earlier than last year. Foreign grain beetles are small (1/12 inch), reddish-brown beetles that feed on molds and fungi. Foreign grain beetles look very similar to red or confused flour beetles, hairy fungus beetles or saw-toothed grain beetles, but can be distinguished from these species by the presence of a projecting rounded lobe on the front corners of the pronotum. An image of the beetle can be found at EPP 654 - Foreign Grain Beetle Invades Homes http://web.utk.edu/~extepp/pubs/frgrnhtml99.pdf.

Because there are so many similar species, it is best to seek identification from an expert. Your county Agricultural Extension Agent should be your first stop. See the blue pages in the phone book or The University of Tennessee Personnel Directory Web Site (http://www.agriculture.utk.edu/personnel/districts_counties/default.asp) to find your local county Extension office. If the agent is unable to identify the insect, they can mail it to the UT Extension Service Plant and Pest Diagnostic Center in Nashville or if they are one of 58 counties with distance diagnostic equipment (http://web.utk.edu/%7Eextepp/ddtrain/equipped-counties-web.jpg), they can upload a digital image of the suspect specimen through the Distance Diagnosis Web Site http://web.utk.edu/%7Eextepp/diagnost.htm. It is important that at least one magnified image of the pronotum’s (“shoulder’s”) front corners be included in the submission.

Foreign grain beetles may appear in newly-constructed homes by the thousands. Typically, the female is attracted to poorly-seasoned lumber or wet plaster and wall board that supports fungal growth. Foreign grain beetles can also be associated with plumbing leaks, condensation problems, or poor ventilation. Eggs are laid on these materials as the house is being built and larvae feed on the molds. In the late summer, adults become obvious when they emerge from the wall voids and are attracted to lights.

To control these beetles, wet wood and the moisture source should be eliminated. Adding
ventilation such as air conditioners, dehumidifiers and fans may be needed to remove the moisture. Often, homes will dry out naturally in 1-4 years thereby eliminating the fungal food source and hence the beetles. Pyrethrin sprays can kill the adults, but need to be applied frequently as the beetles continue to emerge from wall voids. Vacuum cleaners work just as well as sprays, to remove any visible beetles that are present. Pest control companies may be able to provide additional relief by locating the infested wall areas or source of dampness by using a moisture meter or by inspecting areas where the beetles are most abundant. A residual aerosol or dust can then be injected into cracks and crevices along baseboards and into the wall voids. This may provide some relief; however, the beetles may still emerge from the baseboards and die on the floor.

If the homeowner can tolerate the beetles during the period when they are most active (late summer) the problem may resolve itself. Remember, foreign grain beetles are a nuisance by their mere presence, they do not bite or damage wood, fabric or stored food in sound condition.

RAIN CAUSES MOISTURE-ASSOCIATED PESTS TO INVADE HOMES
by Karen M. Vail

In the last day or so, we have received three types of moisture-associated pests, booklice, springtails and foreign grain beetles, for identification. Here’s a quick summary of some moisture-associated pests to help with identification. Images can be found at [http://edis.ifas.ufl.edu/IN030](http://edis.ifas.ufl.edu/IN030). Pest-proofing and reducing moisture are the keys to managing these pests. A detailed description of springtail and foreign grain beetle identification, biology and management is given in other articles in this newsletter issue.

**Booklice.** These are small, pale-brown to white insects shorter than 6 mm. Wings are usually absent, and they have a large swollen area above the mandibles (clypeus). Often they are found in books, on floor molding and in closets. They do not suck blood, but feed on molds and mildews.

**Plaster beetles.** These beetles are in the family Lathridiidae and are 1 mm to 3 mm long. They get their name from infesting newly plastered walls. They feed on molds growing on walls or in wet stored grain. They are elongate and are reddish-brown. The wings have six to eight rows of punctures.

**Centipedes.** They are often called "hundred-leggers" and have one pair of legs per segment. They are long (up to 6") and wormlike. The 40 to 50 body segments are flattened, and the head has one pair of antennae. Some species can bite and penetrate the skin with their mandibles. Centipedes are beneficial outdoors, feeding on insects and other arthropods.
Earwigs. They have forceps-like cerci that can be used to capture prey or to defend themselves against predators. Earwig adults are 1/4" to 1" long. Their bodies are flattened and are pale- to dark-brown. The antennae are threadlike and about half the length of the body. They are active at night and often crawl into homes under doorsills. They are attracted to light and are beneficial, eating insects and other pests.

Millipedes. They are often called "thousand-leggers" because they have many legs (two pairs per body segment). They have many cylindrical body segments and one pair of short antennae with seven segments. Millipedes feed on decaying organic matter and are found in decaying vegetation and mulched areas. They are nocturnal and are known to have mass migrations.

Pillbugs. They are often called "roly-polies" because they roll into a tight ball when disturbed. They are Crustacea in the order Isopoda and are about 5/8" long. Pillbugs have seven pairs of legs and two pairs of antennae, one of which is very tiny. They live in wet areas under logs, flower pots or mulch. They feed on decaying organic matter.

Sowbugs. These are similar in appearance to pillbugs but cannot roll into a tight ball. They also have seven pairs of legs and two pairs of antennae. Sowbugs have prominent taillike appendages (uropoda) that project from the rear end of the body. They are active at night and often are found under debris, in mulch and under flower pots. They often enter homes by crawling under doors.

Fungus gnats. These small flies breed in damp soil or decaying vegetable matter. Often they are brought into houses in potted plants or are found in commercial buildings in planted areas. Fungus gnat adults are attracted to light and often are found around windows. Large numbers of larvae may be found crawling against walls or pavement.

Springtails. They are tiny insects about 1 mm to 2 mm long. They are in the order Collembola and are white to grayish, with no wings. They have a forked structure (furcula) on the rear of the body that enables jumping. Springtails live in mulch and wet soil, but can migrate into homes and swimming pools in large numbers. They feed on molds and decaying vegetation.


SPRINGTAILS
by Karen Vail

Springtails are tiny wingless insects with distinctive heads and often a hump-backed appearance. Their name comes from a forked structure attached to the underside of the abdomen which acts a
spring to project them into the air. This “jumping” behavior gives them the appearance of tiny fleas. Other than being a nuisance, these small creatures pose little threat.

Most springtails live in rich soil or leaf litter, under bark or decaying wood, or are associated with fungi. Many are scavengers, feeding on decaying plants, fungi, molds, or algae. Springtails may become abundant among wet leaves, soil, and plant material along a house foundations or sidewalk where they can be a temporary annoyance.

Most common springtails do not survive in dry conditions. They infest buildings that have constant high humidity. This is usually in the basement, but may be in other areas with water leaks. Springtails also can occur around floor drains and crawl spaces. Masses of these insects can be swept or vacuumed and discarded.

The best method of control is to stop the leak or decrease the humidity. Fans or dehumidifiers may be used to dry wet areas. In crawlspaces, maintain adequate ventilation and drainage. Water plants in the morning to allow the surface to dry in between waterings. Remove accumulations of wet leaves and other organic matter, as well as boards on the ground, to help eliminate breeding sites.

Any steps to improve ventilation and promote drying are the best long term solutions. Insecticides can be used to treat entry points into the structure, but this will not drastically reduce the number of springtails in an area because it only provides temporary relief if the favorable conditions are not corrected. Springtails are attracted to light and may enter homes or other structures under doors. Sealing entry points (see PB1303 Managing Pests Around the Home, http://www.utextension.utk.edu/publications/pests/default.asp#home) or changing to a sodium vapor or yellow bug light may help reduce pest entry into the home.

In new homes where water leaks or other sources of moisture cannot be found, it is possible that fungi or molds are growing on studs in the wall voids. We’ve received several inquiries about springtails in new homes and believe the food source to be in the wall voids. Using dehumidifiers and adding ventilation to the walls may reduce moisture and associated fungi and molds. In most cases, the walls should dry naturally in a few years.


GARDEN AND ORNAMENTAL INSECT UPDATE
by Frank A. Hale
Squash vine borer have already stunted and killed squash plants. While many of us got a late start planting warm weather crops, the squash vine borers were still active and attacking the young plants. If squash plants look chlorotic and are not growing properly, a borer may be the cause. Check around the base of the plant for the messy, swollen damage from this clearwing borer. Staggered plantings are an option for gardeners that do not tend to spray on a regular basis, if at all. This pest is usually not a problem in commercial squash which are regularly treated for cucumber beetles and squash bugs.

Flea beetles chew small holes in the leaves of many solanaceous plants, especially eggplant. The palestriped flea beetle is common on pepper while eggplant is often heavily attacked by the eggplant flea beetle, potato flea beetle, and the tobacco flea beetle. Small plants are more susceptible to attack than vigorously growing mature plants. Heavy damage can cause leaf dessication and individual leaf death. Protect foliage from excessive damage with foliar sprays. Commercial growers have the option of using thiamethoxam (Platinum 2SC) as a soil applied systemic insecticide for flea beetle control.

This is the time of year when fall webworm nests can be seen at the ends of branches of many shade trees. They will have several generations per year and the nests of each generation will persist on the tree. While spraying with insecticides will kill them, it may be best to prune out the nests on lower branches and thus remove the unsightly webbing.

The bluegrass billbug is a major pest of Kentucky bluegrass and perennial rye while the hunting billbug will attack bermudagrass and zoysiagrass. The eggs are laid in the grass stems in the spring and again in mid-summer. The larvae tunnel out the grass stems leaving fine sawdust frass inside. As the larvae mature they attack the crown and can be found in the crown and root area. When they destroy the crown of turf plants, the damage is often mistaken for drought or white grub damage. If the tillers of an attacked plant are not rooted adequately, the original plant and its tillers will die, leaving a 3-6 inch in diameter dead patch. Tug on the turf and if it breaks off easily and the fine frass falls out then you know that you have billbugs. The larvae may be pupating now with new adults emerging anytime from mid-July through August. These adults will feed and lay eggs which may not be noticed on vigorously growing bermudagrass. The damage occurring in the fall is often mistaken for fall dormancy.

Perennial ryegrasses and fescues with the fungal endophyte are highly resistant to billbug attack. There are also some varieties of bermudagrass, zoysia, and bluegrasses that have resistance to billbugs. The adult billbugs (small, dark snout beetles or weevils) can be seen in the spring on sidewalks and such. Treat for adults at this time or when adults emerge in mid-summer. The larvae can be treated when they are attacking the base of the plant, as you might treat for white grubs. The information on billbugs was taken from “Handbook of Turfgrass Insect Pests” edited
WEARING PERSONAL PROTECTIVE EQUIPMENT AND HEAT STRESS

by Gene Burgess

Personal protective equipment is any item that is specifically designed to provide the wearer with some degree of protection against pesticides. The term is abbreviated as PPE and includes coveralls, gloves, boots, aprons, sleeve guards, hats, eye wear and respirators. Ordinary work clothing also provides protection, but is not called PPE.

As a pesticide applicator, you are required to use PPE. If the label states that you must wear PPE you must use it regardless of the threat of heat stroke. There are plenty of ways to manage heat stroke, but the law does not give a variance from using PPE because of it.

What follows are questions and answers from a Web site USDA, EPA, and OSHA have developed.

QUESTION: Does any PPE allow ease of movement?

ANSWER: Increased mobility can be achieved by selecting a material that moves with the body or by using a garment design that promotes movement. In PPE, the materials are limited by their ability to act as a pesticide barrier. If a choice exists, choose less bulky fabrics and wear undergarments that fit well and do not interfere with the protective clothing. Some design features to watch for are: raglan sleeves, elastic waists and wrists, pleats, panels of fabric across the shoulders, and gussets in the underarm and crotch areas. Be certain to use the size that fits best, a too-large garment can be as restrictive as a too-small garment.

QUESTION: What fibers and garments are recommended for hot weather?

ANSWERS: Wear loose clothing. If a choice exists, wear a coverall of woven instead of non-woven fabric. Select 100 percent cotton over cotton/polyester blends. A cotton undershirt can help absorb perspiration. Consider a two-piece suit instead of a one-piece suit. Replace the full-body coverall for mixing/loading with a frontal apron and sleeve guards or a sleeved apron that is open in back. In addition, multi-layered fabrics and film-coated fabrics are available that offer some breath ability while protecting against pesticides labeled CAUTION.

QUESTION: What are the symptoms of heat stress?
**WHAT'S HAPPENING**

**ANSWER:** PPE can contribute to heat stress when worn under hot and humid conditions. Signs and symptoms of heat stress include: fatigue, headache, nausea, chills, dizziness, thirst, loss of coordination, and altered behavior.

**QUESTIONS: How can heat stress be avoided:**

**ANSWER:** Avoid heat stress by adjusting gradually to working in the heat. Drink plenty of water. Take regular breaks in the shade. Avoid working in the noonday sun by scheduling work for cooler times of the day. Use special cooling devices such as vests and headbands.

For more information on heat stress and pesticides, an excellent publication is available from the University of Florida. The title is: *Managing Heat Stress when Mixing, Leading and Applying Pesticides*. The publication can be found at: [http://edis.ifas.ufl.edu/pdffiles/PI/P100900.pdf](http://edis.ifas.ufl.edu/pdffiles/PI/P100900.pdf)

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**EPA ANNOUNCES REQUESTS TO VOLUNTARILY CANCEL REGISTRATIONS OF DIAZINON**

by Darrell Hensley

On Friday, July 11, the EPA published in the Federal Register a notice announcing the receipt of requests to cancel certain products containing diazinon. Drexel Chemical Co. and Makhteshim Chemical Works, Ltd. requested to voluntarily cancel all of their outdoor non-agricultural diazinon technical product registrations. Walla Walla Environmental, Inc. has requested to voluntarily cancel its residential end-use product containing diazinon. Comments on the requested cancellations, identified by docket ID number OPP-2003-0189, must be received by August 11, 2003.

In a 2000 Memorandum of Agreement (MOA), the diazinon technical registrants agreed to cancel registrations for all of their technical products permitting formulation for residential use, effective June 30, 2003. The cancellation of the residential technical products referenced in this notice will be effective after the 30-day comment period and upon issuance of the cancellation order, if there are no significant comments. Walla Walla will be allowed to sell and distribute their end-use product until August 31, 2003.

Distribution, sale, or use of existing stocks of Drexel's and Makhteshim's outdoor non-agricultural technical products will not be lawful after the effective date of the cancellation (i.e., after the date of the cancellation order), except for export or proper disposal. Walla Walla may not distribute, sell, or use existing stocks of their...
outdoor non-agricultural end-use product after August 31, 2003, except for export or disposal. Retail sale and distribution of the Walla Walla product will be prohibited after December 31, 2004, except for purposes of the product recovery program under the 2000 MOA, export, or disposal. Use of existing stocks of the Walla Walla product may continue until stocks are exhausted.

Diazinon has been one of the most widely used insecticides in the U.S. for residential as well as agricultural pest control. A December 2000 agreement with the technical registrants is phasing out and canceling all indoor and outdoor residential uses in order to reduce risks to children and others. EPA's July 31, 2002, Diazinon Interim Reregistration Eligibility Decision (IRED) includes further measures to reduce risks to agricultural workers and the environment.

Earlier, Syngenta Crop Protection, Inc. also requested voluntary cancellation of registrations for all uses of diazinon, effective June 30, 2003. That Federal Register notice is available at EPA's website:


Additional information on diazinon is available on EPA's website at:
http://www.epa.gov/pesticides/reregistration/status.htm
http://www.epa.gov/pesticides/op/diazinon/summary.htm

The Federal Register notice for Drexel, Makhteshim and Walla Walla Environmental is also available on EPA's website:

Precautionary Statement
To protect people and the environment, pesticides should be used safely.
This is everyone’s responsibility, especially the user.
Read and follow label directions carefully before you mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label. Persons who do not obey the law will be subject to penalties.

Disclaimer Statement
Pesticides recommended in this publication were registered for the prescribed uses when printed. Pesticide regulations are continuously reviewed.
Should registration or a recommended pesticide be canceled, it would no longer be recommended by

The University of Tennessee.

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COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS


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