EARWIGS

Integrated Pest Management for Home Gardeners

Earwigs are among the most readily recognized insect pests in home gardens (Fig. 1). Although they can devastate seedling vegetables or annual flowers and often seriously damage maturing soft fruit or corn silks, they also have a beneficial role in the landscape and have been shown to be important predators of aphids. Although several species occur, the most common in California gardens is the European earwig, *Forficula auricularia*, which was accidentally introduced into North America from Europe in the early 1900s. The striped earwig, *Labidura riparia*, occurs in southern California and can annoy residents when it is attracted to lights. It has a very disagreeable odor when crushed. However, the striped earwig does not damage plants.

IDENTIFICATION

The adult earwig is readily identified by a pair of prominent appendages that resemble forceps at the tail end of its body. Used for defense, the forceps are somewhat curved in the male but straighter in the female. The adult body is about ¾ inch long and reddish brown. Most species have wings under short, hard wing covers, but they seldom fly. Immature earwigs look like adults except they are smaller and lack wings. Contrary to popular myth and despite their ferocious appearance, earwigs do not attack humans.

LIFE CYCLE

Earwigs feed most actively at night and seek out dark, cool, moist places to hide during the day. Common hiding places are under loose clods of soil, boards, dense growth of vines or weeds, or even within fruit damaged by other pests such as snails, birds, or cutworms.

Female earwigs dig cells in the ground where they lay masses of 30 or more eggs. Eggs hatch into small, white nymphs and remain in the cell protected and fed by their mother until their first molt. Later instar nymphs are darker and forage on their own. Generally there is one generation a year, but females produce two broods. Part of the earwig population hibernates during the winter as pairs buried in cells in the soil. In milder California climates, some remain active all year.

DAMAGE

European earwigs feed on a variety of dead and living organisms, including insects, mites, and growing shoots of plants. They are voracious feeders on soft-bodied insects such as aphids and insect eggs and can exert significant biological control under some circumstances. In yards that are planted to turf and contain mature ornamental plants, damage by earwigs is unlikely to be of concern.

European earwigs can cause substantial damage to seedling plants and soft fruit as well as to sweet corn. Damaged seedlings may be missing all or parts of their leaves and stem. Leaves on older plants, including fruit trees, have numerous irregular holes or are chewed around the edges. This damage may resemble damage caused by caterpillars. Look for webbing, frass (excrement), or pupae that would indicate the presence of caterpillars. Soft fruit such as apricots or strawberries may be attacked. Hard fruit such as apples will not be harmed. On stone fruit, look for shallow gouges or holes that extend deeply into the fruit. On strawberries, distinguish earwig damage from that of snails and slugs by checking for the slime trails left by snails and slugs. On corn, earwigs feed on silks and prevent pollination, causing poor kernel development. Earwigs may also damage flowers including zinnias, marigolds, and dahlias.

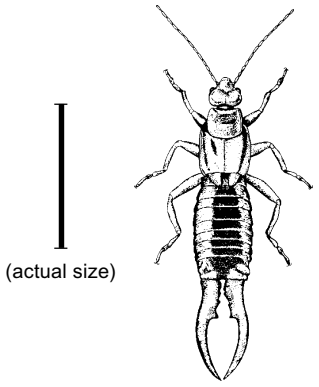

Figure 1. European earwig (male).

Earwigs may seek refuge indoors when conditions outside are too dry or hot or cold. Large accumulations of earwigs can be annoying but present no health hazards. Sweep or vacuum them up and seal entry points. Earwigs eventually die indoors because there is little for them to eat.

MANAGEMENT

Management of earwigs requires an integrated program that takes advantage of their habitat preferences. As moisture-loving insects, earwigs would

PEST NOTES Publication 74102

University of California
Agriculture and Natural Resources

September 2002

not normally thrive in California's arid climate without the moisture and shade provided by the irrigated garden. Where earwigs are a problem, consider reducing hiding places and surface moisture levels. Initiate a regular trapping program. If these measures are followed, insecticide treatments should not be necessary.

Trapping

A key element of an earwig management program is trapping. Scatter numerous traps throughout the yard. Traps can easily be hidden near shrubbery and ground cover plantings, or against fences. A low-sided can, such as a cat food or tuna fish can, with ½ inch of oil in the bottom makes an excellent trap. Fish oil (e.g., tuna fish oil) is very attractive to earwigs or vegetable oil with a drop of bacon grease can be used. Dump captured earwigs and refill cans with oil. Other common types of traps are a rolled-up newspaper, corrugated cardboard, bamboo tube, or short piece of hose. Place these traps on the soil near plants just before dark and shake accumulated earwigs out into a pail of soapy water in the morning. Continue these procedures every day until you are no longer catching earwigs.

Sanitation and Other Controls

Complement the trapping program by removing refuge sites for earwigs, such as ivy, weeds, piles of rubbish, or leaves. Never allow heavy ground cover such as ivy to grow near vegetable gardens. Watch out for mulches; they often harbor earwigs. Natural enemies, including toads, birds, and other predators, may play an important role in some gardens.

For fruit trees, keep weeds, brush, and suckers away from the base of trees throughout the year because they provide refuge for earwigs. Monitor populations with folded newspapers or burlap bags placed at the base of trees. On the lower trunks of older fruit trees, carefully scrape off all loose bark. Trunks can be treated with Tanglefoot, a sticky substance to prevent earwigs from climbing up the trunks to reach ripening stone fruit. Also, keeping fruit trees properly pruned, thinning heavy crops, and picking fruit as soon as it ripens will help keep earwigs from becoming pests. Remember that earwigs can be beneficial in trees when they are feeding on aphids, so keeping them out is not always recommended.

Inside the Home

Indoors earwigs can be swept or vacuumed up; be sure to kill them and dispose of them promptly so they will not re-invade. If earwigs are a regular problem in a building, inspect the area to see how they are getting in the house and seal up cracks and entry points. Remove materials outside the perimeter of the building that could provide harborage, such as ivy growing up walls, ground cover, debris (especially leaves in gutters), wood piles, leaf litter, piles of newspapers, or other organic matter. Also keep water and moisture away from the structure by repairing rain drain spouts, grading the area so water drains away from the structure, and ventilating crawl spaces to minimize moisture. Insecticide treatments indoors are not recommended; they will do little to prevent invasions. If earwigs are attracted to outdoor lights, replace them with yellow or sodium vapor lights, which are less attractive to earwigs.

REFERENCES

Flint, M. L. 1998. *Pests of the Garden and Small Farm*. 2nd ed. Oakland: Univ. Calif. Agric. Nat. Res. Publ. 3332.

Moore, W. S., C. S. Koehler, and P. Svihra. Aug. 1994. HortScript #7. *Earwigs and Their Control.* Univ. Calif. Coop. Ext. Marin County.

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ILLUSTRATION: from Moore, W. S., and C. S. Koehler. 1985. *Earwigs and Their Control*. Oakland: Univ. Calif. Div. Nat. Res. Publ. 7103.

Produced by IPM Education and Publications, UC Statewide IPM Program, University of California, Davis, CA 95616-8620

This Pest Note is available on the World Wide Web (http://www.ipm.ucdavis.edu)

This publication has been anonymously peer reviewed for technical accuracy by University of California scientists and other qualified professionals. This review process was managed by the ANR Associate Editor for Pest Management.

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This material is partially based upon work supported by the Extension Service, U.S. Department of Agriculture, under special project Section 3(d), Integrated Pest Management.