

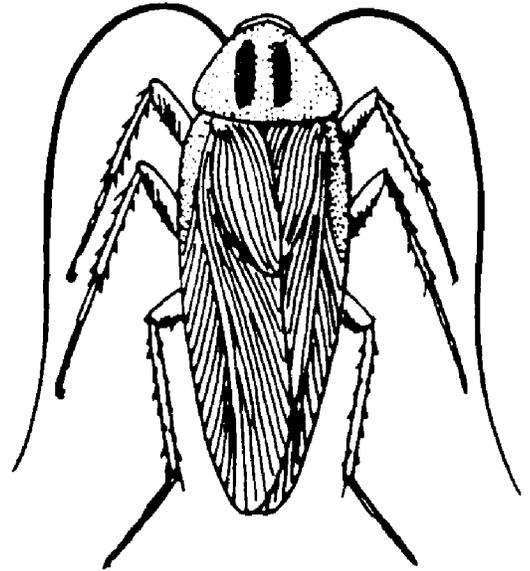
Managing German Cockroaches

Entomology Fact Sheet, NHE-3, Revised 4/96

COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF ILLINOIS

In cooperation with the
ILLINOIS NATURAL HISTORY SURVEY

The German cockroach is the most common cockroach found in homes, apartments, restaurants, supermarkets, hospitals and other buildings where food is stored, prepared or served. They eat food of all kinds and may hitchhike into the home on egg cartons, soft drink cartons, sacks of potatoes or onions, used furniture, beer cases, etc. These cockroaches will move from building to building during the warm summer months. They can develop into large populations and live throughout the home, especially in kitchens and bathrooms. Cockroaches can foul food and produce an unpleasant odor. A significant number of people are allergic to cockroaches, and may exhibit chronic symptoms without realizing the cause of their watery eyes or runny noses. Cockroaches can also contaminate food with bacteria that can cause food poisoning, dysentery, or diarrhea.



Identification

Most cockroaches have a flattened, oval shape, spiny legs, and long filamentous antennae. Immature stages are smaller, have undeveloped wings and resemble the adults. Adult German cockroaches are light tan to medium brown except for the shield behind the head marked with two dark stripes (separated by a lighter stripe), which run lengthwise on the body. Adults are about 1/2 to 5/8 inch long, have wings, but rarely fly. Wings cover the entire abdomen of females and all except the abdominal tip in males. The male is light brown and rather boat-shaped, whereas the female is slightly darker with a broader behind. Young cockroaches (nymphs) are wingless and nearly black with a single light stripe, separating two black bands, running down about halfway of the middle of the back. Egg capsules (ootheca) are light tan and about 1/4 inch long.

Life Cycle and Habits

German cockroach females, unlike most other cockroaches, carry ootheca that protrude from their abdomen until the eggs are ready to hatch. The ootheca is then dropped in a secluded location, where the nymphs emerge within one day. A female may produce four to eight cases during her lifetime, each containing 30 to 48 eggs. Eggs hatch in about one month, and nymphs develop in 1-1/2 to 4 months. Adult female cockroaches live about 6-1/2 months and males live slightly less. The German cockroach produces more eggs and has more

generations per year (three to four) than other cockroaches, thus troublesome infestations can develop from a few individuals. This cockroach has spread throughout the world by commerce and transportation. It is the most prevalent pest in apartments in the United States. During the day, these cockroaches hide in clusters behind baseboard molding, in cracks around cabinets, closets or pantries, and in and under stoves, refrigerators and dishwashers. The crevices behind kitchen drawers and beneath the sink are one of the primary cockroach harborage. If clusters of cockroaches are seen during the day, the population is large. Both nymphs and adults are very active and capable of running rapidly. Without food and water adults may die in two weeks. However, they can live with only water for up to a month.

Control Measures

German cockroaches can be detected by examining the premises after dark with a flashlight and with sticky glue traps. During the day, probing hiding places with a thin wire or thin wood strip will expose cockroaches. Adults and nymphs usually hide clustered together. Household sprays when applied directly to hiding places will flush and kill cockroaches. Insecticide bait stations can also kill cockroaches. For severe or persistent infestations, a pest control professional will provide the most cost-effective control.

Prevention

In rare cases German cockroaches will move from one building to another, however, infestations are usually initiated through the introduction of infested materials. Inspect for cockroaches and their egg cases in sacks, cartons, boxes, used appliances and furniture, etc., brought into the home. Sanitation is critical in cockroach control. (Unclean living conditions from housekeeping neglect is the major contributing factor of cockroach outbreaks.) Thoroughly clean areas beneath cabinets, sinks, stoves, refrigerators, etc. as well as cupboards, pantry shelves and food storage bins. Clean up spilled foods and liquids. Avoid leaving scraps of food on unwashed dishes and counter tops overnight. Keep food in tightly sealed containers, rinse cans and bottles before putting in the trash, and transfer garbage outdoors into cockroach-proof receptacles away from the house. Leftover pet foods should not remain in the feeding dish overnight.

Insecticides

The key to controlling cockroaches with insecticides is to place the insecticides directly where the cockroaches are hiding. Enter a dark room quietly, turn on the light, and watch where the cockroaches run. Spot treat these hiding places and known pathways, especially under and behind loose baseboards or molding strips and around pipes or conduits along the walls and through them. Do not treat entire floors, walls or ceilings. Cockroaches may hide around the kitchen sink or drain board, in cracks underneath cupboards and cabinets, inside the motor compartment of mechanical refrigerators, behind window and door frames, in radio and TV cabinets, and around closet and bookcase shelves. Surfaces used for food preparation should not be treated. Instead, seal cracks and crevices with putty, plastic wood, or other caulking material. Infestations in multi-dwelling housing usually require the treatment of other units as well.

There are numerous cockroach insecticide formulations. Some are labeled "General use" for homeowner application and others are labeled "restricted use" for professional pest control or licensed, certified pesticide applicators only. Before using any insecticide, READ THE LABEL and follow directions and safety precautions.

Most insecticides available to homeowners come in aerosol cans and are sold in supermarkets, supermarts, and hardware stores (See Table 1). Many of these products contain the same active ingredients used by professional exterminators. Moreover, most of the products are very similar in effectiveness if used correctly. In other words, it is not so much *which* insecticide is used, but *how* the insecticide is used (see below). Concentrated

liquid insecticides that must be diluted with water and applied with a hand-held sprayer are also available in hardware and farm supply stores.

When applying insecticides in kitchen and bath areas, all food, dishes, utensils, medicines, etc., must be removed and placed in an area away from the pesticide application. All drawers should then be removed from the cabinet structure. In this way, the cockroaches harborage can be accessed and treated. Treat all cracks and crevices directly with the insecticides, allow the area to dry thoroughly and then replace kitchen and bath items. It is important to note that simply spraying a few cockroaches as they are seen, or spraying only those spots where cockroaches were seen crawling about will not control an infestation of cockroaches.

The use of "insecticide bombs" is **not recommended** for cockroach (or any other insect) control. These types of insecticides are not very effective in eliminating cockroach infestations, and can be extremely hazardous if used incorrectly.

Baits

Baits, when placed in areas of cockroach infestations, are also effective. Hydramethylnon (e.g., Combat, Maxforce) is a cockroach feeding station and is effective against pesticide-resistant cockroaches. For baits to be effective, they must be placed as close to the cockroach harborage as possible. Place the baits about 3 feet apart inside cabinets at all corners (front and back, top and bottom). For minor infestations, baits by themselves correctly placed in areas of cockroach harborage will control the entire population. For more serious infestations, baits should be used in conjunction with direct applications of residuals sprays. When baits are used in conjunction with liquid sprays, always spray first, allow the spray to dry and then apply baits. Baits remain effective for about 3 months before needing replacement.

Traps

Cockroach traps are about the size of a large match box and have openings at both ends. The inside surface is covered with a very sticky adhesive and slow-release food attractant. Traps are best used to evaluate the effectiveness of a control program, especially for brown banded and German cockroaches. When properly placed, traps can determine harborage areas and infestation severity, monitor effectiveness of pesticide applications, and detect any cockroach population increases that may require additional pesticide treatments.

Traps alone will not control cockroaches.

If the cockroach infestation is severe, or if you are in doubt as to the control measures to use, contact a reputable, licensed pest control firm. In most cases, it is much more cost effective to hire a professional for cockroach infestations than attempting to do it yourself. Moreover, these professionals have the necessary advanced training and experience to eliminate the cockroaches quickly and safely.

For more information on managing cockroaches and chemical recommendations, see the University of Illinois Urban Pest Management Handbook or contact your unit office of the University of Illinois Cooperative States Research, Education, and Extension Service.

Prepared by Entomologists at Purdue University, University of Illinois, Illinois Natural History Survey, and Illinois Department of Public Health. For additional copies, contact your unit office of the University of Illinois Cooperative Extension Service. Acknowledgment to William Lyon, Ohio State University for the basis of the text

Urbana, Illinois 1995. Issued in furtherance of the Cooperative Extension Work Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Dennis R. Champion, Interim Director, Cooperative Extension Service, University of Illinois at Urbana-Champaign.

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