

INTEGRATED PEST MANAGEMENT: COCKROACHES



Cockroaches can live any place that has food preparation or storage areas including homes, schools, restaurants, and offices. They can contaminate food, utensils, and paper products, and destroy fabric. Cockroaches are active at night, so if you see one during the day, you probably have a large infestation.

Why are cockroaches a problem?

Saliva, shed skins, and droppings from cockroaches can trigger asthma attacks, especially in young children. Cockroaches can spread bacteria and cause illness when they crawl over food or food preparation areas. Cockroaches can also leave stains and unpleasant odors.

What is the most common cockroach in California?

German cockroaches are the most common and troublesome indoor cockroach in California. One female German cockroach and offspring can produce thousands of roaches in a year. German cockroaches are attracted to moist areas in or near kitchens and bathrooms and can fit into spaces $\frac{1}{16}$ -inch wide, or about the width of a quarter. They avoid open spaces and scurry into hiding places when they sense noise, movement, and light.

IPM Strategies

1 DON'T SPRAY!

Sprays or bug bombs may kill a few cockroaches but won't reach hiding places or kill their eggs. Pesticide sprays can harm people, pets, and the environment.

2 KEEP COCKROACHES OUT

German cockroaches can enter buildings hidden in grocery bags, lunch bags, back packs, diaper bags, and cardboard boxes. In apartment buildings, cockroaches sometimes slip under doors or through wall voids. Outdoor cockroaches can sneak in through narrow gaps in windows and doorways.

- ▶ Install tight-fitting weather stripping, screens on windows, and door sweeps.

- ▶ Take supplies out of cardboard boxes and store them in cupboards, containers with tight-fitting lids, or on open metal shelving. Cockroaches hide in cardboard boxes, eat the glue, and lay their eggs in the tight spaces.
- ▶ Seal cracks and crevices in walls and floors.

3 REMOVE COCKROACHES' FOOD, WATER, AND SHELTER

- ▶ Clean spilled food, dirty dishes, utensils, and surfaces before leaving for the day.
- ▶ Rinse bottles and cans before placing in the outdoor recycling bin.
- ▶ Keep drains, shelves, and counters clean.
- ▶ Store food in containers with tight-fitting lids.
- ▶ Fix leaks under sinks or dripping faucets.
- ▶ Vacuum possible cockroach hiding places thoroughly. Use a HEPA-filter vacuum with a crevice attachment.
- ▶ Empty garbage at the end of each day and keep indoor garbage in lined, covered cans.
- ▶ Place outdoor garbage bins on hard, cleanable surfaces (concrete is best) and away from building entrances.

4 MONITOR FOR COCKROACHES

- ▶ Look for cockroaches behind or under cabinets and appliances. Check behind bulletin boards, mirrors, and other wall fixtures. Look for cockroach droppings, shed skins, and dead cockroaches.
- ▶ Locate hiding places by placing sticky traps under sinks and on the floor next to walls and appliances. When traps become clogged with cockroaches, throw them away and replace with new ones.

[IPM Strategies continued]

- ▶ Once you find where cockroaches hide, focus your efforts there. Put monitoring traps in that area.
- ▶ Keep monitoring traps in the same places (don't move them around). Keep traps out of children's reach.
- ▶ Monitor daily during a severe infestation. Note how many cockroaches you have per trap. A lot of young cockroaches (smaller and wingless) indicate you have an active infestation.

5 GET RID OF COCKROACHES

Don't spray or use bug bombs because the cockroaches will scatter and return later. Instead, use bait stations and gels.

Bait stations are:

- ▶ Small plastic containers with a mixture of insecticide and bait inside.

- ▶ Placed where cockroaches have been found.
- ▶ Effective for several months.

Gels are:

- ▶ Applied with a syringe inside cracks and crevices where cockroaches have been found.
- ▶ Effective for a few days to a few weeks, depending on formulation.

Boric acid powder is:

- ▶ Effective when applied to crevices, behind electrical outlets, appliances, or other undisturbed hiding places.
- ▶ Effective for years, as long as it stays dry.
- ▶ Lower in toxicity if eaten or if it contacts skin as compared to some other insecticides. Always follow label instructions and take steps to minimize exposure, especially to children. If exposure happens, be sure to follow the first aid instructions on the product label carefully.

ACTION PLAN FOR COCKROACHES

WHEN TO TAKE ACTION	NONPESTICIDE PRACTICES	LEAST HARMFUL PESTICIDE	LAST RESORT
<ul style="list-style-type: none"> ▶ If you see a few cockroaches or evidence of them (such as dark spots or smears). 	<ul style="list-style-type: none"> ▶ Monitor with sticky traps. ▶ Caulk and seal hiding places. ▶ Clean all surfaces and store food in sealed containers. ▶ Remove clutter. ▶ Vacuum with a HEPA-equivalent vacuum. ▶ Fix water leaks. 	<ul style="list-style-type: none"> ▶ Cockroach bait stations or gel applied to cracks and areas out of children's reach. ▶ Apply boric acid powder to dry, inaccessible areas. ▶ Apply insect growth regulators to areas where cockroaches are hiding. Keep out of children's reach. 	<ul style="list-style-type: none"> ▶ If you can't get rid of roaches or have a serious infestation, hire a PMP who uses IPM practices.

LESS COMMON SITUATIONS

Outdoor cockroaches (that can come inside)

- ▶ **Oriental cockroaches** (sometimes called water beetles) are relatively large insects (up to 1 ¼ inches in length) that commonly live outdoors in damp places such as drains, water meter boxes, sidewalk voids, woodpiles, and compost areas. They sometimes enter garages or homes in search of food or water.
- ▶ **Field cockroaches**, like their relative the German cockroach, are small (up to ½-inch). Unlike German cockroaches, however, field cockroaches prefer to live outside in leaf litter and plant debris. They are more olive in color than Germans and have a black stripe between their eyes.
- ▶ **American cockroaches** are large (up to 2 inches) and fast-moving. They prefer very warm and moist habitats and are commonly found in California within sewers and underground storm drains. They sometimes invade parking structures and basements.
- ▶ **Turkestan cockroaches** are closely related to oriental cockroaches and share many of their habits and habitats. Female Turkestans look like oriental cockroaches, while the males resemble American cockroaches. In Southern California, Turkestan cockroaches are gradually replacing oriental cockroaches.

RESOURCES

- University of California Statewide IPM Program: *Cockroaches* www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7467.htm
- The Department of Pesticide Regulation, Safely Managing a Cockroach Infestation www.cdpr.ca.gov/docs/pestmgt/pubs/roach_color.pdf

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