

# Rodriguez Exterminating

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The Bug Stops Here!



## Management of Cockroaches in Apartment Buildings

German Cockroach

*Blattella germanica*

### Development of the Cockroach

The cockroach has three life stages: the egg, nymph, and adult. Cockroach eggs are deposited in groups in a leathery case or capsule called an ootheca. This capsule is usually dropped or glued to some surface by the female as soon as it is formed; however, the female German cockroach carries the capsule protruding from her body until the eggs are ready to hatch. There may be from 30 to 48 eggs in the capsule of the German cockroach, but capsules of other cockroaches may have only 10-28 eggs.

The newly hatched nymphs have no wings and shed their skins (molt) several times before becoming winged adults (103 days).

### Where to Look for Cockroaches

Cockroaches hide in dark, sheltered places during the day and come out to feed at night. They may be found around the kitchen sink or drain board, in cracks around or underneath cupboards and cabinets or inside them (especially in the upper corners), behind drawers, around pipes or conduits (where they pass along the wall or go through it), behind windows or door frames, behind loose baseboards or molding strips, on the underside of tables and chairs, in the bathroom, and in radio and TV cabinets.

The German cockroach is usually found in the kitchen and bathroom, although it may be found all over the house.

### Methods of Cockroach Control

An IPM approach is the most effective method of cockroach control. The least effective control method is the use of chemicals alone. Using chemicals alone results in insecticide resistance and, ultimately, very poor control.

Homeowners may undertake their own IPM plan for cockroach control with good success, or they may elect to contract the services of a professional pest control operator. **Rodriguez Exterminating** has the equipment and training to do a thorough job and have access to products not available to homeowners.

### Prevention and Sanitation

Successful cockroach control requires prevention and sanitation. Vacuuming will eliminate cockroach skins and feces that cause cockroach allergies. Cockroach feces also contains a chemical (aggregation pheromone) that attracts cockroaches to an area. Eliminating the cockroach feces by scrubbing with hot,

soapy water will decrease the amount of aggregation pheromone available to attract cockroaches to the area.

Prevention and sanitation can be divided into four categories: exclusion and elimination of food, water, and harborage. Following the recommendations in the four categories will likely eliminate the most important factors that affect cockroach establishment.

### **Exclusion**

- German cockroaches can initially infest a structure when infested grocery bags are brought inside. Inspect groceries for cockroaches before storing. Keep grocery bags in outside storage areas.
- Cockroaches breed prolifically in corrugated cardboard boxes. Discard unnecessary boxes immediately.
- Caulk cracks and gaps around kitchen cabinets, countertops, sink, door frames and baseboards.
- Children can transport cockroaches from school to home in book bags and lunch containers. Inspect these items regularly.
- Dwellings, such as apartments that are separated by a common wall are particularly difficult situations. An infestation can migrate between apartments via the plumbing encased in a common wall. Therefore, cockroaches from one apartment can easily migrate to another apartment, infesting a "clean" dwelling. To help prevent this, caulk holes in common walls and around plumbing.

### **Elimination of Water Sources**

Water is the most important factor in cockroach survival. German cockroaches can survive only 12 days with food but no water. However, if only water is present with no food, cockroaches can survive for about 42 days. Eliminate water sources by doing the following:

- Tighten or patch leaky pipes in kitchen and bathroom areas.
- Do not let water stand in sinks for long periods of time.
- Do not over water indoor plants because accumulated water will be available to cockroaches.
- Empty pans under refrigerators used to catch water from condensation.
- Be aware that pet drinking dishes, aquaria, and pipe condensation (under sinks, in wall voids) can also be sources of moisture.

### **Elimination of Food Sources**

Cockroaches do not need large amounts of food to survive, especially in the presence of water. Furthermore, food sources can compete with cockroach baits, decreasing their effectiveness. Elimination of food sources includes:

- Store and dispose of garbage properly. The highest concentration of cockroaches in a home is usually around the garbage can and around the refrigerator.
- Seal garbage can lids to prevent cockroaches from accessing food sources. Also, keep garbage areas clean by wiping frequently.
- Dump sink strainers frequently to prevent food build up.
- Wash dishes immediately after use. Dishes left unwashed are a major source of food for a kitchen infestation.
- Keep kitchen appliances such as toasters, toaster ovens, microwaves, stoves, ovens, and refrigerators free of crumbs and other food debris. In addition, clean the areas around these appliances.

- Reseal all food after opening or store in the refrigerator.
- Seal pet food tightly. Do not leave food and water out all the time.
- Regularly vacuum or sweep under and around furniture where people eat, such as the dining room table. Vacuuming can also remove cockroach egg cases that will not be killed by insecticides. Remember to promptly dispose of the vacuum cleaner bag in an outdoor container.

## **Elimination of Harborage**

In addition to food and moisture, cockroaches require a place to live. The cockroach harborage is critical to its survival. Cockroaches prefer dark places that are warm and moist. Places that provide tight spaces such as stacks of newspaper or cardboard, piles of clothing, or cracks and crevices in structures are ideal.

Harborages not only provide a place for cockroaches to live, but they also can create "pesticide free" zones where cockroaches can hide if insecticides are selected as one tactic in the IPM program.

Eliminate harborages by doing the following:

- Seal cracks and crevices. Adult cockroaches can fit into cracks only about 1/16 inch and prefer spaces of about 3/8 inch.
- Keep clutter such as newspapers, bags, and clothing from accumulating.

## **Chemical Control**

Use prevention and sanitation methods before and concurrently with chemical control tactics. The most commonly used chemical formulations for cockroach control are baits, sprays and dusts. While cockroach foggers are commonly seen in the marketplace, their effect is limited to the cockroaches that directly contact the fog. Thus, control is variable and will not be discussed here.

## **Baits**

Baits are most highly recommended because of their effectiveness and targeted application, decreasing unnecessary pesticide exposure. Baits usually come in granular formulations, plastic stations, or large syringes for gel applications..

- Apply granular formulations outside in plants and mulched areas.
- Bait stations are most effective when placed in corners where you suspect cockroaches are hiding or coming into your home.
- Place the gel in syringes in cracks and crevices around windows, doors, and any other suspected cockroach harborage, except in food handling areas.
- Never spray a liquid insecticide where baits have been applied. Liquid insecticides used in the vicinity of baits will repel cockroaches from the bait.
- Pest control operators have other baits in different forms that also provide long lasting control.

## **Sprays**

- Greasy surfaces decrease the effectiveness of insecticide applications. Therefore, before treating surfaces eliminate grease and oil by scrubbing with hot, soapy water.
- Generally, liquid sprays will not be effective when applied to wood surfaces such as cabinets and shelves.
- Insect growth regulators will take 4 to 6 weeks for a noticeable decrease in the population. But control is longer lasting than other contact insecticides because the cockroaches are no longer able to reproduce once exposed. Evidence on insect growth regulator exposure is twisted wings

on the adult cockroaches and altered behavior. Expect to see more cockroaches during the day as a result of IGR use. Seeing more cockroaches after IGR use means the treatment is working.

- Apply materials to cracks and crevices where cockroaches live. These areas include cracks around pipes under sinks, around toilet bowls, around baseboards, and around appliances.
- Never spray around or into electrical outlets.
- Avoid spraying food preparation surfaces.
- Do not touch surfaces until dry (at least 4 hours).
- Some materials may damage carpets, tile, or plastics. Check the label before using any material on these surfaces.
- Outdoor products should be applied at the label rate to cracks and crevices where cockroaches are suspected of living or entering the home, such as door thresholds and window frames.

## **Dusts**

Dusts are slow-acting but can give long lasting control. Boric acid is probably the most commonly used dust labeled for cockroach control. It is most effective indoors in clean, dry areas.

- Apply boric acid with a duster that puts out a thin film of dust.
- Apply dusts in hidden areas such as under refrigerators, stoves, sinks, wall voids, and other cracks and crevices.
- Do not apply dusts in open areas such as on shelves or counters where food and utensils are kept.
- Boric acid is highly toxic to plants and will discolor some fabrics.
- Other effective dust and borate products are available to pest control operators.

## **IPM Approach for Indoor Cockroaches**

- Thoroughly vacuum and wipe the premises with hot soapy water.
- Place baits (gel and station type) according to label directions.
- Check baits monthly until populations decrease, then quarterly.
- Replace empty bait stations because they provide additional harborage for cockroaches when empty.
- If populations are very high, a "clean-out" using a liquid insecticide mixed with an insect growth regulator, such as hydroxyflorfen or pyriproxyfen, in cracks and crevices may be needed to knock down the initial population.
- Place baits in areas not treated with liquid insecticide or place baits 4 to 6 weeks after spraying.

## **Why use Rodriguez Exterminating ?**

- Licensed, certified and insured Pest Control Technician
- 18 years experienced
- Educates owner and tenants on control measures and techniques.
- Bilingual – Spanish
- Service Agreements not contracts

- UF/IFAS, citing the publication
- Rodriguez Exterminating education material