



ENTFACT-614

### COCKROACH ELIMINATION

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Cockroaches, are the most common insect pests infesting homes, food service establishments and other structures in Kentucky. Cockroaches are repulsive and objectionable to most people simply by their presence. They are also capable of mechanically transmitting disease organisms such as the bacteria which cause food poisoning. Recently, cockroaches have been found to be an important source of allergy in people, second only to house dust.

Cockroaches typically become established in homes after being introduced in grocery bags, with laundry or, in some cases, wandering in from outdoors. Once cockroaches become established they are prolific breeders capable of producing several thousand offspring in a year.

Cockroaches prefer to live where there is food, warmth and moisture. Since cockroaches flourish where food and moisture are readily available, sanitation is an important step in prevention and control. Empty soft drink bottles, cardboard boxes and paper bags should not be allowed to accumulate. Food containers should be sealed and any crumbs or spillage cleaned up.

Unlike many household pests, cockroaches are prevalent year-round, causing homeowners and businesses to eventually seek some form of control. Homeowners attempting to control cockroaches themselves will find insecticidal baits and boric acid effective and relatively easy to use. This factsheet will explain how to use baits and boric acid to eliminate your cockroach problem.

#### **Cockroach Baits**

Cockroach baits contain a slow-acting insecticide incorporated into a food attractant. Roaches locate and feed on the bait, typically contained in small, plastic bait trays, and crawl away to die. Bait carried back to the nesting area also kills other roaches after being expelled in the sputum and feces.

In contrast to liquid sprays or aerosols, cockroach baits require no mixing and it is not necessary to empty kitchen cabinets or cover food preparation surfaces

prior to treatment. People and pets are not exposed to the toxicant since the insecticide is enclosed within a plastic, child-resistant container. Another advantage of cockroach baits is that they have essentially no volatility or odor.

Various types of cockroach bait products are sold over the counter. Three of the most effective are Combat(R), Raid(R) Max Roach Bait, and Roach Ender(R) Roach Bait (Black Flag). All three products are packaged 12 stations to a box and are available in most grocery and hardware stores.

#### **How to Use Cockroach Baits**

The key to successful cockroach control with baits is proper placement. Bait trays should be placed in all areas where cockroaches are seen, especially in kitchens and bathrooms. Prime locations include under sinks and toilets, beneath refrigerators, dishwashers and stoves, next to trash containers and inside cabinets and storage areas. It's critical that the stations be positioned flush into corners or up against edges (e.g., where walls meet ceilings and floors), since these are the paths commonly traveled by roaches. Placement of baits in the middle of exposed surfaces, i.e., away from edges or corners, will be far less effective. In most cases, a minimum of 12 bait stations should be used at one time, placing 10 baits in the kitchen and two in the bathroom. If cockroaches are seen in other areas such as bedrooms or utility rooms, use 2-4 additional baits. Do not spray around bait stations with other insecticides or cleaning agents as this could deter roaches from feeding on the bait.

Substantial reductions in cockroach numbers should occur within 1-3 weeks of treatment. As with any pesticide, read the product label prior to use.

#### **Boric Acid**

People have been fighting cockroaches with boric acid for nearly a century. Boric acid is one of the most effective cockroach control agents ever developed provided that it is used correctly. Unfortunately, most people use it incorrectly, and in the process waste their money and effort. Boric acid may be used alone or in

combination with the baiting techniques previously discussed.

### **Properties and Advantages**

Boric acid is a wonderful tool for controlling cockroaches in homes, restaurants and other buildings. It is effective in extremely small amounts and retains its potency almost indefinitely provided the deposit remains dry. Unlike many insecticides, boric acid has no repellency to insects and, consequently, roaches return to treated areas repeatedly until they die. Boric acid is deadly to cockroaches, but is low in toxicity to people, pets and other nontarget animals. It is also odorless and contains no volatile solvents.

Boric acid is a white, inorganic powder chemically derived from boron and water. Boron is mined from vast mineral deposits in the ground and is used in countless consumer products, including laundry additives, toothpaste and mouthwash. Boric acid insecticide formulations can be purchased at hardware and grocery stores. The powder comes ready-to-use, i.e., no mixing or dilution is required. Formulations sold in plastic, squeeze-type bottles with narrow applicator tips are the easiest to use. (These containers are similar in appearance to the squeezable mustard and ketchup bottles found in restaurants).

Cockroaches succumb to boric acid when they crawl over treated areas. The tiny particles of powder adhere to the cockroaches' body, and the material is ingested as the roach preens the powder from its legs and antennae. Some boric acid is also absorbed through the greasy outer covering of the insect's body. All species of cockroaches are susceptible to boric acid provided the powder is applied into areas where the roaches are living.

### **Using Boric Acid Like a Pro**

The key to success with boric acid is proper application. For best results, the powder should be applied in a very thin layer barely visible to the naked eye. Piles or heavy accumulations will be avoided by foraging cockroaches much as we would avoid walking through a snow drift. To apply a fine layer, shake the container and puff a small quantity of the powder into the target area. Manufacturers of boric acid often fill their containers too full of powder -- by using a container which is no more than two-thirds full, an airspace is created at the top which allows the dust to be puffed more easily (A few pennies or pebbles placed inside the container helps prevent the powder from caking). The trick is to give the container a shake, then puff a very light dusting of the powder into the area you wish to treat. Avoid applying a heavy layer, and never apply the material with a spoon.

Where the powder is applied is just as important as how it's applied. Cockroaches prefer to live in cracks, crevices and secluded areas close to food, moisture and

warmth. Kitchens and bathrooms are the most common areas to find cockroaches, although any area of a home may become infested if the infestation is severe, or if species other than the German cockroach are involved. Key areas for treatment include under/behind the refrigerator, stove and dishwasher, into the opening where plumbing pipes enter walls (such as under sinks and behind the commode, shower and washing machine), and into cracks along edges and corners inside cabinets and pantries. Oftentimes, there is a void (hollow space) under kitchen and bathroom cabinets which becomes a hiding place for cockroaches. This area can be accessed and treated by injecting powder through any existing gap at the top of the kickplate, or if none is present, by drilling a few small holes. NEVER apply boric acid onto countertops or other exposed surfaces, especially those used to prepare food. Any visible residues should be wiped off with a damp cloth.

Boric acid can be used alone or in combination with other cockroach control products. An effective way to augment the activity of boric acid is to place containerized cockroach baits such as Combat(R), Raid Max(R) or Roach Ender(R) brands, as discussed earlier. Avoid dusting over, or in the immediate vicinity of your bait stations, as this may reduce the attractancy of the bait. Used correctly, this dual approach will produce results comparable to a professional exterminator.