



## German Cockroach Management in Low Income Housing<sup>1</sup>

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German cockroaches, *Blattella germanica* (L.), (Figure 1), are the most common insect pests of low income housing. In a survey of over 1,100 low income apartments found that 50% of inspected apartments had populations of >15,000 cockroaches.

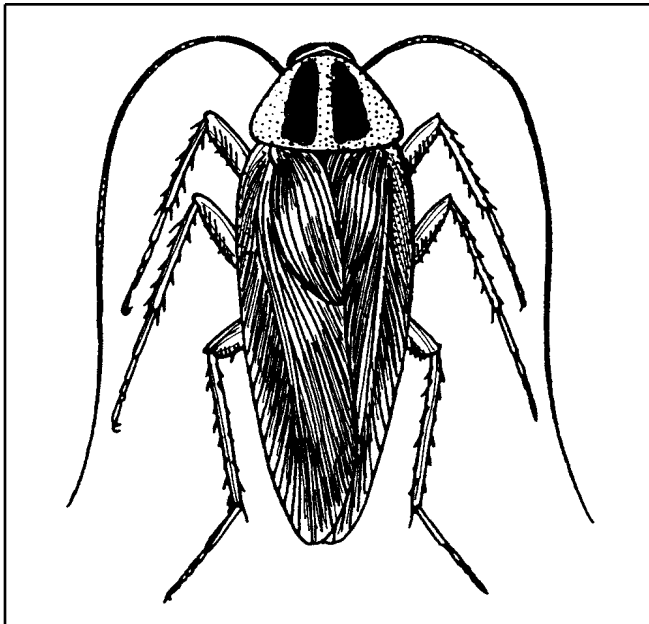


Figure 1. German cockroach (actual size 5/8").

German cockroaches are annoying, can transmit disease, and cause allergies. Most people do not want to live with cockroaches. They can contaminate food

and food utensils with their bodies and droppings. Over 500 disease organisms can be transmitted by cockroaches; however, these diseases can be just as easily transmitted by a filthy hand as a cockroach. Recently, cockroaches have been implicated in causing allergies in humans. In fact, about 10-15% of people in the U.S. are allergic to cockroaches. However, children raised in cockroach infested apartments have a much higher incidence of allergy, 65-70%.

Therefore, it is important to manage German cockroach populations in residences. Because low income housing typically has a high incidence of German cockroach infestation, these locations can be a challenge for implementing effective control. In many cases, high levels of insecticide resistance in German cockroach populations has resulted in the increased use of pesticides for control. This has translated into higher costs of pest control for housing authorities often without satisfactory results.

In 1993, the Department of Entomology initiated an integrated management program for control of cockroaches with the Pasco County Housing Authority. This program was highly successful resulting in a decrease in insecticide usage by 90% and an increase of 95% in German cockroach control. The

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basis of the program was the use of insecticide baits and maintenance personnel to apply the baits. The following are suggestions for implementing similar programs in other counties and municipalities.

## Procedure

### Supplies

1. Sticky traps for monitoring cockroaches (i.e.; Black Flag Roach motels).
2. Insecticide baits (most supplies are available from pesticide distributors, such as Lesco or Van Waters & Rogers). Alternate use of Bait combination #1 and Bait Combination #2 every 6 months.

- Bait combination #1
- MaxForce bait trays and
- MaxForce Gel or
- Siege Gel
- Bait combination #2
- Black Flag Roach bait trays and
- Avert or
- Avert aerosol

3. Data forms (see Table 1).

### Pretreatment Trapping

Apartments should be trapped (e.g.; Black Flag Roach motels) before treatment to determine levels of infestation. Select 10% of the total number of apartments that will be treated; select the ones with the worst infestation (i.e. trap 10 apartments out of 100). Place three traps (one under sink, one next to a major appliance, and one near garbage) in each apartment for 24 hours. Pick up the traps, count the total number of trapped cockroaches, and record numbers on a data sheet. Keep a record of apartments so they can be trapped again after treatment.

## Treatment

Place 12 bait trays in each apartment. Ten bait trays should be placed in the kitchen and 2 in the bathroom area (under sink cabinet). The 10 bait trays should be placed in the following kitchen areas:

- under the sink (to left and right rear of cabinet)
- next to or under refrigerator
- next to stove
- in wall cabinets and pantry
- in floor cabinets Gel treatments should be used to treat other areas in the kitchen, living/dining room, bathroom, and hallways.

Areas to treat with gel include:

- harborages behind cabinets next to refrigerator;
- underneath toaster;
- next to stove;
- cracks behind wall cabinets;
- pictures on the wall;
- circuit breaker boxes;
- fire extinguisher mountings;
- any other areas where cockroaches are seen.

### Retreatments

Apply bait initially. Check bait trays monthly. If all bait has been consumed, replace the bait tray. Retreat with gel every month in locations where cockroaches are still prevalent. Every 6 months rotate bait combinations #1 and #2. This will require removal of old bait traps and placement of bait trays and gel treatments identically to the initial treatment.

### **Measurements**

Posttreatment monitoring should be done monthly with sticky traps placed in the same locations within the same apartments.

### **Analysis**

Calculate average number of cockroaches per trap pretreatment and at each date after treatment (see Table 1). Keep records of expenditures for baits, traps, and other supplies.

### **Certification**

Florida Statute 482 requires individuals applying pesticides as part of their job be certified to apply pesticides. Employees of housing authorities would be required to pass the exam for limited certification at the county extension office. There is a \$50 fee for each employee. The certification would allow the applicator to treat the apartments for the housing authority, but the certification does not allow him to operate a pest control business.

