

## The EFFICACY of EIGHT COMMERCIAL COCKROACH BAITS against the AMERICAN COCKROACH (DICTYOPTERA : BLATTIDAE)

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The use of baits for the control of cockroaches in homes is now commonplace. To date, most bait studies have focused on the German cockroach, *Blattella germanica* (L). However, in many parts of the world, especially the tropics, the American cockroach, *Periplaneta americana* (L), is a more common pest. This study investigated the efficacy of various consumer cockroach baits, incorporating a range of active ingredients, against the American cockroach in a controlled laboratory environment.

The cockroach baits investigated were: Mortein® Nest Kill (0.5% chlorpyrifos), Combat® Superbait (2.0% hydramethylnon), Combat® Quick Kill Formula (0.03% fipronil), Zep® Commercial Pest Cockroach Bait Stations (1.0% sulfluramid), Raid® Cockroach Killing System (1.0% sulfotone → [lithium perfluorooctanesulfonate]), Raid® Max Roach Bait V (0.05% abamectin B1), Raid® Max Kill (0.5% chlorpyrifos) and Baygon® Cockroach Stopper (0.5% chlorpyrifos).

The study was conducted in square melamine trays (1.8 x 1.8 m) at 22±2°C. Cockroaches were provided with water, food (oats and peanut butter), and harbourages. One hundred mixed-sex American cockroaches (25 adults and 75 mid-to-late instar nymphs) were placed in trays. After a 24-hour acclimation period any dead were replaced. Two identical baits were then placed in each tray. There were four trays (replicates) for each bait treatment and one for the control. Mortality was recorded over a 21-day period. LT<sub>50</sub> (time to reduce a tray population by 50%) values were calculated using Kaplan-Meier survival analysis and sorted using a log-rank test.

Statistically, Mortein® was the most efficacious bait (i.e., exhibited the lowest LT<sub>50</sub>), followed by the group comprising Baygon® and Zep® baits. Raid® Max Killing System and Combat® Quick Kill baits comprised the next group, followed by Raid® Max Kill baits. The remaining baits did not reach 50% mortality during the 21-day study.

This study demonstrated that the efficacy of commercial cockroach baits against the American cockroach is influenced both by the choice of active and by the bait formulation used.