

Field efficacy of siege gel bait in an IPM program on life stages of German cockroach (*Blattaria, Blattellidae*) in a residential building.

Abstract

Background: Current control strategies that rely on residual contact insecticides have resulted in insecticide resistance or tolerance to all the major groups of insecticides. New strategies are based on repeated monitoring, sanitation, educational programs and use of pesticides such as gel bait. **Objective:** Investigate the effectiveness of an Integrated Pest Management (IPM) program on life stages of German cockroaches at infested units of a residential building in southwestern Iran. **Methods:** Life stages (adult, nymph, and ootheca) of German cockroaches at 53 units (rooms) were monitored by sticky traps for eight months. The infested units were subjected randomly to IPM treatments and compared to controls following five weeks of monitoring. The IPM approach was based on an educational program using pamphlets, posters, lectures, sanitation with vacuuming, and application of hydramethylnon gel baits. **Results:** There was a high proportion of nymph population (76% of cockroach trap counts) before treatment. German cockroaches showed the highest frequency distribution in trap counts at surveyed residential units. Percentage reduction in nymphs was lower than the reduction in adults in the first week post treatment, although from the fourth to the twenty-sixth week, the percentage reduction was higher than in adults or equal when they reached 100% reduction. Mean total results showed significant reduction in adult and nymph stages throughout the treatment period. Reduction in ootheca fluctuated over the IPM program. **Conclusion:** Siege gel bait (Hydramethylnon 2%) in an IPM program successfully reduced adult and nymph stages of German cockroach infestation over the post treatment weeks especially after the fourth post treatment week.

Keyword: German cockroach; Hydromethylnon; Integrated pest management; Siege.