

INTEGRATED PEST MANAGEMENT STRATEGIES TO MANAGE COCKROACHES AND REDUCE COCKROACH ALLERGEN LEVELS IN MULTI-FAMILY HOUSING

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Abstract Chronic cockroach infestations, high cockroach allergen levels, and repeated insecticide use is a serious health concern among low-income residents living in multi-family housing. Surveys in 358 randomly selected apartments in Gary, Indiana in 2006 revealed that 30% of the apartments were infested with German cockroaches. Cockroach baits, aerosol sprays, insect foggers, and boric acid dusts are commonly used for controlling cockroaches by residents or pest control contractors. In the 101 apartments evaluated, 98% of the kitchen dust samples had detectable (≥ 0.4 U/g) cockroach allergen (*Bla g 1*), 52% had ≥ 2 U/g, and 33% had ≥ 8 U/g. An integrated pest management program (IPM) was initiated to reduce cockroach infestations, cockroach allergen levels, and insecticide use in two apartment complexes in 2006. About 400 occupied apartments were included. The IPM program consisted demonstration and education of residents, application of boric acid dust, gel baits, and sticky traps to reduce cockroach infestations. We monitored the infested apartments monthly by sticky traps. Additional traps and insecticides were applied to eliminate cockroaches. After 12 months, the number of heavily infested apartments (> 9 trapped cockroaches during 24 h trapping period) reduced from 94 to 15 (84% reduction). Monthly bait application reduced from 5,792 to 450 g (92% reduction). Geometric mean of the cockroach allergen (*Bla g 1*) levels reduced from 9.0 to 2.2 U/g (76% reduction) ($n = 80$). The IPM program was highly effective in maintaining cockroach infestations at very low levels, reducing cockroach allergens, and reducing insecticide use.