FACTORS AFFECTING SUCCESSFUL CONTROL OF THE SMOKYBROWN COCKROACH, *PERIPLANETA FULIGINOSA* (SERVILLE)

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The smokybrown cockroach, *Periplaneta fuliginosa* (Serville) (Dictyoptera: Blattidae) is a recognized urban pest in many temperate, sub-tropical, and tropical regions of the world. It is of primary concern in residences where it can establish large populations, both inside and outside, at all levels of a structure. It previously was an elusive and difficult pest to control in the United States, and presumedly in other parts of the world, due to lack of knowledge of its spatial and temporal use of habitat. Studies found in current literature have begun to provide habitat information that allows us to target treatment strategies to the ecology of the pest.

The data presented here is aimed at understanding some of the potential components of an integrated pest management program designed specifically for the smokybrown cockroach. These data are most applicable to temperate regions but do have implications for other climates.

In a study to investigate the most efficient treatment regime we determined that there were no significant differences in the level of smokybrown cockroach population control between insecticide treatments that were (1) exterior only, (2) exterior and attic, (3) interior including attic and exterior, and (4) interior including the attic, exterior and with the inclusion of a bait supplement. The similarity in results for all four treatment groups is probably attributable to the location of population. Ninety-six percent of all the cockroaches trapped in this study were located around the exterior of the structure. However, it is important to remember that smokybrown cockroaches can and do infest the interior of structures. Consequently, while the implication of this study is that only exterior treatment is necessary for smokybrown cockroach control, the more important point is that monitoring to determine which habitats are infested is critical to providing effective treatment while using the least amount of insecticide.

Others factors affecting control success were investigated including formulation of insecticides, the substrate to which it is applied and exposure of that substrate to normal environmental conditions. In general, microencapsulated insecticides remained effective longer than emulsifiable concentrates on brick, painted wood, and mulch. None of the insecticides were effective after two weeks of direct exposure to outdoor conditions. Effectiveness does increase if the outdoor environment is protected from direct sunlight and rain. However, the most significant outdoor population control probably occurs within one week of treatment.

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