Title Impact of IPM practices on insect populations in retail pet stores.

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Abstract

Stored-product insect infestations in retail pet stores cost pet food manufacturers millions of dollars annually, but there are no studies documenting the effectiveness of pest management practices in pet stores. Our study was designed to determine species associated with eight pet stores in Kansas, USA, and to evaluate the impact of chemical and non-chemical intervention on insect populations. Food and pheromone-baited traps were used to estimate numbers of stored-product beetles and the Indian meal moth, *Plodia interpunctella*. Traps were placed in a grid pattern in each store, and trap catches were recorded every 1-3 weeks. Spatial analyses of trap catch data were used for monitoring infestations and for evaluating effectiveness of pest management measures. Measures used against pests included sanitation (sweeping, vacuuming and/or discarding infested products) or sanitation in combination with an insect growth regulator, hydroprene 9% EC, or a pyrethroid, cyfluthrin 20 WP. Each treatment (sanitation or sanitation plus pesticide application) was replicated in two stores. Two stores that were left untreated served as the control. Traps in the stores captured a total of 41 266 adults and 3032 larvae of 36 insect species belonging to 23 families and 7 orders. Infestations were generally associated with birdseed, small-animal foods, or spilled food. Sanitation in conjunction with hydroprene or cyfluthrin applications on targeted floor areas reduced beetle numbers but did not greatly affect Indian meal moth numbers. The significance of these findings is discussed.