

Title Meaning and practical value of spatial analysis for protecting retail stores.
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Abstract

The risks posed by chemical pesticides have prompted initiatives to reduce pesticide use, primarily through integrated pest management (IPM). Implementation of IPM for control of stored product insects in retail stores will require regular monitoring to know when, where, and what type of control measures to apply. This need can be met by a combination of trapping and contour analysis of numbers captured in each trap. The objective of contour analysis is to determine patterns of distribution and identify foci of infestation. The principal requirements for monitoring are that contours of trap catch honour the data, predict trap-catch values between traps, and reflect the spatial distribution of the insect population monitored. Trapping studies of *Plodia interpunctella* in a pet store and *Lasioderma serricorne* in a shed were used to determine how well these requirements could be met in practice. Contours of trap catch for *P. interpunctella* fit the data closely and predicted trap catch values between traps well enough to locate and define a major focus of infestation, but a smaller focus of infestation was missed. Contours of trap catch for *L. serricorne* reflected the spatial distribution of the beetle population. Numbers captured declined with increasing distance from the source of infestation.