

Study 12e

Laboratory Summary

The *ActiveGuard*® Mattress Liner, is an Active Liner impregnated with 1.64% permethrin on a polyester fabric, and is labeled to kill bed bugs for up to 2 years. The Active Liner is typically installed inverted on the mattress and/or box spring once the bed bugs are largely cleared from the structure. Any missed bed bugs or nymphs from newly hatched eggs are killed thus preventing the start of new infestations.

The objective of this study was to evaluate the responses of bed bugs from numerous strains to the permethrin-impregnated fabric. Of special interest was contact toxicity, repellency, and feeding inhibition.

Continual exposure to the fabric resulted in rapid intoxication of the bed bugs with 87-100% mortality in 3 moderately pyrethroid-resistant and susceptible strains. One highly resistant strain reached 22% mortality in 10 days.

Video tracking of bed bugs from each of 5 strains placed onto the treated fabric indicated a lack of repellency among the bed bugs strains tested.

Exposure for 30 minutes to the treated fabric also appeared to interfere with the ability of the bed bugs from all 5 strains to feed to repletion.

Exposure of bed bugs to the permethrin-impregnated fabric resulted in mortality, no repellency, and difficulty in feeding by the bed bugs exposed regardless of resistance status and revealed that sub lethal effects would be an important addition in bed bug control efforts.