

Study 12g

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.

This study centered upon the uptake of permethrin for two strains of bed bugs exposed to permethrin-impregnated fabric. A resistant Forest Brook strain and a susceptible strain were used in this research. The bed bugs were video-taped moving on the fabric in arenas and permethrin uptake was measured via extraction and gas chromatography.

Permethrin uptake off of the treated fabric was rapid and depended upon time and distance travelled by the bed bugs. Correcting for recovery, bed bugs took up 18.3 ng after 1 minute, 25.4 ng after 10 minutes and 66.5 ng after 50 minutes. After 10 minutes of exposure, all bed bugs showed signs of sub lethal effects.

The permethrin taken up after a 10 minute exposure to the permethrin-impregnated fabric in this study was also found to result in the lack of feeding reported by other researchers also after a 10 minute exposure to the treated fabric and adds to the knowledge of how sub lethal exposure of bed bugs to permethrin can contribute to the control of this important pest.