Aprehend®

FIELD NOTES

Evaluation of Aprehend® viability on box spring encasements for use in bed bug infestations

Background

Encasements for both box springs and mattresses are a commonly used tool in the pest control industry (Figure 1). Their use provides the ability to trap live bed bugs and their eggs within the encasement. While not a stand-alone treatment, the use of encasements can provide a useful line of defense in excluding bed bugs that colonize these areas without the need to treat with chemical products. Many PMPs use chemical products to treat mattresses and box springs prior to using encasements to provide an additional level of protection. While Aprehend is not labeled for use on mattresses, whether encased or not, box springs are key target application surfaces for Aprehend spray barriers.

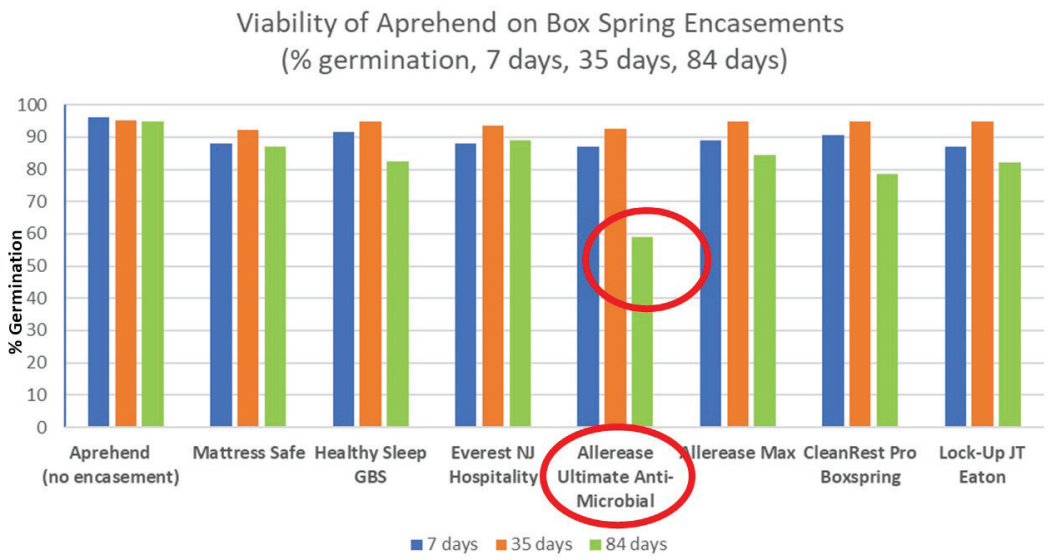
Box spring encasements are an optional add-on when using Aprehend. Without a box spring encasement, Aprehend barriers should be applied around bottom perimeter of the box spring, where the dust cover is stapled to the frame, around the side perimeter to ensure that bed bugs moving up to the bed have to cross a spray barrier, and around the top perimeter before re-positioning the mattress. If a box spring cover is used, the Aprehend spray barriers should be applied to the encasement after fitting, focusing on the side and upper perimeter of the encased box spring.

Figure 1 The control and 7 encasements used in this study. Data presented in Figure 2 on the next page.

Methods

This study was conducted to ensure that the fabrics and anti-feeding coating commonly used for encasements was not toxic to the spores in Aprehend. We applied spray barriers to seven brands of encasements commonly used by PMPs and the general public to evaluate the effect of the encasement material on the viability of the Aprehend spray barriers over time. We took samples of the sprayed encasements and performed germination counts on the spores 1 week, 5 weeks and 12 weeks after the spray application. Aprehend has a residual efficacy of up to 3 months, so we wanted to ensure that none of the products tested resulted in a reduction in this long-term residual.

Figure 2 illustrates the need to avoid anti-microbial encasements on box springs when applying Aprehend.



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Results

The Aprehend spores maintained good viability of up to 95% for 12 weeks after spray application. However, 12 weeks after application, one of the treated encasements resulted in much lower spore viability (<60%) than the other encasement products (approximately 78-89%), as shown in Figure 2.

Our laboratory studies have shown that even when the spore viability is as low as 30%, the spores still cause significant bed bug mortality. However, good viability does ensure maximum efficacy. As a result, we advise PMPs to avoid Allerease Ultimate, Anti-microbial encasements since the 'Anti-microbial' feature does seem to have some detrimental effect on the Aprehend spores.

Summary

Aprehend is compatible with most encasement products, but those with anti-microbial claims should be avoided. Note that encasements are effective only if they remain 100% intact with no rips or holes. Damaged encasements are a common cause of call-backs and control failures, as they not only permit the escape of bed bugs that should have been permanently trapped within, but they also provide an ideal protected harborage for population growth. Always use high quality encasements and inspect for damage whenever conducting inspections.