

ACTIVEGUARD MATTRESS LINER FIELD TRIAL RESULTS

By James B. Ballard

The ActiveGuard mattress liner is a patented, polyester fitted liner impregnated with permethrin that kills bed bugs (*Cimex lectularius* L.) on the mattress and/or box spring and prevents these from reinfestation. It is a registered product by EPA and in all 50 states.

Originally developed by United Kingdom doctors to kill dust mites in mattresses for up to two years, ActiveGuard is now being used as part of the mattress treatment within a comprehensive program for the control of bed bug infestations. The best, most practical way of using ActiveGuard mattress liners is to install them onto mattresses and/or box springs as part of an overall bed bug control program.

The pest management professional should first clear the mattress of bed bugs and eggs and then install the appropriate size ActiveGuard mattress liner onto the mattress or box spring. Any missed bed bugs or nymphs hatching from missed eggs will be killed by the mattress liner later. In most cases, a single pest management professional can install a mattress liner on a mattress.

For use in a bed bug control program, the ActiveGuard mattress liner is installed on the top of a bed mattress and pulled down tight and secured under the bottom edge of the mattress to produce a tight, smooth fit on the mattress. The liner is then covered by a mattress pad and bottom sheet. It was previously established that the ActiveGuard mattress liner could kill 100 percent of either susceptible or field bed bugs in laboratory testing. What follows is some field data collected to demonstrate the value of the mattress liner as part of a comprehensive bed bug control program.

Methods. Bed bug control programs were implemented by PMPs for bed bug-infested structures. Pest management professional protocols included such control measures already reported in the literature, such as heat, insecticides labeled for the mattress, insecticide cocktails for non-sleeping surfaces and dusts for voids.

In this study, mattresses were treated to eliminate as thoroughly as possible the bed bugs and their eggs. The firms treated oth-

er infested areas following their own treatment protocol. ActiveGuard mattress liners then were installed on the mattresses. Follow-up calls were made to the customers to determine the success of the overall treatment. The number of complaints logged after treatment was the measure of success.

The treated structures were monitored for control complaints for up to 12 months after treatment. The level of success of this control program was measured in liner months. Liner months represent the number of bed bug-free months the liners have demonstrated since installation in the field. Although the results of the liner months represent a measure of the overall control program implemented by the PMPs, the PMPs involved used different treatment protocols with the exception that ActiveGuard was consistently used for the protection of the mattresses. In New York only, ActiveGuard mattress liners were installed with no other control measures used within this high transient facility where residents typically only stayed for one month.

Ongoing Results. There are a total of 155 mattress liners that have been in the field from five to 12 months. A total of two complaints were recorded during the 1,321 liner months that the field trials have achieved thus far.

One complaint was for a bed bug found in a bedroom in Maryland (not on the bed) and the other was for a bed bug found in a bedroom in New York where the mattress liner was the only means used to control the bed bugs. Because of the bed bug control protocol used by the PMP firm, some mattresses also had an encasement installed over the ActiveGuard mattress liner. Given that bed bugs can go months between feeding and be spread all over a structure, control programs tend to be very labor and product intensive. The actual level of success of a control program can take months to determine.

In some situations, the bed bugs can actually outlast the control components used by the pest management professional. The installation of control components, such as the ActiveGuard mattress liner, that have the potential to last up to two years and thus outlast the bed bugs is important in the long-term control of bed bugs on mat-

tresses. Longer lasting residual insecticides that may be applied to other areas of the room also would be an important improvement to bed bug control programs.

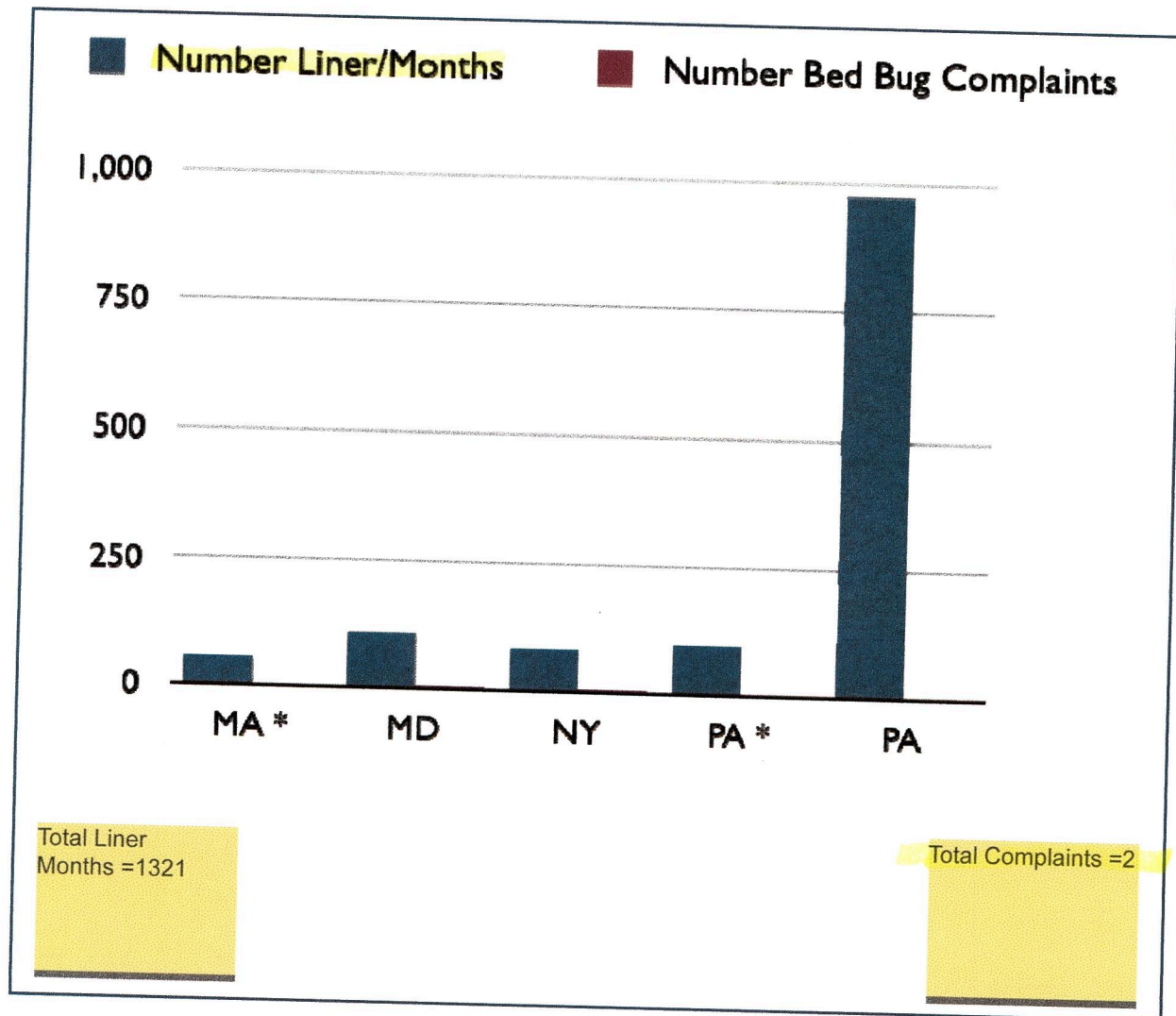
Conclusions. Initial field trials indicate that the installation of ActiveGuard mattress liners on mattresses and/or box springs that have been largely cleared of bed bugs is a viable use of the product as a component step within a bed bug control program. Mattresses can be protected from bed bug infestation by the installation of ActiveGuard mattress liners.

Although limited field data suggests that the installation of only the ActiveGuard mattress liner may provide some protection against bed bug infestation, the effectiveness of the ActiveGuard mattress liners is significantly improved when used as part of a full bed bug control protocol. **PCT**

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This article was written by James B. Ballard, Ph.D., BCE, and the owner of Ballard Pest Management Consulting. He arranged the research reported here on behalf of Allergy Technologies, the manufacturer of ActiveGuard mattress liners.



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