

## Bed Bugs Exhibit Resistance to Pyrethroid Insecticides, University of Kentucky Reports

By

9/5/2006

URL: <http://www.pctonline.com/news/news.asp?ID=4439>

LEXINGTON, Ky. – Entomologists at the **University of Kentucky** report that some bed bug populations across the United States are resistant to pyrethroid insecticides.

Alvaro Romero, a doctoral student, and his co-investigators, Kenneth Haynes (project leader), Michael Potter, and Daniel Potter, found that adult bed bugs from four infestations collected from separate locations in Kentucky and Ohio were several thousand-fold resistant to deltamethrin and lambda-cyhalothrin compared to a susceptible laboratory strain. This high level of resistance may compromise the efficacy of insecticidal products that have pyrethroids as an active ingredient.

Using a discriminating dose test with bed bug nymphs, the researchers further found that seven out of the eight field populations submitted by pest management firms across the country were well over 100-fold resistant to deltamethrin. These tests included bed bugs originating from California, Florida, Kentucky, Ohio and Virginia. Details of the study will be reported at the National Pest Management Association Annual Convention in Grapevine, Texas, in October, 2006.

While the results suggest that resistance to pyrethroids is becoming more widespread, the investigators emphasize that it is not yet universal and many firms are still reporting good control with these active ingredients. Nonetheless, the study findings are significant given that cancellation of most carbamate and organophosphate insecticides has left the industry with few effective alternatives.

Bed bug resistance to insecticides is not a new phenomenon. Resistance to DDT was first reported in the late-1940s and was so widespread a decade later that other products were already being recommended as alternatives. Extension Entomologist Michael Potter cautions that there are a number of reasons other than insecticide resistance why pest control professionals may have difficulty eliminating bed bugs.

Resistance, nevertheless, represents a major challenge to the management of bed bugs and may accelerate the need for alternative tactics. Pyrethroid resistance is likely a factor in the resurgence of this international problem, said Haynes.

“Insecticide resistance has occurred in the past and it will occur in the future,” observes Steve Burt, managing director, Professional Pest Management, Bayer Environmental Science. “As we’ve learned in the past, if you use insecticides properly and in rotation, you won’t have a problem. The key is all of us need to be good stewards of the products we have at our disposal, whether that be the PCO, the distributor or the manufacturer.”