

# NEWS RELEASE

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## **Study: Baits Alone Cause Surprising Reductions in Roach Allergens**

### FOR IMMEDIATE RELEASE

In a surprising discovery, scientists at North Carolina State University and the National Institute of Environmental Health Sciences (NIEHS) have discovered that significant reductions of cockroach allergens in low-income, urban housing can be accomplished with cockroach extermination alone.

The study was published in the January 2004 edition of the *Journal of Allergy and Clinical Immunology* by a team of scientists from NIEHS, Dr. Coby Schal, NC State's Blanton J. Whitmire Professor of entomology, and NC State doctoral student J. Chad Gore.

The paper reports the second half of a yearlong study on efforts to reduce the amounts of German cockroach allergen in urban residences. Studies show that cockroach-produced allergens are some of the most prominent allergens in inner-city homes, and are associated with deleterious effects on human health, especially during childhood.

In the first six months of the study, the NIEHS and NC State team reported the results of a three-pronged approach to reducing cockroach allergen, with a comprehensive treatment of insecticide-containing cockroach baits, professional cleaning and resident education. This approach significantly reduced roach allergens in homes. That was important, Schal says, because studies on the efficacy of the three-pronged approach had not been extensively reported. Schal and his colleagues reported these results in a 2003 issue of the *Journal of Allergy and Clinical Immunology*.

In the second half of the study, the scientists – who promised to use baits to exterminate roaches in the control homes, which had received no extermination treatment in the first part of the study – decided to test whether the significantly reduced allergen levels could be maintained by extermination alone in the intervention homes and whether any significant allergen reduction would occur in the control homes after treatment with bait.

The results were surprising.

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“Based on the existing literature, we did not expect extermination alone to have a significant effect on the level of cockroach allergens in the homes,” Schal says. “But allergen levels were dramatically reduced in the previous control homes with extermination alone. In fact, allergens were reduced to basically the same levels as in intervention homes. Allergen concentrations in intervention homes that had subsequent extermination alone remained essentially unchanged at extremely low levels. This means that cockroach removal seems to be the critical element of the allergen abatement program.”

The researchers used baits – rather than sprays, which can be more harmful to people and animals – to exterminate roaches. Schal says the study placed baits throughout the residences, including kitchens, bathrooms, living rooms and bedrooms. He says that many previous studies confined the use of baits to kitchens and bathrooms.

The scientists monitored allergen levels by vacuuming the floors and swabbing square surfaces in the residences. A special test was then conducted on the collected dust and swabs to quantify the amount of cockroach allergen.

The results showed reductions in allergen levels ranging from 67 percent to 95 percent in various parts of the residence in the crossed-over control homes, and showed maintenance of low levels of allergen in intervention homes. Extermination alone is a great deal less expensive than using the three-pronged comprehensive approach, Schal says, so the implications to the pocketbook, as well as to the health of the occupants, could be significant.

Cockroach allergens are particularly troublesome to residents of inner-city homes, Gore, the NC State doctoral researcher, says. Studies show that children allergic to cockroaches who are exposed to high levels of the allergen are more likely to miss school, visit the emergency room and be hospitalized for asthma, he says.

“A large study of 1,500 asthmatic children found that almost 40 percent were allergic to cockroaches,” Gore says. “Cockroach allergens are some of the most pervasive allergens found in inner-city homes.”

“For years, cockroaches were viewed merely as esthetically displeasing pests,” Schal says. “In recent years, evidence has come to show that cockroaches contribute to childhood asthma.”

Because of the unexpected nature of the results, the scientists are now preparing to replicate the second half of the study.

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