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Forget the Sprays: Roaches and Their Allergens Reduced in Schools Using IPM

FOR IMMEDIATE RELEASE

A North Carolina State University study shows that using integrated pest management (IPM) to control pests in public schools – monitoring closely for signs of pests and then utilizing baits and traps in areas where pests are located – reduces pests and their allergens more effectively than the conventional method of spraying pesticides on a predetermined schedule whether there are cockroaches present or not.

IPM dramatically controls German cockroaches – common school pests – and reduces their allergens, resulting in a healthier environment for students, teachers and staff. Cockroach allergens are associated with asthma problems, particularly among inner-city children.

A study showing the results of tests comparing the two methods in several of North Carolina schools appears in the May issue of the *Journal of Medical Entomology*.

The results are good news for the 70 North Carolina school districts that have already converted – or are currently converting – to IPM, say Dr. Godfrey Nalyanya, extension specialist in entomology, and Dr. Coby Schal, Blanton J. Whitmire Distinguished Professor of Entomology, two of the NC State researchers involved in the study. But it might be even better news for schools that haven't made the switch.

“North Carolina schools are mandated to convert to IPM by 2011, so this finding gives credibility that IPM has superior and longer-lasting results than pesticide use alone,” Nalyanya says.

The study examined the number of cockroaches caught in traps as well as the amounts of cockroach allergens in two school districts using the conventional method and one school district

using IPM. Schools using IPM had no cockroaches caught in traps and much lower concentrations of cockroach allergen Bla g 1 – the most common cockroach allergen – than schools using conventional pest control.

The study was so convincing that the two school districts using conventional pest control quickly made the switch to IPM, Nalyanya says.

IPM has been used in agricultural settings for many years, but is just starting to be used more heavily in buildings or structures, the researchers say.

While this study and others conducted by NC State scientists show that IPM is ecologically superior to conventional pest control, Nalyanya and Schal say that there's long-term economic benefit as well. Setting up the IPM infrastructure and changing existing contracts with pest control providers takes time and money, but the results are worth it.

“The monetary costs for IPM might be higher initially, but it pays for itself down the road, and provides a healthier school environment” Nalyanya says.

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Note to editors: An abstract of the paper follows.

“German Cockroach Allergen Levels in North Carolina Schools: Comparison of Integrated Pest Management and Conventional Cockroach Control”

Authors: Godfrey Nalyanya, J. Chad Gore, H. Michael Linker and Coby Schal, North Carolina State University;

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Abstract: Cockroach suppression is fundamental to cockroach allergen mitigation in infested homes. The effects of various cockroach control strategies on cockroach populations and allergen concentration have not been examined in schools. This study was conducted to compare the effectiveness of integrated pest management (IPM) and conventional pest control in controlling German cockroach (*Blattella germanica* L.) infestations and concentrations of the cockroach allergen Bla g 1 in public school buildings. Two school districts included six schools that used conventional pest control and one district included seven schools that used IPM to control pests. Cockroach traps were deployed to assess the level of infestation, settled dust samples were collected in food service areas, classrooms, and other school areas, and the Bla g 1 allergen was quantified by ELISA. Both cockroach counts and Bla g 1 concentrations were dependent on the pest control approach, with highly significant differences between IPM-treated schools and conventionally treated schools in both the cockroach mean trap counts (0 versus 82.6 ± 17.3 cockroaches/trap/wk, respectively) and in the amount of Bla g 1 in dust samples (2.8±0.3 versus 30.6±3.4 U/g dust). Cockroaches and Bla g 1 were primarily associated with food preparation and food service areas and much less with classrooms and offices. Our data extend recent findings from studies in homes, showing that cockroach allergens can be reduced by

cockroach elimination alone or by integrating several tactics including education, cleaning, and pest control. IPM is not only effective at controlling cockroaches but also can lead to long-term reductions in cockroach allergen concentrations, resulting in a healthier environment for students and school personnel.