

# Making Pests a Thing of the Past

## Integrated Pest Management for Healthier Schools and Students



### All students deserve a safe and healthy learning environment.

Integrated pest management (IPM) is a smart, sensible and sustainable way to reduce pests, improve health and address health disparities in schools.

### IPM 101

Integrated Pest Management (IPM) is a science-based strategy that addresses pest issues before they arise, reducing pest presence through preventive measures.<sup>1,2</sup> IPM takes advantage of all appropriate pest management strategies and controls pest populations by removing their basic survival elements—such as food, water and shelter—and by blocking access to facilities where these items might be readily available.<sup>3</sup>

### IPM strategies are comprehensive and accessible and include—

- Regular inspection and monitoring for pests
- Accurate pest identification
- Maintaining pest records on each building
- Repairs to facilities to exclude pests
- Weatherizing buildings and sealing pest entryways
- Traps and baits
- Targeted application of pesticides
- Decreasing the presence of pests and eliminating the unnecessary use of pesticides
- Education of school staff, teachers and students on steps to prevent pests

*“Children are the most vulnerable members of society when it comes to the effects of poor pest management. Our future is in their hands. We should invest in creating the healthiest, most effective learning environment for our students.”*

—Dawn Gouge, Ph.D., The University of Arizona

### IPM: A Proven Solution

IPM isn't just a good idea: It's a science-based approach to controlling pests that *works*. In a study of three school districts in North Carolina, researchers found—

- **Schools implementing IPM practices** reported decreased pest presence compared to those implementing conventional calendar-based pest management practices.
- **In schools with IPM programs**, 14 percent of dust samples had detectable pest allergens compared to 44 percent of dust samples from schools with conventional pest management programs.
- **Schools implementing IPM methods** used 99.9 percent less active pesticide ingredient than schools using conventional pest management methods.<sup>4</sup>





## The Health Case for IPM

IPM creates healthier environments for students, teachers and staff. Through use of this approach, food preparation areas are cleaner, bacteria are reduced, the spread of viral pathogens is limited, and the unnecessary exposure to pests and pesticides is reduced. IPM also reduces allergens, which can trigger asthma symptoms or contribute to the onset of asthma.

- **Nearly 10 percent** of children in the United States have asthma, and 80 percent of their asthma is caused by allergens.<sup>5,6</sup>
- **Thirty-seven percent** of children with asthma in the United States are allergic to cockroach allergens.<sup>7</sup> Children who are allergic to these cockroach allergens also are more likely to require medical attention for asthma-related issues.<sup>8</sup>

## Suggested Resources

"[Preventing Pests for Healthier Schools: The Health Case for Integrated Pest Management.](#)" U.S. EPA, 2016. This brochure includes additional information and research on the health benefits of using IPM in schools.

"The Basics of School Integrated Pest Management" webinar. U.S. EPA, 2014.  
[www.epa.gov/managing-pests-schools/basics-school-ipm](http://www.epa.gov/managing-pests-schools/basics-school-ipm)

IPM Checklist in the EPA's School IAQ Assessment Mobile App. U.S. EPA, 2015.  
[www.epa.gov/iaq-schools/school-iaq-assessment-mobile-app](http://www.epa.gov/iaq-schools/school-iaq-assessment-mobile-app)

## Endnotes

- <sup>1</sup> Gouge, D. H., M. L. Lame, and J. L. Snyder. 2006. "Use of an Implementation Model and Diffusion Process for Establishing Integrated Pest Management in Arizona Schools." *American Entomologist* 2006: 190-96.
- <sup>2</sup> Chambers, K. T., et al. 2011. *The Business Case for Integrated Pest Management in Schools: Cutting Costs and Increasing Benefits*. The IPM Institute of North America, Inc. 8 pp.
- <sup>3</sup> Brenner, B. L., et al. 2003. "Integrated Pest Management in an Urban Community: A Successful Partnership for Prevention." *Environmental Health Perspectives* 111(13): 1649-53.
- <sup>4</sup> Williams, G. M., et al. "Comparison of Conventional and Integrated Pest Management Programs in Public Schools." *Journal of Economic Entomology* 98(4): 1275-83.
- <sup>5</sup> Bloom, B., L. I. Jones, and G. Freeman. 2013. "Summary Health Statistics for U.S. Children: National Health Interview Survey, 2012." National Center for Health Statistics. *Vital Health Statistics* 10(258): 1-81. [www.cdc.gov/nchs/data/series/sr\\_10/sr10\\_258.pdf](http://www.cdc.gov/nchs/data/series/sr_10/sr10_258.pdf).
- <sup>6</sup> Breyse, P. N., et al. 2005. "Indoor Exposures to Air Pollutants and Allergens in the Homes of Asthmatic Children in Inner-City Baltimore." *Environmental Research* 98(2): 167-76.
- <sup>7</sup> Gore, J. C., and C. Schal. 2007. "Cockroach Allergen Biology and Mitigation in the Indoor Environment." *Annual Review of Entomology* 52: 439-63.
- <sup>8</sup> Rabito, F. A., J. Carlson, E. W. Holt, S. Iqbal, and M. A. James. 2011. "Cockroach Exposure Independent of Sensitization Status and Association with Hospitalizations for Asthma in Inner-City Children." *Annals of Allergy, Asthma and Immunology* 106(20): 103-9.
- <sup>9</sup> Kanchongkittiphon, W., et al. 2014. "Allergens on Desktop Surfaces in Preschools and Elementary Schools of Urban Children with Asthma." *Allergy: European Journal of Allergy and Clinical Immunology* 69(7): 960-3.
- <sup>10</sup> CDC (U.S. Centers for Disease Control and Prevention), NCEH (National Center for Environmental Health), EHHE (Division of Environmental Hazards and Health Effects). 2015. "Asthma-Related Missed School Days Among Children Aged 5-17 Years." Last modified October 5. [www.cdc.gov/asthma/asthma\\_stats/default.htm](http://www.cdc.gov/asthma/asthma_stats/default.htm).
- <sup>11</sup> Faryon, J. 2011. "Empty Seats Costs San Diego School District Millions." [inewssource.org/2011/06/27/empty-seats-costs-san-diego-school-district-millions/](http://inewssource.org/2011/06/27/empty-seats-costs-san-diego-school-district-millions/)

- **A study conducted by** Boston Children's Hospital found that mouse allergens were detectable on desktop surfaces in 100 percent of sampled urban preschools and 95 percent of sampled urban elementary schools.<sup>9</sup>

### Health problems can lead to academic problems.

More than 10 percent of children with asthma miss more than 10 days of school each year, which can cost schools as much as \$100 million annually in attendance-based funding.<sup>10,11</sup> These issues are exacerbated in low-income and minority communities, where children experience higher rates of asthma and asthma morbidity.

## Taking Action to Implement IPM in Your School

By implementing IPM practices, schools can reduce pest presence and related allergens and asthma triggers, thereby improving student and staff health, increasing student attendance, and potentially boosting school funding while addressing health disparities. Focusing on the health case can encourage schools and school districts to commit to an IPM program. Student, teacher and staff health is a unifying issue that everyone can agree on, and making this the paramount message is critical when communicating the benefits of using IPM in schools.

