



More effective and economical pest control: Integrated Pest Management

Integrated pest management (IPM) is a proven, cost-effective strategy to combat pest problems without unnecessary pesticides. By correcting conditions that lead to pest problems and using least-toxic pesticides only when necessary, IPM provides more effective pest control, often without increasing costs. NRDC is collaborating with the IPM Institute to promote a more effective alternative to conventional pest control services.

What is IPM?

Integrated Pest Management (IPM) begins with an inspection for signs of pest activity and conditions that may lead to pest infestation. Pests need food, water, and shelter to survive and thrive. IPM practitioners eliminate these needs to provide lasting pest management. Preventative strategies include improving sanitation, sealing cracks to eliminate pest habitat, installing door sweeps to keep out mice or insects, and fixing leaking plumbing to remove access to water—among many others. When non-chemical measures are not adequate, baited pesticide traps in enclosed containers kill pests and reduce human and pet exposure to pesticides. IPM is included in “green” building standards and certification programs.

IPM is a Less Hazardous Alternative to Spraying Pesticides

Conventional spraying treatments create great potential for health and environmental hazards from pesticide exposure and are less effective than integrated pest management. Conventional pest control for buildings often involves routinely spraying pesticides on baseboards, floors, and other exposed indoor surfaces where children, pets, and adults may come into contact them.

A national government survey found that more than 90 percent of Americans have a mixture of up to 43 pesticides in their bodies.¹ Children are at particular risk. Pesticides have been linked to childhood leukemia, non-Hodgkin's lymphoma, brain tumors, lower birth weight, and congenital heart defects. Children under age six account for more than half of all pesticide poisonings in the United States.



More effective and economical pest control: Integrated Pest Management

Certifying Better Pest Control Practices

NRDC and the IPM Institute of North America have a long history of productive work on pesticide hazard reduction—without sacrificing effective pest control. NRDC endorses the Green Shield Certified program developed by the IPM Institute. Pest management service providers who attain Green Shield Certification use advanced IPM practices, applying effective non-chemical strategies first and using pesticides only when necessary. By working with the IPM Institute of North America, NRDC hopes to help promote an effective marketplace alternative to conventional pest control services.

Reducing Unnecessary Exposure and Risk

Pesticides used in buildings or tracked in from out of doors can remain for weeks or months, presenting an exposure risk to building inhabitants. Pesticides applied outdoors, particularly when applied to impervious surfaces, may contaminate runoff and threaten waterways. In its landmark ten year survey of pesticides in the nation's waterways, the U.S. Geological Survey found pesticides at levels of concern in almost 90% of surveyed urban rivers and streams.

The good news is that IPM can greatly reduce these risks. A study comparing IPM and conventional pest treatments in the homes of pregnant women found insecticides in the maternal blood samples from the control group at the time of delivery, but not in samples from the IPM group.²

Children are more sensitive than adults to pesticides, leading many schools across the nation to adopt IPM practices. In North Carolina, nine elementary schools participated in a test to compare IPM and conventional pest control; conventional treatment left pesticide residues, whereas IPM left few, if any. The efficacy of both treatments was similar³ and there were no significant difference in total costs between IPM and conventional pest control.⁴ IPM can protect water quality by reducing pesticide use and using less toxic materials.

Research Shows IPM is Effective and Economical

95% reduction in cockroach infestation and allergen contamination in low-income housing after initiation of IPM services.⁷

93% reduction in pesticide use in 55 federal government buildings by using IPM techniques over 10 years.⁸

89% reduction in pest complaints and service requests in the same study.

30% decrease in public building and grounds pest management costs when one city switched to IPM in 1996.⁹

IPM is More Effective Than Spraying

Years of research indicate that IPM is more effective than conventional pest control measures. In a study of IPM effectiveness in apartments with large cockroach infestations, the IPM treatment was far more effective than the conventional methods, which often were found to be ineffectual against large infestations.⁵ Since 1996, when San Francisco adopted an IPM policy, the city has largely reduced pesticide use while providing effective, innovative pest control for its buildings and facilities. The city won the first ever National IPM Achievement Award in April of 2006.

IPM is Cost-effective

IPM is not only more effective, but it is also economical:

- The cost of IPM services provided to 131 residents in East Harlem was equal to or lower than traditional spray-intensive pest control, and IPM was significantly more effective at getting rid of cockroaches.⁶
- Structural and landscape IPM programs saved Cape May County, New Jersey, nearly \$45,000 between 1993 and 1998. The IPM program was cost-effective and immediately demonstrated reductions in pesticide and herbicide applications.

1. Center for Disease Control and Prevention, National Report on Human Exposure to Environmental Chemicals <http://www.cdc.gov/exposurereport/>
2. Williams M. K., Barr D.B., Camann D.E., Cruz L.A., Carlton E.J., Borjas M., Reyes A., Evans D., Kinney P.L., Whitehead Jr. R.D., Perera F.P., Matsoanne S., Whyatt R. M. 2006. An Intervention to Reduce Residential Insecticide Exposure during Pregnancy among an Inner-City Cohort. *Environ Health Perspect.* November, 114(11): 1684-1689
- 3,4. Williams, G. M., Linker, H. M., Waldvogel, M.G., Leidy, R. B., Schal, C. 2005. Comparisons of conventional and Integrated Pest Management Programs in Public Schools. *J. Econ. Entomol.* 98: 4. 1275-1283.
5. Miller, D. M., and F. Meek. 2004. Cost and efficacy comparison of integrated pest management strategies with monthly spray insecticide applications for German Cockroach (Dictyoptera: Blattellidae) control in public housing. *J. Econ. Entomol.* 97:2. 559-569
- 6,7. Brenner B.L., Markowitz S., Rivera M., Romero H., Weeks M., Sanchez E., Deych E., Garg, A. Godbold J., Wolff M. S., Landrigan P.J., Berkowitz G. 2003. *Environmental Health Perspectives.* 111:13. 1649-53
7. Environmental Health Watch's Collaboration with Cuyahogo Housing Authority Demonstrates the Difference Integrated Pest Management Can Make. IPM Case Study. EPA. www.ehvw.org/Asthma/ASTH_HUDRoach_Sum.htm.
8. Green A., Breisch N. L. 2002. *J. Econ. Entomol.* 95:1. 1-13
9. Washington State Department of Ecology, 1999, Citing U.S. EPA. 1998. The City of Santa Monica's Environmental Purchasing – A Case Study, EPA

