Pesticides in Schools

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In recent years, policymakers have been confronted with claims that children face dire public health risks associated with the use of pesticide products in schools. Accordingly, on several occasions Congress has considered regulating such uses, and many states have passed laws governing pesticide use. Although these laws may be well intended, they could actually create more serious health hazards for children associated with increased risks from pests.

Congressional Action

By unanimous consent, the Senate passed legislation that would have regulated the use of pesticides in schools as an amendment to the 2001 "No Child Left Behind" education bill. The legislation would have changed the federal pesticide law to require schools to notify parents of pesticide use three times a year and allow them to be placed on a registry for additional notification. The House removed the language from the bill. Although the issue has not emerged recently in Congress, more than 20 states have "pesticide in schools" notification bills, and pressure continues to mount for federal action. In the Northeast, nearly all states have some form of notification. The Massachusetts law is one of the more extensive. It requires schools and day care facilities to develop Integrated Pest Management Plans, with the goal of reducing pesticide use. It also regulates what pesticides can be used and requires notification of parents and employees.

These laws present numerous problems for schools. Perhaps most important, these laws

create incentives for schools to halt pesticide use rather than deal with red tape and bad public relations. Unfortunately, laws that undermine responsible use of pesticides can increase risks of diseases and other health problems posed by pests. In addition, such laws prevent urgent responses to problems that demand such responses. For example, many require schools to wait 48 to 72 hours after a notification before controlling a pest problem. But if a school has a problem with rats, wasps, or other vectors of disease, the goals of public health and safety often demand a rapid response. In addition, these laws have proven expensive for schools that already face tight budgets. According to testimony offered by the National School Boards Association, such laws would cost one Virginia school district $350,000 to $400,000 a year.[1]

Pesticide Risks Are Manageable

Despite claims to the contrary, pesticides can be—and usually are—used in a relatively safe manner in schools, minimizing risks associated with pests without creating significant risks from exposure to the products. One reason is that public exposure is short term and low level and thus unlikely to have any long-term or cancerous effects.[2] In addition, federal laws require products to be thousands of times safer than actual safe levels.[3]

Products must, however, be used according to label directions to ensure that misuse does not harm applicators or others who may be exposed. Fortunately, the data show an impressive safety record associated with pesticide use in schools. Data compiled by the Association of Poison Control Centers indicates few problems. The association's report on the topic from 2003 includes a sample of about 2.4 million reports from 60 poison centers around the nation and covers the 50 states plus the District of Columbia and Puerto Rico.[4]

According to this report, pesticide poisoning problems are not school-based problems: 92 percent of all poisonings occur in the home, and only 1.5 percent of all poisonings occur at school (it is unclear how many of these poisonings are related to pesticides and what the degree of severity is). Of the 41 pesticide-related deaths reported, the report finds that none involved school-age children and most involved intentional poisoning. Only five deaths were reported as accidental—two were preschool-age children and three were adults.

In addition, the *Journal of the American Medical Association* assessed data collected from federal medical surveillance efforts, such as data collected from telephone calls to poison control centers.[5] Despite the hype presented

1. Statement of Marshall Trammell, chairman, Chesterfield County School Board, Chester, Virginia, on behalf of the National School Boards Associations, in School Pesticide Provision to H.R. 1, Hearing Before the Subcommittee on Department Operations, Oversight, Nutrition, and Forestry of the Committee on Agriculture House of Representatives, 107th Congress, First Session, July 18, 2001, Serial No. 107-12, http://commdocs.house.gov/committees/ag/hag10712.000/hag10712_0f.htm.

2. See the policy brief titled "The True Causes of Cancer."

3. See the policy brief titled "The Food Quality Protection Act."

4. William A. Watson, Tony L. Litovitz, Wendy Klein-Schwartz, George C. Rodgers, Jessica Youniss, Nicole Reid, Wayne G. Rouse, Rebecca S. Rembert, and Douglas Borys, "2003 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System," *Toxicology* 22, no. 95 (2002): 335–404.

5. Walter A. Alarcon, Geoffrey M. Calvert, Jerome M. Blondell, Louise N. Mehler, Jennifer Sievert, Maria

in the press about this report, the findings are anything but alarming. The data indicate very few problems associated with pesticide use in or near schools. Over a four-year period, the report finds no fatalities and only three serious cases of pesticide exposure–related illnesses. We have no details on these three cases, but the "high severity" category indicates unfortunate accidents that may have been life threatening or required hospitalization.

The rest of the nearly 2,600 cases involved temporary reactions to chemicals that left no long-term effects. The vast majority—89 percent of the cases—were categorized as "low severity," involving such things as skin irritation, dizziness, headaches, or possible emotional stress associated with exposure to chemicals. Given that the study measures four years of incidents among about 50 million school-age children, these data indicate an incredibly impressive safety record, despite the spin to the contrary.

Risks Associated with Uncontrolled Pest Problems

In contrast to the relative safety of pesticide use in schools, problems related to pests remain significant. Consider just some of the risks.

Cockroaches

According to *School Planning and Management*, cockroaches "often infest schools" and they can "carry pathogens that can cause pneumonia, diarrhea, and food poisoning. Their droppings can inflame allergic or asthmatic conditions, especially in young children."[6] Cockroaches are indeed a serious problem in schools.

According to one study published in *Environmental Health Perspectives* in 1995, "Allergens associated with dust mites and cockroaches are probably important in both onset and worsening of asthma symptoms for children who are chronically exposed to these agents."[7] Cockroaches appear to be a large part of the problems related to childhood asthma and allergies. Researchers reported in the *New England Journal of Medicine* that 36 percent of children in a sample of 476 suffered from cockroach-related allergies.[8] Children who suffered from this type of allergy missed more days of school, had more unscheduled hospital and doctors' office visits, and lost more sleep than children suffering from other allergies. Other reports have found that early exposure to cockroach allergens may contribute to the development of asthma for some children.

The Centers for Disease Control and Prevention (CDC) has reported that 12 percent of children in 2004—9 million children—had at some point in their lives been diagnosed with asthma, and that year four million had suffered

Propeck, Dorothy S. Tibbetts, Alan Becker, Michelle Lackovic, Shannon B. Soileau, Rupali Das, John Beckman, Dorilee P. Male, Catherine L. Thomsen, and Martha Stanbury, "Acute Illnesses Associated with Pesticide Exposure at Schools," *Journal of the American Medical Association* 294, no. 4 (2005): 455–65.

6. Zia Siddiqi, "Don't Let a Pest Problem Be Your Biggest News," *School Planning and Management* 43, no. 5 (2004): 42–49.

7. Floyd J. Malveaux and Sheryl A. Fletcher-Vincent, "Environmental Risk Factors of Childhood Asthma in Urban Centers," *Environmental Health Perspectives* 103, suppl. 6 (1995): 59–62.

8. David Rosenstreich, Peyton Eggleston, Meyer Kattan, Dean Baker, Raymond G. Slavin, Peter Gergen, Herman Mitchell, Kathleen McNiff-Mortimer, Henry Lynn, Dennis Ownby, and Floyd Malveaux, "The Role of Cockroach Allergy and Exposure to Cockroach Allergen in Causing Morbidity Among Inner-City Children with Asthma," *New England Journal of Medicine* 336, no. 19 (1997): 1356–63.

from asthma attacks. Poor children (14 percent) suffer more often from asthma than children from other households.[9]

Prudent use of chemicals—not reduced pesticide use—can be a big part of the solution. A study last year in the *Journal of Allergies and Clinical Immunology* showed that use of chemical baits and regular cleaning can reduce indoor cockroach allergens to levels below that which causes allergies and reduce the number of trapped cockroaches by 96 percent.[10]

Fire Ants

Consider that illnesses caused by fire ants in just one state dwarf the number of health problems associated with pesticides in schools. The *Journal of the South Carolina Medical Association* notes, "In 1998, there were an estimated 660,000 cases of fire ant stings in South Carolina, of which approximately 33,000 sought medical treatment for an estimated cost of $2.4 million."[11] Hence, South Carolina's fire ants caused more than 10 times the illnesses in one year than did pesticide use in every school in the nation over four years, as reported in the *Journal of the American Medical Association* article discussed earlier.[12]

It is true that not all these fire ant illnesses occurred in schools, but the data indicate the scope of that one pest problem, which also affects children at school. Texas's agricultural extension service notes, "Red imported fire ants can be a serious problem for teachers and children cultivating schoolyard gardens in Texas."[13]

Rats and Mice

Students are also at risk from rats, which not only carry disease but also can pose fire hazards by chewing electrical lines. Unfortunately, rat infestations are not as uncommon as one might think. In 2004, the city of Chicago had to shut down 13 cafeterias and begin an intensive $4 million effort to control rats and mice at 600 schools because of rat infestations.[14]

Various Other Problems

Other problems arise from poison ivy, disease-carrying mosquitoes breeding on or near school grounds, dust mites, food-borne illness, molds, bee stings, and other sources—all of which can be reduced with the use of pesticides and disinfectants. Even the common fly can be a problem. According to an article in *Planning and School Management*, "because of their natural attraction to decaying material, flies are among the filthiest insects around, carrying more than 100 known pathogens. They slough off bacteria every time they land on a desk or a cafeteria plate, so prevention is a serious health issue."[15]

9. B. Bloom and A. N. Dey, National Center for Health Statistics, "Summary Health Statistics for U.S. Children: National Health Interview, 2004," *Vital Health Statistics* 10, no. 227 (February 2006), http://www.cdc.gov/nchs/data/series/sr_10/sr10_227.pdf.

10. Samuel J. Arbes, "Abatement of Cockroach Allergen (Bla g 1) in Low-Income, Urban Housing: A Randomized Controlled Trial," *Journal of Allergies and Clinical Immunology* 112, no. 2 (2003): 339–45.

11. Samuel T. Caldwell, Stanley H. Schuman, and William M. Simpson, "Fire Ants: A Continuing Community Health Threat in South Carolina," *Journal of the South Carolina Medical Association* 95 (1999): 231–35.

12. Alarcon, et. al., "Acute Illnesses Associated with Pesticide Exposure at Schools."

13. Nathan Riggs, "Managing Fire Ants in Texas Schoolyard and Butterfly Gardens," Texas Cooperative Extension, Bexar County, 2002, http://fireant.tamu.edu/materials/factsheets_pubs/pdf/FAPFS016.2002rev.pdf.

14. Siddiqi, "Don't Let a Pest Problem Be Your Biggest News."

15. Ibid.

Conclusion

Children around the nation do indeed face some serious public health risks. Schools should implement programs that apply a variety of means to control these problems—an approach called integrated pest management. The prudent use of public health pesticides is often a key tool in any such program. Unfortunately, media hype and resulting legislation about the impact of pesticides that does not consider the risks they help control promises only to undermine public health in the nation's schools.

Key Expert

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Recommended Reading

Logomasini, Angela. 2005. "Pesticides and the West Nile Virus: An Examination of Environmentalist Claims," Competitive Enterprise Institute, Washington, DC. http://www.cei.org/pdf/3893.pdf.

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