School Pesticide Monitor

A Bi-Monthly Bulletin on Pesticides and Alternatives
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Toxic Load from Pesticides in Children's Diets May be Underestimated

A recently released study conducted by the National Institutes of Environmental Health Sciences shows how government agencies may be underestimating children's dietary exposure to pesticides, and therefore the inherent risks to children's health.

The study, "Assessing Children's Dietary Pesticide Exposure," lead by Dr. Chensheng Lu examines the pesticide residues in foods consumed by children in a study group. To determine the precise amount of pesticide residue consumed, parents collected duplicate food samples of all fruits, vegetables, and juices equal to the quantity consumed by their children over a 24-hour period. Parents were instructed to wash and prepare the duplicate samples in the same way as the food their children consumed. This process was repeated at different times during the year to account for seasonal differences in diet.

Researchers noted that consumption of certain foods varies greatly by what's in season. These seasonal differences in the consumption of fresh produce, however, are not taken into account by the Centers for Disease Control (CDC) or the Food and Drug Administration (FDA) when creating mathematical models to estimate pesticide dietary exposure and risk. As a result, these models may greatly underestimate pesticide exposure from these foods.

For example, models that look at the annual average peach consumption may assume that children consume an average of one or less servings a week, and would therefore estimate the risk posed by peach consumption to be acceptable. When peaches are in season though, children might consume one or more servings a day, meaning the risk to their health is much higher than the model implies. Moreover, many types of fresh produce are in season around the same time of year, meaning that children may be getting a much higher

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Report Examines the High Cost of Environmental Illness in Michigan

A coalition of health and environmental groups in Ann Arbor, Michigan estimates that children's exposure to toxic chemicals, including pesticides, cost Michigan billions of dollars each year.

Their report, "The Price of Pollution," examines the costs associated with four environmentally related childhood diseases, including lead poisoning, asthma, pediatric cancer and neurodevelopmental disorders. Treatment for these four disorders alone costs the state an average of $5.85 billion annually, or 1.5% of its Gross Domestic Product (GDP). Researchers note, however that the number would be much higher if all environmentally related diseases had been included.

Using conservative estimates researchers considered direct costs such as medical treatment, as well as less direct costs such as parent wage losses. The study also notes the substantial emotional costs to families dealing with these potentially life threatening or debilitating conditions which cannot be quantified.

This recent study is part of a growing body of literature demonstrating the need to reduce pollution from pesticides and other toxic chemicals, not only for the sake of our health, but for the economy as well. The use of pesticides in the U.S. creates negative effects, such as rising health costs, which are not accounted for in our economic system though they are felt by society.

"While the report offers only an estimation of Michigan's annual costs of diseases due to environmental exposures, it shows the magnitude of how much these toxicants cost every year," says lead author of the report, Aviva Glaser. The important thing to take away from the report, Ms. Glaser says, is that the number represents costs for diseases that are preventable. "By removing toxic exposures in our community, we not only improve children's health, but we can also improve Michigan's economic health."

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California Bill Requiring IPM in Schools Vetoed by Governor

On September 29, 2010, Governor Schwarzenegger vetoed *The Healthy Schools Act of 2010* (SB 1157), which passed the State Assembly and would have required all schools in California to adopt integrated pest management (IPM), using the least hazardous pesticides available.

Specifically, the bill would have required all California schools to use least-toxic IPM and increase the state fees paid by those who sell pesticides to cover the cost of the program implementation. The legislation states that all school sites except for family daycare homes would adopt an IPM program consistent with California code as established by January 1, 2014.

California code defines IPM as "a pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence and establishing treatment threshold levels, using non-chemical practices to make the habitat less conducive to pest development, improving sanitation, and employing mechanical and physical controls. Pesticides that pose the least possible hazard and are effective in a manner that minimizes risks to people, property and the environment, are used only after careful monitoring indicates that they are needed according to pre-established guidelines and treatment thresholds."

Some California activists have expressed concern that the bill was amended eight times since its introduction in February 2010. The last amendment to the legislation was made August 20th.

Though this bill was defeated, environmental and public health groups will continue to work on the issue. It is time for a national policy that would protect every child in the United States from pesticide exposure at school. Federal legislation, the School Environment Protection Act of 2009 (SEPA), has been introduced by Rep. Rush Holt and would protect school children from pesticides used both indoors and on all school grounds nationwide. The legislation also bans the use of synthetic fertilizers.

Beyond Pesticides encourages parents, educators and community members to learn more about this legislation and help its passage. For more information see www.beyondpesticides.org/schools, call our office at 202-543-5450 or send an email to info@beyondpesticides.org.

Environmental Cost

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A 2005 study by Dr. David Pimentel, professor emeritus of entomology at Cornell University, found the economic cost of U.S. pesticide usage on society as a whole to be $10 billion annually. The public health costs are estimated to be $1.1 billion annually. These costs include acute poisonings, cancer, neurological, respiratory, and reproductive effects.

Opponents to pesticide reform argue time and again that it is too costly to institute tighter environmental controls with the current state of the economy. However, when examining the larger picture, it is clear that the economic benefits of greater environmental protection far outweigh the costs.

Children's Dietary Exposure

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pesticide load from their diet over a short span of time.

This study builds on a 2008 study lead by Dr. Wu entitled "Dietary Intake and Its Contribution to Longitudinal Organophosphorus Pesticide Exposure in Urban/Suburban Children." Using the same group of children, researchers measured the concentrations of organophosphate pesticides in the children's bodies who consumed a diet of conventional produce and then switched to an organic produce diet. Researchers found that after a five day period, concentrations of the organophosphates were reduced to trace or non-detectable levels.

Understanding children's dietary exposure to pesticides is important, especially as research continues to strengthen the link between pesticide exposure in children and diseases such as Attention Deficit Hyperactivity Disorder (ADHD).

Dietary pesticide exposure can be effectively eliminated by choosing organic foods. Beyond Pesticides supports organic agriculture not only for the benefits to human health, but also as effecting good land stewardship and a reduction in hazardous chemical exposures for workers on the farm. The pesticide reform movement, citing pesticide problems associated with chemical agriculture, from groundwater contamination and runoff to drift, views organic as the solution to a serious public health and environmental threat. For more information, see www.eatingwithaconscience.org.

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