

School Pesticide Monitor

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Beyond Pesticides / National Coalition Against the Misuse of Pesticides
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New Study Shows Herbicides Increase Cancer Risk

Adding to the existing body of evidence, a new study shows that pesticides can increase one's chances of developing cancer. Exposure to glyphosate (the active ingredient in RoundUp) or MCPA (an active ingredient in many weed and feed products) can more than double one's risk of developing non-Hodgkins lymphoma (NHL), according to a study published in the *International Journal of Cancer*. The case-control study finds a 2.02 odds ratio (OR) for exposure (two times the chance of contracting the illness) to glyphosate, a 2.81 OR for exposure to MCPA, and a 1.72 OR for exposure to herbicides.

According to the U.S. EPA, glyphosate is the most commonly used pesticide in the U.S. with 103 to 113 million pounds used annually. MCPA is a phenoxyacetic acid pesticide, a family of pesticides that has previously been linked to cancer and includes the commonly used herbicides

2,4-D and mecoprop (MCP). The incidence of NHL, a cancer of the immune system, has been increasing over the past several decades.

The link between pesticides and cancer has long been a concern. While agriculture has traditionally been tied to pesticide-related illnesses, 19 of 30 commonly used lawn pesticides and 24 of 48 commonly used school pesticides are probable or possible carcinogens. The consistency of the scientific findings linking pesticide exposure to cancer raises serious questions about their allowed use.

In 2002, these same researchers published a study that shows an increased risk to NHL from exposure to certain pesticides: a 1.75 OR for herbicides, a 3.11 OR for fungicides, a 3.04 OR for glyphosate, and a 2.62 OR for MCPA. And even earlier, in 1999, another study by these researchers, published by the American

Cancer Society, finds that people exposed to glyphosate are 2.7 times more likely to develop NHL.

A 2007 study published in *Environmental Health Perspectives* finds that children born to mothers living in households with pesticide use during pregnancy have over twice as much risk of getting cancer, specifically acute leukemia or NHL. Another study looking at exposure to household pesticides, published in a 2001 issue of *Cancer*, finds that exposed children show a 3 to 7 times greater likelihood of developing NHL, as compared to unexposed children. In studying different types of NHL, the researchers find that household insecticide use is correlated to a greater risk of lymphoblastic lymphoma by 12.5 times.

Schools should avoid carcinogenic pesticides inside school facilities and on their lawns and playing fields by using non- and least-toxic strategies.

Hot Air Found More Effective Than Chemical Lice Treatments

Pesticides used as lice treatments not only have extremely harmful effects on children, they are also not as effective as non-chemical treatments such as utilizing directed hot air, according to new research.

Many of the recent headlines regarding lice in schools include reference to "super lice," which are difficult to eliminate. These lice have developed resistance to the chemicals commonly used to treat them, such as lindane, malathion and permethrin, and therefore these treatments are increasingly ineffective. Insects frequently develop resistance to pesticides, a fact that emphasizes the importance of strategies both in agriculture and public health that focus on pre-

venting pest outbreaks and dealing with outbreaks in ways that will not lead to resistance.

One such method for eliminating head lice that will not lead to resistant strains of lice is the use of hot air, which desiccates the insects and eggs, thus killing them. Researchers testing six methods of hot air application found that hot air outperforms insecticidal shampoos in killing adult lice and nits (eggs). The study shows that a hand held blow dryer used to apply direct heat on sections of the head for a total of 30 minutes results in 98% mortality of eggs and 55% mortality of adult lice. A specially developed hot air applicator named the "lousebuster" results in equal egg mortality and high-

er (80%) adult lice mortality. Both of these treatments are more effective than chemical shampoos. The authors advocate for the institutional adoption of devices such as the lousebuster.

Chemical methods for dealing with lice are highly toxic for humans and the environment. Lindane is particularly toxic and is also bioaccumulative. The last remaining agricultural uses of lindane were cancelled in 2006, and the only remaining use, as a treatment for head lice, is regulated by the Food and Drug Administration. It was banned in California in 2000 because of high levels of water contamination. Following the ban, water contamination drastically declined, and an increase in head lice cases was not reported.



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Air Monitoring Near School Finds Hazardous Pesticides

A new study by Pesticide Action Network North America confirms that school children in Florida continue to breathe air contaminated by hazardous pesticides. Air monitoring near South Woods Elementary School in Hastings detected four agricultural chemicals in the air, often at levels that pose unacceptable risks to children. The report mirrors the results of a similar study released in April 2007, confirming the existence of an ongoing problem of pesticide contamination that is more extensive than previously documented.

The new test results show that in October, November and December 2007 the air in Hastings was contaminated with the pesticides endosulfan, diazinon, trifluralin and chlorothalonil. Of these, two are neurotoxins, two are suspected carcinogens, and three are or will soon be banned in Europe. Endosulfan, the pesticide of greatest concern, was found in 87% of the samples, and, on several days, exceeded levels of concern.

The air monitoring was conducted by concerned area residents using a "Drift Catcher" device, a simple air sampling system that sucks air into tubes, where the pesticides are absorbed and captured. The tubes are then sent to a laboratory, where the chemicals can be identified and the concentrations measured.

James B. Hunt owns the land adjacent to

the school where the air monitoring was conducted, and authorized use of his property for the first round of air monitoring in 2006, which was conducted by high school students as a science project. He decided to continue the drift catching when he saw the lack of response from the school board when the original data was released.

Authors of the report and members of the community around the school are calling for action at the national, state and local level to protect children from exposure to these pesticides. National recommendations include a call for the U.S. Environmental Protection Agency to follow the lead of other countries and ban the pesticides endosulfan and diazinon, and require no-spray buffer zones around schools. Locally, they suggest that school and local officials work with farmers to reduce pesticide exposure of schoolchildren, including support for ecological pest management and application of pesticides only on days when school is not in session.

"The school district chose to purchase this property in an intensive farming area and therefore has the responsibility to address this issue with solutions that will have real impacts," says community member Jordan Whitmire. "Everyday that these children are exposed to the chemicals is one more day of harm done to them."

Pesticide drift is an inevitable problem in pest management strategies that rely on spray and dust pesticide formulations. Although of greatest concern is the aerial application of pesticides, where up to 40% of the pesticide is lost to drift, pesticides can also drift when applied from a truck or hand held application.

This past February, California's Tulare County Agricultural Commissioner adopted new pesticide buffer zone rules that prohibit aerial applications of restricted use pesticides within one-quarter mile of schools in session or due to be in session within 24 hours, occupied farm labor camps and residential areas. Two other counties in the state have similar requirements.

Reports in Hawaii of pesticides drifting onto school property and poisoning students lead state lawmakers to consider legislation that would establish buffer zones around elementary schools.

According to Beyond Pesticides' report *Getting the Drift on Chemical Trespass: Pesticide drift hits homes, schools and other sensitive sites throughout communities*, seven states have recognized the importance of controlling drift by restricting pesticide applications around school properties, residential areas and other sensitive sites. State required buffer zones range from 100 feet to 2 1/2 miles, depending on the application method, pesticide type and site to be protected from potential drift.