

Cancer society turns sights to farm pesticides

Agency holding conference with leading scientists on hotly contested issue of restricting agricultural bug and weed killers

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For years, the Canadian Cancer Society has argued in favour of bans on the cosmetic use of pesticides around homes and gardens. But it has remained silent on the country's biggest use of bug and weed killers: on farms.

Now, the society is considering weighing in on whether these sprays pose a cancer risk to farmers, other rural residents near them, and to the wider public from eating foods carrying pesticide residues.

To that end, the society is holding a conference starting today at which it has assembled experts to advise it on whether cosmetic-pesticide restrictions, which now exist in Ontario, Quebec and many municipalities, should be followed by tougher action against the use of the sprays in agriculture. The society doesn't have a view on the related issue of whether organically grown foods are a better option, a topic that will also be discussed.

"We're bringing the world's leading scientists together to help us understand the science and what we know and don't know and where we could take action, if it's warranted," said Heather Logan, the society's director of cancer-control policy.

In deliberating on possible cancer risks of pesticides, the society is wading into one of the most vociferously contested fields of science and regulation. Health Canada and the pesticide industry say that products licensed for use are extensively tested, and present no risk to farmers or consumers.

"In terms of any risk, health risk, Health Canada will only approve pesticides that do not pose a health risk, provided that the label directions are followed," said Connie Moase, a director in the Pest Management Regulatory Agency, Health Canada's watchdog.

But pesticide opponents, including some respected public-health groups, argue that pesticides are strong poisons designed to kill if used as directed. They contend that Health Canada and industry play down research linking occupational exposures to bug and weed sprays to greater risks of many cancers, such as non-Hodgkin's lymphoma.

Those worried about pesticides also say the cancer society policy is contradictory because it deems use on residential lawns and gardens as dangerous and needing to be banned, while ignoring the far greater use on farms. One estimate, by the U.S. Environmental Protection Agency in 2005, found that about five times more 2,4-D, the main weed killer subject to cosmetic-pesticide bans, was used on farms as on lawns.

"It's very hard to argue that the cosmetic use of pesticides poses a public-health risk, including cancer risk, and not examine what is going on in the rural and agricultural communities," said James Brophy, an adjunct professor at the

University of Windsor.

Prof. Brophy has published research indicating that women who worked on farms in Southwestern Ontario have about three times the breast-cancer risk of those without an agricultural background.

For the cancer society, lending its credibility to campaigns to eliminate cosmetic pesticide use was easy.

The bans were needed because "there is some potential for increased cancer" with the use of these products around homes and "no health benefit whatsoever," Ms. Logan said. "The only benefit that you get is looking at your lawn without any weeds. The issue of non-cosmetic exposure is very different."

The cancer society, in its monitoring of recent scientific literature, considers some cancers to be linked to pesticides. The connection is strongest for those, such as farmers, who have occupational exposures. "There does appear to be a potential of an increased risk of a number of cancers" from them, Ms. Logan said. The diseases include colorectal, prostate, lung, ovarian and some types of blood cancers.

The cancer risks for rural residents near farms and for those eating trace pesticide residues on food are less clear-cut, according to Ms. Logan.

The society says developing a view on agricultural pesticides is complex because it involves a risk-benefit analysis. Pesticides on farms have an economic benefit, helping to provide low-cost food. The society has been promoting diets rich in fruits and vegetables, and is worried that pesticide restriction might reduce the availability of these foods or increase their cost.

If foods are "so unaffordable that people who have lower incomes can't afford to eat a healthy diet, that has the potential to increase their risk long-term of a whole host of chronic diseases," Ms. Logan said.

Most of the research linking cancer and pesticides are epidemiological studies, where the health of people who use a lot of weed-killing and bug-killing sprays, like farmers, is compared with those who don't. Many of these studies, but not all, find associations between pesticides and cancer, leading some scientists to argue that minimizing the use of the chemicals is a sensible precaution.

But epidemiology has a drawback: Regulators view it much like circumstantial evidence in court. It is able to suggest associations between a pesticide and an illness, but doesn't provide proof the chemical caused the disease. On the other hand, these types of studies were the first to show the link between smoking and lung cancer.

But company-sponsored laboratory experiments, known as toxicology tests, where test animals such as rats and mice are fed the killing ingredients in pesticides, typically don't find adverse effects at human-exposure levels - one reason Health Canada says the products don't have much risk.

Neil Arya, adjunct professor of environment at the University of Waterloo, said

the evidence on cancer and pesticides is "highly suggestive," but not definitive.

But Prof. Brophy said his research shows a consistent pattern of increased breast-cancer risk for women who have worked on farms. While this risk could be attributed to factors such as exposure to diesel fumes or growth hormones used on livestock, he said, "pesticides certainly have to be No. 1 on the list."

Differing views on pesticide safety

Quebec, Ontario and many municipalities have cosmetic-pesticide bans, even though Health Canada says the use of bug and weed killers poses no cancer risk. The federal department says other governments are free to introduce tighter restrictions than it advises, but adds they "are not required to base their decision on science."

Health Canada's pesticide evaluations don't mirror real-life human exposures, where people pick up small amounts of a large number of different bug and weed killers that might interact. Instead, the department reviews chemicals one at a time, mainly through oral doses given to test animals, such as mice and rats, in experiments funded by the pesticide industry. The testing starts at high doses that cause harm and then falls to progressively lower levels until no adverse effects are observed. Health Canada then applies a safety factor, often 100 or more times less than the no-effect level, and assumes any human exposures at this level are safe.

Pesticide critics say regulators should pay more attention to real-life studies, where the health of farmers is compared with those who don't use pesticides. Some of these studies have disturbing results. For instance, U.S. researchers, publishing in the journal *Blood* in 2006, found that farmers who use a lot of pesticides and developed non-Hodgkin's lymphoma were 2.6 to 5 times more likely to have a form of the disease with a specific chromosomal translocation, compared with farmers who never use pesticides.

In polling being released today by the Canadian Cancer Society, 60 per cent of respondents said they were worried about pesticide residues on fruits and vegetables, and 74 per cent said they would support stronger federal regulations aimed at reducing pesticide use in food production.

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