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Manitoba Provincial Pesticide Restrictions Are Necessary, Due To Deficiencies in the Federal Pesticide Regulatory System

Prevent Cancer Now is a Canadian National non-governmental organization that works to eliminate preventable causes of cancer.

Under Health Canada, the Pest Management Regulatory Agency (PMRA) regulates products that aim to kill or otherwise control pests such as weeds (herbicides) and insects (insecticides), etc. The PMRA conducts no toxicological testing itself. Rather, it conducts a paper audit of data submitted by the pesticide manufacturers. Unfortunately, its assessment of human risk is flawed, for the following reasons:

1. **Animal testing in labs is of limited relevance for people.** Testing determines the maximum dose that does not make an animal (usually a rodent such as a rat or mouse) seriously ill. Rodents are very different from humans, in that they have enzymes that help them metabolize poisons. Humans do not have the same enzymes, and, of course, tests are not conducted on humans.

Also, tests do not generally cover the animal's lifespan or transcend generations. In humans, exposures that may cause no symptoms in the mother can cause life-long harm to her unborn child. Some effects may be passed through generations due to changes in gene expression, called epigenetic effects.

2. **Tests do not address low dose or cumulative effects.** In fact, the regulatory system actually precludes low dose testing. Some health effects occur at doses commonly encountered in the environment; effects that may predispose people to cancers as well as other major chronic diseases.
3. **No testing is done on endocrine disruption – one mechanism behind many pesticides' chronic toxicities.** Many pesticides disrupt the endocrine, or hormone system. Hormones orchestrate every step of development from gestation through the entire lifespan. They act at extremely low concentrations in the body, and endocrine disrupting chemicals can have different, even opposite effects at higher doses. Alterations to hormone levels during critical windows of development can cause permanent changes to children's lives, affecting their intelligence and behaviour, and making them more susceptible to infections, asthma, obesity, diabetes, reproductive failure, cardiovascular disease and cancers.

A recent review of 845 scientific papers showed evidence of endocrine-disrupting chemicals having adverse health impacts at very low doses in animals and humans. ([Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Responses](#), Vandenberg LN, et al. *Endocrine Reviews*, 2012, March 14). Indeed, the American Chemical Society has acknowledged in their Position Statement that omitting low dose testing undermines the validity of regulatory toxicological testing.

4. **Only “active ingredients” are tested** - Additives are used in pesticide formulations to slow metabolism of the active ingredient, and to improve penetration and spreading on the pest. Additives can do the same in humans, increasing potential toxicity.
5. **Pesticides are not tested in combination** – While we are regularly exposed to myriad chemicals, and we know that chemicals can act very differently in combination, only single chemicals are assessed in isolation during animal testing.
6. **Pesticide registration is based on all directions being followed.** Even if people make the effort to access the label fine print, instructions are extremely difficult to

follow. For example: “avoid inhaling;” “avoid contact with the skin or eyes;” “apply only when there are no children, pregnant women, elderly persons, pets or animals present.”

- 7. The PMRA does not take into account medical literature.** Real-life study of the effects of pesticides is difficult, and according to the recent BC Report on Pesticides, the PMRA dismisses all of this information as showing only correlation. The PMRA is of the opinion that it is virtually impossible to prove that pesticides *cause* harm to humans.

On the other hand, the Ontario College of Family Physicians (OCFP) published [Systematic Reviews of Pesticide Health Effects](#) in 2004, updated in 2012. This is the strongest kind of medical evidence possible. The OCFP found compelling evidence to reduce and eliminate pesticide exposures to avoid cancers, as well as neurological, reproductive, developmental and respiratory harms.

All of this explains why the PMRA (and its fans, the pesticide promoters and members of BC’s Special Committee on Cosmetic Pesticides), and the health and medical community reach opposite conclusions regarding pesticides and human health. The doctors rely upon the real-life human epidemiological research, rather than the confidential industry-produced animal test data and the PMRA’s evaluations based on this test data.

“Cosmetic” pesticides pose a clear risk to vulnerable groups in our community. They have no possible health benefit. There are clear alternatives.

Manitobans deserve to be protected from unnecessary pesticide exposures, with legislation at least as strong as Ontario’s Pesticide Ban Act. Key features would include a list of permitted chemicals modeled after organic agriculture standards and the PMRA biopesticide list; and application to public and private non-agricultural lands, including forests and golf courses.

Respectfully submitted,

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