

## Pesticides: A Brief Outline of Real Science and Actual Fact

**B.C. INTEGRATED PEST MANAGEMENT ACT** — This Act provides British Columbia with the strictest regulations in Canada governing all aspects of pesticide use.

**HEALTH CANADA RE-EVALUATIONS** — By the end of 2009 or early 2010, Health Canada plans to have re-evaluated all pesticides registered in Canada prior to 1995. At least 80% of this work was completed by July/09, with the most common landscape and garden pesticides such as 2,4-D already re-evaluated. Health Canada has a mandate to approve only those pesticides that show no significant increased health risk, including cancer.

**2,4-D RE-EVALUATIONS** — 2,4-D is the active ingredient in the majority of lawn weed control products, and also has the distinction of being one of the main targets of anti-pesticide activity and attacks by many organizations and activists—at least, those who are unable to appreciate or understand the vast amount of research to which this product has been subjected.

**2,4-D HISTORY** — 2,4-D was first registered in Canada in 1946. Since that time, there have been numerous re-evaluations, by the PMRA (Health Canada's Pest Management Regulatory Agency), the U.S. EPA, the World Health Organization (W.H.O), and the European Commission. In fact, despite the opposite claims of many anti-pesticide organizations (including the Canadian Cancer Society), no regulatory body in the world classifies 2,4-D as a human carcinogen.

The PMRA has stated that “No other international body considers 2,4-D to be a human carcinogen. Based on all available and relevant data, Health Canada agrees with this position” (*Questions and Answers: Final Decision on the Re-evaluation of 2,4-D*, PMRA, January 14, 2009, available online). The U.S. EPA has stated that “The Agency has determined that the existing data do not support a conclusion that links human cancer to 2,4-D exposure” (“Decision not to Initiate Special Review,” August 08, 2007, available online).

According to many internationally respected experts on 2,4-D, including Dr. Len Ritter (Executive Director, Canadian Network of Toxicology Centres) and the respected American toxicologist Dr. Frank N. Dost, 2,4-D is probably the most studied and best understood of *any chemical*—not just pesticide—in existence.

**HEALTH CANADA'S PMRA** — Employs over 350 qualified scientists, including biologists, chemists, toxicologists, **epidemiologists**, plant pathologists, weed scientists, and entomologists—all dedicated to the evaluation of pesticides. One must wonder why the Canadian Cancer Society never references the findings of the PMRA in its campaign against the use of pesticides, and instead prefers to claim that pesticides are “known” to cause cancer.

**ONTARIO COLLEGE OF FAMILY PHYSICIANS 2004 PESTICIDE LITERATURE REVIEW** — This ‘study’ has been widely used by anti-pesticide groups as part of their claim of a “growing body of evidence,” and has then been accepted by many municipalities as proof of pesticide carcinogenicity. However, the *Review* has been internationally discredited, due to the fact it consists of **cherry-picked epidemiological studies**, with virtually no reference to important and relevant toxicological research. Copied below, as one example, are excerpts from an analysis of the OCFP *Review* in the U.K. Government's *Report to the Royal Commission on Environmental Pollution* (by Dr. Michael Burr, 2005, available online):

- The treatment of review papers is unclear and appears inconsistent.
- The review takes a rather superficial approach in bringing together the findings of the individual studies.
- Few of the cited studies adequately address the issue of confounding by co-exposures. Much of the evidence supporting an association between pesticide exposure and cancer is derived from occupational exposures, e.g. in agriculture, where animal viruses, diesel fumes, fertilisers and other factors may play a role.

- The review seems to over-interpret the findings, given the limitations of the relevant studies; strong conclusions are drawn from evidence of rather weak quality.

**PRECAUTIONARY PRINCIPLE** — This principle is used as the ultimate tool and guiding light by those opposed to the use of pesticides. There are numerous definitions of this principle (which is also seen as anti-science by many scientists), but the generally accepted one is that of the Rio Declaration, from a United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. This document states that "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

As Dr. Keith Solomon (Professor at the Centre for Toxicology and Department of Environmental Biology, University of Guelph and Director, Canadian Network of Toxicology Centres) explains:

Landscape and garden use of pesticides does not qualify for consideration under the precautionary principle. They are *not serious*, they are selective to pests, have low toxicity to non-target organisms, and are well understood.... The effects of these pesticides are *not irreversible*. There is rapid recovery through reinvasion and weed seeds and most need to be used at least once per year.

("Questions and Answers about Landscape and Garden Pesticides," Dr. Keith Solomon, March 27, 2007)

The Rio Declaration, however, did not embody a vague enough definition for anti-pesticide and unscientific organizations such as the Canadian Cancer Society, which instead choose to use the definition contained in the **Wingspread Statement**: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically." Note that "serious and irreversible" has been deleted from the original. This 'statement' of the principle was formulated by a small group of environmentalists meeting in the U.S. in 1998, and it is not difficult to see why it would be chosen over the Rio Declaration as the weapon of choice.

In a 2006 published report by the prestigious *British House of Commons Select Committee on Science and Technology*, it was stated that "the term 'precautionary principle' should not be used, and [we] recommend that it cease to be included in policy guidance." Also stated was the following:

In our view, the terms "precautionary principle" and "precautionary approach" in isolation from any such clarification have been the subject of such confusion and different interpretations as to be devalued and of little practical help, particularly in public debate. Indeed, without such clarification and explanation, to elevate the precautionary approach or principle to a scientific methodology, which can be proved or disproved to have been applied in any particular case, is both unrealistic and impractical. It also provides ammunition for those seeking to promote an overly cautious approach to innovation or exposure to any risk at all.

(*Science and Technology – Seventh Report*, House of Commons Science and Technology Committee Publication, 2006)

## **INCONVENIENT FACTS**

- Despite claims to the contrary, there are no viable, efficacious, or economical products to replace present pesticides.
- There are only two 'alternative' products approved for lawn care by Health Canada: Sarritor and corn gluten. Sarritor is 5-10 times more expensive— and certainly no safer—than 2,4-D, and works only on top growth, necessitating even more applications. Corn gluten can only be used as a pre-emergent—which means it is *not* effective for pre-existing weeds—and provides only poor results.

- Despite claims to the contrary, children and pregnant women *are* taken into account when pesticides are registered in Canada:

[E]xtra safety factors were applied to the no effect level identified in animal toxicity studies to protect population groups, such as children and pregnant women, that may be more susceptible to the potential effects of pesticides. This resulted in reference doses that were 300- to 1000-fold lower for these groups for these sensitive groups, which are more protective than the minimum 100-fold safety factor. Thus, products will not be considered acceptable for continued registration unless the estimated human exposure is at least 300 times to 1000 times less than the level at which there were no observed effects in the studies examined. These levels ensure the most sensitive population groups – children and pregnant women – are protected.

(Health Canada's PMRA, *Re-evaluation Decision RVD2008-11*, May 16, 2008, available online)

- Many 'organics' are considerably more toxic than conventional counterparts. For example, consider copper, which is used by organic farmers, and is, indeed, labelled as 'organic.' Yet, copper is non-degradable, corrosive, more toxic than its conventional counterparts, and can cause kidney and liver damage.
- Claims by anti-pesticide organizations that business increases for applicator companies after a ban are completely *false*. The Statistics Canada figures used as "proof" are gleaned from a catch-all category that includes all landscape related companies, such as landscape installation and grass-cutting operations. If switching to products deemed 'organic' increases income, why would applicators be opposed?

**BOTTOM LINE** — The Canadian Cancer Society is *not* a scientific body: it is a fund-raising organization, consisting of volunteers and administrators. Much the same can be said for other non-scientific organizations, such as Toxic Free Canada and the Canadian Association of Physicians for the Environment (CAPE). The anti-pesticide organizations have *no one* in their employ with recognized pesticide training or appropriate scientific expertise. Compare this with the over 350 qualified scientists at Health Canada's PMRA, and the thousands at the U.S. EPA.

What is the rationale that causes municipalities to choose to listen to those emotionally and irrationally opposed to the use of pesticides, rather than the actual experts? Why is it that uninformed opinion and unsubstantiated claims take precedence over science for so many Councils and Councillors? According to Dr. Keith Solomon (University of Guelph professor of toxicology), an award-winning and internationally respected expert on pesticides, a lot of this has to do with "bylaw envy." There has, in addition, been an almost universal lack of due diligence: if a number of municipalities pass a pesticide ban, then this alone is taken as acceptable 'proof' of the need for further bans and one municipality simply copies the bylaws of others. Add to this mix the non-scientific approach of the Canadian Cancer Society (which, because of other—good—work done by them, manages to still be viewed as highly respected and reputable) and other anti-pesticide organizations. Many unsubstantiated claims are presented to Councils, using a combination of misinterpreted, poorly conducted studies and fraudulent information.

Thus is laid the groundwork for what appears *superficially* to be suitable grounds for a ban. However, *'facts' cannot be validated by majority votes, and science is not determined through groundless emotion or uninformed public opinion polls.*

***For additional detailed scientific information from respected non-industry scientists and sources, contact:***

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