

EXTRACTIONS



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RESEARCH AND ACTION TO FIGHT POPs

Persistent organic pollutants (POPs), such as DDT and PCBs, are no respecters of national borders. Although Canada has banned or restricted these dangerous substances, which bioaccumulate in organisms and are passed up the food chain, POPs remain a major concern. Prevailing winds carry them over long distances to colder climates where they condense out of the atmosphere and are trapped in snow or ice until the spring melt. Through studies on the fish prey of osprey, scientists at Environment Canada have found that POPs are at their highest levels in fish from small, high-altitude lakes and lakes fed by glacial runoff. These levels are even higher than those in the fish that the birds eat while in their wintering sites in Central America.

Fortunately, United Nations negotiations in December 2000 culminated in a global agreement to reduce POP emissions. It bans or minimizes 12 of the worst POPs to protect the health of Canadians and the global population. The POPs included are the pesticides aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, and toxaphene; the industrial chemicals PCBs and hexachlorobenzene (which is also a pesticide); and dioxins and furans, the unwanted by-products of combustion and industrial processes. DDT was not banned because it is needed in many countries to fight malarial mosquitoes until it can be replaced by a less harmful alternative, but its use was restricted.

Also, the Canadian International Development Agency has provided \$20 million to help developing countries reduce or eliminate their release of POPs. New provisions are proposed for the Chlorobiphenyls Regulations and the Storage of PCB Material Regulations under the *Canadian Environmental Protection Act*, including:

- an accelerated schedule to eliminate PCB-containing equipment in schools, hospitals, and other sensitive locations
- the phase-out of all PCB equipment by the end of 2007
- a maximum PCB content of 2 ppm in all manufactured and imported products
- prohibiting the release of PCB material into the environment
- mandatory labelling and reporting of all PCB-contaminated equipment
- prohibiting the continued storage of PCB materials after December 31, 2009

[From www.ens.lycos.com/ens/dec2000/2000L-12-11-10.html;
www.ec.gc.ca/science/sandenov00/article1_e.html]

CANADA EVALUATES ALL CHEMICALS

Canada intends to examine every commercial chemical in domestic use for its risk to human or environmental health by 2006, a first among the nations of the world.

Like many other nations, Canada requires an importer or manufacturer who wants to introduce a new substance to submit detailed information on its uses and effects. (Since 1994, over 10 000 such submissions have been received, and the annual number is expected to rise with advances in technology and research.) But Canada is unique in also planning to review the 23 000 chemicals on its original Domestic Substances List, chemicals which entered commerce in years past without review.

Under the *Canadian Environmental Protection Act*, experts from Environment Canada and Health Canada jointly review the information submitted about a new chemical to determine if it is persistent or bioaccumulative and if it is toxic to humans or the environment. The chemicals are assessed based on specified volumes and uses, and on expected changes in use patterns. This preliminary review can lead to further risk assessment and to appropriate risk management steps such as regulation, requests for voluntary actions, economic instruments, or recommendation for phase out or elimination.

Since little information exists about some older chemicals, Environment Canada and Health Canada will base those evaluations on public and in-house data, information on similar substances, and expert prediction models. It is expected that 1000 to 3000 of these chemicals will be identified as candidates for risk assessment.

[From www.ec.gc.ca/science/sandenov00/article7_e.htm]

GREENHOUSE GAS CONTROLS IN SIGHT

The *Canada Greenhouse Gas Inventory for 1990-1998* shows Canada's greenhouse gas emissions in 1998 were 13% above 1990 levels, but growth in emissions did slow to 1% in the late 90s compared to 3% in the mid-90s. The country's environment and resources ministers have so far failed to agree on a national strategy to curb greenhouse gas emissions.

The Kyoto Protocol commits Canada to reduce greenhouse gas emissions to 6% below 1990 levels by 2012. To do so will require action particularly in the electricity and transportation sectors:

- In the electricity sector, emissions are 28% above 1990 levels because coal is being used to meet much of the increased demand for electricity.
- In the transportation sector, emissions are 20% above 1990 levels because of increases in road freight and in the number of sport utility vehicles, vans, and light trucks. The average fuel efficiency of new vehicles has not improved since 1990.

In the industrial and manufacturing sectors, emissions are slightly below 1990 levels because improvements in energy efficiency are keeping pace with increases in production.

[From *Environmental Management*, October 2000 and the *Calgary Herald*, Oct. 18, 2000]

ACCORD TO IMPROVE TRANS-BOUNDARY AIR QUALITY

A key part of Canada's clean air agenda is the new *Canada-wide Standard for Ozone*, accepted by all provinces and territories and the federal government in the June 2000 meeting of the Canadian Council of Ministers of the Environment. The new standard sets a specific target for ozone in air of 65 parts per billion in Canada by 2010.

But between 30 and 70% of the ozone problem in eastern Canada originates from emissions in the U.S., while Canadian coal-fired power plants and similar sources contribute to pollution levels of other compounds in the U.S.

Now the governments of Canada and the United States have finalized the draft text for the *Ozone Annex to the Canada-U.S. Air Quality Agreement*, which lays the foundation for significant reductions of smog-causing pollutants from both sides of the border. The *Ozone Annex* combined with the *Canada-wide Standard* will reduce premature deaths caused by polluted air and result in fewer hospital admissions for Canadians with respiratory problems.

[From *Environmental Management*, October 2000]

DISEASES LINKED TO ENVIRONMENTAL TOXINS

Recent research indicates that exposure to toxins, either alone or in combination, may play a crucial role in the development of neurological disorders. For example, Alzheimer's disease, long associated with aging, may have more to do with a person's work or leisure history than with the person's age. People exposed to high lead levels are up to 3.4 times more likely to develop Alzheimer's than are others. Most often, people are exposed to lead while smelting or casting lead, removing old lead paint, or making lead products like electronic components, lead pipe, lead-acid batteries, lead-glazed pottery, or paint and ink.

Parkinson's disease is another case in point. Although genetics plays a role, exposure to pesticides, at work or in the home and garden, increase the risk of developing this disease. In one study, Parkinson's patients were more than twice as likely to have been exposed to insecticides in the home than were those without the disease. Exposure to herbicides was also associated with the disease, although exposure to fungicides was not.

Another recent study shows that, although neither one alone causes a problem, a combination of two widely-used agricultural pesticides creates the same pattern of brain damage in mice that doctors see in patients with Parkinson's disease. The two agrichemicals, the herbicide paraquat and the fungicide maneb, are used on the same crops and in the same locations. A map of their use mirrors areas of the country where people are more likely to die of Parkinson's disease.

Current regulations and safety levels are based on the effects of single chemicals, but in the real world there are thousands of combinations. Researchers say more work is needed to see how much of these chemical combinations people are exposed to whether at work, at home, or on the food they consume.

[From www.ens.lycos.com/ens/jan2001/2001L-01-03-06.html; www.ens.lycos.com/ens/may2000/2000L-05-08-06.html]

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