

No basis for pesticide bans

National Post
June 15, 2001
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Cancer ranks among the most pervasive diseases of the Western world. In a recent report, the Canadian Cancer Society estimates that Canada will experience more than 134,000 new cases of cancer and more than 65,000 cancer related deaths in 2001.

Breast cancer, one of the most commonly diagnosed cancers in women of the Western world, will affect almost 20,000 Canadian women in 2001, a new case diagnosed just about every 30 minutes in this country alone. All of us, whether women or men, will be affected by this disease -- either as we receive the news of a diagnosis and begin to anticipate the horrors that will follow, or through supporting our wives, daughters, mothers and friends as they face the ordeal that lies ahead. Allegations about the causes and risk factors for cancer must always be treated seriously, and the scientific community must remain vigilant in searching out and thoroughly studying possible cause-and-effect relationships.

For decades, pesticides have attracted attention as possible cancer-causing agents. Allegations that pesticide exposure increases the risk of developing specific types of cancer, including breast in women, prostate in men and leukemia in children, abound. Well-intentioned interest groups allege a 25% increase in childhood cancers and alarming increases in adult cancers. Similarly, alleged associations between pesticide use and the increase in childhood asthma frequently lead to municipal restrictions or bans of pesticide use.

Yet the Canadian Cancer Society report found that, of all cancers that they analyzed, just two cancers among men and two among women have increased at an annual rate greater than 2% since 1988: cancers of the prostate and thyroid in men, and cancers of the lung and thyroid in women. Its report also notes that, while breast cancer in women has risen steadily, and gradually, over the past decade, the increase has been due, at least in part, to improved diagnostic techniques and province-wide mammographic screening programs. Lifestyle changes, such as the trend toward fewer and later full-term pregnancies, have also been factors. Similarly, increases in prostate cancer in men and thyroid cancer in both men and women are also almost certainly due to improvements in diagnosis and diagnostic techniques, including ultrasound and needle biopsy. Tragically, lung cancer increases in women followed their growing use of tobacco over the last few decades, an increase predicted to continue for some time to come.

The report found that rates for other cancer sites generally declined, noting that seven of the 10 most prevalent forms of cancer in Canadian men have actually declined since 1988. Of the three that have increased, the report suggests that prostate and thyroid can be explained, at least in large measure, by improved diagnostic techniques. Of the 10 most prevalent forms of cancer among Canadian women, six have declined since 1988, and three of the remaining four (thyroid, lung and breast) appeared to be unrelated to any environmental risk factor. While overall cancer incidence among all Canadians continues to climb, the report largely attributes this increase to the age structure and general aging of the Canadian population, a common trend in most developed countries.

The diagnosis of cancer in any Canadian immediately instills terror and fear, all the more so when the cancer afflicts a child. While allegations of 25% increases in childhood cancer rates abound in front-page news copy, the Laboratory Centre for Disease Control of Health Canada, in cooperation with National Cancer Registry, report that overall childhood cancer rates in Canada have remained unchanged over the last 12 to 16 years (the period of study reported), and that specific rates for leukemia, bone, brain and other nervous system cancers in children, often alleged to be increasing in association with exposure to pesticides, have shown no increase at all. While the incidence of testicular cancer in young men has been increasing, the National Cancer Surveillance program states that an environmental risk factor is not likely.

More recently, allegations that pesticide exposure encourages childhood asthma have begun to emerge. While childhood asthma is most certainly a multi-factorial disease, a recent study has confirmed what allergists have known and argued for some time. In their August, 2000, article in the *New England Journal of Medicine*, Thomas Ball and co-workers at the University of Arizona Medical School reported that recent lifestyle changes, including reductions in the number of children and reduced exposure of young children to older children at home or to other children at daycare, contributed to the recent increases of childhood asthma and wheezing later in childhood. Moreover, in her editorial review of the Ball study, *Day Care, Siblings and Asthma - Please, Sneeze on My Child*, Dr. Sandra Christiansen of the Scripps Research Institute noted the importance of gene-environment interactions in the development of asthma, and factors such as smoking by parents, exposure to indoor allergens, absence of breast-feeding and a diet low in n-3 fatty acids to the development of the disease. Dr. Christiansen also cited the importance of a rural lifestyle, living on a farm with animals near the house, and the presence of a dog in providing a protective role.

Public debate on the safety and need for pesticides must continue. The government regulatory community, together with the regulated chemical industry, the academic research community and the general public must continue to identify and investigate important sources of risk and to move quickly to reduce and eliminate risks wherever practical and possible. Research to study particularly vulnerable, sensitive or highly exposed subsets of the population should be encouraged and supported. But little is gained by advancing misleading hypotheses, supported by inaccurate and incorrect assumptions, in order to advance a specific interest or agenda, however well intentioned.

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