Making Good Decisions

Real World Ecosystems
Backgrounder
Grade Level: 5-8

In Canada, we possess some of the most beautiful lands in the world. We are fortunate to have as much natural space as we do. In the pursuit of the perfect lawn or the perfect crop, has Canada sacrificed its natural health and created unhealthy regions for Canadians?

One problem lies with our use of **herbicides** and **pesticides** for commercial crops, city green space, and personal lawns. The public, activists, and citizens have questioned the use of potentially harmful chemicals. In many cases, the use of pesticides and herbicides has been for purely cosmetic reasons. For example, some cities continue to spray boulevards that are placed between opposing lanes of traffic. Some urban or rural areas are sprayed many times in the summer. Citizens of Canada have seen an increase in cancer, asthma, and other health problems, and many are asking "What is the cause?" At what cost do we pursue the perfect crop, lawn, and city green space? Do we really know the health impacts of herbicides and pesticides on humans, animals, and plant life?

Herbicide: *A product that is applied to plant life in order to control "pests" such as weeds. Sometimes the term "herbicide" is used interchangeably with the term "pesticide," referring to both plant and animal nuisance species.*

Pesticides: *A product that is applied to control undesirable bugs or other "pests." Sometimes the term "herbicides" is used interchangeably with pesticides, meaning both plants and animals.*

Did You Know? Pesticide Poisons

Did you know that people with sensitivities to pesticide or herbicide chemicals can become quite ill? Illnesses from chemical sensitivity range through headache, nausea, vomiting, and even epileptic-like seizures. Other people who do not have a specific chemical sensitivity have reported nose bleeds, swollen lips, and shortness of breath.

It takes courage to stand up and to ask questions. Dr. June Irwin of Hudson, Quebec, brought to public attention issues relating to pesticides and herbicides and their effects on human health. She began to link her patients' illnesses with chemicals in the **environment** back in 1987. However, proving the direct link to human health problems was difficult because it required "scientific proof." Dr. Irwin sent patients' blood samples to the Environmental Health Centre in Dallas, Texas, where she fronted approximately $20,000 of her own money to get the samples tested.

Once enough scientific information had been gathered, Dr. Irwin began a letter-writing campaign to local newspapers, municipalities, and government. She drew attention to the health risks and the lack of regulations. She convinced the government that pesticides should not be used for cosmetic purposes. Her efforts paid off and the cosmetic use of pesticides in Hudson, Quebec was banned. Other communities have followed suit. Dr. Irwin's work is an

example of how an individual can create changes in policy and how science may be used to validate an issue.

Did You Know? Travelling Pesticides

Pesticide and herbicide chemicals can drift 100 metres or 40 homes away from where they were sprayed.

The intention of the Trade Secrets Act (1989) in Canada was to help manufacturers protect their products from being duplicated by competing companies. But the Act is outdated and today most products list their ingredients on their labels. "Pesticide makers are now required by law to submit the details of active ingredients, known as formulants, to a division of Health Canada. But non-active ingredients are kept off the labels because they are considered trade secrets." (CTV, 2001) Not even doctors are allowed to know what the non-active ingredients are in products, not even to treat patients.

Green Thumb: Alternatives!

There are some things you can to do reduce the number of chemicals in your backyard.

- Use organic products.
- Hand-pick weeds.
- Fertilize in the spring and fall. That will jump-start the growth of the grass in the spring and leave little room for weeds.
- Water dry patches; weeds love a stressed lawn.
- Don't worry about the weeds!

Did You Know? Deadly Dust?

Pesticide and herbicide chemicals can be tracked into the house and become a part of the household dust. These chemicals need sunlight and water to break down, so in the home, the chemicals may still be present one year later.

Science can affect what you are allowed to do, where, and how much. How does that work and what does that mean? It is a fact that our laws are based on scientific research, good or bad. A good example of how science can change your daily habits is the recent establishment of new regulations about public smoking. Smoking by-laws are becoming a regular part of our daily life. At one time, one could smoke in theatres, offices and public places.

How did the smoking ban get started? It can all be traced back to scientific research. Scientists researched the effects of smoking on human health. After data was collected, the scientists published their findings in academic journals. Now that the information is public, the research is scrutinized, much like a court case. The government may or may not use the research to change policy (laws). The governmental role can depend on how much importance voters attach to the issue or if the government thinks the issue should be pursued. The change in smoking by-laws is a good example of how science can affect our daily life and protect us from harm.

Think About...

- Why should we or should we not ban pesticide and herbicide use?
- How does science play a role in creating change?
- Why may people have such different viewpoints about one issue?
- What are some reasons why creating change takes a long time?
- When debating the issue of the use of pesticides and herbicides for commercial crops, city green spaces, or personal lawns, why are there different points of view between individuals?
- How do societal perceptions and beliefs affect the decisions that are made? For example, there are communities that have banned the cosmetic use of herbicides.
- How do science and/or technology affect the decisions that are made? For example, Dr. June Irwin's scientific research was crucial for making a decision about the cosmetic use of pesticides.