

Be informed about herbicides

Why herbicide application matters for all of us



The forest industry accounts for 10 per cent of New Brunswick's gross domestic product, which is the value of all goods and services produced in the province. This sector directly employs 16,000 New Brunswickers.

It is a cornerstone of the provincial economy.

New Brunswick's forest industry relies heavily on the harvesting of softwood tree species to produce a variety of value-added products.

More than 50 per cent of the annual softwood supply comes from Crown land. As Crown forests are harvested, most of the land is left to regenerate naturally, which is usually as a mix of native softwood and hardwood species. About 25 per cent of it is replanted with softwood seedlings, and these areas receive other silviculture treatments to grow high-quality trees as quickly as possible.

One of these treatments involves the application of federally approved and provincially regulated herbicides on planted sites to manage and control competing vegetation that restricts the growth of softwood trees. This usually occurs one to two years after an area has been replanted.

The Crown-land herbicide program has been carried out since the mid-1970s, and is essential to the future of New Brunswick's forest industry. The production of softwood fibre from planted sites will produce the expanding wood supply that is a key part of [A Balanced Management Approach for New Brunswick's Crown Forests](#), adopted in 2009 by the Government of New Brunswick. Without this added wood supply, there will be no ability to expand the current forest industry or take advantage of new opportunities in emerging fields such as biofuels.

About the herbicides used

The use of herbicides on Crown land is strictly regulated by federal and provincial government agencies. The only herbicides used are those registered for forestry use under the federal government's *Pest Control Products Act*.

Health Canada's Pest Management Regulatory Agency is responsible for administering the act, including registration of new products and re-evaluation of older ones to ensure the continued safety and value of registered pesticides, including herbicides.

Pesticides are stringently regulated in Canada, using modern, internationally recognized methods of scientific risk assessment before they are approved for use or sale. Health Canada is committed to protecting human health and the environment by minimizing the risks associated with pest control products.

After years of testing and assessment under controlled conditions, glyphosate herbicides have been approved by the federal government for forestry application. Glyphosate herbicides are also widely used by the agriculture industry. Glyphosate is the world's most widely used herbicide and is approved for use in more than 90 countries and on more than 150 crops.

Only herbicides containing glyphosate as the active ingredient are used by the Department of Natural Resources in its spray program. New Brunswick's Crown land herbicide program applies this herbicide at levels that are well below the maximum rate approved by Health Canada.

These products come from different manufacturers under different product names, including Vision®, Forza™ and Vantage™ Forestry.

Studies have shown that glyphosate herbicides are not harmful to humans, wildlife or the environment, when used according to the product label.



Without herbicide application, competing vegetation can damage and eventually kill planted seedlings.

These studies have found that glyphosate-based herbicides do not cause cancer, birth defects, tumours or any other adverse health effects in humans. Glyphosate herbicides are readily excreted by animals that eat sprayed vegetation, and they do not build up in the tissues of animals.

When sprayed, these herbicides bind tightly to soil particles, which means that they have "little potential for leaching into ground water," according to the United States Environmental Protection Agency.

Glyphosate herbicides are one of the most widely used herbicides in the world for forestry, agricultural and domestic application. They have been used for several decades, and as a result, numerous studies related to their safety have been undertaken.

The World Health Organization (WHO) is among the independent, authoritative organizations that have studied glyphosate herbicides. WHO has found that these herbicides do not pose a risk to humans, wildlife or the environment.

Each year, the Department of Natural Resources obtains approval for its herbicide application program from the Department of Environment. This permit contains strict conditions governing the application of herbicides, and these are rigorously followed by the Department of Natural Resources. These conditions include minimum setbacks from occupied habitations and water sources.

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How do glyphosate herbicides work?

Glyphosate is an organic solid of odourless white crystals. It is used to control broadleaf weeds, bushes, trees and grasses.

The herbicide formulations used by the Department of Natural Resources contain glyphosate as the active ingredient; a surfactant similar to dish detergent that helps in the penetration of the active ingredient; and water.

When sprayed on broadleaf plant species and grasses, glyphosate is absorbed by the plant and inhibits an enzyme that the plant needs to produce protein and grow. The same enzyme is not present in humans or animals.

How are herbicides applied?

The Department of Natural Resources's herbicide program treats 12,000 to 14,000 hectares of Crown land softwood plantations and cutover areas annually. This represents less than 0.5 per cent of the total Crown land productive forest area.

Spraying takes place for about 40 days from mid-August to late September. Herbicides are applied from helicopters to treat about 97 per cent of the program area, with the remaining three per cent treated by ground sprayers.

Strict regulations and practices govern this program.



All personnel who work in the air and on the ground must be trained and certified in the application of pesticides. This is part of the Pesticide Use Permit issued by the Department of Environment.

Usually, one or two applications are all that are needed during a softwood stand's 50- to 80-year lifetime to grow a mature crop of high-quality trees.

Are there alternatives to the use of herbicides?

In the past, the Department of Natural Resources has tried to clear brush and other unwanted vegetation from planted softwood stands by using hand tools and brush saws. However, resprouting of the cut stems the following year causes more severe competition and, therefore, these treatments must be repeated, which dramatically increases the cost of tending.

Other jurisdictions have encountered the same drawbacks with manual tending.

The Department of Natural Resources continues to monitor worldwide developments that could produce practical alternatives to using herbicides.



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What would happen if herbicides were not used?

Herbicide application is essential to the survival and growth of Crown land softwood plantations. Without this tool for controlling competing vegetation, the Crown land planting program would be ineffective and would likely be terminated. The immediate effect would be the loss of employment for hundreds of people who plant trees on Crown land annually.

Long-term, the loss of the planting program would significantly reduce future Crown land softwood sustainable harvest levels. This would severely affect the existing forest industry and negate any opportunity to expand into new product areas.

Keeping you informed

The Department of Natural Resources takes very seriously its responsibility to share with New Brunswickers information related to herbicides and its annual spray program.

Each year, the department informs the public of its herbicide use by outlining the intent of the program. This information is presented in newspaper advertisements a minimum of two weeks prior to the start of the program.

Maps showing the precise areas to be sprayed are made available for public viewing at any Department of Natural Resources office.

Signs are clearly posted at all access points to these areas before the treatment takes place. Afterward, the date of the spraying and the type of herbicide used are clearly noted on each sign, and these signs are left in place for several weeks.



The department recognizes that the public has mixed views about the use of herbicides. As with any chemical, herbicides may be harmful if misused. This is why the Government of New Brunswick has taken prudent steps to limit the use of various lawn-care pesticide products. These chemicals are most likely to be misused and overused when applied by persons who do not have the required training and equipment. It is also why great care is taken in the proper storage, handling and application of herbicides on Crown land by personnel who do possess the required training and certification.

The Department of Natural Resources encourages New Brunswickers to be informed about the safety and use of herbicides, and it recommends the following websites as sources for general information on pesticides as well as information specific to glyphosate herbicides:

- Health Canada's Pest Management Regulatory Agency: www.hc-sc.gc.ca/cps-spc/pest/index-eng.php
- World Health Organization: www.who.int
- U.S. Environmental Protection Agency: www.epa.gov

If you have questions or comments about the Department of Natural Resources herbicide program, please contact us at:

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