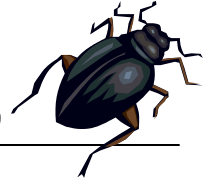


Combating Spruce Budworm Infestation



A large expanse of forest in Quebec is being ravaged by an infestation of spruce budworm. A three-member committee has been formed to evaluate the options for combating the outbreak. In a meeting, the committee will hear proposals for solving the problem from various experts. Once a decision has been made, the committee must write a paragraph outlining the decision and the reasons for it.

A Naturalist - Do nothing! Let the budworm eat itself out of house and home. Eventually the infestation will die out. This is a natural pest and natural processes will take care of it. Pesticides will harm the environment and endanger other wildlife. These toxic chemicals may even get into our drinking water and harm us as well. This won't be the first time chemical companies have told us their products are safe, only to find out later they were wrong! In New Brunswick, where these insecticides have been used for over thirty years, studies have linked chemical sprays containing fenitrothion with Reye's syndrome, a sometime fatal disease that attacks children.

An Aerial Spraying Company Representative - Kill the budworm with aerial spraying. Chemical sprays such as fenitrothion and matacil are approved by the federal government. They kill budworms on contact by attacking the central nervous system. These chemicals require only a few applications. They are inexpensive and easily handled, and they produce excellent results. If we sit around and wait, it could take ten to twenty years for the budworm to die out naturally. In the meantime, the forest will have suffered serious damage. An insecticide like *Bacillus thuringiensis* (BT) is not the solution, either. This is more expensive than chemical sprays. It is also slower-acting and is affected by the weather. BT has an uneven rate of success – sometimes it works, sometimes it doesn't! The only alternative is a chemical spray.

An Insecticide Company Representative - Kill the budworm using the biological insecticide *Bacillus thuringiensis* (BT). This is designed to kill only insects like the budworm. Unlike chemical sprays that kill on contact, BT must be eaten by the insect. It has an extremely low toxic effect on mammals, birds, and fish. It can also be sprayed close to populated areas without danger to human beings. Forest management and reforestation techniques take too long. We have to act now to save the existing forest! The forest industry cannot wait for twenty or thirty years for the damaged forest to regrow. We must apply insecticides like BT to kill the pests as quickly as possible.

A Forestry Management Representative - Solve the insect infestation through silviculture. By regenerating the damaged forest with mixed species rather than a large tracts of a single species that is favoured by the budworm, the forest becomes less attractive to this pest. Salvage cutting is not the answer to this problem. Most of the damaged trees are too far from the mill. If they are removed, severe soil erosion may result over large clear-cut areas. There may also be more salvage trees than the mill can handle. Those who want to endanger the environment by using chemicals or insecticides are only endangering human health and the health of the forest ecosystem.

A Reforestation Company Representative - Harvest the trees that have been killed by the budworm and send them to the local paper mill. Salvage cutting recovers some of the commercial value of the timber and helps prevent the build up of secondary pest infestations. The area can then be reforested with tree species that are unattractive to the budworm. In the future, natural regeneration of clear-cut areas will have to be replaced with artificial regeneration in order to discourage the natural growth of balsam fir, a tree that attracts budworms. This avoids the quick-fix solution of pouring toxic chemicals and insecticides into the forest ecosystem through widespread aerial spraying.