A SUCCESS STORY IN FOREST PROTECTION TECHNOLOGY

Canadian Forest Service scientists license a natural control product for balsam fir sawfly to a New Brunswick-based company.

Fredericton, NB - A signing ceremony marking the licensing of a new bio-control product for forest protection took place on May 25, 2005. The agreement between Natural Resources Canada - Canadian Forest Service and Forest Protection Limited (FPL) of Lincoln, NB effectively commercializes a recent Canadian Forest Service scientific discovery and makes a market-ready natural control product available for the potentially voracious balsam fir sawfly. Abietiv™ is the result of almost 10 years of research and over $5 million of investment by the Federal Government and its research partners.

Front Row: Dr. John Richards, Director General CFS-AFC and Mr. David Ferguson, Deputy Minister, NB-DNR.
Back Row: Mr. Bruce Pendrel, Director of Science, CFS-AFC; Mr. Stephane Dupont, Network Manager, Biocontrol Network; Mr. Bruce Pike, Acting Science Director, CFS-Corner Brook; Mr. John Argall, Executive Director, BioAtlantech; Mr. Edward Kettela, Project Manager, CFS-AFC; Mr. Stefan Richard, Business Development Officer, FPL/BioAtlantech; Dr. Chris Lucarotti, Research Scientist, CFS-AFC; Mr. David Davies, General Manager, FPL; and Mr. Edward Hurley, Forest Health Unit Leader, CFS-AFC.

Since the early 1990's, an ongoing balsam fir sawfly outbreak has threatened thousand of hectares of pristine forest in western Newfoundland. At present, the outbreak is causing moderate to severe defoliation in 45 000 hectares of managed forest, putting at risk timber with a value exceeding $750 million.

In response to the balsam fir sawfly outbreaks, a team of scientists led by Mr. Edward Kettela and Dr. Christopher Lucarotti from the Canadian Forest Service-Atlantic Forestry Center (CFS-AFC) began the search for a solution. In 1997 Dr. Lucarotti was able to isolate a naturally occurring "baculovirus" (aka NPV), from

balsam fir sawfly populations in Newfoundland. These NPV are viruses that are highly specific to select insects, and present no danger to humans and other animals. As certain insect populations reach peak numbers, these NPV can cause a sudden collapse of the affected pest populations. However, in the case of the balsam fir sawfly, a natural collapse of the infestation would only occur after causing serious damage to forests. Knowing this, Dr. Lucarotti and his team set out to enhance this natural biological control process.

"Developing this NPV has been one of my main projects since 1997," explains Dr. Lucarotti. "NPV's are DNA viruses that are highly host specific. They have no detrimental impacts on the environment and non-target pests These types of bio-control agents are really the future in pest control."

From 1997 through 2004, the CFS team developed and tested the balsam fir sawfly NPV collected from Newfoundland. Each year, permits were obtained and studies were conducted. The NPV was found to accelerate the natural collapse of the insect, thereby creating a successful bio-control for balsam fir sawfly. In June 2004 a registration package was submitted under the trade name of Abietiv™ to Canada's registration agency, Health Canada's Pest Management Regulatory Agency (PMRA). Finally, after eight years of effort, all supporting paperwork for the registration of the balsam fir sawfly NPV was sent to the PMRA.

On May 25, 2005, Forest Protection Limited licensed the NPV technology from NRCan-CFS. Lincoln-based FPL is a world leader in aerial forest protection. Since its inception in 1952, FPL has provided aerial forest protection services throughout North America and has had a long-standing, partnership with CFS-AFC. This partnership has already fostered many successes for the protection of Canadian forests.

Presently FPL is working with BioAtlantech, the lead agency for biotechnology incubation in New Brunswick to develop a sound business model for Abietiv™. Stefan Richard is a business development officer, jointly employed by both FPL and BioAtlantech. "The business development phase is crucial to the success of this technology, which we believe can become a real poster-child for environmentally-friendly, made-in-Canada solutions in the management of forest pest insects." claims Richard. BioAtlantech CEO, John Argall, echoes the sentiment "In the technology world, the commercialization phase often requires up to ten times the amount of investment for technology development. However, we believe that we can collapse some of this because the Canadian Forest Service has done so much heavy lifting on their technology, and because FPL has such a great track record in service delivery. We have to convince new investors of that, but I am optimistic."

Many partners contributed financial and in-kind support to the development of this technology, including the Biocontrol Network of the Natural Sciences and Engineering Research Council (NSERC). This robust research network's is aimed at reducing the use of pesticides in agriculture and forestry by replacing them

with treatments based on the natural enemies of insect pests and disease pathogens.

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