Newfoundland: Bacteria-fighting larch tea

The therapeutic properties of the Eastern Larch or Tamarack have earned it an important place in several cultures. In the Middle Ages, herbalists used oil extracted from the tree to create an antiseptic barrier in the mouth to ward off the Black Death. Native Americans, including the Micmacs, boiled the branches of the deciduous conifer into a tea which they used to treat coughs and sore throats. The practice was picked up by settlers in remote areas of Newfoundland, who drank the potion – known locally as "Juniper tea" – to cure respiratory illnesses.

Fourteen-year-old Stephanie Gallant heard about Juniper tea from her grandfather, a west coast Newfoundlander who credited the brew with saving his life after he contracted tuberculosis in childhood. "He continued to drink it throughout his life," said Stephanie. "He said it was good for everything that ails you."

Stephanie, a Grade 9 student at St. Peter's Junior High School in Mount Pearl, Newfoundland, decided to investigate the anti-bacterial properties of larch tea. While the larch is not widely used in the lumber industry because the wood is too soft for construction and has too much sugar for paper milling, Stephanie learned that one U.S. company is already using the tree's inner bark to produce arabinogalactan – popular as a natural source of dietary fibre and immune system enhancer.

Under the guidance of her mentor, Dr. Andrew Lang, of the Biology Department at Newfoundland's Memorial University, the young researcher mixed cultures of *E. Coli* and *Rhodobacter capsulatus* bacteria with different concentrations (25% and 50%) of larch tea and water. These were placed in an incubator, some for 20 minutes and some for 40 minutes, after which serial dilutions were used to prepare bacterial plates. The plates were incubated before bacteria were counted.

Overall results showed that the larch tea decreased bacterial growth in both *E. Coli* and *Rhodobacter capsulatus*. "Bacterial infections affect millions of people worldwide," said Stephanie. "With further investigation it may be possible to use other parts of the larch tree to produce a simple and environmentally friendly alternative to some of the antibacterial medicines now being used."

At the age of 14, Stephanie is already a Sanofi-Aventis Biotech Challenge veteran, having won third place in last year's regional judging for her investigation into the ability of mussels to absorb chemical pollutants. That project subsequently won her the silver medal in the junior life sciences division at last year's Canada Wide Science Fair in Truro, NS.