



## Macaulay Land Use Research Institute Seminar

Tuesday 27 July

**Dr Robert Bradley**  
University of Sherbrooke (Canada)

### Tannins, proteins, and soil N in the boreal *Kalmia*-spruce system

The role leaf litter tannins play in controlling soil N cycling was first inferred half a century ago. Since then, numerous studies have produced data supporting ecological succession models whereby plant communities converge towards tannin-rich conditions with soil N retained in organic forms. The presentation will outline a series of experiments whereby indirect evidence for such an autogenic successional pathway has been applied to explain the growth-check of Black Spruce (*Picea mariana* (Mill.) BSP) seedlings in the presence of Sheep Laurel (*Kalmia angustifolia* L.). More recently, Joannis et al. provided compelling evidence based on the chemistry and protein binding capacity of litter tannins, on soil enzyme inhibition, and on the uptake of N from tannin-protein precipitates by ericoid mycorrhizas, which supports the notion that litter tannin production is an important trait in *Kalmia* driving ecosystem structure and processes. Future research should test the relative importance of this “pedocentric” view of ecological succession against alternative “phytcentric views”, such as the ability of *Kalmia* to produce allelopathic chemicals or to induce non-nutritional water stress.

**10.00 Macaulay B**  
*All welcome*

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