Program: Demonstration and Research on Reverse Osmosis (RO) Technology in a State-of-the-Art Maple Production Facility

Objective:
To demonstrate the use of the RO unit and collect performance data of the RO unit
To estimate economic and environmental energy savings through fuel, electricity and hourly use measurements;
To monitor the performance of the RO unit for several years.

Project Findings:
The use of Reverse Osmosis technology in the maple industry should be encouraged. There is an enormous amount of environmental benefits, time savings and cost savings of using RO technology.

For a situation where the numbers are similar to Kemptville Campus (1100 taps, RO unit and evaporator adapted to that size), the cost savings for oil would be about $2440 and you will likely increase the grade of the syrup produced. Assuming a salary of $15/hour for maple producers, then the time savings would add up to $3646 in savings. This would result in more than $6000 in savings over the course of one maple season, not considering the beneficial impact on the environment because less pollution (>10 tonnes of CO₂ avoided) is being produced.

Producers must clean and sterilise housing and RO unit, as recommended by the manufacturer. Clear protocols on proper washing of the unit should be provided by the manufacturers. A poorly maintained RO unit can reduce its efficiency and contaminate the sap. Reverse osmosis technology must be accompanied with the application of best management practices throughout the production system. This would include processing sap as quickly as possible and maintaining sap as cool as possible.

Support Appreciated from:

Community Benefits Include: Promotes the use of RO system which induces savings through fuel, electricity and hourly use, reduce environment pollution