



Modelling the impacts of cranberry farms on the hydrologic regimes of the Bécancour River watershed in Québec, Canada

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The Bécancour River watershed, located half way between Montréal and Québec City in the Province of Québec (Canada) and covering a surface area of about 2600 km², is dominated by forest in the upstream portion and agriculture in the downstream portion. The production of cranberries (*Vaccinium macrocarpon*) is an important feature of this watershed. This crop not only relies on abundant water resources for frost protection, soil moisture management, and harvest and winter flooding, but also on tiled drainage system which together impact the watershed hydrology and flow patterns.

This study aims at modelling the impacts of cranberry farms on the hydrologic regimes of the Bécancour River watershed in Québec, Canada. We dispose of groundwater level and soil tension data at the root zone from two distinct cranberry farms, meteorological data, Ground-penetrating radar (GPR) and stratigraphy data, and LIDAR data collected over a period of 5 years starting in 2014. We setup the hydrological model using the well-known finite-element-based model named FEFLOW to simulate the hydrological behavior of two cranberry farms in the watershed. The preliminary results are promising and demonstrate the potential of the model in a) depicting and understanding hydrological changes in the watershed and b) supporting decision-making regarding water resources management for agricultural production in the region.