



ses

school of environmental sciences

The Research Seminar Presentation by

Joanne Garnett
will be held on

Tuesday November 3, 2015

At 11:10 am

ALEXANDER HALL 337

**Utilizing the Haney Soil Health Tool to Determine Soil Health
and Predict Fertilizer Requirements for Southern Ontario**

Abstract

In the last 40 to 50 years, many Ontario soils have become vulnerable to deteriorating soil health through mismanaged crop residue, tillage and excess fertilizer impacting profitability and contributing to environmental damage through leaching and erosion. Soil fertility and soil health are intrinsically linked through biological processes that contribute to nutrient cycling, soil organic carbon (SOC) accumulation and ultimately crop yields. The quantity of SOC is a strong indicator of soil health and has been shown sensitive to changes in land management. Soil testing for SOC along with mineral nitrogen (N), phosphorus (P), and potassium (K) can provide pertinent information to predict nutrient requirements and improve land management decisions. The focus of this study is a reputedly universal soil testing methodology called the Haney Soil Health Tool (HSHT) and the Haney Soil Health Fertility (HSHF) test. The HSHT score is calculated using water extractable organic carbon and nitrogen, and a Solvita® CO₂-C value. The HSHF uses H₃A, a multi-nutrient organic acid extractant to obtain N, P, and K values. For this study the HSHT score will be correlated with results from the Ontario Soil Health Assessment (OSHA), Ontario Standard tests for SOC, and N (LECO), mineral N (KCl) and crop yield responses from two long-term tillage trials in Elora and Ridgetown, Ontario. The HSHF will be correlated with results from the Ontario Standard tests for P (NaHCO₃), and K (NH₄OAc) from four long term P and K fertility trials in Simcoe, Bornholm, Elora and Ridgetown, Ontario along with a greenhouse P and K experiment using cereal rye and plant tissue analysis.

Everyone is welcome to attend

(This is a Research Proposal presentation by students in ENVS*6900)