

Healthy Soils, Healthy Farms, Healthy Environment (H-3) Project (Interim Report – Year 2 - ECSCIA Partner Grant)

Purpose:

The H-3 Project focus is to encourage practices that improve soil management as well as test the acceptance of soil Best Management Practices (BMPs) in York, Durham, Haliburton, Peterborough and City of Kawartha Lakes (formerly Victoria County). The project provides support for soil sampling to farmers within the five counties and regions, while coordinating the lab analysis and showcasing the linkage between on-the-ground practices and GIS mapping capabilities. Additionally, the program includes educational workshops to participants on the overview of soil testing, soil nutrient fertility and crop nutrient budgeting.

Methods:

1. Farmer agrees to have soil sampling conducted through the H-3 project by contacting the OMAFRA Environmental Specialist in Brighton to participate. Farmer agrees to pay for base analysis for soil sampling (\$12.00 + \$1.56 HST = 13.56 per sample which will require a cheque payable to “A&L Canada Laboratories Inc”
2. The H-3 projects will pay for the sulfur and organic matter portion of the test (\$2.70 + HST)
3. Farmer + soil sampler meet to discuss fields and location. OMAFRA prepares map(s) of property(ies) and field locations
4. Sampling procedure will follow OMAFRA recommendations for soil sampling found at http://www.omafra.gov.on.ca/english/nm/regs/sampro/sampro02_09.htm#1 and the general recommendation is for 1 composite or representative sample per 25 acres. However, the farmer will have the “final say” if he/she wishes to deviate from the 1/25 acre recommendation.
5. H-3 representative collects samples and send to for lab analysis.
6. Farmer attends the H-3 workshop to discuss the results

Samples are sent to OMAF and MRA accredited lab, A & L Canada Laboratories for analysis. The specific parameters tested are listed and are identified as Soil Package 1 (P, K, Mg, Ca, Na, pH, Mn, Al). Additional analysis for sulfur, organic matter and zinc testing are performed for the purpose of research for OMAF and MRA. The farmer is responsible for most of the analytical costs (\$13.56) while the H-3 program covers the additional tests (\$2.60).

Results

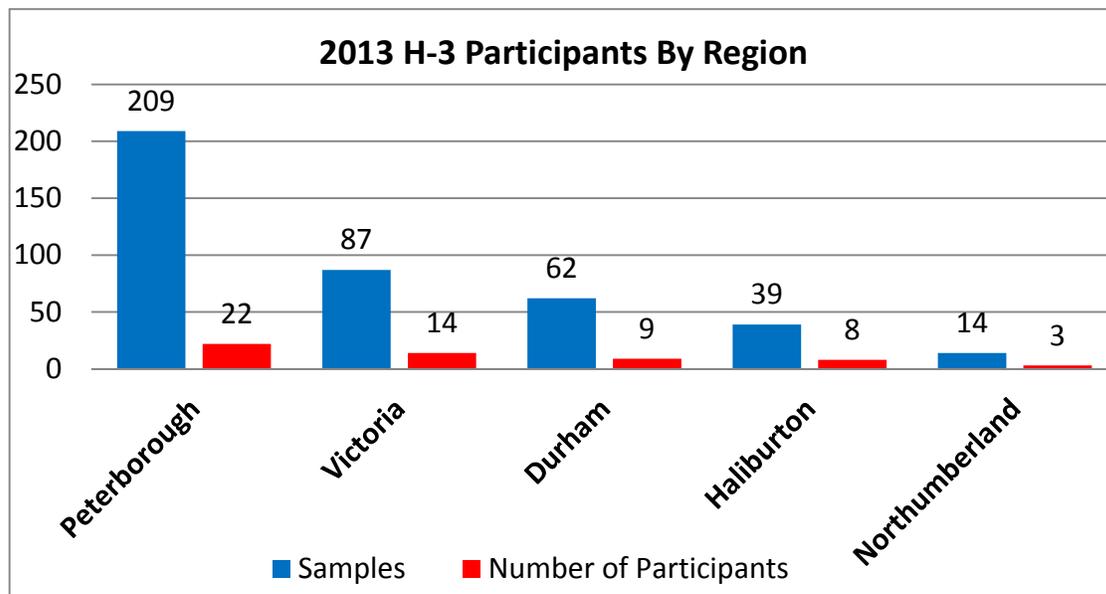
Presentations and updates on the H-3 project were provided at several local SCIA meetings including the four county/region annual meetings, Victoria SCIA car tour in July and the Peterborough SCIA GPS and tillage demonstration day in July. In addition, regular updates were provided in ECSCIA newsletters. Direct communication with

Crop Advances: Field Crop Reports

farmers at their meetings has a direct and positive response in the willingness of farmers to participate in the H-3 project. In addition, several farms signed up for H-3 soil testing when they observed a neighbour's field being sampled.

Participants were invited to attend educational workshop held December 18th and 19th 2013 in Peterborough and Lindsay. The workshops included an overview of the project, soil sampling refresher, introduction to AgMaps – Online Atlas, a lesson on interpreting the soil report by Bonnie Ball, OMAF & MRA Soil Fertility Specialist and a workshop on crop nutrient budgeting using NMAN software. Over the two days, approximately 60 people participated in the workshops.

Figure 1. Number of Participating Farms and Fields in the Project



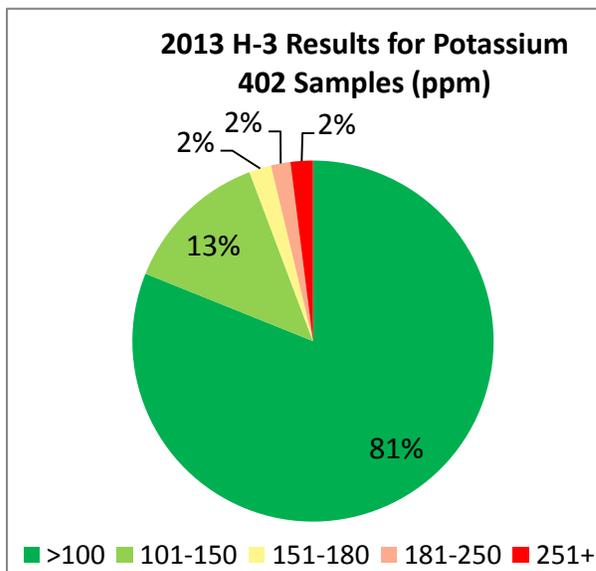
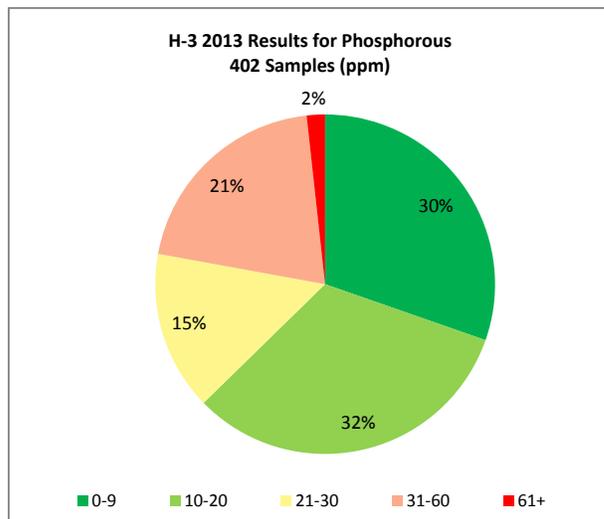
In 2013, 56 farm operations participated in the H-3 Program from May until November and 411 composite samples were sent in to A&L Canada Laboratories for analysis. Of the 411 samples, Peterborough County has the greatest uptake with 22 farm operations sending in a total of 209 samples. Fourteen farm operations participated from the City of Kawartha Lakes (formerly Victoria County) resulted in 87 samples being analyzed through the project. Durham Region sent in 62 samples from 9 farms and there were 39 samples from 8 farms in Haliburton County. Northumberland County has 3 participating farms that sent a combined total of 14 samples for analysis.

- Average soil test for phosphorous bicarbonate extraction is 21 ppm and approximately 62% of samples are below 20 ppm - according to OMAF & MRA recommendations, this indicates the samples are low and would prosper with additional nutrient application.
- Potassium; the average ammonium acetate soil test is 83.2 ppm and approximately 81% of the samples are less than 100 ppm.

Crop Advances: Field Crop Reports

The two pie-charts below summarize the soil test results for 402 samples from the H-3 project in 2013. Nine samples were removed from the dataset of 411 because these samples were from “garden areas” on participating farms. The “garden areas” represent significantly different areas in terms of results and management and it is not typical of farm field management for these participating farms.

Figure 2a +b: Soil Test Levels of P and K



Summary:

The project has exceeded its objective in year two of 20 farms. Soil analysis indicate participating farms are low (62% of fields sampled are less than 20 ppm P [bicarb extraction] and 81% less than 100 ppm K).

Crop Advances: Field Crop Reports

The samples taken from each field represent a 'snap-shot' of the field conditions at that time. Multiple soil samples will need to be taken over time to better understand overall nutrient trends. This will allow for better soil management since manure or fertilizer application will be based on a more representative picture of the soil instead of a single result.

The remarkable uptake from farmers in 2013 is a result of the momentum that accumulated from past participants, local farm events and word-of-mouth. The H-3 Program will continue in 2014 as soon as the weather conditions allow for soil sampling.

Information related to sulfur has been provided to Bonnie Ball, OMAF & MRA Soil Fertility Specialist for future interpretation.

Next Steps:

- March 5th & 6th, East Central Farm Show – encourage farmers to sign-up for final year of project
- Coordinate sampling with farmers that have signed up (approximately 75 farms signed up to date)
- Continue to provide participants with personalized maps

Acknowledgements:

- Participating farmers (65 that have had samples collected and 75 that have signed up for future sampling).
- York, Durham, Victoria and Peterborough SCIA and GFO – for assistance with promotion and communication at their annual meetings and events
- Ontario Soil and Crop Improvement Association – funding support for regional partner grant
- Brittney Wielgos, Jr. Nutrient Management Technician, OMAF & MRA, Amy Tenbult, East Central SCIA, Sang-Hun Mun OMAF & MRA, Brittany Barkes, Environmental Specialist, OMAF & MRA, – sampling and data summary/analysis
- East Central SCIA and John Kinghorn & Neil Moore – project direction/guidance, communication and administration
- Bonnie Ball and Joel Bagg, Jack Kyle - Agricultural Development Branch, OMAFRA
- A & L Canada Laboratories – support for lab analysis

Project Contacts:

Peter Doris, OMAFRA, 613 475 5604, peter.doris@ontario.ca

Location of Project Final Report: - to be determined