CENGN

SOILOPTIX INNOVATION HIGHLIGHT
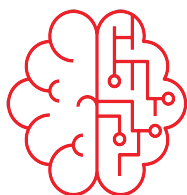
SOILOPTIX®

COMPANY OVERVIEW

SoilOptix® provides a new foundation for precision agriculture today with high-definition topsoil maps. SoilOptix® reveals the true personality and history of each field in unprecedented detail. With its technology, it gives agronomists and growers a new level of detail and definition to apply the right product at the right time, in the right amount and in the right place.

LOCATION: TAVISTOCK, ON

TECHNOLOGY

Artificial Intelligence

Lori Davey, Office Manager
lori@soiloptix.com
soiloptix.com

Rick Penwarden, Sr. Manager, Marketing
rick.penwarden@cengn.ca
cengn.ca/projects

MISSED POCKETS OF OPPORTUNITY IN THE CROP FIELD

The common practice of grid sampling for field soil measurement is a single 1 lb soil sample to reflect 2.5 acres (1 hectare). This allows for a great risk of missed pocket opportunities within the crop field. Growers rely on the greatest knowledge of their soil to correct problem areas and gain valuable information to proceed with a customized fertilizer application for the greatest crop yield. Growers require a non-invasive service with low maintenance to give them the most optimal soil data possible.

A PASSIVE, NON-CONTACT SOIL SENSOR WITH PRECISE RESULTS

The SoilOptix® system is a passive, non-contact sensor that detects the soil's natural decay and the radiation which it emits. Coupling this stable soil measurement with lab results from physical soil samples collected after the survey is completed, SoilOptix® delivers up to 30 different soil layers with a resolution of 335 data points per acre, or a point every 11 ½ feet (3 ½ meters). Farmers, agronomists, and crop consultants use this data to develop variable rate prescriptions for fertilizing or seeding, use it as a comparative element for yield deficiencies or over-producing areas, or as an informative tool for managing water resources within the field using the texture and water relevant layers exported.

ACCURATE AI MODELLING AND DATA SCALABILITY

At CENGN, SoilOptix® tested their AutoMap Pipeline and SoilOptix® AI Pipeline. Using the CENGN Testbed, they verified that the new architecture provides more valid results, with an increase of 81% accuracy with initial tuning. They also determined that the architecture could scale and reduced runtime by a factor of two to three times when processing gamma data. Following their project with CENGN, SoilOptix® is confident that their AI Modelling processes will reduce soil samples and open new markets for the company.

> "The work performed on the CENGN Testbed allowed us to understand our specific hardware needs moving forward, and the ability to scale efficiently to support the growing demand for high-definition topsoil maps."
>
> **Ryan Eyre**
> Product Integration Manager, SoilOptix