



Practical Precision's SoilOptix® unit is being used in Oxford County and around the world. (SoilOptix® file photo)



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## An exciting AG technology good for the environment and economy

By GEOFF DALE

An innovative Oxford County family-owned-and-operated business is pushing the boundaries in agriculture with a unique device that is successfully addressing ecological and economic concerns posed by producers and agronomists. The Tavistock based Practical Precision, owned by Paul (son) and Barry Raymer (father), has been the driving force in bringing SoilOptix® technologies to a commercial market, while improving upon the status quo of soil sampling methodology.

Other family members involved in the business are Paul's wife Connie and his mother Elizabeth, who was a dairy farmer with Barry. The company also features a vibrant young team of skilled and dedicated employees.





Tyler Vollmershausen  
an Innerkip grain farmer  
operating in the north-east  
quadrant of Oxford County in  
pictured in one of his fields.  
(OSCIA photo)

The technology used in the SoilOptix® sensor originated in the Netherlands as a geological industry tool before coming to Canada in 2010. Seeing the product's potential, the owners began further research into the use of gamma radiation in agriculture to develop nutrient and texture maps of the soil.

Researching and providing this service to Ontario farmers, Practical Precision was also influential in developing the Greenseeker and Y-Drop technologies on farms across Canada. They found using Greenseeker without applying nitrogen below the canopy was unsatisfactory so that led them to the Y-Drop.

The company became the first dealer in North America to sell the two as the ultimate side dress system.

"We're passionate about using technology to help farmers understand and improve their soil health to grow better crops and feed the world," said Paul. "SoilOptix® is a one-of-a-kind,

affordable soil analysis system that sets a new standard for accuracy in precision agriculture, offering more than traditional soil measurement practices.

"It delivers the highest definition and most detailed field nutrient maps

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obtainable today, empowering growers to make the best management and soil stewardship decisions. We believe it all starts with soil. To capture the full potential, growers must know what the soil is providing.”

The Raymars found growers and agronomists got the most in-depth analysis of their soil with a resolution of about 335 points per acre. SoilOptix® gave a deeper understanding of the variability in fertility and textural-based properties of the soil.

Conventional soil testing averages only one to two samples per acre, delivering accuracy of only about 15 per cent on soil fertility. Results between these points can vary significantly, with results sometimes misleading.

“The SoilOptix® scanner reads gamma rays emitted by the soil, providing a complex picture of its condition at 335 points per acre,” Paul said. “Physical soil samples are integrated into our readings. It uses proprietary software to translate this information into high definition digital maps. Resulting data is VRA-ready to maximize seeding and input performance.

“This has been around for decades but application in precision agriculture only began in the mid-2000 at the University of Groningen in Northern Netherlands. A researcher approached us with plans of expansion to other parts of the world and we responded.”

A partnership was established in February 2017 between Hubei Forbon, the largest progressive Chinese fertilizer additive company and Practical Precision Technologies, with its solid reputation as an influential Southwestern Ontario precision ag technology operation.

Hubei Forbon Technologies was looking for a soil mapping technology to bring back to China. This provided Practical Precision an opportunity to migrate SoilOptix® out into an entity of its own.

“We wanted improvement over historic soil measurements,” said Paul. “It might not be the silver bullet because soil is extremely complex.

We were trying to raise the bar to put information in front of growers so they could pinpoint pockets of opportunity, save on fertilization inputs, be more strategic on seed population count or help empower decision-making.

“Farmers are stewards of the land. We’re in a turning tide in terms of awareness and sensitivity levels, with respect to soil. Every living being on the earth is dependant on soil, like air, water and sunlight. The complexity of soil has been taken for granted in some ways. We’re shedding a new light, giving the subject a breath of fresh air on soil measurement.”

One of the first local producers to use the technology was Tyler Vollmershausen, an Innerkip grain farmer operating in the north-east quadrant of Oxford County. He’d experienced difficulties with soil readings in the past but using SoilOptix® technologies in 2013, he was able to produce more accurate soil maps while increasing his yield.

“I’ve had success with SoilOptix®



Chuck Baresich, a Bothwell corn, soybean and wheat producer. (Chuck Baresich photo)

identifying problem areas,” he said. It gives a lot of very useful information. With that data the onus is on the farmer. Everyone has an opinion on the frequency of rescanning. Typically, we do it every five years. Some problem areas needed adjustments so that meant the right soil amendment in the right places at the right time.”

“It’s a good product that really works. I’ve gone through samples before and often come up with some very surprising results with respect to the nutrient level in a specific area. That was something I wanted to look into further.”

Chuck Baresich, a Bothwell corn, soybean and wheat producer, first noticed SoilOptix® in 2015 at a farm show and was impressed with the results. While he felt the impressive technology might not be commercially ready at that point, two years later he brought the sensor to his property for comparisons he was doing.

“I was quite happy with the results both in economic and environmental terms,” he said. “No farmer wants to apply nutrients for no reason, no matter what some say. Too often I hear they’re spreading fertilizer willy-nilly. That’s untrue because it’s costly and farmers don’t want to harm the soil in any way.

“Our land has high and low ground. The soil is unforgiving for those who don’t look after it. If you’re from an

area with rich, deep soil you can make mistakes, not spreading fertilizer and getting away with it for a while. If you mess up here the ground doesn’t tolerate any errors.

“The SoilOptix® sensor lets you work effectively with soil variances, applying fertility precisely. This is smart from an economical standpoint. Tailor fertility close to what’s needed. From a sustainability perspective, we build up soil so it’s more resilient for better crops. It’s a win-win situation. I was amazed at how much growth and yield I gained.”

While still a local company with a strong base across Canada, Practical Precision is active globally in such places as the United States, Mexico, Argentina, Chile, Brazil, the United Kingdom, Germany, France, Bulgaria and more.

Most recently it is dealing with large farmer co-ops in Denmark, Finland, Sweden, Morocco, South Africa, Australia, and New Zealand with four companies in India interested in undertaking a test run.

“As a local family owned and operated company we’re very proud to be involved in ventures globally,” Paul said. “It’s rewarding to be working with such a healthy Green approach in terms of the two Es – economics and environmental concerns.

“We’re solid business-minded managers dipping our toes into technologies to see what we can provide, asking customers what changes they want and if our tool can help. There’s a growing global appetite for soil mapping. We’re a player and the only one with this technology.”

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