ONTARIO SOIL AND CROP
IMPROVEMENT ASSOCIATION

1 Stone Road West, 1st Floor, Guelph, Ontario N1G 4Y2
Toll: 1-800-265-9751 Tel: 1-519-826-4214 www.ontariosoilcrop.org

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Media Release - Better soil health reduces fertilizer use and increases yields, says Soil Champion

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For immediate release

By Lilian Schaer, for Ontario Soil and Crop Improvement Association

There's nothing that makes Tyler Vollmershausen happier than sticking a shovel into a field to see what's happening underground.

It's that passion for soil that is one of the reasons Vollmershausen Farms has been selected as the 2016 Soil Champion, an award handed out annually by the Ontario Soil and Crop Improvement Association (OSCIA) to recognize leaders in sustainable soil management.

Vollmershausens have been farming near Innerkip in Oxford County for six generations. Today, Doug and Connie, their sons Larry and Brian, and Larry's son Tyler grow corn, dry beans, and cereals, as well as keeping some of their cereal seed for use as cover crops.

"Our focus is on soil health. As farmers, it is our responsibility to manage the land and look after soil," says Tyler of their soil conservation efforts that include strip till, no till, and cover crops.

It all started several years ago with a presentation by soil expert Dr. Jill Clapperton at an annual meeting of the former Ontario Coloured Bean Growers' Association where she explained how fall tillage destroys earthworm populations: full surface tillage damages their over-wintering structures, allowing water inside and causing them to drown.

"The next year we did no fall tillage and started to see a change. In one presentation, she completely changed the way we view agriculture," Tyler admits. "Except for a 10 acre patch to be planted to oats in the spring, all of our bean acreage has been seeded with cover crops or a winter cereal cash crop, and we are proud of that. Our nutrients and soils are staying on farm where they belong."

The Vollmershausens practice strip tillage using a Soil Warrior, a technology Tyler says has helped them reduce their fertilizer usage, boost yields, and address labour issues.

They don't do any fall passes on their lighter soils, but in fall passes on their heavier land, which makes up about one quarter of their acreage, the machine penetrates 10 to 11 inches into the ground to lift the soil and create a berm, leaving two thirds of the soil surface undisturbed.

This vertical rolling tillage action locks the soil together, leaving a rough bottom that prevents the strip from washing over the winter. The raised berm dries out more rapidly in spring, allowing them to get on the land a few days sooner.

A single spring pass on the remaining three quarters of their acreage is about five inches deep, with the Soil Warrior uniformly blending the soil and fertilizer to create an ideal seed bed combined with precise nutrient placement.

"The Soil Warrior is extremely efficient and low maintenance. We're using about a third less fertilizer and we've seen a 10 to 15 per cent yield increase compared to our previous conventional practices," he says.

Overall, the Vollmershausens are pleased with their switch to the Soil Warrior technology, and in spite of a few start up electronic communications issues with the guidance system, they're committed to it for the long term. In addition to the agronomic advantages, it has also solved their labour issues, making it possible for two people to handle all the spring field work without needing extra help.

They've also been using Greenseeker technology for the last two years for real-time variable rate nitrogen application.

Sensors can detect where additional nitrogen should be applied to avoid potential plant stress, as well as limit the over-application of fertilizer where it's not required. This allows the Vollmershausens to hold back some of their nitrogen application to later on in the growing season when it is most needed for plant growth.

"Greenseeker allows us to take advantage of what the soil is supplying naturally," says Tyler.

His real passion lies with cover crops though.

This year, for example, they spread a clover and radish mix into standing six leaf corn, and followed that with rye broadcast into the stover after harvest. In fact, they spread 75,000 pounds of rye this year – it will grow on marginal temperature days that are too cold for other cover crops – and now grow their own rye and oats for cover crop seed.

Cover crops help with weed control, the crimson clover and yellow sweet clover serve as a good food source for pollinators, and the addition of radish can cause a dramatic increase in earthworm populations.

"Radish is like Red Bull for earth worms. It's a brassica and isn't part of our regular crop rotation so it is feeding a different set of microbes in the soil," Tyler says. "Our system is simple: keep the soil covered at all times and keep living plant roots in the ground. That's what's driving the biology below the soil line."

And although Tyler believes polycultures offer the greatest opportunity to bring biodiversity back, he says there is no one silver bullet mix that will solve all problems or work well on all areas.

Instead of establishing a red clover monoculture cover crop after cereal harvest, they've seen the best results from combining low seeding rates with as many different cover crop species as possible. That variability in species ensures that even if not everything will grow, enough species will to create good ground cover.

New this past year for the Vollmershausens was an experiment growing a corn crop without any commercial fertilizer application except nitrogen, by leaving a 10-species cover crop in-field and simply no-tilling into it.

"We just let nature do her thing. It's not about achieving the highest yield, but retaining the highest net profit," Tyler says, adding that they haven't yet analyzed the yield data on this particular crop and look forward to measuring its success.

Tyler's soil focus has not gone unnoticed. He's twice represented the family business as a speaker at the Southwest Agricultural Conference, as well as presenting at the Innovative Farmers Conference this year and the Precision Ag Conference in 2015, something he's happy to do as a frequent attendee of these types of events himself.

He's also active on Twitter as @t_vollmer, where he follows others with similar approaches to soil management and credits those like-minded individuals with boosting his family's confidence in moving forward with initiatives on their farm.

His key advice to other growers is focused on continuous learning, taking part in education events and always asking questions. And for those unsure of making big changes, it's ok to start with small steps, he says.

"Try a small portion – you won't lose your shirt on five acres and if you don't want anyone to see it, tuck it away at the back of your farm," he advises. "There is no silver bullet to soil health, it's about learning what works best for your soils and implementing changes."

"This land needs to support many more generations, so I think it's necessary for Ontario farmers to evolve, reflect on what we're doing, and make changes to benefit our soil health and water quality," he adds.

Do you know someone worthy of the title Soil Champion? The submission deadline for the 2017 Award is September 1, 2016. For the application form and details, visit ontariosoilcrop.org.

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For further information, please contact: Amber Van De Peer - avandepeer@ontariosoilcrop.org or 519-826-3152