

ONFARM CASE STUDY

OVERVIEW

Brett Schuyler's multi-purpose approach to cover cropping on his Norfolk County, Ont. farm benefits both his family's soil and sheep.

Brett operates Schuyler Farms alongside his brother, father, aunt, and uncle, as well as "a growing team of people making it all happen," Brett says. Schuyler Farms grows apples, sour cherries, corn, and soybeans. The family also grazes sheep.

The Schuyler family has some experience with on-farm research, particularly through its more recent experimentation with cover crops in the corn-soybean rotation. The Schuylers had success with a basic annual ryegrass cover crop. Brett recognizes the value of a more diverse cover crop mix but notes his family has experienced "limited, mixed results" over the years. The stand of the various cover crop species can vary by the year, too, he says.

Brett was drawn to participate in the On-Farm Applied Research and Monitoring (ONFARM) program because it provided him with resources – such as in-person expert advice – to advance his research on how to best incorporate cover crops into his management system. Through ONFARM, Brett can gather more data to inform his decision-making.

He also welcomes the opportunity "to be a part of something a little bit bigger and get that information recorded properly," he says.

Ultimately, Brett hopes his research trials can help other producers who want to plant cover crops on their farms, he adds.



Schuyler Farms Ltd.



Left to right: Carrie Woolley, Emma Schuyler and Brett Schuyler

AT A GLANCE

Farmer name: Brett Schuyler

Location: Simcoe, Norfolk County

Topography: Gently rolling topography with fine sandy loam soil

BMP: Use of over crops in a corn-soybean rotation to improve yield, improve soil health, and reduce erosion

WHAT IS ONFARM?

The On-Farm Applied Research and Monitoring (ONFARM) program is completing extensive soil health and water quality analysis on 32 farm sites across southern Ontario. This network of sites and newly established partnerships will help to build a stronger understanding of best management practices (BMPs) and their effect on soil health and water quality on Ontario farmland.

ONFARM WATER QUALITY DATA COLLECTION

- Investigators led by Don King, Principal and Research Agronomist at the Soil Resource Group (SRG)
- Soil health indicator tests: physical, chemical and biological measurements
- Other baseline soil data: horizons, texture, drainage class, structure characterization, and soil type
- Field landscape and soil degradation assessments, agronomic monitoring, and BMP costing

THE TRIALS

On Brett's sandier soils, it's "difficult to get a winter wheat crop established," says Don King. The crop is often winterkilled or suffers from drought. As a result, Brett relies on a corn-soybean rotation and "he is exploring cover crop options to improve his soils," Don says.

Through the ONFARM data collection process, the SRG team has "observed degradation of knolls from past tillage erosion and some structural issues related to past compaction," Don adds.

In selecting his cover crop mixes for his ONFARM trials, Brett sought options that would both improve his family's soil and provide reliable grazing for the sheep.

In 2020, Brett's trial involved planting cover crops into his corn with minimum tillage. To compare that with his normal practice, he had a control, which was a section of the field with no cover crops. He had two treatments, which refers to the management practice that changes across a trial. One treatment was an interseeded cover crop mix which included annual ryegrass, clovers, radish, and hybrid brassicas. The other treatment was a cereal rye drilled in after corn harvest.

The clovers in the cover crop mix "provide lots of fine root growth to break up the compaction near the surface and provide additional nitrogen. The radish also helps to address the deeper compaction," Don explains.

In 2021, Brett again grew corn. He had a control strip in the trial, as well as a strip with the same interseeded cover crop mix that he grew in 2020.

In 2022, Brett is growing soybeans. He is collaborating with the SRG team to explore whether he will interseed a cereal rye cover crop into his soybeans around the time of leaf drop. Brett is interested in using a drone to broadcast the cereal rye over the soybeans.



THE SUCCESSES AND CHALLENGES OF THE TRIALS

Brett identifies several benefits from his involvement in the ONFARM program. For example, he has increased his knowledge and experience working with cover crops. Brett also underscores the value of the cover crops for grazing.

Through the trials, Brett has experienced some challenges. The need to refine his herbicide programs topped his list. "Some residual herbicides do a great job of keeping clean fields, but they make getting a cover crop established challenging. When you add more tools to a farming system, there are more things to manage," Brett explains. Brett faces the added challenge of glyphosate-resistant pigweed and lamb's quarters, so he needs a herbicide program that controls these glyphosate-resistant weeds but does not negatively affect his cover crops, Don adds. As a result, Brett has experimented with new herbicide programs to see what works for his crop rotation.

The stand of the cover crops within a mix also often varies by species. For example, the "establishment of the clovers in the mix was okay in 2020 but quite limited in 2021 due to the drier conditions at the site in the summer," says Don. In contrast, "a decent amount of the annual ryegrass made it through the winter of 2021, so Brett tried grazing the cover crop in 2022." In the spring, he had to make a timely herbicide application to control the overwintered annual ryegrass.

Overall, Brett emphasizes that the ONFARM program's key strength is the one-on-one advice it provides. He "finds the SRG team to be very helpful. They have a lot of experience dealing with the conditions and challenges on other sites," Brett says. This broader experience enables the SRG team to give Brett practical advice and to tailor the trials to the needs of his farm.



Brett Schuyler and his wife Carrie Woolley pose for a photo with their daughter Emma.



Brett Schuyler (left) gathers with his wife Carrie Woolley, children Emma and Elliott, and brother Ryan Schuyler (right).



The sheep from Woolleys' Lamb graze the cover crops.