



Dan Breen

MINIMUM TILLAGE & BUILDING ORGANIC MATTER FOR LONG-TERM PRODUCTIVITY

BY: LILIAN SCHAER

In Ontario, farmers are blessed with a diversity of soils and climate conditions that allow them to grow a wide range of crops and support different types of agriculture. To varying degrees, they face common challenges related to drainage, organic matter and fertility – but also deal with conditions unique to their topography and geographic location. This is one of a series of profiles highlighting Ontario farmers and how they're addressing soil health on the land in their care.

Challenges:

Degraded soils, hilly terrain prone to erosion

Soil health practices:

Rotation, no-till, cover crops, manure

Dan Breen farms with his wife, daughter and son-in-law in Middlesex County. The family farm includes dairy cows and 850 acres owned and rented crop land that's a mixture of heavy clay, silt loam, and sand.

What are the biggest challenges that you face with respect to soil on your farm and how do they impact yield and productivity?

It takes time and incremental gains to get degraded soil back to where I would like it to be and to build back that which was unknowingly lost due to practices and not knowing what the soil needs. It took a long time to degrade and will take a long time to rebuild. When we moved away from mixed farming in Ontario, cash crop farms ended up with less or no manure on their soil, which might have been negative towards soil health. I think livestock farmers and cash crop neighbours can work together to mutually benefit the soil. There are different levels of nutrients in different kinds of manure, so maybe there are opportunities to trade manure between farms or work out some other kinds of cooperative arrangements.

What are some of your practices to promote soil health?

COVER CROPS

We adopted cover crops 17 years ago. I really love tillage radish and what it does, but the cover crops I grow depend on the needs of my farm. Those include pea, triticale, and oats, and tillage radish helps open up those tight sandy soils. There's no recipe as such; I target the crop to the timing of planting, the type of manure that will go on, what my feed needs are and what I'm trying to accomplish, like break up compaction and it will be different from year to year.

MANURE

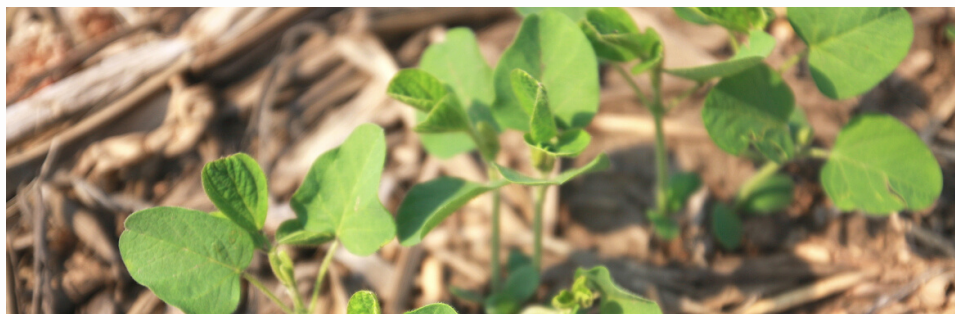
I believe in manure and I try to use it. We still use chemical fertilizers, but we have manure from our own dairy herd, and we've also bought pig manure and used biosolids. We believe in feeding the soil: keep it green, keep it covered, keep it growing.

ROTATION

I've tried to never grow the same crop twice in a row unless there are extreme reasons or I'm tying a rental farm into a rotation. Our primary crops are corn, soybeans and wheat, with some alfalfa and permanent grass for the dairy herd.

NO-TILL

We've been 100% no-till since spring of 1990, so some of our land on the home farm and the farm next door have been no-tilled for 30 years. We bought a farm nearby six years ago that was the last tobacco farm in the area and are now using the same practices there. We started with lots of manure and cover crops and it's starting to come along. I've made a commitment to no-till, so I'm not flexible on tillage even if it is a cool, wet spring.



What is the most important change that you have made on your farm with respect to soil health? Or the one that has had the biggest impact?

Switching to no-till. The day I stopped tilling, we started keeping the soil in place on our hilly land. I no-tilled for some years without cover crops, but incorporating cover crops into that system also had a big impact. Using cover crops can accelerate change in the soil; as the soil improves and becomes more resilient, it speeds up the process of soil regeneration.

What advice would you have for other farmers with respect to soil health?

Just start and start today.

Be committed, be patient and be willing to invest not only cash but also your time in reading, going to workshops, and learning from others. This next generation of farmers is so connected and there is so much learning at our finger tips now, like apps that will identify weeds and help you with strategies to control them, so take advantage of that.

No two farms are the same.

Don't compare yourself to your neighbour or what's in the paper. Do the best job you can with what you have. Don't get discouraged, as long as you can improve. You'll have setbacks and weather patterns, but if you can see a trend of improvement, that's the key.

Have a strategy but be flexible.

