

Land Stewardship Project Field Tour Examines Effects of Cover Crops on Soil Health

By Jill Veerkamp
St. Charles Press Editor

At the end of September, the Land Stewardship Project organized field tours to four different farms over the course of two days. Each of the farms in question manage test plots to study the effects of cover crops on soil health. The tour stopped at Stan Smith's farm in Lewiston, Dean Richards's farm in St. Charles, Jeff Gillespie's farm in Fountain, and Marty Malin's farm in Peterson.

The field tour was free and brought interested people to the demonstration farms, where they spent an hour or two discussing the field results with the respective farmers. Caroline van Schaik of the Land Stewardship Project organized the event. She said, "I really wanted the host farmer to do most of the talks and answer questions." Also joining the tours were soil scientist Dan Nath of the Natural Resources Conservation Service and forage specialist Jim Paulson of the University of Minnesota-Extension. Paulson was able to share his expertise on the feed value of cover crops, while Nath was able to explain the interaction between roots and soil biology. "They are really great partners for us," said van Schaik.

There are short and long term benefits of building soil health through the use of cover crops. Increased biological activity within the soil fuels a soil that better retains water and can withstand more severe storms. This can translate into crop yield. Furthermore, introducing diversity into the soil through the variety and number of crops planted can also have economic ramifications. Van Schaik said, "Cover crops is a fantastic tool for doing that. With cover crops, farmers can increase the production of their fields by growing crops over more months out of the year."

Van Schaik pointed out that cover crops do not need a vast farming operation to try. They can be implemented on a quarter acre garden just as well as a 1,000 acre farm. "It works regardless of scale...it's good for everything," said van Schaik.

The demonstration farms studied the effects that different common cover crops have on the health of the soil. They planted rye and grain cover crops, as well as grazing cover crops for livestock. The demo plots tested out radish, hairy vetch, triticale, wheat, and clovers.

Cover crops are also currently studied as a possible method of weed suppression. Their true role in weed suppression has yet to be determined, although there is plenty of anecdotal evidence that certain cover crops seem to control weeds. Possibly, cover crops could help farmers move away from tilling and the use of chemicals. "This is something worth looking into," said van Schaik.

For example, one farmer that was part of the LSP's study planted oats and peas in the spring, prior to planting corn. The early spring planting appeared to have a possible impact on the amount of foxtail in the field. Van Schaik felt that these early results would warrant a future, more in-depth

study. Another farmer that was part of the LSP's tour also noted that there was less Canada thistle in his field after the use of cover crops.

However, another farmer discovered that wheat by itself as a cover crop is not as effective for weed suppression as others, and perhaps a combination of cover crops would have better success.

In general, a variety of planted cover crops can help improve the health of the soil. Different crops planted at the same time can create a biological synergy in the soil, with more than one type of root system working together. Van Schaik said, "Something better happens when you have two to three species in the ground." She recommended that farmers choose cover crops with a mix of root structures, such as planting legumes alongside grasses.

The farmers involved with the demo fields have also experimented with early maturing corn. Early maturing corn allows the farmers to harvest the corn off the fields earlier, creating a larger window to establish cover crops. The typical window for cool season cover crops in Minnesota is from August 1st to mid-September at the latest. This means there is not a lot of time to harvest the summer corn before establishing cover crops. Van Schaik said, "It's a significant problem in our parts, but not insurmountable."

Each of the demonstration plots as part of the Land Stewardship Project's tour are a part of the Haney Soil Health Project. As van Schaik explained, the Haney test "is a way of analyzing soil organic matter pH." The test also examines the biological activity in the soil. For farmers to be part of the Haney Soil Test project, they have to do the planting and agree to share their data anonymously. They also must agree to be part of the cover crop network and host one field day.

While the Haney Soil Health test is not universally accepted, it does allow soil scientists to address and make steps to improve the biological components of the soil. Past Haney Soil test results have shown that permanent pastures have four times the biological activity than cornfields. Relating to the discussion on cover crops, the permanent pasture has year round roots in the ground.

Every farm that was part of the LSP's field day had soil health improvement, as measured through the Haney Soil Health test. Van Schaik said, "That may be beginners luck, but it beats the alternative."

The four study plots were funded through multiple grants. The LSP received a grant from the Minnesota Department of Agriculture's Sustainable Education program, as well as a USDA Sustainable Agriculture and Resource Education (SARE) partnership grant. The granted funds paid for the soil health tests, helped with soil sampling, sponsored the field day tours, and provided the farmers a cost share for the risk in using their fields to test the cover crops. Van Schaik said, "They allow us to experiment on a small scale and have some of that risk honored and acknowledged."



Dean Richards (center, black sweatshirt), St. Charles, grazes his beef cows on an oats cover crop field, a practice that saves him the cost of purchased feed, improves his herd health, adds fertility to this field, and gives his permanent pastures a rest. Photo courtesy of the Land Stewardship Project.



Stan Smith, Lewiston, shows how different planting conditions affected the roots of his soybeans. For example, the soybeans that had a later planting date and were interspersed with rye were more branched. Photo by Jill Veerkamp.

The field events gave farmers and landowners a chance to put their heads together and learn from each other, as well as feel supported by their peers. Furthermore, the tours helped expand everyone's understanding of common issues affected by farming, such as erosion and water quality. Van Schaik explained, "Farm issues no longer stop at the farm gate...I really applaud the farmers and landowners who allow a sense of responsibility and recognize their management decisions impact everyone."

Van Schaik added that if farmers can cover their soil more than three months out of the year, then the impact is positive. Good farm management practices are even more essential as climate change continues to increase. In southeastern Minnesota, climate change causes more severe storms, which means that rain lands on soil harder and faster. Thus, the soil needs something to cover and buffer them from the weather. Van Schaik said, "It's taking care of your resources." The positive effects of cover crops will last for years down the road.

For some, there may be financial barriers to planting cover crops. Yet van Schaik urged farmers to do what they can afford and start there. Another barrier is simply the novelty of the concept of cover crops. Van Schaik said, "The newness of it is something to be reckoned with." One more barrier is the lack of time available between harvesting the summer crops of corn and soybeans and planting cover crops early enough for them to be viable.

Through the site tours, a number of conclusions were developed. First of all, using

cover crops for weed suppression is a worthwhile consideration. Also, there are also merits of two or three species of cover crops in a mix.

While cool season cover crops do need to be planted in the early fall, van Schaik is unconvinced that the use of early maturing corn is the best solution for removing the harvest from the fields sooner. Usually, early maturing corn is only used if the planting has been delayed and there is no other choice. Early maturing corn is of a mixed quality and yields mixed results.

Overall, as van Schaik pointed out, the more that farmers work with cover crops, the more experienced they become, allowing them to get better results. Farmers have to be willing to stick with it for a few years before they will see measurable results. Furthermore, farmers must be able to rework their calendar, acquire the necessary equipment, and find the new seed to plant. "It's a learning curve," said van Schaik. However, every farmer van Schaik has spoken with who has implemented the use of cover crops has reported that, eventually, it provides rewards that make it worthwhile.

In addition to the test plots in Lewiston, St. Charles, Fountain, and Peterson, the Land Stewardship Project sponsors two addition demonstration sites, outside of Byron and Canton. They also soil sample another six fields as part of the Haney Project. The LSP is sponsoring a cover crop networking meeting on December 1st that is open to the public. The meeting is at LSP's Lewiston office, from 1-3 p.m.



Great friends, great chili, and great conversation while gathering for the Whitewater Trailblazers Club Membership Drive on Friday, November 4th, at the Club Building in Utica. Photo by Carol Boynton.

Whitewater Trailblazers Hold Membership Drive

By Carol Boynton
Lewiston Journal Editor

Wendell Ploetz, president of the Whitewater Trailblazers welcomed the public to the snowmobile group's chili feed membership drive on Friday, November 4th. The Whitewater Trailblazers are a non-profit group that keeps 75 miles of southeastern Minnesota snowmobile trails in shape for winter fun.

The Trailblazer's trails connect St. Charles to Utica and hook up with Lewiston and Rushford and Lanesboro. They also head north to Crystal Springs, Elba, Altura, and then onto Plainview.

"The trails that all hook up together make some great trails for those that really like to go the distance," said Wendell Ploetz.

Ploetz added, "This club is a great family orientated club. We try to invite everyone. Of course, we also need a lot of help with maintaining these trails. There are signs to be put up, grooming and maintenance, and three bridges to be rebuilt. It takes a lot of take a lot of manpower. We need help from the snowmobilers to keep things running well."

Currently, the Whitewater Trailblazers have 45 members, which appears to be dropping due to the lack of snow in recent years. However, as Ploetz noted, "There's nothing better than anyone who rides our trails when they say we have some of the best trails around."

The Trailblazers also hold events and special activities throughout the year in order to entice members. An annual Radar Run on the first Saturday in February has many prizes available to win. Although there is no snow on the ground in the summer, the Trailblazers have a summer picnic for members, complete with sweet corn and hot dogs. "And of course, we always hold our annual chili feed for our membership drive," said Ploetz. "I've been president of the group three times. The group originated in 1969 and I've been a member since 1971. We really need to keep fundraising and raffles for our group. It draws in those snowmobilers to keep their snowmobiles registered."

Snowmobile registration is important, because the funds generated go towards the maintenance of trails. Jim

Mickow, Trailblazers gambling manager, pointed out, "We need people to register their sleds because that's where we're reimbursed for our trails by the state. We will certainly be watching for stricter enforcement coming down the trails with \$40 to \$50 for registration and that's for three years. If you don't carry that registration... It's a ticket that'll cost you in the vicinity of \$100."

While the Trailblazers also receive a percentage of gas tax fees for trail maintenance, ultimately, the task of grooming the trails falls upon the hard work of volunteers. Ploetz shared, "There's a challenge of getting everything done on these trails. We wanted to get the bridges done but it always ends up being one of the last things that seem to happen before the season sets in. But we like everybody to have a good ride and when you hear that they're having a good time it's all worth it."

To thank the landowners for the use of their property for trails, the Whitewater Trailblazers hold an appreciation dinner every year. "We wouldn't have any trails without our landowners," said Mickow. "We are very appreciative of the way our landowners work with us."

The Trailblazers also help prepare the next generation of snowmobilers. In January, they hold safety training classes, which usually draw between 15 and 35 students. "We tend to wait until we have some good snow. That's when the kids really get excited about getting some good snowmobiling in," stated Ploetz.

In addition to Ploetz and Mickow, Whitewater Trailblazer leadership also includes Stan Kreidermacher (vice president), Ashley Murphy (secretary), and Joan Hager (treasurer). The Trailblazer Board of Directors consist of Greg Heim, Jeremy Ploetz, Bruce Brown, Cody Hager, Brian Koenig, and Mike Murphy.

If you have any questions you may go to the Whitewater Trailblazer website at: www.whitewatertrailblazers.com or join a meeting on the third Thursday of each month at 8 p.m. in the Trailblazer club house in Utica.

Happy Sledding!!!! Don't forget to register you sled!



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