

produce higher yielding cash crops.

A Greenhorn Perspective

A biology program at a liberal arts college like St. Olaf would normally be known more for teaching students about the benefits of nature preserves than doing practical research on cropping systems. Seybold, for example, first thought she was going to study prairie and forest systems, and her introduction to farming was the college's small organic garden.

"I didn't look at agricultural fields as ecosystems at all," she recalls. Her professor was pretty much in the same boat. Shea was trained as a plant ecologist and her previous research had focused on trees.

"Agriculture is something I've had to learn about," says Shea. "It's a wonderful convergence of interests. A lot of students have been interested recently in food issues,

and then the college is fortunate to have the land and a farmer who is interested in finding out more about what's best for the soil."

Legvold, a lifelong agriculturalist, sees the St. Olaf researchers' lack of farm background as a plus—they are able to come at the issue of how to balance environmental sustainability and economic profitability with a fresh perspective.

"They're not approaching it from the standpoint of, 'My dad said if you put on a little more fertilizer, it's going to get better.' That's not in Kate's head," the farmer says.

"It's not," says Seybold, laughing.

That interaction showcases another result of this farmer-college collaboration. It's producing scientists who are not only able to tackle the tough issue of balancing production agriculture and a healthy environment, but can relate on a personal level with the people in the best position to make practical use of research innovations: farmers.

Seybold, for her part, would eventually like to go on to graduate school and

study agroecology or crop science, and her research has already been recognized by the Minnesota Academy of Science. That's a nice capstone to her undergraduate career, but she says her real passion is to work directly with farmers.

"Before I started this research, I kind of looked at corn production and industrial agriculture as the demise of society," she says. "But this research humanized it and I understand the complexity of the forces that impact agriculture more than ever. And I'm a people person, so I think agriculture is a good fit for me because you can't do agriculture without people." □

Give it a Listen

In episode 166 of LSP's *Ear to the Ground* podcast, Dave Legvold discusses his work with St. Olaf students researching the impacts of his cropping system on soil health: www.landstewardshipproject.org/posts/podcast/732.

Infiltrating Soil Health

The rate at which soil absorbs water tells part of the story of that soil's ability to grow plants. This spring, Land Stewardship Project staffers joined a team of field managers, a farm host and soil scientist Allen Williams (*pictured on the right*) on cornfields in central Iowa to learn how to measure infiltration rates and conduct a myriad of other tests associated with soil health.

This is part of a team initiative LSP is participating in that will take the next two years to illustrate what happens to soil fertility and farm finances when row crops are integrated with cover crops and grazed livestock. As Williams said, "We know the results—let's see how it works in real time with people trying to make their living here." LSP staff are managing two of the eight farm research sites in Iowa and Minnesota. Other partners include the Sustainable Farming Association of Minnesota, Practical Farmers of Iowa, La Crosse Seed Co., Green Cover Seed and Winrock International. (*Photo by Caroline van Schaik*)



LSP Initiative Looking at Role of Short Season Corn & Small Grains in Cover Cropping

By Caroline van Schaik

Cover crops are a logical part of the solution to forage needs, depleted soils, profitability and environmental concerns, but standard maturing corn is an indisputable barrier to their integration in southeastern Minnesota.

Could an early maturing corn variety and greater use of small grains offer a realistic yield and open up the necessary August-September window for planting cover crops? This is the question that six cash crop and livestock farmers in southeastern Minnesota will explore in demonstration plots over the

next two years. Land Stewardship Project staff are working with farmers in the region who want to learn whether and how they can make modest changes to their cropping patterns to safeguard against severe weather as well as to reduce their use of chemicals, save on feed and veterinary costs, and build soil in the near and long term.

The results of this initiative could have a significant impact in this part of the state—almost half of cropped acres in 11 southeastern Minnesota counties are planted to fall-harvested corn. The inclusion of even a single species of cover crop into a rotation has far-reaching utility in protecting the soil beyond the four

or so months of corn and soybean growth. Answering questions related to cover crop timing could have bearing throughout the Upper Midwest, where cover crop planting and the cash grain harvest often conflict.

Research funding is being provided in part by grants from the USDA Sustainable Agriculture Research and Education Partnership program and the Minnesota Department of Agriculture.

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