Staples takes the lead on locally generated biomass research

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STAPLES, Minn — If there was an award for traveling the longest distance to Staples’ Agriculture and Energy Center field day, Loren Forrest of Luverne would be a strong contender. Forrest made the five hour trip recently to learn more about miscanthus. The plant is one of several energy crops in trial plots at the Central Lakes College’s ag center grounds.

The innovative farmer is growing the crop near Luverne, but has plans to expand its production in South Dakota. The key to the Staples research is the soil. The center and surrounding area has sandy soils. So does the area in South Dakota where Forrest may grow more miscanthus. He was interested in how the crop thrives in sandy soils and what researchers have discovered about the crop’s production.

Forrest also gained an insight to a variety of crops including camelina, prairie cordgrass, switchgrass and more.

“After years of work, we want you to ask the question: Is an energy crop something to consider for your farm?” said center director Bob Schafer. “We believe it is. It’s a way to diversity your income.”

The center’s work on energy crops is fairly new, Schafer reminded the group. It’s been researching energy production for the past two to three years. It received funds through a NexGen grant for some of its work.

Energy is a new focus for the Agricultural and Energy Center. Originally the center’s work focused on irrigation and its management tools. Now the center has expanded its focus toward locally produced fuels that will aid in rural economic development.

The research and demonstration efforts will help prove the concept of distributed energy, said Schafer.

Center researchers are working with other Central Lakes College divisions including heavy equipment and diesel mechanics to test the biofuels and the Farm Business Management department to share findings with farmers.

The group toured the research plots. Central Lakes College’s Agriculture and Energy Center has 20 acres on site and another 10 off the grounds, Schafer said.

Through the NexGen grant, the center has looked at perennial crops. They’ve planted those crops with a six-foot Truax Drill. They have eight plots on five acres and are looking at tonnage yields.

Some light was shed on prairie cordgrass production thanks to the University of Wisconsin, which researched the plant’s fertility, Schafer said. UW researchers were first studying switchgrass, but noticed a field that had better yields. It was prairie cordgrass. They also looked at prairie blends and miscanthus.

The center’s concern about the crop was if it would work in Minnesota’s colder climate. They found a Canadian strain that would. The crop yields 20 tons per acre.

Camilina is a drought-tolerant plant that does well in sandy soils. It does well in the cold and is an early setting variety.

When researchers considered the productivity of the crops they looked at the grass land area and Conservation Reserve Program lands.

“We have found that for this kind of system, it could produce three tons of biomass with a mixed prairie plant — that would be 100 gallons of cellulosic ethanol,” Schafer said.

The perennials could have 15 years of harvest life after they are established, he said.

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At the end of the day, does alternative energy production come close to fossil fuel costs? Schafer thinks so.

"We are getting close to the cost of fossil fuels and I think that's where we need to be talking," he said.

Some are taking the information to the next level.

Tom Smude of Pierz is processing sunflowers through a press and is making an oil. The oil is bottled and sold at farmers markets, he said. The byproduct, the meal, is great livestock feed.

He has also pressed the oil for some of the center's crops.

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