

# Plowing new ground for biofuel crop research

By Melinda Voss, Published August 29, 2013

As part of an expanding emphasis on biofuel research and training, [Anoka-Ramsey Community College](#) (ARCC) in Minnesota has been growing a 24-acre double-crop plot of camelina and soybeans this summer on its Cambridge campus.

Camelina, a distant relative to canola, offers a promising new possibility for producing biofuels from nonfood sources, said Melanie Waite-Altringer, a biology faculty member who's leading the project that also involves students in undergraduate research.

The college's biology and chemistry faculty joined with [Ever Cat Fuels](#), a nearby biofuel processor; [U.S. Department of Agriculture](#) (USDA) researchers; and local farmers to study various aspects of this potential energy crop.

"This is a true energy crop that isn't used for food," Waite-Altringer said. "In this project, we are 'intercropping' camelina with soybeans to see if the two crops can be grown together with high yields of each."

Planted in early May, the camelina was harvested in late July. The soybeans, planted in early June, are expected to be harvested in September or October.

The project is important in part because it may well spur new economic development in the region, said Deidra Peaslee, ARCC vice president.

"Besides enriching student learning, we are expanding opportunities for area farmers, businesses and the workers needed in this emerging industry," she said.

Biofuels are expected to play an important role in helping Minnesota meet its goal to produce 25 percent of the total energy used in the state from renewable energy resources by 2025.

## An unconventional approach

"Camelina is not widely known as a good source for biodiesel production, so the project is trying to showcase that it can be a sustainable resource of highly needed renewable energy, Waite-Altringer said. As part of the research, students are conducting studies adjacent to the demonstration plot to see what ratio of camelina to soybeans will generate the optimal profit for farmers, she said.

Dillon Danforth, a 19-year-old science student who just completed his freshman year at the college, said he jumped at the chance to participate in the research project.

"I plan on going into some kind of science," he said. "With this project, I have a better understanding of how the whole process works and all the work that goes into it. Most undergraduates don't get to do actual research. So, I feel I'm very lucky to have gotten this experience."

The participants are working with USDA researchers from Morris, Minn., who are studying beneficial pollinating insects associated with energy crops, said Waite-Altringer, who noted that Ever Cat Fuels offers the most efficient way to process camelina into biodiesel fuel. One acre of camelina may produce up to 70 gallons of biodiesel fuel.

## Building on

The college's interest in biofuels began several years ago when the [Governor's Workforce Development Council](#) awarded a \$100,000 grant to the college's Professional and Workforce Training Center and Ever Cat Fuels to train current and potential employees in biofuel refining.



*In Minnesota, Anoka-Ramsey Community College biology students take measurements this summer at the edge of the demonstration plot.*

The courses included mechanical and biodiesel fundamentals, federal safety standards and technical report writing. By the end of the nine-week training in 2011, 25 individuals were certified in biofuel production. Sixteen of them were already employed in the industry but had had no previous training in biofuel refining. Nine others—all displaced workers—completed the certification program and most found jobs in the industry, said Steve Jones, the center's director of training.

In 2011, [SarTec Corp.](#), in conjunction with Ever Cat Fuels, received a \$500,000 grant from the [U.S. Department of Energy](#) specifically to recruit farmers and others in growing energy crops, said Dave Wendorf, Ever Cat's director of marketing.

"Anoka-Ramsey stepped up to the plate to work with us on this project," Wendorf said.

## Planting the seed

Last year, they did some test plantings on the Cambridge campus with pennycress, another energy crop that turned out to be problematic. With a grant this spring from the [ARCC Foundation](#), [Central Minnesota Initiative Foundation](#) and a Strategic Initiative Grant from the college, Waite-Altringer had the resources to plant and harvest the 24-acre plot.

"This year's test plot certainly helps a lot because it gives us more experience and research on camelina," Wendorf said. "Our long-term goal is to have our Isanti biodiesel plant able to process biodiesel from a crop like camelina. And with the college as a partner, we can make sure we have properly trained workers who can run our biodiesel facilities safely and efficiently."

Jones said the next step for the college may be developing additional science and technology courses in biofuel refining with technical guidance from Ever Cat Fuel representatives and others.

The college is also seeking more community involvement.

"We have local farmers on our advisory committee for the project," Jones said. "We plan to involve 4-H, FFA and Boy Scout troops in working with the demonstration plot."

*Voss is a special correspondent for [Anoka-Ramsey Community College](#).*