

Second Harvest

Alberta, Minn.--While the corn harvest is in full swing across most of Minnesota, a different kind of commodity collection has drawn the interest of dozens of farmers in western Minnesota and beyond.

This fall the Chippewa Valley Ethanol Company has held several demonstrations of corn cob biomass collection. CVEC is a farmer-owned cooperative that recently began operating a biomass gasification system to offset the ethanol plant's natural gas usage.

"We're always looking for ways to lower cost through biomass," says CVEC General Manager Bill Lee. "There may be some cost advantages with cobs. They're about the most plentiful and available biomass we have in our area."



This pull-type cob collection system was one of two harvest technologies tested.

CVEC, with support from AURI, the Minnesota Corn Research and Promotion Council and the Minnesota Department of Commerce, will harvest cobs from 5,000 acres of corn or an estimated 4,000 tons of cobs. Two different technologies will be used in the one-pass process designed to collect cobs and corn at the same time.

The cob collection project will do more than just test collection systems; it will also evaluate storage systems, and address handling and transportation issues.

"Some of the biggest hurdles for any type of large-scale utilization of biomass are densification, handling, storage and transportation," says Alan Doering who heads up AURI's coproduct utilization program in Waseca. "Every time you handle biomass or have to do something to it, it adds cost.

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Water Reuse

Reclaimed wastewater from municipal treatment facilities may provide an alternative water source for agri-processing facilities, particularly where water resources are scarce.

AURI has partnered with the Metropolitan Council Environmental Services to evaluate the feasibility of using reclaimed wastewater in agricultural processing applications where high-quality groundwater is not necessary or is in short supply. Municipalities may benefit by offering reclaimed water as an alternative water source to industries.

Municipal facilities in Minnesota treat about 425 million gallons of water a day. Much of that treated water is discharged into groundwater sources such as rivers. Water reuse could conserve resources and support industries and economic development.



"There are agri-processors that have looked at building in certain locations but can't because of a lack of groundwater resources," says Jennifer Wagner-Lahr, AURI project development director. "This project will look at the feasibility of connecting municipal treatment facilities to processors because in the right circumstances, it could reduce groundwater depletion and provide a reliable and potentially lower cost water source for industry."

The project will involve two case studies involving agricultural processing facilities. Once the findings are in, Wagner-Lahr says AURI will be holding industry forums to distribute the information to facilities that could benefit.

Several industries are already taking advantage of reclaimed wastewater including a North Dakota ethanol plant that is piping in treated water 27 miles from Fargo to its site.

A more in-depth article on this topic will appear in the January issue of Ag Innovation News.

Harvest continued...

A one-pass collection system would improve economics."

Two systems, one a pull-behind unit and another combine-mounted collector were used to collect the cobs. Staff at the University of Minnesota West Central Research and Outreach Center in Morris will conduct yield analysis and quality monitoring of the cobs. The cobs will be gasified in the CVEC system as well as at the newly-built system at the University of Minnesota-Morris campus.

Corn cobs are widely available and their removal isn't cause for soil health concern. Corn stover is important for erosion control, organic material and soil structure. Cobs, meanwhile, have less value to the soil but are among nature's perfectly densified fuels.



Corn cobs collected during this fall's harvest will be tested in two separate gasification systems.



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