

# Cobs-to-ammonia plan moves forward

**A** CALIFORNIA company, SynGest, is moving ahead with plans to build a plant in Iowa that will make anhydrous ammonia fertilizer from corncobs. The goal is to manufacture fertilizer in the U.S. and reduce fossil-fuel emissions by not using as much natural gas-based nitrogen in agriculture.

"This kind of innovation is the upside of energy price increases," says SynGest CEO Jack Oswald. "When energy prices were very low, you couldn't compete with natural gas, the traditional source for ammonia-based nitrogen. But natural gas prices have increased in recent years, driving many U.S. fertilizer companies to close their doors here because natural gas prices overseas are lower."

SynGest's plan to build small plants in the Midwest to make fertilizer from corncobs would avoid the price volatility farmers have had to put up with and would help ensure that U.S. farmers won't face a shortage, he says.

SynGest has signed an option to buy 75 acres of land to build the facility near Menlo in central Iowa. The company plans to use 150,000 tons of locally produced corncobs annually to produce 50,000 tons of bioammonia — enough to fertilize 500,000 acres of farmland.

SynGest officials say the \$80 million facility should be built for economic, environmental and political reasons.

"About 20% of the nitrogen fertil-

## Key Points

- Plans are progressing to build a bioammonia N facility in central Iowa.
- The \$80 million plant would make nitrogen fertilizer from corncobs.
- Organizers of the project are trying to persuade farmers to harvest corncobs.

izer used in the U.S. is imported from Russia," says Ravi Randhava, the SynGest engineer who developed a "fluidized gassifier" that the company plans to use in converting cobs to ammonia. "Do you want to continue to buy fertilizer from other countries? Iowa can be the Texas of 21st century energy. Those corncobs will be what oil was in the 20th century."

## Green energy source

Randhava and Oswald say the bioammonia would free farmers from the price swings in natural gas, the feedstock for chemical fertilizers.

"And, you'll be reducing your carbon footprint," says Oswald, a former Silicon Valley high-tech businessman who has refocused on Midwest agriculture "because green energy is the investment of the future, and you have the land and biomass here."

Oswald thinks the Menlo plant could be the first of up to two dozen bioammonia plants SynGest might build. He hopes to have it operating by 2012.



"Ammonia is ammonia," says Doug Holliday, a farmer from Greenfield who is active in the Iowa Corn Growers Association. "I wouldn't have any problem with using ammonia made from corncobs."

Like ethanol producer Poet, which is building a cellulosic ethanol plant that would use cobs as feedstock at Emmetsburg in northwest Iowa, Oswald needs to persuade farmers to invest in special equipment to harvest corncobs, which are now left on the ground by combines.

## Harvesting equipment needed

Various machinery manufacturers, including Vermeer at Pella, Iowa, are readying prototypes of harvesters that would separate cobs from corn at harvest, catch the cobs in a wagon, etc.

Cost estimates range from \$30,000 to \$60,000 depending on the system, but the 2008 Farm Bill provides matching federal grants to farmers for biomass equipment purchases or leases.

The SynGest plant location is planned across the road from the Hawkeye Renewables ethanol plant, making Menlo, with a population of 365 people, a sudden biomass hot spot. Adjacent Adair County also boasts MidAmerica Energy's new 76-turbine wind farm.

Oswald hopes to get a \$40 million grant from the U.S. Department of Energy and another grant or loan of up to \$5 million from the Iowa Power Fund to build the SynGest plant at Menlo. Those requests follow the same subsidy trail paved by Poet for its planned corncob-ethanol plant at Emmetsburg.

Source: SynGest, Iowa Corn Growers

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