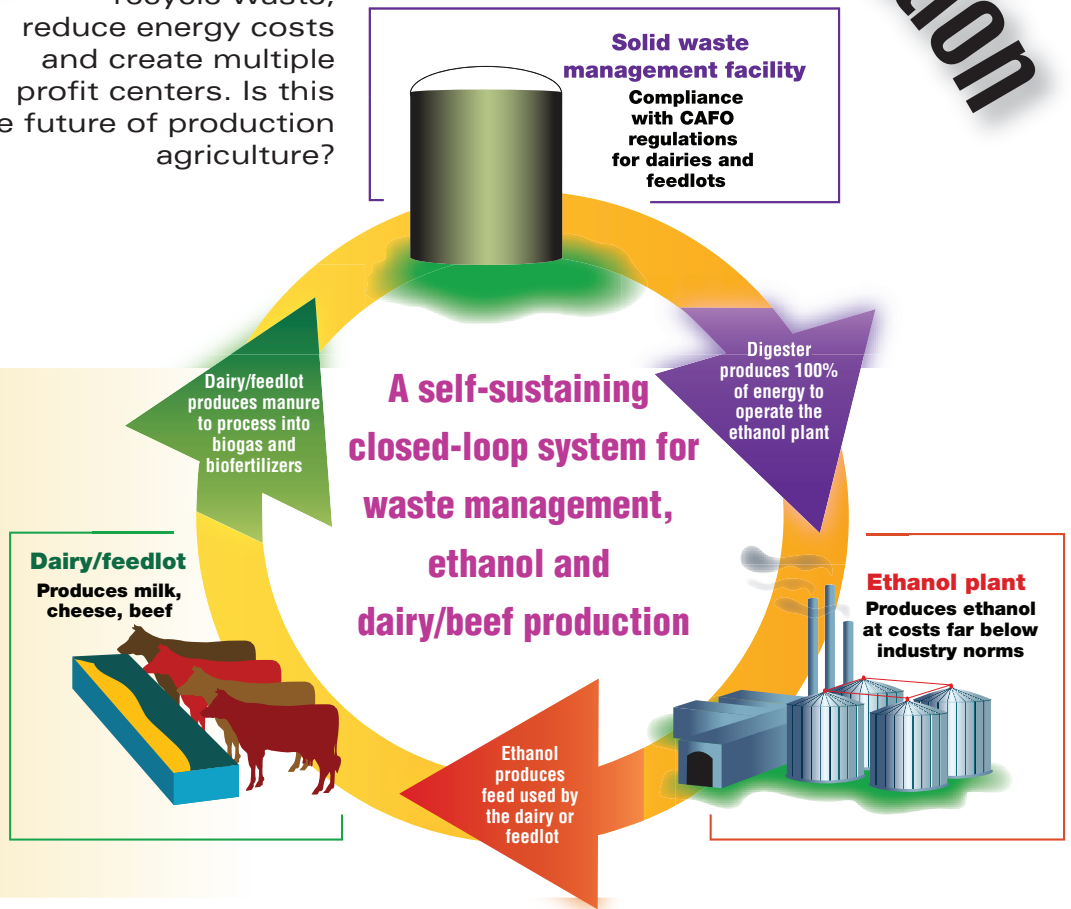


By Mike Wilson

Welcome to the closed-loop revolution

Driven by a thriving ethanol industry, 'integrated biorefineries' recycle waste, reduce energy costs and create multiple profit centers. Is this the future of production agriculture?

Closed-loop systems, or "integrated biorefineries," convert manure from cattle into methane to power an ethanol plant, and distillers grain left over from the ethanol-making process into cattle feed. While the cattle or dairy cows create beef and milk, the ethanol plant creates fuel at a much lower cost thanks to the "recycled" power source (cow manure). If a plant doesn't need all the energy from its digester, it can sell to the local power grid, creating yet another profit stream.



Your great-grandpa wouldn't put all his eggs in one basket, so he wisely grew corn, cattle, milk cows — maybe even some pigs, too. This fall, a "farm" is being built in Cadiz, Ohio, with the same idea — except this operation would make your great-grandpa's head spin.

Here, on the eastern edge of the Corn Belt, Harrison Ethanol LLC is putting up a 10,000-head feedlot, 2,000-head dairy, 20 million-gallon

ethanol plant and an anaerobic digester that will turn cow manure into power for the ethanol plant, which in turn will spit out distillers grain to feed all the cattle.

The resulting "integrated biorefinery" will employ more than 100 people and provide enough leftover electricity to sell to a local power plant, says Rhoda Crown, CEO for Coshocton Grain.

Unlike your great-grandpa, Coshocton Grain Investment LLC sold shares to raise \$1.3 million for the project, mostly through local investors,

including farmers.

"All of the different enterprises within this integrated facility are tried-and-true," Crown says. "There really is no waste. The digester produces not only methane but also dried material that comes out like peat moss; part will be used for bedding for cattle and part will be sold for horticultural use. The water that runs through the ethanol process runs through the anaerobic digester and is recirculated back through the ethanol process.

"We want to put all those together to enhance the bottom line and make ▶