

Biogas Galore with right mixing system at De Jong Family Farms

Sending over 100,000 MMBtu of clean, green renewable energy to the interstate pipeline in Indiana has somewhat justified the decision of a dairy to introduce an AD plant to its operation.

With 6,200 cows at De Jong Family Farms, there's not exactly been a shortage of manure. Previously, there was certainly nothing wrong with the 100 million gallons of slurry going to storage ponds, before being applied to land – but that's all changed now.

If you consider manure 'a nuisance,' then think again.

Aside from the 100,000 MMBtu of energy, De Jong Family Farms has gladly reduced its greenhouse gas emissions, and in doing the right thing, has also received plenty of carbon credits.

When making a considerable investment in its biogas plant 13 years after the dairy opened

in 2009, choosing the right mixing system was crucial, as De Jong Family Farms' Project Manager, Rob Juhl, explains:

"Based on the knowledge and expertise of the engineering team, we were happy with their strong recommendation for Landia's proven GasMix digester mixing system, so that decision was actually made easy for us," he said.

Maximize the gas

"We were hopeful that this was the very best equipment to mix and homogenize the manure properly; last a long time (ten-years-plus), be easy to maintain, and of course, maximize the gas. We love the fact that everything on the system is easily accessible outside the tank. There's also no working at height. These factors are a big, big advantage. So far, we are pleased with the outcome."

Each of the two 1.4-million-gallon anaerobic digesters are served by two Landia GasMix systems, which feature the proven Landia Chopper Pump (invented by the company in 1950).

The system draws thick liquid up from the bottom of the digesters, where solids are continuously chopped to accelerate the digestion process and prevent clogging of pipes and nozzles. In the first stage of the



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Written by: Chris French | July 2024

mixing process, the liquid is injected into the upper half of the digester, while biogas is aspirated from the top of the tank and mixed into the liquid.

The Landia GasMix not only reduces buoyancy at the surface of the liquid, but also sees the rising gas bubbles continue to mix after the pumps are switched off.

Rob Juhl added. "With organic matter getting captured and digested in the AD process, it means that our storage ponds are much cleaner, with increased capacity."

In addition to the anaerobic digesters, there are also two Landia Chopper Pumps on the site's pre-treatment tanks.

"The Landia pumps run pretty much all the time," continued Rob Juhl, "but we don't have any issues with them, so we're very happy. In terms of reliability, I would say that they are the best pumps we've had. We switch them on, and they do what they should do."

What makes the performance of the Landia pumps particularly impressive is that De Jong Family Farms is a sand-bedded dairy.

Use of sand can create all sorts of issues for equipment

"Sand is no friend of pumps," commented Rob Juhl.

"We do everything we can to get the sand out, but there's inevitably going to be some of it getting through. When we carry out inspections though, the pumps don't show that much wear. The use of sand can create all sorts of issues for equipment, but the dairy finds the benefits of it over traditional bedding are substantial."

He continued: "Importantly, when we get in touch with Landia, help is always at hand. It might just be that from time to time, we see a little oil, which is understandable, or that a pump might be making a different noise from normal, but Ken Jacobs, Landia's Aftermarket Manager, is a pleasure to work with. Unlike many other manufacturers, we always get a quick response."

We carry out some basic maintenance, such as oil changes, ourselves. That aside, the pumps don't require much attention at all. We have great peace of mind from the reliability of the pumps and the back-up we receive.

"There's huge value in capturing the organic matter from the manure, which the Landia GasMix does to great effect."

For more information

The Landia GasMix Mixing System enhances biogas production by ensuring efficient mixing of slurry. It uses biogas injection for thorough mixing, improving methane output and reducing maintenance costs.

Designed for durability and ease of maintenance, GasMix is ideal for various biogas plant configurations.

Please contact us at info@landia.dk or visit our website at landiaworld.com



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