They're Turning Manure Into Oil

By Janis Schole, Contributing Editor

Peter Fransham of Advanced BioRefinery Inc., of Ottawa, Ontario says he's close to perfecting a cost-effective system that will extract oil from biomass such as chicken manure or other biomass like waste wood.

The company was awarded a $1.2 million grant from a government research group to develop a commercially viable system. "The system extracts a useable bio-fuel and at the same time produces a beneficial fertilizer product," says Fransham.

He has been working hard for the past 17 years to find a feasible way to accomplish his goal, and currently has two prototypes. These units will be in operation later this year.

"Our objective is to start producing a commercial prototype by the end of this year," he says. "We hope to start taking orders by the end of this year. However, it could be two years down the road before we actually start manufacturing them."

Fransham says his pyrolysis system operates at 378 to 380° C. It works by vaporizing and condensing the biomass in the absence of air.

He believes he can build cost-effective systems that could easily be tailored to the needs of the client. The current prototypes can process about a ton of dry poultry manure per day.

The end products include burnable oil, some gas, and a phosphorus and potassium-rich charcoal which he says makes a good fertilizer.

"We've found that we're also making some very high value chemicals from chicken manure that could be used in pharmaceutical drugs. Our systems could synthesize those chemicals on a large scale."

Currently, electricity is required to get the pyrolysis process started, but Fransham says that down the road, it may be possible to capture and use the gas generated by the system.

Fransham says the oil produced from his process has about half the energy of regular heating oil, and that one ton of chicken manure yields about 990 lbs. of oil.

"We want our systems to be economically feasible, so we want to make sure it works before we get people too excited," he says. "We don't want to disappoint farmers or anyone else, so that's why it could be a couple years before we start waving our arms confidently."

Fransham has filed for patents on certain aspects of the technology, and expects them to be granted sometime next year. He says he's also "open to developing business relationships in the U.S., but I would need someone local to conduct the business."

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System is designed to extract oil from biomass such as chicken manure or waste wood, at the same time producing a beneficial fertilizer product. It works by vaporizing and condensing the biomass in the absence of air.

Deere No-Till Drill Converted To "Air"

Tom McMillan converted his Deere 752 no-till drill into a precision air seeder and says he couldn't be happier with the results. He replaced the original delivery system (seed drill boxes) with air tanks.

McMillan, who farms at Pickardville, Alberta, says that his original Deere limited his fertilizer application rate to 200 lbs./acre (in the mid-row band).

"Pulling an anhydrous tank behind doesn't work well with this drill's openers, so I wanted to apply all my fertilizer at once - as dry product - with one machine," he says. "To accomplish this, I removed the original seed and fertilizer boxes and bought two used 110-bu. tanks off a Flexi-coil 1100 air seeder, along with new manifolding."

The most difficult part of the project was setting the tanks on the Deere frame, a task which involved using a picker truck, according to McMillan.

With the modifications, he can now apply more than 300 lbs. per acre of fertilizer and can also carry more seed and starter fertilizer.

He seeded 250 acres with the hybrid unit last spring, and says the system worked quite well for the most part. McMillan says he does plan to change the hydraulics, so he can adjust each tank's fan speed independently.

The total project cost was $11,500 (Canadian), but since McMillan sold the original seed drill boxes for $2,000, his final cost was only $9,500.

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Tom McMillan wanted to apply all his fertilizer at once, as dry product, with one machine. To accomplish that, he replaced the original seed and fertilizer boxes on his Deere 752 no-till drill with two used 110-bu. tanks off a Flexi-coil air seeder.

Hefty New Wheel Rake

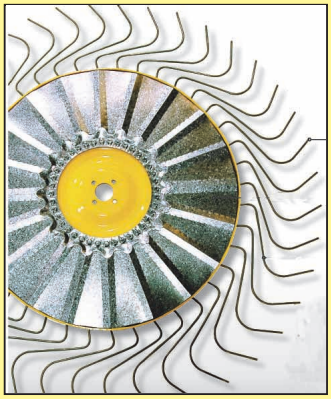
About a year ago Bridgeview Mfg. in Gerald, Sask., started building and promoting a new high-capacity wheel rake to distributors. Early this year the company struck a deal with Degelman Industries to take over marketing and service of the high-end rakes.

"Degelman VR Series Wheel Rakes," as they are now called, are turning heads because of their oversized wheels with individually-bolted teeth for fast replacement. Farmers also like the overall beefier frame construction designed to stand up to rough conditions, says Jack Degelman.

There are currently three models in production: the VR 810 (8 wheel); the VR 1214 (12 wheel); and the VR 1618 (16 wheel). All can be upsized with an optional two-wheel extension. A 20-wheel model may soon go into production.

"All of these rakes are designed and built to handle large volumes of hay at fast speeds, shorten drying time and increase productivity," Degelman says. "They're built to last. The frame is made from heavy duty 5 by 5-in. structural tubing, compared to others' standard 4 by 4-in. tubing."

While most other hay rakes have 55-in. wheels, the Degelman VR Series boasts 62-in. wheels, which mean it can cover more ground in less time. Other payoffs include easier rolling and better material flow in heavy or wet conditions.



Rake teeth are individually bolted to the reel for fast replacement.

Each wheel has standard "Wind Guard" solid centers, a feature that provides more strength and durability, while increasing material flow during use.

Another standard feature is heavy-duty, wrap around castor wheels, which provide the unit with added stability to its wings and better maneuverability on tight turns.

A special, patented, low-maintenance tension spring design gives the rake wheels longer service and provides easy tension adjustment.

The VR 1618 series has hydraulically adjustable windrow adjustment. The VR 810 and VR 1214 have turnbuckle adjusters.

Teeth can be easily replaced because they bolt on individually.

Independently mounted transport wheels with tension springs are easily raised up with a double-acting hydraulic wheel height adjustment feature.

The company incorporated heavy-duty tapered bearings into these rakes to handle both radial and thrust loads, and they're sealed within a dust cap to prevent any foreign material from entering.

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High-capacity wheel rake has oversized wheels and an overall beefier frame.