



Posted Aug 11, 2008

MAIN STREET

Pro-Act: Get a whiff of this manure

 By William Hamilton
 PBN Staff Writer

You really don't want to know what's bubbling in that tall plastic container in Dr. Chuzhao Lin's research lab, but she tells you what it is anyway. It's cow manure mixed in water.

"Smell it," Lin insists.

Uh, OK.

Surprisingly, the dark sludge doesn't smell; at least it doesn't smell bad.

That's the point. Lin explains that's she's conducting research and development on a new liquid, organic, chemical-free fertilizer for home gardens that uses cow manure but doesn't smell like it.

It's just the latest project for Pro-Act Microbial Inc., a small Warren company that specializes in the biological treatment of manure at dairy farms to reduce noxious odors and make more effective fertilizer for farmers.

Pro-Act's tiny helpers in the process are manure-munching microbes that naturally break down wastes without the usual odor and leave behind a byproduct that provides the right mix of nutrition when applied to crops.

Established in 2001, the company has about 100 customers across North America, from a small farm with 150 cows in New Hampshire to one that has 10,000 cows in Idaho.

No matter the size, the farms share an age-old problem: What to do with the waste from the animals.

Most farms flush the manure to a lagoon, where it often sits as the stench builds. When the solids settle to the bottom, farmers use the lagoon water to flush barns and irrigate crops.

That's where Pro-Act comes in.

Bill Donohue, the company's chief operating officer, says the company uses specially formulated microbes and an aeration system to form an "odor cap" over the lagoon as the wastes are broken down. The water that's left still contains the microbes and can be used to flush barns without the usual smell.

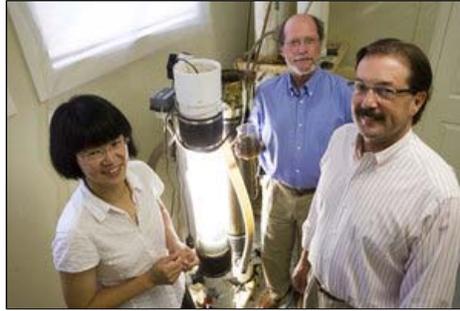
And the treated water can also be used as a more effective fertilizer. The proof? Bill Campion, company president, pulls out photos of a farmer standing in a field of shoulder-high corn, which Campion says had been irrigated with microbe-treated lagoon water. Other photos show that the part of the field that had been sprayed with untreated water was only waist high.

According to Donohue's calculations, using Pro-Act's microbes can save a farm as much as \$100 per cow in fertilizer costs annually.

"The biggest problem we have in working with microbes is seeing them," Donohue says. "People like to see what they're getting. But we stand by the results."

The company's origins can be traced back to the 1990s when Campion visited a hog farm in Ontario, Canada, that was using a bio-reactor to make its own microbes to reduce odors.

Campion had worked for a company that used hydrocarbon-eating microbes to help in the removal of underground fuel tanks. He saw the potential of using the microbes to handle manure at farms



PBN PHOTO/STEPHANIE EWANS

SMELLING SUCCESS: Chuzhao Lin, Bill Donohue, right, and Bill Campion of Pro-Act Microbial, a company developing fertilizer that doesn't emit an offensive odor.

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nationwide, and Pro-Act was born.

Why is the business located on the waterfront in Warren instead of closer to the big farms in the Midwest?

Campion said he and his wife decided to move south of Boston after a particularly cold winter in Maine a few years ago. Eventually, he connected with Donohue, who had extensive experience running small businesses.

Neither of them had a scientific background, and they were at first purchasing microbes "off the shelf," Donohue says.

"We realized we had a good opportunity," he adds. "But we had to take it to the next level."

That meant hiring a microbiologist. Coincidentally, Lin - who had studied the inner workings of cow stomachs at the University of Illinois and was working at a hospital in Rhode Island - spotted the help-wanted ad in a local community newspaper.

In the four years since her hiring, Lin's research has led to better products, Donohue and Campion say, with microbial mixes that can be adjusted to account for changes in the farm animals' diet to changes in the weather.

While Lin develops the formulas in the research lab at the company's Warren offices, the microbes are manufactured in large batches elsewhere in the country.

The company sees other possibilities on the horizon.

Lin is working to develop the organic liquid fertilizer and Pro-Act is also experimenting with improvements to biodigesting equipment that is used by large farms to capture methane gas from manure and is later used as an alternative energy source.

Campion says most biodigesters are too complex for smaller farms to deal with. The one under development by Pro-Act would require less time to use and maintain.

In the meantime, the company maintains its focus on its initial mission of odor control and improving fertilizer.

"We're staying with the focus on the dairy farms," Donohue says. "It's a much bigger base for us." •

COMPANY PROFILE

Pro-Act Microbial Inc.

OWNERS: Bill Campion, president; Bill Donohue, chief operating officer; Chuzhao Lin, vice president and director of research

TYPE OF BUSINESS: Agricultural biotech company

LOCATION: 64 Church St., Warren

EMPLOYEES: 5

YEAR ESTABLISHED: 2001

ANNUAL SALES: WND

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