

HOG MANAGEMENT AND EQUIPMENT

MANURE TREATMENT

Hog manure treatment could limit need for manure pits

Canadian technology separates manure into water, nitrogen, potassium and phosphorus

- 1 Clean water
- 2 Ammoniacal nitrogen
- 3 Bio liquid potassium

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FARMTARIO STAFF

Solugen, a Quebec-based company, is testing a manure separation technology on a hog farm. Widespread implementation of the technology could limit the need for manure pits.

The technology was invented to assist in the treatment of liquid residual materials to help simplify wastewater management while enhancing the value of contaminants. It didn't take long for Solugen to realize that could also be applied to animal manure.

WHY IT MATTERS

Eliminating the need to store pig manure saves money for producers, reduces greenhouse gas emissions, smell issues and the possibility of pollution to local water sources.

The technology was created for use in water treatment but was found to be very effective on pig manure due to its high water content.

During the distillation process, nitrogen, potassium and phosphorus are removed.

"With the manure not being stored or spread we are eliminating 90 to 95 per cent of the greenhouse gas emissions," says Patrick Vidal, sales and marketing director with Solugen Global.

The company believes its new technique has potential to remove the need for manure pits.

"We don't need manure pits anymore. We eliminate the risk of people falling in those pits, we eliminate most of the bad smells, we considerably reduce the cost of transporting manure to the fields," said Vidal.

The fully automated system uses two processes. The first is a pre-treatment



The Solugen treatment creates clean water and usable nitrogen, potassium and phosphorus, all of which can be put back into farm soils or put into other uses. PHOTO: PATRICK VIDAL

unit that separates solids from liquids using a centrifuge. The second is an azeotropic evaporation treatment, which is the main treatment unit.

The first process results in biosolids containing 85 per cent of the initial phosphorus, with 25 to 30 per cent dry matter and represents 10 per cent of the initial volume.

"We then use lime to help fluctuate all those remaining elements in the liquid."

The lime acts as a coagulant. The ammonia is stripped and the ammoniacal nitrogen is stored in liquid form.

The bio-liquid is then brought to the main treatment plant to undergo the azeotropic evaporation treatment.

"We use heat to bring this liquid to about 100 degrees Celsius. The end of this distillation process will be three

sub products: clean water, liquid nitrogen and potassium with small remnants of phosphorus."

The water represents about 84 per cent of the original volume and is clean enough for drinking. It can be reused to clean the barns or as drinking water for the livestock.

"The national institute of scientific research has carried out numerous tests and we have now the authoriza-

tion to release this water directly to the water course. There is no impact on the environment," says Vidal.

Last fall, the opening of the manure treatment facility in Quebec received a lot of attention from industry members around the globe. Vidal said it opened his eyes to the issue producers and industry members face globally.

"The problems generated by the pig manure is something that is univer-

sal. We have come to the conclusion that everywhere has the same type of problems with the management of manure," says Vidal. "We know there is a huge market and we are ready to work on that market."

Vidal says the company has been contacted by numerous companies in Quebec and especially Denmark, which would like to use the remaining solids to produce bio-gas.

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