Separated Drinking Water From Liquid Manure for Swine

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Background

A device recently evaluated (Fleming, 2002) as a liquid/solid separator for liquid swine manure appears to produce water that is clean and free of pathogens. The technology used is reverse osmosis configured in a unique manner to handle the higher solids in liquid manure and to concentrate nutrients to a relatively high degree and is referred to as VSEP. VSEP stands for Vibratory Shearing Enhanced Processing and as the name implies, uses a vibrating membrane resulting in a high-energy action at the surface of the membrane which prevents fouling of the membrane. The resultant permeate from this filtration is a clear water product containing no pathogens and low aqueous compounds. It appears that this water could be a source of drinking water for pigs. The proposed study is designed to explore the efficacy of the separated water from liquid manure as a source of drinking water for pigs.

Objectives

To evaluate the impact of separated clean water as a source of drinking water on:

- The quality of water recovered from liquid manure
- The growth performance of starter pigs
- The health status of starter pigs.

Results

A study involving the 3 water treatments (regular barn water, half barn water and VSEP permeate, and VSEP permeate) was completed. Results showed that the VSEP unit produced permeate (separated water) from liquid manure at a quality level accetable to pigs. The data revealed that no performance or health effects resulted from providing the recovered water from liquid manure to yong weaner pigs (12 - 26 kg liveweight).

Take Home Message

That water can be recovered from liquid swine manure for drinking water for young pigs was demonstrated. Such a capability would offer a tremendous benefit in reducing the amount of liquid spreading and to reduce the amount of water used in swine units.

Financial support was received from the Ontario Research Challenge Fund, Ontario Pork, and the University of Guelph-OMAF Animal Research Program.