

# Manure flow in pull-plug barns and implications on clean up

Suzanne T. Petersen, PhD.  
Brand Marketing Manager  
Land O'Lakes Purina Feed LLC

## In the barn

Tom Reuter, Humboldt, Nebraska

Tom Reuter started on EcoCare<sup>®</sup> Feed in his modified open front building in April 2007. The manure in this barn drains into a common flush area on the south end of the barn (the pigs actually run in the flush gutter where the manure accumulates). On the east end of the barn is a 8" drain pipe that he plugs shut, and every 2-3 days he pulls the plug and the manure drains to another finisher with a 8 foot deep pit. This finisher is directly east of the treatment barn. The EcoCare<sup>®</sup> barn is basically stocked at 400-425 head, and the control barn is 400 head. Tom purchased the site 2 years ago, and the land had considerable phosphorus buildup from continual manure application. He was having difficulty getting the manure to flow out of the west finisher to the east finisher prior to feeding EcoCare<sup>®</sup> feed. Within 45 days of starting EcoCare<sup>®</sup> Feed, he noticed a significant improvement in the consistency of the manure, and the flow of manure to the other finisher.



Tom spoke to us on August 23, 2007:

"I've been nothing but impressed with what EcoCare<sup>®</sup> feed has done. The feed has done what you said it would do. The manure liquefies faster – previously I had sludge buildup in the drain pipe, and now the manure stays liquefied. Now, when I pull the plug, I really have to watch out, because it flows with a lot of force and can flow back up at you. The manure consistency is comparable to manure that comes from our gestation barn (not as thick). I don't have a lot of land for application, so the reduction in phosphorus output is a large benefit."

*Prepared by: Steve Hoefer, Land O'Lakes/Countryside Cooperative Swine Consultant – Firth, NE*

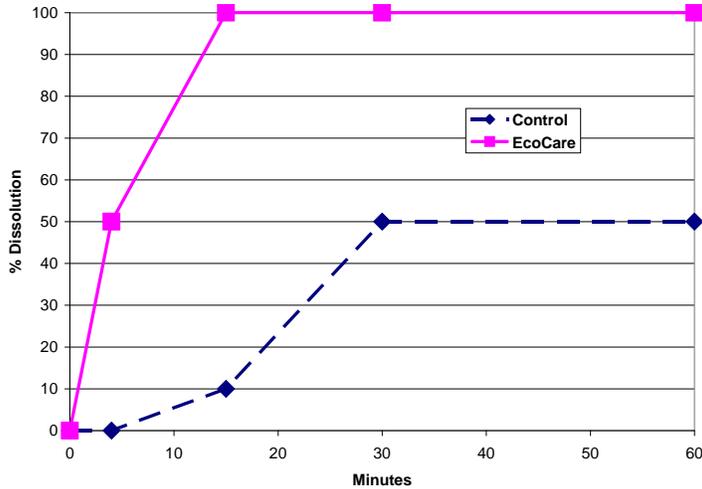
## In the laboratory

To investigate the clean up improvement potential when using EcoCare<sup>®</sup> feed, a four square inch manure mat was scraped from the fully slatted flooring of finishing pigs fed either EcoCare<sup>®</sup> or no treatment (control) in the barns owned by Tom Reuter.

The manure mat from the control barn was considerably harder to remove than that from the EcoCare<sup>®</sup> barn. In fact, it required a hammer and chisel. Once in the lab, a four gram intact sub-sample of each mat was placed in 500 ml of water at 25°C with a magnetic stir bar. Each beaker was placed on stir plate at a constant speed. The level of dissolution was visually determined for

each treatment over a one hour period. The time required for the solid mass to disperse completely with stirring action was determined (minutes/g of sample).

### The effect of EcoCare® feed on Manure Dissolution Rate



It took 4 minutes for half of the EcoCare® manure to dissolve and 15 minutes for it to be completely dissolved. In contrast, the Control barn manure was only 50% dissolved at 30 minutes and continued to have a big clump of hard manure in the beaker even after 60 minutes of stirring.\* The assumption can be made that, barns in which pigs were fed EcoCare® feed will need less water soaking time and will also be easier to clean due to faster dissolving manure.

#### Conclusion:

**A practical demonstration has shown that pigs fed EcoCare® feed produce manure that flows and dissolves better. Thus, EcoCare® feed has a direct and positive impact on manure storage and, very likely, clean up of barns.**



**The best feeding choice for grower/finisher pigs,  
The right choice for our environment.**

*For further information on EcoCare® Feed, please see your local feed sales representative at a Land O'Lakes Feed Co-op or Purina Mills Dealer. Visit us on-line at [www.LOLFeed.com](http://www.LOLFeed.com), [www.PurinaMills.com](http://www.PurinaMills.com),*

**LAND O'LAKES PURINA FEED LLC**

Copyright © 2009 Land O'Lakes Purina Feed LLC. All rights reserved. EcoCare is a registered trademark of Land O'Lakes Purina Feed LLC. Due to factors outside of Land O'Lakes Purina Feed's control and because of market uncertainties, individual results to be obtained, including but not limited to financial performance, profits, losses or otherwise, cannot be predicted or guaranteed by Land O'Lakes Purina Feed.

Acknowledgements to Agtech Products, Inc for their assistance with this technical bulletin. A protocol from the University of Arkansas was followed.