

# Barn Management: Small Changes for Big Gains

Canadian Pork Council - Cedric MacLeod



*Demonstration of barn management strategies to reduce GHG emissions are housed in this commercial research facility in Manitoba*

Winter has once again come to the Canadian prairies, wheat is in the bin, tractors and combines are safe in the shed. Now is the time to catch up on the reading you have been piling on the corner of your desk all season. Greenhouse gas (GHG) articles written so far have focused on the Canadian Pork Council's GHG program, covering liquid manure storages, and maximizing the benefits of manure as a nutrient source. This article will focus on barn operating efficiency, maximizing value of feed in the bin, and how barn management options can reduce the potential for GHG production on your operation.

There are three main areas where a producer might make improvements in barn management to reduce GHG production. Keep in mind that not all of these management options will reduce GHG production directly, but may have indirect effects further down the management chain, when manure is applied to cropland, for example.

## Climate Control

Climate control systems, using electricity, propane or natural gas, can be a significant drain on finances. Proper maintenance and cleaning of fans and heating systems will keep

your barn atmosphere clean and warm while minimizing the cost of powering the system. New heat pads for farrowing units may eliminate the need for power hungry heat lamps, and are worth considering. Another energy saving option demonstrated through the GHG program is a climate control system that reduces nighttime barn temperatures relative to the daytime climate. Research at the Prairie Swine Center has shown that feeder hogs prefer cool nighttime temperatures.

## Feeding Strategies

Improved feeding strategies are always of interest to producers, as feed represents a significant cost of production. Currently, feed crude protein (CP) content is a popular target for nutrition research. Traditionally, to provide all essential amino acids required for efficient growth, hog feed has contained a high proportion of crude protein. As specific amino acids become available for use in feeds, CP content, an expensive component, can be decreased, reducing the amount of nitrogen being excreted in manure. Your nutritionist will have more detail on the potential for ration manipulation to reduce nutrient excretion. Reduced manure nitrogen means less to deal with in the field, and less potential for GHG production.

## Water Management

Water conservation strategies may further improve feeding efficiency while reducing water wastage in your facility, as well. Positive gains can be made with a move to wet/dry feeding systems. Prairie Swine Center has reported a 30 per cent reduction in manure volume using wet/dry systems compared to dry feed and nipple drinkers. Low cost drinker bowls help to reduce wasted water

entering the manure system. Other options include controlling drinker flow rate (pigs may not be able to consume all the water provided), and examining the quantity of water flowing through your barn misting system.

## Greenhouse Gas Reductions

How are these practices going to reduce GHG production? How do they save you money? Efficient climate control uses less electricity and costs less to operate. Feed protein is expensive; amino acids are getting cheaper to buy. Low crude protein content diets will tend to produce less methane during hind-gut fermentation. Minimizing the amount of water wasted in your facility will reduce your manure pumping costs, reduce diesel fuel use, and the potential for nitrous oxide production at manure application time.

## Small Modification for Big Gain?

These management options may seem insignificant to your operation, but put a few of them together and you *may* see significant changes. It is easy to suggest an anaerobic digestion system for every western Canadian hog farm as a way to mitigate GHG production. However, if we fail to consider the source of our production inefficiencies, even digestion technology becomes a symptom treatment, and we do not address the source. Continual gains in efficiency make us sustainable, big efficiency gains can be made with small changes.

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