Swine Innovation Porc

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The Next Game Changer in Feeding Pigs

The opportunity to transform how we feed pigs is what the development of a precision feed system is bringing to the Canadian pork industry. Precision feeding offers the opportunities to (1) reduce feed costs by improving feed and nutrient efficiency (2) reduce environmental footprint by avoiding over feeding of nutrients and (3) enhance food safety through traceability. Fundamentally, precision feeding is an agricultural concept that relies on the existence of in-field variability.

A Revolution in Feeding Management
http://www.swineinnovationporc.ca/resources/Precision%20farming%20for%20website%20AN.pdf

Development of an Innovative Precision Feeding System
http://www.swineinnovationporc.ca/a-10.php

Precision Feeding Cuts Feeding Costs and Reduces Environmental Footprint
http://www.prairieswine.com/precision-feeding-cuts-feeding-costs-and-reduces-environmental-footprints/

What Does Precision Feeding Involve?

Nutrient requirements vary greatly between the pigs of a given population, and for each pig over time following individual patterns. Traditional phase feeding programs are least-cost formulated to meet the nutritional requirements of either the average or best performing pig in a population, resulting in over and under feeding pigs within the same group. Therefore nutrient requirements are no longer a static population characteristic, but a dynamic process that evolves independently for each animal. Precision feeding attempts to feed individual pigs specific diets that are in line with the nutrients they specifically require; therefore reducing waste and saving on costs of expensive feed additives.

Results of trials conducted at the research centre of Agriculture and Agri-Food Canada in Sherbrooke, lead by Dr. Candido Pomar and funded through Swine Innovation Porc indicate pigs (25 to 105 kg) fed with rations adjusted to their daily needs, showed that lysine intake was reduced by 25% without limiting growth or body composition. This approach can lead to reductions of nitrogen intake of 25%, while excretion of this same nutrient can be reduced by 40%. At current feed prices this reduction in lysine represents close to a $6 per hog savings in feed cost.

Based on the design of the facility, producers may be physically limited to the number of phases, including split-sex feeding, they can feed in each area of the barn. Whereas a precision feeding system offers the potential for unlimited phases – utilizing two premixes (formulations) that can be blended to meet the growth requirements of individual pigs. This could result in significant cost savings through a reduction in feed production costs, storage and transportation resulting from handling fewer diets.

Precision feeding also offers several other advantages: the opportunity to reduce nitrogen and phosphorus excretion within the manure potentially reducing land requirements for manure application; the opportunity to reduce labour requirements through automatic monitoring and management of feeds and pigs; opportunity for early identification of diseases and individual treatments resulting in improved herd performance and lower veterinary costs; and the opportunity to evaluate new feeds or co-products on a select group of pigs.

There is a great potential for the use of precision feeding systems within the pork industry. However implementation of precision feeding systems presents, significant challenges which are related to their complexity (e.g., individual estimation of nutrient requirements), reliability (e.g., using electronic devices in farms) and cost effectiveness. These challenges will need to be addressed in the future making it a practical and viable option for producers throughout Canada.

Swine innovation Porc is a corporation of the Canadian Pork Council

Agriculture and Agri-Food Canada / Agriculture et Agroalimentaire Canada

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