Rising Interest in Lower Feed Costs

By Geoff Geddes for Swine Innovation Porc | April 8, 2021

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If you want to make a pork producer's day, you need only utter three words: lower feed costs. Accounting for 65 – 70% of pig production expense, feed continues to eat away at farmer profits. This is especially true for growing-finishing pigs, as they account for about 80% of all feed consumed. As producers continue to grapple with thin margins and challenges to sustainability, the timing is perfect for developing cost-effective feeding strategies through projects such as "Reducing feed cost and the environmental footprint and enhancing global competitiveness of Canadian pork production by increased nutrient utilization of feedstuffs fed to growing-finishing pigs".

"This is a follow up to some previous projects we were involved in that looked at reducing feed cost of growing-finishing pigs using alternative feedstuffs," said Dr. Ruurd Zijlstra, professor in the Department of Agricultural, Food and Nutritional Science at the University of Alberta.

The current study examines how to use enzymes and other technologies to derive more nutrients from those feedstuffs.

“We are hoping to characterize the nutrient value of different feed ingredients that people can use to formulate pig diets more accurately,” said Dr. Martin Nyachoti, professor and department head, Department of Animal Science, Faculty of Agricultural and Food Sciences at the University of Manitoba. “In doing so, we can lower feed cost and reduce the environmental footprint. For example, if we avoid feeding pigs more than they require, there will be less nutrient excretion involved.”

As part of the project, locally available feedstuffs must be considered to match dietary nutrient supply with the pig’s nutrient requirements in an effort to reach the overarching objective: reduction of feed cost per unit of lean growth.

“To achieve the main goal, locally-sourced ingredients need to be characterized, and we must consider opportunities of processing and feed enzymes to enhance nutrient utilization,” said Dr. Zijlstra. “Consequently, nutrient losses into the environment and the need to import nutrients into a production system will be reduced in parallel.”

This reduction is important, because excessive discharge of nitrogen and phosphorus in pig manure poses serious environmental concerns that may hamper competitive pork production. Expanding the matrix of well-characterized feedstuffs to formulate swine feed will enhance flexibility in feed formulation. Furthermore, the use of pigs as an omnivorous species to convert co-products into pork will improve the sustainability of pork production.

Central to this study is a nutritive evaluation of Canadian feed crops and their co-products for swine diets. Canada is the world’s largest exporter and one of the world’s largest producers of legume seeds including pulse grains and soybeans. While soybeans are increasingly grown in Quebec, Ontario and Manitoba, a wide range of pulse grains - including faba bean, field pea, chickpea, lentil, and kidney bean - are grown in Ontario and western Canada.

“In general, pulses contain anti-nutritional factors (ANF) that may reduce the nutritive value of pulses for swine compared to their expected value based on their starch, protein, fiber and fat content,” said Dr. Zijlstra. “Clearly, the relationship between ANF content and nutritive value requires better characterization.”

Initial data from the project that began in 2018 indicates that important differences exist in starch digestibility among feedstuffs, especially for pulse grains. Similarly, differences exist among feedstuffs in fiber fermentability. In addition to pulse grains, short-season corn and small grains - such as oats and triticale, and oilseed and their co-products - are produced in Canada. Research focused on establishing the nutritive value of these feedstuffs for swine is needed to optimize their use in mitigating feed cost.

While strides have been made recently to characterize the nutritional value of Canadian feedstuffs, major gaps remain in North American feedstuff tables, especially for feedstuffs that are unique to Canada.

In spite of COVID-19, the projects are continuing following a brief stoppage. Once life returns to normal, they will target field peas and lentils, then move into oil seed co-products coming from different oil extraction methods. They will also resume analyzing a pile of samples that await their attention.

The unexpected break is frustrating all around, but researchers hope their final results will be worth the wait.

“The greatest benefit from this study will be making nutritionists more comfortable using a wider array of feedstuffs for growing-finishing pigs, which should significantly reduce feed costs,” said Dr. Zijlstra.

According to Dr. Nyachoti, the project should also “help companies better define and market these feedstuffs.”

Of course, the study and its benefits are made possible by financial support from pork producers, something that scientists appreciate at a difficult time for the industry.

Additional information...

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More information about the project *Reducing feed cost and the environmental footprint and enhancing global competitiveness of Canadian pork production by increased nutrient utilization of feedstuffs fed to growing-finishing pigs* may be found on our website at: swineinnovationporc.ca.

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