Innovative feed research finds $4 of extra margin per hog

by Kieran Brett

Funded by ALMA/ACIDF's, Feeding Initiative this project determined that lower-energy feeds could be nutritionally suitable, and more profitable, for grower-finisher hog operations.

When the price of feedgrains rises, there's a corresponding jump in the operating costs faced by Alberta's livestock producers.

An increase in feed cost is especially hard on pork producers. In the fall of 2012, for example, feed accounted for 72% of the cost of growing a pig to market weight. With today's strong prices for feedgrains and stiff competition from bioindustrial companies for supply, it's a challenging business environment for pork producers.

That's why Alberta Agriculture and Rural Development (ARD) scientist Eduardo Beltranena, pictured left, posed two bold questions last year. First, can pork producers reduce the Net Energy content of a feed ration as hogs grow closer to market weight? Second, if so, could they save money by including relatively less high-energy feedstuffs and relatively more barley or even oats in the ration?

"We have been conditioned over many years to believe that U.S. corn-soy-based diets are hotter and better," says Beltranena, ARD's Monogastrics Research Scientist. "There's a perception that in Western Canada, our hogs take longer to reach market weight because there isn't enough energy in barley- or wheat-canola-based diets compared with corn-soy."

What happens when hog feed has less Net Energy?

In 2012, with funding from the Alberta Livestock and Meat Agency/Alberta Crop Industry Development Fund (ACIDF) Feeding Initiative, Beltranena designed an innovative research project to examine this question. Working closely with commercial hog producers, including the Alberta Pig Company of Wainwright and Manitoba's HyLife, Beltranena compared six different feeding regimens.

As a control group, one set of gilts and barrows were fed a constant diet providing 2.5 megacalories (Mcal) of Net Energy (NE) per kg of feed. This relatively high level of Net Energy represented a conventional U.S.-style corn-soy-based diet. Feeding took place from 30 kg of hog weight up to 120 kg, a heavier market weight increasingly being demanded by processors.

For the other five feeding groups, the Net Energy level was reduced by using less wheat and lentil, more barley, wheat distillers grains with solubles (DDGS) and canola. These animals were fed 2.3, 2.35, 2.4 and 2.45 Mcal of NE/kg, tapering down gently or abruptly to as low as 2.1 Mcal of NE/kg before slaughter. At the 2.1 Mcal of NE/kg level, Beltranena introduced some lower-cost oats into the ration.

Upon reaching market weight, pigs were slaughtered and carcasses were weighed and graded to determine lean yield and index, the criteria upon which a producer's revenue depends.

Lower Net Energy increased hog revenue, reduced feed costs

"We thought that feeding 2.3 to 2.4 Mcal of Net Energy per kg, the pigs would do poorly," says Beltranena. "We were a little bit surprised that this did not happen. We found that the pigs could increase feed intake to make up for the reduced feed energy and actually perform better. They consumed more of the lower energy diets and still resulted in a better lean yield."

When Beltranena conducted an economic analysis of the results, he found that the lower Net Energy feeding programs reduced diet cost and cost per kilogram of gain while increasing revenue. All told, this approach increased gross margin over feed cost by $4 per hog.

As Beltranena sees it, this research can be considered excellent news for Alberta's barley and oat producers. The evidence is clear that hog producers could feed more of these low-energy grains in a grower-finisher operation and much less corn and soy, which are imported.

Though more research work is needed into low-energy hog diets, this same idea is being applied to understanding the impact of feeding bioindustrial co-products like DDGS, canola meal and millrun on the profitability of hog production. For his part, Beltranena is delighted to help pork producers to increase their gross margin.

“To a producer in today's market, four dollars per animal is a very significant increase in profitability,” says Beltranena. “Because hogs consume 80% of feed in a farrow-finish operation and 90% of the feed cost relates to energy-yield ingredients, any efficiencies that we can gain will have an immediate impact on producers' bottom line.”

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