Supplemental fat not necessary when canola meal is fed to weanling pigs

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New research from the University of Illinois shows that adding supplemental dietary fat is not necessary to avoid reduced growth performance when replacing soybean meal with canola meal in diets fed to weanling pigs.

Canola meal contains more protein than most plant ingredients, and can be used in place of soybean meal in pig diets. High protein canola meal is produced from canola varieties that have been selectively bred to have thinner seed coats, and contains less fiber than conventional canola meal.

"Recently, it's been reported from several experiments that up to 40 percent canola meal may be used in diets fed to weanling pigs without negatively affecting growth performance," says U of I animal sciences professor Hans Stein. "However, dietary fat was used as a supplement in all of those experiments to maintain constant net energy among diets."

Stein and his team formulated four diets by adding 20 or 30 percent conventional or high protein canola meal to a corn-soybean meal basal diet. The energy content of these diets ranged from 2299 kcal/kg net energy (NE) in the 30 percent canola meal diets to 2402 kcal/kg in the 20 percent high protein canola meal diets.

Four additional diets were identical to the first four diets except that choice white grease was added, so that each diet contained 2452 kcal/kg NE.

Final body weight was not influenced by dietary energy concentration. Pigs fed diets without supplemental fat had greater average daily gain and average daily feed intake than pigs fed the diets with constant net energy. Average daily gain, average daily feed intake, gain to feed ratio, and final body weight were not influenced by concentration of canola meal in the diets.

"The results of this experiment confirmed that it is not necessary to maintain constant NE among diets containing canola meal," Stein says.

Pigs fed diets containing conventional canola meal had greater final body weight, average daily gain, and average daily feed intake than pigs fed diets containing high protein canola meal.

"The high protein canola meal used in this experiment contained 12.6 μmol/g of glucosinolates, compared with only 4.43 μmol/g in the conventional canola meal," Stein says. "Glucosinolates reduce diet palatability, so that may be why the pigs fed high protein canola meal had reduced feed intake and growth performance."

More information: T. F. Pedersen et al, Effects of diet energy concentration and an exogenous carbohydrase on growth performance of weanling pigs fed diets containing canola meal produced from high protein or conventional canola seeds, *Journal of Animal Science* (2016). DOI: 10.2527/jas.2016-0681

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