

# Growth Performance and Carcass Fatty Acid Profile of Pigs Fed Flaxseed Meal

L. Eastwood, P. Kish, J.F. Patience and P. Leterme

Prairie Swine Centre Inc., 2105-8<sup>th</sup> Street East, Saskatoon, SK S7H 5N9;  
*Email:* laura.eastwood@usask.ca

The use of flaxseed and flaxseed meal (FSM) is becoming a growing interest for swine nutritionists due to a high  $\alpha$ -linolenic acid (omega-3) content. The omega-3 fatty acids have been implicated as having many potential benefits to human health and have thus opened a new consumer market for omega-3 enriched products. Flaxseed meal may contain levels up to 12% oil and thus has the potential to create an omega-3 enriched pork product.

This experiment was conducted with two objectives: to determine the effects of FSM (12% oil) inclusion on pig performance, and to determine the effects on the carcass fatty acid profile with a focus on  $\alpha$ -linolenic acid. A total of 200 pigs from 32kg initial weight through to market (115kg) were used to determine the effects of FSM inclusion on average daily gains, feed intakes and feed conversion ratios. Diets were balanced for DE and digestible essential amino acids and contained barley, wheat, peas and soybean meal. FSM was included at levels of 0, 5, 10 and 15% at the expense of barley and soybean meal. Diets were formulated in three phases (32-60kg, 60-85kg, 85-115kg) to better meet the nutritional requirements of the pigs. The average daily gains of pigs on the 0, 5, 10 and 15% FSM treatment groups were 950, 940, 910 and 920 g/d respectively. These differences were not significant ( $P=0.6$ ) and no differences were found in terms of feed intakes ( $P=0.43$ ) or feed conversion ratios ( $P=0.23$ ). At the time of market, six pigs per treatment group were randomly selected for carcass fatty acid analysis. Loin and backfat samples were collected and analyzed via gas chromatography. A 5% inclusion of FSM in the diets of finishing pigs significantly increased the amount of  $\alpha$ -linolenic acid in the backfat ( $P<0.0001$ ), and inclusion of 10% FSM in the diet significantly increased  $\alpha$ -linolenic acid in the loins ( $P<0.0001$ ). No increase in the total fat content of the loin samples was observed ( $P=0.29$ ).

**Implications:** The inclusion of up to 15% flaxseed meal in the diets of finishing pigs will have no effect on growth performance and thus will not affect pig flow through a barn. FSM is able to improve the omega-3 fatty acid content of pork without increasing total fat, providing producers with a product that can potentially be sold in specialized markets and attract a premium price.