

# The effect of feeding crude glycerol on growth performance and nutrient digestibility in weaned pigs

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The biofuel industry competes for grains and oilseeds with the livestock industry; hence, prices for grain and vegetable oil have increased, forcing the livestock industry to look for alternative feedstuffs. Production of one liter of biodiesel may yield 79 g of crude glycerol. The energy values of wheat and glycerol are similar; thus, glycerol might be an attractive feedstuff to replace wheat. The feed value of crude glycerol resulting from canola seed processing for biodiesel in Canada is relatively unknown.

Starting 1 wk post-weaning, 72 weaned pigs housed in 18 pens were fed one of three pelleted wheat-based diets containing 0, 4, or 8% crude glycerol for 28 days. The diets were formulated to 2.28 Mcal/kg net energy (NE) and 5.02 g standardized ileal digestible lysine/Mcal NE. Wheat was replaced by crude glycerol, and synthetic amino acids to maintain amino acid balance. Feeding of crude glycerol linearly increased final body weight ( $P = 0.04$ ). Pigs fed 8% glycerol were 1.11 kg heavier than pigs fed 0% glycerol at day 28. Glycerol inclusion tended to increase average daily gain linearly ( $P = 0.066$ ). Glycerol inclusion quadratically increased average daily feed intake ( $P = 0.037$ ). Glycerol inclusion did not affect feed efficiency ( $P > 0.10$ ).

**Implications:** Increased utilization of biofuel co-products, such as crude glycerol, will allow livestock producers to source alternative feedstuffs and mitigate high grain prices. Crude glycerol may play an important role in meeting the dietary energy needs of pigs as biodiesel production expands. The present study indicates that crude glycerol can be included up to 8% as replacement for wheat in diets for weaned pigs, without reducing growth and feed efficiency. For commercial application, approval by federal authorities should be obtained.