

# Feeding canola meal or soy expeller at two dietary net energy levels to grow-finish hogs

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Soy expeller (SE) is now locally produced in Canada and has greater energy value than imported soybean meal. Canola meal (CM) has relatively low energy value due to high dietary fibre. These feedstuffs therefore offer opportunities to increase or reduce dietary net energy (NE) level at a low cost. The objective of this study was to compare growth and carcass traits of grow-finish barrows and gilts fed low (2.17-2.20 Mcal/kg for grower and finisher, respectively) or high (2.32-2.35 Mcal/kg) NE levels including either SE (15-12.5%) or CM (25-20%) to market weight. In total, 1008 pigs (33 kg) housed in 48 pens of 21 barrows or gilts were fed one of four diets (low SE; high SE; low CM; high CM) in a 2 x 2 x 2 factorial design over 5 growth phases (Grower 1: day 0-12, Grower 2: day 13-33, Grower 3: day 34-53, Finisher 1: day 54-74, Finisher 2: day 75-slaughter). Pen body weight (BW) and feed disappearance (average daily feed intake - ADFI) were measured at day 0, 12, 33, 53, 74, biweekly thereafter, and at slaughter weight (130 kg). Warm carcasses were weighed and graded (Destron).

For the overall trial (day 0-74), although hogs fed low NE diets consumed ( $P<0.001$ ) 72 g/d more feed than those fed high NE diets, NE intake was 350 cal/d less ( $P<0.001$ ). Intake was 209 cal/d greater ( $P<0.001$ ) for hogs fed SE that grew 37 g/d faster ( $P<0.001$ ) than those fed CM. Gain: feed was 14 g/kg lower ( $P<0.001$ ) in hogs fed low vs. high NE diets and 12 g/kg greater ( $P<0.001$ ) in hogs fed SE vs. CM. Dressing was 0.6 %-points lower ( $P<0.001$ ) feeding low vs. high NE diets and feeding CM vs. SE. Carcass weight was 0.8 kg lower ( $P<0.050$ ) for hogs fed low vs. high NE diets; 1.4 kg greater ( $P<0.001$ ) for hogs fed SE vs. CM. Hogs fed SE averaged 2.3 mm larger ( $P<0.001$ ) loin than those fed CM. Dietary energy level or protein source had no effect on backfat depth, pork yield or carcass index. Hogs fed CM stayed 2.6 days longer ( $P<0.001$ ) in the barn than those fed SE. Diet cost averaged \$28.38 per tonne less ( $P<0.001$ ) feeding low vs. high NE diet; \$7.76 per tonne more feeding SE vs. CM. Gross revenue after subtracting feed cost per hog shipped was \$2.75 greater feeding low vs. high NE diet; only \$0.32 greater feeding SE vs. CM.

**Implications:** Feeding lower NE diets to hogs resulted in greater profitability. Abruptly introducing 25% CM in the grower phase diets was a challenge to pigs, which never caught up to those fed more palatable, lower fibre SE.