

Effects of dietary NE value, stocking density, feeder space and sex in grow-finish hogs

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In order to benefit from feeding low net energy (NE) diets, growout hogs must increase feed intake, but this might be difficult in crowded pens. Feeder access or # of feeder spaces/pen may also influence feed intake. The objective of this study was to compare the growth performance and carcass traits of grow-finish barrows and gilts fed low or high NE levels, with 2 or 3 feeder spaces/pen, and housed at 2 stocking densities. In total, 1920 pigs (31 kg), housed in 96 pens with 2 or 3 feeder spaces and 18 or 22 barrows or gilts, were fed either low (2.20 Mcal/kg) or high (2.35 Mcal/kg) NE phase diets in a 2 x 2 x 2 x 2 factorial design over 5 growth phases (Grower 1: d0-20, Grower 2: d21-41, Grower 3: d42-62, Finisher 1: d63-80, Finisher 2: d81-slaughter). Pen BW and feed disappearance (ADFI) were measured for each growth phase, biweekly from start to shipping for slaughter, and at slaughter weight (130 kg). Warm carcasses were weighed and graded (Destron).

For the overall trial, hogs fed low NE diets consumed 111 g/d more feed ($P<0.001$), but gained 9 g/d less ($P<0.10$) than those fed high NE diets. Feed intake was 44 g/d greater ($P<0.10$) for pens with 18 vs. 22 hogs and 62 g/d greater ($P<0.010$) for pens with an extra feeder. Hogs grew 29 g/d more ($P<0.001$) in pens with 18 vs. 22 pigs and 13 g/d more ($P<0.050$) with an extra feeder. G:F was 15 g/kg lower ($P<0.001$) in hogs fed low vs. high NE diets and 4 g/kg greater ($P<0.001$) in pens with 18 vs. 22 hogs. Feeder space did not affect G:F and carcass traits. Hogs fed low vs. high NE diets took 1.7 days longer ($P<0.10$) to reach an 800 g lighter ($P<0.050$) ship weight (wt), 69 g lighter ($P<0.050$) carcass wt. Hogs in 22-pig pens took 2.1 days longer ($P<0.050$) to reach a 1.2 kg lighter ($P<0.010$) ship wt than those in 18-pig pens, but carcass wt was not different. Dietary NE level, stocking density and feeder space had no effect on dressing %, backfat depth, loin depth or pork yield. Gross revenue after subtracting feed cost per hog was \$1.82 greater feeding low vs. high NE diet; \$1.98 greater in 18 vs. 22-pig pens.

Implications: A lack of interactions between NE value, stocking density and feeder space suggests that lower NE diets can be fed to hogs even if they are crowded. Lower NE diets resulted once again in greater profitability. An extra feeder space/pen did not help to boost profitability further.