Evaluation of gender and lysine during the nursery period

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Split-gender feeding in the grow-finish period was an innovative technology of the last decade. However, due to various weaning strategies, it has not been adequately evaluated in the nursery. The objectives of our research were to determine (1) if gilts and barrows responded similarly to increased protein (lysine) after weaning and (2) if the current NRC lysine estimated requirements are adequate. Six experiment stations (MI, MN, KY, OH, KS, SD) utilized 748 pigs (average 6.7 kg BW and 19.4 ± 1.1 d). The pigs were allotted to four treatments in 32 replications (5 to 7 pigs/pen) in a RCB design. Barrows and gilts were penned separately, and complex nursery diets were fed in three phases (d 1 to 7, 8 to 21, 22 to 35). Lysine was provided at NRC estimated requirements or at 0.20% higher (1.35 vs. 1.55%, 1.25 vs. 1.45%, 1.15 vs. 1.35% for the three phases, respectively). Pigs and feed were weighed initially and at the end of each phase. The results demonstrated that gender did not affect ADG, ADFI or GF in any phase or during the 35-d study (453 vs. 452 g/d; 674 vs. 674 g/d; 0.67 vs. 0.67 for barrows and gilts, respectively). The higher lysine concentration improved ADG in phase 3 (627 vs. 588 g; $P \leq 0.001$) and overall (464 vs. 440 g; $P \leq 0.001$) more than when pigs were fed the NRC lysine estimated requirements. Increased lysine in the diet increased ADFI in phase 2 ($P \leq 0.05$), but not in the other phases or for the overall 35-d period. Gain:feed was improved by feeding higher lysine concentrations in phase 2 (0.78 vs. 0.70; $P \leq 0.001$) and in the overall 35-d experiment (0.69 vs. 0.65; $P \leq 0.001$). There was no evidence of a gender x treatment interaction ($P = 0.33$) for any trait during any of the phases or overall. Our results demonstrate that increasing lysine concentrations in nursery diets results in improved pig performance of both genders, and there appears to be no benefit in split-gender feeding during the nursery phase.

KEYWORDS
Lysine
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