Effect of Feeding Wheat Millrun on Diet Nutrient Digestibility and Growth Performance in Starter Pigs

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Wheat by-products could be an alternative feedstuff for sustainable pork production. To explore, effects of substitution of soybean meal (SBM) and wheat with increasing levels of wheat millrun on diet nutrient digestibility and growth performance of starter pigs were evaluated. Five pelleted wheat-based diets containing 0%, 5%, 10%, 15% or 20% wheat millrun in substitution for up to 15% SBM and 5% wheat were fed to 160 weaned pigs for 3 weeks (day 1–21) starting 2 weeks after weaning at 21 days of age. Diets were balanced for net energy (NE) using canola oil and for amino acids using crystalline amino acids to contain 2.41 Mcal NE/kg and 4.39 g standardized ileal digestible (SID) Lys/Mcal NE. Increasing inclusion of wheat millrun to 20% linearly reduced ($P < 0.001$) diet apparent total tract digestibility (ATTD) of dry matter by 0.040 and ATTD of gross energy by 0.029, but did not affect ATTD of crude protein. The calculated NE values of diets were linearly increased ($P < 0.05$) by 0.02 Mcal/ kg with increasing inclusion of wheat millrun, suggesting NE value of wheat millrun ingredient was underestimated for weaned pigs. Increasing dietary inclusion of wheat millrun tended to linearly reduce ($P = 0.07$) average daily feed intake (ADFI) by 65 g/d for day 1–7 and linearly increased ($P < 0.05$) feed efficiency (G:F) by 0.10 for day 8–14. Overall (day 1–21), increasing dietary inclusion of wheat millrun did not affect ADFI, ADG or G:F. In conclusion, up to 20% wheat millrun can replace 15% SBM and 5% wheat in diets formulated to equal NE and SID Lys and fed to nursery pigs starting 2 weeks after weaning without detrimental effects on growth performance.

Implications: Wheat by-products such as fibrous wheat millrun can serve as alternative feed ingredients for starter pigs to replace expensive soybean meal to reduce feed cost, providing NE and SID Lys were used to formulate the diets.