

Effects of corn dried distillers grains with solubles (DDGS) on diet digestibility and slurry output from gestating sows

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An experiment was conducted to evaluate the effects of feeding diets containing high levels of DDGS to sows for 3 reproductive cycles on nutrient digestibility, and quantity and composition of slurry output. A total of 40 sows at parity 0 or 1 were assigned randomly to 1 of 2 dietary treatments and maintained on these treatments for up to 3 reproductive cycles. Sows were fed either a fortified corn-soybean meal control diet (C) during gestation and lactation, or a diet containing 40% DDGS in gestation and 20% DDGS in lactation (D). During wk 6 to 10 of gestation, total collection of feces and urine was performed for 3 d on sows in their first or third reproductive cycle from C (n = 9 vs. n = 10, respectively) and D (n = 10 vs. n = 11, respectively) to determine apparent DM digestibility of diets. Fecal and urinary subsamples from each sow were mixed in the same proportion as excreted to simulate slurry production, and analyzed for N, P, and K content. There were no interactions between diet and reproductive cycle. Neither diet nor reproductive cycle affected ADFI of sows. Feeding D decreased ($P < 0.05$) diet DM digestibility compared to C (76.7% vs. 82.9%, respectively; SE = 3.34). Sows fed D excreted more ($P < 0.05$) fresh feces than sows fed C (755 vs. 561 g/d, respectively; SE = 93.12). Neither fecal moisture content (39.4% vs. 37.9%; SE = 1.47) nor volume of slurry (4.0 vs. 4.5 L; SE = 0.90) excreted daily were different between sows fed C or D, respectively. Quantity of N (35.0 vs. 34.4 kg; SE = 3.76) and P (28.4 vs. 29.2 kg; SE = 4.23) per 3,800 L of excreted slurry was not different between C and D, respectively. Amount of K excreted per 3,800 L of slurry was not affected by diet or reproductive cycle. In conclusion, feeding diets containing 40% DDGS to gestating sows decreased apparent DM digestibility of the diet and increased the fecal output but did not affect the total volume of slurry produced or N, P, or K output in slurry.

Keywords: DDGS, sows, diet digestibility, slurry