

PSIX-14 Evaluation of high-protein distillers dried grains on growth performance and carcass characteristics of growing-finishing pigs.

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A total of 1,890 growing-finishing pigs (PIC; 359 × 1050; initially 27.1 kg) were used in a 124-d growth trial to compare the effects of pigs fed diets with high-protein dried distillers grains (HPDDG) or conventional dried distillers grains with solubles (DDGS) on growth performance and carcass characteristics. Conventional DDGS contained 29.0% CP, 0.48% standardized ileal digestible (SID) Lys and 9.2% oil, whereas HPDDG contained 39.3% CP, 0.68% SID Lys and 11.1% oil. All diets were formulated on an equal SID Lys-basis with diets containing HPDDG having less soybean meal than diets with conventional DDGS. There were 27 pigs per pen and 14 pens per treatment. Treatments were arranged in a 2×2 + 1 factorial with main effects of DDG source (conventional DDGS or HPDDG) and level (15 or 30%). A corn-soybean meal-based diet served as the control and allowed linear and quadratic level effects to be determined within each DDG source. Pens were assigned to treatments in a randomized complete block design with initial weight as the blocking factor. Data were analyzed using lme4 package in R (version 3.5.2) with pen as experimental unit. Overall, there were no differences observed in ADG between pigs fed either DDG source. Pigs fed HPDDG had decreased (P < 0.001) ADFI and increased (P < 0.001) G:F compared with those fed conventional DDGS. Increasing either conventional DDGS or HPDDG decreased carcass yield and HCW (linear, P < 0.02); however, there were no differences between pigs fed HPDDG or conventional DDGS. Iodine value (IV) was greater (P < 0.001) in pigs fed HPDDG than conventional DDGS, and IV increased (linear, P < 0.02) with increasing DDG. These data suggest that pigs fed HPDDG had greater G:F and IV compared with pigs fed conventional DDGS, probably due to the difference in oil content.

Table 1. Effect of DDG source and level on growth performance and carcass characteristics of growing-finishing pigs¹

Item	Control (0%)	Conventional DDGS		HPDDG		SEM
		15%	30%	15%	30%	
ADG, kg	0.88	0.86	0.87	0.87	0.86	0.007
ADFI, kg ^{2,3}	2.26	2.24	2.26	2.21	2.14	0.03
G:F ^{2,3}	0.388	0.382	0.384	0.394	0.404	0.004
Carcass characteristics						
HCW, kg ⁴	94.9	92.5	92.1	94.0	92.0	1.50
Carcass yield, % ⁴	73.1	72.6	72.1	72.9	71.9	0.32
Iodine value, g/100g ^{2,4}	64.8	69.0	73.7	72.9	80.0	0.76

¹ADG = average daily gain. ADFI = average daily feed intake. G:F = gain-to-feed ratio. HCW = hot carcass weight.

²Main effect of DDG source, P < 0.001.

³Linear effect of HPDDG, P < 0.001.

⁴Linear effect of DDG source, P < 0.02.

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