

Effects of diet change and digestibility of corn distillers dried grains with solubles (DDGS) on growth performance and carcass characteristics of growing-finishing pigs

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Efficacy of feeding diets containing 40% DDGS to growing-finishing pigs and the accuracy of Standardized Ileal Digestible (SID) AA estimates for DDGS sources when fed continuously or intermittently throughout the growing-finishing phase has not been studied. Crossbred pigs (n = 324, BW = 33.2 ± 3.0 kg) were blocked by BW, and pens within a block were assigned randomly to 1 of 6 dietary treatments (6 pens/treatment; 9 pigs/pen). Diets were formulated on a SID AA basis. Treatments included: a corn-soybean meal control (CON), CON plus 40% low AA digestibility DDGS (Lo), CON plus 40% high AA digestibility DDGS (Hi), alternating between Lo and CON (Lo-CON), Hi and CON (Hi-CON), and Hi and Lo (Hi-Lo). Diet switches coincided with phase changes. Pigs were harvested on a single date after 98 days on feed. Average daily gain was reduced (P < 0.05) for pigs fed Lo and Hi-Lo and tended (P < 0.10) to be reduced in Hi compared to CON. Pigs fed Lo tended to have decreased ADFI compared to CON (P < 0.10). Daily lean gain was reduced for Lo and Hi-Lo pigs compared to CON (P < 0.05). Dressing percentage was lower for Lo and Hi-Lo pigs compared to CON (P < 0.05). Pigs fed Lo-CON and Hi-CON were not affected by treatment. Results from this study suggest that pigs continuously fed a diet containing 40% low digestible AA DDGS experience reduced ADG, ADFI and lean gain compared to pigs continuously or intermittently consuming a control diet. However, regardless of the predicted digestible AA of the DDGS source, the periodic inclusion and removal of 40% DDGS from diets did not adversely affect growth performance or carcass characteristics.

Table 1. Treatment effect on pig performance

Trait	CON	Lo-CON	Hi-CON	Lo	Hi	Hi-Lo	SEM
Final BW, kg	121.5 ^{ab,x}	121.6 ^{ab,x}	123.0 ^a	115.9 ^c	118.3 ^{bc,y}	117.8 ^c	1.1
ADG, kg	0.92 ^{ab,x}	0.92 ^{ab,x}	0.93 ^a	0.86 ^c	0.89 ^{bc,y}	0.88 ^c	0.0001
ADFI, kg	2.70 ^x	2.72 ^a	2.78 ^a	2.57 ^{b,y}	2.73	2.68	0.002
Lean gain/d, g	395 ^{ab}	396 ^{ab}	404 ^a	362 ^d	383 ^{bc}	367 ^{cd}	34.1
Carcass lean, %	51.8	52.1	52.1	51.3	52.3	50.8	0.326
Dressing percent	76.2 ^a	75.8 ^{ab}	76.0 ^{ab,x}	74.7 ^c	75.1 ^{bc,y}	74.6 ^c	0.076

^{abcd} Means with unlike superscripts differ (P < 0.05)

^{xy} Means with unlike superscripts tend to differ (P < 0.10)

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