

EFFECTS OF LOW SOLUBLES DISTILLERS GRAINS IN DIETS FOR FEEDLOT CATTLE

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When compared to conventional dried distillers grains plus solubles (**DDGS**), the lower concentration of polyunsaturated fatty acids present in low solubles dried distillers grains (**LSDG**) may reduce energy content of cattle diets and alter feedlot performance and carcass characteristics. The objective of this experiment was to evaluate effects of partially replacing rolled corn in traditional corn-based finishing diets with DDGS or LSDG on feedlot cattle performance and carcass characteristics. Angus steers ($n = 48$) averaging 699 ± 18 lb initial BW were assigned randomly to one of three finishing diets (DM-basis): 1) 82.5% rolled corn, 12.1% CP, 55% starch, 3.55% fat, 0.15% S, and 0.585 Mcal/lb NEg, (**CON**); 2) 35% DDGS, 51% rolled corn, 17.1% CP, 34% starch, 5.96% fat, 0.42% S, and 0.583 Mcal/lb NEg, (**DDGS**); and 3) 35% LSDG, 51% rolled corn, 22.0% CP, 36% starch, 3.53% fat, 0.37% S, and 0.572 Mcal/lb NEg, (**LSDG**). All diets contained 12% haylage and were formulated to supply 300 mg monensin sodium/steer daily. Steers were fed for *ad libitum* intake once daily at 0700 using individual Calan gates. Amount of feed offered was recorded daily, and feed refusals were collected weekly. Steers were withheld from feed for 16-h prior to initial BW measurement, and a 4% pencil shrink was applied to all 28-d interim BW. On d -11 and 56, respectively, all steers received initial and terminal implants (Synovex[®] Choice). Following 118 days on feed, steers were harvested at a commercial abattoir where carcass characteristics were collected by University of Minnesota personnel. Hot carcass weight was divided by a common dressing percentage (60.9%) to calculate adjusted final BW. Carcass-adjusted final BW was similar ($P = 0.54$) among treatments and averaged 1219, 1217, and 1190 ± 20 lb for CON, DDGS, and LSDG, respectively. Overall DMI tended to be greater ($P = 0.08$) for CON compared to LSDG (22.7 vs. 21.5 ± 0.4 lb/d) but was similar ($P = 0.58$) to DDGS (22.4 lb/d). However, DMI from d 28 through finishing was greater ($P < 0.01$) for CON than LSDG (23.9 vs. 21.9 ± 0.4 lb/d) but was similar ($P = 0.16$) to DDGS (23.0 lb/d). Carcass-adjusted ADG was similar ($P = 0.49$) and averaged 4.37, 4.38, and 4.22 ± 0.11 lb for CON, DDGS, and LSDG. Carcass-adjusted feed:gain was not different ($P = 0.59$) and averaged 5.267, 5.130, and 5.107 ± 0.119 for CON, DDGS, and LSDG. Hot carcass weights were similar ($P = 0.54$) and were 743, 741, and 725 ± 12 lb for CON, DDGS, and LSDG. Yield grade, 12th rib backfat depth, and percent KPH fat were similar ($P \geq 0.18$) among treatments. Longissimus muscle area was similar ($P = 0.57$) and averaged 12.1 ± 0.2 sq. in. across treatments. Marbling score (where 500 = Small⁰⁰, 600 = Modest⁰⁰) was not different ($P = 0.26$) and averaged 561, 594, and 609 ± 22 for CON, DDGS, and LSDG. Finishing beef cattle on diets containing low solubles dried distillers grains tended to reduce overall daily feed intake; however, this co-product may successfully replace up to 35% of corn grain in feedlot diets as other live performance and carcass variables were not affected.