

**Effects of feeding varying concentrations of dry distillers grains with solubles to finishing steers on performance and odorant emissions.** C. Benson\*, K. Tjardes, and C. Wright, *South Dakota State University, Brookings.*

Distillers grains are becoming more prevalent as a feedstuff, with dried distillers grains plus solubles (DDGS) being the predominant form. This trial was designed to determine if feeding increasing concentrations of DDGS affects finishing steer performance and odor emissions. One hundred ninety-nine steers (wt = 386 ± 8 kg) were blocked by source, stratified by weight, and allotted to 16 dirt floor pens (14.7 m x 34.7 m). The pens were then randomly assigned to one of four dietary treatments. The control diet (CON) contained 82% cracked corn, 10% alfalfa hay, 4% molasses, 3.2% supplement, and 0.8% urea. In the remaining three diets, all of the urea and some of the cracked corn was removed and replaced with DDGS at 15% (D15), 25% (D25), and 35% (D35) of the diet DM. The diets were balanced to provide similar levels of CP for CON and D15 (13.2 and 13.3% CP, respectively) and a stepwise increase in CP for D25 and D35 (15.4 and 17.6%, respectively). Weights were recorded prior to feeding on d 0 and 105, and every intermediate 28 d. Over the entire trial, DMI was greater ( $P < .05$ ) for D25 compared to all other treatments (10.77, 10.94, 11.25, and 10.91 kg/d for CON, D15, D25, and D35, respectively). There were no differences in final weight between treatments, but D35 steers tended to have a higher dressing percent ( $P < 0.10$ ), which resulted in D35 having greater carcass weights ( $P < 0.05$ ; 358.9, 362.8, 359.5, and 375.2 kg for CON, D15, D25, and D35, respectively). No differences were detected between treatments for marbling, backfat, ribeye area, or yield grade. Air samples were collected via wind tunnel at 3 locations per pen over a 3-d period prior to animal introduction and on d 78-80. Hydrogen sulfide levels were greatest ( $P < 0.05$ ) in pens containing cattle consuming the D35 treatment compared pens with cattle consuming the remaining treatments. Odor was analyzed using dynamic, triangular, forced choice olfactometry. No differences in odor characteristics were detected between treatments.

**Key Words:** Distillers Grains, Hydrogen Sulfide, Odor

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