

Interactions of yeast culture and dried distillers grains plus solubles in diets of lactating dairy cows.

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Sixteen multiparous Holstein cows (127 ± 52 DIM) were used in four replicated 4×4 Latin squares with 4-wk periods to evaluate interactions of dietary yeast culture (YC, Diamond V XPC™ Yeast Culture, Diamond V Mills, Cedar Rapids, IA) and dried distillers grains plus solubles (DDGS) on production of milk and milk components when fed diets containing low amounts of forage fiber. Treatments were a 2×2 factorial arrangement of: 1) no YC with no DDGS (NYND); 2) no YC with DDGS at 20% of diet DM (NYD); 3) 14 g/d YC with no DDGS (YND); and 4) 14 g/d of YC with DDGS (YD) at 20% of diet DM. Diets consisted of corn silage (27%), alfalfa hay (18%), and a concentrate mix (55%) on a DM basis. Diets were isocaloric and isonitrogenous. Forage NDF was calculated to be 19.3% of diet DM. Dry matter intake (26.0 kg/d) was similar for all diets. Milk production (42.5, 41.6, 44.8, and 42.3 kg/d for NYND, NYD, YND, and YD, respectively) increased ($P = 0.05$) with the addition of YC and decreased ($P = 0.04$) in diets containing DDGS. Milk fat percentage (3.23, 3.07, 3.21, and 3.00%) and yield (1.38, 1.26, 1.44, and 1.28 kg/d) were decreased ($P < 0.05$) by the addition of DDGS but were not affected by YC. Milk true protein concentrations (3.05, 3.04, 3.02, and 3.08%) were similar for all diets; however, the addition of YC increased ($P = 0.05$) yield of true protein (1.29, 1.26, 1.35, and 1.30 kg/d). Concentrations of MUN (11.2, 10.9, 10.7, and 12.4 mg/dl) increased ($P < 0.01$ for YC \times DG) when both YC and DDGS were included in the diet. The DDGS decreased ($P = 0.02$) yields of energycorrected milk (ECM; 41.1, 39.1, 43.0, and 39.7 kg/d) and tended to decrease ($P = 0.08$) feed efficiency (1.56, 1.53, 1.66, and 1.53 kg ECM/kg DMI). Body weights and condition scores were not affected by treatments. Results suggest that, in diets containing minimal amounts of forage fiber, DDGS at 20% of diet DM will contribute to milk fat depression. The addition of YC did improve milk and milk protein yields but did not prevent milk fat depression caused by DDGS. Production responses to YC were similar when cows were fed DDGS or non-DDGS diets.

Key Words: Yeast Culture, Distillers Grains, Lactating Cows