

**The effect of replacing corn dry distillers grains with triticale dry distillers grains on milk yield and composition of lactating dairy cows.**

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The objective of this study was to compare milk yield and composition of dairy cows fed corn dry distillers grains with solubles (CDDGS) or triticale dry distillers grains with solubles (TDDGS) as a protein supplement. Thirty lactating Holstein cows ( $128 \pm 57$  DIM) were used in a crossover design with 14-d periods. Cows were assigned to one of two diets containing either CDDGS or TDDGS, at 20% of dietary DM, with barley silage, alfalfa silage, dry rolled barley, and the premix of minerals and vitamins. Both experimental diets were formulated to contain 16.7% crude protein and 22.0% forage neutral detergent fiber. Dry matter intake and milk yield were not affected by treatment, and averaged 23.2 and 31.5 kg/d, respectively. However, cows fed TDDGS decreased concentration of milk urea nitrogen compared to those fed CDDGS (15.7 vs. 16.6 mg/dl;  $P < 0.01$ ), indicating that less N might be wasted in cows fed TDDGS. There were interactions between parity and treatment for 4%-FCM yield, milk fat concentration, and milk fat yield ( $P < 0.05$ ). Multiparous cows fed TDDGS had greater 4%-FCM yield (32.8 vs. 26.9 kg/d) and milk fat concentration (3.81 vs. 3.46%) compared with primiparous cows fed TDDGS although there were no differences for cows fed CDDGS. In addition, multiparous cows fed TDDGS had greater milk fat yield compared with primiparous cows fed CDDGS or TDDGS (1.29 vs. 1.08 or 1.01 kg/d). These data indicate that high producing dairy cows may benefit more from TDDGS than lower producing cows. Consistent with this speculation, the response in milk yield to TDDGS relative to CDDGS in individual cows was positively related to their pretrial milk yield ( $P = 0.03$ ). The results of this study demonstrate that TDDGS can replace CDDGS without negative impacts on lactation performance, however, its effects on the efficiency of N utilization is of further research interests.

**Key Words:** Triticale Distillers Grain, Corn Distillers Grain, Milk Production