

The effect of feeding dried distillers grains plus solubles to lactating dairy cows on milk production and excretion of urinary purine derivatives.

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The objective of this experiment was to evaluate the effects of feeding dried distillers grains plus solubles (DDGS) on lactational performance of Holstein dairy cows. In addition, we evaluated urinary excretion of purine derivatives (PD) as an indirect estimator of ruminal microbial crude protein production (MCP). Twenty one multiparous and thirteen primiparous mid-to-late lactation cows averaging 178 ± 36 DIM and 651 ± 65 kg BW were randomly assigned to one of two diets in a three period cross-over design. During each of the 21-d periods, cows were offered one of two diets which were chemically similar but differed by the rate of inclusion of DDGS. Dietary treatments were either control (no DDGS) or 30% of diet DM as DDGS. Dried distillers grains plus solubles replaced a portion of dietary forages and concentrates. Diets were formulated to contain similar amounts of CP, NDF, and energy. Dry matter intake was not different ($P = 0.19$) between treatments (22.8 and 24.0 ± 0.65 kg/d) nor was 3.5% FCM (34.4 and 34.9 ± 1.24 kg/d; $P = 0.69$). Percentages of milk fat and true protein did not differ between treatments averaging $3.67 \pm 0.07\%$ and $2.99 \pm 0.03\%$. The ratio of PD to creatinine was not affected ($P = 0.83$) by DDGS feeding (2.43 and 2.45 ± 0.07). Similarly, allantoin to creatinine ratios were not different ($P = 0.57$) between diets (2.23 and 2.28 ± 0.07 respectively). Estimated MCP was not affected ($P = 0.80$) by DDGS addition (1636 and 1656 ± 58 g/d). In conclusion, purine excretion and estimates of rumen microbial crude protein production were not affected by feeding higher amounts of DDGS. Production results suggest that dairy diets may be formulated to contain DDGS at 30% of the diet DM and maintain acceptable DMI, milk production and milk composition.

Key Words: Dairy Cow, Distillers Grains Plus Solubles, Urinary Purine Derivatives