

The Effect of Replacing Dietary Beet Pulp with Wheat Treated with Sodium Hydroxide, Ground Wheat, or Ground Corn in Lactating Cows

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This experiment examined the effect of complete diets composed of 60% grass silage and 40% concentrate based mainly on beet pulp, ground wheat, wheat treated with NaOH, or ground corn on milk production and ruminal fermentation of dairy cows. Milk production and fat yield were 19.8, 20.7, 20.1, and 21.2 kg/d and 0.71, 0.76, 0.72, and 0.78 kg/d, respectively (18 cows per treatment). Cows fed the diet based on ground corn had higher milk production and fat yield, but lower milk protein concentration, than did cows fed the diet based on beet pulp. Cows fed the diet based on ground corn also had higher fat yields than did cows fed the diet based on wheat treated with NaOH. Cows fed the diet based on ground wheat had lower ruminal pH than did cows fed the diet based on beet pulp (6.34 vs. 6.59) and higher ruminal NH₃ concentrations (6.2 vs. 5.2 mmol/L) than did cows fed the diet based on ground corn. These results showed little difference in milk production based on wheat processing method and little advantage to replacing beet pulp with either wheat type in a high forage diet. However, milk production and fat yield were increased by replacing beet pulp with ground corn.

Key Words: lactating cows • wheat treated with sodium • hydroxide • dietary starch

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