

Effect of unsaturated fatty acid supplementation on digestion, metabolism and nutrient balance in dairy cows during the transition period and early lactation

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Abstract: The objective of this study was to evaluate the influence of unsaturated fatty acids in diets for dairy cows during the transition period and early lactation on intake, digestion and nutrient balance. Thirty-six multiparous and pregnant Holstein cows were randomly distributed to receive one of the experimental diets in the period from 35 days before the expected date of parturition to 84 days post-partum. Diets were fed as a total mixed ration and were as follows: control (C); soybean oil (SO), based on inclusion of 30 g/kg (DM basis); and calcium salts of unsaturated fatty acids (CS), based on inclusion of 30 g/kg (DM basis). Pre-partum dry matter intakes (DMI) of cows fed C, SO and CS were 11.9, 9.5 and 9.6 kg/d, respectively. Postpartum DMI was affected by experimental diets (18.5, 15.0 and 17.4 kg/d for C, SO and CS, respectively). The energy balance in the transition period of animals fed CS was 4.41 Mcal/d higher than cows fed SO and 1.3 Mcal/d higher than cows fed C. Supplementing cows with unsaturated fatty acid sources is a strategy for dairy cows in the transition period.

Key Words: dry matter intake, energy balance, ruminant digestion