

Effect of Feeding Varying Levels of Dietary Cation-Anion Difference on the Performance of Transition Sahiwal Cattle

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Abstract : Dietary cation anion difference (DCAD) is an important aspect of dairy nutrition, especially in the transition period. Sahiwal cattle is the highest milk producing breed among Zebu cattle. We planned first study on transition Sahiwal cattle to determine the effects of feeding varying levels of negative DCAD. For this purpose, twenty pregnant cows (at the 250th day of gestation) were selected and randomly divided into 5 groups comprising four animals each. Five iso-caloric (2100 Kcal) and iso-nitrogenous (12%) diets were formulated and each diet was allotted to each group. The animals received positive DCAD diet served as control. Diets were supplemented with NutriCAB® to attain 0, -15, -30 and -45 DCAD levels. Experimental diets were fed at ad-libitum upto parturition and data regarding feed intake were recorded on daily. Post-partum incidence of milk fever, dystocia, retention of placenta (RP), mastitis as well as milk production, milk fat percentage and serum Ca levels were recorded. Urine and blood pH were determined weekly during the last month of pregnancy. Results showed that prepartum feed intake and blood pH were not affected ($P > 0.05$), while urine pH was significantly reduced ($P < 0.05$) by lowering DCAD levels. Post parturient blood calcium level linearly increased ($P < 0.05$) with decreasing DCAD. Pre-partum negative DCAD feeding had no effect ($P > 0.05$) on post-parturient milk production and fat percentage. However, parturient related problems decreased with decreasing DCAD feeding. It was concluded that negative DCAD feeding raised serum calcium level and reduced the incidence of post-parturient problems in Sahiwal cattle.

Keywords : dairy cattle, transition, metabolic diseases, reproductive disorders, incidence

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