Abstract

The objective of the study was to evaluate the effect of supplementation with starch or fibre-based concentrates on blood metabolites in dairy cows fed spring pasture. Twenty seven lactating Friesian cows producing 30.0 L/day were assigned to completely randomized design for 42 days. The treatments included: Grazing alone (TG), grazing plus 6 kg/d of sugar beet pulp-based concentrate (TA) and grazing plus 6 kg/d of cereal-based concentrate (TF). The cows were supplemented twice a day and managed under a strip grazing system on pasture consisting mainly of perennial ryegrass. Six coccigeal blood samples from each cow were obtained for seven consecutive days after the morning milking in vacuum tubes containing sodium heparin and sodium fluoride. Plasma was separated after centrifugation, frozen at -25ºC and analyzed for ßOH-butyrate, glucose, urea and albumin. The unsupplemented group had a lower glycaemia and a higher ßOH-butyrate concentrations than TA and TF (P < 0.05). It was observed a prevalence of 44% sub clinical ketosis in TP group, and no cases in TA or TF. The glycaemia were higher in TA (P < 0.05). The plasmatic urea concentrations were lower (P < 0.05) in TS and higher in TG (P < 0.05). Among the treatments not differences were found for the plasmatic albumin concentrations (P>0.05). From the results it can be concluded that supplementation with starch concentrate advantage the energetic balance in lactating dairy cows at pasture. The supplementation with concentrate based on starch or fibre decreased the risk of sub clinical ketosis, and increase the utilization of pasture nitrogen reducing plasma urea concentrations.

Keywords

Cows, grazing, supplementation, metabolism.