Abstract
Five crossbreed cows (Bos indicus x B. taurus) fitted with flexible rumen cannula, and average weight of 362 ± 28.71 kg, were used to evaluate the effect of energy supplementation and changes in feeding pattern, based on synchronization index of energy and protein (CFP), on microbial protein supply (MPS). The treatments were: I. Two energy sources (sugarcane molasses and maize) (E) and a control treatment without energy supplementation (NE); 2. Two feeding times (morning and evening). The experiment was conducted in a 5 x 4 incomplete Latin square with a 2 x 3 factorial arrangement. The animals had Pennisetum purpureum (chopped) as basal diet and foliage mix of Brosimum alicastrum and Leucaena leucocephala as supplement. There were not significant (P > 0.05) differences on basal diet intake (5.54 kg MS/an/d) among treatments. The potentially degradable DM (33.7 %) and OM (36.4 %) fractions were not affected by energy supplementation, but degradation rate (DM) was (P < 0.05) lower with maize treatments (0.036/h) than molasses (0.043/h). CFP did not affect DM and OM basal diet degradation; though OM degradation rate was (P < 0.05) lower in morning’s treatments (0.046/h) than evening’s (0.036/h). pH means were above 7 in all treatments; NE (7.35) showed (P < 0.05) higher pH values. Ammonia concentrations were within the range between 20 to 50 mg/l. V FA post-suplement were higher (P < 0.05) in molasses treatments (159.86 mM/l) than in maize’s (97.86 mM/l). MPS was (P < 0.05) increased by E treatments (43 g/d) compared with NE (26 g/d), but molasses treatments resulted in a higher (P < 0.05) MPS (51.45 g/d) than maize’s (33.67 g/d). Also molasses treatments were (P < 0.05) more efficient (15.82 g MN/kg OMAFR) than maize’s (9.64 g MN/kg OMAFR). The results showed that CFP did not affect (P > 0.05) neither MPS nor efficiencies of MPS (SPME). Energy supplementation increased MPS, especially molasses treatment, which also improved MPSE.

Keywords
Energy supplementation, feeding pattern, foliage mixture, maize, molasses, supply microbial protein, synchronization.