

Summary

At La Romelia experiment station of the Centro Nacional de Investigaciones de Café, CENICAFE, located in Chinchiná in the coffee-growing zone of Colombia, the effect of various management techniques on the production and composition of milk from first- and second-parturition Brown Swiss cows was studied. Cows were from 3 to 4 years old, weighed between 443 and 455 kg with less than 59 days lactation. Cows grazed on parcels of pangola grass (*Digitaria decumbens*) measuring 6400 m² for periods of 17 days with 34 days rest.

Treatments consisted of: 1) annual application of 238.5 kg N/ha to the pasture; 2) annual application of 238.5 kg N/ha to the pasture along with daily 2 hour accessibility by the animals to a protein bank consisting of various ecotypes of *Leucaena leucocephala*, equivalent in size to 30% of the parcel area; 3) annual application of 238.5 kg N/ha to the pasture along with daily supplementation of 6 kg of commercial concentrate per animal; and 4) annual application of 48.6 kg N/ha to the pasture. The treatments were disposed in a random block design. Results of milk production were analyzed taking each of the six animals in the experiment as a repetition.

At the end of the common lactation period, significant differences were found in accumulated milk production between those animals having access to highly fertilized pastures and receiving concentrate (2249 kg of milk in 263 days) and those animals which had access to fertilized pastures without supplementation (1435 kg of milk in 228 days).

Animals with access to the *L. leucocephala* protein bank produced an average of 1920 kg of milk in 248 days, a production higher than that obtained with animals grazed on N fertilized pastures but inferior to, although insignificantly, to that of animals on concentrate. Animals on pastures fertilized with the highest rate of N (238.5 kg/ha) had an average lactation period of 225 days and showed daily gains of 270 g; animals with access to the *Leucaena* protein bank had an average lactation period of 248 days and gained 150 g per day; animals on low-fertilized pastures (48.6 kg N/ha) had a lactation period of 176 days and lost weight making it necessary to remove them from the study. Treatments did not affect milk composition.

Results of this study indicate that it is possible to increase milk production in the Colombian coffee-

growing region by fertilizing *D. decumbens* pastures and supplementing *Leucaena* in the diets of milk-producing cows with high protein requirements. Agronomic evaluations showed that *L. leucocephala* CIAT 17481, 17482, 17491, and 17492 were the best-adapted ecotypes to the zone.