

## Summary

An experiment was conducted in an Ultisol of the CIAT-Quilichao experiment station, Cauca, Colombia, to determine the nutritive value of four promising tropical forage legumes from CIAT germplasm bank: *Centrosema macrocarpum* 5065, *Stylosanthes guianensis* "tardío" 1283 (var. *pauciflora*), *Stylosanthes macrocephala* 1643, and *Zornia brasiliensis* 7485. Physiochemical characteristics were also determined. The station is located between longitude 3°6'N and latitude 76°6'W; 990 m.a.s.l, with an average temperature of 24°C, and annual rainfall of 1772 mm.

A randomized complete block design with four treatments and four replications was used for the feeding trial, totalling 16 African sheep ( $11.28 \pm 0.8 \text{ kg} \cdot 75$ ) as experimental units. Using analysis of variance and Duncan's multiple range test each legume was analyzed (on a percentage basis) for composition of plant parts offered; crude protein; neutral detergent fiber (NDF); acid detergent fiber (ADF); lignin; apparent dry matter (DM) digestibility; apparent nitrogen (N) digestibility; ADF, NDF digestibility; DM intake ( $\text{g DM}/\text{kg} \cdot 75$ ); *in vitro* dry matter disappearance (IVDMD), and digestible energy (Mcal/kg).

Significant differences were found in legume quality. Specifically *C. macrocarpum* 5065 was found to have a very high nutritive value, measured both in terms of protein concentration and digestible nutrient intake. *S. macrocephala* 1643 had high intake potential, despite its low leaf:stem ratio at maturity as a result of the considerable proportion of inflorescences with a high nutritive value and intake. *S. guianensis* var. *pauciflora* had a low voluntary intake despite its relatively good leaf:stem ratio at maturity, apparently because of its high leaf viscosity. *Z. brasiliensis* 7485 had an extremely low intake, which is associated with digestive disorders caused by alkaloids. Thereby, this legume is unsuitable as a forage plant.