

Summary

An experiment was conducted at CIAT's experimental station in Quilichao, Colombia, to determine the animal production potential of the pasture *Brachiaria dictyoneura-Desmodium ovalifolium* under three stocking rates in a rotational system, and to investigate which pasture attributes could explain the weight gains observed.

The trial was conducted during 3.8 years, and included 10 evaluation cycles of 140 days each. Measurements on the pasture included forage availability and quality of the forage on offer while those on the animals included quality and botanical composition of the diet selected as well as liveweight gains. Data obtained were adjusted to a linear and exponential regression model; the weight gains observed (Y) and some pasture attributes (X) were correlated through appropriate models.

Overall, the pasture showed a high carrying capacity. However, the legume was not persistent and weight gains decreased over time. The weight gain reduction (79%) in the high stocking rate (5 AU/ha) was associated with a limited quantity of forage on offer. In the medium (3.6 AU/ha) and low (2.8 AU/ha) stockings rates, pasture productivity decreased on the average by 56%, due to a reduction in the protein content of the grass on offer and in the diet selected by the grazing animals. It was not possible to determine whether the reduction in the protein content of the grass on offer was due to the loss of the legume, to

immobilization of nitrogen, or to inhibition of nitrification in the soil.