

Summary

Evaluations were made of 136 *Brachiaria* ecotypes on an Inceptisol of the "Los Diamantes" experimental station (10° 13' N, 83° 47' W;

250 m.a.s.l., tropical rain forest) of the Costa Rican Ministry of Agriculture and Cattle Farming, between October 1987 and September 1988. These evaluations to measure adaptation of ecotypes in the area, included dry matter (DM)

production, leaf/stalk relationship, tolerance to attack by pests and diseases, crude protein (CP) content, and in vitro DM digestibility (IVDMD) of 136 *Brachiaria* ecotypes, belonging to the following species: *B. brizantha* (52), *B. decumbens* (26), *B. humidicola* (21), *B. jubata* (20), *B. ruziziensis* (8), *B. arrecta* (3), *B. dictyoneura* (2), *B. subulifolia* (2), *B. platynota* (1), and *B. serrata* (1). These ecotypes were supplied by the Genetic Resources Unit of the Centro Internacional de Agricultura Tropical (CIAT). They were planted at the rate of six plants in 7 x 1 m plots, and laid out in a randomized block design with two replications. Evaluations were made every 6 weeks, and the ecotypes were grouped according to their characteristics through a cluster analysis. Significance of these characteristics was determined by the F test.

Differences were found ($P < 0.01$) between species and ecotypes within species for the varieties studied. The production of DM/cutting varied between 0.15 and 6.4 t/ha, with *B. brizantha* CIAT 16300 and 16305, *B. ruziziensis* CIAT 26170 and 26175, and *B. decumbens* CIAT 16497 being the ecotypes that presented the greatest DM production. The leaf/stem relationship was on the average $1:1 \pm 0.5$ g/g, PC content was greater in the leaves (9.1% to 19.8%) than in the stems (3.8% to 11.8%), IVDMD varied between 54.1% and 80.1% in the leaves, and between 45.2% and 77.3% in the stems. Spittlebug attacked 5% of the ecotypes.

According to the cluster analysis, the most promising ecotypes for the area are: *B. brizantha* CIAT 6294, 6780, 16146, 16295, 16297, 16300, 16301, 16305, 16306, 16318, 16322, 16335, 16444, 16449, 16452, 16480, 16827, and 26112; *B. decumbens* CIAT 16494, 16500, 26185, 26292, and 26308; *B. ruziziensis* CIAT 16551, 26170, 26174, 26175, and 26347; *B. humidicola* CIAT 16866, 16880, and 16884; and *B. platynota* CIAT 26200.