

Summary

The experiment was established on an Oxisol at the Dairy Cattle Research Center (EMBRAPA), Coronel Pacheco, MG, Brasil, to compare the forage production of *Brachiaria* accessions: *B. decumbens* BRA-000116, *B. decumbens*

BRA-000141, *B. brizantha* BRA-000337, *B. ruziziensis* BRA-000272 and *B. humidicola* BRA-000231), under three levels of applied nitrogen (N_0 = zero N; N_{75} = 75 kg N/ha/year; and N_{150} = 150 kg N/ha/year). Under N_0 , *B. brizantha* had the lowest annual DM yield, while the two *B. decumbens* accessions had the highest yields. However, *B. brizantha* was the most responsive to N, exhibiting the highest yield at N_{150} . The accessions least responsive to applied N were *B. ruziziensis* and *B. humidicola*. During the wet season, the DM yield of all *Brachiaria* accessions increased significantly with increasing N applications. However during the dry season, responses to N were also significant with the exceptions of *B. ruziziensis*.