

Summary

The trial was conducted from January to October, 1986, in order to evaluate the response of 244 accessions of guineagrass (*Panicum maximum* Jacq.) to an environment characterized by a hot humid climate with rains all years round (23.4 °C of daily mean temperature and 1840 mm of rainfall) in an Oxisol low in pH (4.1-5.2) and deficient in N and P. A randomized complete block design with two replications was used and the response variables were dry matter yield (DMY), percentage of leaves (PL) and plant height. Forage was harvested four times: March, June, August, and October. With regard to plant height 45 cm were classified as tall, 43 cm as medium and 8 cm as short. Thirteen accessions were considered as superior, yielding more than 0.45 kg DMY/plant per harvest and PL values greater than 40%. The effect of harvest was significant ($P < 0.01$), being June and October harvest superior to the other two. It was concluded that forage resources might be improved by introducing the new guineagrass accessions. However, it is necessary to confirm the results of this trial with new agronomic assays on levels of fertilization, and height and harvest frequency followed by grazing trials to test their animal production potential.