

Abstract

The study was conducted to evaluate the primary production variables of Brachiaria grass cultivars in semi arid regions of Eastern Kenya. Brachiaria cultivars *B. decumbens* cv. Basilisk, Brachiaria hybrid Mulato II, four Brachiaria brizantha cultivars Marandu, Xaraes, Piata, MG4 and Brachiaria humidicola cv Llanero were assessed with reference to their field establishment and growth rates. *Chloris gayana* cv. KATR3 and *P. purpureum* cv. Kakamega I were included as controls. Plant numbers, heights, spread, plant tiller number and plant cover were monitored for the initial 16 weeks following seedling emergence. A standardization cut was done on all the plots at week 16 and dry matter yields determined. All growth parameters measured varied significantly ($p < 0.05$) among the cultivars. *Chloris gayana* cv. KATR3 recorded the highest plant numbers (48 plants/m²). Llanero recorded highest plant spread (146.9 cm) and tiller number (31 tillers/plant). Napier had the highest plant height (103.8 cm), cover (94.9%) and average dry matter yields (5430 kg /ha). The results demonstrate that Brachiaria grasses are capable of establishing themselves in the semi arid regions of Eastern Kenya. It is recommended that the experiment be conducted for a longer period of time to determine their growth capacity during dry spells and pests and diseases that can hinder establishment and production. The results demonstrate that Brachiaria grasses are capable of establishing themselves in the semi arid regions of Eastern Kenya. It is recommended that the experiment be conducted for a longer period of time to determine their growth capacity during dry spells and pests and diseases that can hinder establishment and production