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Área do trabalho: Pastagens e forragicultura

Agronomic characteristics of elephant grass genotypes fertilized with nitrogen and intercropped with butterfly pea

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In sustainable tropical systems, intercropping of grasses and legumes can increase productivity. Since legumes associate with bacteria that carry out biological nitrogen (N) fixation, this process represents a sustainable and renewable source of N for plant growth, replacing the use of expensive N fertilizer derived from fossil energy. Thus, the objective of the study was to evaluate the agronomic characteristics of elephant grass (*Cenchrus purpureus* Schum.) cultivars fertilized with N or intercropped with butterfly pea (*Clitoria ternatea* L.) at different seasons of the year. The experiment was carried out at the Carpina Sugarcane Experimental Station of UFRPE (tropical humid climate with a dry summer) in Pernambuco, Brazil, using a randomized block experimental design with four replications. The cropping systems were elephant grass cv. Elefante B + N, elephant grass cv. Mott + N, 'Elefante B' + butterfly pea, Mott + butterfly pea. Agronomic evaluations took place between September 2021 and February 2023. The cutting frequency used was 60 days, with cutting intensity at ground level. fertilizations were carried out with N, K and P (100, 60 and 70 kg ha⁻¹) in the cuts of the rainy season. The intercropped systems did not receive N fertilization. The data were submitted to anova using SAS® On Demand, with means compared using the Tukey Test (P<0.05). During the rainy and dry seasons, 'Elefante B' + N and 'Elefante B' + butterfly pea, and Mott + N and Mott + butterfly pea did not differ in plant height (115 and 107 cm for 'Elefante B' and 72 and 64 cm for Mott cropping systems). It was observed that Mott + N and Mott + butterfly pea did not differ for forage accumulation and forage accumulation rate (15 t DM ha⁻¹ year⁻¹ and 56 kg DM ha day⁻¹). Elephant B + N (18 t DM ha⁻¹ year⁻¹ and 69 kg DM ha day⁻¹) showed higher forage accumulation and forage accumulation rate than your intercropped with butterfly pea (13 t DM ha⁻¹ year⁻¹ and 48 kg DM ha day⁻¹). In relation to the seasons of the year, there was no significant difference in forage accumulation (13 t DM ha⁻¹ year⁻¹). The forage accumulation rate was higher in the rainy season compared to the dry season (57 and 40 kg DM ha day⁻¹, respectively). Did not occur changes in height, forage accumulation and forage accumulation rate in Mott intercropped with butterfly pea or fertilized with N. However, Elephant B fertilized with nitrogen presents greater forage accumulation and forage accumulation rate compared to intercropped with butterfly pea. The largest offering ecosystems services must be considered in the choice of cropping systems.

Palavras-chave: *Cenchrus purpureus*, *Clitoria ternatea*, ecosystem services, forage production.

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