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Productive characteristics of forage cactus genotypes in the Brazilian semi-arid region

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The forage cactus, adapted to the Brazilian semi-arid region, is a plant that withstands prolonged water stress and presents high productivity of green matter and water accumulation per hectare. This study evaluated the productive characteristics of different genotypes (*Opuntia sp.* and *Nopalea sp.*), aiming to identify varieties with greater potential for adaptation to the edaphoclimatic conditions of the Paraiba hinterland, contributing to management strategies and genetic selection of the crop for the region. Ten genotypes from the EMPAER-PB Germplasm Bank were studied and evaluated 23 months after planting under a rainfed regime and spacing of 1.0 x 0.5 m (20,000 plants.ha^{-1}). The soil was fertilized 60 days after planting with 30 t.ha^{-1} of cattle manure. The experimental design used was completely randomized, with ten replications. For each genotype, the cladodes were detached from the mother plant and weighed on a semi-analytical scale to determine the average fresh weight. Subsequently, the material was fragmented, packed in paper bags and kept in a forced air circulation oven at 65 ºC until it reached a constant weight, obtaining the dry mass. Dry matter productivity (t.ha^{-1}) was obtained as the product of multiplying the average dry mass weight (DM) of cladodes by the total number of plants per hectare. The data were subjected to analysis of variance and the means were compared using the Scott-Knott test at a significance level of 5%. The genotypes showed a significant difference in green matter production ($P<0.05$). Negro Michoacan (F07) and Oreja de Elefante (F16) presented the highest production of green matter, 338 and 283.1 t.ha^{-1}. On the other hand, the lowest productions of green biomass were obtained for Cold Resistant Texas (F14) and Palmepa-PB4, with 133 and 99.2 t.ha^{-1}, respectively. The genotypes presented low DM levels ranging from 79.20 (Palmepa-PB1) to 113.30 (Palmepa-PB3) g.kg^{-1} of natural matter. Due to the low DM content of cladodes, the nutritional requirements of domestic ruminants may not be met with diets based on these genotypes, making it necessary to supplement with other sources of roughage to optimize DM consumption. A significant difference ($P<0.05$) was observed for DM production in t.ha^{-1} of the different cactus cactus genotypes. F07 and F16 produced the largest quantities with a production of 31.79 and 27.46 t.ha^{-1}, respectively. The genotypes PB4, PB1, Raio Vigor and F14 produced fewer amounts of DM, ranging from 8.70 to 16.42 t.ha^{-1}. The different genotypes influence the productive characteristics, highlighting F07 and F16 as promising for improving the productivity of palm plantations in the Semiarid region of Paraiba.

Keywords: dry matter production, genotype selection, *Nopalea*, *Opuntia*.

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