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Área do trabalho: Pastagens e forragicultura

Survival and productivity of forage cactus genotypes cultivated in the semi-arid region of Paraiba

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The different cactus genotypes demonstrate variability in their ability to adapt to local conditions, which directly influences their survival and vulnerability to pests and diseases. However, there is a need for more in-depth studies in the different mesoregions and edaphoclimatic conditions of Paraiba to fully understand these adaptations. The objective of this study was to evaluate the survival rate and productivity of different genotypes of cactus pear (*Opuntia* and *Nopalea*) cultivated in the semi-arid region of Paraiba, seeking to identify resistant and productive varieties for use in animal feed in the region. 19 genotypes from the EMPAER-PB Germplasm Bank were analyzed, evaluated 180 days after planting under rainfed conditions, with a spacing of 1.0 x 0.5 m (20,000 plants.ha^{-1}). The soil was fertilized with 30 t.ha^{-1} of cattle manure 45 days after planting. A completely randomized experimental design was used, with ten replications. Survival was calculated by dividing the number of living plants by the total number of initial plants of each genotype, expressed as a percentage. Cladode fresh biomass productivity was estimated non-destructively, using measurements of cladode length, width and thickness. This biomass was then multiplied by the number of cladodes per plant and the number of plants per hectare, resulting in the estimated fresh matter productivity in tons per hectare (t.ha^{-1}). The data were subjected to analysis of variance and the means were compared using the Scott-Knott test at a 5% significance level. The genotypes showed high survival rates, demonstrating their capacity for adaptation and resistance, with the exception of genotypes F07 and PB4, which differed statistically ($p<0.05$) from the others, with rates lower than 60%. The fresh biomass productivity varied between 563.31 and 454.64 for the OF, V10, F16 and F22 genotypes, which were statistically equal and were superior to the others for this variable. On the other hand, genotypes V03 and V14 presented fresh biomass productivity lower than 100g. It is important to note that heavier cladodes have greater water storage capacity and resistance to water stress events. Estimated fresh matter productivity values showed significant differences between genotypes, ranging from 9.58 to 112.66 t.ha^{-1} for V14 and OF, respectively. In semi-arid conditions, productivity varies considerably according to the variety, soil and climate conditions and the management adopted. The genotypes studied exhibited high variability in productive aspects and survival rates, highlighting OF, V10, F16 and F22 as promising for improving palm productivity in the semi-arid region of Paraiba.
Keywords: *Nopalea*, *Opuntia*, forage production, genotype selection.

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