

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

**IMPACT OF MANAGEMENT AND LUMINOSITY ON MORPHOLOGICAL COMPOSITION OF GIANT MISSIONARY GRASS (*Axonopus catharinensis* Valls.)**

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Forage plants respond to environmental conditions and disturbances regulated by anthropic action, such as shade produced by trees and grazing management. Such responses aim to promote better light capture and tolerate the removal of plant components. The objective of this study was to evaluate the relationship of giant missionary (*Axonopus catharinensis* Valls.) morphological components at cutting heights (15, 25, 35 and 45 cm), defoliation severity (20, 40, 60 and 80%) in full light and shade (i.e. 50% light reduction), in a 4x4x2 factorial scheme, in a completely randomized design with 3 replicates. The experiment was developed at EPAGRI in Lages - SC, from December 2016 to June 2017. The seedlings were established in wooden boxes (0.15 m<sup>3</sup>) with sand and vermiculite substrate, irrigated with total nutrient solution. The canopy height was determined using a sward stick in 10 points per experimental unit and cut in an area of 0.08 m<sup>2</sup>. The green samples were separated into leaf, pseudostem+stem, inflorescence and senescent leaf. Component samples were oven dried at 55°C for 72 hours. The proportion of each component was calculated, data was submitted to analysis of variance and Tukey's test, at 5% of significance. It was observed interaction between cutting height and severity for the stem proportion variable, regardless of the light condition, indicating that the increase in ratio is only substantial when taller plants (i.e. 45 cm) are grazed more severely (i.e. 80%). Shade reduced between 40 and 50% the production of all components ( $p < 0.0438$ ), with a higher proportion of leaves and a lower proportion of inflorescences compared to full sun. In the 15 cm treatment, a higher proportion of leaves, senescent leaves and leaf:stem ratio were observed, with a lower proportion of stems. The opposite was observed in 45 cm treatment. Plants cut at 25 and 35 cm did not differ for proportions of the components. For the severity parameter, there was no difference for the leaf ratio; But for the other components, there was a difference between the extremes (20% and 80%). It is concluded that management targets above 35 cm in height and severity greater than 60% is not recommended for the giant missionary, regardless of the light condition. It is suggested that more criteria should be considered for the determination of management targets for giant missionary in different light environments.

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