



Universidade Federal do Maranhão
Programa de Pós Graduação em Ciência Animal

**ECOPHYSIOLOGICAL MANAGEMENT USING LIGHT
INTERCEPTION TECHNOLOGY WITH THE ACCUPAR
EQUIPMENT: QUALITY VERSUS QUANTITY OF FORAGE**

TOMAZ DE MELO NETO

Chapadinha - MA

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Dissertação apresentada ao Programa de Pós-Graduação em Ciência Animal da Universidade Federal do Maranhão, como requisito parcial para obtenção do título de Mestre em Ciência Animal.

Orientador: Prof. Dr. Anderson de Moura Zanine

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ABSTRACT

Background: Understanding canopy light interception is essential for optimizing forage production and improving the efficiency of grazing systems. Accurate quantification of photosynthetically active radiation (PAR) intercepted by the canopy allows for better estimation of crop coefficients and growth dynamics. This study aimed to assess the forage mass and nutritional value of Guinea grass pastures managed under two grazing frequencies, defined by 90% and 95% light interception (LI) measured using AccuPar equipment, and two post-grazing stubble heights (30 and 50 cm). Evaluations were conducted during both the rainy season and a dry year to capture seasonal variability in pasture performance. **Methods:** The experimental design was of completely randomized blocks with four replications. **Results:** The treatment with 90% LI resulted in higher values of crude protein and digestible. However, 95% LI resulted in higher values of neutral detergent insoluble nitrogen and acid detergent insoluble nitrogen values in grass pastures Guinea. The highest value of forage mass in Guinea grass was reported with 95% LI in association with a post-grazing height of 30 cm. **Conclusions:** Management of light interception at 90% provided a reduced amount of forage with better nutritional value. Pasture management considering the light interception technology with the AccuPar equipment was efficient as a pattern for interrupting pasture regrowth in the vegetative phase.

Keywords: digestibility, canopy light interception, crude protein, grazing management, pasture growth.