

## EVALUATION OF THE PROPORTION OF TOUCHES IN BOTANICAL COMPONENTS AND FORAGE MASS IN MULTISPECIES PASTURES UNDER CONTINUOUS STOCKING

### AVALIAÇÃO DA PROPORÇÃO DE TOQUES EM COMPONENTES BOTÂNICOS E MASSA DE FORRAGEM EM PASTAGENS MULTIESPÉCIES SOB LOTAÇÃO CONTÍNUA

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#### Abstract

The pasture structure consists of the three-dimensional arrangement of botanical and morphological components, shaped by environmental and grazing conditions. Therefore, this study aimed to evaluate the effects of grazing management strategies (GMS) on touch proportion on botanical components during height measurements (TPH) and forage mass (FM) in multispecies pastures. The experiment was conducted at the Instituto de Zootecnia in Nova Odessa, SP in summer (January and February 2021) and winter (June and July 2021). Multispecies pastures were composed of aruana grass (*Megathirsus maximum* cv. *Aruana*) and a mixture of forage legumes: calopo (*Calopogonium mucunoides*), macrotyloma (*Macrotyloma axillare*) and stylo (*Stylosanthes macrocephalla*+*Stylosanthes capitata*). The study was conducted in four randomized blocks with four treatments (15, 30, 45 and 60 cm canopy heights considering the GMS) and four replications (500 m<sup>2</sup>/each paddock), in continuous stocking with sheep. For the evaluation of TPH, aruana grass leaf blade (PAGLB), legume follicle (PLF) and invasive plants (PIP), the training of observers was first performed later, with a monthly frequency at the time of the 50 readings of the average heights of the paddocks, generating percentage values of participation. For the evaluation of the FM, soil level cutting was performed in three areas of 0.25 m<sup>2</sup> representative of the average height of the paddocks. The samples were divided into two subsamples for separation of components and quantification of total dry matter. Analysis of variance was performed with PROC MIXED of the SAS software, and the Tukey test was applied for comparison of the means (P<0.05). The TPH of PAGLB, PFL and PIP components was affected by the seasons (P= 0.0013; P<0.0001; P= 0.0403, respectively). The highest values of PAGLB and PIP were found in winter (62±3.1 and 25±2.2%) compared to summer (53±3.1 and 21±2.2%). For PFL, the highest value was found in summer compared to winter (25 and 13±1.7%). For the variable FM and aruana grass mass (AGM), there was an effect of GMS (P= 0.0060; P= 0.0021). The highest values of FM and AGM were for the 60 cm strategy, with 10451± 691.9 and 5675± 448.9 kg of DM.ha<sup>-1</sup>, respectively, and the lowest values of FM and AGM were for the 15 cm strategy with 7351±691.9 and 3044±448.9 kg of DM.ha<sup>-1</sup>, respectively. FM, AGM, legume mass (LM) and invasive plant mass (IPM) were affected by the seasons (P<0.0001, respectively for all variables). For FM, AGM, LM and IPM, the highest values found were during summer (10237±546.9; 5758±353.9; 432±61.6 and 714±112.7 kg of DM.ha<sup>-1</sup>), in relation to winter (7179±399.4; 3019±255.7; 109±43.6; 78±86.6 kg of DM.ha<sup>-1</sup>). PAGLB and PIP obtained higher values during winter, unlike FM, possibly due to the larger size of these components in winter than summer, which contributes to higher number of touches. For PFL, there was a relationship between its proportion of touches and presence in FM during the summer. This was also due to the fact that calopo and macrotyloma have a twining growth habit and stylo has shrubby habit, which in periods of favorable weather conditions, were able to access the top of the forage canopy, allowing the touch of their structures. The pattern of responses to the relationship between THP and FM needs more studies and has been changed due to the modifications caused by the GMS and environmental conditions in its reflection in the pasture structure.

#### Keywords

Indirect methodologies, pasture structure, Aruana grass.

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