

**THEME 5 | GRASSLANDS AND FORAGES**

**Production of fodder of *Brachiaria brizantha* cv. BRS Piatã in crop-livestock- forest integration systems, according to the distance of the trees**

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In agroforestry systems the forest arrangement is a very important factor to consider, since it determines the availability of light for the forage plant. So the production of fodder is not only influence on the under the canopy of trees, but on all its sub-forest. The knowledge of this effect is important in the planning of agroforestry systems, this work aimed to evaluate the effects of shading on the forage mass production of *Brachiaria brizantha* cv. BRS Piatã and to identify the average distance between the tree ridges, in which the best use of shading occurs, in different densities of trees. The experiment was conducted at Embrapa Cattle (20 ° 24'90 "S, 54 ° 42'72" W, 530m altitude), in Campo Grande, MS. The treatments consisted of the combination of the iLPF systems (14x2 and 22x2m spacing), in the north and south directions, and distances from the equidistant points of observation to the row of single tree lines (A, B, C, D and E), distributed in a randomized block design, with four replications. The evaluations were carried out during the dry period in June, July and August of 2015 and the water period, December, January and February of 2016. Forage mass was cut, solar radiation measurements with a portable ceptometer (Accupar, model 80) . Data were submitted to analysis of variance and evaluated by tukey test, at 5% probability. The radiation incident on the subsurface of the two systems varied ( $p < 0.05$ ) as a function of the interaction points x time of the year, only for the period of the waters, interfering significantly in the forage production. It was observed a significant effect of the distance between the trees, the points on the canopy were the most affected, as expected. However, the average point (B) between the central point (C) and the point under the tree canopy (A), even with high shading intensity, was 93% in the iLPF14 and 81% in the iLPF systems. (2359 and 3388 kg MS.ha-1, respectively) similar to point C (2358 and 3337 kg MS.ha-1, respectively) receiving higher radiation, possibly due to higher soil moisture and lower air temperature at point C, Favoring the production of fodder. Thus, in agrosilvipastoral systems, there is influence of the trees according to the distancing to the frog, because the microclimatic interactions caused by the shade can favor the growth of the fodder plant.

**Keywords:** Agrosilvipastoral, *Urochloa brizantha*, forage mass, radiation, eucalyptus, shading