

### Strategies of resource-use of *Panicum maximum* cultivars.

Suzana Tamiris Bonfadini<sup>1,4,5</sup>, Raissa Coutinho Tomaz Reganassi<sup>2,4</sup>, Fábio Henrique Pereira<sup>3,4</sup>, Tatiane Beloni<sup>4</sup>, Mariana Vieira Azenha<sup>4</sup>, Cristiana de Gaspari Pezzopane<sup>4</sup>, and Patricia Menezes Santos\*<sup>4</sup>

<sup>1</sup>UEMS, Aquidauana, MS, <sup>2</sup>UFSCar, São Carlos, SP, <sup>3</sup>UNICEP, São Carlos, <sup>4</sup>Embrapa Pecuária Sudeste, São Carlos, SP, <sup>5</sup>PIBIC/CNPq.

Persistence and productivity of forage crops under suboptimal conditions for growth are closely related to the form of use of resources available. Fast-growing plants are generally more productive, as they maximize the capture of light through a “resource-acquisition” strategy. On the other hand, slow-growing plants are usually more tolerant to unfavorable conditions, and associated to a “resource-conservation” strategy. The aim of this study was to characterize the resources use strategy of four cultivars of *Panicum maximum* (‘Mombaça’, ‘Tanzânia’, ‘BRS Tamani’ and ‘BRS Zuri’). A complete randomized blocks experiment, with three replicates, was conducted in greenhouse at Embrapa in São Carlos, SP, Brazil. The plants were evaluated under optimum growth conditions. Aerial biomass above 25 cm (ABP; g pot<sup>-1</sup>), maximum height (MH; cm), number of tillers (NT; pot<sup>-1</sup>), specific leaf area (SLA; m<sup>2</sup> kg<sup>-1</sup>), leaf dry matter content (LDMC; g g<sup>-1</sup>) and leaf thickness (LT; µm) were evaluated. Statistical analyzes were carried out with PROC MIXED of the statistical package SAS. ABP and MH (P < 0.0001) were higher for ‘Mombaça’ and ‘BRS Zuri’ (18.25, 15.95 g pot<sup>-1</sup> and 118.05, 112.71 cm, respectively) than for ‘Tanzânia’ and ‘BRS Tamani’ (11.35, 9.27 g pot<sup>-1</sup> and 102.36 and 85.81cm, respectively). However, lower values of NT (P < 0.0001), SLA (P < 0.0001) and greater LT (P < 0.0001) were verify for ‘Mombaça’ (19.33 pot<sup>-1</sup>; 22.08 m<sup>2</sup> kg<sup>-1</sup>; 0.22 µm), ‘BRS Zuri’ (18.00 pot<sup>-1</sup>; 21.30 m<sup>2</sup> kg<sup>-1</sup>; 0.21 µm) and ‘Tanzânia’ (19.87 pot<sup>-1</sup>; 20.99 m<sup>2</sup> kg<sup>-1</sup>; 0.20 µm) when compared with ‘BRS Tamani’ (45.53 pot<sup>-1</sup>; 28.26 m<sup>2</sup> kg<sup>-1</sup>; 0.15 µm). These results suggest that ‘BRS Tamani’ has a resource-conservation strategy, while ‘Mombaça’ and ‘BRS Zuri’ cultivars have a resource-acquisition strategy. Further characterization will be necessary for a proper classification of the resource use strategy of ‘Tanzânia’ cultivar, as it presented a ABP close to BRS ‘Tamani’, that suggest resource-conservation strategy, but a SLA and LT close to ‘Mombaça’ and ‘BRS Zuri’, more characteristic of a “resource-acquisition” strategy for tropical forages.

**Key words:** forages, resource-acquisition, resource-conservation