

## Preliminary Performance of *Panicum Maximum* Accessions and Hybrids in Brazil

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**Presenter Information**

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**Introduction** Due to the lack of high quality forages adapted to the distinct ecosystems in Brazil, a national network to evaluate 14 accessions, 4 hybrids and 5 commercial standards of *Panicum maximum* was established in 2002, in 5 regions of Brazil (states of Mato Grosso do Sul, Acre, Rondônia, Minas Gerais and in the Federal District). Staff of the Embrapa Beef Cattle group co-ordinated the network and pre-selected the accessions and hybrids (Jank, 1995; Jank *et al.*, 2001; Resende *et al.*, 2004). We present their performance as to leaf dry matter yield (LDMY) and leaf percentage (LP) obtained from 7 harvests in 2003-2004 in Mato Grosso do Sul.

**Materials and methods** The experiment was established at Embrapa Beef Cattle station in 24m<sup>2</sup> plots in a randomised complete blocks design, with 3 replicates. The commercial cultivars were Tanzania-1, Mombaça, Massai, Aruana and Milênio. The first harvest (dry season, 192 days growth) was on 16 Oct 2003 and 6 subsequent harvests were at 35-day intervals until 11 May 2004. The characters LDMY and LP were analysed using Selegen REML-BLUP (Resende, 2002), and a selection index was calculated using the weights 4.7 and 2 (rainy season) and 2.3 and 1 (dry season), for LDMY and LP, respectively.

**Results** Annual broad sense heritabilities for LDMY and LP were high, 0.55 and 0.75, respectively, with a high accuracy, indicating precision in the selection of the best accessions. The production in the dry season was low and varied from 4.9-11% of the year-round production, a characteristic of the species and already observed previously (Jank, 1995). Five accessions (PM35, PM40, PM36, PM30 and PM39) had better indexes than cv. Mombaça. The above accessions and the hybrids PM46 and PM47, had better indexes than cv. Tanzania-1 (Table 1). The accession with the best index also had the best annual LDMY, and its selection should result in 23 and 12% gains, respectively, over the overall mean and the best commercial cultivar for this character. The selection index allowed characters associated to production in the rainy and dry seasons to be considered simultaneously as a selection criterion.

**Table 1** Ranking of *Panicum maximum* accessions and hybrids based on selection index and genotypic values for the characters leaf dry matter yield (LDMY, t/ha) and leaf percentage (LP), annual data

Rank	Index	LDMY	LP	Rank	Index	LDMY	LP
1	PM35	14.57	78.02	13	PM37	10.66	78.85
2	PM40	13.86	83.76	14	PM34	10.56	81.68
3	PM36	13.43	74.74	15	Massai	11.55	76.27
4	PM30	13.80	73.98	16	PM33	10.58	79.11
5	PM39	12.66	83.14	17	PM45	10.19	79.41
6	Mombaça	13.03	79.92	18	PM44	10.80	76.09
7	PM47	12.04	76.22	19	PM31	10.72	76.97
8	PM46	11.84	77.23	20	PM41	10.52	75.45
9	Tanzânia	11.26	76.39	21	PM38	9.46	74.21
10	Milênio	12.50	76.09	22	PM43	9.19	65.63
11	PM32	11.50	75.72	23	Aruana	8.29	62.29
12	PM42	11.12	77.69	<b>Mean</b>	-	<b>11.84</b>	<b>76.25</b>

**Conclusions** The tested accessions had variable LDMY (8.3-14.6 t/ha) and LP (62.3-83.8%). Therefore superior genotypes may be selected, and the hybrids have potential for increased *P. maximum* productivity.

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