Forage production and animal performance of Ipyporã and Mulato II Brachiariagrasses under continuous stocking

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Introduction
In the last two decades breeders have focused on hybridization within the grass genus Brachiaria in order to integrate the most outstanding characteristics of several species to enhance animal performance in forage-livestock system, especially when addressing edaphoclimatic conditions and pest susceptibility. Our objective was to compare herbage accumulation, nutritive value, and animal performance of Ipyporã (Brachiaria ‘BRS RB331 Ipyporã’) (B. ruziziensis × B. brizantha) and standard cultivar Mulato II (B. ruziziensis × B. brizantha × B. decumbens) under continuous stocking in the Amazon Biome.

Materials and Methods
• The trial was carried out in Sinop - MT, Brazil
• From May 2016 to May 2018;
• Two cultivars: Ipyporã and Mulato II;
• Randomized complete block, with four replicates, totaling eight experimental units;
• Each unit was 1.5 ha (150 x 100 m) for a total of 12 ha of experimental area;
• Fertilizer: 20 kg P (single superphosphate), 50 kg N (potassium chloride) and 40 kg K (urea);
• Nellore steers (Bos indicus), with initial body weight (BW) of:
  - 250±11 kg in Year 1 and 276±12 in Year 2,
  - and age of 11±2 and 14±2 months,
• Continuous stocked using a variable stocking rate

Results
Table 1. Annual herbage and animal responses in Ipyporã and Mulato II pastures during two years.

<table>
<thead>
<tr>
<th>Variable response</th>
<th>Cultivar</th>
<th>SE†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbage mass (kg DM ha⁻¹)</td>
<td>Ipyporã</td>
<td>6,110</td>
</tr>
<tr>
<td></td>
<td>Mulato II</td>
<td>6,060</td>
</tr>
<tr>
<td>Herbage accumulation (kg DM ha⁻¹ yr⁻¹)</td>
<td>14,930 b†</td>
<td>17,370 a</td>
</tr>
<tr>
<td>Herbage accumulation rate (kg DM ha⁻¹ day⁻¹)</td>
<td>46 b</td>
<td>54 a</td>
</tr>
<tr>
<td>Animal performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbage allowance (kg DM kg⁻¹ BW)</td>
<td>6.71</td>
<td>6.34</td>
</tr>
<tr>
<td>Average stocking rate (kg BW ha⁻¹)</td>
<td>1,010 b</td>
<td>1,260 a</td>
</tr>
<tr>
<td>Average daily gain (kg BW day⁻¹)</td>
<td>0.610</td>
<td>0.570</td>
</tr>
<tr>
<td>Gain ha⁻¹ (kg BW ha⁻¹ yr⁻¹)</td>
<td>660 b</td>
<td>815 a</td>
</tr>
</tbody>
</table>

† SE, standard error.
‡ Least squares means followed by the same lowercase letter in the row are not different by t test (P > 0.05).

Conclusion
Greater annual HA and gain ha⁻¹ for Mulato II support its use in intensive forage-based systems. However, susceptibility of Mulato II to spittlebug requires regular monitoring and treatment in regions like the Amazon biome, where risk of spittlebug damage is great. In contrast, spittlebug-resistant Ipyporã can provide excellent plant and animal response with no spittlebug risk, offering a sustainable alternative to Mulato II for forage diversification.

Fig 1. Experimental area.

Average canopy height was maintained at 30 ± 5.0 cm

The HA was determined using the paired-cage method

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