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Forage Production of Continuously Stocked Ipyporã and Mulato II Brachiariagrasses in the Brazilian Amazon

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Abstract Text:

Forage cultivar diversification reduces risk in forage-livestock systems. Ipyporã brachiariagrass (*Brachiaria* 'BRS RB331 Ipyporã') (*B. ruziziensis* × *B. brizantha*) was released in 2017 for use in areas where spittlebug [*Deois flavopicta, Notozulia entreriana* and *Mahanarva spp.*] is a challenge. Our objective was to compare forage production in Ipyporã and standard cultivar Mulato II (*B. ruziziensis* × *B. brizantha* × *B. decumbens*) under continuous stocking during May 2016 to May 2018 in the Amazon Biome (Sinop, MT, Brazil). The experimental design was a randomized complete block with four replicates (1.5-ha pastures). Average canopy height was maintained at 30 ± 5.0 cm.Mulato II presented greater herbage accumulation (HA; 17360 kg DM ha^{-1}) and herbage accumulation rate (HAR; 55 kg $ha^{-1}day^{-1}$) than Ipyporã (14930 kg DM $ha^{-1}$and 48 kg $ha^{-1}day^{-1}$, respectively) across the two years. Mulato II crude protein concentration was 10 g kg^{-1} greater than Ipyporã. Spittlebugs were present only during the rainy season, and foliar damage occurred only in Mulato II pastures. Both cultivars had greater HA, HAR during the rainy season in the first year (2016/2017) compared with the second year (2017/2018). The first year was the pasture establishment year, with a shorter period of water deficit (30 days less) and greater rainfall (2147 mm) than the second year (1762 mm). Our data indicate that if greater productivity is desired, Mulato II provides greater HA than Ipyporã when adequate pest monitoring and pest control are implemented. However, systems based on Mulato II will have greater risk and require more attention and decision making by managers. Although Ipyporã had lesser HA, there was no concern about spittlebugs in this severe risk region, which confirms Ipyporã as an alternative for diversification of forage-based livestock systems in the Amazon Biome.

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Introduction

Forage cultivar diversification reduces risk in forage-livestock systems. Ipyporã brachiariagrass (*Brachiaria* 'BRS RB331 Ipyporã') (*B. ruziziensis* × *B. brizantha*) was released in 2017 for use in areas where spittlebug [(*Deois flavopicta*, *Notozulia entreriana* and *Mahanarva spp.*] is a challenge.

Our objective was to compare forage production in Ipyporã 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 experimental unit was 1.5 ha (150 x 100 m) for a total of 12 ha of experimental area.
- Fertilizer: 20 kg P ha^{-1} (single superphosphate), 50 kg N ha^{-1} (potassium chloride) and 40 kg K ha^{-1} (urea).

The HA was determined using the paired-cage method

Average canopy height was maintained at 30 ± 5.0 cm

Results and Discussion

Table 1. Herbage accumulation (HA) and herbage accumulation rate (HAR) of Ipyporã and Mulato II pastures

Response	Year	Cultivar: Ipyporã	Cultivar: Mulato II	Average	SE
		--- kg DM ha^{-1} yr^{-1} ---			
HA	1	18960	21300	20130 A†	450
	2	10900	13450	12180 B	
	Avg	14930 b	17360 a		
		--- kg ha^{-1} d^{-1} ---			
HAR	1	60	70	65 A	1.5
	2	35	40	38 B	
	Avg	48 b	55 a		

† Least squares means followed by the same uppercase letter in the column and lowercase letter in the row are not different by t test (P > 0.05).

Table 2. Crude protein of Ipyporã and Mulato II pastures under continuous stocking

Variables	Cultivar: Ipyporã	Cultivar: Mulato II	SE
	--- g kg^{-1} ---		
Crude protein	115 b	125 a	0.28

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

Year 1 – 2147 mm

Year 2 – 1762 mm

↑ 365 mm

↓ 30 d water deficit

Fig 2. Spittlebugs were present only during the rainy season, and foliar damage occurred only in Mulato II pastures.

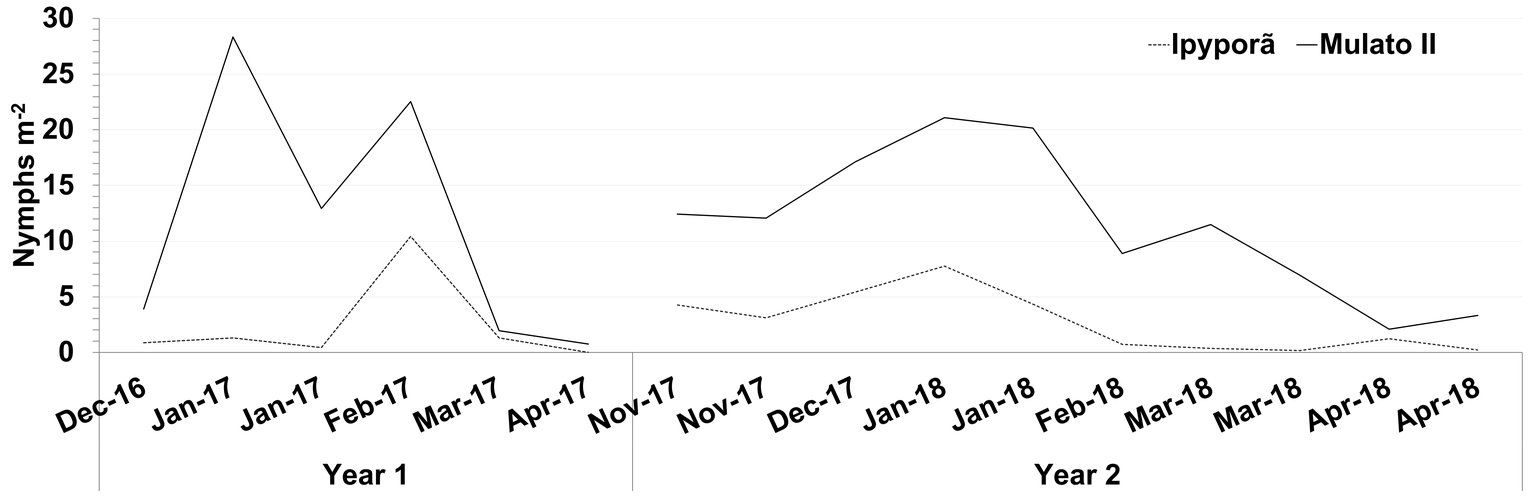

Fig 1. The number of nymphs was counted at three 1- by 0.5-m sites per experimental unit at sites representing average pasture condition.

Conclusion

Our data indicate that if greater productivity is desired, Mulato II provides greater HA than Ipyporã when adequate pest monitoring and pest control are implemented. However, systems based on Mulato II will have greater risk and require more attention and decision making by managers. Although Ipyporã had lower HA, there was no concern about spittlebugs in this severe risk region, which confirms Ipyporã as an alternative for diversification of forage-based livestock systems in the Amazon Biome.

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