

Forage yield of *Stylosanthes* cultivars aiming their use in dry season as protein bank

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Introdução

As leguminosas forrageiras são alternativas de uso e indicadas para o aporte de nitrogênio no sistema solo-planta-animal, pois proporcionam melhoria na produtividade animal e na vida útil das pastagens.

Dentre as várias opções de leguminosas, destaca-se *Stylosanthes guianensis*, nativa do Brasil, apresenta boa adaptação às condições de baixa fertilidade do solo. Por outro lado, apresenta limitações como persistência sob pastejo, produtividade de sementes e tolerância à seca prolongada.

O banco de proteínas com o *Stylosanthes* pode ser estabelecido na estação chuvosa como estratégia de suplementação para posterior utilização na estação seca. O crescimento sem desfolha durante um longo período pode superar a produção sazonal de forragem em áreas de pastagens. Entretanto, a quantidade e a qualidade da forragem são sensíveis à frequência de desfolha e as diferentes cultivares.

Nesse sentido o objetivo desse trabalho foi estabelecer o manejo na estação do chuvosa e as épocas de utilização na estação seca para genótipos de *Stylosanthes guianensis* com base no comportamento produtivo e composição morfológica da forragem.



Figura 1. Banco de proteína estabelecido com diferentes genótipos de estilósantes no campo experimental da Embrapa Cerrados em Planaltina-DF

Materiais e Métodos

- The trial was conducted in Planaltina, FD, Brazil, aiming to evaluate dry matter yield (DMY) and morphological composition of stylo cultivars in response to defoliation management.
- The experimental design was completely randomized block in a split plot arrangement with three repetitions, and Management factor was allocated to the plots and Genotype to the subplots (2 x 2 m).
- Genotype treatments were *Stylosanthes guianensis* cultivars (BRS Bion, BRS Nuno and BRS Bela), and Management treatments were cutting or not cutting in the rainy season (February) combined with dates of use in the dry season (May, June, July or Flowering).

	Genótipo (Subparcela)	Manejo (Parcela) : Águas – Seca	
		ÉPOCA	
		1	Rebaixado águas – uso em maio
		2	Rebaixado águas - uso em junho
		3	Rebaixado águas – uso em julho
		4	Rebaixado-águas – uso florescimento
		5	Crescimento livre águas – uso no florescimento
1	BRS Bela		
2	BRS BioN		
3	BRS Nuno		

Resultados e Discussão

- The effect of Management × Genotype was not significant (P>0.05).
- The total DMY (stem plus leaf) for BRS Bion (5.128 kg/ha) and BRS Nuno (12.967 kg/ha) was inferior to DMY for BRS Bela (15.030 kg/ha).
- Since plants flowered in May, delaying 15 days when cut in February, there were no differences of DMY in dry season for dates of use, except for July - 6.479, 7.804 and 11.298 kg/ha for May, June and July, respectively.
- In the same way, DMY of the total rainy and dry season was 9.046, 10.436 and 14.553 kg/ha for May, June and July, respectively.
- The percentage of DMY from rainy season (~80%) did not differ for Genotype (P>0.05). The lower canopy height for BRS Bion (57 cm in the rainy season and 76 cm in the dry season) was related to their lower leaf and stem accumulations.

Tabela 1: Acúmulo de massa seca da parte aérea (MSPA) por genótipos de *Stylosanthes guianensis* cultivados num latossolo argiloso no Cerrado do Distrito Federal manejados na estação das águas (corte/rebaixamento em fevereiro ou crescimento livre) e com rebrotagens até o período da seca (Seca). Médias de quatro rebrotagens/crescimentos (fevereiro a maio, junho, julho ou até o pico do florescimento). Planaltina, DF. 2021.

Genótipo	Massa Seca Parte Aérea, MSPA			% Seca
	S+A	Seca (S) (fevereiro – épocas uso)	Águas (A) (plantio até-fevereiro)	
Bela	15030a	11928a	3102a	79
Bio N	5128c	4083c	1046c	78
Nuno	12967b	10486b	2482b	81
Média	11042	8832	2210	80

Manejo águas – época de uso	Massa Seca Parte Aérea, MSPA			% Seca
	S+A	Seca (S) (fevereiro – épocas uso)	Águas (A) (plantio até-fevereiro)	
Fev-maio	9046b	6479b	2567	71b
Fev-junho	10436b	7804b	2632	74b
Fev-julho	14553a	11298a	3255	78b
Fev-flor	9662b	7067b	2595	75b
Livre-flor	11513ab	11513a	0	100a
Média	11042	8832	2210	80

Médias seguidas por letras distintas diferem pelo teste t de Student (P=0,05);
Águas (A): acúmulo de forragem do plantio (novembro) a meado das águas (fevereiro);
Seca (S): rebrotação de meado das águas (fevereiro) até a época seca (maio, junho, julho)
Altura do corte: CPAC 4171 30 cm; demais 40 cm;

Conclusões

- The Genotype effect on DMY happened due to the accumulation of stems, mostly for later dates of use.
- BRS Nuno had lower DMY due to influence of stems, which was higher for BRS Bela, both for rainy and dry season.
- There is no effect of the previously cut in the rainy season on forage yield when the use of the stylo protein bank occurs at the flowering, regardless of Genotype.

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Stylosanthes protein bank can be established in the rainy season for later use in the dry season, overcoming the seasonal forage production from grasslands. However, the quantity and quality of the forage are sensible to defoliation frequency and stylo cultivars. The trial was conducted in Planaltina, FD, Brazil, aiming to evaluate dry matter yield (DMY) and morphological composition of stylo cultivars in response to defoliation management. The experimental design was completely randomized block in a split plot arrangement with three repetitions, and Management factor was allocated to the plots and Genotype to the subplots (2 x 2 m). Genotype treatments were *Stylosanthes guianensis* cultivars (BRS Bion, BRS Nuno and BRS Bela), and Management treatments were cutting or not cutting in the rainy season (February) combined with dates of use in the dry season (May, June, July or Flowering). The effect of Management × Genotype was not significant ($P>0.05$). The total DMY (stem plus leaf) for BRS Bion (5.128 kg/ha) and BRS Nuno (12.967 kg/ha) was inferior to DMY for BRS Bela (15.030 kg/ha). Since plants flowered in May, delaying 15 days when cut in February, there were no differences of DMY in dry season for dates of use, except for July - 6.479, 7.804 and 11.298 kg/ha for May, June and July, respectively. In the same way, DMY of the total rainy and dry season was 9.046, 10.436 and 14.553 kg/ha for May, June and July, respectively. The percentage of DMY from rainy season (~80%) did not differ for Genotype ($P>0.05$). The lower canopy height for BRS Bion (57 cm in the rainy season and 76 cm in the dry season) was related to their lower leaf and stem accumulations. The Genotype effect on DMY happened due to the accumulation of stems, mostly for later dates of use. BRS Nuno had lower DMY due to influence of stems, which was higher for BRS Bela, both for rainy and dry season. There is no effect of the previously cut in the rainy season on forage yield when the use of the stylo protein bank occurs at the flowering, regardless of Genotype.