Annual and Seasonal Yields of Jiggs, Tifton 85, and Vaquero Bermudagrasses in Response to Clipping Frequencies in Southeastern Brazil

Carlos G. S. Pedreira, Valdson J. Silva, Mariana F. Abdal, Felipe N. Lima, Liliane S. Silva, Mateus C. Pereira, Carla M. Marassatto, Debora C. Basto, and Aliedson S. Ferreira

Dept. Zootecnia, ESALQ - Univ. de Sao Paulo, Piracicaba, SP, Brazil

Introduction

Forage production is the backbone of the brazilian livestock industry, with the world's largest commercial cattle herd. Thus, management factors that influence forage production, and that can be used in decision-making within the production system must be well understood. For newly released *Cynodon* grasses, technical and scientific information are still scarce in tropical regions, especially for Jiggs and Vaquero bermudagrasses. The objective of this study was to evaluate the annual and seasonal (cool vs. warm season) yield of Tifton 85, Jiggs and Vaquero bermudagrasses in response to clipping frequencies (every 14, 28 and 42 days) under irrigation in southeastern of Brazil.

Materials and Methods

- The trial was carried out in Piracicaba - SP, Brazil, from December 21, 2010 through December 21, 2011, with treatments corresponding to the combination of genotypes (Tifton 85, Jiggs and Vaquero bemudagrasses) and clipping frequencies (every 14, 28 and 42 days) in an CR design with a factorial arrangement, and four replications.
-The field was irrigated to avoid drought effects on yield.
- Plots were fertilized with N and K_2O (400 kg ha^{-1} yr^{-1})
- Forage was harvested mechanically at 7 cm height.
- Warm-season was considerd from December 21, 2010 to March 22, 2011 and from September 22 to December 21, 2011.
- Cool-season: March 23 to September 21, 2011.
- Analysis of variance with Mixed Models procedure in SAS was used to examine treatment effects.

Contact information:
cgspedreira@usp.br

UID: 74896

Results and discussion

Under the 42-d schedule Jiggs was more productive than the other grasses (26.1 Mg MS ha^{-1}) (Figure 1), but in the six warmest months of the year yield was similar to that of Tifton 85 at the frequencies of 28 and 42 days (average of 12.9 and 16.7 Mg DM ha^{-1}, respectively), indicating that the difference in total yield between Jiggs and Tifton 85 is due to cool-season yield, likely a combination of low temperature and shorter daylength (Table 1).

Table 1. Seasonal yield of Jiggs, Tifton 85 and Vaquero bermudagrasses under three clipping frequencies

Genotype	Clipping frequency		
	14-d	28-d	42-d
	----------Mg DM ha^{-1} ----------		
	Warm-season (SEM=0,20)		
Jiggs	5.86 Cab	10.37 Ba	17.34 Aa
Tifton 85	6.92 Ca	12.95 Ba	16.71 Aa
Vaquero	5.25 Cb	7.84 Bb	9.70 Ab
	Cool-season (SEM=0,10)		
Jiggs	3.28 Ca	5.73 Ba	8.77 Aa
Tifton 85	2.53 Ca	3.69 Bb	4.83 Ab
Vaquero	3.07 Ca	5.54 Ba	7.31 Aa

*Capital letters compare clipping frequencies; lower-case letters compare genotypes

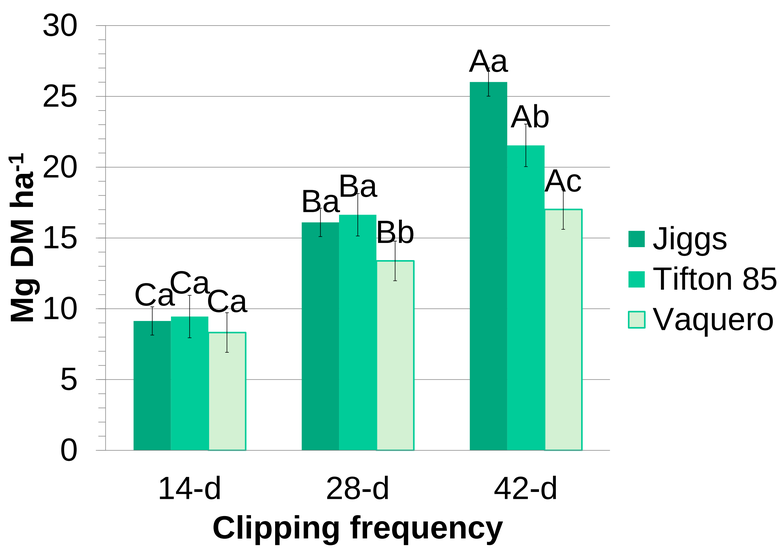

Figure 1. Annual yield of Jiggs, Tifton 85 and Vaquero bermudagrasses under three clipping frequencies

*Capital letters compare clipping frequencies; lower-case letters compare genotypes

Vaquero was less productive at the frequencies of 28 and 42d (7.8 and 9.7 Mg DM ha^{-1}, respectively) in warm-season and total yield (13.4 and 17.0 Mg DM ha^{-1}, respectively). During the cool-season, regardless of clipping frequency, Tifton 85 was less productive (2.4, 3.7 and 4.8 Mg DM ha^{-1} for 14-d, 28-d and 42-d, respectively) than Jiggs and Vaquero (average of 3.2, 5.6 and 8.0 Mg DM ha^{-1} for 14-d, 28-d and 42-d, respectively).
Vaquero, under the 42-d schedule, had a less pronounced seasonal growth, mainly because poor forage production in warm-season (Table 1).
Tifton 85 was more seasonal than Vaquero and Jiggs (Figure 2), however was productive as Jiggs and more productive than Vaquero in the warmest months of the year.

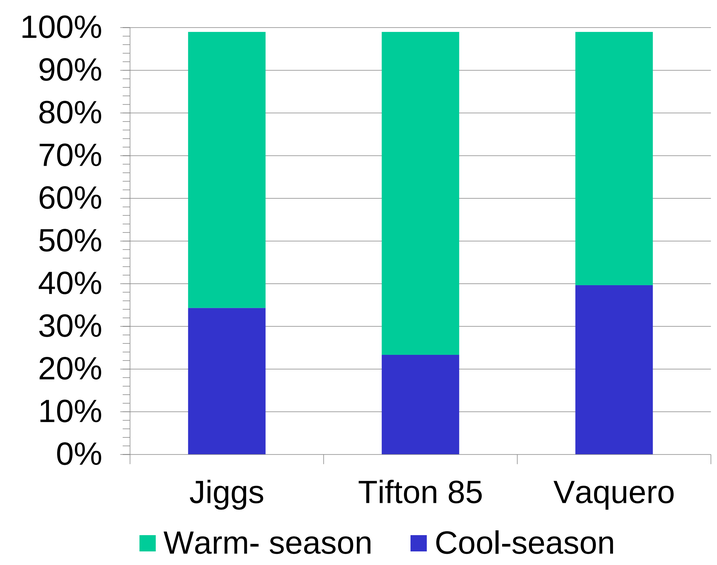

Figure 2. Percentage of yield - warm- versus cool-season

Conclusion

Due to greater production, Jiggs and Tifton 85 are the best choices to producers and the harvest schedule of 28-d or 42-d could be adopted for high yields, although leaf/stem ratio of the harvested forage should be considered in the decision.

Acknowledgment:

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