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## Introduction

The livestock industry is one of the major economic activities in Brazil. In this context, the wide use of pastures as feed source makes the activity highly profitable. Novelty forages are often adopted by producers before the correct management has been established. Mulato II brachiariagrass (*Brachiaria* spp. cv. Convert HD364®) was released by the Internacional Center for Tropical Agriculture (CIAT) in 2004. There is little information related to its management in Brazil. The objective of this research was to evaluate forage mass (FM) and tiller population density (TPD) responses of grazed Mulato II brachiariagrass (Convert HD364®) under contrasting growth rates and canopy heights kept by continuous stocking

## Materials and Methods

The trial (Figure 1) was carried out at Piracicaba, SP, Brazil (22°42' S, 47°30' W, 580 m alt.) from 12/22/2012 to 4/20/2013.



Figure 1. Overview of experimental area.

Mulato II was studied under two growth rates (50 and 250 kg N ha<sup>-1</sup> yr<sup>-1</sup>) and three canopy heights (10, 25 and 40 cm) kept constant by continuous stocking. The experimental design was randomized complete block, with a 3 x 2 factorial arrangement, with three replications (200 m<sup>2</sup> each). The FM was measured by collecting samples of 40 tillers per paddock every 28 days. The samples were hand-separated to obtain the plant part

composition (Figure 2) and subsequently dried in a forced-draft oven at 60°C until constant weight. They were then weighed and mean tiller weight was calculated.



Figure 2. Plant part composition.

The TPD was quantified by counting basal and aerial tillers in two 0.4 m<sup>2</sup> quadrats (Figure 3) per plot, every 28 days. FM was calculated as TPD x mean tiller weight.



Figure 3. TPD sampling quadrats.

## Results and Discussion

Forage mass was affected by the height\*rate interaction ( $P=0.0202$ ) (Table 1). Under both growth rates, FM was higher at 40 cm and lower at 10 cm. There was no effect of the growth rate within heights.

Table 1. Forage mass of Mulato II under two N rates during the experimental period.

Height	P value	N rate (kg ha <sup>-1</sup> yr <sup>-1</sup> )	
		50	250
--Forage mass (Mg DM ha <sup>-1</sup> yr <sup>-1</sup> )--			
10 cm	(=0.5302)	5.3 c	4.1 c
25 cm	(=0.3221)	9.1 b	7.6 b
40 cm	(=0.1742)	13.7 a	15.5 a
SE		(0.43)	

\*Lowercase letters compare within columns ( $P < 0.05$ ).

Basal tiller numbers were affected only by height ( $P=0.0186$ ) (Figure 4). The 10 cm height resulted in 20% more tillers than 40 cm, with the 25 cm height not differing from the other two.

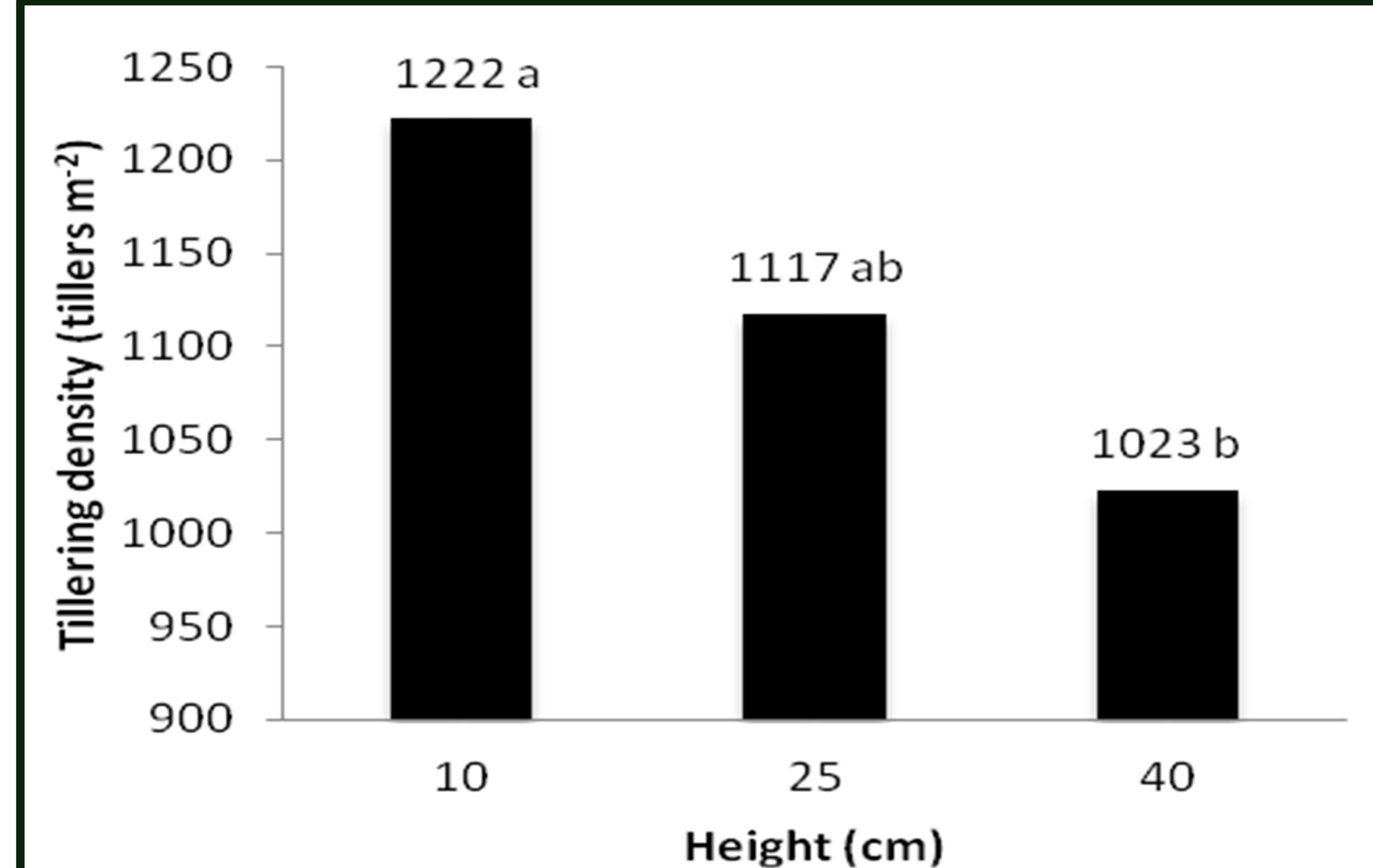


Figure 4. Basal tiller population density of Mulato II.

There was no height effect in aerial tillers numbers ( $P=0.7667$ ), but the higher growth rate resulted 65% more tillers than with 50 kg N (Figure 5).

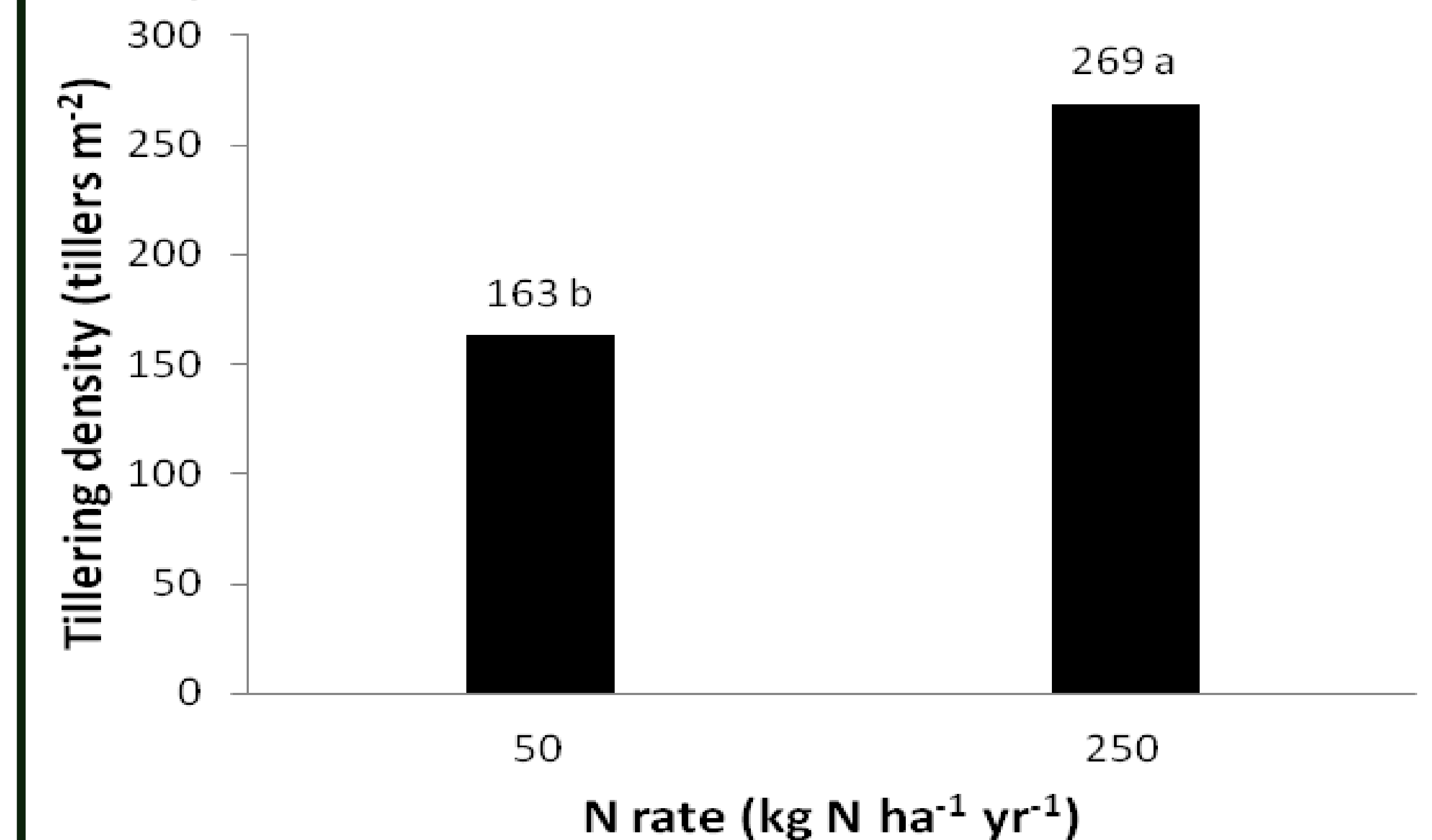


Figure 5. Aerial tiller population density of Mulato II.

Total TPD was affected ( $P=0.0238$ ) by N rate, with the 250 kg resulting in 12% higher TPD superior than the 50 (1414 and 1260 tillers m<sup>-2</sup>, respectively).

## Conclusion

Mulato II has higher forage mass in taller swards, although with lower tiller population density.

N rate influenced mainly the amount of aerial tillers and consequently, the total tiller population density.

## Acknowledgments