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The XXI International Grassland Congress / VIII International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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## Seed yield of hybrid *Brachiaria* (CIAT 36061) with nitrogen fertilization

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**Key words** : seed yield component , flowered stems , spikelets

**Introduction** *Brachiaria hibrido* CIAT 36061 , local name Mulato is a grass whose production is expanding in the tropical regions of Mexico and other Latin American countries . Seed availability for this grass , however , is low and seed prices are high . Nitrogen fertilization could increase seed yield allowing farmers to meet their sustenance needs , produce their own seed or have extra seed to sell (Jimenez , 1991) . The objective of this study was to determine seed yield and its components at increasing levels of added N .

**Materials and methods** Four levels of added N were compared : 0 (control) , 100 , 200 and 400 kg ha<sup>-1</sup> yr<sup>-1</sup> in a completely randomized design with four replications where the experimental unit was a plot of 20 m<sup>2</sup> . Plots were established in the rainy season of the previous year . During the rainy season of the following year , the respective N-level was split in two equal applications occurring at the beginning and at the middle of the rainy season . Source of N was urea . Plots were harvested at the beginning of the second rainy season to remove all dead matter before the first N addition was applied . Then at the middle of the rainy season plots were again harvested and the second addition of N was done . Finally , the grass was allowed to grow without further disturbance until seed harvest . Treatment effects on seed yield and other responses ( see Table 1 ) were evaluated with analyses of variance using PROC GLM in SAS (SAS , 2006) .

**Results and discussion** Maximum seed yield was found with 100 and 400 kg N , the amount of seed was two times that found with the control , addition of 200 kg N gave a seed yield no different (P>0 .05) than any of the other levels of N or the control (Table 1) . Regardless of the amount of N , the addition of N increased (P<0 .05) total number of stems in relation with control . Spikelets per stem was not influenced (P>0 .05) by the addition of N . Number of flowered stems and spikelets m<sup>-2</sup> were the two seed-yield components that showed responses similar to that of seed yield where , 100 and 400 kg N gave the maximum values while control and 200 kg N gave similar values .

**Table 1** Seed yield and its components in *Brachiaria* CIA T36061 at different N fertilization .

N (kg ha <sup>-1</sup> )	Seed yield (kg ha <sup>-1</sup> )	Total stems (number m <sup>-2</sup> )	Flowered stems (number m <sup>-2</sup> )	Spikelets stem <sup>-1</sup>	Spikelets m <sup>-2</sup>
0	18 b <sup>‡</sup>	917 b	792 b	13 a	1457 b
100	35 a	1291 a	1330 a	15 a	2139 a
200	29 ab	1155 a	1234 ab	14 a	1735 b
400	37 a	1387 a	1527 a	14 a	2817 a

<sup>‡</sup> Means within column with at least one letter in common are not different (P>0 .05)

**Conclusions** Nitrogen fertilization of *Brachiaria* CIAT 36061 is an agronomic practice that increases seed yield by increasing number of flowered stems and spikelets per unit of area , however these increments are not maintained as N level is increased .

### References

Jimenez , M . A . 1991 . La Producción de Forrajes en México . FIRA-Banco de México . 57 pp .  
SAS . 2006 . SAS/SAT User's Guide . Release 6 .03 , SAS Institute , Cary North Carolina , USA .