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## Preliminary Investigations on Columbus Grass (*Sorghum alnum Parodi*) for Fodder in Semi-Arid Nigeria: Effects of Sowing Methods on Growth Components and Herbage Yield

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## Preliminary investigations on Columbus grass (*Sorghum almum* Parodi) for fodder in semi-arid Nigeria effects of sowing methods on growth components and herbage yield

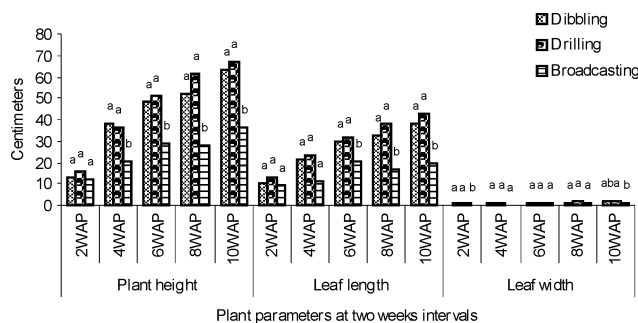
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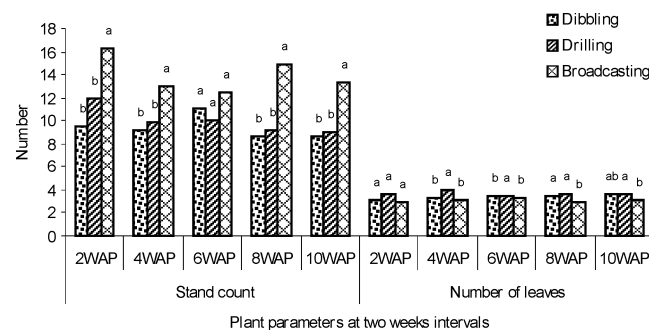
**Key words :** Columbus grass, semi-arid, sowing methods

**Introduction** Most of the ruminants in the country is located in semi-arid region, where feed supply is limiting during the long dry season. This research was conducted to investigate the growth and herbage yield of the introduced Columbus grass (*Sorghum almum* Parodi) using different sowing methods in a semi-arid region of Nigeria, where it is being considered for its possible use as fodder plant.

**Materials and methods** The experiment was conducted during the rainy season of 2005/2006 at the Usmanu Danfodiyo University Teaching and Research Farm (13°1'N, 5°15'E), using a Randomized Complete Block Design (RCBD) with three replications. Soils were manually prepared using the hoe. The plots were marked out into parallel rows, separated by a 0.5m footpath. They were rectangular, slightly sunken 3m×4m (12m<sup>2</sup>) basins. Three sowing methods were tested: a) broadcasting (at a rate of 19.8 kg ha<sup>-1</sup>), b) dibbling (at a rate of 16.8kg ha<sup>-1</sup> in 50×50cm and, c) drilling (at 16.8kg ha<sup>-1</sup> same rate and spacing as for dibbling). Plant height, leaf length, leaf width, number of leaves, stand establishment count and herbage yield were measured in each plot at intervals of 2, 4, 6, 8 and 10 weeks after sowing to measure crop growth rate (Harper 1983). Data were compared by analysis of variance, and LSD was used to compare means (SAS 1988).



**Figure 1** Plant height, leaf length and leaf width of Columbus grass with different sowing methods at different time intervals.



**Figure 2** Stand count and number of leaves of Columbus grass with different sowing methods at different time intervals.

**Results and discussion** Plant height and leaf length differed significantly ( $P < 0.05$ ) among treatments from 4 to 10WAP (Figure 1). The two parameters also increased with increase in time intervals. Leaf width differed ( $P < 0.05$ ) at 8 WAP. Stand count and number of leaves differed ( $P < 0.05$ ) except at 2 and 6 WAP respectively (Figure 2). Drilling method required less seeds and produced the highest ( $P < 0.05$ ) DM yield of 3170 kg ha<sup>-1</sup>, which was however lower than the value of 8180 kg ha<sup>-1</sup> reported by Muhammad (2004) in the same ecological zone.

**Conclusion** It can be concluded from our results that drilling greater amounts of seed resulted in greater dry matter production.

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