

Short Communications

Yield and Fodder Quality from Single and Ratoon Harvesting System of *Pioneer Sorghum*

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Pioneer sorghum, which is an interspecific hybrid of sorghum and Sudan grass (*Sorghum bicolor* x *Sorghum sudanensis* (Piper) Stamf.) var. *Pioneer* is a recently introduced fodder crop in Sudan. Preliminary experiments have shown it to be superior in resistance and fodder quality aspects compared to its parents and other species. Bebawi and Mezloun (1986) reported that *Pioneer* 988 was generally more productive than *Abu Sabeen*. Some trials at Shambat showed that the second cut was better in both quality and quantity than the first cut. Bebawi (1987) found a significant difference in tiller density between *Abu Sabeen* and *Pioneer* sorghum at second and third harvests of the first year and at all harvests of the second year. This study was conducted to find the best cutting regime of the crop in respect to biomass and fodder quality.

A field experiment (RBD) with four replications was conducted during October 1987 to June 1988 at Shambat, College of Agricultural Studies Farm. The experimental soil (0-30 cm) was clayey (44% clay with 55% saturation capacity), having pH (paste) 8.1, ECe 1.7 dS m⁻¹, OC 0.41%, avail-

able P 6.3 ppm, water soluble cations (Na 21.0, Ca 13.0, Mg 3.7, K 0.15 c mol (P⁺) L⁻¹) and anions (CO₃ 0.23, HCO₃ 1.23, Cl 1.56 c mol (P⁺) L⁻¹). *Pioneer* sorghum was drilled by hand at a rate of 40 kg ha⁻¹. Plots were irrigated to field capacity at weekly interval. The crop was fertilized with urea (43 kg ha⁻¹) and superphosphate (62 kg ha⁻¹).

The sampling was carried out after 60 days from planting for the first cut, 150 days from planting for the second cut, and 210 days from planting for the third cut for various analysis.

The number of tillers were significantly higher for the main cut than the other two cuts (Table 1). There were no significant differences among other parameters. However for most parameters the second cut has an advantage. Leaf area index LAI and stem diameter were also higher for the second cut. The first cut had the highest number of internodes, tillers, and greater fresh weight (Table 1). Number of green leaves and plant dry weight were higher for the second cut than the first cut. On the other hand, the forage quality was better in first cut

Table 1 Effect of cuttings on various growth and quality parameters of *Pioneer sorghum*

Treatments	Plant height (cm)	LAI	Stem diameter (cm)	Fresh weight (kg)	Dry weight (kg)	Tiller (Nos.)	Green leaves (Nos.)	No. of internodes	Ash (%)	Crude protein (%)	Crude fibre (%)
First cut	102.74	129.30	2.58	1.15	0.64	8.86	5.63	5.50	10.89	5.13	26.33
Second cut	106.82	132.86	2.70	1.12	0.68	6.97	6.26	5.34	9.80	4.87	27.06
Third cut	99.69	128.86	2.72	1.01	0.58	7.21	5.05	5.12	9.71	4.99	26.44
LSD %	NS	NS	NS	NS	0.82	NS	NS	NS	NS	NS	NS

