



## Effect of row spacing and cutting management on growth, yield and quality of multi-cut perennial sorghum under arid environment

S. M. Kumawat\*, R. C. Bairwa, S. P. Singh and S. R. Bhunia

Swami Keshwanand Rajasthan Agricultural University, Bikaner-334006, India

\*Corresponding author e-mail: sagarskrau@gmail.com

Received: 14<sup>th</sup> April, 2020

Accepted: 12<sup>th</sup> March, 2021

### Abstract

An investigation on multi-cut perennial sorghum was conducted for three consecutive years at Agricultural Research Station, Swami Keshwanand Rajasthan Agricultural University, Bikaner. The Twelve treatments consisted combination of three spacing at row intervals 30, 45 and 60 cm; and four cutting intervals viz., 45, 60, 75 and 90 days were laid out in factorial randomized block design with three replications. The results of the pooled analysis revealed marked and consistent variations for growth attributes, fodder yield and quality based on pooled data as well as during three years of experiments. Maximum green fodder yield of 574.5 q/ha was recorded at 30 cm inter row spacing, closely followed by 45 cm inter row spacing (568.0 q/ha) both being at par and were significantly higher by 19.5 and 18.1%, respectively over 60 cm inter row spacing. Among the different inter row spacing, the wider row spacing of 60 cm recorded significantly higher number of tillers per meter row length (66.6), number of leaves per meter row length (392), leaf area index (2.69) and leaf chlorophyll content (39.17), while plant height (83.0 cm) in 45 cm inter row spacing and leaf: shoot ratio (0.88) in 30 cm were recorded maximum as compared to other spacing treatments. Cutting days interval (CDI) exhibited significant differences in GFY and DFY at 90 days cutting interval, but non-significant variations up to 75 CDI on pooled analysis and consecutive three years also. Highest GFY (567 q/ha) and DFY (168.8 q/ha), were observed at 45 and 90 CDI, respectively and *vice versa* in case of minimum values of DFY (154.5 q/ha) and GFY (502 q/ha) on pooled analysis. Almost similar results were observed in quality parameters namely LSR and HCN content. However, number of tillers and number of leaves, chlorophyll content, LAI and crude protein content improved with increasing CDI, but fiber, TDN, NFE and ME contents/ values had non-significant variations.

**Keywords:** Cutting management, Fodder quality, Fodder yield, Perennial sorghum, Row spacing