

Response of Summer Sesame to Irrigation Regimes and Nitrogen Levels

Authors : Kalpana Jamdhade, Anita Chorey, Bharti Tijare, V. M. Bhale

Abstract : A field experiment was conducted during summer season of 2011 at Agronomy research farm, Dr. PDKV, Akola, to study the effect of irrigation regime and nitrogen levels on growth and productivity of summer sesame. The experiment was laid out in split plot Design in which three irrigation scheduling on the basis of IW/CPE ratio viz., irrigation at 0.6, 0.8 and 1.0 IW/CPE ratios (I1, I2 and I3, respectively) and one irrigation scheduling based on critical growth stages of sesame (I4), in main plot and three nitrogen levels 0, 30 and 60 kg N ha⁻¹ (N0, N1 and N2, respectively) in subplot. The result showed that plant height, number of leaves plant⁻¹, leaf area and dry matter accumulation were maximum in irrigation scheduling at 1.0 IW/CPE ratio, which significantly superior over 0.6 IW/CPE ratio and irrigation at critical growth stages but were statistically at par with irrigation at 0.8 IW/CPE ratio. Nitrogen levels, application of 60 kg N ha⁻¹ was recorded significantly superior all growth parameters over treatment 30 kg N ha⁻¹ and 0 kg N ha⁻¹. In case of yield attributes viz., No. of capsules plant⁻¹, Test wt., grain yield and Stalk yield (qha⁻¹) were maximum in irrigation scheduling at 1.0 IW/CPE ratio and were significantly superior over 0.8 IW/CPE ratio, 0.6 IW/CPE ratio and irrigation at critical growth stages. Application of 60 kg N ha⁻¹ increased all yield attributing characters over application of 30 and 0 kg N ha⁻¹. In case of economics of crop same trend was found and the highest B:C ration was obtained in irrigation scheduling at 1.0 IW/CPE ratio. Whereas, application of 30 kg N ha⁻¹ was recorded highest B:C ration over application of 60 and 0 kg N ha⁻¹. Interaction effect of irrigation and nitrogen levels were found to be non significant in summer season.

Keywords : irrigation regimes, nitrogen levels, summer sesame, agricultural technology

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