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RESEARCH PAPER

Effect of crop geometry, drip irrigation and bio-regulator on growth, yield and water use efficiency of wheat (*Triticum aestivum* L.)

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Abstract : A field experiment was conducted during *Rabi* season, 2011-12 at Niche Area Excellence Farm, Bikaner to study the effect of crop geometry, drip irrigation and bio-regulator on growth, water use efficiency and yield of wheat (*Triticum aestivum* L.). The experiment was conducted in Randomized Block Design with three irrigation schedules *viz.*, 60, 80 and 100 per cent ETc, two crop geometry levels *viz.*, 22cm paired row spacing-4 rows (120 cm lateral spacing) and 22 cm normal spacing sowing (60 cm lateral spacing) and two levels of bioregulator *viz.*, control (water spray) and thiourea (500 ppm) foliar spray twice at vegetative stage and flowering stage. The study indicated that there was increase in dry matter accumulation, plant height, grain yield and biological yield with increase in irrigation level from 60 per cent ETc to 100 per cent ETc. The study further indicated that dry matter accumulation and plant height was maximum in paired row as compared to normal planting whereas grain yield, biological yield and harvest index were maximum in normal planting as compared to paired row planting. The study indicated that dry matter accumulation significantly increase only 60 and 120 DAS and plant height at only 120 DAS with the thiourea (500 ppm) as compared to control. The study also indicated that the interaction effect of irrigation and geometry gave maximum grain yield, biological yield and WUE at 100 per cent ETc +60 cm drip line spacing, maximum harvest index at 60 per cent ETc + 60 cm drip line spacing whereas maximum WUE at 80 per cent ETc + 60 cm drip line spacing.

Key Words : Crop geometry, Drip irrigation, Bio-regulator

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