

Triticum Aestivum Yield Enhanced with Irrigation Scheduling Strategy under Salinity

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Abstract : Soil Salinity and irrigation water salinity is critical threat to enhance agricultural food production to full fill the demand of billion plus people worldwide. Salt affected soils covers 6.73 Mha in India and ~1000 Mha area around the world. Irrigation scheduling of saline water is the way to ensure food security in salt affected areas. Research experiment was conducted at ICAR-Central Soil Salinity Research Institute, Experimental Farm, Nain, Haryana, India with 36 treatment combinations in double split plot design. Three sets of treatments consisted of (i) three regimes of irrigation viz., 60, 80 and 100% (I1, I2 and I3, respectively) of crop ETc (crop evapotranspiration at identified respective stages) in main plot; (ii) four levels of irrigation water salinity (sub plot treatments) viz., 2, 4, 8 and 12 dS m⁻¹ (iii) applications of two PBRs along with control (without PBRs) i.e. salicylic acid (G1; 1 mM) and thiourea (G2; 500 ppm) as sub-sub plot treatments. Grain yield of wheat (*Triticum aestivum*) was increased with less amount of high salt loaded irrigation water at the same level of salinity (2 dS m⁻¹), the trend was I3>I2>I1 at 2 dS m⁻¹ with 8.10 and 17.07% increase at 80 and 100% ETc, respectively compared to 60% ETc. But contrary results were obtained by increasing amount of irrigation water at same level of highest salinity (12 dS m⁻¹) showing following trend; I1>I2>I3 at 12 dS m⁻¹ with 9.35 and 12.26% increase at 80 and 60% ETc compared to 100% ETc. Enhancement in grain yield of wheat (*Triticum aestivum*) is not need to increase amount of irrigation water under saline condition, with salty irrigation water less amount of irrigation water gave the maximum wheat (*Triticum aestivum*) grain yield.

Keywords : Irrigation Scheduling, Saline Environment, *Triticum aestivum*, Yield

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