Influence of hydrophilic polymer on different crop growth parameters and yield in tomato

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A field experiment was conducted during Rabi 2008-09 at Main Research Station College of Agriculture, University of Agricultural Sciences, Dharwad to study the Impact of hydrophilic polymer on irrigation requirement and biophysical parameters in tomato. The treatments consisted of different concentrations of hydrophilic (0.50 to 1.75 g/plant) and another was control. These treatments were imposed at the time of transplanting of seedlings. The results of the investigation revealed that among the treatments the application of liquasorb (1.75 g/plant) into the soil increased different crop growth parameters such as total dry matter (TDM) production (147.3 g/plant), leaf area (LA)/plant (78.23 dm² plant⁻¹), leaf area index (LAI) (1.419), absolute growth rate (AGR) (1.84 g plant⁻¹ day⁻¹), crop growth rate (CGR) (3.22 g m⁻² day⁻¹), relative growth rate (RGR), (6.30 g g⁻¹ day⁻¹ x 10⁻³) net assimilation rate (NAR) 0.0552 g m⁻² day⁻¹, leaf area duration (LAD) 26.97 days, biomass duration (BMD) 2579 g days⁻¹, and yield (36.6 t/ha) as compared to all other treatments. While lowest value of these parameters observed in control (without hydrophilic polymer). The results of this study have shown that the crop yield could be improved by adding hydrophilic polymer to the soil as the polymer in soil can store extra water and enable to the plants to utilize that water over an extended period of time.

Key words: Hydrophilic polymer, Total dry matter, Leaf area, Relative growth rate, Net assimilation rate, Biomass duration and leaf area duration