

Foliar application of chitosan improved morpho-physiological attributes and yield in summer tomato (*Solanum lycopersicum*)

ABSTRACT

Chitosan acts as an elicitor in many plant species. It not only activates the immune system of plants, but also increases the crop yields. A study was planned to investigate the effect of foliar application of chitosan on morphological, growth and reproductive characters and its consequence on fruit yield of summer tomato. The experiment comprised five levels of chitosan concentrations viz., 0 (control), 25, 50, 75 and 100 mg L⁻¹. The chitosan was sprayed two times, 25 and 35 days after transplanting. Foliar application of chitosan at early growth stages increased plant height, number of branches and leaf area plant⁻¹ and nitrate reductase activity in leaves, resulting increased total dry mass plant⁻¹ and absolute growth rate. Reproductive parameters (number of effective flower clusters and flowers plant⁻¹, and reproductive efficiency) also increased in chitosan applied plants and thereby increased the prime yield component, number of fruits plant⁻¹ of summer tomato. The higher fruit yield was recorded in 50 and 75 mg L⁻¹ of chitosan in summer tomato with being the highest in 75 mg L⁻¹ (35.61 t ha⁻¹). Therefore, foliar application of chitosan at 75 mg L⁻¹ may be used at early growth stage for getting maximum fruit yield of summer tomato under sub-tropical condition.

Keyword: Chitosan; Foliar spray; Plant growth; Fruit yield; Summer tomato