

Efficacy of Liquasorb on Morphological characters and yield components in tomato

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SUMMARY

A field experiment was conducted during *Rabi* 2008-09 at Main Research Station College of Agriculture, University of Agricultural Sciences, Dharwad to study the efficacy of liquasorb on morphological features and yield components in tomato. The treatments consisted of different concentrations of liquasorb (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 significantly the morphological such as plant height, number of branches per plant, canopy spread (top and middle) continuously during the peak growth period of crop, root length (47.6 cm/plant), root fresh weight (30.7 g/plant), root dry weight (21.6 g/plant), root volume (33.5 cc/plant) and yield component as number of fruits/plants (92.8), fruits volume/pants (6111.0 cc) and fruits yield (5.61 kg plant⁻¹ and 36.6 tons ha⁻¹) as compared to all other treatment while lowest value to all morphological and yield component was recorded in control. The results of this study have shown morphology could be improved by adding liquasorb 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, which maintained proper growth and development of crop plants.

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Tomato [*Lycopersicum esculentum* (L.) Mill.] is one of the most important vegetable crops grown widely all over the world. It is a self-pollinated crop and is a member of Solanaceous family with $2n = 24$ chromosomes. Peru Ecuador region is considered to be the center of origin (Rick, 1969). English traders of East India Company introduced tomato into India in eighteenth century. Tomato is one of the most popular and widely growing vegetables around the world either outdoors or indoors. Water is the most abundant constituent of all organisms including plants. Among the main fruits and vegetables, tomato ranks 16th as source of vitamins. Tomatoes are important source of lycopene, minerals, vitamin-A, B and also

excellent source of vitamin-C. Ripe tomato fruit is consumed fresh as salad and utilized in the preparation of range of processed products such as powder, ketchup, soup, canned fruit. Tomato is very good appetizer and its soup is said to be good remedy for patient suffering from constipation. Raw or unripe green fruit are used for preparation of pickles and chutney. Tomato is also rich in medicinal value. The pulp and juice are digestible and blood purifier. It is reported to have antiseptic properties against intestinal infections. The epidemiological studies revealed that, vegetables containing high levels of photochemical to lower the risk of several chronic diseases. Frasher *et al.* (1991) reported decreased cancer risk with the intake of tomatoes. This nutraceutical effect of tomato is attributed to 'lycopene' a major carotenoids present in tomatoes. Lycopene has a straight chain of hydrocarbons containing 12 conjugated and 2 non-conjugated double bonds. The use of hydrophilic polymers, particular under green house condition has shown that they have great potential to hold water and release slowly for crop growth and development. Polymeric soil conditioners were known since the 1950s (Hedrick and Mowry 1952). The present study is aimed at arriving appropriate concentration of and liquasorb to see efficacy on morphological features

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