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Research Article

Influence of plant growth regulators on growth, yield and quality of tomato and brinjal

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ABSTRACT : The present investigation on influence of plant growth regulators on growth, yield and quality of tomato (*Lycopersicon esculentum* Mill.) cv. MARUTHAM and brinjal (*Solanum melongena* L.) cv. SURATI RAVAIYA was carried out at the Regional Fruit Research Station, Gujarat Agricultural University, Navsari Campus, Navsari, Gujarat during winter. The experiment was laid out in Randomized Block Design (RBD) replicated thrice including nine treatments *viz.*, 2, 4-D @ 2, 4, 6 and 8 ppm as well as NAA @ 25, 50, 75 and 100 ppm along with control (water spray). Among the treatments the foliar sprays of 2, 4-D @ 6 ppm and 4 ppm gave the highest yield of tomato (69.80 t/ha) and brinjal (64.35 t/ha), respectively, while plant height of tomato (86.40 cm) and brinjal (74.47 cm) was found to be maximum with 50 ppm NAA. For quality parameters, TSS (5.56 and 5.06 ^{O}B) and acidity (0.60 and 0.29 %) were found maximum with foliar spray of 100 ppm NAA in tomato and brinjal, respectively. In tomato ascorbic acid was found maximum (22.46 mg/100g) with 8ppm 2,4-D while in brinjal it was maximum (16.46 mg/100g) with 100 ppm NAA.

KEY WORDS : Plant growth regulators, Growth, Yield, Quality, Tomato, Brinjal

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INTRODUCTION

Tomato (*Lycopersicon esculenturn* Mill.) and brinjal (*Solanum melongena* L.) are an important fruit vegetables of Solanaceous family known to be cultivated in India since an ancient times. It is believed that the origin of tomato is tropical America while that of brinjal is India. It is cultivated as a cash crop as well as a vegetable crop on commercial base in almost all parts of India. Similarly, brinjal is also most commonly and extensively grown throughout the country because of its adaptability to wide range of agro-climatic conditions.

Gujarat occupies 38.80 and 72 thousand ha area with 97.84 and 123.6 lakh M.T. production in tomato and brinjal crops, respectively (Anonymous, 2011). Both the vegetable crops are most commonly and extensively grown throughout the country because of its adaptability to wide range of agro-climatic conditions. Plant growth regulators are known to influence on higher yields as well as quality in horticultural crops. Considering the popularity and area under tomato and brinjal as well as its market potential, the experiment was conducted to investigate the influence of PGRs under south Gujarat conditions.

EXPERIMENTAL METHODS

The experiment on tomato cv. 'MARUTHAM' and brinjal cv. 'SURATI RAVAIYA' was conducted at Regional Fruit Research Station, Gujarat Agricultural University, Navsari (South Gujarat) during winter. Treatments comprised of foliar sprays

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