

Research Paper

THE ASIAN JOURNAL OF HORTICULTURE

Vol. 6 | Issue 2 | December, 2011 | 279-282



Article history:

Received : 12.04.2011

Revised : 16.06.2011

Accepted : 24.08.2011

Response of bio-fertilizers and inorganic fertilizers on growth and yield of tomato cv. PUSA RUBY

■ ANKUR KUMAR¹, JITENDRA KUMAR¹, BRAJ MOHAN², J.P. SINGH, RAJBEER¹ AND NATHI RAM¹

Associated Authors:

¹Department of Horticulture, C.C.S. University, MEERUT (U.P.) INDIA
²Department of Horticulture, Gocher Mahavidyalaya, Rampur Maniharan, SAHARANPUR (U.P.) INDIA

Author for correspondence :

J.P. SINGH

Department of Horticulture, Gocher Mahavidyalaya, Rampur, Maniharan, SAHARANPUR (U.P.) INDIA

Abstract : The field experiment was conducted at the Horticulture Research Farm, Department of Horticulture, C.C.S. University, Meerut (U.P.) during 2007-08. The experiment consisted 9 treatments of inorganic and biofertilizers. Three biofertilizers treatments *i.e.* B₀, B₁, (B₀ = no biofertilizer, B₁ = phosphobacteria) and B₂ = *Azospirillum* and three, inorganic fertilizer treatments *i.e.* I₀, I₁ and I₂ (I₀ = no inorganic fertilizer, I₁ = 60kg N+30 kg P/ha), I₂=120 kg N + 60 kg P/ha. The maximum plant height (77.32cm), no. of branches/plant (12.28), diameter of fruits (58.72 cm) average fruit weight (5.06 g) and yield (360.82q/ha), the earliest flowering (43.05days) were noted in the treatment I₂, where nitrogen and phosphorus was applied 120 kg and 60 kg/ha, respectively and diameter of main stem showed non significant effect. But the interaction effect on plant height, number of branches/plant, diameter of main stem, days taken to first flowering, diameter of fruit, average fruit weight and yield gave the better performance at the treatment combination I₂B₂ as compared to other treatments and control.

Key words : Tomato, Nitrogen, Phosphorus, Phosphobacteria, *Azospirillum*

How to cite this article : Kumar, Ankur, Kumar, Jitendra, Mohan, Braj, Singh, J.P., Rajbeer and Ram, Nathi (2011). Response of bio-fertilizers and inorganic fertilizers on growth and yield of tomato cv. PUSA RUBY, *Asian J. Hort.*, 6 (2) : 279-282.

Tomato (*Lycopersicon esculentum* Mill.) is a member of Solanaceae family and genus *Lycopersicon*. Tomato is one of the most popular and principal vegetable crops grown in India and other parts of the world. It can be grown in almost all parts of the country except higher altitudes. Horticultural crops are likely to benefit the most from bio-fertilizer inoculation as the production practice of these high value crops are readily amenable to inoculation, and vegetable crops like tomato will form a good condition from bio-fertilizers inoculation due to the very nature of its root morphology.

It is known that all the nutrients like nitrogen, phosphorus and potash are very necessary for proper growth and yield of not only tomato but also for all plants because these elements are the major constituent of plant protein, amino-acids, chlorophyll, protoplasm, nucleic acid, phospholipids and some vitamins which play a definite role in the physiology of plant life. Therefore, the requirement of three elements have to be fulfilled by the use of inorganic manures. Although the successive use

of inorganic manures is responsible for deterioration of soil health.

The bio-fertilizer of microbial origin, *i.e.* *Azospirillum* as a source of nitrogen and phosphobacteria of phosphorus are the most for potential biological systems. For more rational agricultural programme, the economical and eco-friendly use of these nitrogenous and phosphates bio-fertilizers has now become an important issue

RESEARCH METHODS

The present experiment was carried out at the Horticulture Research Farm, Department of Horticulture, Ch. Charan Singh University, Meerut (U.P.) during 2007-2008. The topography of the field on which the experiment was conducted was fairly uniform. The experiment was laid out in Randomized Block Design. The experiment consisted 9 treatments of inorganic and biofertilizers. Three biofertilizers treatments *i.e.* B₀, B₁, (B₀ = no biofertilizer, B₁ = phosphobacteria) and B₂ = *Azospirillum* and three inorganic fertilizer treatments *i.e.* I₀, I₁ and I₂