



Research Paper

Article history :

Received : 15.10.2013

Revised : 03.04.2014

Accepted : 17.04.2014

Effect of *Azotobacter*, *Azospirillum* and different level of inorganic fertilizer on growth and flowering of petunia

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ABSTRACT : Modern agriculture has been heavily dependent on chemical fertilizers to meet the food, flower demand of ever increasing population. In recent years, chemical pesticides and fertilizers were extensively applied to obtain higher crop yield. Overusing agrochemicals led to several agricultural problems such as poor cropping system. The excessive application of chemicals nitrogen fertilizer accelerated soil acidification and threatened an air and groundwater contamination at the sometime. Using organic fertilizers and bio-fertilizers offers a safe option for reducing the agrochemicals inputs. Hence, the current trend throughout the world is to expose the possibility of using alternate nutrient sources or increasing the efficiency of chemical fertilizers by supplementing them with organic fertilizers and bio-inoculants comprising largely microbes like bacteria. Among the different microbial inoculants or bio-fertilizers, *Azospirillum*, nitrogen fixing bacteria, *Azotobacter* and decomposing microorganism are considered as bio fertilizers. An experiment was carried out in Department of Horticulture, Sam Higginbottom Institute of Agriculture Technology and Sciences, Allahabad (U.P.) during 2011-2012. The treatment was laid out in simple Randomized Block Design (RBD) with ten treatments replicated thrice. The treatment consisted of two different biofertilizers viz., *Azotobacter* and *Azospirillum* with different levels of inorganic fertilizers (N: P: K) as a combination. A combination dose of *Azotobacter* and *Azospirillum* with different levels of nitrogen at 50%, 75%, 100% and full dose of P: K (basal dose) was applied at 30, 60, 90 and 120 days after transplanting. It was observed that Treatment T₈ (*Azospirillum* + *Azotobacter* + 100% dose of NPK) had significant effect on vegetative, reproductive stages of plant as well as increase the quality and yield of the flowers, when compared to control.

KEY WORDS : *Azotobacter*, *Azospirillum*, NPK, Petunia, Biofertilizers

HOW TO CITE THIS ARTICLE : Sarwa, P.C., Soni, M., Vaidya, P.P. and Khandekar, J.S. (2014). Effect of *Azotobacter*, *Azospirillum* and different level of inorganic fertilizer on growth and flowering of petunia. *Asian J. Hort.*, 9(1) : 61-63.