

Effect of nitrogen and phosphate solubilizing bacteria on growth and quantitative traits of tuberose (*Polianthes tuberosa* L.)

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(Received: 14 Jun-2012 ; Accepted: 23 Apr-2013)

Abstract

Tuberose is one of the most important cut-flowers in Iran and the world. Since nutrition is an important factor in growth and quality of ornamental plants, a factorial experiment was conducted, based on completely randomized blocks design, with 12 treatments and 3 replications, in Zanjan province, in 2011, to assess the effects of nitrogen (N) fertilizer and phosphate solubilizing bacteria (PSB) on growth and quantitative traits of tuberose (*Polianthes tuberosa* L.). N from urea fertilizer source at 4 levels (0, 50, 100 and 200 kg/ha) and PSB at 3 levels (0, 5 and 10 kg/ha microbial fertilizer) were applied to soil. Soil was inoculated with PSB before planting and N was applied in two splits (after emergence of the bulbs and 20 days after the first application). In this experiment, the plant height, length of florescence, stem and floret diameter, number of leaves and florets, and fresh and dry weights of aerial parts and roots were measured. The results of ANOVA of data showed that application of N fertilizer increased significantly all measured traits, except stem and floret diameters. All growth parameters, except dry weight of aerial parts, were increased significantly by soil inoculation with PSB. Based on the results of this study, application of 200 kg/ha N and 10 kg/ha microbial fertilizer containing PSB resulted in the highest yield and quantitative traits for tuberose.

Keywords: Ornamental plants, Cut flower, Nutrients.

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