



Effect of inorganic fertilizer (nitrogen) and bio-fertilizer (*Azospirillum*) on growth and flowering in African marigold (*Tagetes erecta* L.) cv. PUSA NARANGI GAINDA

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Abstract : The present investigation was conducted at Horticulture Research Farm, Department of Horticulture, Gochar Mahavidyalaya, Rampur Maniharan, during the year 2010-2011. The experiment was laid out in Randomized Block Design, consisting of 9 treatments with control. Two levels of *Azospirillum*, i.e. 1.5kg/ha and 2kg/ha and two levels of nitrogen, i.e. 100 Kg/ha and 150 kg/ha with one control were taken. All growth and flowering attributes are significantly affected with the application of nitrogen and biofertilizer. The maximum plant spread (50.82cm), no. of primary braches /plant (16.93), no. of secondary braches /plant (11.27), flower stalk length (8.58cm), flower diameter (5.56cm), no. of flower/plant (19.54), weight of 5 flowers (164.32) and earlier flowering (52.48) was recorded at the treatment A₂ (*Azospirillum* 2kg/ha), while the plant height (69.55cm) was recorded under the treatment N₂ (nitrogen 150kg/ha) and earlier no. of days taken to seed ripening (107.54) was recorded at A₁ (*Azospirillum* 1.5kg/ha) as comparison to individual treatment and control.

Key Words : Nitrogen, *Azospirillum*, Growth, Flowering, Marigold

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INTRODUCTION

Marigold (*Tagetes erecta* L.) is one of the most important hardy flower crops grown commercially in different part of the world. In India, it is one of the most commonly grown loose flowers and extensively used on religious and social functions, in one form or others. Marigold gained popularity among gardeners and flower dealers on account of its easy cultivation, wide adaptability of diverse soil and climatic conditions, habit of profuse, flowering, short duration to produce marketable flowers, wide spectrum of attractive colours, shape and good keeping quality. The integrated use of nutrients is the need of the hour. The use of organic manures and bio-fertilizers along with the balanced use of chemical fertilizers is known improve physico-chemical and biological properties of soil, besides improving the efficiency of applied fertilizers. Integrated nutrient management in marigold is comparatively a new aspect of research. Limited research work has been done on the

balance use of different sources of nutrient in this important flowering crop.

MATERIALS AND METHODS

The field experiment was conducted at Horticultural Research Farm of Gochar Mahavidyalaya Rampur Maniharan, Saharanpur, U.P. during 2010-2011. Rampur Maniharan is situated on the Delhi - Saharanpur high way. The experiment was laid out in Randomized Block Design (RBD) with 9 treatment and replicated thrice. Two levels of *Azospirillum*, i.e. 1.5kg/ha and 2kg/ha and two levels of nitrogen, i.e. 100 kg/ha and 150 kg/ha with one control were taken. Seedlings of African Marigold were raised in the beds of the nursery. The experimental field was prepared well by repeated ploughing followed by planking to a fine tilt required was marked and beds were prepared according to the plan of layout. Recommended doses of FYM 2.5-3.0 kg/m², 40 g/m² P₂O₅ and

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