

Response of nitrogen, phosphorus and potash on growth and flower production of chrysanthemum (*Chrysanthemum morifolium* Ramat) cv. IIHR-6

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ABSTRACT

The experiment was carried out at the Department of Horticulture, B. A. College of Agriculture, AAU, Anand to study the effect of nitrogen (100, 200, 300 kg/ha), phosphorus (0, 100 kg/ha) and potash (0, 100 kg/ha) on growth and flower production in chrysanthemum cv. 'IIHR - 6' in RBD factorial during 2005-06, 2006-07 and 2007-08. There were twelve treatment combinations. The results revealed that the maximum plant height (56.85 cm) was recorded with treatment N₁ (100 kg/ha). The significantly maximum plant height (56.78 cm) was recorded with treatment P₁ i.e. no phosphorus (0 kg/ha). The different levels of potash on plant height were found non-significant. In respect to plant spread, significantly maximum plant spread (1237 sq.cm) were recorded with nitrogen level N₂ (200 kg/ha) in pooled, while maximum plant spread (1208 sq. cm) was found with treatment P₁ (0 kg/ha). The significantly maximum plant spread (1151 sq. cm) was recorded with K₁ (0 kg/ha) which was at par with K₂ (100 kg/ha). The maximum number of flowers/plant (36.94) was recorded with the nitrogen level N₁ (100 kg/ha) during the year 2005-06. while during the year 2007-08 it was maximum (44.08) with nitrogen level N₃ (300 kg/ha) which was at par with N₂ level (200 kg/ha) during the same year, while it was found non-significant in 2006-07 and in pooled. The significantly maximum flower yield i.e. 12953 and 11041 kg/ha was recorded with the nitrogen level N₂ (200 kg/ha) during the year 2006-07 and 2007-08, respectively.

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Chrysanthemum is one of the most widely cultivated garden flowers and ranks second in popularity next to rose. Its flowers are in great demand throughout the world. It has beautiful range of colour shades, widely different flower shape and height range as chrysanthemum. A nutrition plays an important role for higher and better quality of flowers. The IIHR-6 cultivars well known for its high yielding capacity and good quality of flowers. Therefore, it requires proper quantities of major nutrients like nitrogen, phosphorus and potash. Very little research based information is available on nutrition aspect of chrysanthemum; therefore, this experiment has been conducted in middle Gujarat conditions. Therefore, the present investigation was carried out with a view to "Response of nitrogen, phosphorus and potash on growth and flower production of chrysanthemum (*Chrysanthemum morifolium* Ramat) cv. IIHR - 6".

MATERIALS AND METHODS

The present investigation on "Response of nitrogen, phosphorus and potash on growth and flower production of chrysanthemum (*Chrysanthemum morifolium* Ramat.) cv. "IIHR-6" was conducted at the College Nursery, Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand during 2005-06,

2006-07 and 2007-08. The experiment was laid out in Factorial Randomized Block Design (RBD) with different treatments comprising of three levels of nitrogen (100, 200, 300 kg/ha), two levels of phosphorus (0, 100 kg/ha) and two levels of potash (0, 100 kg/ha). There were twelve treatment combinations.

Chrysanthemum (*Chrysanthemum morifolium* Ramat.) is generally propagated through suckers. The suckers of "IIHR-6" cultivar were transplanted in the plot at the spacing of 45 x 30 cm. The recommended cultural practices were followed during the experimentation except fertilizer application. Fertilizers were applied as per treatments. The data on plant growth and flower production were recorded and statistically analyzed.

RESULTS AND DISCUSSION

The results obtained from the present investigation have been presented in the following sub heads:

Plant height (cm):

Effect of nitrogen :

The data presented in Table 1 revealed that the individual effect of different levels of nitrogen on plant height was found significant during the year 2005-06 only,