



Performance of varieties and chemical fertilizers on growth and flowering in chrysanthemum

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Abstract : A field experiment was conducted to investigate the performance of varieties and chemical fertilizers on chrysanthemum at Horticultural Instructional Farm, Junagadh Agricultural University, Junagadh during *Rabi* season of 2003-04 and 2004-05. The experiment was laid out in Factorial Randomized Block Design with twenty four treatments combinations, replicated three times. The treatment consisted of two varieties viz., IIHR-6 (V_1), Shyamal (V_2); three levels of nitrogen (100, 200 and 300 N kg ha⁻¹), two levels of phosphorus (100 and 150 kg P₂O₅ ha⁻¹) and two levels of potash (100 and 150 kg K₂O ha⁻¹). Both the varieties significantly influenced growth and flowering parameters in which higher plant height, number of branches per plant and leaf area were observed in the variety IIHR-6 in both the years and in pooled. Similarly, higher fresh and fry weight of plant, flowering parameters like weight of 10 flowers, flowering span and dry weight of flowers were recorded in variety Shyamal. This variety also take more days for first flower bud initiation and first flower open. Application of nitrogen at 300 kg ha⁻¹ recorded significantly highest plant height, number of branches per plant, leaf area, fresh and dry weight of plant, flowering span, total fresh and dry weight of flower, weight of 10 flowers and diameter of flower during both the years and pooled. This dose (300 kg N ha⁻¹) also taken less days for first flower bud initiation and first flower open. Phosphorus also played a significant role in improving all of these attributes at higher level except, leaf area, fresh weight of plant, number. of days taken for first flower open and flowering span. Potash failed to influence all of these growth and flowering parameters during both the years and pooled.

Key Words : Nitrogen, Phosphorus, Potash, *Chrysanthemum morifolium*, Growth, Flowering, Parameters, Cultivars

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INTRODUCTION

Chrysanthemum (*Dendrathera grandiflorum* Ramat) is a popular flower crop of commercial importance belonging to family Asteraceae and native of Europe and Asia. The bloom of the Asteraceae appears on capitulum's inflorescence. It consists of a large number of small florets in very close formation. The florets are of two types, ray florets and disc florets. The ray florets are large, attractive, and colorful and of various shapers which give beauty to head, where as disc florets are smaller and centrally placed. The chrysanthemum is mainly grown for its cut flower for making bouquets, garlands, *veni* and for decoration during religious and social functions. Some species of chrysanthemum are also cultivated as source of pyrethrum, an important insecticide (Chittenden,

1956; Carter, 1980; Pascual, Villalobos, 1996). Manurial schedule of N, P and K plays a major role in successful production of chrysanthemum (Lunt and Kofranek, 1958; Hansen and Lynch, 1998). It is evident from the literature that very little research work has been carried out on response of chrysanthemum varieties to different levels of nitrogen, phosphorus and potash for growth and flowering parameters in Gujarat state, especially in South Saurashtra region. With this view, the present study was under taken to find out optimum level of nitrogen, phosphorus and potash on growth and flowering parameters of chrysanthemum cultivars (IIHR-6 and Shyamal).

MATERIALS AND METHODS

The field experiment was conducted during the *Rabi*

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