



Research Paper

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Effect of different levels of nitrogen, phosphorus and potash on quality, nutrient content and uptake of chrysanthemum cultivars

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ABSTRACT : A field experiment was conducted on medium black calcareous soil of Horticultural Instructional Farm, Junagadh Agricultural University, Junagadh during *Rabi* season -2003-04 and 2004-05. The experiment was laid out in factorial randomized block design with twenty four treatments 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 quality parameters. Higher length of pedicel, vase life of cut flower and longevity of cut flower were recorded in variety Shyamal. While both varieties had non-significant effect on nutrient contents of vegetative and flowering part of the plant. While higher uptake of nitrogen was recorded in Shyamal. Effect of varieties were found to be non-significant with respect to availability of nutrients (N, P and K). Nitrogen at 300 kg ha⁻¹ improved the length of pedicel and longevity of cut flower but lowered vase life of cut flower. This level of nitrogen significantly improved N, P and K contents of both parts, as well as uptake of nitrogen. P₂ level of phosphorus had a significant impact on length of pedicel and increased the N content of leaves and P content of both parts, as well as uptake of nitrogen and phosphorus, where as higher dose of phosphorus produced higher availability of phosphorus in the soil after completion of the experiment. Varying levels of potash failed to influence quality, nutrient content and uptake as well as availability of nutrients significantly during the experiment.

KEY WORDS : Nitrogen, Phosphorus, Potash, *Chrysanthemum morifolium*, Content, Uptake, Cultivars

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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 colourful 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 quality, content and uptake of nutrients of chrysanthemum cultivars (IIHR-6 and Shyamal).