

Response of NPK applications on foliar N, P and K content of chrysanthemum cv. SNOW BALL

B. P. SHARMA* AND Y. D. SHARMA

Department of Floriculture and Landscaping, Dr. Y. S. Parmar University of Horticulture and Forestry, NAUNI-SOLAN (H.P.) INDIA

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SUMMARY

NPK applications at the different stages of crop growth and flowering of chrysanthemum cv. SNOW BALL was undertaken to study the foliar N, P and K content during the years 2001-2002. From these studies, it was found that at 'before flowering' stage, foliar N, P and K content were more with graded levels of NPK. At 'after Flowering' stage, these foliar content showed a similar but declining trend with NPK applications.

Key words : NPK, Chrysanthemum.

Chrysanthemum (*Dendranthema grandiflorum*, Tzelve) is one of the leading commercial flower crops of India and is used both as cut flower and loose flowers too. Due to variety in colour, shape and size, it is becoming popular day by day both nationally and internationally. For quality flower production, application of balanced nutrients dose play a very important role. As chrysanthemums are heavy feeders of nutrients and deficiency in any kind can hamper the crop growth and flowering. Leaves are the primary site of plant metabolism, therefore the changes in nutrient supply are reflected in the composition of the index tissues. These changes are more pronounced at certain stages of plant development. The leaf nutrient concentrations at specific growth stages are related to crop performance. Keeping above facts in view, the present study was undertaken to observe the leaf nutrient status at two different stages and also to see their effects on crop performance.

MATERIALS AND METHODS

This experiment was conducted at Research farm of Department of Floriculture and Landscaping, Dr. Y. S. Parmar University of Horticulture and forestry, Nauni-Solan during the years 2001-2002. Chrysanthemum cv. SNOW BALL which is incurving in nature and white in colour was selected for the investigation. The rooted plants were planted in a net plot size of 1.0 x 1.0 m at a distance of 30 x 30 cm apart on July 2nd of both the years. Treatment comprised of four levels of nitrogen viz. 0, 15, 30 and 45 g/m² and three each of phosphorus and potash @ 0, 15 and 30 g/m². The experiment was laid out in randomized block design with three replications in factorial

scheme. In all, there were 36 combinations. CAN, SSP and MOP were the sources of N, P and K, respectively. Full amounts of phosphorus, potash and half of nitrogen were applied at the time of planting and another half of nitrogen after one month of planting. Cultural practices like weeding, hoeing, irrigation, disbudding etc. were followed from time to time.

Leaf samples were collected from five representative plants. After one month of planting, leaves from top, middle and bottom positions of plants were taken both at 'before flowering' and 'after flowering' stages. Soil of the experimental area was silty loam and found low in respect of available nitrogen and high in available phosphorus and potash. For analyzing the foliar for N, P and K content, leaves after collection were washed in series and dried at 64°C in oven till the weight becomes constant (Chapman, 1964). Nitrogen content of leaves were estimated by using Micro-Kjeldahl's method (Jackson, 1973), whereas phosphorus content of leaves were estimated by Vanado-Molybdate yellow colour method (Jackson, 1973). Foliar K-content in the extract being determined on Flame Photometer using Neutral Normal Ammonium Acetate (Merwin and Peech, 1951). The data recorded were analyzed and results were interpreted on basis of pooled analysis.

RESULTS AND DISCUSSIONS

Foliar N-content

Maximum foliar N-content (5.18%) were found with N₃ treatment which differ significantly from N₁ and control (Table 1). As nitrogen increases from N₂ to N₃, foliar N-content did not increase proportionately. Such

* Author for correspondence.