



Effect of chlormequat spraying on vegetative growth and flowering of dahlia (*Dahlia variabilis* L.)

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ABSTRACT

The present investigation was carried out at the Department of Horticulture, Ch. S. S. S. P. G. College, Machhara during the winter season of the year 2004-2005. The results worked out during the investigation revealed that application of chlormequat (5500 ppm) and (4500 ppm) reduced plant height and leaf area; and increased stem diameter and number of branches per plant. 3500 ppm chlormequat recorded a minimum days to full bloom. Increase in number of flowers and flower diameter was also observed with 5500 ppm and by 4500 ppm, respectively.

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Key words : Dahlia, Chlormequat

Dahlia is an important ornamental plant grown for wide range of form, size and colour of its flowers. It is widely grown for garden displays, home decoration, bedding, cut flower, flower arrangement and other various ornamental purposes. Different growth regulators have been tested for various ornamental plants to improve their quality (Bhattacharjee and Bose, 1979). The use of chlormequat has been found remarkably successful in improving the overall performance of several flowering plants (Shanmugan and Muthuswamy, 1974) and (Khan and Tiwari, 2003). Keeping in view the above facts, the present study was undertaken to study the effect of chlormequat on growth and flowering of dahlia.

MATERIALS AND METHODS

The present investigation was carried out at the Department of Horticulture, Ch. S. S. S. P. G. College, Machhara during the winter season of the year 2004-2005. Experiment was laid out in a Completely Randomized block design with three replications. Well-developed uniform size rooted cuttings of dahlia were transplanted in earthen pots filled with a growing mixture of soil, sand and FYM in a ratio of 2:1:1. Treatments consisted of five levels of chlormequat (1500 ppm, 2500 ppm, 3500 ppm, 4500 ppm, 5500 ppm, and a control) were maintained. The spraying was done in two splits, *i.e.* 20 and 40 days after transplanting during the morning hours. The observations *viz.*, plant height, number of leaves

per plant, No. of branches per plant, leaf area, stem diameter, days to full bloom, number of flowers per plant and flower diameter were recorded. The data was subjected to statistical analysis to find out the actual differences.

RESULTS AND DISCUSSION

All the treatments of chlormequat showed a tremendous effect over control for almost all the characters studied (Table 1) Chlormequat sprays reduced plant height and leaf area. The dwarfest plant (37.30cm) was observed with 5500 ppm followed by 4500 ppm (39.57cm) as compared to control (50.88cm). The leaf area was reduced up to 88.57 cm with 4500 ppm followed by 88.85 cm with 5500 ppm. These concentrations were however statistically at par. Stem diameters was also stimulated to some extent. Reduction in plant height, leaf area, and increase in number of branches and stem diameters by chlormequat has been reported by Khan and Tiwari (2003). Reduction in plant height and leaf area due to inhibiting cell division and elongation of sub-apical meristem by chlormequat, MH and B-9 was also reported by some workers. Similar results were observed by Kumar and Pal (2004) on Chrysanthemum by the use of Peclobutrazol. Maximum number of branches per plant (7.13) was recorded with 4500 ppm chlormequat. Number of leaves (32.18) increased with the chlormequat sprays and it was maximum (32.18) was recorded with 4500