Research Paper

Investigation of different levels of gibberellic acid (GA₃) and pinching treatments on growth, flowering and yield of chrysanthemum (*Chrysanthemum morifolium* Ramat.) cv. 'IIHR-6' under middle Gujarat conditions

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ABSTRACT

A field experiment was conducted at College Nursery, Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand during *Kharif-Rabi* season of the year 2009-10 to study the Investigation of different levels of gibberellic acid (GA₃) and pinching treatments on growth, flowering and yield of chrysanthemum (*Chrysanthemum morifolium* Ramat.) cv. 'IIHR-6' under middle Gujarat conditions. Significantly, maximum number of branches, plant spread, number of suckers per plant, number of flowers per plant, yield of flowers per plant and yield of flowers per hectare were obtained in the treatment GA₃ 200 ppm and pinching at 60 days after transplanting. However, minimum number of days for initiation of flowering and that for peak flowering, maximum duration of flowering, flower diameter, fresh flower weight, shelf and vase lives of flowers were obtained in non pinched plant sprayed with 150 ppm GA₃.

Chrysanthemum (*Chrysanthemum morifolium* Ramat.) belongs to the family 'Asteraceae' and is one of most widely cultivated garden flower ranking second in popularity next to rose. The name 'Chrysanthemum' is derived from the Greek words " Chrysos" means 'Garden' and "Anthos" means 'Flower' by Linneaus in 1753 (Gortzing and Gillow, 1964). It is native to the northern hemisphere chiefly Europe and Asia. Among different flowers, chrysanthemum enjoys worldwide popularity and its flower is in great demand throughout the world. The regulation of flower production is an important aspect of commercial growing of chrysanthemum to meet increasing demand of cut flowers for longer period which can be achieved through some agrotechniques such as pinching and use of GA₃ sprays. GA₃ affects the growth through its activity in terms of cell elongation and multiplication. Similarly, pinching regulates the crop and increases the flowering. Keeping this in view, the present study was initiated to investigate the effect of GA₃ and pinching on improvement of growth and flowering in chrysanthemum cv. 'IIHR-6'.

MATERIALS AND METHODS

The field experiment was carried out at the College Nursery, Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand, during *Kharif-Rabi* season of the year 2009-10 which was laid out in Randomized Block Design with factorial concept and replicated three times. The treatments comprised of four different concentrations of gibberellic acid *viz.*, 0, 150, 200, 250 ppm and four levels of pinching treatments *viz.*, no pinching, pinching at 30, 45 and 60 days after transplanting.

The experimental soil is classified as sandy loam locally known as '*Goradu*'. *Goradu* soil is alluvial by its origin and very deep, well drained and fairly retentive of moisture. The field was ploughed well and properly levelled. Plots measuring 1.8 x 3.6 m were made and a basal dose of well decomposed farmyard manure was applied uniformly to all the experimental plot @ 40 t/ha and mixed well after layout of the plots. Nitrogen, phosphorous and potassium were applied @ 200:100:100 kg/ha. One fourth dose of N and full dose of P and K