

## Effect of PGR's on growth, flowering and flower yield of chrysanthemum (*Chrysanthemum indicum* L.) cv. 'LOCAL WHITE'

S.A. AKLADE, KIRTI BARDHAN, PARAMVEER SINGH, D.K. KAKADE AND A.B. PATHAN

Accepted : November, 2009

See end of the article for authors' affiliations

Correspondence to:

S.A. AKLADE

Soil Water Management  
Research Unit, Navsari  
Agricultural University,  
NAVSARI (GUJARAT)  
INDIA

### ABSTRACT

The present investigation was carried out during 2004-05 at NAU, Navsari. The experiment was laid out in RBD with 10 treatments comprising of 3 levels of each GA<sub>3</sub>, NAA and CCC along with control which were replicated thrice. Application of GA<sub>3</sub> at 100 mg/l was found beneficial for increasing all the characters under study, except number of branches which were maximum (14.19/plant) under CCC at 2000 mg/l. GA<sub>3</sub> at 100 mg/l recorded maximum plant height (68.30 cm), minimum days for blooming (61.59), greater flower size (7.39 cm), stalk length (13.87 cm), fresh weight (3.88 g) and shelf life (11.08 days) of flowers. It also produced maximum number of flowers per plant (44.33) and flower yield (19.24 t/ha).

**Key words :** Rose, Planting environment, Cutting, Media and rooting

Chrysanthemum is a leading commercial flower crop, grown for cut and loose flowers and also as a pot plant. It is grown in many parts of the world owing to its excellent beauty and economic values. The growth and yield of plants is mainly influenced by two principle factors viz., genetically and cultivation or management factors. In recent years scientist have given due attention to the idea of regulating plant growth as third most important factor in improving the growth, yield and flower quality with the application of plant growth regulators in various ways. These substances modify the plant physiological processes within the plant, which ultimately affects plant growth and development. Various growth regulators are now a days being tried for controlling growth and flowering of chrysanthemum with a view to have taller or compact plants, to stretch-out or retard the rate of plant growth and also to hasten or delay the flowering period. However, the research work on this aspect of agro-technique in chrysanthemum under south Gujarat conditions is lacking and so with a view to this, present experiment was carried out to study the effect of PGR's on growth, flowering and yield of chrysanthemum cv. 'LOCAL WHITE'.

### MATERIALS AND METHODS

The experiment was conducted at College farm, N.M. College of Agriculture, Navsari Agricultural University, Navsari during the winter season of the year 2004-05 to study the effect of plant growth regulators on growth, flowering and yield of chrysanthemum (*Chrysanthemum indicum* L.) cv. 'LOCAL WHITE'. The experiment was laid out in Randomized Block Design

(RBD) with ten treatments which were replicated three times. The treatments, comprise of three different concentrations of each of GA<sub>3</sub> at 50, 75 and 100 mg/l, NAA at 50, 100 and 150 mg/l and Cycocel (CCC) at 1000, 1500 and 2000 mg/l along with control (water spray). Three weeks old, healthy and uniform suckers were procured from FRS, Navsari and selected for transplanting which was done at a spacing of 40 x 30 cm with 30 plants per gross plot. The foliar application of growth retardants was done after 30 and 45 days of transplanting after pinching operation. The observations on growth, flowering and yield parameters were recorded from five randomly selected tagged plants in each plot and the data analysis was carried out statistically.

### RESULTS AND DISCUSSION

The results obtained from the present investigation are presented in Table 1.

#### *Effect of PGR's on growth of chrysanthemum :*

The data presented in Table 1 revealed that, significantly maximum plant height (68.3 cm) was recorded under plant sprayed with GA<sub>3</sub> at 100 mg/l, while CCC recorded significant reduction in plant height under all the concentrations. The extension in plant height with GA<sub>3</sub> might be due to hyper elongation of internodal length and the similar results were also obtained by Mahariya *et al.* (2003) and Rakesh *et al.* (2003) in chrysanthemum. Whereas, application of CCC at 2000 mg/l produced more number of branches per plant (14.19) as compared to rest of the treatments. Increase in number of branches