

## Effect of growth regulators on growth, flowering and yield of China aster

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### ABSTRACT

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An experiment was carried out at the Floriculture Unit, University Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during *rabi* season of the year 2005-06 to study the effect of growth regulators on growth, flowering and yield of China aster. The results revealed that, growth in terms of plant height, branches per plant, leaves per plant and diameter of stem were found maximum in those plants which were applied with GA<sub>3</sub> 200 ppm. While, an early flowering and 50 per cent flowering were noticed in the treatment of GA<sub>3</sub> 100 ppm. Whereas, yield in terms of per plant, per plot and per hectare were noticed the maximum in the treatment of GA<sub>3</sub> 200 ppm.

**Key words :** China aster, Growth regulators

Flowers, crowning glory of gods creation are an inseparable part of human life. They are part of age old tradition and culture of Indian society symbolizing purity, peace, passion, love and beauty. Due to their aesthetic, economic and social value their demand in the global market is increasing tremendously.

Among the flowers used for domestic market, aster (*Callistephus chinensis* L. Nees) is to be considered as one of the important commercial flowers (2n=18) belongs to family Asteraceae and is native of China. Its generic name *Callistephus* is derived from two Greek words *Kallos*- beauty and *stephonusa* crown allowing large colourfull flower heads. Aster have been developed from single form of wild species *Callistephus chinensis*.

Plant growth regulators have played a significant role by modifying the growth, flowering, seed set and seed yield of plants. Aster grown under field condition, produce flowers of inferior quality. Further market apical dominance in aster has been one of the factor limiting the production of flowers. Plant growth regulators are being increasingly used to manipulate the growth and flowering of ornamental plants (Saini and Arora, 1975). However, the research work on this, aspect of agro-technique in China aster in Vidarbha region is lacking with a view to this present experiment was carried out.

### MATERIALS AND METHODS

The experiment was conducted at Floriculture Unit, University Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola to study the effect of growth regulators on growth, flowering and yield of china aster during *rabi* season of the year 2005-06. The experiment was laid out in Randomized Block Design

(RBD) with three replications. The present investigation comprises growth regulators at different concentrations viz., T<sub>1</sub> – GA<sub>3</sub> 100 ppm, T<sub>2</sub> – GA<sub>3</sub> 200 ppm, T<sub>3</sub> – MH 250 ppm, T<sub>4</sub> – MH 500 ppm, T<sub>5</sub> – Ethrel 100 ppm, T<sub>6</sub> – Ethrel 200 ppm, T<sub>7</sub> – NAA 100 ppm, T<sub>8</sub> – NAA 200 ppm and T<sub>9</sub> - control (Water spray). The seeds of China aster cv. POORNIMA was made available from Indian Institute of Horticulture Research (IIHR), Hesseargatta, Bangalore. These seeds were sown on raised beds of 2 x 1 m size in line 10 cm part to raise the seedlings. Seedlings of aster were transplanted in the field when they had three to four leaves and attained 15 to 20 cm a height (40-45 days). Immediately after transplanting, the seedlings were wakened using rose can. Method of planting adopted was ridges and furrows. The first foliar spray of growth regulators were given on 7<sup>th</sup> December, 2005 i.e. 15 days after transplanting and 2<sup>nd</sup> spray was given on 21<sup>st</sup> December 2005. Uniform spraying was done with hand sprayer. The observations on growth, flowering and yield were recorded.

### RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below.

#### *Effect of growth regulators on growth of China aster:*

The data presented in Table 1 revealed that, significantly the maximum plant height (50.43 cm), number of branches per plant (14.60 cm), number of leaves per plant (80.60) and diameter of stem (1.72 cm) were noticed under the treatment of spraying of GA<sub>3</sub> 200 ppm. While, significantly minimum plant height (32.52 cm) and number of leaves per plant (43.60) were recorded with MH 500