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Effect of growth regulators on growth, yield and quality of chrysanthemum under net house conditions

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ABSTRACT

An experiment was carried out at Floriculture Unit, Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during July, 2007 to February, 2008 to study the effect of gibberellic acid and maleic hydrazide spray at 30th and 60th days after transplanting on growth flowering and yield of chrysanthemum grown under net house conditions. The results revealed that, foliar application of gibberellic acid at 200 ppm concentration resulted in maximum plant height, hastened the flowering, increased the diameter of flower, length of flower stalk and flower yield. However, number of branches per plant and vase life of flower were maximum in MH at 750 ppm.

Key words : Chrysanthemum, Gibberellic acid, Maleic hydrazide, Net house

Chrysanthemum (*Dendranthema grandiflora* Tzvelev) is one of the most important cut flower belongs to family asteraceae and originated from Northern hemisphere chiefly Europe and Asia. It is mainly grown commercially for making garlands and religious offerings. Chrysanthemum has earned tremendous popularity due to its wide range of shades and size of flowers, brilliance of colour tones, long lasting flower life, diversity in height and growth habit. It ranks second after rose (Kher, 1990). The growth and development of plants are governed by internal factors namely hormonal and nutritional balance. The balance development of plant is governed by growth regulators. These growth regulators are classified as growth promoters and growth retardants. The plant growth regulators are being increasingly used to manipulate the growth and flowering of ornamental plants. Thus, keeping in view the potentialities of growth regulators like gibberellic acid and maleic hydrazide, the present study was undertaken to find out the suitable concentration of these growth regulators for better growth, yield and quality production of chrysanthemum under net house.

MATERIALS AND METHODS

An experiment was carried out at Floriculture Unit, Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.) during July, 2007 to February, 2008. The experiment was laid out in Completely Randomized Design (CRD) with four replications. In the present investigation three levels of each gibberellic acid (100, 150 and 200 ppm) and maleic hydrazide (250, 500 and 750 ppm) were tried along with control (water spray). Experiment was laid out in net house. Illuminate net (75 %) was used as covering material. Ultra violet stabilized polyethylene film of 200 micron was fixed around the net house from ground level upto the 5 feet height. Healthy rooted cuttings of chrysanthemum cultivar 'Akola Local' (intense yellow colour, standard type) were planted in pots filled with mixture of soil + sand + FYM (60:30: 10) which was sterilized with 0.2 per cent formalin solution. Only one rooted cutting was planted per pot and all the pots were then irrigated to maintain the optimum soil moisture. Six pots were accommodated in one square meter area. Solution of gibberellic acid and maleic hydrazide was sprayed as per treatment along with control (water spray) at 30th and 60th days after transplanting. Nitrogen, phosphorous and potassium at the rate of 15, 5 and 5 g per sqm, respectively were applied through urea, single super phosphate and muriate of potash at 30 days interval. The observations on growth, flowering, flower yield and quality were recorded.

RESULTS AND DISCUSSION

Results obtained are summarized in Table 1. Analysis of variance revealed that different level of GA_3 and MH had significant effect on growth parameters, yield parameters and quality parameters.

Growth:

Different growth regulators exhibited significant differences in respect of plant height and branches per plant. Significantly maximum plant height (95.00 cm) and branches per plant (8.40) were recorded in spray of GA_3 at 200 ppm and MH at 750 ppm, respectively. However, significantly minimum plant height (79.45 cm) and branches per plant (3.20) were recorded in MH at 750