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Research Paper

Effect of foliar application of different plant growth regulators on growth, yield and quality of Gaillardia in Vidarbha region

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ABSTRACT

Foliar application of different plant growth regulators studies on gaillardia with different concentrations (ppm) were carried out with nine treatments. The maximum height of plant, maximum number of leaves, big size of flower and more stalk length of flowers obtained in treatment GA_3 200 ppm, while the spread of plant, number of primary branches, vase life of flower, number of flowers plant^{-1}, yield of flower plant^{-1}, yield of flower plot^{-1}, yield of flower ha^{-1} and weight of flower, were found maximum in treatment MH 500 ppm. The treatments MH 500 ppm and GA_3 200 ppm were found beneficial for gaillardia to obtain maximum yield and quality flowers, respectively.

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Key words : Plant growth regulators, Gaillardia, Foliar application

Among the flower used for domestic market, gaillardia (*Gaillarida pulchella*) is to be considered as one of the important commercial flowers. Gaillarida is commonly known as 'Blanket Flower'. The flowers are attractive, brightly coloured, and excellent for raising in garden as borders and beds. Gaillardia is being grown round the year in Vidarbha area which as an important cut and loose flower of the region. Yellow red coloured flowers are more demanded in the market. These are used for worship of god, preparing garlands, etc. In Vidarbha region, farmers raise this crop mainly in *Rabi* season. Presently the area under this crop is less and its is likely to be increased in the near future because heavy demand for it's flowers. However, the yield and quality of the flowers are low, which needs to be increased by adopting improved agro techniques.

Plant growth regulators are found to be rapidly absorbed by the different parts of the plant. The most common method is foliar application as it is easy, convenient, cheap and economical.

Plant growth regulators have played a significant role by modifying the growth, flowering, seed set and seed yield of plants. Gaillardia grown under field conditions produces flowers of inferior quality. Further, marked apical dominance in gaillardia has been one of the factors limiting the production of flowers. Plant growth regulators are being increasingly used to manipulate the growth and flowering of ornamental plants (Shanmugam *et al.*, 1973 and Saini and Arora, 1975). However, the research work on this aspect of agro- technique in gaillardia in Vidarbha region is lacking.

MATERIALS AND METHODS

Research work was undertaken at Satpuda Botanic Garden, College of Agriculture, Nagpur during 2006- 2007. The experiment was laid out in Randomized Block Design with nine treatments and three replications. The nine treatments included under studied were GA_3 100 ppm, GA_3 200 ppm, NAA 100 ppm, NAA 200 ppm, MH 250 ppm, MH 500 ppm, Ethrel 100 ppm, Ethrel 200 ppm and control (No spray).

The experimental field was brought to a fine tilth by ploughing twice before one month of transplantation followed by four harrowing. The size of flat bed was 3.6 m x 2.4 m prepared. After layout, the plot wise well decomposed FYM and vermicompost were applied. There after as per spacing ridges and furrows were prepared. Gaillardia seeds of the cv. Yellow dusty were collected and sown on well prepared raise beds. Irrigations was given to the plots two days prior to the transplanting of the seedling and transplanted in furrows in the field when they had three to four leaves formed. These seedling were transplanted in main field. After transplanting, seedling