



Effect of plant growth regulators on flowering and yield of gladiolus (*Gladiolus grandiflorus* L.) cv. AMERICAN BEAUTY

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ABSTRACT

The experiment was carried at College Horticulture Nursery, Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand during the year 2008-09. The treatments comprised of four growth regulators with their two levels of each viz., GA₃ (25, 50 mg/l), NAA (50, 100 mg/l), Ethrel (100, 200 mg/l) and CCC (250, 500 mg/l) including control (only water). The experiment was laid out in a Randomized Block Design with nine treatments and three replications. The results revealed that treatment of Ethrel 200 mg/l took minimum days required for spike initiation as compared to rest of the treatments. While, minimum days required for first flower opening, maximum number of spikes per plant, spike length and number of florets per spike were obtained with the application of GA₃ 50 mg/l as compared to control. Where as CCC 250 mg/l gave maximum yield of corms and cormels in terms of number and weight per plant as compared to control.

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Key words : Gladiolus, Gibberellic acid, NAA, Ethrel, CCC, Regulators

Gladiolus is a flower of glamour and perfection and known as the queen of bulbous flowers with majestic flower spikes having florets of massive form, brilliant colours, attractive shapes, varying sizes and excellent keeping quality. Gladiolus flower is ideal both for garden and floral decoration. It is highly priced for bright, beautiful and differently coloured flowers which make it attractive for use in herbaceous borders, beddings, rockeries, pots and for cut flowers.

Gladiolus is grown on all types of soils having good structure and drainage. It is a winter season crop but can be grown during rainy season in low rainfall areas with mild climate. For maximization of yield and quality of any flower crop various cultural and management practices like optimum dose of manures and fertilizers, spacing, irrigation, plant protection etc are required. Besides these practices, the increase in flower production and improvement of quality of spike can be achieved by the use of plant growth regulators. The growth regulators are classified in various groups viz., auxins, gibberellics, cytokinins, dormines and inhibitors etc. Now a days these growth regulators are commercially available in the market and used for getting the higher yield in horticultural crops.

MATERIALS AND METHODS

The present investigation was carried out during November, 2008 to March, 2009 at the Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand in Randomized Block Design (RBD) with three replications. Total a treatments comprised of four growth regulators with their two levels of each viz., GA₃ (25 and 50 mg/l), NAA (50 and 100 mg/l), Ethrel (100 and 200 mg/l), CCC (250 and 500 mg/l) and compared with control (only water).

The soil was sandy loam in texture, locally known as 'Goradu' and reasonably suitable for gladiolus cultivation. The corms were dipped for overnight (12 hrs) as treatment and then planted on raised beds one per hill at a distance of 45 x 30 cm with 6 cm depth in the month of November, 2008. Uniform basal dose of well rotten FYM was applied @ 4 kg/m² at the time of soil preparation. The fertilizer dose given to the crop was 300:200:200 kg NPK/ha as per recommendation. One third dose of nitrogen and potash as well as full dose of phosphorus was applied at the time of corm planting. Out of 2/3rd dose of nitrogen and potash, half dose of each was applied at 4 leaf stage i.e. 30 days after planting. Remaining dose of nitrogen and potash was applied at 6