

## Effect of plant growth regulators on growth and yield of gladiolus cv. AMERICAN-BEAUTY

JINESH M. PATEL\*, H.C. PATEL, J.C. CHAVDA AND M.Y. SAIYAD

Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, ANAND (GUJARAT) INDIA

### ABSTRACT

The experiment was conducted at College Horticulture Nursery, Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand during November, 2008 to March, 2009. The treatments comprised of four growth regulators with their two levels of each viz., GA<sub>3</sub> (25 and 50 mg/l), NAA (50 and 100 mg/l), Ethrel (100 and 200 mg/l) and CCC (250 and 500 mg/l) including control (only water). The experiment was laid out in Randomized Block Design with nine treatments and three replications. The results revealed that treatment of GA<sub>3</sub>@50 mg/l took minimum days for corm sprouting as compared to control and rest of the treatments. Significantly the maximum plant height, leaf length and number of leaves per plant width were registered with the same treatment GA<sub>3</sub>@50 mg/l as compared to control. Where as CCC @250 mg/l gave maximum yield of corms and cormels by increasing the number and weight of corms and cormels per plant as compared to control.

Patel, Jinesh M., Patel, H.C., Chavda, J.C. and Saiyad, M.Y. (2011). Effect of plant growth regulators on growth and yield of gladiolus cv. AMERICAN-BEAUTY. *Internat. J. agric. Sci.*, 7(1): 141-143.

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

### INTRODUCTION

Gladiolus (*Gladislus grandiflorus* L.) is a flower of glamour and perfection and commercially (internationally next to tulip) cultivated as a bulbous plant. It is 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. It is ideal both for garden and floral decoration. Gladiolus 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 can be cultivated on all types of soils having good structure and drainage. The soil pH range of 6.0-7.0 is ideal for good growth and spike production. 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 to be properly followed. Besides these practices, the increase in flower production and improvement of quality of spike can be achieved by following advanced techniques like use of plant growth regulators. The majority of growth regulators are classified in various groups viz., auxins, gibberellins, cytokinins and inhibitors etc. These growth regulators are commercially available in the market.

### MATERIALS AND METHODS

The experiment 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. In the experiment, the treatment comprised of four growth regulators with their two levels of each viz., GA<sub>3</sub> (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/m<sup>2</sup> at the time of soil preparation. The fertilizer dose given to the crop was 300:200:200 kg NPK/ha. One third dose of nitrogen and potash as well as full dose of phosphorus was applied at the time of corm planting. Out of 2/3<sup>rd</sup> 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 leaf stage i.e. 45 days after planting.

Removal of corms and cormels was done when the leaves turned yellow. After complete drying of the leaves, corms were lifted by digging of soil. The cormels were