

## Research Paper

THE ASIAN JOURNAL OF HORTICULTURE

Vol. 6 | Issue 2 | December, 2011 | 398-401



### Article history:

Received : 18.05.2011

Revised : 19.09.2011

Accepted : 08.10.2011

## Effect of growth regulators on growth and flowering of gladiolus

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**Abstract :** An experiment was conducted to study the effect of growth regulators *viz.*, GA<sub>3</sub> and NAA on growth and flowering of three varieties of gladiolus *viz.*, Phule Neelrekha, Phule Tejas and Phule Ganesh in split plot design at Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during *Rabi* season of the years 2008-09 and 2009-10. The results revealed that, the maximum leaves plant<sup>-1</sup> and spikes hectare<sup>-1</sup>, minimum days required for opening of first pair of florets and 50 per cent flowering were due to the variety Phule Tejas. Whereas, the maximum total chlorophyll content of leaves before the flowering and the maximum length of spike, distance between two florets, longevity of flower on plant and length and width of florets were observed under the variety Phule Ganesh. However, effect of PGR was non-significant as regards leaves plant<sup>-1</sup> and chlorophyll content of leaves. However, significantly early opening of first floret and 50 per cent flowering and the maximum spike yield and spike quality parameters *viz.* length of spike, distance between two florets, longevity of flower on plant and length and width of florets were noted under the treatment of GA<sub>3</sub> 150 ppm.

**Key words :** Gladiolus, Varieties, Growth regulators, Growth, Flowering, Yield

**How to cite this article :** Chopde, Neha, Gonge, V.S. and Nagre, P.K. (2011). Effect of growth regulators on growth and flowering of gladiolus, *Asian J. Hort.*, 6 (2) : 398-401.

**G**ladiolus (*Gladiolus grandiflorus* L.), commonly known as sword lily belongs to the family Iridaceae. It is one of the interesting flowers due to its florets with brilliant colours, attractive shapes, varying sizes and numerous forms suited to the different tastes and purposes. It is useful for both cut flowers and garden display.

As a cut flower, it has great potentialities for the export to European countries during the winter months to earn the valuable foreign exchange. Therefore, growing gladiolus on scientific footing is of immense need for getting the quality blooms with exportable standards.

Synthetic growth - regulating chemicals are becoming extremely important and valuable in the commercial floriculture for manipulating the growth and flowering of many of the ornamental plants. The various research workers have reported that, the application of foliar spray of growth regulators like GA<sub>3</sub> and NAA helps to produce the good quality cut flowers as well as yield of gladiolus corms. Hence, the present study was undertaken to find out the suitable concentration of plant growth regulators for the better growth, yield and quality production of

gladiolus cut flowers.

### RESEARCH METHODS

An experiment was carried out at the Main Garden, Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.) during the year 2008-09 and 2009-10. The experiment was laid out in split plot design with four replications. In the present investigation, the treatments comprised of three varieties of gladiolus *viz.* Phule Neelrekha, Phule Tejas and Phule Ganesh and five treatments of plant growth regulators *viz.*, P<sub>1</sub> – GA<sub>3</sub> 100 ppm, P<sub>2</sub> – GA<sub>3</sub> 150 ppm, P<sub>3</sub> – NAA 200 ppm, P<sub>4</sub> – NAA 300 ppm and P<sub>5</sub> – control (water spray). After preparing the experimental land, the field was laid out with the beds of 45 cm spaced ridges and furrows. The rested, cold stored, uniform and bigger size gladiolus corms of three varieties were selected and placed at room temperature for 15 days and treated with 0.3 per cent captaf fungicide for 15 minutes before planting. After drying in shade, the corms were planted 20 cm apart. Solution of plant growth regulators was sprayed as per