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Research Note

Effect of growth regulators on the growth, flowering, corm and cormel attributes of gladiolus

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Gladiolus is one of the leading cut flower in global industries of floriculture. It requires various nutrients and growth regulators for production of good quality of flowers. The work done with various growth regulators like GA_3, BA and SA with different levels on gladiolus is almost nil which allured our attention to study the effect of growth regulators on gladiolus; hence the present investing was carried out.

A field trial was conducted at Floriculture Research Scheme, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari during winter 2008-09. The soil of experimental field had a pH of 7.7, with available nitrogen 160 kg/ha, available phosphorus 40.12 kg/ha and available potash 381.05 kg/ha. The experiment was laid out in Randomized Block Design with various growth regulators treatment *i.e.* T_1-GA_3 20mg/l, T_2 GA_3-30 mg/l, T_3-GA_3 40 mg/l, T_4-BA 25 mg/l, T_5-BA 50 mg/l, T_6-BA 75 mg/l, T_7-SA 50 mg/l, T_8-SA 100 mg/l, T_9-SA 150 mg/l and T_{10}-Control. The data on growth parameters, flowering parameters and yield parameters were recorded and presented in Table 1 after statistical analysis.

The data recorded during the course of investigation were tabulated, statistically analysed and results are intepreted here under appropriate heads:

Growth attributes:

Plant height:

Highest plant height (45.6 cm) was recorded under treatment T_3 (GA_3 40 mg/l) which was at par with T_1, T_2 and T_9. This may be due to GA_3 which are known to promote the elongation of stem by cell elongation and cell multiplication. Also may due to osmotic up taken of water and nutrients under the influence of GA_3. Which maintain a swelling force against the softening of cell wall and thereby increase in plant height (Umrao *et al.,* 2007).

Length of leaves:

GA_3 (40 mg/l) recorded significantly highest length of fully open leaf (36.2 cm) while minimum leaf length was recorded in control being 25.5 cm. It might be due to enhanced cell elongation and cell multiplication by promoting DNA synthesis in cell. The increase in leaf length as a result of GA_3 application is in close confermity of finding with Sharma *et al.* (2004).

Number of leaves per plant:

Maximum number of leaves per plant crop was recorded in T_3 (GA_3 4 mg/l) being 7.2 while least number of leaves was noted in control being 5.2. It might be due to increase in vegetative growth which accelerates the photosynthesis metabolic activity more transportation and utilization of the photosynthetic production (Rana *et al.,* 2005).

Leaf area:

Maximum leaf area (35.5 cm^2) was recorded by the application of GA_3 40 mg/l, which was statistically at par with other growth regulator treatment except T_4. Minimum leaf area (25.1 cm^2) was recorded in control. It may be due to action of gibberellins occurring through the enhancement in auxin by proliferating the site of auxin action. Emergence, exploitation of leaves pivotal of overall growth and development in plant. Also foliar application