

Performance of Phosphorus levels on gladiolus (*Gladiolus grandiflorus* L.) cv. 'HAPPY END'

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SUMMARY

Response of *Gladiolus grandiflorus* L.) to varying levels of phosphorus was studied at Horticulture experimental field C.C.R (P.G.) College Muzaffarnagar. Attempt was made in the present study to find out the optimum level of phosphorus for better growth, flower and corm yield in gladiolus. Three different levels of phosphorus i.e. P₁-100 kg, P₂-150 kg and P₃-200 kg/ha were practiced for the experimental purpose. Results of the investigation revealed that, among the three doses of phosphorus, P₃ dose i.e. 200 kg/ha resulted maximum vegetative growth of plant. Number of flowers per plant and number of spikes per corm were recorded maximum with P₃ dose. Also number, weight of corm and cormels were observed maximum with P₃ dose than P₁ (100 kg/ha) and P₂ (150 kg/ha) dose. However, early sprouting of corms was observed with P₂ and maximum diameter of corms was recorded for P₁ dose respectively.

Key words : *Gladiolus*, Phosphorus, Happy End.

Gladiolus (*Gladiolus grandiflorus* L.) which is popularly known as the 'Sword Lily' or 'Corn Flag' is one of the most important bulbous flower crop in both domestic and international markets. Its long attractive flower spikes which are available in various colours and form, their prolonged vase life and also ability to with stand long distant transportation are the main reasons for its increasing demand. It is extensively being grown for use in cut flower, herbaceous border, bedding, rockeries and pot culture. Apart from domestic consumption, there is great potential for export of its flower spikes and planting material from India. In India, improvement in gladiolus had not still reached to the expected level despite a glorious research work. Productivity of gladiolus depends to a large extent on nutrition. Nutrition plays an important role in the growth and development of any plant. Proper and balanced nutrition is very essential for obtaining better growth and higher yield of good quality. Among the nutrients phosphorus perhaps play an important role, as it is quickly available to plants. Phosphorus a macro-element is good to stimulate root development and growth of the plant. It is required for plants in sufficient quantity. The major limitation in commercial cultivation of gladiolus is improper and unbalanced use of macro-elements. In view of the importance of this crop and to overcome the problem in commercial cultivation an experiment was undertaken at C.C.R (P.G.) College Muzaffarnagar entitled "Performance of Phosphorus levels on *Gladiolus grandiflorus* L.)" Cv. 'HAPPY END'.

MATERIALS AND METHODS

An experiment was conducted to investigate the performance of Phosphorus levels on *Gladiolus*

grandiflorus L.) at C.C.R. (P.G.) College Muzaffarnagar during 2002-03. Soil of the experimental field was exclusively loam in texture, deficient in phosphorus and organic matter, having soil pH 7.7. Three doses of phosphorus i.e. P₁-100 kg, P₂-150 kg and P₃-200 kg/ha were used. The experiment was laid out in a Factorial R.B.D, with three replications. Phosphorus in the form of single super phosphate (SSP) was used and incorporated in the soil before sowing. Prior to sowing the corms were treated with 0.2% Bavistin solution, a protective measure against fungal infection. Regular irrigation and hoeing was done. To find out the relative performance, five plants were selected randomly and tagged in each plot for observations of characters viz, days taken for first sprouting, number of sprouts per corms, height of plant, number of leaves, number of flowers, number of spikes, number of corms and cormels, weight and diameter of corm and various other similar characters. Data of the experimental findings is presented in Table 1.

RESULTS AND DISCUSSION

During investigation it was seen that phosphorus application played an effective role. It is clear from observations presented in Table 1 that height of plant after 90 days (51.17 cm), number of leaves per plant (6.84), number of tillers per corm (1.18) was found maximum with P₃ dose of phosphorus. Similar observations were recorded by Gowda *et al.* (1988). Length of spike (64.17 cm), number of florets (14.38) and diameter of spike (1.12 cm) was also recorded maximum with P₃ dose, which are in conformity to the early findings of Motial *et al.* (1979). Number of days taken for opening of first floret (109.78 days), number of days taken for opening of last floret (120.44 days), days required for closing of first floret (114.90 days) and days required for closing of last floret (125.63 days) was minimum for P₃ dose. Number of spikes per plant (1.53) was observed

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