

COMMERCIAL CULTIVATION OF GLADIOLUS



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Gladiolus (*Gladiolus grandiflorus*) popularly known as ‘sword lily’ or ‘corn flag’ is an ornamental bulbous plant belonging to the family Iridaceae and is a native of South Africa. The flowers vary in color with attractive shades of crimson, pink, salmon, red, purple, apricot, cream, white or combination of two or more shades. Gladiolus is used mainly as ‘cut flower’ either in flower vase or in bouquet. They are also used in borders, beddings, rockeries and pots.

Climate

Gladiolus prefers an open sunny site for proper growth and flowering, away from the shade of trees. The optimum temperature for growing gladiolus is 20-28°C during day time and 15-20°C during night.

Soil and its preparation

Well drained sandy loam soils rich in organic matter; at least 30 cm deep with a pH value of 5.5 to 6.5 is ideal for gladiolus growing. The soil should be thoroughly ploughed and kept open in sun for at least 15 days, then reploughed and leveled.

Cultivars

A large number of gladiolus cultivars were evaluated by Division of Vegetable Science and Floriculture, SKUAST-J, Chatha, out of which the best cultivars identified for commercial cultivation under Jammu conditions are White prosperity, Eurovision, Novalux, and American Beauty



White Prosperity



Eurovision



Novalux

Manures and fertilizers

Fertilizer requirements vary with climatic conditions and soil type. Apply farm yard manure @ 2.5 tons /kanal at the time of ploughing. For good growth and attractive crop, Urea: 17 kg; DAP: 10 Kg; MOP: 8 Kg per Kanal should be applied. Full dose of DAP and MOP should be applied as basal dose, whereas Urea in 2 equal split doses (one at 3 leaves and other at 6 leaf stage).

Propagation

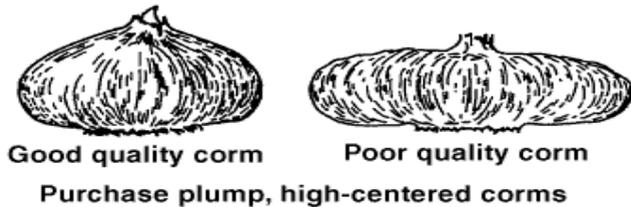
1. **Corm:** Propagation through corm is the commercially used method (4-6 cm diameter). A single flowering stock corm produces on an average 1-4 flower grade daughter corms in a season depending on its size and variety
2. **Cormel:** Propagation by cormel is the cheapest method and is generally used for the multiplication of stock. A single flowering stock corm can produce 50-60 cormels depending on its size and variety. Cormels takes at least 2-3 seasons to become full sized corm.

Planting of corms

Gladiolus takes 60-120 days to produce spikes. The best time for planting corm and cormel is September–November under Jammu conditions. Staggered planting of corm at 15 days interval is suggested

for obtaining flowers at different time so as to avoid glut in the market.

The quality of gladiolus flowers depends on the quality of the corms. Corms with high centers and plump shape are better than large, flat, thin ones. The thicker the corm, the higher the quality of the bloom is expected.



Corms should be planted 6-10 cm deep, while cormels are planted 6 cm deep in furrows.

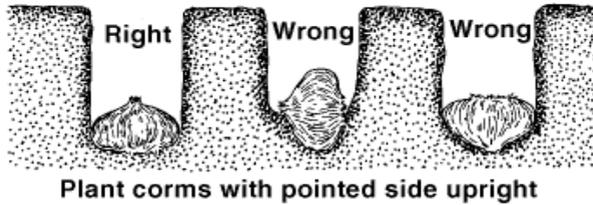
Corm treatment: Corm and cormels should be should be dipped in a solution of Bavistin (0.1%) and Dithane M-45 (0.2%) for half an hour to prevent fusarium attack before planting.

Spacing: Plant to Plant: 20 cm; Row to Row: 40 cm.

6,250 corms are required for planting in one kanal area.



Gladiolus corm planting in furrows



Intercultural operations

Irrigation

The crop needs irrigation at one week interval during summer and two week interval during winter depending upon climatic conditions. Immediately after planting corms, field should be given irrigation for good sprouting.

Weeding and hoeing: The beds or field should be kept clean by regular weeding and hoeing. Weeding and hoeing should be done manually, with the help of 'kharpa' or hand hoe.

Earthing up: After about 40-50 days of planting, earthing up should be done to check the lodging of the plants at the time emergence of spikes due to high wind velocity.

Harvesting of spikes

Harvesting is carried out at tight bud stage with at least four leaves left on the plant intact, and at least one to five buds showing color. Spikes should be cut in morning or evening hours when the temperature is mild. Spikes are cut with sharp edged secateurs or knife. Care should be taken not to crush the stem. Cut spikes should be kept in a vertical position to prevent geotropic bending.



Earthing up



Grading

Digging of corm and cormel: The development of corms normally get completed in 60 to 70 days after flowering. As soon as the corm mature they are lifted. Care should be taken to avoid damage to the corms.

The aerial part is twisted off and the adhering soil and shriveled mother corms are removed along with the roots. Corms and cormels are kept in trays, separately in a shady but well ventilated place for about a month. After proper cleaning, corms are subjected to treatment Bavistin (0.1%) and Dithane M-45 (0.2%) for 1hour. They are finally stored in cold storage at 4⁰C for next planting.



Post harvest handling

Immediately after harvesting spikes are placed in buckets containing water to remove field heat. The harvested spikes are then brought to cold store. About 10-12 spikes are tied in a bundle; such 20-30 bundles are packed in ventilated cardboard boxes (120x60x30 cm) and sent to market.

Plant protection

Fusarium wilt: Leaf tips become yellow and later on whole plant will turn brownish yellow. Curving, stunting and drying of leaves, flower spikes and rotting of bulbs are also observed. Spraying of Bavistin 2 gm/litre and drenching the soil at the initial stage of disease is quite helpful.

Aphids: They suck sap from tender leaves and emerging spikes as well as florets. Spraying systemic insecticides like Metasystox, Monocrotophos @ 0.1% concentration, using some wetting agent like Tempo is effective against aphids.

Economics

A net profit of Rs. 10,000-15,000 per kanal can be earned by selling spikes from the cultivation of gladiolus.

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PROJECT: Production and demonstration of quality planting material of commercially important cut and loose flowers in Jammu region under FTTF-NABARD