

RAMA UNIVERSITY, KANPUR, UTTAR PRADESH

Faculty of Agricultural Sciences & Allied Industries



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**Course: Production Technology of Ornamental Crops, MAPs, &
Landscaping (HOR-221)**

Lecture 9

Gladiolus

Introduction: It is an important commercial cut flower, ideal for bedding, for

flower arrangement, in bouquets and for decorations. It belongs to family Iridaceae and is originated from South Africa.

Varieties: Eurovision, Pink Friendship, Snow Princess, Rose Supreme, Rose Spire, Suchitra, Peter Pears, Mayur, White Prosperity, Jester and Subhangini.

Climate: Optimum growth of gladiolus occurs at temperature between 10-25°C. Long day treatments delay flowering but improves bloom quality. Long day condition of 12-14 hrs photoperiod increases number of florets, spike length and flowering percentage.

Soil: Sandy loam soil with pH between 6.0 to 7.0 is ideal. Gladiolus plants are sensitive to alkaline and degraded soil.

Propagation: Gladiolus is propagated by seed, by vegetative means (cormels) and (corms), by micropropagation.

Manure and fertilizers: Organic manure should be mixed through the top soil before planting to improve the structure of the soil. Nitrogen should be applied at 300 kg/ha which may be reduced in medium and heavy soils. It is applied in two doses, first at 3 leaf stages and second at 6 leaf stage. Phosphorus should be given as basal dose ranging from 150-200 kg/ha depending upon soil test. Gladiolus requires around 120-150 kg K₂O/ha at the time of planting of corms. Iron deficiency can be corrected by spraying ferrous sulphate at 0.2 per cent, twice or thrice at 10 days interval.

Diseases

Fungal: Fusarium wilt, Storage rot, Dry or Neck rot, Botrytis blight, Flower rot and Leaf spot.

Bacterial: Leaf spot

Insect pests: Aphids, Thrips, Borers, Loopers and Nematodes.

Physiological disorders:

Tip burn: This physiological disorder occurs due to high levels of aerial fluorides in the atmosphere. A spray of blitox 50 WP (0.3%) should be given at initiation of symptoms and repeated once more, if required.

Geotropic bending of spikes: This is primarily due to the lateral downward movement of auxin and its accumulation on the lower portion of the spike. To prevent bending of tips, the spikes should be held vertically in storage as well as during transportation.

Harvesting: Spikes are ready for harvest in 60-90 days after planting and continue for about a month. For export and distant market, it should be harvested at the tight bud stage or when basal 1-2 florets shows colour. Harvesting should be done in morning or evening hours when temperature is mild. For local market spikes are harvested when basal floret is fully opened. Cut is given above the top leaf sheath with the help of

sharp secateur/knife. The cut spikes are immediately kept in a bucket containing water. While cutting spikes 2-3 bottom leaves should be left.

Postharvest management: Spikes can be pulsed with 20 per cent sucrose plus 8-HQC (200 ppm)/ aluminium sulphate (300 ppm) or sodium hypochlorite (50 ppm) for improving vase life.

Grading And Packaging: The spikes are graded before marketing. According to Society of American Florists, gladiolus should be graded as follows:

Grade	Spike length (cm)	Minimum number of
florets Fancy (Blue)	>107	16
Special (Red)	96-107	14
Standard (Green)	81-96	12
Utility (Yellow)	<81	10

Graded spikes are made into bunches of 10-12 and loosely tied with rubber band and packed in cardboard boxes. Empty tube light boxes can be used for this purpose and each such box can accommodate 250 to 300 quality spikes. For export purposes, spikes need to be precooled at 4-5°C for 72 hours under dry conditions. Uncooled spikes can be transported for 24-48 hours at 20-25°C. Transportation medium depends on distance to market.

Yield: Approximately yield of flower spike would be around 2,00,000-3,00,000/ha depending on planting density, cultivar, corm size and management practices.

