



DEPARTMENT OF
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MINISTRY OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF INDIA

Tulip

CULTIVATION



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Tulip

Family: Liliaceae

Scientific name: *Tulipa gesneriana* L.

English name: Tulip

Tulip ranks among the top selling cut flowers at global level. Tulip is becoming one of the leading flower crops in Kashmir valley owing to establishment of Asia's largest tulip garden at Cheshmashahi. It is gaining popularity among flower growers of the valley due to congenial climatic conditions coupled with increasing demand of dry bulbs for cut flower production, outdoor beds, borders and pot culture. Tulip bulbs are also in demand from resort and golf course operators in North India.



Climate and soil: Tulips need sunny situations for optimum growth and development. They have an obligatory warm (17-20°C) - cool (2-9°C) - warm (17-20°C) temperature cycle requirement. This requirement is naturally met under Kashmir conditions. Tulips thrive in well drained soils with low clay, high organic matter and fine sand/Silt with pH between 6.0 to 7.0.

Varieties: Apeldoorn, Apeldoorn's Elite, Candella, Christmas Marvel, Golden Harvest, Golden Oxford, Inzell, Orange Monarch, Princes Margaret Rose and Prominence are for cut flower production. Double Yellow, Orange Monarch and Show Winner are good pot culture varieties under Kashmir valley conditions.

Cultivation: For cut flower production open cultivation is recommended for locally non programmed bulbs. Cultivation of non-programmed under polyhouse can advance flowering at the most by about 20 days.

Propagation: Propagated through multiplication of bulbs.

Planting Time: Last week of October to middle of November.

Planting Method: Bulbs of 10-12 cm circumference and above are planted on raised beds, flat beds or even on ridges (when Soil is too heavy) at a depth of 10 cm with a planting density of 50 -60 bulbs per sq.meter. Bulb requirement varies from 20,000 to 24,000 bulbs per kanal.



Crop duration: Crop duration extends from October to May.

Manure and Fertilizers:

Well rotten farmyard manure/sheep manure @ 1.5-2.0 tonnes per kanal should be applied at least one month before planting. A fertilizer dose of 4.0, 2.5, 2.5, & 0.25 Kg of N, P, K, and Zn per kanal is recommended. Whole of P, K and Zn is applied as basal dose while half of N is applied at the resumption of growth in March and the rest after flowering.

Irrigation: Limited irrigation is required under valley conditions but ensure optimum moisture in soil at the time of planting for uniform sprouting. Light irrigations may be provided depending upon the soil moisture status.

Weeding and Hoeing: Light hoeing and weeding at the resumption of growth in March is recommended

Flowering: Third week of March to third week of April under open conditions.

Harvesting:

Flowers: Flower scapes should be cut leaving lower most leaf intact with bulbs when the bud takes 50% colour.

Bulbs: Dig out after aerial parts have withered.

Yield: Cut flower yield varies from 18,000-20,000 scapes per Kanal. Bulb yield varies from 25,000-30,000 bulbs and bulblets per kanal. Yield may vary depending upon planting density and variety.

Post-Harvest Management:

Flowers: Put harvested flowers in buckets containing 8-10 cm of clean water in an upright position. Cut lower 1.5-2.0 cm of stems before bunching the flowers together. Transport of flowers in upright position is desirable.

Bulbs: Treat with 0.1% Carbendazim for one hour and dry in shade. Bulbs are stored in wooden/plastic crates in not more than 2-3 layers at room temperatures.

Diseases

1. **Basal rot:** Manifests as Purplish colouration of leaves. Dark brown spots on bulbs. Flowers from infected bulbs are deformed.
2. **Botrytis rot:** Sunken lesions with a cavity beneath rot may be seen on bulbs. Leaves may fail to emerge or may be stunted or deformed. Spots on leaves turn white or yellow and have small black granules (sclerotia) in them.
3. **Penicillium rot:** Rotted bulbs appear brown and are soft and wet to touch. Light bluish green growth of fungus may also be visible.

Management: Do not bruise bulbs at the time of lifting. Store in well ventilated dry rooms. Burn plant debris after harvesting. Plant bulbs in well-drained soil. If possible same field should not be used for more than once in four years.

Chemical treatment:

Before storage:

Treat bulbs with carbendazim 50 WP (1g) + mancozeb 75 WP (4g) per kg of bulb and latter dry under shade.
46 Approximate gross returns: Rupees 1.0-1.20 lacs/kanal from the sale of cutflowers at a sale rate of Rs. 5.00 per cut flower. This is besides the returns on the recurring sale of surplus extra tulip bulbs.

