

# Dahlia Production Technology: A Practical Guide for Quality Flower Production

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**D**ahlia (*Dahlia* spp.) is a tuberous-rooted, half-hardy perennial flowering plant belonging to the family Asteraceae. It originated in the mountainous regions of Mexico and Central America. The genus *Dahlia* was named by Abbé Cavanilles in 1791 in honour of Dr. Andreas Dahl, a Swedish botanist and student of Linnaeus.

There are at least 27 species of dahlia, and the crop was introduced to India as early as 1857 under the auspices of the Agri-Horticultural Society of India. Dahlias are valued for their versatile beauty, wide colour range, diverse forms, and large variation in flower size (from 2.5 cm to over 40 cm in diameter). They are widely used for garden display, exhibitions, home decoration, and as cut flowers. Pompon and miniature types remain fresh for several days in vases and are also suitable for making garlands. Plant height ranges from 30 to 180 cm depending on cultivar. Due to harsh summer conditions in India, dahlias are primarily grown as winter flowering crops.

## Soil

Dahlias grow best in friable, well-drained soils with a pH of 6.5–7.0. Fine tilth up to 40 cm depth is required to facilitate tuber formation. Good drainage is essential, as poor drainage promotes tuber rotting and reduces tuber quality.

## Light

Optimal growth and superior flower production require 8–10 hours of direct or indirect sunlight. Shaded conditions result in lanky

growth and reduced flowering. Photoperiod influences shoot growth, flowering, and tuber development.

## Temperature and Humidity

Dahlia performs best at temperatures between 18–23 °C with relative humidity of 75–78%. Maximum fresh weight of tuberous roots occurs at 16–21 °C, while growth is inhibited below 10 °C.

## Propagation

### Division of Tuberous Roots

Propagation is commonly done by dividing tuberous roots, ensuring that each division contains at least one



bud; otherwise, shoot emergence will not occur. The ideal tuber weight ranges from 80–120 g for healthy bud development.

### Stem Cuttings

Stem cuttings (7–8 cm long with 2–4 leaves) are used for commercial propagation. Terminal cuttings are treated with IBA powder and planted in washed coarse sand for rooting.

### Planting

Dahlias are usually planted during September–October.

### Spacing

- Large-flowered types: 75 cm
- Medium types: 60 cm
- Dwarf types: 30–45 cm

In plains, rooted stem cuttings are used, while sprouted tubers are preferred in hilly regions.

For pot cultivation, a potting mixture consisting of equal parts sandy loam soil, decomposed cow dung, and leaf mould is enriched with 100 g oil cake, charcoal, 50 g steamed bone meal, and a small quantity of garden lime.

Tubers should be planted 10–15 cm deep, placed slightly slanted with buds facing upward. Bulb dust may be applied around the tuber to prevent fungal infection.

### Irrigation

Regular watering is essential. Container-grown plants require frequent irrigation, whereas field-grown plants are irrigated at 3–4 day intervals. Overwatering should be avoided as it may cause bud drop, weak root systems, and abnormal growth.

### Flowering

- From tuber planting: 60–90 days
- From stem cuttings: 45–60 days (earlier than tubers)

### Special Cultural Practices

#### Staking

Dahlia stems are fragile and require support. Bamboo stakes or sturdy supports are used, especially for large-flowered cultivars. Pompon and miniature varieties may be supported using bamboo or polythene rings.

#### Disbudding

Typically, three flower buds are produced. For large, high-quality blooms, two side buds are removed at the pea stage, retaining the central bud.

#### Harvesting

Fully opened flowers are harvested with a stalk length of 30–40 cm for use in exhibitions, decorations, and floral arrangements.

#### Lifting and Storage of Tubers

After flowering, when leaves turn yellow, plants are cut back leaving about 15 cm stem above ground. Tubers are lifted using a fork hoe and shade-dried for 3–4 days.

Tubers are stored during summer until June for replanting. Before storage, tubers are treated with 0.2% Captan for 30 minutes. Copper fungicides may be used during storage to prevent fungal infections. The eyes around the collar region should be carefully examined at lifting.