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From Swamp to Splendours: The Story of Calla Lily

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INTRODUCTION

Zantedeschia aethiopica known as Calla lily, Arum lily or Lily of the Nile is a flowering plant from the Araceae family native to South Africa. It's name "Calla" comes from the Greek word "Kallos," meaning beauty which highlighting its elegant flower. The genus is named after Giovanni Zantedeschi an Italian Medical Doctor. Calla lilies are popular ornamental plants used in cut flower production, landscaping and pot decoration. They are commercially grown in countries like New Zealand, the Netherlands, Israel and the USA. Recently, the crop has gained significance in India due to rising export demand and its attractive flowers.

Natural Habitat and Growing Conditions:

Calla lilies usually grow in wet places like ponds, streams and riverbanks. They grow well in moist or even soggy soil, unlike many other ornamental plants. When grown in pots, the soil should be kept moist by adding water regularly to the saucer below the pot. They are commonly seen in cool hilly regions around 2500 m above sea level, where the climate helps in better growth and flowering.

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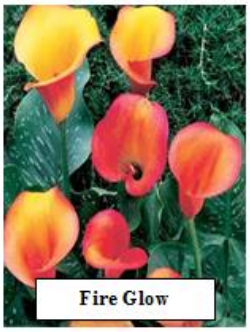
Botanical Features:

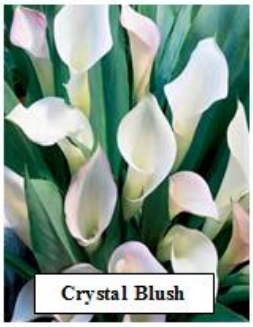
Zantedeschia aethiopica is a herbaceous perennial plant that grows from thick underground rhizomes. Its leaves are dark green and arrow or heart shaped with long stalks. The stalks are soft, fleshy and slightly hairy. The plant contains needle-like calcium oxalate crystals called raphides, which may cause irritation. The flower consists of a yellow central spike called the spadix, surrounded by a white funnel-shaped spathe. Male flowers are present on the upper part of the spadix, while female flowers are found at the lower part. Pollination mainly occurs through insects like beetles and butterflies.

Species and Cultivars:

Species	Flower Colour	Important Features
Z. aethiopica	White	Most widely cultivated species; popular for cut flowers
Z. elliottiana	Yellow / Golden	Produces bright yellow attractive blooms
Z. rehmannii	Pink / Rose	Known for pink-colored spathes

Many hybrids and cultivars have been developed to improve flower colour, shape, yield and disease resistance. Popular cultivars include Black Star, Fire Glow, Crystal Blush and Peach Chiffon.





Climate and Soil Requirements:

Zantedeschia aethiopica grows well under cool climatic conditions. An ideal temperature of 18–25℃ during the day and 12–18℃ at night. Very low or high temperatures can affect flower quality. In India, hill regions such as the Nilgiri Hills are suitable for cultivation. The crop prefers rich, well-drained loamy soil with good organic matter. A soil pH of 5–8 along with proper moisture and aeration is ideal for healthy rhizome growth and flowering.

Cultivation Practise

Propagation:

Zantedeschia aethiopica can be propagated through seeds, rhizomes and tissue culture.

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Commercial cultivation mainly uses rhizomes or tubers. Healthy rhizomes are divided into smaller pieces with buds and replanted. Tissue culture helps produce disease-free planting material.

Planting:

Tubers are planted 3–4 cm deep with spacing of 30–45 cm. Planting is usually done from spring to early summer. Rhizomes are often treated with GA_3 before planting to improve sprouting and flowering.

Irrigation:

Calla lilies require plenty of water and moist soil for proper growth. Irrigation should continue even after flowering to help rhizome development. Watering is stopped only after leaves dry completely.

Manuring and Fertilization:

The crop requires adequate nutrients for healthy growth. Organic manures improve soil fertility and moisture retention, while balanced fertilizers of 20:10:20 support flowering and rhizome development. Excess nitrogen should be avoided as it may cause weak growth and soft rot.

Weed Control:

Weed control is important during early growth stages. Herbicides like Roundup, Simazine and Surflan are commonly used. Dense plant foliage later helps suppress weed growth naturally.

Growth Regulators:

Growth regulators are used to improve growth and flowering in *Zantedeschia aethiopica*. GA_3 helps in better sprouting and increases flower production, while CCC controls plant height and promotes compact growth.

Tuber Lifting and Curing:

After flowering, watering is continued until the leaves dry naturally. Rhizomes are then carefully lifted, cleaned and treated with fungicide. The tubers are dried and cured properly to reduce water loss and disease during storage. They are usually stored in dry materials like sawdust or rice hulls.

Harvesting:

Flowers are harvested during cool morning or evening hours when the spathe is fully open. Flowers are usually pulled instead of cut to obtain longer stems. Flowering occurs about 10–12 weeks after planting.

Yield:

Flower yield mainly depends on the age, size and variety of the rhizome. In the second year, one plant can produce about 10–20 flowers. By the third year, healthy plants may produce 24 or more flowers and under suitable conditions the yield can reach up to 40 flowers per plant.

Post-Harvest Handling:

The vase life of calla lily flowers varies with species. *Z. aethiopica* flowers usually last for about 5 days, while *Z. elliottiana* flowers can last around 7 days. One common problem after harvest is stem splitting due to rapid water absorption. This can be reduced by treating

flowers with 100 ppm 8-HQC solution and storing them at 5–10°C. Proper handling and recutting of stems also help improve vase life.

Grading and Packing:

Flowers are graded mainly based on stem length. White varieties generally have longer stems than coloured varieties. Long stems are packed in bunches of five, while shorter stems are packed in bunches of ten. The flowers are wrapped in tissue paper and packed carefully in cardboard boxes to avoid damage during transport.

Insect Pests:

Common insect pests affecting calla lilies include aphids, thrips and caterpillars. Aphids and thrips damage the plants by sucking sap from leaves and flowers, while caterpillars feed on foliage. These pests reduce plant growth and flower quality. They are commonly controlled using suitable insecticides such as malathion(2ml/L) and rogor(1ml/L).

Diseases:

Calla lilies are affected by fungal, bacterial and viral diseases. Crown rot caused by *Rhizoctonia solani* and root rot caused by *Phytophthora cryptogea* are important fungal diseases. Soft rot caused by *Erwinia carotovora* damages rhizomes and stems. Viral diseases like Dasheen mosaic virus and Tomato spotted wilt virus cause leaf distortion and mosaic symptoms. Proper sanitation, healthy planting material and pest control help reduce disease problems.

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Dasheen mosaic virus

Crown rot

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