



# Growth conditions for commercial production of Orchids

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## DESCRIPTION

Orchids are the second largest family of flowering plants and are found all over the world. The *orchidaceae* is divided into five subfamilies (*Apostasioideae*, *Cypripedioideae*, *Vanilloideae*, *Orchidoideae* and *Epidendroideae*). Make orchids c. 8% of angiosperm biodiversity. To date, 29,199 species have been identified and approved, with hundreds of new species added each year. At the end of 2017, the International Union for Conservation of Nature (IUCN) an assessment of 948 orchid species, of which 56.5% were considered, threatened. Orchids are monocotyledons. They can be epiphytic, terrestrial, and lithogenic. About 70% of the world's orchids are epiphytic and/or stony, 25% are terrestrial, and 5% of the world's orchids grow on mixed substrates (both epiphytic and terrestrial). In addition to their geographical and taxonomic diversity, orchids are used legally or illegally, sustainably or non-sustainably for a variety of reasons. Orchids are one of the most important plant groups in the global horticultural and cut flower trade, harvested, cultivated and traded for a variety of purposes including ornamental, pharmaceutical and food . *Cattleya* from Brazil, *Laelia* from Mexico, *Cymbidium*, *Vanda* and *Dendrobium* from India have all played important roles in the development of today's beautiful hybrid orchids.

That number he exceeds 300,000. In international trade, orchids rank 6th among the top 10 cut flowers, among orchids *Cymbidium* ranks his 1<sup>st</sup>, accounting for his 3% of the total production of cut flowers of ornamental plants . In India, it contains 1331 species in 158 genera and grows up to 5000 m altitude. In India, native genera such as *Cymbidium*, *Paphiopedilum*, *Vanda*, *Arachnis* and *Dendrobim* are widely cultivated for cut flower production. *Cymbidium* is mainly grown in Sikkim, Darjeeling Hills, Arunachal Pradesh and Assam. Tropical orchids are grown in parts of Kerala and Tamil Nadu, Karnataka and Maharashtra. Winter and spring flowering species should be preferred for exporting flowers to temperate regions from December to May.

Climate Condition, a 75% green shade net with 70%-80% humidity, 18-28°C temperature, and a light intensity of 1500-2000 ft candles is ideal for growing this tropical orchid.

Growth environment, a mesh house with 75% shade, 70-80% humidity, 21-29°C daytime and 18-21°C nighttime temperature is ideal for growing this tropical orchid. In areas with a lot of rain, shade net houses should be provided with rain protection.

Propagation is through Division of tubers, keikis, dorsal onions and tissue culture plants.

Containers and Support is through clay pot with holes is ideal, and the plant is staked with bamboo sticks.

Growing medium, the most common potting soil mixtures consist of charcoal, broken bricks or tiles, coconut husks, and coconut fiber.

Irrigation, mist or overhead sprinklers to provide water and maintain humidity.

Nutrients, foliar application of NPK 20:10:10 0.2% at weekly intervals starting 30 days after planting.

Growth regulator, thirty days after planting, apply 50ppm of GA3 to the foliage every other month.

Repotting, Orchids require regular repotting, usually every 2-3 years.

a) When the plant grows tall and outgrows the container

b) When the potting material deteriorates

c) When need to share or share attachments

d) It is better to repot epiphytes every year

The best time to repot is when new roots appear on top of the previous year's growth. One-legged climbers should be repotted or divided if new leaf growth is evident on top and new root growth is visible.

Dividing or splitting plants, plants that grow into large clumps containing 2-3 old canes and new shoots divide before repotting. Each division should be at least one old two-year-old stick, new shoots, and some new roots.

Harvest, *Dendrobium* flowers reach full maturity in just three to four days after opening. Flowers cut before they are fully ripe will die before they reach wholesalers, so the flowers are harvested fully open. Immediately after harvest, cut off the bottom 3/8 inch of the stem and place the flowers in a tube of fresh water containing preservatives. Harvest the spike when 75% of the flowers are open and the remaining buds are not. Yield: 8-10 panicles/plant/year

#### **Diseases and mangement**

- Bacterial soft rot (*Erwinia sp.*) can be treated by foliar application of streptomycin sulfate and copper oxychloride.
- Bacterial Brown Spots (*Acidovorax sp.*) can be treated by foliar application of streptomycin sulfate and copper oxychloride.
- Black rot (*Pythium and Phytotra*) can be treated by foliar application of 2 g/lit of metalaxyl (or) Dimethomorph 50% WP 0.5 g/lit.
- Anthracnose can be treated by Thiophanate methyl 2 g/l (or) Difenconazole 0.5 ml/l foliar application.