# **New York Botanical Garden: Vanda orchid**

The orchid family, Orchidaceae, is one of the largest of all flowering plant families, with plants growing in many different habitats. Successful orchid culture is the result of imitating an orchid's natural habitat as closely as possible.  All orchids need appropriate light, temperature, humidity, moisture, nutrients, ventilation, potting medium, and maintenance.

*Vanda* are native to humid forests in tropical Asia. They are epiphytic plants, that is to say they grow in fast-draining pockets of debris on trees. Vanda and related orchids are adapted to warmth, moisture and strong, filtered light with loose, fast-draining, growing medium. They can have large root systems and upright stems that reach many feet high, with two broad rows of evergreen leaves that require a fair amount of space.

In the New York City area, cold winters mean that *Vanda* and related plants are often kept outdoors to enjoy the sunshine and humidity in summer and brought inside to a bright window or greenhouse in winter.

**Light:**

Light is one of the conditions where this plant places the greatest demands on the grower.V*anda*grown indoors require extended bright to very bright light to remain vigorous and produce flowers. In the New York City area, a south-facing window is best for all *Vanda* types. If the plant is spending summer outdoors, terete types with pencil-like leaves need full sun exposure and strap-leaf types and semi-terete types need some protection from direct light.

With the use of a light meter, you can directly measure the light exposure of a potential growing area. A bright, sunny day out of doors may measure 10,000 foot-candles, while a south-facing window may be about 5,000 foot-candles.*Vanda* is considered a high-light orchid and requires about 3,500 to 4,000 foot-candles of light.

LED artificial light can be used to supplement light for most orchids. Increase exposure gradually and be careful not to place the light too close and burn the plant. Look for a full-spectrum light option made for plants.

**Water and Humidity:**

*Vanda*need generous water at their roots and may be watered as often as daily if air circulation is good (for instance plants grown with exposed roots). Watering frequency is likely to change during the year. Day length, humidity, cloudy weather and individual heat systems will affect the rate at which water evaporates from the plant. From November through February, be sensitive to the change in light your orchid is receiving and reduce watering accordingly.

Always water in the morning. It is best to use tepid water so that you don't shock the plant. Exposed roots will change from white to green as they become hydrated.

Humidity in the air is just as necessary as moisture in the soil. A minimum of 65% relative humidity is required to grow*Vanda*whereas an average home in the northeast may have humidity as low as 25%. Both heating in winter and air conditioning in summer remove a lot of moisture from the air. Supply extra humidity with humidifiers, or group plants on a gravel-lined tray that is filled with water to increase air moisture through evaporation. You can use a simple hygrometer to assess the humidity and keep it in the 70 to 80% range that *Vanda*prefers. Vanda may fail to flower without adequate humidity.

**Air Movement:**

The high humidity in tropical habitats is often accompanied by gentle and constant air movement through the high tree locations in which these orchids grow. Stagnant, humid air is as detrimental to orchids as cold drafts. Air movement is essential, as it evaporates moisture on leaves and stems and helps protect plants from the spread of disease. *Vanda* can be particularly large plants and need extra space to grow. If you are keeping your orchids in a closed room, an open window (when temperatures are in the target range), the movement of air from a humidifier or from a fan are an often-neglected factor in growing healthy orchids.

**Temperature:**

Most orchids need a distinct fluctuation between day and night temperatures to successfully produce flowers. Warm-growing orchids from tropical forests like*Vanda*prefer day temperatures between 70 and 85°F., with night temperatures between 60 and 70°F. all year long. Warm and humid conditions, with enough water, air circulation and feeding, support a fast-growing *Vanda*orchid.

**Nutrition:**

Since orchid potting mediums are not composed of nutritious garden soil, the rule of thumb for orchid feeding is "feed weakly, weekly". Vanda, however, has a greater need for nutritional supplements than most orchids. A balanced, powdered fertilizer (20-20-20) is best, at ¼ to ½ of the recommended strength on the label, every time you water. Reduce frequency in the winter. Occasional feeding in summer with a high-phosphorous, organic fertilizer will support flowering.

**Encouraging Flowering:**

An orchid needs to have all its needs met to generate the energy necessary to flower. Adequate light, proper watering, and correct temperature and humidity levels all contribute to a flowering *Vanda*. In nature, orchids experience a 10ºF. temperature difference between day and night. This differential is important when trying to initiate flowering. Vanda's needs are somewhat extreme and humidity, temperature, nutrition and water that are off the mark may prevent your*Vanda* from flowering. Occasional feeding in summer with a high-phosphorous, organic fertilizer will support flowering.

**Care After Flowering:**

Cut the spike all the way down to the base when it turns brown after flowering to allow the plant to rejuvenate and grow for the next flowering season.

**Re-potting:**

When *Vanda*outgrow their pots or the potting medium has deteriorated, they should be re-potted. This is best accomplished when new growth is beginning in spring. *Vanda*may be grown in baskets with roots exposed, in small pots, or hanging with no growing medium at all. Plants in pots should have a coarse, chunky orchid mix with outstanding drainage and air circulation, such as fir bark, lava or charcoal. Be sure to use only quality orchid potting mixes and never substitute landscape mulches for orchid potting mediums. Vandas grown in baskets may be gently moved to a larger basket without removing the old basket.

**Hygiene:**

Cleanliness is important for orchids. Wash orchid leaves occasionally with mild soapy water to reduce the harmful effects of excess debris that can slow photosynthesis and minor insect infestation. Since orchids are susceptible to viral diseases, use gloves when handling them and/or wash hands often between handling. When cutting stems always use tools sterilized in a 10% bleach solution (1 part bleach to 9 parts water) and/or alcohol, or use a clean, single-edged razor blade.

**What to watch for:**

**Sudden decline in late fall** is not uncommon in the northeast. It becomes difficult to maintain natural light and humidity levels that fall in in the orchid's comfort range. Test the light and humidity in the environment and re-establish the correct equilibrium of light, humidity, warmth and nutrition, using a humidifier and supplemental artificial light if necessary. Continuing to water generously without adequate light can overwhelm the plant and lead to root and stem rot.