# **New York Botanical Garden: Miltonia and Miltoniopsis (pansy 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.

*Miltonia*are warmth-loving orchids with pointy petals native to Brazil. Many of the plants previously considered to be *Miltonia* have been transferred to other genera, particularly *to Oncidium.* In 1978, a group of cooler-growing *Miltonia* native to higher elevations in Central and South America were reclassified as *Miltoniopsis* and these are the sweet, pansy-faced orchids that give the group their common name. To make matters more confusing, many hybrids are a mix of *Miltonia* and *Miltoniopsis*.

Though *Miltonia* and *Miltoniopsis* are now separated by scientists, many people still refer to all of them as *Miltonia*. It is important to know the difference when it comes to care. Both *Miltonia* and *Miltoniopsis* have a pseudobulb water storage organ with leaves fanning out on either side. *Mitonia* are rambling plants often grown on a mount. They are easier to grow in a home than*Miltoniopsis,*which require the intense humidity of their native cloud forests to flourish. *Miltoniopsis* is, none-the-less, an orchid-grower favorite.

**Light:**

*Miltonia and Miltoniopsis*require bright but indirect light. Strong direct light will quickly burn the delicate leaves and turn them a pinker color.

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. *Miltoniopsis* is considered a relatively low-light orchid and requires about 1,200 foot-candles of light. Gentle eastern morning light can be ideal. *Miltonia* grow in medium-light habitats and need somewhat more light, around 1,500 to 2,000 foot-candles.

LED artificial light can be used to supplement light for most orchids. 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:**

*Miltoniopsis*grow in a cloud forest environment where they are likely to be saturated daily andneed to be watered when the potting medium only just begins to dry on top so that it has constant moisture. The strong humidity in which they are kept helps to stabilize the moisture in the growing medium. Day length, humidity and individual heat systems will affect the rate at which water evaporates from the growing medium. They are not tolerant of water with a high mineral content, and the leaves will discolor if hard water is used on them.

*Miltonia* grow in warmer locations and are more tolerant of dryness. Water them when the growing medium has nearly dried out and if in doubt, wait a day. These plants are less sensitive to accumulating mineral salts and can be watered with tap water. If your*Miltonia* is growing on a mount with little growing medium to preserve moisture it will need to be watered more often and have higher humidity than an orchid in a pot.

Always water in the morning. Place the plant in a sink and allow the water to soak through and drain out completely. The growing medium must drain well. It is best to use tepid water.

Humidity in the air is just as necessary as moisture in the soil. A minimum of 60% relative humidity is required to grow*Miltoniopsis*(40% for Miltonia)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% range that *Miltoniopsis*prefers (60% for *Miltonia*).

**Air Movement:**

The high humidity in tropical habitats is often accompanied by gentle and constant air movement. Stagnant, humid air is as detrimental to orchids as cold drafts.*Miltoniopsis* are adapted to particularly airy conditions. Air movement is essential, as it evaporates moisture on leaves and stems and helps protect plants from the spread of disease. 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. *Miltoniopsis* are native to cool forest and prefer day temperatures between 70 and 80°F., with night temperatures between 55 and 65°F. Some *Miltoniopsis d*o not do well in strong summer heat and won't produce flowers if temperature rises outside of its comfort zone.

*Miltonia* can manage warmer temperatures, 75 to 85°F. during the day and 60 to 65°F at night.

**Nutrition:**

*Miltoniopsis* is a salt-sensitive orchid so a consistent low level fertilizing regime with a balanced, powdered fertilizer (20-20-20) is best, at ¼ strength every other week. It's important to flush the plant out with water once or twice a month to get rid of any residue salts left over from the fertilizer. It's better to give an orchid too little fertilizer than too much. This can be further reduced somewhat during the winter.

**Encouraging Flowering:**

An orchid needs to have all its needs met to generate the energy necessary to flower. Adequate light, careful watering, and proper temperature and humidity levels all contribute to a flowering *Miltonia*or*Miltoniopsis*. In nature, orchids experience a 10ºF. temperature difference between day and night. This differential is important when trying to initiate flowering.

**Re-potting:**

When *Miltonia and Miltoniopsis*outgrow their space or the growing medium has deteriorated, they should be re-potted. *Miltoniopsis* is easily damaged by the impurities that accumulate if kept in deteriorating growing medium. Replacing potting mixture is best accomplished every one to two years when new growth is beginning. Try to avoid transplanting in midwinter and in the heat of summer. Usually, plants in bud and flower prefer not to be transplanted. It is important to remove as much of the old potting medium from the roots as possible by shaking or rinsing the roots under water. Any rotting roots need to be removed immediately with sterile tools.

Orchids require good drainage and good root aeration to grow. A finely textured, orchid mixture suitable for fine roots, like those incorporating fir bark or tree fern with small amounts of perlite and charcoal is preferable for *Miltoniopsis.*Keep the pot snug and shallow for best flowering. Be sure to use only quality orchid potting mixes and never substitute landscape mulches for orchid potting mediums.

*Miltonia* has a creeping habit and does best mounted on cork, tree-fern slab or other untreated wood. Found wood pieces should be soaked to remove any salts or impurities. To replace the growing medium (and the wood slab if necessary), tie damp sphagnum moss to the selected wood mount with fishing line, spread the orchid's roots across the surface and cover them with additional, moistened sphagnum moss. Wrap the roots and moss with a mesh of fishing line to secure the plant firmly. A shallow pot of medium-grade fir bark orchid mix is an alternative.

**Hygiene:**

Cleanliness is important for orchids. Wash orchid leaves occasionally with mild soapy water to reduce the harmful effects of excess debris 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:**

**Pleated leaves** develop if the plant is getting too little water or humidity. The same symptoms occur if a plant has been over-watered, is not draining well or sits in run off water and its roots are no longer healthy enough to take up water.

*Miltoniopsis* will develop **brown leaf tips** if it is watered with high-mineral content water.

*Miltoniopsis* **potting medium deteriorates rapidly** due to frequent watering. Keep an eye on the break down to avoid the very common problems associated with mineral build up and lack of air circulation.