



St. Augustine Orchid Society

www.staugorchidsociety.org

Light and Orchids

Bill Gourley, May 23, 2010 Keiki Club

What is Light? From the perspective of an orchid, light helps convert food to energy for growing. Light drives photosynthesis in the leaves.

- The proper amount of light is critical for good growth and flowering.
- An orchid getting almost enough light can grow well but not flower.
- If your orchid hasn't rebloomed, it most likely isn't receiving enough light.

Proper Light. One indicator of proper light intensity is the color of the leaves. For a cattleya or similar bright light lover, a light colored, firm leaf indicates the orchid is getting enough light while a darker green color indicates not enough light, as below:



Photo courtesy of the American Orchid Society

Measuring Light. How do we measure light levels so we know the difference between low light, medium light and high light? We use a light meter, which the club has for your use. The light meter measures light in foot-candles (a foot-candle is the amount of light measured one foot from a standard sized candle). That is all we need to know about that bit of trivia because the number on the light meter is what we want to know.

Orchids are typically grouped by the amount of light needed to grow well: low, medium and high light levels.

- Low Light – Orchids such as phals and most paphs need low light which is generally something under 1500 ft-candles though multifloral paphs generally do better in medium light up to about 2500 ft-candles.



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- Medium Light – Orchids like oncidiums, dendrobiums, and cattleyas typically do well in light levels of 2000 to 4000 ft-candles, with the oncidiums preferring the lower end of medium and the dendrobiums and cattleyas the higher end of medium.
- Bright Light - Vandas like bright light in the range of 4000 to 6000 ft-candles, if acclimated to that bright of light.

Leaf Temperature. There is a relationship between light levels and leaf temperature we must be careful about. For example, a phal growing in 1500 ft-candles of light in the spring time with 70 degree air temperature can usually control its leaf temperature quite well. As the air temperature rises, the leaf temperature can also rise because of the light intensity. This may require a little more shade, perhaps 1000 foot candles, for the phal to have the proper leaf temperature and not burn.

This is true for all orchids, don't let the leaves get too warm. Feel the leaf. If it feels hot, you can:

- Move the orchid to a shadier spot,
- Add fans to circulate the air and cool leaf temperatures, or
- Spray or mist under your growing area and the plant itself, though be careful not to spray the leaves in the bright sun between 11 and 2 or they may burn (the water can act like a magnifying glass and increase sun intensity causing sunburn).

Growing Areas. You can use the light meter to find the best spots for your orchids. Do a survey in your yard at the same locations at various times of the day say at 10 am, noon, 2 pm and 4 pm. Determine whether a given location will be excessively bright at any point in the day and whether that location will receive sufficient light throughout the day.

Simple Light Guide. The American Orchid Society has an easy way to determine the brightness of your growing area. Use a white sheet of paper or white illustration board or foamcore. Hold your hand about 8 to 10 inches above the white card midday on a bright day when the sun is shining fully. This will help tell you the brightest light you will receive in a given spot realizing the light will be less intense earlier in the morning or later in the afternoon. Use these illustrations as guides (courtesy of the American Orchid Society).



Full sun is equivalent to about 10,000 foot-candles of light and is too bright for most orchids.



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BRIGHT

Bright light casts a shadow with a soft edge that is somewhat lighter than the one in full sun. It is approximately 6000 to 6500 ft-candles or 35 to 40% shade cloth, suitable for growing vandas and acclimated schomburgkias and phalaenopsis type dendrobiums.

Filtered light has a shadow with a soft edge and open shadows. It is approximately 4000 to 5000 ft-candles or 50 to 60% shade cloth suitable for growing cattleyas and most dendrobiums.



FILTERED LIGHT



SHADY BRIGHT

Shady bright light has a very soft grey shadow. It is approximately 3000 ft-candles or 70% shade cloth suitable for growing oncidiums and multifloral paphiopedilums.

Full shade has a blurry, indistinct shadow in which it is difficult to recognize the object in the shadow. It is approximately 1000 to 2000 ft-candles or 80% shade cloth suitable for growing phalaenopsis and single flowered paphiopedilums.



FULL SHADE