

Appropriate night temperatures are critical to good growth and flowering. Most orchids do best with a 10-15F fluctuation between day and night temperatures with those from lower elevations and more tropical climates needing somewhat less but without this day/night temperature differential the plant's respiration and metabolism are impacted. Cool nighttime temperatures allow orchids to store rather than expend the carbohydrates they manufacture during the day. Night temperatures that are too high or day/night fluctuations that are insufficient are perhaps the second leading cause of failure to bloom. If your plants are growing well, with strong vigorous growth but fail to flower and you are sure that your light is adequate, try dropping your night temperatures by a few degrees. You may be surprised by the results. In some cases, plants will not flower unless both the day and night temperatures are below a certain threshold regardless of the day/night fluctuation. For example, phalaenopsis grown under 90F/80F (day/night) temperatures will not flower even though there is a 10F differential. This is because day temperatures above 85F and night temperatures above about 75F inhibit flowering independently of each other. Conversely, if your plants are not producing vigorous growth, try raising or lowering your night temperature a few degrees.



A min-max thermometer will show you the temperature range over a given period of time.

Seasonal Variation

Know thy orchids. Many orchids, especially species, are adapted to significant seasonal variations and without them will either not flower or may not grow at all. This is especially true of plants from higher elevations or more northerly climates. While *Dendrobium lindleyi* (aggregatum) grows perfectly well during the summer months with temperatures in the 90's during the day and 70's at night, it will not flower without a sharply colder (and virtually dry) winter season. The same sort of seasonal variation is at play in the flowering of noble dendrobiums and plants like *Dendrobium kingianum*. In their native habitat, summers can be very hot with temperatures even exceeding 100F but winters are cool and dry. Without this cool winter, flowering is inhibited and the plants produce numerous keikis where there should have been inflorescences.

For every orchid that needs a wide seasonal variation there's an orchid adapted to consistently warm or cool conditions. In some cases these species occupy localized habitats that do not experience significant seasonal variations because of altitude or equatorial location or they may come from high or low altitudes. This is where a little research into the native habitat of your plants will go a long way to successful culture.