St. Augustine Orchid Society
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Cold Tolerance of Warm Growing Orchids

by Sue Bottom, sbottom15@hotmail.com

If you allow your orchids the pleasure of growing outside during the warm season, they will reward you with an abundance of growth and blooms. You may have to make some adjustments to protect your orchids when the cool season arrives. Some orchids are very intolerant of cold and may have to be relocated to a warm winter home while others are more cold tolerant and may only need protection on the coldest nights. Each type of orchid has its preferred minimum night temperatures during the winter cool season, below which cold damage to the plant will occur.

- Most phalaenopsis, the large two toned vandas, the evergreen dendrobiums and the mule eared oncidiums are the least tolerant of cold, preferring night time temperatures above 60°F though some tolerate temperatures in the 50's.
- Most cattleyas and oncidiums prefer winter night temperatures in the mid 50's though some tolerate temperatures in the mid 40's.
- Deciduous dendrobiums bloom better after a cooler, drier winter rest period with no fertilizer tolerating temperatures in the low to mid 40's.
- Dendrocoryne dendrobiums and cymbidiums are the most cold tolerant orchids of those that can grow in summer heat accepting of temperatures down into the 30's.

C. (L.) purpurata var. *carnea*

Cattleyas. As a general rule, cattleya alliance plants prefer temperatures above 55°F though many will tolerate temperatures into the mid 40's. Cattleyas from the Amazon like *C. violacea* prefer warmer temperatures, and there are many cold hardy varieties that tolerate temperatures in the mid to upper 30's, like *C.* (syn. *Soph.*) *coccinea, C. loddigesii, C. intermedia, L. anceps* and *C.* (syn *L.) purpurata*. As a general rule, protect your cattleyas when temperatures drop below 50°F particularly if they are in bud or in bloom.

Cymbidiums. Cymbidiums are perhaps the most widely grown orchids beloved for their variety of color, long bloom period and ease of culture. Sadly for southern hobbyists, many are cool growers that don't grow or bloom well in summer heat unless you have carefully selected for warmth and heat tolerance. Cymbidiums are very cold tolerant. Their ideal minimum temperature is 40°F although they tolerate temperatures into the mid 30's and will survive light freezes with some cold damage.

Cym. John William Easton

Dendrobiums. There are over 1200 species of dendrobiums organized into more than 40 sections that grow in a wide variety of habitats and elevations. For those dendrobiums that grow in warm climates, cold tolerance ranges from the least cold tolerant Phalaenthe

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section dendrobiums to the most cold tolerant Dendrocoryne section dendrobiums. The warm tropical growers will quickly drop leaves if exposed to too cool conditions. The more cold tolerant dendrobiums actually flower better when exposed to cooler and drier conditions during the winter, though they shouldn't be fertilized after Thanksgiving until the new growth begins in the spring. Minimum temperatures for various sections are:

	Dendrobium Section	Minimum Temps (ºF)
 *Den.* Enobi Purple 'Splash' JC/AOS	Phalaenthe Flowers resemble phalaenopsis flowers, includes the species *affine, bigibbum (phalaenopsis), compactum, dicuphum, schroederianum, superbiens, williamsianum*	60
 *Den.* Banana Royale	Spatulata Antelope Dendrobiums, flowers have twisted petals, includes the species *antennatum, bicaudatum, canaliculatum, gouldii, johannis, lineale (*syn. *veratrifolium), stratiotes, strebloceras, taurinum, undulatum*	60
 *Den. dearei*	Formosae Cane like pseudobulbs with black hairs on silvery sheaths, includes the species *bellatulum, cruentum, dearei, draconis, formosum, infundibulum, lowii, margaritaceum, sanderae, schuetzei, senile, spectatissinum*	Mid 50's
 *Den. spectabile*	Latouria Mostly white, yellow and green long lasting flowers, includes the species *aberrans, alexandrae, atroviolaceum, convolutum, forbesii, johnsoniae, macrophyllum, rhodostictum, spectabile*	Mid 50's

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Den. goldschmidtianum

Pedilonum

Bright pink, red and purple flowered inflorescences on leafless canes, includes the species *bracteosum, bullenianum, capituliflorum, crenatifolium, goldschmidtianum (*syn. *miyakei), purpureum, secundum, smilieae*

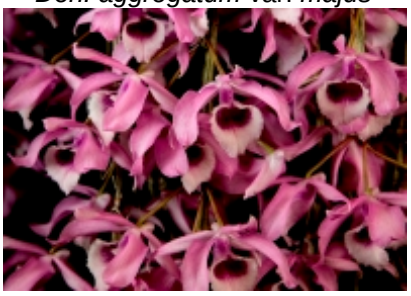
Mid 50's

Den. aggregatum var. *majus*

Callista

Showy pendant golden grapelike flower inflorescences, includes the species *aggregatum (*syn. *lindleyi), chrysotoxum, densiflorum, farmeri, jenkinsii, sulcatum, thyrsiflorum*

Mid 40's



Den. Adastra 'Berkeley' AM/AOS

Dendrobium

Upright and pendulous inflorescences on leafless canes, includes the species *anosmum (*syn. *superbum), aphyllum (*syn. *pierardii), chrysanthum, heterocarpum, loddigesii, moniliforme, nobile, parishii, primulinum, unicum*

Mid to Low 40's

Den. speciosum

Dendrocoryne

Very freely flowering plants from Australia, includes the species a*dae, aemulum, callitrophyllum, falcorostrum, finniganense, fleckeri, gracilicaule, jonesii, kingianum, speciosum*

Mid to Upper 30's

Oncidiums. While orchids in the Oncidiinae alliance have a wide range of cold tolerance, many of the cool growers that can withstand near freezing winter temperatures are not grown in warm climates because they cannot tolerate the summer heat. The thick leaved mule ear oncidiums like *Onc. lanceanum* are from lowland tropical areas and resent temperatures below 60ºF. Most of those oncidiinae that grow well in the summer heat like brassias, cochiliodas, miltonias, oncidiums and similar genera as well as the myriad of intergenerics like *Beallara, Burrageara, Miltassia,*

Onc. splendidum

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Vuylstekeara, Wilsonara, etc. prefer night temperatures in the mid 50's, but will tolerate temperatures down to the mid 40's.

Phal. Olympia's Cameo x *Phal.* Little Netsuke

Phalaenopsis. Phalaenopsis are fairly cold intolerant although they enjoy the first fall cold snap. Allow them to chill down to 55ºF for two or three weeks during this time frame when the daytime temperatures go back above 70ºF during the day. This brief chilling will tell your phals that it is time for them to set their bloom spikes, after which it is time to move them to their indoor winter home. As a general rule, phals enjoy nighttime temperatures above 60ºF. If temperatures drop below this minimum, some phals will drop their buds, particularly the standard phalaenopsis like *amabalis*, *schilleriana* and *stuartiana* that are less cold tolerant. Phals from higher elevations and the foothills of the Himalayas like *lindenii*. *lobbii* and *mannii* are more tolerant of lower temperatures down to around 50ºF.

V. Kultana Fragrance

Vandas. Vandaceous orchids as a whole are fairly cold intolerant although there are some species from higher elevations that withstand lower temperatures. If you are unsure of your plant's genetic background, keep nighttime temperatures above 60ºF. This is particularly true of the widely hybridized *Vanda sanderiana* that has large two toned flowers and species of the fragrant genus *Aerides*. Some *Vanda* species like c*oerulea*, *denisoniana* and *tessellata* are more cold tolerant as are many members of the colorful small flowered vandas previously known as *Ascocentrums* and *Ascocendas*, *Renanthera* and *Rhynchostylis* that are comfortable down to 50ºF. *Vanda* (syn. *Neofinetia) falcata* is probably the most cold tolerant vandaceous orchid accepting of temperatures in the lower 40's. If exposed to too low temperatures, the vandaceous orchids will start dropping leaves giving the plants an unappealing palm tree appearance.

Orchids are often categorized into general temperature groups that are based on the preferred winter night temperature below which growth slows. The three temperature groups are the warm growers with nights from 60 to 65ºF, the intermediate growers with nights from 55 to 60ºF and the cool growers with nights from 50 to 55ºF. Many orchids that demand cool conditions in winter also prefer cooler summers than southern locales offer so they are not good candidates for southern growers who don't have special coolers in their growing area. Most plants suitable for growing in the summer heat are intermediate to warm growers that grow best when plants are protected from winter night

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temperatures below the 50's. If you cannot protect plants during the cooler weather, be careful to choose plants that both thrive during the summer heat and are tolerant of winter cold.