

Summer Orchid Care

A regional guide to the basics in the United States

HAWAIIAN ISLANDS

The majority of Hawaiians are able to grow most genera in lath houses or under shade cloth which reduces the light 50 to 60 percent. Dendrobiums, cattleyas, ascocendas and vandas will tolerate brighter light in the summer if they were moved to their present location during the winter when the sun was less intense. The main cultural elements to consider when placing orchids for the summer are light, temperature, humidity, air movement, water and fertilizer. Mentally, put yourself in the place of your plants. If you are comfortable in the heat of the summer where your orchids are growing, then your plants will thrive.

There is a relationship between the size and type of container, its location (whether on a bench or hanging), the potting medium and the climate, which includes the amount of light, rainfall and humidity. If you change one factor, you might have to alter several. An increase of sunlight and air movement necessitate more water and fertilizer.

The amount of light orchids will tolerate in the summer depends, to a great degree, on their location. The hot, dry areas of the leeward coast of the islands may require up to 60-percent shade. This decreases as elevation increases. The upper regions of Manoa Valley may require only 30-percent shade. Terete and semi-terete vandas and most cane-type dendrobiums can adapt to full sun.

The easiest way to increase shade is to hang orchids from trees or the eaves of roofs and patios. Drape shade cloth on clotheslines on the top and side facing the sun to gain additional space. Hang orchids in pots or baskets from the lines; set others on portable benches below. Low benches are cooler than high ones. Vandas, laelias and other sun-loving orchids thrive when

suspended from eaves and rafters. Experiment to find the microclimates in your yard.

Determining the proper amount of water required by each genus during hot weather is the most difficult task. Do not let vandas, phalaenopsis or paphiopedilums dry out. Cattleyas benefit from drying between waterings. Offset the higher temperatures by ensuring good air movement and increased watering. Mist all orchids daily; several mistings per day may be necessary when temperatures and winds are high.

Apply foliar fertilizer routinely. Dissolve one teaspoon per gallon of water and always water beforehand. Never fertilize dry plants in hot weather. Salt build-up in the potting medium and containers can create toxic conditions, causing root loss. Flush the containers with plain water once a month to remove accumulated fertilizer salts. Do this during hot, windy weather.

Good sanitation practices help prevent insects and diseases. Pick off dead leaves and old flowers regularly. Remove trash and weeds near benches. Do not crowd plants. Observe the orchids when you water. Keep watch on specific plants that require individual attention and be alert to early indications of pest problems. Thrips and mites will probably cause the most problems. Consult the American Orchid Society's *Pests and Diseases Handbook* for the proper treatment. Routine misting of the undersides of leaves helps discourage mites.

The summer changes of increased light and temperature must be balanced by changes in the other elements to maintain healthy specimens. — Douglas B. Schafer, 1778 Hoolana Street, Pearl City, Hawaii 96782.

PACIFIC NORTHWEST & ALASKA

With the advent of warm weather, orchidists in the Pacific Northwest should consider putting some of their orchids outdoors, where they will receive fresh air, good air movement and ample light. Take precautions to thwart various pests, both wild and domestic. Many orchids can be hung from tree branches (apple and other fruit trees work well); be sure they receive adequate light. In Alaska, it is preferable to keep orchids indoors.

Hobbyists east of the Cascade Mountains must maintain suitable humidity. In the hot, dry days of summer, this is a challenge. Any orchids put outside must be able to cope with the heat, but special efforts to provide humidity are essential. Cluster orchids or spritz the foliage in the morning.

Locate cymbidiums to receive maximum light, just short of burning; the foliage will turn yellowish green in strong light. Leave them outdoors until just before the first light frost in early autumn; they will have initiated inflorescences by then. *Nobile*-type dendrobiums tolerate (and appreciate) almost full sun; acclimate them to the higher light levels. Provide copious water and fertilizer for cymbidiums and *nobile*-type dendrobiums. Return them indoors prior to the first frost.

Masdevallias (and other pleurothallids) will love being put under a tree. Make certain they receive adequate humidity on those warm, drier days. Mist foliage to compensate for low humidity.

Paphiopedilums will have finished flowering. Divide and repot them now; complete the job as quickly as possible so strong new growths will develop for this winter's flowering season.

Miltoniopsis (pansy orchid) will be completing its spectacular spring flowering. Remove all dried flowers and keep all dead leaves picked off to prevent bacteria and fungi. It is natural and healthy for the foliage of these orchids to assume a pink flush in strong light. Increase the shade if

the pink becomes reddish, which is a sign of too much light. *Odontoglossums*, on the other hand, can develop considerable red pigmentation on their leaves with little or no apparent harm. As the days become drier, keep watch for potential signs of red spider mite damage. On *miltoniopsis*, the tell-tale signs are a silvery appearance to the foliage. One of the most effective ways to combat spider mite infestations is to raise the humidity during the daytime. Accompany this with lots of air movement.

Cattleyas and their relatives should receive enough light to impart a yellowish tinge to their foliage; dark green leaves indicate inadequate light.

While this is a time when many orchid enthusiasts are spending considerable time outdoors, remember to enjoy and appreciate the beauty of summer-flowering orchids, like the unjustly neglected Brazilian *miltonias* and their relatives in the *Oncidium* Alliance.

Many of your orchids will be growing vigorously in this time of longer days and warmer temperatures. Provide adequate water and fertilizer to develop healthy new pseudobulbs and manufacture food. — Gary Baker, 1803 14th, #202, Seattle, Washington 98122.

ROCKY MOUNTAINS

Summertime in the Rockies is a glorious event. Snow is just a distant memory and the brilliant mountain sunshine never stops. Life abounds everywhere and that, of course, includes orchids.

Summer weather is described by two words: sunny and dry. Extremely low humidity — five to 10 percent — is typical. Breezes are light but regular. The sunshine is bright, intense and uninterrupted by clouds from morning through early afternoon, when it is often replaced by thunderclouds at 5 pm.

The main challenges posed by the hot and dry weather for greenhouse growers are maintaining humidity, reducing sunlight and cooling.

Increasing the natural humidity requires mechanical intervention — automated misting, regular watering and humidifying. Place misters on timers and moisten the greenhouse pavement at regular intervals. In larger greenhouses, the plant mass serves to maintain high humidity, particularly when supplemented by swamp coolers.

The intense mountain sunshine also necessitates additional greenhouse shading. Accomplish this through artificial means (shade paint, shade cloth and louvers) or natural solutions (positioning the greenhouse on the northeast side of the house or in the summer shade of deciduous trees). I use Kool Ray shade paint, a substance similar to whitewash. It increases the greenhouse shading in the summer while conveniently weathering off by winter.

Cooling is essential. Greenhouse temperatures will zoom up into the 80s in March and easily into the hundreds in mid-summer. This will roast orchids. Compensate for the heat with passive ventilation, active air circulation and active cooling. The passive ventilation typically consists of roof or wall panels that automatically open in response to ambient temperature as aptly exemplified by solar-powered vents. More sophisticated systems utilize vent fans and ventilation systems to draw cooler (typically about 10 to 20 degrees) outside air through the greenhouse. Thermostatically controlled active cooling via swamp coolers or air conditioning is highly recommended. The low humidity makes swamp cooling efficient and relatively inexpensive compared to air conditioning.

Long days provide for rapid growth, particularly when supplemented by a regular fertilizing schedule. Combat low humidity with inexpensive cooling via swamp coolers, which considerably reduce fungi and bacteria. The low night temperatures are ideal for many genera — *masdevallias*, *cymbidiums* and, my favorites, *paphiopedilums*.

Harsh sun is less of a problem indoors. Windowsill growers need to carefully monitor the change in sun intensity until

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the summer conditions are adapted to. High ambient indoor heat and low humidity remain major considerations. Cool with swamp coolers, air conditioners or by moving the growing area to the basement (under lights) or other protected area of the house. Basement temperatures here generally reach the 70s during the summer; this is acceptable to many common household genera, such as *phalaenopsis* and *paphiopedilums*. Supplement the humidity with household humidifiers and regular misting/watering.

Finally, consider outdoor growing. *Cymbidiums*, *cattleyas* and some *oncidiums* thrive outside, particularly in partial shade with morning sunshine. Water regularly to prevent dehydration. Bring orchids indoors before the first October frosts. Be forewarned, the low outdoor humidity is deadly to *vandas*, *renantheras* and other orchids with many exposed aerial roots or those requiring high humidity (mounted plants and many botanicals). In general, choose those orchids you summer outdoors with care. Introduce them to the sun gradually, and watch out for early and late season hail.

Remember that summertime in the Rockies brings hot sun, low humidity, warm days and cool nights. Orchids thrive during the long, sunny days, and the climate is ideal for using inexpensive means, such as swamp coolers, to provide the ideal environments for your favorite genera. — *Arnold Gum, 2218 Ayrshire Drive, Fort Collins, Colorado 80526.*

SOUTHWEST

Summer is a great time for orchids in the Southwest. New growth competes with late spring bloom for the grower's attention. The orchids are having such a good time on their own that the grower's primary attention should turn to maintenance of the growing area. Overhaul the heater, oil fans, scrub window screens and thoroughly clean

everything in the greenhouse. Plants can be moved outside for a few days to provide room for needed repairs. There may be a certain charm to going out in freezing weather to kick the old fire-box back to life, but the mild discomfort of preventive maintenance in July beats most options.

The same might be said in recommending mid-summer as the time to clean the greenhouse roof. Ours is fiberglass, and we use one of those car-wash brushes which has a rotating section in a brush head. We extend handle length with regular PVC pipe and manage to scrub the entire roof from a ladder positioned at the edge of the greenhouse. Before you decide your roof does not need that much cleaning, scrub a small section by hand. Chances are, you'll be down at the auto-parts house buying a rotary brush-scrubber.

Our plants need preventive maintenance, too. We wash our larger plants thoroughly each summer with mild soapy water applied as a gentle spray. It removes winter's grime, hardened secretions of aphids, mealybugs and other sucking insects (often called "orchid honey") and other debris. Your plants will show improved health and vigor. Wait until the weather cools a bit in the autumn to divide plants. Heat stress added to the trauma of division and repotting can be the one strain too many for tender plants. Remove all dead and desiccated material.

In most areas of the Southwest, July and August bring an explosion of red spider, or two-spotted, mites. A combination of dry weather and elevated temperature causes mite populations to increase. We've never found the proprietary miticides particularly effective and prefer soap solutions. Several good insecticidal soaps are on the market. Plain household cleaners diluted in water also prove effective. Treat for mites every third day for a total of nine treatments, then pause and watch closely to see if the mite problem returns.

On the occasional cool or cloudy day, open the greenhouse to get a complete

change of air. This one action may contribute more to the health of your plants than any other. Even in desert areas, we can find fine, cool early morning hours which permit the greenhouse to be open for a breath of fresh air. Your plants will notice the improved environment as quickly as you do. When a greenhouse smells fresh and clean, it is sure to be fresh and clean. — *Ed Wright, 223 Larkwood Drive, San Antonio, Texas 78209.*

MIDWEST

In the Midwest, summer is the only time of year in which we experience the tropical climates in which most cultivated orchids thrive. It is essential that the plants be grown optimally now.

Where possible, move light-loving *Cattleya* Alliance species and hybrids, most of the *Oncidiinae*, dendrobiums, cymbidiums, *Phaius* and vandaceous types (except for *phalaenopsis*) outside. Some of the best orchids for summering outdoors are *Dendrobium phalaenopsis* hybrids and autumn-blooming cattleyas (especially those with *Cattleya bowringiana* or *Cattleya aurantiaca* in their ancestry).

The added light intensity and spectrum, higher humidity and increased heat induce robust growth. Some plants double their size in only a few months.

Only well-established plants perform well outside. Keep orchids repotted in late spring or early summer in the house or greenhouse until new strong roots develop. Other plants which seem to do best when left in their regular accommodations include *paphiopedilums*, *phalaenopsis*, *miltoniopsis* and most of the *Pleurothallidinae*. The extremes of temperature and the brighter light seem to do more harm than good. The same is true for community pots and small seedlings.

Set plants under a solid roof that provides shade and protection from excessive rain. A simple structure made of pressure-treated lumber with a corrugated fiberglass roof and walls of 63-percent shade cloth is

inexpensive and practical. Build benches to hold plants above the ground. Lengths of 1-inch-diameter PVC pipe, supported at regular intervals by wire loops, can serve as rods from which plants can be suspended. I like to hang plants in 6-inch or larger pots, and put the smaller containers on benches. Gather the smaller plants in trays or in larger clay pots to prevent wind or water from knocking them over. Smaller collections may be summered outdoors beneath a tree, on a screened porch or in a down-sized shade box, provided the light is correct and there is plenty of air movement.

Orchids grow much faster and require more water and fertilizer now. Modifying watering and feeding schedules as the seasons change is crucial to successful growing. Water just before the plants dry. Pay special attention to those specimens with strong new growths and active roots. Do not allow them to dry out completely. This may dictate daily watering for small plants outdoors, and will mean greatly increased watering for everything else. Continue to fertilize immediately after every second watering. A light misting (just enough to wet the leaves) during the hottest part of the day can help to cool down the plants and prevent excessive dryness.

The same factors which make summer so wonderful for growing orchids can be sources of trouble. Too much light indoors or outdoors can kill a plant in a few hours. To determine if a location is suitable, place a plant there during the brightest part of the day for about 15 minutes. If its leaves are cool to the touch, the location is good. If, however, the leaves are warm, move the plant to a shadier site. A window that is perfect during the remainder of the year can become far too hot during the warmest part of the summer. Keep an eye on windowsill plants for potential troubles. A table set a few feet away from the window may be preferable in July and August.

Increased humidity can lead to fungal or bacterial problems when the plants are crowded or air circulation is inadequate. An

inexpensive oscillating fan is recommended for a light garden or on a windowsill.

Insects are a major concern of those who raise orchids outside during the summer in the Midwest. Good cultural practices produce orchids that are remarkably unappealing to most bugs. Counter the few that may arise with spot applications of the appropriate insecticide. Read the label carefully and follow all precautions. Use only insecticides recommended for orchids. Spray early in the morning so the foliage will be dry by midday. Before bringing the plants inside for the cooler months, thoroughly drench the pots and spray the plants with a general-purpose insecticide. Microencapsulated Diazinon used twice at seven-day intervals is effective.

To give orchids growing beneath lights an added boost, replace all fluorescent tubes at the beginning of the summer. In a light garden, I provide an exaggerated day length; the lights are operated two hours longer than natural day length year-round.

Cooler-growing orchids may become stressed during the summer. Treat *masdevallias*, *miltoniopsis*, the cool-growing *Odontoglossum crispum* hybrids and some of the cool-growing dendrobiums with special care. Do not overwater them. A light misting will keep them from overheating, but it is preferable not to water until the plants are nearly dry. Pot them in early autumn, after the hottest weather has past.

Summer is the best growing season in the Midwest. With a little extra attention, our orchids can grow phenomenally during this brief time. — Duane McDowell, c/o Klehm Growers, 44W637 State Route 72, Hampshire, Illinois 60140.

NORTHEAST

For most of us in the Northeast, summer allows us to relax from the anxieties of living in a cold climate. During the winter, thoughts of greenhouse growers focus on what to do if the heating system fails and how to keep the humidity from dropping. Summer is a time for change.

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After the last chance of frost has past, many orchids can be moved outside into a lath house. This includes cattleyas, dendrobiums, epidendrums, oncidiums, catasetums and mormodes, among others. Paphiopedilums and phalaenopsis are best left indoors, but if you choose to place them outside, orient them so water does not accumulate in the crown (center of the leaves).

For orchids grown beneath lights, the new natural surroundings compensate for the artificial conditions which the plants endure for most of the year. The stronger light, the constant breezes and the rain infuse the orchids with extra energy.

Situate orchids according to their light requirements, and remember to acclimate them gradually to the increased light.

Take the time to examine each orchid and determine what special care it might need. For example, now is an ideal time to repot many phalaenopsis. Increase the doses of fertilizer and include manure tea, which is easier to apply to plants growing outdoors.

To make manure tea, fill one panty hose leg with dehydrated manure, tie a knot in the top and place it in a five-gallon pail set in the sun. Fill the vessel with water, put a lid on top and secure it with a brick. Allow the brew to ferment for one or two weeks. The riper it gets the better. Dilute at the ratio of one cup manure tea to one gallon of water and apply it in the morning when the fumes are less intense.

Manure tea is compatible with Slugit, which combats snails and slugs, and Sun Spray Oil, a non-toxic mineral oil that controls insects by smothering them. These can be mixed together to reduce work and sprayed on the orchids.

By July we have gradually moved the cymbidiums into full sun. But the miltoniopsis are kept in the shade, low to the ground, but not directly on it, where it is cooler and they receive ample air movement.

Insects are less of a problem outdoors than in the greenhouse. The orchids harden off and resist their attacks. But take appropriate measures to prevent damage from slugs and snails.

Inside the greenhouse, swing into action. Remove algae from fiberglass and any other glazed surfaces. On a cloudy morning we wet the glass with water, then with a pump sprayer, spray on Physan and wait for 30 minutes. Then we take a garden hose with a strong force nozzle, wash the glass down and remove any stubborn stains with a soft brush.

Repair benches and caulk any cracks, then begin a general clean-up. Scrub benches, clean floors, repair fans, check to make sure weatherstripping is secure and the heaters are operable.

The only trouble in the Northeast is that the summer is over before all of the chores are finished. Did I say relax? — *Rita Cohen, Orchid Art, 1433 Kew Avenue, Hewlett, New York 11557.*

SOUTHEAST

With the arrival of summer, the conditions necessary for successful orchid care in the Southeast are the opposite of those required during the winter. Efforts devoted to maintaining adequate temperatures despite frost, cold winds, ice and snow must now be replaced with attention to combating hot, drying winds, high humidity and soaring temperatures. An efficient cooling system is essential. Thoroughly check your system to be sure it is functioning properly. This applies to greenhouses and indoor light gardens. Lights without appropriate cooling and outside temperatures hovering around 100 F can be equally damaging.

The greenhouse can benefit from a second application of shading now, if this has not been done or if shading fabric is used. Adequate shading can help plants grow and lower interior temperatures which reduces stress on the cooling system. The high humidity of late July and August in the Southeast reduces the efficiency of evapo-

rative coolers. Greenhouse temperatures are harder to control during days when the humidity is high, so quality shading does make a difference. Dampen the benches, the floor under the benches and the walkways with a complete heavy mist during hot, dry days. This will cool plants, raise humidity and lighten the cooling system's workload.

Proper watering compensates for high temperatures. In contrast to periods of restricted watering during the winter, summer is the growing period. Attention to more frequent watering and fertilizing is essential. Robust growth now will reward your efforts with flowers of the best quality next autumn, winter or spring.

In your zeal to produce the best, avoid excess. Overwatering can be more damaging than under watering. Good drainage is essential to avoid drowning the roots, which causes them to die. There is an exception in watering catasetums, cycnoches, lycastes and their related genera with growths that mature quickly. These plants benefit from more frequent watering and fertilizing during active growth, provided they are given sufficient light. Good drainage is also essential. These and other thin-, pleated- or plicate-leaved orchids benefit from higher light intensity during the period of fast growth. However, avoid exposure to light intensity so high that it causes the leaf surface to overheat and burn. Keep the surrounding air moving.

With the hot temperatures of summer, it is advisable to postpone repotting cattleyas, paphiopedilums and cymbidiums until the autumn. The stress that results from repotting now is too great. For example, cattleyas will develop badly shriveled pseudobulbs from which they most frequently do not recover, even when the temperatures drop to a more comfortable range. Loss of roots is part of this problem, and there is the tendency, which should be resisted, to compensate by overwatering which only compounds the problem and makes it worse.

Phalaenopsis, on the other hand, are rarely affected when repotted now. They seem to be spurred into a flush of new growth when either freshly repotted or moved into a larger pot from an earlier spring repotting. This assumes adequate attention to a proper watering and fertilizing schedule of at least twice a week under normal conditions. Water early in the day so plants are dry by dark. Phalaenopsis are more susceptible to crown rot than cattleyas, paphiopedilums or cymbidiums. Any orchid will succumb to rot when conditions are incorrect. Avoid this by operating fans to provide adequate air movement.

During summer, keep an eye out for insects. Unchecked, these pests can multiply rapidly and inflict a lot of damage before they are discovered. Pill bugs, roaches, mealybugs, thrips, aphids and spider mites can spread rapidly during the favorable conditions of summer, so be on guard. Spray or treat affected plants only on an as-needed basis and always as instructed on the bottle label. Do not make the mistake of rationalizing that if one teaspoon is good, two would be better. Excessive insecticide can damage the plant, and possibly you if you are careless. Follow the label instructions. Spend the necessary time required to keep the pots free of weeds and fallen leaves. Oxalis, for example, is frequently a host for spider mites during dry weather. Decaying leaves can harbor unwanted fungus problems. Keeping the growing area clean is a smart move. — *Alvin L. Bolt, 325 Fieldcrest Drive, Nashville, Tennessee 37211.*

CENTRAL & SOUTH FLORIDA

The riotous flush of spring flowers has passed. Now orchids relish summering out-of-doors where high humidity, frequent rain showers and abundant fresh air are conducive to the full maturation of new growth initiated in the spring. Because the quantity and quality of future flowers depends on these new growths, exercise proper care to insure their maximum vigor.

Primary is proper fertilization. From late spring through late summer, frequent but very dilute applications of a high nitrogen fertilizer are in order. Through photosynthesis, leaves manufacture the energy which the plant will use to produce flowers, and nitrogen helps produce large leaves. Thus, the importance of this element while new pseudobulbs, canes and leaves are developing. But do not go overboard. Excessive algae growth or the need to flush containers frequently to remove built-up fertilizer salts indicate over-fertilizing.

The above applies mainly to orchids that bloom in the spring or autumn and winter. Summer-blooming plants, such as vandaceous orchids, will flower better if frequent, dilute waterings with a high phosphorus fertilizer are alternated with a high nitrogen fertilizer. Water your vandas daily during the hot summer months. They will even enjoy an extra misting if your time permits. While they do thrive on full early morning or late afternoon sunshine, keep them protected from the intense noon-day sun. Always provide some protection from the overhead sun.

Most other orchids benefit from watering twice a week, but adjust your watering schedule during the rainy season, when your plants will not dry as quickly.

Insects proliferate now. Thrip damage is particularly evident, especially on the buds of vandaceous genera. As the new buds begin to form, watch for evidence of these voracious little monsters. The buds will turn brown and subsequently dry up. There is no superior weapon in the fight against these scourges than frequent and close inspection. If caught early, most insect infestations can be effectively curbed with relatively non-toxic chemicals, such as soapy water or rubbing alcohol. If pesticides are warranted, note that many utilize petroleum distillates as a carrier and/or wetting agent. Such distillates can cause serious damage to your orchids if applied when the plants are dehydrated or if the temperature is very

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high, common situations during the summer.

Toward summer's end, examine orchids thoroughly for insects. Many growers have learned the hard way that the best time to deal with spring pest problems is at the end of the previous summer.

Extended periods of warm, rainy summer weather may induce fungal and bacterial rots; however, good cultural practices can prevent most such infections. Promptly remove any dead or dying growths including faded flowers; provide ample space between plants to maximize air circulation; never over-pot your plants; and, especially important when growing orchids outdoors, use containers and media that will dry rapidly once the rains stop. Mounted orchids possess another weapon against rots: they naturally tend to grow in a manner which prevents moisture from accumulating in sensitive areas such as the leaf sheaths or the plant's growing point.

Position cattleyas, phalaenopsis and oncidiums inside a shade or lath house to provide good steady air movement. Do not crowd plants to permit easy monitoring for insect control. Damage from scale can be quite extensive before it is seen. This is particularly true for equitant oncidiums (which are also called toolumnias) and members of the *Cattleya* Alliance. The scale is concealed at the bases of the leaves where they form a fan. When uncontrolled, scale causes new growths to turn yellow and soft. Gently spread the leaves and examine for this sucking insect.

Culture for the equitant oncidiums is simple. Instructions from the late Bill Osment were to the point — "hang 'em high and keep 'em dry." Water in the morning so they are dry by nightfall. They like bright light, good air movement and regular applications of fertilizer. — *Rufino Osorio, 2184 Ambergate Lane #E, West Palm Beach, Florida 33415.*