



St. Augustine Orchid Society

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Organizing Your Growing Area

by Sue Bottom, sbottom15@hotmail.com

Orchids come in all different size pots, with varying potting mixes, and different types of orchids have different light and watering requirements. So, how do you decide what to put where? After a repotting program, one of our members laughingly commented “*I had a bit of a laugh when you said about grouping the same sized pot and same type of media in groups together. Apparently, you haven't seen the average grower that has a multitude of different plants, different sized pots, and different media all shoved into a small greenhouse. The mix of different sizes allows a grower to shove in plants between other plants much like a mix of different sized rocks in a bag so that no air spaces exist.*” Steve’s comment was on the mark. How should you go about deciding where to place orchids in your growing area?



Light loving cattleyas hanging high in the greenhouse and lower light orchids underneath on benches (RIO circa 2009).

Light. Light is a key concern for growing orchids in that it is the source of energy fueling plant growth. Too much light and your plants will be sunburned, and too little light and your plants will not flower. Vandaceous orchids, catasetinae and cattleya alliance plants like the brightest light while phalaenopsis, jewel orchids and mottled leaf paphs prefer shady conditions, with most of the rest of the commonly cultivated orchids falling in between the two extremes. As a practical matter, all plants love morning sun and can take direct morning sun up until around 10:30 am. This makes an eastern exposure perfect for your shadier loving plants. The sun intensity is too great for almost all orchids

between about 11 and 2 pm, so orchids must be protected from this direct light by growing under trees, a shade cloth covered trellis or pergola, pool lanai, or roof eave. A southern exposure can work well for the bright light loving orchids as long as you have protection from the midday sun. A western exposure with late afternoon sun can also be suitable for many orchids. Feel the leaves during the brightest part of the day, if the leaves are hot the plant should be moved to a shadier spot or the area protected with shade cloth. Be aware of the changing sun angle through the year.

Many of the recommendations in orchid books talk about light intensity in foot-candles and give general ranges of light intensity for various genera. In my greenhouse where the bulk of cattleyas are grown, there is a 50% shade cloth covering the outside year-round, with another 30% shade cloth added inside at the spring equinox and taken down at the autumnal equinox. Using an estimated 10% shade factor for the polypropylene greenhouse skin, this means that at noontime in summertime when sunlight registers about 10,000 foot-candles, the inside light level is a hypothetical 3150 foot-candles ($10,000 \times 0.9 \times 0.5 \times 0.7$). In winter, the plants can take more intense sunlight because the temperatures are lower, while in summer additional shading is required to try to prevent plants from overheating. Even with these hypothetical calculations, there are brighter and darker areas of the greenhouse and you can use these microclimates to your advantage. The bench along the northern wall is used



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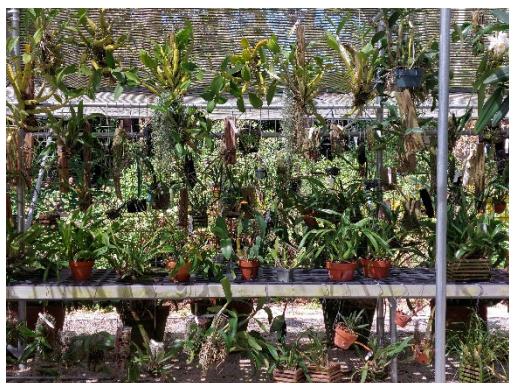
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for seedlings that enjoy less light while the bench along the eastern wall has bifoliate, nodosa hybrids and encyclias that all enjoy brighter light. The area where the phals are grown along the western wall has a second 50% plus a third 30% shade cloth year-round, so they receive a calculated 1575 ft candles ($10,000 \cdot .1 \cdot .5 \cdot .5 \cdot .7$), on the high end of recommended phalaenopsis light.

You can get meters to measure visible light intensity (in foot-candles) and photosynthetically active radiation (as Photosynthetic Photon Flux Density, measured in micromoles per second per square meter). There are many references to guide you if you are technically minded, particularly if you want to grow indoors under lights. When you grow under lights, you are supplying a constant light intensity for the entire period the lights are on, unlike in my greenhouse where the light starts to increase from zero at dawn to a maximum at noon and then dropping again to zero at nightfall. The light levels recommended in foot-candles in orchid books are really based on the maximum midday light level, which would be way too much light if a plant were exposed to that intensity for the entire day. Under light growers usually try to supply one-quarter to one-third of the light levels recommended for those growing in natural sunlight.



Keep all your mounted orchids together so you can easily water them once or twice a day.

Watering. You spend many hours watering your orchids over the course of the year. Choosing your potting mixes to match your watering habits and time availability is a key aspect of your orchid culture. If you tend to water frequently, you can use coarse freely draining mix with lots of drainage without fear of overwatering your plants. If your time is limited, you may choose a more water retentive mix containing a higher percentage of sphagnum moss, peat or bark that holds moisture longer and thus requires more careful watering to ensure plants are not overwatered.

The SAOS coarse mix we offer to members is a mixture of about 30% clay pebbles 30% coarse perlite, 30% Orchiatra bark and 10% charcoal. It is a freely draining mix that contains a small proportion of organic matter. It is intended for potting cattleyas and dendrobium type orchids that like to dry out between watering. It is freely draining enough to withstand extended periods of rainfall during tropical storms. Of course, if growing under cover or outside during the droughty season, it does require watering several times a week. Whatever mix you finally select for your cattleyas, you should be able to water this group of your orchids all at the same time.

If you group plants with similar watering requirements together, it's easy to know when to water what. This gets very complicated when you bring home new plants from a show, and one is potted in clay pebbles, another in sphagnum moss and a third in bark. If you water all these with the same frequency, you will likely be overwatering the one in sphagnum moss and underwatering the one in clay pebbles. This is when you should follow repotting rule



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number one. When you bring home a new plant, once it is done blooming, watch for it to throw off new roots and then put it in your preferred potting mix.



These seedlings in 3½" pots are watered every day or two.

Pot Size. Pot size is another consideration in how often to water your plants. Other things being equal, smaller pots will dry out more quickly than larger pots and have to be watered more frequently. A 6 inch pot holds about 2.5 times as much mix as a 4 inch pot, and an 8 inch pot more than twice the mix as a 6 inch pot. Plastic pots don't breathe, so they hold more moisture with the evaporative surface limited to the top of the pot. For clay pots that breathe, the surface area of the pot helps determine how quickly the pot will dry out. As the size of the pot increases, the volume of the pot and the surface area increase, but the ratio of surface area to volume decreases so

larger pots dry out relatively more slowly than smaller pots.

This is one reason why growers are often successful using sphagnum moss in small pots, but fail when they try to use the sphagnum moss in large pots. One way to overcome this problem is to add chunks of Styrofoam in with the sphagnum in larger pots. I grow phals in high quality sphagnum moss in clay pots. The smaller 3 to 4 inch pots have sphagnum moss with some Styrofoam in the bottom of the pot. With larger 6 to 8 inch pots, they are also grown in sphagnum moss but with liberal amounts of Styrofoam chunks added in the bottom of the pot and intermixed with the sphagnum moss in the upper layer of the largest pots. By adjusting the ratio of potting and drainage materials in various size pots, the phals can all be watered at the same time because the extra drainage material adds evaporative surface area in the larger pots.

There are many considerations in choosing a potting mix for your orchids. The longer you grow orchids, the more you will learn what works best for you in your growing area. Julia Child has a great cookbook, *The Way to Cook*. In it, she gives a master recipe for a dish, and then follows that with several variations on the theme for different ways to modify the main recipe. If you are just learning about orchids, use something like the SAOS coarse mix for your cattleyas and dendrobiums, and the Pro-Mix/perlite blend or long fibered sphagnum moss for your phals. Then you can start mixing and matching, tailoring your mixes to the different orchids you grow. Perhaps some chopped sphagnum in the coarse mix for your oncidiums or some sphagnum as a top dressing on media surfaces. Your best lesson learned will occur when you repot your orchids, and get to see firsthand how the orchid roots fared in last season's mix. If they look mushy, add more drainage; if they look dessicated, use more water retentive mixes, and if they look great, hallelujah!