

Cattleya

Watering, Fertilizer & Sunlight

One of the most common cultural directions, is that 'Cattleyas should dry out between waterings'.

I am convinced, that this simple instruction was coined at a time, when many hobby growers were killing their Cattleyas due to over-watering. Or, to be more precise, due to watering too much for the potting material used at that time (sphagnum?).

Travelling around to Orchid Societies to give talks, I see a lot of orchids on society show tables. And, many of the Cattleyas **are showing signs of not getting enough water!**



If the new growths are slender, and the older pseudobulbs are showing 'ribs' (see 'A'), the plant is not getting sufficient water. The plant in this photo is actually a year overdue for repotting, and as a result the roots inside the pot are suffering.

Compare this plant to 'B' (backbulb division, which has produced a healthy new growth), and 'C' which shows a plant bursting with vigor. Not every Cattleya plant is capable of producing pseudobulbs as fat as 'C', but you want your plants to look somewhere in between 'B' and 'C'.

To get to that goal, you have to discard the good old 'drying out between waterings'. It is not 100% wrong, but it is far from the whole story.



In nature, most Cattleyas grow in regions with alternating periods of heavy rainfalls, and dry spells. So, how should we take care of these plants then?

We have to treat the plants differently when they are in active growth (which normally occurs during the rainy season).

- During this period they do **not** need to dry out.
- **BUT**, they should not be sopping wet either.

First of all, we have to distinguish between seedlings of varying sizes, blooming size and eventually specimen size plants.

- Seedlings generally grow continuously, so no rest period is observed. At least till they are very near blooming size (BS).
- Once the plants reach blooming size, we have to give them a light rest, when they are not in active growth. While in active growth, they should be supported with water & nutrients throughout.

To optimize plant growth, it is simply not possible to utilize a 'one size fits all' approach. To minimize the variation in watering, I find it necessary to use a highly individualized selection of pot/basket type and potting medium.

I vary both pot type and potting mix choices based on the size of the plants. Since I can't use a single pre-mixed medium across all sizes of plants, this means that I am mixing media on the fly every time I repot Cattleyas.

- Small seedlings go into **chopped sphagnum** with a little seedling size bark & charcoal added.
 - From flask they go into community pots or flats.
 - From community pots they go into 2¼" or 3" **plastic pots** (in the same mix).
- From small plastic pots they go into small **clay pots** (usually 3" or 4" size), with seedling size bark/charcoal/Perlite in 4:2:1 ratio.
- The next step depends upon the eventual size of the now BS (or NBS) plant.
 - If compact type plant and going into a **4" clay pot**: 4:2:1 ratio (bark/charcoal/Perlite), but the bark is 50% seedling size (⅛-¼") and 50% mature size (½-¾").
 - If standard type plant, and going into a **5" or larger clay pot**: 4:2:1 ratio, all mature size.
- Eventually, very large specimens will go into a basket (usually 8" or larger). Here a *Rhyncho-laelia digbyana*, it was in a very full 4" net pot in 2020, and overflowed this custom 10" basket by

June 2023 (=> 20 divisions).

- Due to the cost of wooden baskets, I have been experimenting with some alternatives.



- In the local Dollar Store, I have found plasticized metal mesh baskets. They do start rusting after a while, but at \$1.25 cost it is not a budget buster to replace it when repotting.



- Plastic net pots, which have a solid upper ring, work well. You can buy singles in the local hydroponics store, or in bulk at Home Depot (special order only). I have just reordered (Aug 2023), including sales tax:



3", 48-pack \$0.37 ea
 4", 50-pack \$0.93 ea
 5", 24-pack \$1.13 ea
 6", 24-pack \$1.17 ea

Net pots are easily converted to hanging baskets (drill 3 holes under the lip, and add a 3-strand wire hanger).

- You can use standard media in the baskets (sphagnum/bark, bark/charcoal/Perlite, etc.), but this forces you to repot every 2 years or so. I have been experimenting with **Aliflor** nuggets (= LECA, expanded clay nodules), which do not break down. Most mature plants do very well (see the digbyana above and two Rhy. Gigantea at right), but occasionally there is a plant that just goes straight downhill in this medium.



Having a large greenhouse full of plants, it is impossible to treat each plant individually. But, using the above outline of pot and medium choices, I can water & fertilize everything on the same schedule. Here is what this schedule looks like:

Spring/summer/fall: Heavy watering **twice a week**,
If 90°F+ temperatures & full sun,
3 times a week.

Late Nov-February: Heavy watering once a week,
 + spot watering, if/as needed.

Obviously, watering 2 or 3 times a week in the summer, the plants are not drying out between waterings. The reason this works (roots are not rotting), are:

1. Small plants are in constant growth and should never dry out.
2. Clay pots are porous, so the water evaporates through the sides. This also helps keep the roots cool during the heat of the summer.

Both net pots, wooden & metal baskets have large openings, so they dry out even quicker.

If I must use a plastic pot, I use one that is as small as possible.

3. In larger pot sizes, I use a very coarse medium ($\frac{1}{2}$ - $\frac{3}{4}$ " particle size). This means that even though there is still moisture in the pot from the previous watering, **there is also adequate air flow.**

NOTE: Watering as heavily as we do, the medium breaks down fairly quickly.

Thus it is necessary to repot every 2 years (Paphs 12-18 months, Phrags 12 months).

Growing in a greenhouse, where we can maintain adequate humidity, it is less critical to repot Cattleyas on schedule. Some of these plants are 2-3 growths over the edge of the pots, but the new growths are strong (and also blooming), so there is no rush.



Fertilizer

I am not a fan of using super diluted fertilizer in every watering. We fertilize every 2 weeks, year round, always using **Peters 20:20:20 with micro nutrients**. This gives us at least one watering with clear water in-between, so there will be no build up of excess fertilizer salts. We apply the fertilizer:

Spring/Summer/Fall	300 ppm
Winter	200 ppm

Caution: 300 ppm is too strong for *Adenium obesum*, but it is fine for all my other non-orchids.

I know that there are many adherents of assorted other/multiple fertilizers & 'additives'. I do not have the patience to work out the schedules for multiple applications in varying strengths, so we use only the one fertilizer.

With our simple approach (plus top dressing the Cymbidiums), I have grown pendulous Cymbidium seedlings from flask to bloom in 28 months (approx. 15 plants out of 150 seedlings). I am satisfied with this rate of growth & bloom, so I don't intend to invest in any other remedies/additives/bloom boosters, etc.

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I frequently hear people say: 'I water everything once a week'. I have to admit, I did the same a long time ago. However, over the past 10 years I have come to recognize the value of watering more. When I buy plants from other nurseries, and then look at the plant again after 12-18 months in my greenhouse, there is a marked improvement in PB thickness & stature.

In the home environment, it might not be feasible to water as heavily as I do. In that case, you might want to explore alternatives in terms of pots & potting medium. Trying sphagnum (don't pack it too firmly) is one option for providing moisture to the plant over a longer period of time.

Full Sunlight

I have always grown high light plants in full sun over the summer (*Dendrobium kingianum* & *speciosum*, *Laelia anceps* and all my standard Cymbidium [not the Chinese types]). These plants go out in late April (ideally on the first of 2-3 overcast days), and stay out till nighttime temperatures drop to 34°F. In full sun the plants dry out very fast, so they need copious volumes of water 3 times a week.

A few years ago, I mistakenly took out **Lc. Miss Wonderful** (C. Mari's Song x *Laelia anceps*) together with all my *L. anceps*. I did not notice this till the middle of August. By then the ' $\frac{1}{2}$ *anceps*' plant looked like this:



The size & stature of the growth produced in full sun is remarkable in comparison with what the plant had produced the previous several years inside the greenhouse.

I have no doubts that *C. purpurata* can be grown outside (I need a better watering system to test this), and very likely also *C. intermedia*, *Ioddigesii* & most of the other bifoliate Cattleyas. I am not confident about Guarianthes, but I intend to test a couple.