

Color Breaks in Flowers Virus - or NOT?

Plants can get infected with virus, just like humans (and other mammals). The big difference is, that mammalian organisms eventually suppress or eradicate the virus, while plants remain infected. Nobody has come up with an anti-viral treatment for individual plants yet, so the only known treatment is to throw out the infected plant.

I have heard of a few isolated cases, where a known infected orchid eventually came up clean when re-tested. These cases reportedly rely on very high ambient temperatures to cause eradication of the virus.

An infected plant that is otherwise in good health, will usually show no outward signs of being infected. However, when such a plant blooms, the flowers typically reveal the situation via color breaks.

Here a ***Brassanthe Maikai*** (*B. nodosa* x *Gua. bowringiana*), showing typical signs of virus infection:



While the infected plant is in good health, it may grow normally, and the color breaks can be minimal. However, once the plant is weakened (from repotting, or some other cause), it will usually start to go rapidly downhill.

If you wish to keep an infected plant, whether for sentimental reasons or for possible use in breeding, it should be carefully isolated from your healthy collection.

If you intend to breed with such a plant, place the pollen from the healthy parent plant onto the infected plant, so you don't infect the other parent plant.

Then, let the seed pod go mature (the virus does not cross over in dry seed).

Testing Orchid Plants for Virus

Currently there is only one test kit on the US market, which detects for **Cymbidium Mosaic Virus** and **Oncidium Ring Spot Virus**. From growers in CA, I have had reports of this kit occasionally producing both false positives and false negatives, which have subsequently been disproved by laboratory testing. It is my understanding that such false results can be caused by several factors:

- The sample size being either too large, or too small.
- The sample carrying fertilizer (or spraying residue) on the surface.
- The test kit having deteriorated from improper storage.

There is another test kit available from Taiwan, but you must buy it from there. If purchased in large quantities, it is somewhat lower priced, and it can be stored at room temperature. Bill Stender in PA has been doing group imports of this better kit in recent years.

However, it also tests only for CMV & ORSV. There are other plant viruses, which neither of these tests will detect.

Lastly, let me close by commenting on how to prevent the spread of virus:

- Any time you cut plant material, use either a single use blade (razor blade), or sterilize your tool carefully after every use.
- If you use **pot clips**, or the **hangers** that have a metal part inside the pot, these must be sterilized between uses. I soak such items in undiluted bleach.
- **Plastic pots:** I no longer re-use plastic pots. I do not trust soaking them in diluted bleach (and I do not have the time to spend hours on cleaning old pots).
- **Clay pots:** I scrub them to remove dirt & any organic matter. Then I bake them in a 400°F oven for 2+ hours (you can also use your grill). No virus will survive this treatment.

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And now for some recent observations:

In late 2018 I was still rebuilding following the 2017 freeze, so I purchased more than I should have when Alan Koch from Gold Country Orchids visited New Jersey.

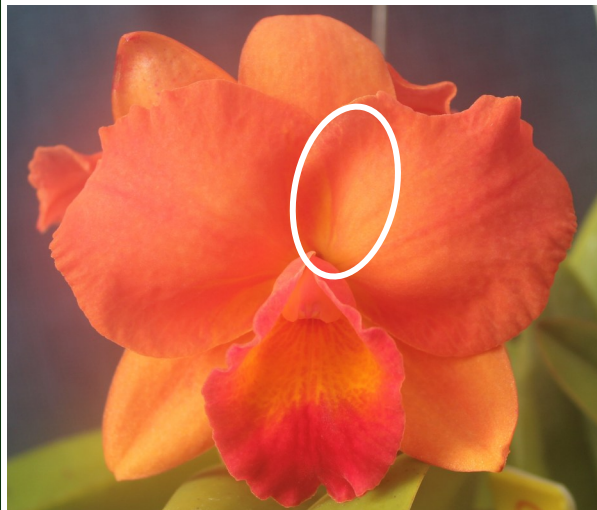
In January 2021, I bloomed **C. Rose Marguglio Szwed** (Circle of Life x Melody Fair) from that purchase. This plant produced an excellent flower, but with some disconcerting color breaks (photo on next page).



With a flower of this high quality, I couldn't get myself to throw it out, so I isolated the plant. It bloomed again in 2022, and repeated the color breaks.

In 2022 I tested the plant, and to my surprise it tested clean. This grex (*C. Rose Marguglio Szwed*) has received two AOS awards. One is a flower quality award, to a flower without color breaks. The other is a JC/AOS to a flower with the same random color breaks; that plant was awarded at a show in Florida.

The next month, I saw another good flower on a first bloom seedling. This is a miniature (***C. Circle of Life* x *Rlc. Kat E-Sun***) from Hill's Raintree Tropicals breeding program.

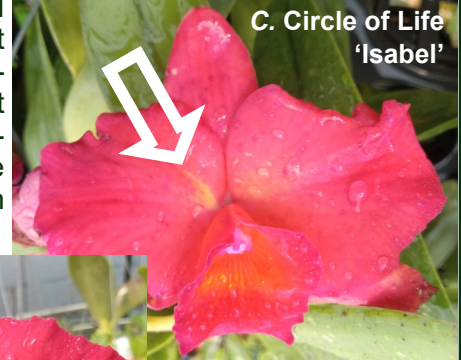


Since then, I have spotted random color breaks in other Circle of Life progeny.

To the right yet another example (*C. briegei* x CoL). To my surprise, this plant also tested clean.



In early 2021 I got an opportunity to buy 6 different ***C. Circle of Life*** plants, all from the original Fordyce cross, which consisted of only 50 plants. These divisions have now started to bloom. I expect that the flower quality will improve as I get the plants into better condition, but the next two photos pick up a clue to what is going on in these plants.



My conclusion is, that Circle of Life progeny are likely to have some minor color breaks, which are NOT caused by a virus.

These observations have led me to take a very close look at all flowers. I have come across similar color breaks in one other plant = ***Rhyncattleanthus Li Hing Mango***:



This grex does not descend from Circle of Life, but it does have 3.38% *C. coccinea* in its genetic makeup. That is where I suspect the color breaks originate in the Circle of Life grex & progeny.

And, since I have included this last plant in this report, I should mention that it also tested clean. So, the conclusion is: ***Test it before you throw it out!***