St. Augustine Orchid Society

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Potting Media Considerations

October 2000

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Orchid Growing Tips

Most Orchid growers view the stuff in Orchid pots (correctly called media) as nothing more than something to hold Orchids in the pot. A recent article in the AOS journal, *Orchids,* on growing and propagating native Lady Slippers (Cypripediums), discussed the fact that a small difference in the pH of media made a difference in whether seedlings survived. Unless the exact pH conditions existed in the media, fungi would attack and kill the plants. Solving this problem will likely lead to healthy native Lady Slipper Orchids available for American gardens. This is an important lesson for all growers.

pH of the media is an important variable for all Orchids that have roots in contact with the media. In nature, terrestrial Orchid roots often grow in wet decaying plant matter, on the surface of wet soils. Often they grow attached to wet surfaces in which friendly fungi grow. Try this in a pot and your Orchid will most likely be dead in a short time. We often blame lack of oxygen for the death of plants in wet mixes, but usually invading fungi and bacteria cause death.

Early Orchid growers in Europe had a difficult time overcoming their misconceptions about conditions in which Orchids would thrive. Eventually, they found media such as Osmunda fiber in which Orchid would not only survive for a few years, but also grow and multiply. When Orchids reached the U.S. and became big business in the cut flower trade, Osmunda fiber was abandoned because it was expensive and difficult to use. There was also the problem of destroying the old live Osmunda ferns that produce this fiber. Commercial growers tried many other natural and manufactured products, eventually settling on fir bark, used mostly where cheap and available (out west), and various mixes using fir bark and peat on the East Coast.

These products were used with great success for many years. Each of these media provided not just something for plant roots to attach to, but contained an ideal pH that prevented growth of fungi and bacteria. As sources of fir bark and peat changed, growers began using other products and when fungi and bacteria became a problem, they began using a wide variety of anti-biotic and anti-fungal products. Once such products became widespread and relatively cheap, price became the major reason to select a media. This has led to increased problems for hobbyists that purchase plants and then have difficulty growing them after a few years.

Cattleyas have become much more difficult to grow today than they were many years ago. Heavy use of anti-fungal sprays has also led to the proliferation of breeding lines that are not as resistant to these diseases. Hobbyists purchasing plants in media often assume that the media will be ideal for them as well. That may not be the case.

Commercial growers extensively tested many different medias in the first half of the century paying special attention to pH. Numerous articles record their findings that show that the best media are those with an acidic nature. Media must maintain this pH for years.

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Many tree barks have this characteristic for obvious reasons. Some, however, like Redwood trees and many Pine species have bark that is too acidic. They may prevent the growth of fungi, but they also harm Orchid roots. Others like tree fern are almost inert or neutral. Mixing 5% redwood bark with 95% tree fern provides the appropriate pH and this mix is still used in warm climates.

Water, however, also plays a role. Water from rivers and wells contains small amounts of dissolved salts. Each water source has different salts in different amounts. Salts raise pH in water and on the surface of media. Thus, salts added each time you water changes your media depending on your water quality and the nature of your media. Generally the more dissolved stuff in your water the shorter will be the life span of your media or the more fungicide/bactericide you will need. Rainwater is ideal and not only contains low quantities of salt, but is also slightly acidic.

Pay attention to which plants have fungal problems. Are they in certain media? Is the media old in those plants? Which plants have done well? Are they in a certain media? If you pay attention to this aspect of Orchid growing you will be able to find the best media for the kind of Orchids you grow under your conditions and with your water. You will also find that if you can attain this ideal pH you will dramatically decrease your use of fungicides and other similar products.

Winter is not the ideal time to repot, but is a great time to evaluate rotting problems as they tend to manifest themselves during cool periods when greenhouses are closed. If you find a pattern, try using some other media next year when you repot. If you have a more experienced grower nearby that has few rot problems and does not use many fungicides ask them what they use for media. Asking a few simple questions can save a great deal of time and prevent needless “Orchid Tragedies”.