The How and Why of Water

More orchids are killed by incorrect watering than by any other reason. There are two separate components to proper watering; when and how. The vast majority of orchids grown by hobby growers are epiphytes, growing on trees above the ground where the light is more plentiful. These plants are adapted to having their roots exposed to light and air so in addition to water, orchid roots need air. The central core of an epiphytic orchid root is covered with a spongy material called *velamen* designed to store water. When this spongy material remains wet too long, the central core suffocates and begins to rot. Once the roots begin to rot, the plant can no longer take up water properly and a whole host of problems begin. At worst, root rot will spread upward into the rhizome and cause the death of the plant. In other cases, the loss of roots prevents the plant from absorbing sufficient water to maintain the plant in good condition and the leaves will take on a wrinkled appearance. Unfortunately, the symptoms of over-watering and under-watering are superficially similar and the tendency is to increase watering rather than inspect the roots. Over-watered roots will be brown and mushy while those on under-watered plants will be white or gray and obviously dry. Let's look first at when to water.

When do I water?

Orchids should be watered just as they dry out. This rule applies to all orchids with slight variations depending on whether your plant has pseudobulbs (thickened stems that are designed to store water) or not. Orchids such as cattleyas and oncidiums should be allowed to just dry completely between waterings while orchids such as phalaenopsis and vandas that have no water storage organs should be watered just before dryness occurs. For vandas, this may mean daily watering during the warm

summer months. Vandas and ascocendas that are properly watered will have actively growing root tips at all times. If the root tips on your plants dry up and seal over, you are not watering often enough.

There's unfortunately no magic formula; i.e., water a plant in a 6” pot every 7 days and you'll be trouble free. This is because your growing area is different from anyone else's. Humidity, air movement, potting medium (type and age) and light levels all play a role. There are several ways to determine when a potted orchid is almost dry: 1) the surface of the potting mix will appear dry; 2) dry pots will feel lighter when lifted; 3) clay pots feel dry; 4) a wooden stake or skewer inserted into the potting mix will come out almost dry. If in doubt, a finger inserted into the potting mix is perhaps the best tool to determine the moisture content of the potting mix. It will cause no harm to the plant. And remember, fresh potting mix will always dry out faster than the old medium.

How do I water?

How to water is just as important to proper culture as when to water. When orchids are watered, they should be watered copiously. Water should be provided until it runs freely from the drainage holes. This serves several functions. First, thorough, copious watering is necessary to soak the potting medium. In addition, thorough watering helps to flush away the salts that naturally accumulate in the potting medium from the dissolved salts in our water supplies and the fertilizers applied for good growth. Also, this is your opportunity to examine how the potting mix behaves. If you cannot pour water rapidly through the pot, the potting mix is too dense and you run the risk of starving the roots for air. If you see finely divided material that looks like coffee grounds in the water coming from the drainage holes, your potting mix is breaking down and it's time to repot into fresh medium. At a minimum, try to thoroughly water your plants at least once a month.

Finally a couple of notes about mounted plants and those like vandas that are grown in baskets without additional potting medium. First, avoid dunking these plants in buckets of water. This practice

very easily spreads diseases. If one plant has a disease, all those dunked in the same bucket of water will have been exposed as well. Also, two short waterings a few minutes apart are much more effective than one long watering. Once water runs off the plant, the roots will have absorbed essentially all they can at that time and excess water simply runs off to the ground. The proper technique is to water your plants and then a few minutes later water them again, always beginning with the first plant you watered. This allows time for the roots of the last plant watered to finish absorbing water before you wet them again. Roots that are completely saturated will be a solid color while those that are not will appear mottled.

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