



**St. Augustine Orchid Society**

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## **Top Dressing Your Orchids**

by Sue Bottom, sbottom15@hotmail.com

Orchid growers can talk about different orchid potting mixes for hours on end. Whether or not organic matter should be incorporated into a mix, what types of organic materials are preferable or is it better to just use inorganic media, how best to buffer pH, what about salt accumulation, and on and on. Regardless of where you settle on the potting mix debate, here's a new twist. What benefits can you obtain from top dressing your orchid potting mix with different materials?



1. New cattleya seedlings are dropped into small slotted clay pots filled with chunks of lava rock and then a little sphagnum moss is draped over the top of the pot for moisture retention and root protection.

**Different Potting Materials.** You may have decided on the potting mixes that work best for you and your orchids, and still benefit from top dressing the pot with different materials like sphagnum moss, cypress mulch, coconut fiber and similar materials.

*Retain Moisture.* A layer of sphagnum moss placed on top of your pots will help retain moisture in the pot as well as provide a little extra moisture for the newly emerging roots. When you have very small seedlings, such as from a compot or a plug tray, you can pot them up in a 2 or 3 inch (5 to 8 cm) clay pot filled with medium lava rock chunks. This provides plenty of air around the roots but is a bit of a shock to the new plants. Add a top layer of New Zealand long fibered sphagnum moss over the lava rock for a little moisture



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retention at the top where new roots emerge. This will also increase humidity and moisture in a dry environment.

*Protect from Chewing Pests.* Covering the new roots with a top dressing will protect newly emerging roots from snails, slugs and cockroaches. Cattleya grower Keith Davis taught us the trick of placing a little sphagnum moss around emerging roots to protect them from damage, particular with bifoliate cattleyas that seem to only throw off new roots once a year.



2. Cypress mulch used as top dressing will provide a little bit of acidity to counter the effects of hard water as well as allow you to top dress coarse potting mixes with timed release fertilizer without having it wash through the pot.

*Prevent Washout.* If you are using a fine bark or soilless mix, top dressing the pot with sphagnum, cypress mulch or coconut fiber will keep the mix from washing away when you're watering the pot. This is particularly important for paphs grown in a fine bark mix or phals and some terrestrials grown in a soilless type mix. Top dressing will also help keep timed release fertilizers and other nutrient top dressings from washing out of the pot.

*Buffer pH.* A top dressing that has an acidic reaction like sphagnum moss or cypress mulch can help buffer the pH of the potting media. If you have a very alkaline water



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source and are concerned about maintaining the proper pH in your root zone, adding some acid generating material to your potting mix can help introduce a little acidity to keep your potting mix in the slightly acidic range, which is optimum for nutrient availability.



3. A light top dressing of sphagnum moss provides a little more moisture as the eyes begin to sprout their new growths on a cattleya.

Some people extend the concept of top dressing to the entire pot, using different materials similar to building a 7 layer dip. Canadian orchid grower and AOS judge Jean Allen-Ikeson outlines her approach:

I plant my orchids in layers of potting mix going from completely open at the bottom of the pot to sphagnum moss on the top. Lava rock or expanded clay pellets are placed on the bottom about  $\frac{1}{2}$  to 1 inch (1 to 3 cm) deep depending on the size of the pot. Then I add a mix that is coarse with bark, a bit of charcoal, expanded clay pellets or baked clay 'corn' and a bit of oyster shell because I use rainwater. If it is a large pot, then I add a little more bark as I get close to the top and then all pots get a  $\frac{1}{2}$  to  $\frac{3}{4}$  inch (1 to 2 cm) thick layer of sphagnum on the top depending on the pot size.

How often do you dump a pot and find the roots on the top a bit desiccated and the ones on the bottom rotted and the mix soggy? If you layer your mix, it is drier



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as you go down. The sphagnum catches the water so that it drips more slowly through the pot and wets the mix better and then retains more moisture at the top for new roots, which need it the most. If you fog, it slightly dampens the sphagnum so that you can let the pots dry out more. Of course with small pots, I use more sphagnum because they dry out very fast and the plants do not have much water storage at that size. Bigger pots need less water or watering less often than smaller pots, but that is why fogging or misting with a filter-less cool mist humidifier is so helpful, particularly when growing in a low humidity environment in the house where you are forced to water every other day. The plants all love it and grow much better roots.

**Fertilizers and Nutrient Supplements.** Water soluble fertilizers containing all the essential mineral nutrients are great to feed your plants. The advantage of water soluble fertilizer is you know exactly what nutrients you are supplying to your plants each time you fertilize. If you apply  $\frac{1}{4}$  tsp/gal (0.3 cc/l) of the water soluble 15-5-15 Cal Mag fertilizer, you can know that you are supplying 50 ppm of nitrogen to your plants. There is no similar conversion factor for timed release fertilizers. With slow release fertilizers, you simply top dress your orchid pots with the fertilizer and wait for it to slowly dissolve and be taken up by your plants.



4. Catasetums get several layers of time release fertilizer interlayered with sphagnum moss as they're potted up, and then a final dusting of time release fertilizer.



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*Timed Release Fertilizer.* Top dressing with timed release fertilizer is a common practice. Timed release fertilizer is simply fertilizer that has been encased in a coating that breaks down slowly releasing the fertilizer. Dynamite is a popular timed release fertilizer with various formulas that is available in nurseries and the big box stores. If you go to a nursery supply outlet, you can find hundreds of formulations, fertilizers with different ratios of the macro and micronutrients, fertilizer with coatings designed to release over a time period anywhere from 70 to 360 days, and some fertilizers intended for spreading on top of the pot while others are intended to be incorporated into the potting mix.

The use of water soluble or timed release fertilizer doesn't have to be an either or proposition. I use water soluble fertilizer throughout the year at a rate that is best for the cattleyas, about 50 ppm nitrogen. For the heavier feeders like phalaenopsis and the catasetum family, timed release fertilizer is also added to the pots as a top dressing. In fact, when the catasetum relatives are repotted, many growers interlayer the timed release fertilizer with the potting mix to make sure these plants have enough nutrition to fuel their summer growth.



5. Granular organic fertilizers can be placed in tea bags and laid on top of the pot. The tea bags don't last, but once the organic fertilizer gets crusty, most of it stays on top of the pot and slowly releases its contents.



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*Calcium and Magnesium Supplements.* Calcium and magnesium aren't mentioned on many fertilizer labels, but they are essential nutrients for your orchids and are contained in the popular cal mag fertilizer formulations. There are water soluble supplements that can be added to your irrigation water, including calcium nitrate (available from feed stores) for calcium and Epsom salts (available from the grocery and drug store) for magnesium. Your local hydroponic store has several other calcium and magnesium supplements that can be used. There are also "natural" supplements that can be used as top dressings on your plants or incorporated into your potting mix. Sources of slow release calcium include granular dolomitic lime (which also supplies magnesium), crushed oyster shells, steamed bone meal and fish bone meal. Even crushed egg shells can be used although perhaps making an organic tea is more aesthetically pleasing than looking at crushed egg shells under your orchids. The disadvantage of these supplements is they tend to increase the root zone pH. Gypsum (chemically calcium sulfate) can be applied to supply calcium without causing a basic reaction in the potting mix. You might sprinkle a teaspoon (5 cc) or so over for every 4 inches (10 cm) in pot diameter several times a year to supply extra mineral nutrition.

*Organic Fertilizers.* There are a host of organic fertilizers and supplements that can be applied as top dressing. Besides the calcium supplements, there are nitrogen supplements like cotton seed meal, feather meal, soy bean meal and blood meal, although caution with blood meal is advised because it is a quick to release nitrogen form that can burn plants. Alfalfa meal contains trace minerals and growth stimulators. Fish meal is a general purpose, slow release fertilizer. Kelp is a rich source of trace minerals, plant growth regulators, vitamins, hormones, amino acids, enzymes and chelated nutrients. You can top dress peat based and sphagnum moss mixes, or place it in tea bags to hold the granular fertilizer so it doesn't wash through a porous open mix.

Women have been top dressing for years, applying a little make up here and there to supplement what nature gave them. You can provide extra nutrition, moisture retention and pH adjustment by using various top dressings while still maintaining high porosity and aeration around the roots deeper in the pot, giving you the best of both worlds. You are limited only by your imagination!

**Acknowledgements:** Thanks to Jean Allen-Ikeson from Ontario for her tips on building up a potting mix from the bottom up.

**References and Additional Reading:**

Poole, H. A.; Seeley, J. G., 1978: Nitrogen potassium and magnesium nutrition of three orchid genera. *Journal of the American Society for Horticultural Science* 103(4): 485-488