



St. Augustine Orchid Society

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Top Dressing with Mycorrhizae

by Sue Bottom, sbottom15@gmail.com

Orchid growers are always learning new tricks from their orchid buddies. Take Keith Davis up in North Carolina. He was visiting his friend Russ Bolt of Looking Glass Orchids and naturally the topic of conversation turned to growing orchids. Russ grows his diversified selection of orchids in PRO-MIX HPCC, a peat based formulation rather than the bark or clay pebbles base many other growers use. He's careful about watering because this mix tends to retain water, and his results are impressive. So impressive that Keith decided to test it out in his greenhouse by using the PRO-MIX HPCC as a top dressing. He reports:

I know some of you have heard me talk about the amazing results I have been observing when top dressing plants with the PRO-MIX HPCC. Here is yet another example. C. dolosa alba that had pretty much maxed out in flower count and growth size, at least I thought so. Early in the spring, I top-dressed the plant with about 1/2" and just look at the size of the bulb compared to all the previous ones. To date, the most blooms that Kurtis or myself have had on this plant is 3 per spike. It was awarded the AM in Greensboro with 2 blooms...

I am seeing this on everything I top dress with it. I have had Lorraine Shirai 'Raye' for more than 20 years and it has NEVER put out but one growth per year. I topped-dressed it with the PRO-MIX about 8 weeks ago and it now has three new growths, two on the back bulbs.



C. dolosa alba. Look at the size of the new pseudobulb compared to the older growths, and 7 flower buds compared to the normal 2.



PRO-MIX HPCC comes in 2.8 cu ft loose bags or 3.8 cu ft compressed bales. The HP stands for High Porosity and the CC is for chunk coir.

PRO-MIX HPCC contains sphagnum peat moss, perlite for porosity and drainage, chunk coir for air and water porosity, and mycorrhizae for enhanced growth. The mycorrhizae blends all contain what the manufacturer calls PTB297 technology, consisting of an endomycorrhizal inoculum of *Glomus intraradices* (6,000 viable spores/g). This fungus, which is now known as *Rhizophagus irregularis*, populates the plant roots and helps provide nutrients (particularly phosphorus) and water to the plant in exchange for the sugars it receives from the plant. Keith adds:



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As a top dressing, the coco fiber keeps the stuff from filtering down between the open mix below and it stays on top. It does not seem to have any detrimental effects to mix below. I do add medium sized sponge rock to the PRO-MIX. In a large mixing container, I dampen the mix and add about 30% by volume sponge rock and use it like that.

I use it on seedlings too and have the best results of any mix I have ever tried. On small seedlings, I place broken pieces of peanuts in the bottom 1/3 and fill the rest of the pot with the PRO-MIX. I do this with pots up to 4" size. These C. Hardyana coerulea seedlings arrived in 2" pots from Tropical Orchid Farm. All were in growth, which has since matured. I put each in a 4" pot with chunky pieces of sequoia bark and peanuts, then top dressed each pot with just enough PRO-MIX HPCC to cover most of the chunks. All are now producing double and triple new growths. Those not treated with the PRO-MIX HPCC matured the original growth but did not have any new growths.



These seedlings are producing double and triple new growths with the PRO-MIX HPCC.



I am even getting new growths on dowiana that just flowered, some with double new leads.

The SAOS potting mix for phalaenopsis is a 50-50 mix of sponge rock and PRO-MIX HP that contains mycorrhizae and biofungicides, but no coir. Most PRO-MIX biofungicide products have been enriched with *Bacillus pumilus* (strain GHA180) (not *subtilis* MBI-600) that colonize developing root systems and suppress root disease causing organisms such as *Pythium*, *Rhizoctonia* and *Fusarium*.

Courtney gave this interim report:

I have been using PRO-MIX HP as a top dressing on my Phals for a couple of years. This product does not have Coir or mycorrhizae. I switched to PRO-MIX with the mycorrhizae, but not the coir, last fall. Both seem to provide the same level of growth. I usually apply this topdressing after I remove Phal flowers in the spring, so there may not have been enough time to see the benefit of the mycorrhizae. Both the PRO-MIX



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HP with the mycorrhizae and my old PRO-MIX HP add moisture in summer when Phals dry faster than the Catts, allowing me to water both at the same time.

I am using the Sunshine Mix as it is, i.e. no added sponge rock. My mature Catts are potted in a very coarse mix. When I add a layer of Sunshine Mix on this medium it tends to sink into the surface of my medium unless I use a heavy layer. On seedlings, it tends to stay on the surface even though they are in coarse medium. I never put the top coating on and water plants as this tends to just flush the Sunshine Mix through. If the Sunshine Mix is left in the pot for a couple of days it seems to absorb water and not flush through when I water. I found that several of the seedlings that had the Sunshine mix top dressing began to look desiccated, so I pulled the plant from the pot and discovered that the roots were totally dry. The top dressing was acting like a barrier to water flowing into the pot. When I took the plant out of the pot it looked like there were fine cotton fibers, likely mycelia from fungi, throughout the top dressing that had become almost hydrophobic. I checked several other pots and they too were not getting water into the roots. Now I try to not cover the entire surface on seedlings, which seems to be working OK.

We tried to purchase the PRO-MIX HPCC at horticultural outlets like BWI to no avail, so we turned to our local hydroponic store who suggested Sunshine Advanced Mix #4 with mycorrhizae. This product seems even better, containing 50% Canadian sphagnum peat moss, 35% perlite, 15% coir, a proprietary blend of endomycorrhizae as well as silica. Courtney and I are trialing this product, and if you would like to experiment with it, SAOS is offering coffee jugs of the material for \$3, two for \$5. Preorder by email to info@staugorchidsociety.org.