



St. Augustine Orchid Society

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Secrets of a Great Orchid Grower – James Arnold

by Sue Bottom, sbottom15@hotmail.com



Have you ever looked at someone's plants and wondered if they have been feeding their 'chids royal jelly? James Arnold of the Jacksonville Orchid Society has spectacularly well grown plants. He had some seedling paphiopedilums for sale at one of the meetings and they looked terrifically healthy and vigorous. When you lifted the pot you could feel the fat and happy thick roots through the thin plastic pot. The plants he displays on the show table and at orchid society exhibits are impeccably grown and flowered. I had to learn his secrets.

James Arnold of Jacksonville, Florida agrees with Yogi Berra, you can observe a lot by just watching.

Growing Area. We made the trip up to Jacksonville to visit his growing area, where James specializes in paphs, phrags and phals, but also has cattleyas, miltoniopsis, and catasetums in the greenhouse and cymbidiums and dendrobiums growing in the yard. He built his 12 ft x 20 ft greenhouse from a kit purchased from Greenhouse Supply. It is made of a double layered greenhouse film with an inflated air space, double walled polycarbonate at the ends and is covered with 70% aluminet. It has been retrofit with a water wall for cooling. There are two circulation fans that operate continuously and two exhaust fans on temperature control that cycle on to keep temperatures below 85F at the water wall in the summer. There are two small electric heaters to keep winter temps above 55F along with a ventless blue flame propane heater for the really cold nights. It's a very nice set up, fairly conventional, although it doesn't really explain his growing success.



James built his 12 x 20 ft greenhouse that he bought as a kit from Grower Supply (www.GrowerSupply.com). He praised them highly for their technical support while he was deciding on construction details, like installing a ventless blue flame propane heater to heat the greenhouse in winter.



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Watering and Water Quality. I think his secrets are his powers of observation, attention to detail and his determination to solve any problems, which together give him the ability to identify a potential problem and take whatever steps may be necessary to correct it. Take his approach to his water system. He started out using city water but became concerned about the residual chlorine and its impact on some of his sensitive species. So he decided to install a reverse osmosis (RO) system, which treats the softened water from his house from which calcium, magnesium and iron are removed in the softener so the RO unit can easily remove the sodium and produce a very clean water for his orchids. This solved one problem and created a different problem because the clean water had no buffering capacity and when fertilizer was added to this clean water, there were precipitous drops in the root zone pH and the acidity caused some premature plant deaths as well as nutrient deficiencies. Now James blends about 25% well water with his clean RO water ending up with a water low in total dissolved solids (100 ppm TDS), slightly acidic pH (6.2 pH units) and having a moderate alkalinity for pH buffering. His 100 gallon per day system with a booster pump produces enough to water his greenhouse thoroughly every 4 or 5 days in the warm season and every 7 to 10 days in the cool season. His observation of problems pushed him toward the ultimate fix, and then his attention to detail and handy nature came into play. He added an aquarium aerator in the water tank to keep the water fresh and full of oxygen, and in the winter, he drops in an aquarium heater to keep the water about 70°F. The end result is near perfect water quality for his orchids year round.



Not many folks can grow the *Brachypetalum* section *paphiopedilums* to perfection. Here are pics of *Paph. Conco-bellatulum* on the left and *Paph. bellatulum* in the middle. The *Paph. delenatii* var. *alba* on the right came home with us along with some seedling *Paph. bellatulum*s, hope I can grow them half as well!

Fertilizer. So what about that royal jelly, does he have some secret orchid food or snake oil that he's using? With his RO water blend, he had great success with the JR Peters fertilizer formulated for RO water, a 12-3-15-7Ca-2Mg formula with micronutrients and for the last six months he's used a K Lite fertilizer having the formula 12-1-1-10Ca-3Mg although he hasn't noticed a difference in his plants since the switch. He periodically gives them different fertilizers including MiracleGro to vary their diet. He gives the plants calcium nitrate and Epsom salts monthly and says the calcium nitrate gave his plants the biggest boost of any of the orchid fertilizers he's used. He doesn't use supplements like seaweed or fish emulsion on any regular basis. He waters his plants thoroughly and then mixes up



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a batch of fertilizer and comes back and fertilizes the prewetted plants with every watering. He has recently increased his fertilizer application rate from about 125 ppm nitrogen to 200 ppm nitrogen and is watching his plants to gauge their response.

Potting Mixes and Repotting. He addresses other aspects of orchid growing with a similar approach, observe the plants, make modifications if they don't look vibrant and fine tune the orchid culture. You know there are many choices when it comes to potting mixes, from inorganic stalite, clay pebbles, lava rock, the organic coco husks, several varieties of bark, sphagnum moss, and blends containing various degrees of each. James says when he first started out and would hear a speaker extol the virtues of this or that potting medium, he would run out and buy it and make wholesale changes. No mas. He is an Orchiata man now, blending in Sponge Rok at a 6 parts Orchiata to 1 part Sponge Rok ratio. He uses the smallest size (Classic #9) for compots although he advises this small size lasts only a year or so in the pot. He blends the two medium grades together using large sizes for larger pots and smaller sizes for smaller pots and finds that the bark seems to stay fresher for longer than other barks he's tried, although the pot life is an unknown at present. Suffice it to say that the plants are growing incredibly well now and he will notice when the mix becomes stale and must be refreshed.



My jaw really dropped looking at his phalaenopsis plants, anytime I've tried to grow phals in pots larger than



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6 inches I've had problems. He has incredible phals in 8 inch standard pots filled with Orchiata top to bottom, no peanuts at the bottom.

Chemicals. James might break out the big guns on occasion, like when he had to resort to Safari to get rid of a scale infection on his cattleyas. But he relies most heavily on two household chemicals, isopropyl alcohol to dispatch the occasional mealybug and hydrogen peroxide to combat the bacteria that cause the fast moving rots. He doesn't experience fungal infections probably due to the buoyant air movement in the greenhouse. He inspects his plants (no surprise there!) regularly and takes immediate action if any problems are found (no surprise there either!). It's a great example of good cultural practices eliminating 90% of any potential pest and disease problems.

Culling. James is a student of Darwin and believes in natural selection. If a plant in his care struggles, even after changing its growing conditions in the hopes of finding its sweet spot, and the similar plant in the next pot grows well under those same conditions, guess which one stays in the greenhouse? Once James concludes the plant does not grow well for him, whether because it is a genetic weakling or his conditions simply do not agree with it, the plant is shown the door. It may be ruthless, but he selects his keepers based on vigor and flower quality and thereby gets the most blooms per square foot of growing area.



Some well grown complex paphiopedilums.

James got interested in orchids with an assist from his grandmother and perhaps she passed her green thumb on to him. He has gobbled up information about the many different aspects of orchid growing and honed his cultural skills. His real secret, and what



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elevates him from a great orchid grower to an exceptional orchid grower, is the troika of keen observation skills, attention to detail and the determination to grow the healthiest and happiest orchids.