St. Augustine Orchid Society
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Orchid Supplement… Or Snake Oil?

by Sue Bottom, sbottom15@bellsouth.net

Our speakers are always suggesting new things to use on our orchids to improve their growth. The bigt question is whether it is a true supplement that benefits the orchid or a snake oil with the potential for unintended negative consequences. We'll review some supplements from the more commonly used to the ones that are on the fringe.

Fish Emulsion. Fish emulsion is naturally derived liquid from the fish processing industry. It is considered to be an organic fertilizer appropriate for use in ornamental horticulture. It has low concentrations of nitrogen, phosphorus and potassium (such as 5-1-1) and contains some micronutrients and vitamins. It is fairly aromatic though today's version is not nearly as odorous as it used to be. Fish emulsion is safe to use as either an everyday fertilizer, a monthly supplement or a wintertime alternative to other fertilizers. The label recommends 1 tbs/gal once a month for adult plants and twice a month for seedlings. I use fish emulsion monthly to quarterly at a rate of 1 tsp/gal as a supplement to rather than a replacement for my normal feeding routine.

Seaweed Extract. Seaweed extract is an organic product derived from harvested brown seaweed that contains major and minor nutrients, amino acids and growth promoting substances like auxins, cytokinins and gibberellins (advanced growers may be interested in KelPak). Seaweed extract is often used to start the growth cycle in spring, enhance root growth on seedlings and divisions, and initiate multiple new growths from back bulbs. A negative is that too much seaweed use can result in a multitude of new growths that might be smaller in size than the older growths. The label recommends using 1 oz/gal weekly. I use seaweed monthly in the spring and summer at a rate of 1 tsp/gal as a supplement to rather than a replacement for my normal feeding routine. Using seaweed immediately after repotting is a good practice to encourage new root growth.

Magnesium Supplements. Magnesium is an essential element that is a major component of chlorophyll and it should be present at levels of 20 to 50 ppm in irrigation water. Magnesium supplements in the form of Epsom salts (magnesium sulfate) can be used to provide additional magnesium or Cal-Mag fertilizers like the Excel 15-5-15 product can be used. Magnesium is mobile in the plant so it can be translocated from the older to the newer part of the plant. You can apply magnesium at higher concentrations, say 1 tbs/gal on a quarterly basis or apply it monthly at ½ to 1 tsp/gal. Do not mix with calcium supplements because a reaction will occur between them that will precipitate out in the mix tank. I use Epsom salts monthly at

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½ tsp/gal during the fresh water flush or in conjunction with using 20-10-20 fertilizer in the winter (cal mag fertilizer is used during the summer).

Calcium Supplements. Calcium is an essential element used to build cell walls that should be present at levels of 40 to 100 ppm in irrigation water. Calcium supplements in the form of calcium nitrate (available at feed stores), dolomitic lime applied as a top dressing, the specialty product Metalosate Calcium or Cal-Mag fertilizers like the Excel 15-5-15 product can be used. Calcium is not mobile in the plant and will not translocate from older to newer parts of the plant. Calcium deficiency will result in a similar appearance to a bacterial or fungal rot on the newest, most rapidly expanding tissue. It affects cattleyas, especially the Guarianthe, primarily during periods of rapid growth in the spring and summer. New leaves may turn black at the tips. I use a Cal-Mag fertilizer all summer long and supplement it with monthly doses of Metalosate at 0.5 tsp/gal.

SuperThrive. SuperThrive contains the synthetic rooting hormone 1-naphthyl acetic acid at 0.04%, vitamin B1 (thiamine, also known to stimulate root growth) at 0.09%, plus a variety of trade-secret ingredients likely including kelp extracts, humates, soluble iron compounds, and the like (from FirsRays.com). Many growers soak newly deflasked plantlets in a SuperThrive solution or use SuperThrive when repotting to help stimulate root growth. The recommended addition rate to irrigation water is 1 to 3 drops per gallon. Some growers have reported flower deformity and crippling if too much SuperThrive is applied. I can't tell the difference in plant growth with or without SuperThive but I continue to use it as a matter of faith. I usually add a few drops per gallon monthly during the growing season.

Quantum Growth (Innoculaid). The Quantum Growth website describes this product as naturally occurring microorganisms in a peat humus extract that increase the population of naturally occurring beneficial microorganisms in

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the soil. This would appear to be most suitable for terrestrial or semi-terrestrial orchids like paphs because most orchids are not grown in soil. In fact, some growers report that the microorganisms rapidly degrade any organic matter (like coco husks) in the potting mix. Many SAOS members have tried this product, some report great success, most have discontinued its use. The label recommends 2 oz/gal though others recommend 1 tbs/gal on a monthly basis.

Axiom (Messenger). The Axiom Harpin proteins are a plant health promoter and plant growth stimulator that activates a plant's growth and defense responses. Harpin Proteins are produced in nature by certain bacterial plant pathogens and plants develop receptors to detect the presence of Harpin proteins which triggers an "early warning system" leading to increased plant yields and health. The label says the material should be applied as a foliar spray every three weeks. I used an earlier version, Messenger, and the plants grew well but not noticeably better, so I discontinued its use. There is some suggestion that the product may work more effectively on seedlings than mature plants.

Ethanol. It has been suggested that adding ethyl alcohol to high light growing orchids can enhance the growth rate. Using an 80 proof vodka, the recommended addition rate is 0.6 tsp/gal. I have been using about a third that rate weekly during the growing season and am seeing very vigorous growth. Some growers suggest the alcohol has no impact, others think perhaps the alcohol is easily converted to sugar and absorbed by the plants or that perhaps the alcohol is an alternate carbon source to the carbon dioxide absorbed from the atmosphere. Ray Barkalow of FirstRays speculates it might increase the permeability of the plants' cell walls, therefore allowing a greater throughput of the fluids the plants need to grow. This is an experiment in progress but I think I'll continue using 0.2 tsp/gal weekly during the spring and summer growing season.

If you have mastered the fundamentals of supplying the right amount of light, air movement and water, and then use either a good Cal-Mag fertilizer or a 20-10-20 with regular magnesium supplements, your plants should grow beautifully. You can potentially get an extra percentage point or three in improved growth by using some of these supplements, particularly the organic fertilizers and possibly ethanol. You may also target seedlings or recently repotted plants with some of the root stimulators like seaweed and SuperThrive. Focus on the basics first, that's where you can have the greatest impact on how well your orchids grow and bloom.