



**St. Augustine Orchid Society**

[www.staugorchidsociety.org](http://www.staugorchidsociety.org)

## **Leaf Reddening from Magnesium Deficiency after Exposure to Cold Orchid Alert**

Courtesy of Dr. Martin Motes, Motes Orchids

The recent extraordinarily prolonged bout of cold has put exceptional stress on many genera of orchids in exposed settings. Orchids that have been maintained at proper nutritional levels are always able to withstand cold stress better. The Michigan State formula or similar formulae with low phosphorus, lower nitrogen and additional magnesium helps protect orchids from the intermittent cold snaps that are typical of a Florida winter. Growers who have not been using the recommend formula may see a dramatic reddening of the foliage of their orchids. This reddening which affects all genera is typically attributed to cold but low temperatures are merely the instrumental cause, the material cause of the reddening is magnesium deficiency. Orchids with a proper level of magnesium do not turn red when exposed to cooler temperatures.

The cure for reddening of foliage is one tablespoon of Epsom salts (magnesium sulfate) per gal of water. This should be given weekly until the red disappears. The Epsom salts is ideally applied in conjunction with one tablespoon per gal of potassium nitrate that supplies the proper low level of nitrogen and the additional potassium to alleviate the magnesium deficiency. This combination can be substituted for regular fertilization for the duration of the winter. Most orchids in cultivation have more than enough phosphorus in them already and this formula will also yield long-term benefits in increased bloom.

Epsom salts are as near as the corner drug store but potassium nitrate is harder to find (particularly in less than 50 lbs.). Broward Orchid Supply and OFE International can supply potassium nitrate (in user friendly quantities) and the recommended fertilizer formulae<sup>1</sup>.

Orchids that have been protected from the cold by running water overnight are almost certain to have had nutrients leached from their roots. Those nutrients need to be replaced. Vandaceous orchids in particular have had nutrients stripped from their extensive exposed root system. They should be fertilized on a weekly basis to restore proper growth.

If they did not actually freeze, Himalayan dendrobiums of the *Nobile* section should bloom all the better for the exposure to cold. The same is true of the dendrobiums of section *Callista*. See *Fla. Orchid Growing* pp. 31-35 for different culture of various sections of dendrobiums and pp117-121 for cold tolerance of different orchids.



<sup>1</sup>Broward Orchid Supply lists potassium nitrate on their webpage but OFE does not; neither website lists a MSU formula fertilizer. Peter's Excel 15-5-15 Cal-Mag is a good MSU formula fertilizer though not generally available in small quantities. Janet Skinner at the Ace on US 1 in St. Aug stocks this fertilizer in 25 lb bags.