

## Frost Damage 2004

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We have finally had a significant freezing event in the Valley, again. We often go years without any damaging temps and we all tend to stretch the envelope with near tropical plants. As a nurseryman, I love the exotics as they add color, texture and variety to the plant palette. However, they also add the element of loss when we grow them in areas beyond their normal ranges.

At our home and nursery in Chandler, we had successive nights of 24 F and then 22 F. In 2003, I noted temperatures of 26, 25 24 without much damage at all. One night registered 23 last year with negligible damage. This year was different. At 22 degrees, we have had a major meltdown of *Euphorbia tirucalli* (pencil euphorbia) with especially serious damage to the newest cultivar called fire sticks. This cultivar develops a stunningly beautiful reddish color on the new growth during normal winters. The freeze turned it to a stunningly brown mush of fire sticks left exposed to the cold! Among the agaves, we took quite a severe hit on *A. desmetiana* and *A. gypsophila*. Some of both were damaged under an eight-foot tall cover of shade clothe, which is very unusual. Those that had frost protection closer to the plants survived with minimal scarring. Both of these agaves are relatively new in the trade with introductions from southern California nurseries. I also had severe damage to unprotected *Agave quingola*. The one thing these three agaves have in common is very thin leaves which apparently denied them the natural protection of mass (bulky plants resist freezing better, in general).

Among our elephant trees, the results will not be totally apparent until the flush of new growth this spring. *Pachycormus discolor* held up the best based on retaining vibrant green foliage versus the somber dead brown that cloaks the *Bursera microphylla*, *B. hindsiana* and *B. fagaroides*. I deliberately did not cover these three this winter as I have spent many dollars and hours covering them the past several years without any damaging temperatures. This effort was greatest on *the Bursera microphylla* in our front yard that is roughly 16 feet tall with a spread of 20 plus feet. I have a special 50 x 50 piece of shade cloth that takes three or four men to install. Oh well, maybe I will return to covering it next year.

Some plants take a hit every winter such as *Bombax ellipticum*, Cannae lilies, etc. as part of their normal Valley cycle preparatory to blooming. This usually just takes out the foliage leaving the underlying scaffold of branches or stems to host the renewal of spring. I don't see any damage beyond normal with them. I have probably lost the velvet leaf kalanchoe that has prospered so well for three years on the north side of the house. The kalanchoes under the eaves on the east side of the house show some damage, but are obviously full of life and will replace the damaged parts very quickly.

With our cactus, there has been surprisingly little frost damage. I have finally progressed to leaving a couple of samples of most species we grow uncovered as an on-going quality control. Of the several myrtillocactus species, only the *M. eichlami* from Guatemala has

minor damage on the growing tips. Surprisingly, the various crested and variegated myrtillos came through unscathed. All of the stenocereus made it just fine with one notable exception. I have a few stenos that come from the area of Guaymas. They are very fat, bright green with spination most similar to *S. dumortieri*. They were blasted. We have never had a firm ID on these, and now with the frost damage they will be consigned to the dumpster. Who needs trouble?

This brief survey is not intended to keep you from buying the more marginal plants. It just highlights the need to recognize the difference a little cold (one degree colder than 2003) can make on marginal species. With just a little effort to plant them in a more favorable microclimate such as under eaves or providing frost covers on the worst night of winter you can grow and enjoy exotics. The corollary to that is if you don't want to do the work to protect them, stick with the tried and true species that are not affected by frost. Your nurseryman can tell you if you will ask about the hardiness of the plants.