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It works for me
Harvey Welton

Soil

When growing any plant there are several major factors that will have a significant effect on the end product. They are soil or growing media, water, fertilizer and growing environment (light and heat.)

These factors are all equally important to a successful grower. I am most often asked to recommend a soil mix or growing media so I will start there. Once again let me stress if what you are using is giving you the results that you want - DON'T CHANGE!

First a little background so that you can understand why and how I have arrived where I am now. I have seen cacti and succulents successfully grown in everything from the street sweepings of one of our Southern California cities and blown vineyard sand to very specific formulas that included very exact amounts of everything from sand and gravel to humus, fertilizer and micronutrients. I suspect that there are as many soil mixes in use today as there are individuals producing plants either as a commercial enterprise or as a hobbyist. My nursery has used several soil mixes with equal success and when I changed it was for a specific reason.

The first mix that we used was referred to as the UC mix. As you might suspect it was a formula that was provided by the University of California for growing cacti and succulents in a nursery environment. It contained, as near as I can remember, equal parts of washed plaster sand, pea gravel and peat moss.

At the time we were growing in wooden propagation flats that were nailed together and measured 18" square and 2" deep. There were several problems with this situation. First the wooden flats were used over many times. To eliminate the problem of disease contamination they had to be sterilized after each use before new soil and plants could be planted in them. Then the nails that held the flats together rusted from the constant dampness, required to keep the young plants growing. Of course eventually the flat, usually full of sticky plants, would fall apart. Not good! The last problem was weight. Each flat, filled with wet soil and depending on the size and number of plants, would weigh as much as 20 to 30 pounds. Thirty pounds may not be a problem for most men but in those days, 40 years ago, most of the small commercial growers were or had been hobbyists and were either older folks or women. For them weight was a problem.

Styrofoam flats were invented about the time we moved to Riverside and began growing cacti. The change in flats necessitated a change in the soil mix. The UC mix was so heavy it would often cause the flats to break. So initially we

substituted pumice for the pea gravel. That didn't reduce the weight enough so we cut the amount of sand in half and substituted vermiculite for the missing sand. Now the mix was 2 parts pumice, 2 parts peat moss, 1 part sand and 1 part vermiculite. That mix worked well even though we had to provide almost constant fertilizer which resulted in very soft or tender plants that had to be hardened off before we sold them.

A few years later the disposal of old car tires became a problem and it was solved by making them into the propagation flats that we now use. At my nursery my three daughters and wife did the majority of transplanting and wanted the soil mix still lighter. Again we began the substitution process.

The soil mix now became 2 parts commercial seed mix, 2 parts perlite and one part washed plaster sand. I used this basic soil mix for the last 25 years or so. Eventually I added a small amount of balanced slow release fertilizer and a systemic insecticide to control fungus gnats. Recently I began having trouble with an influx of weeds which I determined were coming into the nursery via the sand we were using. So to remedy this problem I changed to 2 parts commercial seed mix and one part pumice and that is what we are presently using. So far it seems to be working well. Only time will tell if we need to modify this formula.