

Potting Soil, Water & Food for the Cactus and Other Succulents Grower

By Gene Schroeder

One sure fire way to start a vigorous discussion among growers of Cactus and Other Succulents is to ask "What should I use for potting mix?" This has been the subject of hours of discussion, hundreds of written words and even a complete issue of the CSSA Journal. Various mixtures and additives are promoted with almost religious fervor. The only consensus opinion seems to be that pumice, where available, is the best aggregate to use as a basis for your mix.

Over the last 15 years, I have grown almost exclusively in pumice-based mixtures. I have used several recipes collected from these discussions and writings, and also experimented quite a bit, sometimes intentionally, and sometimes due to lack of some ingredient. As the sum of this experience, I can now offer my recipe for success.

I make up quantities of a basic mix from materials that are readily available locally. This mix provides the most important attributes needed by most succulent plants. It is loose and friable with lots of available space for air and roots. It drains very quickly, leaving air space while still retaining enough moisture to reduce frequency of watering without danger of root hair loss. Ph is usually near neutral at 5.5- 6.5. Here in Orange County, I find it suitable for both outdoor and greenhouse culture and use it for all but the most specialized or difficult plants.

My Basic Mix = 5 parts pumice, 2 parts course sand, 3 parts organic material

Pumice is available locally from Orange County Farm Supply in 2 cf. Bags. The sand must be clean and hopefully, of assorted sizes. #12 Silica from a building supply store also works and, in fact, is what I usually use. For organic material, there are lots of choices. These are mine, in order of preference:

- Coir (fibrous material from ground up coconut husks). I prefer to use 2 parts Coir and 1 part of any of the next 4 ingredients but you can use 3 of any of these. This basic mix is 50% pumice and can be used for almost everything without further modification. As a plus, it is also easily cut or amended to accommodate special needs.
- LGM or Kellogs Leaf Mold
- LGM or Kellogs premium planter mix
- Supersoil
- Composted redwood

Experimentation is encouraged. For example:

2 parts basic mix + 1 part pumice = 67% pumice - use this for the higher drainage requirements of many difficult cactus and more extreme succulents

2 parts basic mix + 2 parts pumice = 75% pumice - use as low organic content mix with super drainage for mesembs such as Lithops or Conophytums and very hard grown succulents such as Sarcocaulon or Othonna

1 part basic mix plus 1 part perlite = Very fast draining, low organic mix like above but retains even less moisture after watering. (Pumice is porous and will retain some water allowing slower drying of the mix than perlite.) Try this for Pachypodiums but be prepared to water frequently in the hot months.

1 part basic mix + 1 part organic material = 33% pumice - Good drainage plus higher organic content for plants like Aloes, Cucurbits (e.g. Momordica) and most tropical or sub-tropicals requiring constant moisture and more organic content.

The Spice Rack

Growing in pumice based or other soilless mediums requires more attention to the plant's requirements for food (fertilizer) and trace elements. I keep several things handy to spice up my basic pumice mixture. You may use any, or all, based on your understanding or observation of the plant's needs.

- Osmocote 270 day formula - time release fertilizer that works well for fast growth in more organic mixes. Be sure to increase your watering in very hot weather to avoid excess salt buildup in the potting medium. Flood thoroughly, wait 20-30 minutes, and flood again to remove salts.

- MicroMax Trace elements from the Osmacote people - a good and easy to use micronutrient mix compounded for nursery use.
- Dolomite or Horticultural Lime - add this as needed to adjust the the ph of more acid (higher organic content) mixes.
- Superphosphate - good additive to promote root growth when potting bare root or potting on seedlings
- Gypsum - the only way to add usable lime to mix. Good for cactus or succulents that grow naturally on limestone - just a pinch per pot
- Marathon - an expensive but very effective granular systemic pesticide

Watering and Feeding

Now that we all have a few ideas for the planting mix, the next question is, "When do I water?" Like the potting mix question, there are many opinions.

If you take a survey for any given plant, you will get answers ranging from the reasonable to the absurd and some that are just plain impractical, like "Look up the weather for the plant's home area every day and water when it rains there." Although offered in good faith, such advice doesn't make sense because your plant is here, growing in your mix and weather, NOT there!! Watering by the calendar (i.e. don't water at all between October and April) is another suggestion that doesn't allow for the year-to-year or even month-to-month variations of growth and weather. Like during El Nino years!!

Watch and study your plants. If they are in active growth, they need food and water. Sometimes much more then you would think. This can be as often as every day or two during very hot dry weather with actively growing plants. When growth is over and dormancy begins, water and food needs drop drastically, or even cease.

Periodically check the soil moisture. Use a water meter, bamboo skewer or just lift the pot to see how light it has gotten. When the mix is almost dry, it's time to water. Remember, that even when fully dormant, most plants will benefit from a small amount of moisture in the mix to keep fine root hairs from dying. One of the major benefits of the pumice-based mixes is that it is hard to over-water due to the fast drainage plus the porous nature of the material which still slows complete drying.

Feeding, as mentioned above, is more important with soilless mixes. For most plants and growers, the easiest method is to feed at a reduced rate every time you water. If you adopt this schedule of feeding with every watering, just apply 1/8th to 1/4th the fertilizer strength recommended by the manufacturer.

For plant food, I have used all the following with equal results. I suggest changing from time to time just in case there are trace element differences that could be good, or bad.

- Grow More -- 15-15-15 (From OC Farm Supply in 5# bags - very economical)
- Miracid Tomato Food -- 18-18-21
- Schultz liquid -- 10-15-10
- Peters Professional -- 10-30-20
- Cactilizer - trace element additive from CSSA seed bank 1 - 2 drops per gallon

Most important of all -- feel free to change or experiment with any of this. The best mix and culture is the one that works for you and your plants.

Good Growing,
Gene Schroeder