

Soil for Cacti & Succulents

Soils for cacti and succulents are normally well drained. There are probably as many variations in cactus and succulent soil mixes as there are growers. The types of soil mix a grower uses reflects the growing habits of the grower. Those that grow under greenhouse conditions, in plastic pots or water frequently may find well drained mixes help prevent root rot or other problems relating to drainage. Mixes with better water holding characteristics would be better for growers growing in clay pots, or under conditions where their plants may get watered less frequently or less thoroughly.

Most succulent growers will build their soil mix to meet their own needs by combining ready-made mixes or peat moss with other materials to increase drainage. What they are changing is the porosity of the soil--the amount of open spaces in soil that can be filled with water or air. Larger pores will be predominantly filled with air and smaller pores with water. When soil is irrigated all of the pores are filled with water and the soil is said to be saturated. As gravity pulls water down through the soil air is pulled into the soil. Conditions that prevent or slow this drainage--such as heavy soil, very little pore space or water in trays under the pots--will create poor growing conditions for cacti and succulents or encourage the development of root and stem diseases.

Some soil content is up to both the creativity of the grower and availability of materials (in the 1950s it was not uncommon to find peanut hulls and garden soil in geranium mixes because they were free and locally available). If you have a difficult time growing a particular type of plant in one soil, then modify the mix or switch to another.

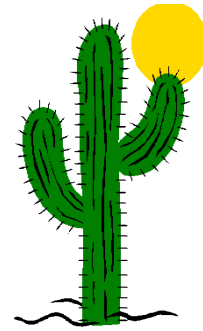


Milled sphagnum peat (left) and coir (right) are almost indistinguishable, but have very different properties in a potting mix.

Common Components of Potting Mixes

Coconut Coir

Also called coir, this is the shredded inner fibers from the coconut. It is easy to re wet so it makes a good addition to peat mixes (which tend to be difficult to wet once dried). Use a trusted source; some coir can contain significant levels of salt.



Midwest Cactus and Succulent Society
MWCSS.com

Peat Moss

Peat moss is the preserved and only partially decomposed remains of sheets of *sphagnum* moss plants that have been lying under the surface of bogs. Peat moss has good water holding and nutrient holding capacity. Mixes with a lot of peat moss may hold too much water for cacti and succulents. Soil mixes may also contain reed-sedge peat which are the mostly decomposed remains of various bog plants. Reed sedge peat gives potting mixes a fine black texture and will stain hands and clothing. Reed sedge peat mixes do not drain well.



Perlite (left) is light but coarse silica sand (right) is very heavy. Both increase drainage in a potting mix.

Sand

Sand is the most common drainage material recognized by growers. Coarse sand is best. Fine sand, such as play sand or builders sand, does not aid drainage as much as coarse silica sand. Sand is heavy and helps provide weight needed to counterbalance tall plants in small pots. One club member cautions that some sand is cleaned by rinsing with kerosene so be cautious when selecting a supplier. Sand does not hold on to nutrients well.

Perlite

Perlite is a coarse and light soil component that is made by heating silica rock to high temperatures. It

can be very dusty and an irritant to eyes and sinuses. Use horticultural grade perlite which is more coarse. Perlite will retain more water than sand.

Turface

Another coarse drainage material is turface. This is a fired clay product that has some nutrient holding capacity and increases the drainage in the mix. It is a more uniform product than sand and will hold onto more nutrients. It is lighter than sand but heavier than pumice.



Pumice (left) and turface (right) are two more aggregate products used to increase soil drainage.

Other potting materials you will run into might include composted bark, leaf humus, rice hulls or bio solids. Vermiculite is another component; it holds a great deal of water and might not be appropriate for succulents. One thing you should not add to a potting mix is garden soil. Soil from the yard or garden is not well suited for root growth in a pot and may also introduce pests and diseases into the potting mix.

Toppings

Thin layers of stone or gravel on top of the soil serve several functions. This stone mulch will preserve



Grit or decorative gravel can be used as a mulch or to stabilize new transplants.

moisture in the pot and help prevent weeds. Also, you can select types of gravel for ornamental effect. Various sizes of crushed granite are available as chicken grit. River gravel is available in several sizes from landscape supply yards. More colorful options can be found at aquarium (pet) stores. Larger, heavier gravel will

help hold new transplants upright.

Mix Your Own Potting Soil

Growers may purchase a ready made potting mix either for general use or for cacti. Changing the mix to suit your own needs or growing habits can be as simple as adding a small amount of one of the previ-



The gritty soil mix(left) will drain faster and hold less water than the more organic mix (right).

ously mentioned components.

An easy way to mix soil is to use percentages. This will let you create a recipe that you can change or reproduce as needed. To use percentages find a container to use as a measure--the size doesn't matter. If each full container represents 10% then ten containers would equal 100%. Using this measuring technique, 5 parts of peat moss and 5 parts of perlite would be a 50% peat 50% perlite mix. A half-part would be 5%.

Moisten ingredients before mixing to hold down dust. As long as it is not too wet, mixed soil can be stored for a long time. If plants do not grow well in a particular mix, consider changing it before transplanting. It is not uncommon to have several soil mixes for different types of cacti, succulents, or other plants in your collection.

Examples of Soil Mixes

Cactus & Succulent Mix 1

65% Pro Mix BX potting soil
25% Course Silica Sand (can use perlite, pumice or turface as a substitute)
10% Coir

Cactus & Succulent Mix 2

1 part Metro Mix 360c
1 part pumice
1 part coarse perlite
1/2 part compost / biosolids

African Violet Soil

75% Pro Mix BX potting soil
25% Perlite