Rooting advice for Cactus Kate's best customers

Our Rooting Tutorial PDF is linked from the Sitemap page. The direct URL is trichocereus.com/Trichocereus-Heaven-rooting2.pdf

Callused ends

**Start with well callused tips** that are ready to set in potting soil. The soil mixture is not critical as long as it is not soggy wet. *I use it dry.*

Actually, any potting soil will work as long as you don't water it.

We make a mix with peat moss, coir, compost, course sand, and 50% perlite. Our page shows how we make it: sacredcactus.com/pottingsoil.htm

Rooting soil mix

Using Miracle-Gro Cactus mix:

- screen sifts out chunks of wood
- 2-3 scoops of the above mix
- 3 scoops of perlite
- 1-scoop coir *(or screened peat moss)*
- 1/4 scoop course sand *(no more than about 5% of the mix)*

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1 Supplier is Norcal Perlite in Richmond, California norcalperlite.com. They have inexpensive 4 cubic foot bags of #3 horticultural grade. Smaller grades (#1, #2) are for germinating seeds. Norcal Perlite 2605 Goodrick Ave. Richmond, CA 94801 / tel (510) 232-7337 / fax. (510) 232-8127
A 1/4” screen removes the large chunks of garbage found in commercial potting soil.

Wood in potting soil is bad. Will rob nitrogen from the plants as soil microorganisms try to break it down.

We pour all ingredients through a 1/2” screen to help mix them.

**No sterile mixes**
Sterile mixes have no beneficial bacteria to fight bad bacteria. Nurseries sterilize soil to kill weed seeds when germinating thousands of seeds. It would be a huge problem to weed thousands of tiny seedling pots. So they bake the soil to kill weeds. *But don't use it for rooting cactus.*

**About compost**
Cactus Kate made her own compost to root her cactus cuttings. I also did it that way - using my aged homemade compost. But that is tricky to create for an amateur. Compost sold in stores is not compost - it's made from forestry waste products. It is actually mulch, not compost.
Real compost is humus - a special substance that you can't purchase in a bag from Home Depot. Real compost is something only nature and organic gardeners make. The closest thing to it is simply leaf mold from a forest floor. Humus is a spongy form of carbon that provides large surface area for tiny plant roots to absorb ions of phosphorus, nitrogen, potassium, and minerals.

There is more rooting info, primarily about rooting out of season, but the page is very informative: trichocereus.com/winter_rooting.html

Steps to successful rooting

- Fill 1- gallon nursery pots 1/4 to 1/3 full with the soil mix. Do not pack the soil down. Leave it fluffy.

- Support a cutting in one hand - hovering it just above the soil - while you shake a bowl of soil mix around the cutting until it is supported on its own.

This method results in a fluffy mix that allows air to reach the callused end. If the cutting was dropped into the pot it would pack down the soil mixture. Packing soil can create an anaerobic condition under the cut end. That's bad - you want an aerobic situation so that air can reach the cut end. That air will help prevent mold.
NO DIRECT SUN

- Place all the potted cuttings in a cool, shady spot - no direct sun. It will burn the cuttings just like human sunburn.

Watering unrooted cuttings can rot them

- Don't water an unrooted cutting because it has no roots to drink water with.

- **Use a hand pumped mister bottle** to lightly mist the cutting portion above the soil, every few nights. Cactus open their pores, called stomata, at night to breathe. They can take in CO2 and water vapor that way.

Misting is a way to give the cutting a sip of water before it has roots

Cactus Kate never did this because her nursery in Watsonville received lots of Pacific Ocean fog and cool humidity at night.

If you live in an ocean side location, there is considerable night time humidity, unlike my location in the hot Central Valley. Here in the hot, dry, valley I have to mist cutting during hot summer months. In early spring this is not so necessary.
• After a month you may tilt a cutting over to see if root buds have formed yet.

• Weeks after root buds appear fine rootlets will form.
The fine roots are fragile so don't break them - you can gently (sloowwly) lift a tip upward to sense if rootlets have formed because you'll see the soil bulging up, and feel it tugging back - so stop lifting or you'll break the fine roots!

**Rootlets mean you can gradually start watering**
I do it by first misting more forcefully - and letting the mist lay on the soil surface.
**Rooting hundreds of tips on large greenhouse tables**

Use a fine spray nozzle on a garden hose that makes a fog like mist to reach hundreds of cuttings at once.

**Sometimes tips will fall over, or lean, and need to be straightened**

If one starts to rot it will fall over as if it was dead. Just re-cut the end, callus it, then replant in soil mix. When doing dozens or hundreds of tips a small percentage (5 or 10 out of 100) will need this kind of emergency help.

**Misting teases out more rootlets**

You don't drown them, you let them search for moisture which is how a good root system is formed. As the days pass you'll notice when you lift up a tip you'll feel the the rootlets holding on. Water more.

Soon you can splash water on the soil surface to give the pot a 1/4" of water...and by 2 months you may be able to water more, let it dry, then water moderately. When you can lift the tip and the pot lifts up with you - you can water fully, let dry, then water fully again.

**You did it!**

You rooted the cuttings. But it takes months for a fully healthy root system to form. Be patient and give your plants a gradual increase in light, water, and fertilizer. As your cutting roots it can tolerate more and more light because the roots allow it to transpire water for cooling. Black plastic nursery pots should not be set in direct sun because it will over heat the soil.

Cluster the pots together so they shelter/shade each other. Morning sun with afternoon shade is best. All day direct sun will result in a yellow cutting because it stops producing chlorophyll to survive.
**Shade net** - we grow underneath 40% shade net to protect the plants that receive all day sun. They need overhead misting to cool them if night time temps are over 70 degrees. This should not be a problem in most areas.

Cactus can shut down their metabolism when night time temperatures exceed 70 degrees.

**Repot your container plants every year** until they are in a 20 gallon or larger one. Trichocereus grow to the size of trees. Attempting to leave them in flower pots will stunt their growth and hobble them.

Thank you — have fun!