Spring rooting of San Pedro cuttings

Cactus root fastest this time of year because the days are getting longer—increasing daylight.

You may root in unheated grow houses when the daytime temperatures are about 70 degrees.

Below 70 degrees they root more slowly. But it is not necessary to heat the whole environment—you just want soil to be about 70.

In a large space like the one shown here the entire mass of plants and soil warm up during the day, then buffer the heat loss so that no heated propagation mats are necessary.

If you have cold nights use electrically heated propagation mats.

Dry soil mix
We've found that a 50% mix of perlite with compost, coir, or even peat moss makes a good rooting medium. Use only about 5% course sand. Do not make a heavy sand mix as it will compact and cut off air circulation to the cut end.

You don't have to mix up worm castings, or other special additives because this is only a temporary medium to nurture root hairs to spread out receiving moisture.
After rooting you may water with soluble organic fertilizers to feed the plants. We repot into a richer soil mix the second year.

**If you don't make your own** organic compost use store bought materials. *Do not use wet compost that stinks from anaerobic bacteria.* You may be better served by buying coir or peat moss.

**We do not recommend vermiculite** because it stays soggy wet too long. Coir is supposed to be better than peat moss but both work well.

**Perlite** sold in Home & Garden stores is usually #1 horticultural grade - tiny size for seedlings. We've had best results with #3 grade — larger size chunks. If you live in the San Francisco Bay Area there is a place in Richmond, CA that makes Perlite. You may buy it from them in 4 cubic foot bags and also 56 cubic foot sacks.

**Callusing cuttings**
An electric fan blowing air over the cut end is excellent to speed up drying the end without discoloration from mold or fungus.

The shiny white ends shown here are perfect to ensure rooting without rot.

**More information**
sanpedrocactus1.com/pottingsoil.htm  
sanpedrocactus1.com/winter_rooting.htm
Don’t rot cuttings!
Use dry soil mix.

(right) Notice how the mix is being poured into the container—hold the cutting suspended in the air as you pour.

The cut end needs air circulation — so gently pour soil mix around until the cutting is supported. DO NOT TAMPER DOWN, or pack the soil. That will increase the likelihood of rotting.

That cut end, below the soil, needs to be dry and have air circulation— it needs to breathe. Aerobic is good. Anaerobic is not.

Never water a cutting
It does not have roots and the wet soil will cut off air making an anaerobic situation. Rot.

If you follow these instructions you should only have 1 to 5% of your cuttings rot. If they start to rot you'll know because the tip will fall over. Just pull it out to re-cut, re-dry, callus and try again.

95% of your cuttings should root without problems.

If the weather is hot you may mist cuttings at night—not to water the soil, but to wet the skin surface such that when the stoma open there is moisture the plant can take in.

Successful rooting
• Use dry potting mix
• Pour mix around cutting for support - don’t pack soil or tamp down. Air needs to circulate to the cut end.
• Shady / bright - no direct sun.
• Don’t water a cutting. It doesn’t have roots yet.
• Be patient - check for roots after a month. (see other photos)
Check for root buds
After a month pull a cutting out to look for root buds. These are not roots — they are more like an expeditionary fingers searching for moisture.

If you don’t find root buds wait another few weeks. Speed of rooting varies with temperature, hours of daylight, and factors I can’t think of right off hand.

(right) Next come the root hairs. Notice how the one in this picture is sending out smaller shoots that will become thin root hairs to gather moisture.

This is the time when you can mist more often and splash the soil surface with water as you gradually introduce watering. Gently lift a cutting as you observe the soil surface noting the pull back you feel. Root hairs will break if you lift the cutting out. Don’t do that. But that resistance tells you the root buds are turning into the fine roots which are the goal.

You should see the soil surface bow upward as you gently tug on the cutting. This means it has roots (fine ones) and you can begin to water lightly while gradually introducing more light.

Avoid direct sunlight that can sunburn a newly propagated Trichocereus tip.

The test of a fully rooted cutting is to grab the tip and lift up with the pot holding on.

Congratulations!
It takes a warm, dry, shady location with excellent air circulation to properly callus the ends

**Happyness is a dry cut.**

Before you root a cutting the end has to be mold free and dry. Cut with a sharp knife. Sterilize by splashing with alcohol. Rubbing alcohol is fine if it is 70 to 95% (not a lot of water like 35%). Set in a dry, room temperature place with good air circulation. In summer I leave them outside, in winter indoors with an electric fan to dry the cut quickly. Let heal for 2 weeks.

**Perfectly dry cut end.** Set in soil and let it root. If it is dry and warm (spring or summer time) it can be set on almost any plot of dirt, leaf mulch, or garden soil and it will form roots. During winter, or cold and wet periods mold/rot is a problem so you have to use sterile soil and keep the soil warm enough to stimulate root development.

Example of “re-cut, alcohol rinse, air dry and try again.” Cut off enough of the rotted part to get to healthy cactus. Then air dry it and let heal for 2 weeks.

**Note to the inexperienced:** After you cut the bad part off place in front of an electric fan inside a warm, dry room away from moisture such as kitchen or bathroom. WATCH HOW THE END DRIES AFTER CUTTING!! VERY IMPORTANT: If you see an area that looks different, sort of transparent, like clear jelly, THAT IS BAD! That is a vein of infection! You have to cut more off. Do it over and watch again. If that clear section appears again as nearly dry while you will have to cut again. **YOU HAVE TO GET AHEAD OF THE VEIN OF INFECTION.** If you are timid and only cut off thin sections you will simply be following the spreading infection instead of getting ahead of it to stop it. OK? Understand? Now you are experienced and not a dumb newbie.

**Mold is a problem of moisture.** Use an electric fan to blow air over the cut end for a few days to dehydrate it. Let the cut heal for 2 weeks in a warm, dry place.