
CACTUS and SUCCULENT SOCIETY of NEW MEXICO

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KEEPING CACTI BLOOMING IN ALBUQUERQUE WITHOUT A GREENHOUSE

Albuquerque, at 5000 feet, is an excellent place to grow cacti. There is enough ultraviolet in the sunlight to make the high mountain cacti happy, but not so much that the lowland cacti suffer. Summer temperatures, rarely above 100, are also good for both kinds, and the winter is not too cold for growing some foreign cacti outdoors.

The bad news is: cacti are lousy house plants. That is, they're ok as foliage plants in the house, but few are going to bloom inside the house. There are some that don't mind being indoors (and they might bloom): the epiphytes (Epiphyllum, Hylocereus, Zygocactus, and others), small globulars (Notocactus, Parodia, and others), and some others. All except the epiphytes would appreciate some time in the summer eating straight sunlight for at least some of the day. Think about where most cacti live. They either love the sun or have evolved to tolerate it.

The good news is: if you use the seasons and the outdoors properly, you can keep a huge variety of cacti as semi-houseplants. They will bloom for you year after year. The first thing is: get your cacti outside in the spring, after the last frost date for your area. The trick here is to do this without burning them. Think of the problem as it applies to you. If you were to go outside, semi-naked, one day in the spring and stay there all day, you would get very very sunburned and maybe even otherwise get sick. If you do this properly, starting with a small exposure and increasing outside time day by day, you'll get acclimated without any discomfort. Do the same with your cacti. Increase their sun exposure day by day and they will get used to being in the sun again. Think of you getting used to the sun when you think about how to get your cacti used to the sun

Most of us can't be moving cacti in and out of the sun like this. We're busy at work, making the money which allows us to indulge in our hobbies, like cacti. The solution is to find a spot in your yard, probably on the east or west side of your house, that gets, say, 30 minutes of overhead sun a day. Leave your plants in this space for some days. Then find a spot that gets, say, 45 minutes of overhead sun and leave your plants there for some days. After about three weeks of this, it should be ok to put the plant out all day on either the east side (cooler) or the west side (warmer) of your house. Two weeks of this and you can put the plants in an all-day south exposure if you want.

You can actually build a variable sunlight exposure rig pretty easily. Two pieces of anything opaque, like plywood, cardboard, sheet metal, etc., held on edge in a north/south orientation will allow you to adjust sun-exposure to something placed between them. If the pieces are sufficiently tall, the adjustable variable for direct sun exposure is the distance between the two pieces. The closer together, the less sun falls in-between; the farther apart, the more sun. With this rig you can start at something like 30 minutes of direct overhead sun, move the pieces a little farther apart every couple of days and within a three weeks, you can get your plants acclimated to the sun. Remember that the wind blows, so be sure to anchor the walls so that they don't blow away.

I emphasized overhead above. The dangerous part of sunlight is the ultraviolet light, and this is dangerous for only about three hours on both sides of local noon (1:00pm MDT; 12:00 noon MST in Albuquerque). You can't acclimate your plants to sunlight by using only morning and evening light. There is not enough ultraviolet in this light to make a difference. Be careful! You can't expect to take a plant that you keep in a south window and stick it outside without going through

this gradual sun exposure routine. Glass is an almost perfect absorber of ultraviolet light. The plant in that south window has seen no ultraviolet light.

Once you have the plant in the sun, enjoy looking at it, water it, feed it, and let it get fat on sunlight. Leave the plant outside until the fall. Stop watering it in September/October. The soil should go quite dry as winter approaches. Until you know what the plant can take for a low temperature, don't let it get frost nipped. (Actually, the big majority of cacti can take a light hit of frost.) The point of leaving the plant outside in the fall is that the plant must go dormant. A combination of low temperature and decreasing sunlight will send most cacti into dormancy. Most cacti will not flower properly if they don't have a cold dormant period. (Cacti are like apple trees in this regard.) Once you decide that you don't want to risk your plants getting frostbite, take them inside but don't put them in the warm part of the house. An attached garage is ideal. Try to give the plant two or three months of cool dry dormancy. Any space that stays below 50 F is good; colder (below 40!) is better. Light is not necessary. At the end of February, you could put the plant into the warm part of the house, hoping for it to break dormancy and maybe flower in the house. Or you could wait until, say, April and start the outdoor regimen, which will bring the plant into flower.

What I have just described is how my mother kept cacti for very many years in Buffalo, NY. She would let the plants get dry and dormant in the fall, wrap them in newspaper (no kidding!) and store them in the cold unheated basement until late spring when she put them back outside. She had good, healthy plants which bloomed. If this worked in Buffalo, it'll work in Albuquerque, and just about anywhere else.

To find out the cold temperature tolerance of the various cacti is not easy. Almost every book written on cacti was written by a European, typically a German or an Englishman, or maybe a Czech. Even if an American writes a book, he'll borrow (= plagiarize) liberally from European books. The Europeans certainly copy from each other. The people writing these books live at 50 degrees N latitude and maybe much farther north. For a reference point, this is the latitude of southern Canada! Albuquerque is at 35 degrees north latitude. Anything that a European book says about raising cacti, years to flowering, ease of flowering, etc. is completely wrong for most of the USA. It's particularly wrong for New Mexico, since our sunlight is maybe twice as intense as even that of North Dakota. European books are full of nonsense. We've all read books which say that virtually all cacti must be kept no colder than 50 degrees in the winter. This is just nuts. Europeans will tell you that *Echinocereus triglochidiatus* should not be kept colder than +40. In fact, many populations of this plant can take -40! The best source that I know of for cold temperature limits of cacti (and other succulents) is the Mesa Garden seed catalog. The next best is Miles Anderson's book "The Complete Guide to Growing Cacti and Succulents" (Lorenz Books, publisher; list price is \$30; I bought many copies from Amazon.com for \$20.69). This is actually, in my opinion, the very best book that you can own for excellent guidance in keeping succulents. Miles Anderson owns a cactus business in Tucson AZ, and he didn't copy from the Europeans when he wrote his book. His temperature guide for the species he covers is a bit on the conservative side, but is still an excellent source of reliable temperature information (and much other information).

What does "hardy in Albuquerque" mean? What you would like it to mean is that you can just put such a plant into the ground anywhere and it will survive year after year. Well, it's not that simple. We all know that there are no saguaros in New Mexico and we laugh at New Mexico ads which have the familiar saguaro outline in them. But, if you go to Pancho Villa State Park in Columbus NM, and look at the south wall of the temporary visitor's center, you'll see three saguaros well over six feet tall. They've been there for some time. I think that there are two reasons they survive. First, they're big, and their size keeps them warm; that is they conserve some daytime heat by the fact that they're big bags of water and they survive the cold nights because of this stored heat.

Second, the building that they're up against also gets heated up during the day and is internally heated at night. These saguaros live in a micro habitat that allows them to survive. Without that south wall, they would be dead. If they were much smaller, they would be dead.

I believe that a big factor in the geographic range of cacti is the survivability of their seedlings. The reason we have no native *Ferocactus wislizenii* in Albuquerque is that the seedlings can't take the cold. You can keep large *F. wislizenii* in Albuquerque, probably in some sheltered spot against the south wall of a building. Little ones will die there. A spot that is out of the prevailing wind might be ok for some cacti; in the wind and the plant won't make it. You can keep some plants in the heights, where the cool air flows downhill and doesn't puddle; the same plant in the valley will die. A fence in your yard in the heights may retain enough of the cold air so that some plants can't survive.

If you look at cacti in their native habitats, you'll quickly note that cacti are not everywhere. Each plant has undergone a microselection for where it's growing. If you were to move the plant three feet in some direction from where it now is, it might die. This, by the way, is the real reason you shouldn't collect wild plants. They belong where they're growing; they'll probably die elsewhere. If you want a plant, get a bunch of seeds and in your growing process you will select survivors which are adapted to your care and conditions. There's a good chance that you can't take your homegrown plant back to where you collected the seed and stick it into the ground with the expectation it'll survive.

I'm sorry that things are this complicated.

So what "hardy in Albuquerque" means is if your plant is big enough and if you've found the right sheltered micro habitat in which to place it, the plant might live for a time in the ground. If it dies, go get another copy and try somewhere else. Most cacti don't cost that much and there is a real personal rush that you can get from having something from Bolivia big and blooming in your Albuquerque back yard.

Good Luck!

PS: The scheme just described also works for jade plants. Most people who keep jades are not aware that these things produce wonderful bursts of flowers in the fall. Put your jade outside in the spring, acclimating it to sunlight as described above, and water it LIKE CRAZY and fertilize it. I promise you that jades love water and food and lots of it. Put the jade into the house when a frost threatens in the fall, then watch. You'll see a wonderful show of buds and flowers which usually maximize at Thanksgiving. You'll not believe it possible! I promise!!