

# SHOULD WE WATER MORE?

By Leo A. Martin

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This originally ran in our July 1998 newsletter, and I thought it would be of interest, in that we have a number of new members. Now, a lot of growers might take exception to some of the above; you need to experiment, taking your own conditions into consideration. I have left some gymnos out all winter in the rain for several years and they look pretty good (they're in clay pots.). Yes, while telling beginning growers to keep their cacti dry in cold weather is good general advice, you will find, over time, that there are exceptions to every "rule" of plant culture. (I even have a few mammillarias out in the winter rain and they are still alive.) . Some plants do better for me planted in the ground, rather than in pots—cleistocacti, for instance. Leo has said that he never lets his *Cleistocactus strausii* dry out at all. These plants can react to dryness with tip die-back--an unattractive but natural phenomenon. My *strausii* experienced it this past summer. Well, they'll outgrow it. (I always tell myself that.)

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When I began growing cacti, I read and was told to let cacti dry out between watering in the summer, and that most dead cacti in captivity got that way from too much to drink. So, I tried to comply. Living in Phoenix, lots of my smaller cacti didn't seem to grow very much, and I seldom saw flowers. I didn't lose any, though.

Notice I said I tried to comply. Some plants were closer to the hose bib and just too easy to water. My hose bib is against the house and shaded by shrubs. The cacti underneath the shrubs were small things like *gymnocalycium*s, *Borzacactus samaipatanus*, and a small *Carnegie gigantea* that couldn't take full Arizona sun. I also have a *Trichocereus pachanoi* I acquired as a seedling which is in a small pot that I keep wet to damp. They all got lots of water and grew rapidly. The gymnos bloomed faithfully each spring, the borzi each summer, and the *T. pachanoi* often grows a foot a year. I often noticed algae growing on the outsides of their pots and felt grateful that they didn't rot despite my overwatering. I chalked this up to luck.

In July 1997 I attended the CSSA Convention. Professor James Mauseth of the University of Texas spoke about botanizing in South America. He showed slides of *Neocardenasia herzogii*, a very large Argentinian

columnar cactus. I have one of these but was unsure of how best to care for it. After the talk I approached him and asked about the climate where it grows. He said, "Water and fertilize the hell out of the columnar South American cacti." Neocardenasia comes from a warm moist river valley and lives on the bottomlands. He also showed habitat photographs of Echinopsis, Soherensia, and Matucana up to their eyebrows in moss. I started thinking. I have never seen a Trichocereus or Echinopsis die from overwatering. Have you?

I read a recent article about roots by Roger Brown in [To the Point, the CSSA newsletter]. It refreshed my memory about root growth. The parts of the roots that absorb water and nutrients are called root hairs, and they must keep growing. When the root dries out, the root hairs die back to the fibrous, non-absorptive, structural part of the root. A cactus in completely dry soil cannot absorb any water until it re-grows its root hairs, which may take more than a day, and is significant energy expenditure for the plant. When we let our plants dry out completely between waterings, we make the plants have to re-grow a new set of root hairs each time they dry out. If we plant in clay pots small for the plant, use a porous soil mixture, and let them dry out completely, it is no surprise to find they are bone dry in a couple of days in the summer.

I thought about my wet gymnos, what Dr. Mauseth said, and what I had read about root hairs. I decided to try watering some of my plants more. Specifically, during summer 1997 I gave a lot more water to my South American columnars (such as Austrocephalocereus, Cleistocactus, Espostoa, Pilocereus) and to my small globular cacti generally native to grasslands (such as Echinopsis, Gymnocalycium, Lobivia, Matucana, Notocactus). Most of these plants never dried out completely.

My results were unquestionable. All of the above grew much faster than they had on my previous watering regimen. Notice that Mammillaria is not included in the wet list. These generally come from rocky areas with mineral soil and little rain. Most of us have verified that mammillarias die quickly from overwatering. Rebutia and Copiapoa like a dry rest during the heat. And larger carnegias will split if overwatered.

I now aim to pot my cacti using a combination of pot size and soil such that they will not dry out completely for about a week after watering. I keep the plants on my wet list at least moist. I let my mammillarias get almost dry between watering except for those such as M. carmenae that really need to dry out. Aim to keep the plants moist for no less than a week before they dry out. And, many cacti don't need to dry out between watering.