

# Cacti & Succulents

## A Primer for the Care and Growing



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# Cacti & Succulents- A Primer

## Introduction

Cacti and Succulents are very adaptable houseplants and can survive under a wide variety of conditions. They are very hard to kill and if properly cared for require very little maintenance and can provide the homeowner years of pleasure.

Hopefully the following guide can provide you with all the information you need to properly grow and care for your cacti and succulent arrangement.



## Taxonomy

All Cacti are succulents, but not all Succulents are cacti. Cacti belong to the family **Cactaceae**, where succulents belong to over 60 different botanical families.

All members of the Cactaceae are only indigenous to the Western hemisphere from Alaska to Chile and are usually found in desert or semi-desert areas. Succulents are native to most parts of the world and although most are found in desert or semi-desert areas they can also be found in mountains, jungles and near lakes or seas.

Both, Cacti and Succulents are **Xenophytes**. Xenophytic plants are a species of plants which have adopted to survive in dry environments with little or no liquid water. Converse to popular belief, dry does not necessarily mean deserts and hot. The Northern Arctic and Antarctica are two of the driest areas in the world, and yes, cacti or succulents are found there.

## Difference between Cacti & Succulents

	Cactus	Succulent
Family	Cactaceae	Belong to over 60 botanical families
Leaves	No or few leaves	Thick water soaking leaves
	All have Aeroles & Spines	Some Spines, No Aeroles
Spines	Not connected to tissue	Connected to tissue
Indigenous	North & South America	Found world wide
Habitat	Desert & Semi Desert	Desert, Semi-Desert, Mountains, Jungles and water bodies



Cacti



Succulents



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## How They Survive Long Periods of Droughts

Succulents did not evolve under the same extreme conditions as cacti, but both had to adapt to environments where water availability was followed by long periods of drought. The key to survival during those long dry periods was to develop mechanisms to capture and store water quickly and then prevent the loss of that water

### Prevent Water Loss

1. Small leaf surface or no leaves at all
2. Fold leaves during to reduce sunlight
3. Drop leaves during dry periods
4. Open stomata at night to reduce loss of water
5. Thick, fleshy leaves and stems seals moisture

### Storage

1. Absorb water quickly when available
2. Extensive shallow root system
3. Store water in roots, stems and leaves
4. Dense hairy leaf covering to catch water in air

## Keys to growing and caring for your cacti & succulent

- Growth Cycle- Cacti and Succulents have a natural growing and dormant season, each requiring a different care program
- Lighting- All cacti and succulents need bright light. Place your terrarium in a bright, lighted area with lots of indirect lighting
- Watering- It is a myth that cacti and succulents don't need water. In fact they are very fond of water. Over-watering and under-watering are the major cause of death to plants in your terrarium
- Temperature- These plants need to be kept warm during the growth cycle and cool during the dormant cycle.

## Soil/ Planting

- Texture & Composition- Soils to be used in container growing must have superior drainage and be quick to dry out. A combination of Potting soil, Perlite or Pumice and sand are the preferred combination mix. The specific mix ratios can be found on our website by linking to [www.maakprop.com/library/upclose/cacti](http://www.maakprop.com/library/upclose/cacti)
- pH: Cacti and succulents prefer slightly acid soils in the 5.6 to 6.0 range

## Growth Rates & Habits

- Growth Cycle- Cacti and succulents have a natural growth and dormant cycle in response to temperature. Learning and care should be adjusted to the cycle
  - Growing Cycle:
    - Season: Spring and Summer (warm)
    - Location: Inside near window or in brightly lit area
    - Ideal temperature: between 70°F and 80°F
    - Water: Once every two to three weeks
    - Fertilize: Every third watering
  - Dormant Cycle:
    - Season: Autumn and Winter (cool)
    - Location: Outdoors in covered, bright area
    - Ideal temperature: between 50°F and 60°F
    - Water: Once per month, when soil is dry
    - Fertilize: Every two months



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## Culture Management

- Water/ Irrigation
  - It is impossible to give precise rules about watering because of all the different variables. The key word is restraint.
    - Refer to season of the year for frequency. Water more, but less frequently.
    - Give enough water that the soil is damp but not wet. Do not re-water until soil is completely dried out.
    - Never use a spray bottle. For watering use a watering can with a long spout to reach in between the plants.
    - Water the soil around the plants, but as little as possible the plants
- Exposure/ Light
  - Cacti and succulents require a minimum of 6 to 8 hours of bright light.
  - If indoors, you can keep near a window but be careful not to be so close that they will sunburn.
  - **Etiolation**, or stretching, is a sign that the plants are not getting enough light

## Common Disorders

Nutrition	Pests & Insects	Diseases	Other
Over fertilization	Scales	Stem Rot	Over watering
Excessive nitrogen	Fungus Gnats	Rust	Under watering
	Mites	Botrytis	Planting too deep
	Mealybugs		Overheating, especially succulents
	Aphids		Frost Damage
			Etiolation (stretching)

- Nutrition
  - Any standard houseplant fertilizer with balanced amounts of nitrogen, phosphorous and potash (20-20-20) can be used.
  - Liquid fertilizer added to the water every third watering during their growing season
- Diseases
  - Most problems associated with cacti and succulents grown as houseplants are bacterial or fungal diseases caused by overwatering.



Aeroles



Etiolation



Over watering