Maintaining Cactus and Succulents

Master Gardener Education
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Where Do You Start?

Carefully select plants that are:

- Vigorous
- Hardy
- Disease and Pest-Free
- Acclimatized
- Carefully Handled

What is the ideal size of a Saguaro to move?

- ‘Spears’ and small armed Saguaro move best
- Transplanting is best accomplished during spring and fall. The extreme temperatures of winter and summer should be avoided
- Don’t attempt to move large Sagueros and other cacti without the proper equipment
- Be sure to have the proper tags and paperwork before moving any cactus

Cactus

True cacti are succulents and are native to the Western Hemisphere

- They do not always have spines
- True cacti have areoles, small nubbin-like structures found on the body of the cactus
- The spines, flowers, and roots develop from areoles

Long-term Study of Preserved and Transplanted Saguaros in an Urban Housing and Golf Course Development

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Percent survival by life stage after nine years of study

<table>
<thead>
<tr>
<th>Height (m)</th>
<th>Control</th>
<th>Preserved-in-place</th>
<th>Transplants</th>
<th>Life stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 – 0.9</td>
<td>100</td>
<td>77</td>
<td>76</td>
<td>Newly Established</td>
</tr>
<tr>
<td>1.0 – 1.9</td>
<td>100</td>
<td>88</td>
<td>80</td>
<td>Columnar (spear)</td>
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<tr>
<td>2.0 – 3.9</td>
<td>100</td>
<td>67</td>
<td>71</td>
<td>Newly Reproductive</td>
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<tr>
<td>4.0 – 4.9</td>
<td>95</td>
<td>71</td>
<td>56</td>
<td>Middle Reproductive/New Branches</td>
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<tr>
<td>5.0 – 6.9</td>
<td>100</td>
<td>63</td>
<td>55</td>
<td>Older Reproductive/Mature Branches</td>
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<tr>
<td>≥7.0</td>
<td>71</td>
<td>40</td>
<td>40</td>
<td>Older Individuals</td>
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</tbody>
</table>

The plant on the left is plump and full of moisture. It will outperform the plant on the right.

- Smaller plants (nursery-grown) are not acclimatized and need protection from the sun
- Shade materials are not practical in commercial situations
- Sunburning is often the cause of death of younger, small plants

Shade materials are not practical in commercial landscapes. Where are the cactus?

Sun burning is often the cause of death of younger, small plants

Acclimatization

- Buy locally grown plants that are already acclimatized to the local climate
- Look for the ‘Arizona Grown’ label or logo

How to Transplant a Cactus

- Choose a healthy specimen
- Transplant during the spring and fall if possible
- Try to avoid the hottest months of the year
Planting

- Do not plant too deep
- Bare root plants will have tan or brown area indicating the original soil level
- Be sure not to injure the fleshy parts of the plant
- Planting too deep or injuring the plant may lead to internal rotting caused by *Pythium*
- Plants that are wounded and then overwatered are more susceptible to *Pythium* rot

Moving a Large Cactus with Two People

Be Careful!!

Don’t underestimate the weight of cactus… a clump like this can weigh over 200 lbs!! An 18 inch cactus may weigh 75–80 lbs; a 30 inch may weigh 200 – 250 lbs!

Clay Soils

- Cactus require well drained soils
- Do not plant on heavy clay-laden soils
- Amend clay soils with pumice (or perlite), sand, and organic matter

Sandy Soils

- Amend sandy soils with generous amounts of organic material
- Cactus will *survive* on sandy soils with adequate moisture and fertilizer
- They will not typically *thrive* on sandy soils without soil conditioning and irrigation

Irrigation

- Cactus benefit from regular irrigation during the dry spring months
- No supplemental irrigation is required during the ‘monsoon’ season
- Reduce irrigation in the fall as the days get shorter and cooler.
- No supplemental irrigation during the winter months
Poor Soil...

- If you have poorly draining clay soil, consider mounding improved soil and using it as the planting medium.
- Mulch will help conserve water, reduce weeds, and moderate soil temperatures.
- Use inorganic mulches.

Fertilizer

- Cactus do not normally require fertilizing unless grown on very sandy soil.
- A balanced fertilizer such as 20-20-20 is adequate.
- Cactus and agaves will respond to nitrogen but growth will be ‘softer’ and on many species, more prone to freeze damage.

Light Exposure

Not all cactus are tolerant of full sun, while other require high light to grow normally and flower.

Abiotic (Non-living) Problems

- Freeze damage
- Sun damage
- Hail damage

Rodents

Freeze Damage on Cereus peruviana

Freeze Damage on Cereus peruviana

Rodents
Pack Rat Damage on *Cereus peruvian*

**Rabbit and Rodent Control**
- Trapping (live or other)
- Poisons
- Shooting
- Fencing
  - Fencing must be buried to prevent burrowing under the barrier

**Insects**
- Encourage (don’t discourage predators)
- Do nothing and hope for the best

**Cochineal Scale**
Control: Blast off with a strong stream of water and treat with insecticidal soap

**Cactus Long Horned Beetle**
Leaf Footed Plant Bug

Agave Snout Weevil

Adult Agave Snout Weevil (about ½ inch in length)

Diseases

Phytophthora Root Rot on Prickly Pear

Ring Spot Virus on Englemann's Prickly Pear

Mite Damage