



THE UNIVERSITY OF ARIZONA

Cooperative Extension

Master Gardener

Frost Freeze

*By: Zann Wilson - Master Gardener Volunteer
SaddleBrooke and SaddleBrooke Ranch Master Gardeners*

Frost/freeze warnings! What do I do to protect my plants?

Many of us, coming to the Sonoran Desert from other parts of the world, are unfamiliar with best practices for protecting landscape plants from winter injury. This is not a single answer issue. There are many factors which can influence a plant's ability to withstand cold temperatures in the desert climate. Plants native to this area are almost always tolerant of cold. Plants that have evolved in warmer areas, which includes areas of the Sonoran Desert south of Tucson, are less tolerant. Freshly planted areas are vulnerable, since plants have not established a healthy root system, nor adapted to light situations. Young plants are more vulnerable than better established ones. Also plants in containers are less tolerant to cold since the root systems are in closer proximity to fluctuating temperatures. These often need covering all the way to the ground to capture soil heat. Consider the duration and depth of temperatures in guiding your efforts to protect your plants.

According to NOAA, a frost is the crystallization of moisture on the surface of plants. Simply, this may occur when temps briefly drop below 32°F. A freeze, on the other hand, is a long duration (3-30 hrs.) of temps below 32°F. When temps drop below 28°F for a long duration, it is considered to be a severe freeze.

Frost will end the growing season for annual plants such as petunias, tropical hibiscus or geranium. You can protect containers of annual plants by moving them to a protected area or to the inside until temps warm. Most desert adapted plants can easily tolerate a frost. A freeze suggests a longer exposure to cold, so when a freeze warning is issued sensitive plants should be sheltered or covered.

The following is a brief discussion of 1) which plants in your landscape might benefit from winter cold temperature protection, 2) what materials are best used for protecting plants from cold and 3) what methods are recommended for wrapping sensitive plants.

Which plants in your landscape might benefit from winter cold temperature protection?

Each homeowner should reference their original landscape plan to access the botanic identification of their plants. Only with the correct ID of a plant (not necessarily a commonly used nickname) can we determine whether a plant will be able to withstand temperatures below or well below freezing. If you cannot ID your plants, you may contact the SaddleBrooke/SaddleBrooke Ranch Master Gardeners for assistance (planthelp@arizona.edu). Also, note that many of our landscape plants are adapted to go dormant during cold season and recover with a burst of new growth once spring temperatures warm. This might require cutting back damaged plant material in the spring, but no permanent harm will occur.

Once plants are properly identified, you will be able to research their hardiness to cold. Please recognize that these ratings are not absolute. Varying micro climates on your property, influenced by nearness to heat-holding structures, low lying areas near washes or ravines or water features can temper/alter the ability of a specific plant to tolerate cold temperatures.

*NOTE: Cold hardiness of cactus plants is best accomplished by reducing irrigation as the winter season approaches. Cacti, when allowed to gradually go dormant, have an improved tolerance for cold.

Below is a sample listing of plants typical to our landscapes.

Agave – **most** are cold hardy here, verify your specific plants to be sure

Cereus peruvianus, Apple cactus- hardy to 20°F

Cereus peruvianus, monstrose variety-hardy to 30°F

All forms of Citrus-any temps approaching freezing require covering to the ground, below 28°F may require inserting a heat source under covers. Allow space so no heat source such as an incandescent light bulb might spark a fire or touch the plant.

Cycas revolute-“Sago palm” – not a true palm. Very cold sensitive- cover or move to a sheltered area in freeze situation

Echinocereus ssp., hedgehog- hardy

Hesperaloe ssp., Red Yucca – hardy

Lagerstroemia fauriei – Crape myrtle – dormant – prune in spring

Lantana – will go dormant at freezing- prune in Feb. to green stems.

Lophocoreus schottii, Senita cactus – hardy to 18°F

Lophocereus schottii 'Monstrose', totem Pole Cactus-hardy to 30°F

Opuntia –prickly pear – most varieties are cold hardy to below zero F. Verify your species to be sure.

Pachycereus marginatus Mexican Fencepost – protect from freeze

Palms – generally hardy – verify your specific plants

Rosea – will go dormant in cold – prune in spring

Stenocereus thurberi, Arizona Organ Pipe – hardy to 24°F

Trichocereus ssp., hybrid torch cactus –generally hardy

Trichocereus pachanoi, San Pedro cactus – marginally hardy

Many columnar cacti are cold sensitive on the tip of arms where the growth points are located, so only that area need be protected. Others are sensitive throughout the plant. Be sure to identify your plants correctly to ascertain this information.

What materials are best used for protecting plants from cold?

The best material for use in covering any sensitive plants is fabric such as cotton or burlap, breathable frost cloth – never plastic. Many garden centers sell a suitable frost cloth material. Colors are usually white or green. Never use a black colored fabric unless you dutifully remove the fabric each day as temps return over freezing. Our local growers use Styrofoam cup covers on the growing tips of some sensitive plants. These must be secured and removed when each day's temps warm. Whatever material you might use to protect plants from cold, the main consideration is allowing moisture to escape and the necessary gas exchange which is part of the plant's normal function to take place.

What methods are recommended for wrapping sensitive plants?

Securing fabrics can be tricky. The spines on cacti are a necessary part of the plant's anatomy and should not be broken or damaged. A light twine wrap can secure frost cloth. Be careful using bungee cords since these are often tight and as winds vibrate them, damage can occur to the plant. When frost cloth is used, it can be secured with wooden clothes pins at each side. This allows for quick removal when temps warm. Generally when temps plummet there is little wind, so simply laying cloth over the top of a sensitive plant can be helpful. Of course, in being considerate of your neighbors, make certain that your coverings don't become loose and create a nuisance.

When required to completely cover sensitive plants, aim to gather the heat of the soil by covering all the way to the ground and securing covers appropriately with landscape pins or large rocks as weights.