



## **FROST PROTECTION STEPS AND INFORMATION LINKS**

**1-Check the weekly weather forecast frequently** as it does change.....it is the weather after all!

**2-Organize and plant your garden with frost tolerance in mind.** Avoid planting frost tender plants in low areas of the garden as cold air clings to those lower elevations. Frost tender plants, like citrus, should be planted in containers, raised beds and/or higher ground. Planted next to a south or west facing wall these frost tender plants will benefit from the residual heat radiating off it at night. Choose plants native to our area as they are prepared for our region's temperatures. Some cold hardy plants are crocus, pansy, tulip, calendula, sweet alyssum and snapdragons. Cold hardy veggies, some of which actually taste better when touched by frost are: carrots, potatoes, beets, parsnips, turnips, onions, garlic, radish and rutabaga, broccoli, cauliflower, kale, brussels sprouts, cabbage, bok choy and collard greens. Some fruit tree varieties actually need 'chill hours' to produce a good crop

**3-Keep your plants hydrated.** Water them during the heat of the day. The moist soil will insulate the roots and the rising heat of evaporation will help to warm the foliage at night. Succulents are the exception. Keep succulents on the dry side. Their leaves are normally full of liquid anyway and any additional water would make the cells of the plants fuller more likely to burst when the liquid within them freezes.

**4-Cover the soil.** Mulch will protect soil from sudden temperature changes. A thick 1-6 inch layer of mulch around the plants and an inch or two from the main stalk will provide insulation for the plants' root systems and protect the soil as well.

### **Cover to protect and and uncover to allow air circulation and sunlight:**

**5-Cover** smaller plants individually with bell shaped covers made of plastic or glass. Plastic milk cartons with the bottoms cut out work quite nicely. Cover each plant in the evening and remove in the morning after the frost has evaporated.

**6-Cover** larger plants with blankets, sheets, drop cloths etc. Use stakes or pvc hoops to hold cover away from the foliage in a tent-like formation almost all the way to the ground. Leave the bottom of the covering open to the ground. Though this might not be possible when covering larger trees try to keep the cover off the foliage as that will prevent the frost laying on the cover from transferring that cold to the leaves and thus freezing them. Many purchased covers offer a drawstring at the bottom. Do not cinch the bottom of the cover shut because as the soil cools it will release its heat up into the opening of the covering and help to warm the plant. Weight the edges or clip the cover to the support structure so it doesn't blow off during the night. Plastic isn't a good material for the cover as it doesn't breathe. All of these coverings should be removed in the morning when the frost has evaporated.

If frost is the normal state of things in your area you can purchase plant frost protection covers specifically designed to be left in place throughout the season. They can be cut to size and are

openweaved. They are designed to allow sunlight and heat to enter during the day but also designed to protect from heat loss and frost damage during the night and morning.

**Bring small container plants inside in the evening and then put back out in the morning:**

**7-**Bring plants in small containers and hanging planters inside to a cool, not a heated location, a garage, garden shed or basement, after the sun sets in the evening if frost is predicted. These potted and hanging plants are more susceptible to cold and root damage because they are surrounded by air and not down in the insulating soil. Put the plants back out after the frost evaporates in the morning.

**8- Wrap your young tree's trunks.** Younger fruit trees 1-4 yrs old are much more susceptible to frost damage. To protect their spindly trunks wrap them with strips of cloth. Old ace bandages are perfect for this. Start at the base and, overwrapping each layer an inch, continue to wrap the trunk all the way to the lowest branches and secure with string or cording.

**9-Air movement is important to frost protection.** Folks in our valley are used to the sound of the vineyard fans that support this statement. This air movement can actually raise the air temperature as much as 2-7 degrees. We small home gardeners can't make use of these huge fans but we can move the air in our gardens by other means. We can use small electric fans placed in a raised platform and blow over the frost sensitive plants. Remember, safety first, use all equipment rated for outdoor use.

**10-Add a little ambient air warmth** by using strings of xmas tree lights wrapped around the trunk and lower branches of trees or a 100 to 150 watt spot light aimed up into the foliage under the frost protection cover. Use the incandescent light bulbs only as the newer LED lights don't put out the heat. Put these lights on timers to come on at dusk and go off after the frost has melted in the morning. Remember to use only outdoor rated equipment

**11-How to deal with frost damaged plants: Wait. Wait. Wait.** Frost damaged plants often display softened translucent leaves as well as black and/or brown foliage and stems. Liquid expands when frozen and frost damage is actually the result of the plant cells freezing and bursting. The last frost date for our area is around April 15th. So wait until the weather warms before cutting away any frost damaged foliage. Those frost damaged leaves and branches will actually help to protect the new spring plant growth from further frost damage. Once you have trimmed away the damage, wait at least a month to give the plant a chance to come back.

Frost prevention information links

UC ANR

<https://mgsantaclara.ucanr.edu/frost-avoidance-and-dealing-with-damage/>

<https://ucanr.edu/sites/mgsc2016/files/360387.pdf>

UCMG Napa County

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=25850>

UCMG Sacramento County

[https://sacmg.ucanr.edu/Frost\\_Protection/](https://sacmg.ucanr.edu/Frost_Protection/)

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