

Cold Protection for Plants

Don't worry just yet! It is next to impossible that severe cold will pop up in October but Old Man Winter will visit us later this year. Typically a frost/freeze in Southwest Florida occurs during the months of December, January and February. What follows is a brief overview of protection options for cold sensitive plants and trees. Let's start out with a brief description of frost and freezing.

Frost can form on plant leaf surfaces as air temperatures approach the mid to lower 30's depending on the dew point and relative humidity. Frost can burn the leaves of sensitive crops from a little to a lot depending on how long it persists but does not usually damage stems or bark. Please note that many plants can be seriously damaged irregardless of the presence of frost once temperatures fall below 32°F. In other words, plant tissue can freeze and frost is not always a warning sign.

Freezing is when temperatures stay below 32°F for two hours or more. A hard freeze is when temperatures stay below 30°F for several hours. The latter condition can freeze water pipes that are above ground and kill plant leaves, stems and trunks of tender plants and trees depending on weather severity. Obviously, preparing for a freeze is more involved than for frost conditions only.

Greenhouses covered with plastic: This is the most reliable way to protect containerized, cold sensitive plants. These structures store heat during sunny days and release it at night. However, due to poor insulation additional heat is usually required throughout the night via heaters or by turning on irrigation (briefly). Be aware that plastic conducts cold inside and temperatures can be several degrees less within 2 to 4 feet of the walls and roof. Use interior thermometers to monitor temperatures in several locations throughout the greenhouse.

The more sensitive crops can receive damage or drop leaves in the lower 50's or lower 40's so just keeping temperatures above freezing will not adequately protect all plants. Try to know your different crops and how much cold they can tolerate. Do your best to keep these houses "buttoned up" with doors closed during the day preceding a cold snap to help store heat for the ensuing frigid night. Along these same lines when protecting plants inside an enclosed box truck or steel building, some minimal heating may be required. There are some sad stories of nurserymen opening the doors of their delivery truck after a 28°F night only to find frozen plants since the temperature eventually dropped below 32° inside the truck.

Water/irrigation: An entire book could be written on the dos and don'ts concerning the use of this resource for cold protection. We have learned over past decades that sometimes more harm than good transpires from turning on the sprinklers due to ice build up and stress from flooding the root zone. Unpredictable factors such as wind speed, minimum temperature and duration along with a possible power outage can produce a disastrous outcome. This

practice is wasteful and once sprinklers are turned on they should not be turned off (no matter what) until all ice has melted as temperatures rise above 32°F which can be from 2 to 10 hours total running time for warmer locations in Lee County.

Use this option only as a last resort. Only seasoned nursery professionals can pull off this stunt most of the time. With all this being said, it is beneficial to generously water landscape planting beds, potted plants and greenhouses/shade houses during the day preceding a frost/freeze to help build ground heat for a bitter night. Concerning outside areas; be sure to water early enough in the day so foliage can dry off prior to night fall since wet foliage can create premature frost as temperatures approach 32°F.

Frost Cloth: This versatile and reusable product is worth its weight in gold when the mercury drops down low. Choices are available as to thickness, width and length. This cloth can be purchased at your local nursery supply house or ordered online from the Web. Just Google "frost cloth"! Try to purchase or order early since availability locally is in short supply just prior to a predicted "rip snorting" freeze. Being prepared is the # 1 priority in a good frost/freeze protection plan.

I would recommend a medium thickness since it allows irrigation or rain to pass through more efficiently and not puddle up on top which weights down the plants. This is important when covers have to stay on for a few days and container plants underneath must get consistent irrigation. The thinner cloths are a little cheaper and allow more ultraviolet light to pass through which curtails bloom fading and leggy growth. Keep in mind though that the heavier the cloth the better the protection. You can however double up lighter weight cloths for more protection on select crops.

We have placed thermometers under these fabrics and found temperatures to be from 2 to 5 degrees higher than the outside air temperature due to stored ground heat. They are great for frost protection and do a decent job for freeze protection in Southwest Florida when used properly. Do your covering as early in the day as possible to trap ground heat and have all edges of the cloth in contact with the ground. Be sure to secure sides with wire ground cover clips or weights (blocks, lumber etc.) as wind can destroy all your hard work. Plants can have superficial burn on outer leaves that are in contact with the cloth which is easily remedied with a light trim or by plucking. An alternative is to install temporary bow type supports using 3/4 in. PVC pipe and short rebar stakes driven in the ground to hold the ends in place. These bows can be spaced from 5 to 8 feet apart to hold cloth above the foliage.

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