The Scoop
on horticulture

Plant Injury During Winter Months

The plant pallet that we have in the landscape in Florida has many subtropical and tropical plants that are susceptible to the damaging effects of winter. There are several factors that contribute to the possibility of injury at this time of year, but with proper cultural practices and several protective measures, this damage can be minimized.

The two most serious factors affecting plants at this time of year are:

- Cold temperatures and sudden freezes
- Lack of water and windy conditions

Cold Temperatures and Sudden Freezes

Several plants and annuals are not able to withstand temperatures below freezing and many tropical and subtropical plants can become hardened-off over time to withstand temperatures below freezing and properly conditioned temperate plants can withstand temperatures substantially below freezing. Hardening-off is a naturally occurring process that occurs gradually as temperatures drop and the day length shortens.

Cold damage can and often does occur even in South Florida where the temperature rarely drops below freezing.

There are two common types of freezes that occur:

1. Those that occur on calm clear nights when heat radiates from the surfaces of objects into the environment (**Radiational freezes**). This type of freeze can be a dry freeze, but if the air is moist it will result in frost.
2. Those that occur when cold air masses move in from northern regions causing a sudden drop in temperature (**Advective freezes**). Windy conditions are common during this type of freeze. It is much more difficult to protect plants from this type of freeze.

A gradual decrease in temperature over time increases the ability of a plan to withstand cold temperatures. A sudden decrease in temperature in late fall or early winter will cause a lot more damage to a plant then the same low temperature in January or February.

Short durations of warmer temperatures midwinter can de-acclimate a plant causing bud break or flowering. These plants are again much more prone to freeze injury.

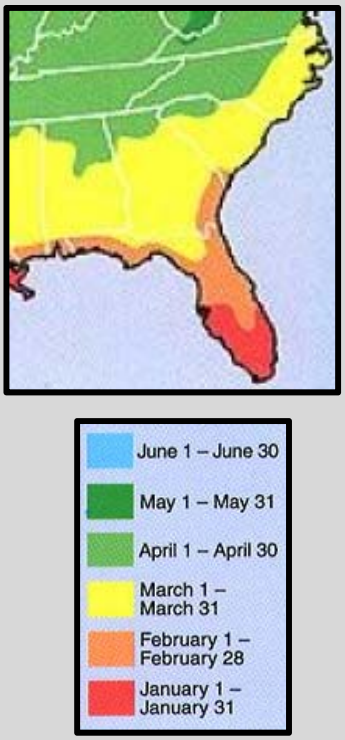
There are no documented cases of successful pre-conditioning of tropical plants. They just do not respond well to cold. Cold injury can occur to the entire plant or to individual plant parts such as fruits, flowers, buds, leaves, trucks, stems or roots. Many parts of the plants can adapt to tolerate cold, but fruits and roots have little ability to acclimate. Often the result of the cold damage will not be recognized until the plant is stressed out by higher temperatures trying to push growth.

Lack of Water and Windy Conditions

Plants require water to remain healthy at all times. This requirement reduces in winter months as growth slows down, but it is still necessary. A common type of injury to plants in the winter is plant desiccation. This is characterized by marginal or leaf tip burn in mild cases to totally brown leaves in severe cases. Desiccation occurs when dry winds and sunlight result in the loss of more water from the leaves than can be absorbed and/or translocated up through the plant from the roots.

This is most extreme in environments where the plants receive substantial amounts of water for a good amount of the year and have

Average Dates of Last Spring Frost



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developed very shallow and weak root systems. Poorly drained soils result in weak, shallow roots which are susceptible to cold injury. When the cold and dry conditions of winter affect these plants, their underdeveloped root systems are not able to supply the necessary amount of water to the plant.

Tips for the Winter

Landscape plants that are healthy are much more tolerant of winter weather than are stressed, unhealthy plants. Proper quantities and applications of fertilizer help to minimize the effects of adverse weather.

- Our fertilizer programs provide the necessary nutrients to keep the plants healthy, but in certain instances, supplemental applications may be necessary. It is important for the cold season to pass prior to pushing the growth with additional fertilizer. Any new flush will be extremely sensitive to cold and the plant could be severely damaged if hit by another cold spell after flushing out.
- Moist soil will help a plant survive a freeze or near freeze event. This does not mean you should water the night before an expected freeze, but that the soil should be holding some water. You can water the day before the expected freeze, but it is important to do so early enough that there is no water remaining on the plants' leaves by the time of the freeze.
- Annuals and other sensitive plants can be covered in the case of a frost coming in. This will help to keep them slightly warmer and prevent plant damage. DO NOT use plastic coverings.

Frost-Damaged Plant Material

Palm Fronds

Turf Mowed with Frost

Banana Fronds

Ginko Leaves

Azaleas

Damage One Month After Freeze

Questions, comments or topic ideas? E-mail communications@austinoutdoor.net