

Frost Damage Recovery Plan

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Recent winter frost damage in Phoenix was severe and widespread. Pruning out dead leaves and branches at the right time and in the right way is critical to plant health. Here are some guidelines for getting your frost-damaged plants back on track.

When to remove frost-damaged foliage

The best time to remove frost-damaged foliage is after February 15th, the average last day of frost in the Phoenix area. That date can vary slightly for other cities. As February 15th approaches, watch the weather forecast for late freeze warnings. If the forecast is too cold, wait until temperatures rise. Try to finish pruning no later than mid-March so juvenile growth can get established before hot temperatures arrive.

How to remove frost-damaged foliage

When you are ready to prune, start by doing a scratch test with a small knife or your fingernail on the smallest twigs and branches to determine the extent of the frost damage. The cambium just below the bark should reveal a bright green color on healthy wood. If the scratch test reveals brown or black tissue, the wood is dead. Continue your scratch test on larger wood until you find the transition zone where green wood starts. You can prune just below that point.

If you wait until new growth emerges to find out the extent of frost damage, it is harder to remove the dead foliage without damaging the new juvenile growth. It is especially difficult to extricate hard dead branches on trees like citrus that have especially tender, weakly attached new shoots. By removing dead branches earlier, full sunlight can reach the plant interior and new foliage will emerge without interference. Earlier pruning also gives new foliage maximum time to get established and harden off before hot temperatures arrive.

Plant response and restorative pruning

All trees and shrubs respond differently to frost damage. Some are frost-hardy and don't suffer damage. Others have minor tip die-back. Some lose small branches, some major limbs. Some die right to the ground but their root systems are still alive.

Regardless of how much damage occurs above ground, undamaged root systems can remain healthy and are ready to produce new foliage. To equalize the normal root to shoot ratio, a riot of new growth emerges. Clumps of vigorous, upright and disorganized shoots grow from cut branch ends as well as along stems and even trunk wood. These random and unattractive branches lack normal density and can be a challenge to prune. But these clumps of foliage help protect plants from too much sun and are a key to survival. They replace essential photosynthetic leaf surface needed for production of sugars and starches, the energy resources plants need for growth, reproduction and defense.

So the goal at first is plant recovery. Restoration of plant growth habit is important but should wait until foliage is full and plant energy reserves are restored. For the first few months, the best practice is to allow plants to go wild. For the first six months to a year, limit pruning to minor shaping of exterior branches. After that, begin to thin out the crowded branches that emerged from cut branch ends. When restoring these clusters, leave branches with the strongest attachment to their host stem and that grow in a favorable direction.

It may take more than one season but with patience, restoration pruning can return plants to their beautiful pre-frost condition.