

## **Problem:** Freeze and Frost Damage in Spring



### **Host Plants:** Any

**Description:** Plants that have gone through abnormally warm temperatures before a cold snap are more likely to be damaged than those that suffer a drop in temperature after more seasonal temperatures. Following are some general observations on plants and their ability to come through a frost or freeze.

### **Observations and Recommendations:**

**Woody Plants:** Leaves may be burned back (looks just like summer scorch) and/or flowers may be killed when temperatures reach the mid-20's but the plant itself is usually not significantly damaged. Even if swollen buds or new leaves are completely killed, the plant will activate secondary buds that will leaf out later. Extreme cases may result in extensive damage and a weakening of the plant resulting in susceptibility to other stresses.

**Fruit trees:** Just a few degree's difference can make a huge difference in the percentage of fruit that will develop. For most of our tree fruits such as apples, pears, peaches and tart cherries, a temperature down to 28 degrees will mean a loss of about 10% for trees in full bloom. A drop to 25 degrees, however, can mean a loss of 90% of the fruit buds. Trees that have not progressed to full bloom will be more cold hardy.

**Vegetables:** Asparagus, cabbage, broccoli, cauliflower, Brussels sprouts, carrots, lettuce, turnips and kale can take mid-20's without a problem and some can take even lower temperatures. We have seen onions suffer no significant damage at 19 degrees though the tips of the leaves were burned. Lettuce and radishes at that same temperature suffered no damage whatsoever. Note that these plants were well-hardened off and established. If an extended warm spell had preceded the cold snap, damage would likely be extensive.

Vegetables that are less tolerant and can usually only take a light frost include Chinese cabbage, collards, Irish potatoes, mustard, radishes, spinach and Swiss chard.

**Herbaceous perennials:** Healthy perennials with foliage exposed can differ markedly in cold hardiness with creeping phlox and peony foliage being quite resistant. Creeping phlox came through the 2007 Easter freeze (two nights at 18 degree) with little to no damage. Peony came through 19 degrees with no damage as well. Even if the foliage is killed, healthy perennial plants are usually able to put on new growth and recover. Note that flower buds may be damaged even if the rest of the plant is not.

**References:**

[Frost and Freeze Damage to Horticultural Plants](#), K-State Research & Extension Horticulture 2007 Newsletter, No. 15, April 11, 2007

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