

# Let's Get Growing

## Akers Answers Your Gardening Questions

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April 19, 2007

### Freeze Recovery for Indiana Landscapes and Fruit Crops

**Q** What happens to plants during a late freeze? What will happen to all of these damaged plants? What can I do? L.D. Lebanon

**A** Your questions are echoed by many people in Boone County right now. Below is recent information that I summarized, edited, and combined from Michael V. Mickelbart, Bruce Bordelon, and Peter Hirst, Department of Horticulture & Landscape Architecture Purdue University; Janna Beckerman, Department of Botany & Plant Pathology; and Beth Babbitt, Horticulture Specialist, University of Tennessee Extension.

Young green leaves and flowers can get zapped during late spring cold snaps. This spring was especially severe because of the extended above normal weather from March 21 – April 3, and then the long cold spell that saw several nights with temperatures that dropped into the low to mid 20's. This unusual cold spell extended through April 16 and actually didn't end until temperatures rebounded into the 70's after a frosty morning.

So what exactly happens to plants? In some plants the cell inside the leaves and stems froze and the cell membrane ruptured killing that part of the plant tissue, not necessarily the whole plant. At night plants take in water vapors, carbon dioxide and oxygen through small opening on the leaves called stomates. Others might have wilted. In these plants water escaped from the leaves and plant cells too quickly due to a rapid drop temperature. Cells in the plant actually deflated causing the tissue to wilt.

Due to the freeze, flowers and tender buds may be lost on plants that flower on old growth like some hydrangeas and some climbing roses. Plants that bloom on new growth, such as some clematis, Annabelle hydrangea, and Endless Summer Hydrangea will still bloom after they have recovered.

## **What happens now? Will my plants survive?**

The amount of damage done by the cold weather will depend mostly on the stage of plant growth at the time of the cold. Trees such as honey locust were still in the tight bud stage, whereas species such as crabapples had small, tender leaves exposed.

Trees that were more than a year old should be fine, however, growth will likely be reduced this year. Some crabapples definitely lost their flower buds, but a number of crabapples are now in bloom in Boone County.

## **So what to do now?**

At this point, it is difficult to know the extent of the damage on some landscape plants. Dead foliage can be carefully cut away, but this is not necessary for recovery. Pruning should be done only after the true extent of the damage is apparent-after several weeks of warm temperatures, when new growth has occurred. Prune dead wood back to healthy tissue, or remove whole shoots that have significant dieback.

## **What about Fruit Crops?**

Purdue fruit specialists report that the freezes caused widespread damage to fruit crops throughout Indiana - affecting apples, peaches, grapes and blueberries. "The cold snap hit peaches the hardest of any fruit, with many growers reporting total losses," according to Peter Hirst, a Purdue Extension Fruit Specialist. Apples also have been affected, although it is too early to quantify the damage, Hirst added.

Personally my fruit trees here in Boone County appear to have fared much better than I expected. I cut into some apple blossoms and they appear fine. But, then again, I don't grow peaches.

This is an unusually bad freeze," said Bruce Bordelon, a Purdue Extension viticulturist, or grape-growing expert. "It's the worst I have seen or heard of in at least 15 years." Nevertheless, Hoosier growers and consumers are urged to not completely write off their fruit crops, as the damage varies widely among different types and varieties of fruit, as well as by their location.

The April cold spell would have been less devastating were it not for the weeks of unusually warm weather in late March, Bordelon said. This heat caused fruit crops to develop earlier than usual, making them more vulnerable to frost damage. In general, Bordelon said, fruit crops have budded out about two weeks sooner than usual.

Grape yields are likely to decline by 50 percent to 75 percent, Bordelon said. Growers may see losses of three-fourths their blueberries, he said. Despite the devastation, the

entire fruit crop isn't wiped out, and consumers will still probably be able to find orchards and farms with fruit throughout the state, Bordelon said.

Bordelon and fellow Purdue Specialists, Janna Beckerman and Peter Hirst urge commercial fruit growers to consult their online newsletter, "Facts for Fancy Fruit," in the upcoming weeks for fruit-specific advice and information on how to manage individual fruits and how this might change based on the extent of the damage. It is available online at <http://www.hort.purdue.edu/fff/>.

As of last year, about 400 acres of grapes were cultivated in Indiana, with a total value of about \$1.5 million. More than 600 acres of blueberries were harvested, totaling around \$4 million. Indiana has about 2,000 acres of apples and 400 acres of peaches, according to Bordelon.