

THE PURDUE LANDSCAPE REPORT

Effects of Recent Cold Temperatures on Plants

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The hard freeze last week had many homeowners concerned about their perennial and annual plants in their landscape. For the vast majority of perennial plants, there aren't many issues long-term of concern. Some foliage and flowers have significant damage, but the plants will recover, and possibly release new vegetative buds in severe cases. The plants that suffered the most damage, and in some cases death, are the annuals planted by impatient landscapers and gardeners. Planting annuals prior to the frost-free date (May 10th in central Indiana) will more than likely cause a replant to occur.



Figure 1. Cold temperatures and cold on April 21-22 caused stress

on many plants that have broken buds.

In addition to the potential stress from the temperatures, many trees received broken limbs due the combined weight of the leaves/flowers and snow load.



Figure 2. A Japanese Zelkova in full leaf with a heavy snow load.

If you maintain a client's fruit trees (i.e. apples), there may be a significant impact on fruit production. The Purdue Meigs Horticultural Research Farm, located about eight miles south of the West Lafayette campus, recorded a low temperature of 22° F

on April 21st. Dr. Peter Hirst, pomologist, indicated that at the current stage of flowering a temperature of 25° F might result in a 90% bud kill. Since there was a significant snowfall, the hope is that there was some moderation in temperatures.



Figure 3. Apple flowers on April 22 in West Lafayette. Photo by Tristand Tucker.



Figure 4. Apple flowers on April 22 in West Lafayette. Photo by Tristand Tucker.



Figure 5. Apple flowers on April 22 in West Lafayette. Photo by Tristand Tucker.

Plants that have been stressed due to cold temperatures should be closely monitored over the growing season. Don't prune 'dead' portions until you allow more buds to break. Chances are the early foliage was dropped and new leaves will soon emerge. Be sure to provide adequate moisture to assist in recovery. Currently about half of the state is in the beginning stages of drought, so be sure to provide irrigation now if your area is dry. Always remember that too much water can be just as detrimental as too little water.

The Indianapolis Star published an article on the extreme low temperatures that can be found here:
<https://www.indystar.com/story/news/environment/2021/04/21/indianapolis-weather-how-protect-plants-unexpected-snow/7317219002/>

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