Affects of Cold Temperatures on Plants

When the temperature swings from mild days to bitter cold nights, we personally are shocked by the sharp change in weather. Severe winter weather is common in Kansas. We are used to freezing temperatures and snow drifts. How does it affect our plants? Here are some tips on how to protect plants from severe conditions.

The good news is that most landscape plants will tolerate the cold spells. There is a greater concern when we experience rapid temperature changes in the late fall or spring. More damage can result when the plants are not properly prepared for winter or have begun spring growth. For example, a sudden cold snap can result in a poor leaf drop from the trees due to the rapid change. Other concerns are dieback, as some plant materials were not properly hardened for winter. Broadleaf evergreens or plants that put on a late summer flush of growth are most at risk.

Temperature affects plants, not wind chills. Wind chill is a human measure and means nothing to plant material. Plants are rated as to their absolute winter temperature tolerances based on plant hardiness zones. The USDA Plant Hardiness Zone Map classifies trees, shrubs, and flowers by the lowest temperature they will survive. You can find the map at planthardiness.ars.usda.gov. Hardiness zones range from 13 to 1. Zone 13 is the warm and tropical islands of Puerto Rico and Hawaii while zone 1 is the tundra of Alaska. Post Rock District is located in zone 6a and the most northern areas are 5b. Plant materials hardy in our zone will survive minimum winter lows of -10°F to -5°F.
Plants with roots that are well covered or properly mulched should be acclimated to winter temperatures and have no problem. We often try to push the limits on plant materials. Two common plants grown here are crape myrtle and mimosa. These are tender plants and might have winter injury when the temperatures drop below zero.

One condition that can affect winter hardiness is the moisture level in the soil. Dry soil conditions will decrease winter hardiness and increase desiccation. A good example of this is evergreens and broadleaf evergreens such as boxwood and holly. Continual loss of water during the winter can be serious if dry conditions prevail. Damage results in a browning or killing of the foliage.

If you’ve landscaped using plants for our designated hardiness zone then they should be accustomed by now to the cold and snow. This will help them survive Mother Nature’s fickle fluctuations this season and set them up for spring. But then, there are no guarantees. We’ll just have to cross our fingers and wait and see. If you have any questions about how winter weather affects your plants, contact your local extension office.

Post Rock Extension District of K-State Research and Extension serves Jewell, Lincoln, Mitchell, Osborne, and Smith counties. Cassie may be contacted at choman@ksu.edu or by calling Beloit (738-3597).