

Yard and Garden - 02-16-2013 - Ted Griess / Extension Horticulture Assistant

Webster's defines the word fluctuate as *continually changing or varying in an irregular way*.

Such a definition certainly applies to Nebraska's weather. No matter if it be winter, spring, summer or fall, the weather seems always to be fluctuating. Spring draws near, but it is still winter. Due to fluctuating temperatures, one day we find ourselves shivering in the bone chilling cold; and, yet, a day or two later we will be in shirt sleeves enjoying the spring-like weather.

We humans adapt to fluctuating weather and temperature extremes through proper clothing selection. We also rely on protecting ourselves by seeking shelter. Furthermore, in the event of life-threatening weather conditions, we are usually capable of moving from harm's way.

As I stand in my home, warm and comfortable, I often gaze out my windows and marvel at the adaptability of trees, shrubs, and other plant life. What is it they possess that allows them to endure the extreme temperature fluctuations that nature delivers? Think about it for a moment. Twenty-four seven, three hundred sixty-five days a year with no wardrobe changes or the ability to seek shelter, these plants literally take it on the chin. There they stand, silently at attention, like sentries at their post, enduring searing heat, freezing cold, wind, hail, snow, sleet, rain, and drought. Still, they generally survive. How do they do it?

A simple answer to that question is dormancy. Although accurate, such a response does not define dormancy. Webster's dictionary defines dormancy as *not growing, a state of suspended animation, quiet and still*.

Plant dormancy begins from late summer to early fall when daylight hours shorten and temperatures begin to drop. The photosynthetic process stops, nourishment translocates to the root system, and a number of physiological and hormonal changes take place within the plant's cells. All this is to keep the plant from being destroyed by freezing temperatures. Once all these stages are complete, the plant is said to be dormant, safely protected from freezing temperatures. Unfortunately, an early fall freeze before dormancy is fully established will often damage or destroy plants.

During dormancy, each plant species must undergo a chill period for a specified amount of time, exposed to near freezing temperatures. Although plants may be

exposed to fluctuating temperatures from sub-zero to warm, they still require a specific amount of time exposure to near freezing temperatures to remain dormant. Once that time period is met and outdoor conditions become suitable for new growth, dormancy breaks. As with an early frost in the fall, a late-spring freeze after dormancy breaks will often damage or destroy plants.

Note: Actively growing plants cannot withstand freezing temperatures for any length of time, yet we know some plants are capable of withstanding colder temperatures than others. We live in USDA Zone 5A. Zone 5A has expected lows of -15°F to -20°F. Knowing this, it is best we select plants to grow in our landscapes that are rated for Zone 5A or lower. By so doing, we greatly improve their chances for survival.

By proper plant selection and through the miracle of dormancy, plants are amazingly capable of withstanding extreme temperature fluctuations. We humans are not. Temperatures outdoors continue to fluctuate. Keep an eye on the weather, listen to the forecast and when you venture outdoors, dress accordingly.