

## Why Are There Still Leaves On My Trees?

### AGRI-VIEWS

by Chuck Otte, Geary County Extension Agent

We usually expect that by the first week of December, the leaves would have fallen off of most of our deciduous trees. But as you look around town, you'll find that we still have a lot of trees with a lot of leaves on them. If the leaves were nicely colored no one would probably mind, but most of them are either brown or a faded green color. Answering the first question most folks are asking, no, this isn't normal. The second question is answered with, no, it isn't bad for the tree, as long as we don't have a really heavy wet snow!

Leaves are usually very well attached to the tree. If you've ever tried to pull one off in the middle of summer you know this. In late summer, or early fall, the tree starts the process that allows the leaves to fall off. The tree, in starting to prepare for winter, starts sealing itself off from the leaves. It creates an abscission layer at the base of the leaf stem. This layer is nothing more than a layer of cells that stops the flow of water and nutrients to the leaf and blocks the flow of carbohydrates or sugars from the leaf to the tree. As the leaf slowly starts to die, photosynthesis stops, chlorophyll fades away and then we can start to see some of those pretty fall leaf colors.

Once the leaf starts to change color it becomes much easier to remove it from the tree. You've probably pulled a pretty red leaf off a tree and noticed that there's a brown layer at the end of the leaf stem. This is the abscission layer. Normally, as the fall progresses, this abscission layer becomes so weak that the wind, or just gravity alone, will remove it from the tree.

Not all trees move towards winter dormancy at the same time. Part of the determining factor is day length, part is temperatures, specifically low temperatures. Many of our native trees proceeded through the fall with normal leaf fall or senescence. There are some trees, like Pin Oaks, that are notorious for hanging on to their leaves well into the winter, sometimes into spring. But as I look around town I see lots of ornamental pears, lacebark and Siberian elms and other red oaks that are still hanging on to a lot of leaves.

These are all species that normally do lose their leaves late in the fall. This year we had an abnormally warm October. In a normal autumn, we'd start to get some light frosts in late October and these chilly mornings would trigger most of the mentioned species to start developing abscission layers, which would then allow the leaves to fall off normally. We didn't have our first frost this year until the very end of October. What then followed, in mid November, was extreme cold into the single digits before the abscission layer was fully formed. The leaves were killed while still on the tree and without a fully formed detachment point.

This happens from time to time, the last time was the fall of 2000. When the leaves are killed while still on the tree, it is known as marcescent or marcescence. Marcescent literally means "to wither". What will happen now is that these leaves will slowly fall off the tree in the coming weeks. In a worst case scenario they won't all come off until next spring when the new leaves start to come out. In many cases the leaf stem, or petiole, dries out, becomes brittle and then breaks in a strong wind. Marcescence in and of itself doesn't really do any damage. There is a risk that a heavy snow could come along, build up in the tree on those leaves and cause limb breakage. In reality this isn't likely to happen and that's a good thing, because there's nothing we can really do about it anyway!