

## Yard and Garden – 11-02-2013- Ted Griess / Extension Horticulture Assistant

I have a love/hate relationship with our sycamore trees. If one were to stand in the middle of our driveway and look up, to the left one would view the canopy of a huge sixty-year-old sycamore tree. To the right, one would view the canopy of our neighbors' huge sixty-year-old ash tree. Both trees are deciduous and each produces countless leaves. As autumn progresses, both trees undergo a color change. Ash leaves turn a brilliant yellow; whereas, sycamore leaves turn shades of brown. A notable difference between the two species is the speed at which they drop their leaves.

Ash trees shed their leaves early and quickly. Once they begin dropping, in a matter of a day or two, ash trees are entirely void of leaves. Conversely, sycamore trees are notorious for dropping their leaves all winter long and are not fully void of leaves until the new leaves emerge the following spring. Needless to say, the time and labor involved when raking the leaves of these two trees is significantly different.

Did you know that the speed at which tree leaves are lost is based upon two factors: genetics and environmental conditions? At the base of each leaf is a special layer of cells called the abscission zone. Botanically speaking, the abscission layer is a zone of cells whose breakdown causes separation of the leaf from the stem. Deciduous tree species lose their leaves at different times because each species is genetically timed for the cells in the abscission zone to swell, thus slowing nutrient movement between the tree and leaf. When this happens, the abscission zone is blocked, a tear line forms and the leaf falls off.

Environmental issues such as sunlight exposure, day length, colder air temperatures, early or late frost, high winds, soil, and water differences influence leaf drop. Depending upon exposure, such issues may even cause a difference in leaf drop between two trees of the same species growing within one hundred feet of each other.

Environmental stress factors also impact when trees lose their leaves. A prolonged drought, disease or insect pests can cause a tree to shed foliage to conserve moisture, food or energy. A tree living under a street light will have its cycle disturbed by the light. Trees that are watered regularly and stand in sheltered areas often hold their leaves longer than others of the same species in a more exposed setting. Trees in cities experience a variety of man-made stresses such as air pollution, industrial chemicals and herbicides. A tree planted close to a busy street may lose its leaves earlier than a tree of the same type growing in a park a few blocks away.

Have you noticed that some deciduous trees change color in fall but don't drop their leaves? Many of the brown leaves cling to the tree throughout winter and early spring until new leaf growth begins. These trees have a genetic feature called marescence. Botanically defined, marescence is the retention of dead plant tissue that is normally shed. American beech, American hornbeam, sycamore, and many oak trees including black oak, pin oak, shingle oak and white oak possess this feature. In autumn, these trees do not develop entire abscission layers to cause their leaves to drop away. Rather, they tend to hold their dead, dry, brown leaves. Harsh winter winds or heavy snow can tear the leaves off, but usually it's not until early spring when all leaves finally drop. The swelling buds on the branch twigs help complete the separation in the spring.

This past week, over the course of a day or two, my neighbors' ash trees dropped all their leaves. They now stand naked for the winter. It took me less than an hour to mow up the ash

leaves that blew into my yard. From now on, and almost daily until the snow flies, I, as well as my neighbors, will be raking sycamore leaves. We will still be raking in the spring.

Now, you might understand my love/hate relationship with our sycamore trees. If you are considering planting trees, perhaps this might be something to consider when selecting what species to plant. If you choose to plant sycamore, hopefully your neighbors will be as tolerant as ours.

