Week of January 2, 2000

Leaves, a Natural Masterpiece

Willie Chance

The blustery winds make the leaves fly.

Oak, birch and maple take to the sky.

I wonder why they travel that way?

Perhaps they've some place they must be today.

You can see why I 'm a County Agent and not a poet. Even though my poetry is bad, I have a good subject. Leaves make an interesting study of the Master Designer's handiwork.

The leaf’s main function is to catch sunlight and turn this energy into sugars for food. They are made wide and flat so they catch lots of light without weighing very much. Leaves growing in shade may be even larger to catch more light. Some plants have thicker leaves, like magnolia. This will allow them to intercept as much light as possible and to prevent other plants growing under them.

How important is it that leaves turn sunlight into sugars and other chemicals? This reaction (photosynthesis) is the basis of almost all our food chain and the source of fossil fuels for energy.

Leaves are also important in our environment. While on the plant, they provide cooling, shade, and water, air, and noise pollution control.

Leaves appear solid, but they are somewhat spongy inside with holes (called stomates) on top and on bottom. This system allows air to get into the leaf to provide the carbon dioxide necessary for photosynthesis.

Water is also important. Leaves ‘perspire’ water in an effort to keep cool. This is called transpiration. Water is also used in photosynthesis. If there is not enough water, leaves close their stomates and wilt to control water loss. Wilting is a sign that the plant is in trouble.

Waxes and hairs on the leaf keep it from drying out. Some hairs may have glands on them or have a star-shaped top. Some hairs may function to control insect damage.

Leaves come in many shapes and sizes. This is often how we identify the plants. Did you ever notice how young leaves may have a different shape than older leaves? You may even find two leaf shapes on one plant.

Evergreen plants have leaves all the time, but not the same set of leaves. They put on a new set of leaves and lose the old. For instance, magnolias go through this transition in spring. While losing the old leaves, evergreen plants can look bad. Just wait and water them. They should recover.

Some leaves are easier to rake, aren't they? This is related to leaf shape and size. This also determines how and where the leaves will end up in the wild. Small flat leaves (like Willow Oak) will fall close to the tree providing a mulch for the roots. Large leaves that curl up when they dry will probably blow and roll farther in the wind. This distributes them across the landscape where they decay and enrich the soil where they cease their travels.

Leaves know when to bud out and when to fall off. It has been placed in them to follow the cues of nature. Many leaves start growth in the spring and turn colors and die in the fall. Did you ever wonder where the fall colors come from? Many of these colors were already in the leaf. Shorter, cooler days alerted the tree to remove the green pigment into storage for next year’s growth. This leaves the other pigments to reveal themselves as the green fades. Other colors are formed in the fall to add to the show.

Did you know that leaves were so intricately put together? These masterpieces of engineering are perfectly designed for their function.

For more information on caring for your leaves, contact the Houston County Extension Service. We will return from the holiday break January 3 and can be reached at 542-2020 or by e-mail at uge2153b@uga.edu.