

Black Locust (*Robinia pseudoacacia*): Built-in Fertilizing System

by Gary Carlin

Jesuit missionaries believed that the Black Locust was the tree that kept St. John alive while we went into the Wilderness. So they named the tree "locust" from the Bible. However, it is more probable the tree the bible was referring to was the Carob Tree (*Ceratonia siliqua*); and it is now considered the actual locust tree of the New Testament. The genus name of the tree, *Robinia*, pays homage to Jean Robin, who first planted the tree in Europe as the gardener for Henry IV of France.

The black locust is a member of the Pea family (*Fabaceae*) and a native species of the southeastern U.S. It is widely-used in the American South for honey production ("acacia honey"). Estimates are that one acre of black locusts can yield up to 1,200 pounds of honey. An interesting characteristic of this tree is that its leaflets will fold up and the leaves will droop when it rains and during the night time. If you were to walk by a flowering tree in Drake Park from May to June you would pick up on a strong "orange blossom" fragrance. Remember though, timing is everything, as the tree only blooms for about ten days. It produces 3- to 4 inch "slender, pea pod-looking fruits" which are actually legumes (like a bean or pea), and contain 4-10 seeds.

As a leguminous plant, the Black Locust has nitrogen-fixing bacteria that live in nodules on its roots. These bacteria exist in a mutualistic relationship with the tree as they are able to take free nitrogen from the air and convert it into a useful nitrogen compounds (nitrates) that are readily usable by the tree. It is like having a built in fertilizing system, which allows the Black Locust to live in very poor soil and thrive.

The Black Locust was once a good source of lumber -- especially fence posts. The tree grows very quickly and the wood is extremely hard and strong, and will not rot quickly like other woods once it is placed in the ground. Because of the woods great strength, it was also used to make "treenails" to nail down planks on the hull of wooden ship. And in the old telephone poles, it was used as the "cross arms" to hold the telephone and power lines.

Unfortunately, insects called locust borers spread quickly in the early 1900s and damaged or destroyed most of the trees in the U.S. Even today, the young trees start out great but then are very quickly attacked by the locust borers and become diseased. Their growth is stunted, and this eventually leads to their early death. In short, the borer-infected trees just cannot live and grow long enough to be valuable as a timber tree. Believe it or not, its main use today is it the wood used to make xylophone keys!

When you stand by the Black Locust trees of Drake Park, you're next to the tree Abraham Lincoln split into rails and fence posts and took his nick name, "Rail Splitter", from. It has been used to make small boats, furniture, hardwood flooring, and various types of furniture. It is one of the best woods that you want to burn in your fireplace or wood stove. It burns slowly with little smoke and puts out almost the same amount of heat as anthracite coal. It even burns well wet. However be careful, the damage produced by the locust borers and knots in the wood may cause the burning wood to "spit" hot coals a considerable distance!

The flowers, long clusters of 10-25 pea-like buds, and the cooked seed pod (not including the seeds) of the Black Locust are edible, however the leaves and bark are toxic. In France and Italy, the flowers clusters are dipped in a batter and fried to make beignets (*beignets de fleurs de Robinier*). Many people simply remove the fresh flowers from the stem to make fritters, pancakes, doughnuts, and egg custards. Or they use the flower blossoms as flavoring to make syrups, jellies and wine.

The primary mode of reproduction is by vegetation propagation in which new trees (suckers) sprout from the trees roots, even if the tree has been cut down! Since they are produced by an asexual means, they are clones, genetically identical. These clones rapidly invade new areas. And the tree is now considered an invasive species in some areas. Because of its extremely fast growth and reproduction, scientists are now experimenting with black locust as a biomass energy source.

These (19) Black locusts were planted in 2001 as part of a federally-funded "silviculture" (tree) project headed by Professor Thomas Whitlow of Cornell University. A goal of the research was to determine whether or not trees helped remove particles from the air. The study concluded that the effect of tree-planting on air pollution was "trivial".