One of the most damaging diseases in pecans is pecan scab, caused by the fungus *Fusicladium effusum* (Thompson and Grauke, 1991). It infects actively growing tissue, such as stems, leaves and nut shucks, when temperatures are above 70 degrees Fahrenheit and relative humidity is above 90 percent. Stems can be infected during rapid growth in the early spring. Leaves can be infected from bud break until they are fully expanded. Nuts are susceptible from nut set through water stage.

Scab reduces photosynthetic activity by damaging tissues of the plant. Leaf infections result in black lesions that can cause severe leaf spotting, premature defoliation and shoot death. If the infection is severe, production of reserves are affected and can reduce the following year’s crop. Scab of the nuts can reduce nut size, quality and overall yield.

Management for pecan scab consists of fungicide applications and host resistance. Commercial operations in the southeast may have to apply fungicide numerous times throughout the growing season to control pecan scab. For example, during 2013 growers in the southeast who had cultivars susceptible to pecan scab applied fungicide as many as 17 times for scab control. It is estimated that the total pecan crop was reduced by as much as 40 percent because of the high scab pressure in 2013 from the excessive amount of rain. Not only was the yield lowered by scab, but the cost of the fungicide had an effect on crop productivity.

Host resistance is the best control but has to be decided early in the establishment of the orchard. Selecting cultivars that are resistant to pecan scab is recommended to avoid these costly sprays. However, history has shown that cultivars once thought to be resistant lose the ability to fight the fungus over time. Scab fungus is highly diverse, and multiple races have...
been documented. For example, when a newly selected clone displays strong scab resistance at a location and is later propagated at another location in greater numbers, the resistance often is lost as the clones are exposed to larger numbers of scab races.

In a previous article, *Pecan Research Moves into the 21st Century* ([www.noble.org/ag/horticulture/pecan-research](http://www.noble.org/ag/horticulture/pecan-research)), I discussed the use of genetic resources in a pecan breeding program. With the assistance of fellow scientists here at the Noble Foundation, development of molecular markers to identify genes that are involved in resistance of pecan scab will be one of the first traits to be evaluated. With the help of these markers, we should be able to determine resistance of cultivars to pecan scab. These markers will assist in selection of parents for future crosses in a breeding program, as well as assist in the evaluation of new selections.

A better understanding of how various cultivars deal with scab and what controls the resistance will allow us to breed better cultivars. These new varieties will have higher resistance to pecan scab throughout different regions and won’t lose the resistance over time.