PECAN SCAB

Pecans, the only native nut commercially produced in the United States, are an important crop in the Southern Great Plains. They are considered the third-most-popular nut in the U.S. and have become a profitable commodity for growers. However, there are many pests that growers must combat to produce quality pecans.

Pecan scab is the most economically important disease of pecan in the southeastern U.S. and can significantly impact the amount of quality pecans produced in a season.

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WHAT DOES PECAN SCAB LOOK LIKE?
More than likely, the black spots you see on pecan leaves and shucks are due to pecan scab. Symptoms of the disease appear as small, dark lesions on the leaves, twigs and shucks. As the disease progresses, the lesions can expand and grow together. The easiest way to see the fungus actively producing spores is by using a hand lens.

WHAT CAUSES PECAN SCAB?
The disease is caused by spores produced by a fungus called *Venturia effusa*. Spores can be spread by wind or rain and cause new infections throughout an orchard. *Venturia effusa* is capable of several infection cycles throughout the growing season, which can contribute to greater disease severity.

The fungus needs wet conditions to initiate an infection on leaves or shucks, and young developing leaves are especially susceptible. If we have a wet spring, you can anticipate problems with scab on leaves starting early in the season.

HOW DOES PECAN SCAB AFFECT PRODUCTION?
Leaf scab can result in a reduction in photosynthesis as well as defoliation. Scab that occurs on the shucks during fruit development can impact the size of the harvested nut and percent kernel fill. The impact to overall yield will vary depending on the severity of nut scab.

HOW DO I MANAGE THIS DISEASE?
Unfortunately, the pathogen is here to stay. However, with careful control measures, you can manage the disease.

Pecan scab can be managed by removing orchard floor debris, thinning and pruning, and implementing a fungicide program.

The fungus likely overwinters in the orchard on the tree, in the leaf litter or on the shucks. These reservoirs of the pathogen can be the source for the coming growing season. You may be able to reduce these pathogen reservoirs by removing orchard floor debris.

Pecan scab can also be managed using cultural practices such as thinning and pruning, which help with airflow throughout an orchard.

If planting a new orchard, avoid low lying areas where humidity may be a problem. Consider planting resistant cultivars as part of your disease management strategy. Kanza and Lakota are two recommended cultivars with low scab susceptibility for Oklahoma and Texas.

If you have an established orchard of susceptible cultivars, the best way to manage scab is to implement a fungicide spray program to reduce the rate of disease. There are several other fungal diseases that can infect pecan, but they are usually controlled when using a fungicide spray program to control pecan scab. The first spray for scab control should be in early April at the prepollination stage. Spring rains likely provide the needed moisture for infection to occur. It is also important to follow a fungicide spray program throughout the season.

IS THERE A CURE FOR THE DISEASE?
There is unlikely to be a cure for pecan scab disease. However, Nikki D. Charlton, Ph.D., and Carolyn A. Young, Ph.D., of the Noble Research Institute’s mycology laboratory work on *Venturia effusa*. Their research on the life cycle of the fungus has resulted in a major breakthrough understanding the biology of this destructive pathogen. They have found that the pathogen has a sexual cycle that may initiate the disease at the beginning of the growing season. They have been able to produce a sexual cycle in the lab to produce progeny that may differ in their ability to infect pecan cultivars. This will eventually lead them to discover the features in the pathogen genome that contribute to the ability to cause disease. By better understanding the cause of the disease, they, and others, can work toward providing growers with new ways to manage the disease in their pecan orchards.