



# PLANT DISEASE AND INSECT ADVISORY

Entomology and Plant Pathology  
Oklahoma State University  
127 Noble Research Center  
Stillwater, OK 74078



Vol. 7, No. 20

<http://entopl.okstate.edu/Pddl/>

June 9, 2008

## Begin Scouting and Managing your Pecan Orchards for Pecan Scab

Damon L. Smith, Turfgrass and Horticulture Crops Extension Pathologist

Several diseases of Pecan can cause reductions in yield and quality, which impact profit. Of greatest importance to Oklahoma production is Pecan scab caused by the fungus *Cladosporium caryigenum*. Symptoms of the disease typically first appear as dark lesions on leaflets. As new spores are generated from these lesions new infections can continue to develop on leaves and infection of shucks and symptom development on those shucks can occur.



Early leaflet lesions caused by the pecan scab fungus (l), Shuck lesions caused by the pecan scab fungus (r). Photo credits - UGA1324043: Rob Flynn, Bugwood.org, UGA1224007: Jerry A. Payne, USDA Agricultural Research Service, Bugwood.org

Last year's abnormally large amount of rainfall and mild temperatures created challenges in managing pecan scab in many orchards. Growers often found it difficult to get into the field to make fungicide applications, or they found that their "resistant" variety wasn't so resistant when the weather was continuously favorable for disease development. As a result, a significant level of disease was present in many orchards. This has implications for this season too. Last year's disease has resulted in the production of large quantities of primary inoculum available for new infections this season. This problem is further confounded by the abundance of tree debris still in some orchards and injury to some trees that resulted from the December

2007 ice storm. This scenario could make it difficult to manage pecan scab in some orchards again this year.

Pecan scab has recently been reported in eastern sections of Oklahoma this year. If growers have not done so, they should begin scouting immediately and consult the Oklahoma Mesonet pecan scab advisory (<http://agweather.mesonet.org/horticulture/default.html>) as an aid to determine if a fungicide spray is necessary. Remember, for a scab hour to be registered at your site the air temperature must be 70°F or greater and the relative humidity must be at least 90%. At many locations this spring, scab hours accumulated very slowly or not at all. Weather conditions were very cool with extended periods of dry conditions and low relative humidity. In the month of May, this pattern rapidly changed and scab hours have begun to quickly accumulate, especially in the last week or two.

A fungicide spray will be advised for highly susceptible varieties after 10 scab hours have accumulated; for moderately susceptible varieties after 20 scab hours have accumulated; and for native trees or resistant varieties after 30 scab hours have accumulated (Table 1). The accumulation of scab hours takes place over a 14-day period since the last fungicide application or from the beginning of the season if a spray has not been made.

Many folks who have used the pecan scab advisory in the past have found it very helpful, while others are frustrated by the perceived “poor” accuracy of some predictions. Growers should be reminded that the pecan scab advisory is simply that, an advisory. Disease advisories in all cropping systems should be treated as a tool to aid growers in decision making processes. The advisory should not replace scouting or be used in place of past experience with pecan scab epidemics in a particular orchard. Also, growers should consult more than one Mesonet station near their orchard(s). The Mesonet station in their county may not be the most representative station for a particular property. By watching several stations and verifying what is occurring in their orchard, growers can determine which Mesonet advisory is best for them.

Advisories can be helpful in years not highly conducive for disease development. In a situation like this, the advisory is helpful in giving a grower the peace of mind that a fungicide spray doesn't need to be applied. In years when weather conditions are highly conducive for infection and scab development, the advisory may tell the grower nothing more than they already know which is to spray. We are continually working to make improvements with the Oklahoma Mesonet and the advisories available to growers.

There are many fungicides available for managing pecan scab. This is a good thing and growers should take advantage of these products as their budgets permit. Growers should choose several different fungicides with diverse modes of action. The pecan scab fungus is a pathogen that can develop resistance to constant and continued use of the same fungicide mode of action (fungicide resistance). Fungicide resistance has been documented in populations of the fungus in Georgia pecan production. Fungicides should be rotated frequently to minimize the occurrence of fungicide-resistant populations of pathogens in the orchard. Remember, the least expensive program that does not include rotation may be the most costly program over time if the pathogen develops fungicide resistance. In addition to chemical management, growers should use good cultural practices in their orchards to prevent scab. Proper canopy management and sanitation, including removal of damaged or weak limbs and other debris can

limit damage caused by the fungus. Improving water drainage in the orchard and encouraging air movement in the canopy is also recommended to reduce levels of pecan scab.

**Table 1.** Some common varieties of pecan grown in Oklahoma, their relative susceptibility to scab, and the number of scab hours that must be accumulated for a fungicide spray to be advised.

<b>Highly susceptible</b>	<b>Moderately susceptible</b>	<b>Low susceptibility (resistant)</b>
Burkett	Caddo	Barton
Squirrel's Delight	Colby	Choctaw
Western	Creek	Graking
Wichita	Giles	Kanza
	Kiowa	Lakota
	Maramec	Mount
	Mohawk	Nacono
	Oconee	Osage
	Shawnee	Peruque
	Pawnee	Stuart
		<b>Native Trees</b>

---

Dr. Richard Grantham, Director, Plant Disease and Insect Diagnostic Laboratory

Oklahoma State University, in compliance with Title IV and VII of the Civil Rights Act of 1964, Executive Order of 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, VP, Dean, and Director for Agricultural Programs, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of Agricultural Sciences and Natural Resources.