



Pest e-alerts



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First Report of Pecan Scab for the 2009 Season

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Pecan leaf samples of the cultivar 'Wichita' recently arrived in the Plant Disease and Diagnostic Laboratory at Oklahoma State University. These samples were sent from the Southeastern area of Oklahoma. Among other problems associated with the samples, mature and immature scab lesions were identified on these samples. With the recent, excessive rains and rising temperatures this past week, scab in other areas on other cultivars can be expected in the coming days and weeks.

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%. 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. 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.

In areas around Idabel and Madill, scab hours have accumulated very quickly in the past week. As I write this (May 10, 2009) season-long scab hour accumulation stands at ~30 hours near Idabel and ~20 hours in areas around Madill. Pecan trees in these areas are likely at, or past, the pollination stage. Protecting pecans from fungal infections during this period is critical,

especially for susceptible cultivars. Growers in the Madill and Idabel areas should seriously consider actively scouting for disease and/or making a fungicide application especially on susceptible and moderately susceptible cultivars. Remember that the most critical time to begin a good scab control program (and for other diseases) is during the pollination period, and after, when fruit set is occurring. Once the fruit are infected by a pathogen it is often too late to manage the disease for that cropping season. Growers in other areas of the State should also begin scouting and monitoring the pecan scab advisory. While scab hours have not accumulated to the levels that have occurred in the South and Southeastern areas of Oklahoma, there has been some low- to mid-level accumulation of scab hours in much of the pecan production area of the State.

For those looking to develop a fungicide program for the 2009 season, I have included the table below, which was modified from the recent revision of fact sheet [EPP-7663 “Fungicide Resistance Management.”](#) In the table, many of the common fungicides used on pecans in the United States, and their properties are presented. When developing a fungicide program, growers should use fungicide rotation and incorporate as many different fungicide modes of action in the program as possible. Remember to use the proper spray volumes and only use fungicide rates as indicated on the fungicide label. Also, growers should be aware that fungicides have different types of mobility in the plant tissue. Contact fungicides are applied to the surface of a plant and will remain where they are applied. There is no movement of the fungicide into, or across the plant surface. These fungicides are prone to being washed off the plant and must be re-applied to parts of the plant that grow after the fungicide application. Penetrant fungicides are absorbed into the plant tissue. Because these fungicides are absorbed into plant tissue to some degree, then all penetrant fungicides are considered systemic fungicides. Penetrant fungicides have different degrees of systemic capability. Some fungicides are only locally systemic, and after initial contact with the plant material, move very little into the plant tissue. Another type of systemic fungicide, translaminar fungicides, are absorbed into the leaf and move through the leaf to the opposite surface. Translaminar fungicides are not transported throughout the plant. Other fungicides can be xylem-mobile in which they will be absorbed into the plant and moved upward from the point of entry via the plant’s xylem (water conducting elements). Finally, true systemic fungicides move throughout the plant through the xylem and phloem elements (very few fungicides have this capability). Regardless of the type of systemic fungicide, these compounds have limited “curative” capability. They can only stop or slow infections within the first 48-72 hours of fungal exposure. Therefore, penetrant (systemic) fungicides must be applied shortly after infection and are ineffective once the fungus begins producing spores.

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Some fungicides registered for use on pecans in the United States grouped by mode of action and relative risk for developing resistance problems.

Mode of action	Group ¹	Group name	Common name	Trade names for pecans	Mobility ²	Risk ³	Target Disease ⁴
Mitosis and cell division	B1 (1)	Benzimidazole	thiophanate-methyl	Topsin M	S	H	Downy spot, Liver spot, Powdery mildew, Scab
Respiration	C2 (7)	Carboxamide	Boscalid	Pristine (+ pyraclostrobin)	S	M	Anthracnose, Scab
	C3 (11)	Strobilurin (Quinone outside Inhibitor (QoI))	azoxystrobin	Abound, Quilt (+ propiconazole)	S	H	Anthracnose, Downy spot, Liver spot, Powdery mildew, Scab, Vein spot
			kresoxim-methyl	Sovran	S	H	Scab
			pyraclostrobin	Headline, Pristine (+ boscalid)	S	H	Anthracnose, Scab
			trifloxystrobin	Gem, Stratego (+ propiconazole)	S	H	Anthracnose, Scab
	C6 (30)	Organo tin	triphenyl tin hydroxide	Super Tin, Agri Tin	C	L	Downy spot, Liver spot, Powdery mildew, Scab
Sterol synthesis	G1 (3)	Demethylation Inhibitor (DMI)	fenbuconazole	Enable	S	M	Downy spot, Gnomonia spot, Powdery mildew, Scab, Vein spot
			propiconazole	Tilt, Orbit, Propimax, Bumper, Quilt (+ azoxystrobin), Stratego (+ trifloxystrobin)	S	M	Downy spot, Liver spot, Powdery mildew, Scab, Vein spot
			tebuconazole	Folicur	S	M	Downy spot, Liver spot, Scab, Vein spot
Multi-site activity	M3 (M3)	Dithiocarbamate	ziram	Ziram	C	L	Anthracnose, Scab
	M7 (M7)	Guanadine	dodine	Elast	C	M	Downy spot, Liver spot, Scab

¹ Subgroups represent specific target sites within a mode of action, cross-resistance may occur within subgroups, Fungicide Resistance Action Committee (FRAC) group is in parenthesis. FRAC code is based on time of product registration and potential for cross-resistance within subgroups.

² C=Contact, S=systemic or penetrant.

³ The resistance risk is assigned based on the worst case-scenario. For example, dicarboximide resistance is serious for some diseases, but resistance problems have not developed with other uses.

⁴ Be sure to read the label for each fungicide you use. Be sure the target disease is listed, as diseases are added and removed from labels frequently. Not all fungicides can be applied throughout the season, be sure you are applying them at the correct time according to the label. Also, be aware that grazing restrictions exist for many of these products.