



# Pest e-alerts



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## **Powdery Mildew Control on Cucurbits**

John Damicone, Extension Plant Pathologist

As temperatures have cooled down, look for powdery mildew to become more of a problem on susceptible cucurbit crops. These include pumpkin, squash, and watermelon. Hopefully, growers have selected cantaloupe and cucumber varieties with powdery mildew resistance. However, if the resistance level of the variety is not known and white, powdery colonies appear on leaves, assume the variety is susceptible. Watermelon growers should be maintaining a regular, preventive fungicide program for other



disease which generally will provide adequate control of powdery mildew as well. Consider spraying pumpkins three times on a 14-day schedule beginning in mid August or earlier if the disease appears. Other cucurbits should be treated as needed. Spray programs should include the following fungicides where powdery mildew is the primary disease:

Sulfur is highly effective on powdery mildew and the newer granulated formulations (e.g. Mircothiol) are easy to mix and spray. Sulfur has a vapor phase which controls the disease on both leaf surfaces. Sulfur is cheap, but only controls powdery mildew. It is an excellent choice for pumpkins because powdery mildew is usually the only foliar disease of concern here in Oklahoma. I have not experienced leaf or fruit burn on pumpkins or watermelons under a wide range of environmental conditions. However growers in TX and CA have reported watermelon fruit burn from sulfur. Therefore, I do not recommend it on watermelons. Sulfur also should not be tank-mixed with other pesticides.

DMI fungicides are systemic and control powdery mildew on both leaf surfaces. These include myclobutanil (Nova), triflumizole (Procure), and tebuconazole (Folicur and numerous other generics). Resistance is a concern and applications of DMI fungicides should be alternated with non-DMI (group 3) fungicides.

Quinoxifen (Quintec) is not systemic but is highly active on powdery mildew. Because of resistance concerns, it should be alternated with another fungicide.

Copper fungicides (e.g. Kocide, Cuprofix) provide non-systemic, contact control. Copper fungicides should be applied weekly or in alternation with another fungicide.

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## **Cucurbit Downy Mildew Update**

John Damicone, Extension Plant Pathologist

Downy mildew is a destructive disease of cucurbits that causes rapid vine defoliation when the fungus is present and where cool wet conditions occur. There are biotypes of the fungus that



**Downy mildew on watermelon.**

prefer certain cucurbit crops over others and this seems to differ geographically. In Oklahoma, the disease is most severe on watermelon and cantaloupe, and on susceptible cucumber varieties. Pumpkin, squash, and resistant cucumber varieties have not been affected. In the eastern U.S., watermelon is least affected while pumpkin, squash, and cucumber are most susceptible. In addition to variation in the crop responses, new strains have become predominant that are difficult to control with fungicides. For example, control failures where strobilurin fungicides (e.g. Reason and Cabrio) and metalaxyl (e.g. Ridomil/Bravo) have been frequent in recent years. These more aggressive strains also cannot be adequately controlled with just broad-spectrum, protectant fungicide such as chlorothalonil (Bravo) and mancozeb (Dithane).

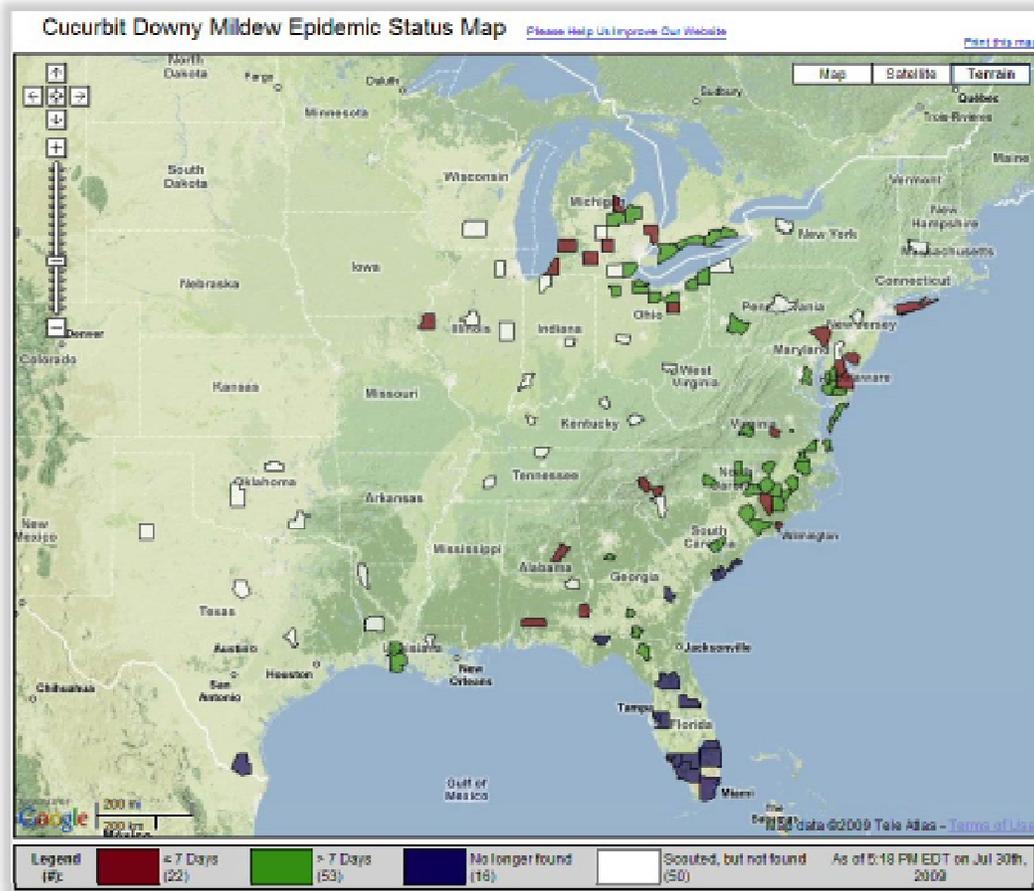


**Downy mildew on cantaloupe (l) and a susceptible cucumber variety (r).**

In order to track the progress of the disease each year and to warn growers on potential new outbreaks, the North American Plant Disease Forecast Center at NC State University has been monitoring known sources of downy mildew and making forecasts on disease spread into new areas (<http://nc-climate.ncsu.edu/cucurbit/map.php>). This effort to track cucurbit downy mildew led to the development of a network of sentinel plots across the country for the first time in 2008 and again in 2009. Most states in the U.S. that grow cucurbits are participating. The three locations for sentinel plots in Oklahoma again this year are in Stillwater, Lane, and Ft Cobb at the local research stations. There are seven different cucurbits that were planted in early June in the hopes of identifying the prevalent biotypes.

Downy mildew has not yet been detected in OK and in most areas of surrounding states (see map). Texas reported downy mildew affecting watermelon in the spring, but the crop has matured and the disease is no longer active where it is being monitored. Texas and Oklahoma have been plagued by hot and dry conditions most of the early summer. Last year, downy mildew appeared in a commercial field and in sentinel plots simultaneously in early September, so the sentinel plots did not provide an early warning.

The recent return to cool rainy weather makes us all nervous about downy mildew. We will report any occurrences immediately and spread of the disease in other states can be monitored at the web site. In the meantime, spray programs with preventive fungicides such as chlorothalonil and mancozeb should be maintained. Once downy mildew threatens, the more specialized downy mildew fungicides such as Curzate, Previcur, Presidio, and Tanos should be incorporated into the spray program.

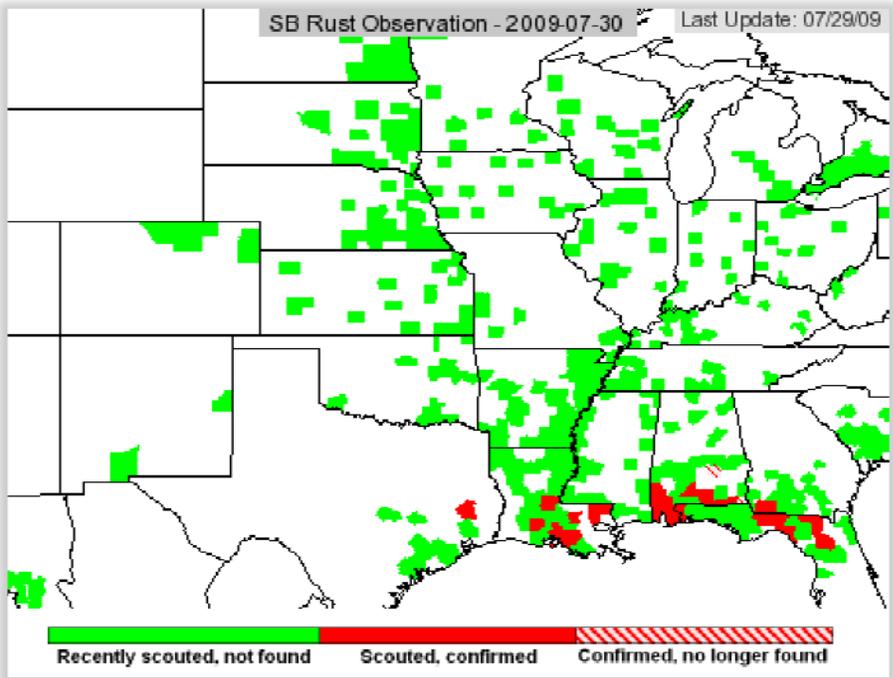


## Soybean Rust Update

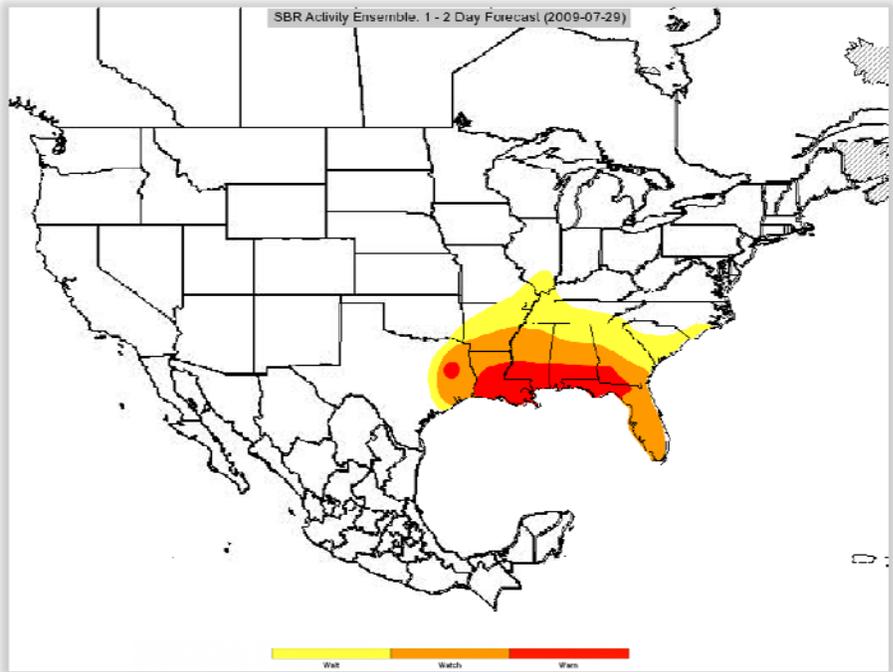
John Damicone, Extension Plant Pathologist

The recent rains and cool weather have certainly improved 2009 soybean prospects in Oklahoma. We were on the verge of having the crop burn up in the heat. The hot weather in June has apparently also slowed the spread of soybean rust in the US. After an early start, the disease again is not increasing much on soybeans or spreading to new areas (see maps). Samples are being received from all 11 soybean rust sentinel plot sites in Oklahoma and rust has not yet been found in the state this year. Similarly, warning areas for soybean rust activity remain south of Oklahoma. However, most of the full-season beans are still in vegetative or early reproductive stages (bloom). We are close, but have not yet escaped rust damage this year. Fungicide sprays on soybeans are not recommended at this time.





**SBR activity in the US as of 7-30-2009.**



**SBR activity forecast as of July 29, 2009.**

*Dr. Richard Grantham  
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