

Soybean Rust Update

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Update

By April, 2005, five counties in the United States had tested positive for soybean rust, all on kudzu. By early March, 2006, 21 counties have confirmed soybean rust presence on both kudzu throughout the southeastern US and soybean in Texas and Mexico. What, if anything, does this change for Wisconsin soybean production? One point that hasn't changed is the need to track the movement and development of soybean rust. The best sources for tracking movement is the USDA Soybean Rust Information Site, <http://www.sbrusa.net/> and the Toll Free Wisconsin Soybean Rust Hotline, 1-866-787-8411.

Clearly, disease dynamics have changed in 2006. In addition to the 21 counties mentioned above, four other sites had confirmed presence of soybean rust, but the host plants were destroyed. The most notable example was a soybean field in Texas that was confirmed in mid February and harvested on March 3. Additional rust confirmations in the Mexican states of Tamaulipas and San Luis Potosi are also of concern. Wind patterns that affect Wisconsin are more likely to flow through Mexico and Texas and provide a more direct, if not quicker, pathway to Wisconsin as compared to weather patterns from Florida, Georgia and Alabama. Perhaps, soybean rust will follow the known pathway of other rust diseases. The activity of soybean rust in Mexico, Texas and Louisiana will likely be of more importance to Wisconsin than its activity in Florida and other Southeastern states.

At this point, spore viability after long migrations is unknown. Soybean rust spores are not considered to be as hardy as other rust species. Environmental conditions such as low humidity and sunlight are known to decrease spore viability. If some of the spores arriving from the southern states remain viable, they will still require the appropriate environmental conditions (temperature, relative humidity and leaf wetness) to infect soybeans.

Another issue that bears watching is the spring regrowth of kudzu. Kudzu, the overwintering host of soybean rust, is greening up from west-central Texas, through northeast Texas, all of Louisiana, southern Alabama and Georgia, and the entire state of Florida. This may soon increase the range of soybean rust and further increase the amount of inoculum available for transport.

Section 18 Concerns

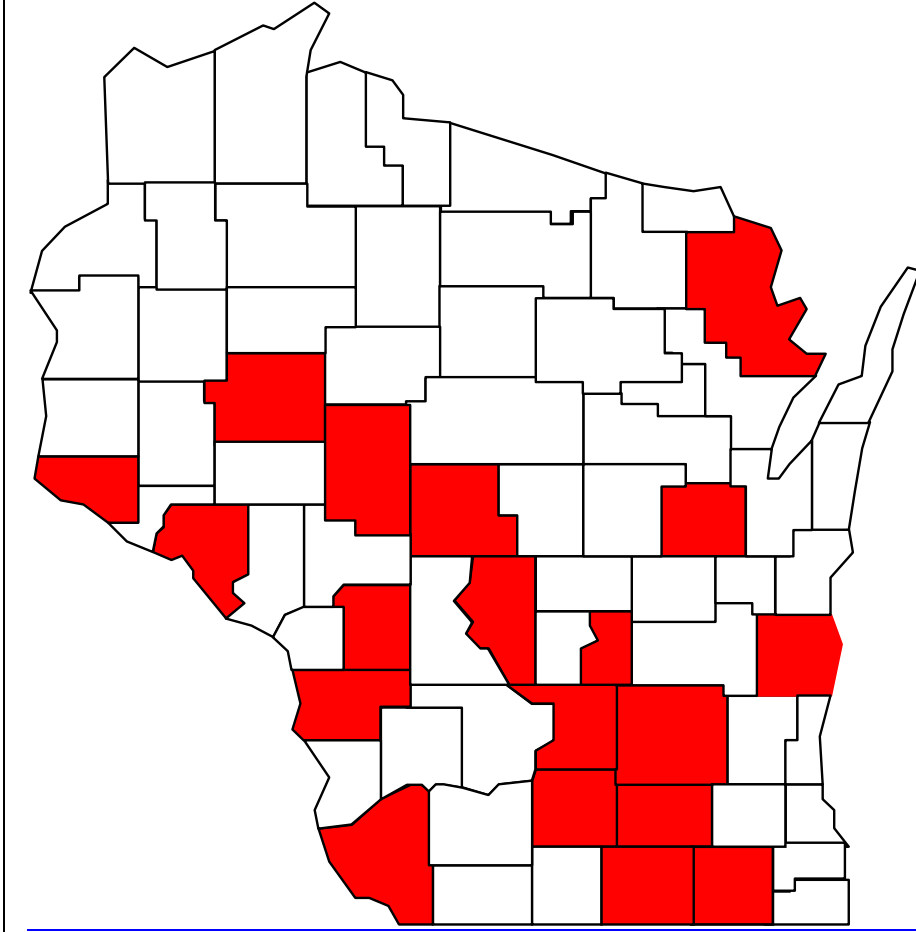
Wisconsin, and other soybean producing states, had an unprecedented number of fungicides approved by EPA through the Section 18 Emergency Exemption process for the control of (only) *soybean rust on soybean*. These Section 18 Emergency Exemption registrations are an invaluable tool for production agriculture. Essentially, EPA allows for the limited use of pesticides during a crisis situation which do not have established food tolerances. Although approved for use, it must be remembered these fungicides can legally be used for only soybean rust on soybean. Not for control of other soybean diseases or for improving “plant health”. As a result, each state must determine, either independently or collectively, what event will trigger an acceptable use of section 18 soybean rust fungicides. In Wisconsin, we have decided that event should be when rust is found in an adjacent state (Indiana, Illinois, Iowa and or Minnesota). This should avoid premature or unnecessary fungicide application, yet allow significant time for proper application. Remember, this is for the section 18 labeled fungicides, not for the fungicides which have a section 3 label (Bravo, Echo, Headline and Quadris)

Possible Fungicide Interactions with Soybean Aphids and Two-Spotted Spider Mites

When considering the use of foliar fungicides, attention must be given to their ability to control the disease as well as to economics. Crop advisors must also consider their effects on entomopathic fungi. Entomopathic fungi are naturally occurring and can significantly lower arthropods populations if environmental conditions are favorable. Results from a 2005 foliar fungicide efficacy test at the West Madison Agricultural Research Station indicated a possible interaction with these fungi because some fungicide treatments had a significantly lower yield with the presence of two-spotted spider mites. Similar results are known to exist with aphids in potatoes as well as other cropping systems.

Sentinel Plot

Wisconsin will continue to monitor soybean rust sentinel plots through the combined efforts of county extension agents, agriculture research station staff and UW-Madison campus research staff. Goals of the sentinel plot network include identification of spore producing areas and collection of data for research. However, the primary goal is detection of soybean rust at low levels and providing an early warning system for soybean producers. Over 30 states have joined this sentinel plot network that utilizes trained observers to look for signs and symptoms of rust on soybean, dry beans and kudzu. Wisconsin has 21 sentinel plots in 19 counties. Most Wisconsin soybean growers will have a sentinel plot within their county or will border a county with a sentinel plot. Results of these sentinel plots are disseminated through the USDA website and the toll free WI Soybean Rust Hotline, both listed in the first paragraph.



Shaded counties will have soybean rust sentinel plots in 2006