

**Carol Groves, Plant Pathology, UW-Madison**

(608) 890-3938, [cgroves@wisc.edu](mailto:cgroves@wisc.edu), <http://fyi.uwex.edu/fieldcroppathology/>

**Damon Smith, Plant Pathology, UW-Madison/Extension**

(608) 262-5716, [dsmith26@wisc.edu](mailto:dsmith26@wisc.edu), <http://fyi.uwex.edu/fieldcroppathology/>

Leaf blotch is a complex of common fungal diseases of small grains (e.g., wheat, barley, oats and rye), and many grasses. In Wisconsin, winter wheat is the most important commercial crop affected by these diseases with potential yield losses of up to a 30%. Leaf blotch diseases are generally favored by cool, wet, windy weather.



Blocky to oval brown lesions, often with yellow haloes, are typical of leaf blotch diseases on small grains.  
Photo Courtesy of Craig Grau.

Symptoms of leaf blotch diseases usually first appear between the veins of lower leaves as chlorotic (i.e., yellow), water-soaked flecks that enlarge to become dry, yellow, then red-brown, blocky to oval lesions, sometimes surrounded by yellow haloes. Some leaf blotch fungi can infect glumes in seed heads as well as leaves. Rows of tiny black specks (reproductive structures of leaf blotch fungi) are often visible in mature lesions.

Several species of fungi can cause leaf blotch. These include *Septoria* and *Stagnospora* species. Leaf blotch fungi survive in infested residues, seeds, volunteer wheat plants and some weed grass hosts.

Initial infections typically occur in the fall as seedlings emerge, and are caused by spores (called ascospores) that are produced on wheat residue from a previous wheat crop. Additional infections can occur the following spring and are due to spores (called conidia) that are produced in lesions on infected wheat plants.

Successful management of leaf blotch can be accomplished through an integrated approach that combines use of resistant varieties, pathogen-free seed, crop rotation, proper crop debris management, volunteer wheat eradication, and fungicide treatments. Several race-specific sources of resistance [complete resistance to a specific variant of the pathogen (called a race)] are available in commercial wheat varieties. Some partial resistance (to many races) is also available. These forms of resistance are limited so it is important to use resistance in combination with other management techniques. Use crop rotations that include non-cereal crops for at least a year between successive wheat crops. When possible, deeply incorporate wheat residues by tillage prior to planting to promote more rapid decay of these residues. This will help reduce the levels of leaf blotch pathogens in the soil and will assist in managing volunteer wheat. Use of resistance and cultural techniques can help reduce the need for fungicide applications.

Fungicide treatments can be useful in managing leaf blotch diseases, but any decision to apply fungicides should be based on regular, careful scouting. Because heavy rainfall favors leaf blotch development, rain patterns should be considered when determining the frequency of monitoring for disease development. To assess the need for treatments, scout five locations within a given wheat field. Once two of the five areas have 25% or more of leaves showing symptoms of leaf blotch, scouting should be repeated approximately every 4 days. Once three of five areas have 25% or more of leaves exhibiting symptoms, then fungicide applications should be considered. In areas with a history of severe leaf blotch diseases, and on wheat varieties susceptible to leaf blotch, preventative applications of fungicide to protect the flag leaf (Feekes 8 and 9 growth stages) may be necessary.