



# Extension FactSheet

Plant Pathology, 2021 Coffey Road, Columbus, OH 43210-1087

## Tan Spot: Yellow Leaf Spot or Blotch

Jessica S. Engle, Patrick E. Lipps, and Dennis Mills  
The Ohio State University

Tan spot has been found in nearly every wheat-producing county in Ohio. This disease has the potential to cause serious damage to Ohio's wheat crop when environmental conditions favor disease development because most varieties appear susceptible. Although tan spot occurs throughout the state, *Stagonospora* leaf blotch is usually the more serious yield-limiting disease. Tan spot, in combination with *Septoria* and *Stagonospora* leaf blotches, causes serious damage to the carbohydrate-producing green leaf tissues. Greatest yield losses occur when the flag leaf and the leaf below the flag leaf become infected before head emergence. If these leaves are killed before the soft dough stage, the grain will be lightweight and shriveled.

### Symptoms

At first, lesions appear as tan to brown flecks, which expand into irregular oval- or lens-shaped tan blotches with a yellow or chlorotic margin (Figure 1). As these spots coalesce, large blotches are formed. Frequently, a dark brown to black spot develops in the center of the lesion. As the disease progresses, entire leaves may be killed.

One of the biggest problems in determining the presence of tan spot is the similarity of the lesion to *Stagonospora* leaf blotch lesions (Figure 1). These diseases have similar yet variable lesion types.

### The Fungus Causing Tan Spot

*Pyrenophora tritici-repentis* (*Drechslera tritici-repentis*) is the fungus causing tan spot. This fungus overwinters on wheat debris on the soil, diseased grass hosts, or infected seed

(Figure 2). The fungus produces black pin-head-sized fruiting structures on residue. These are the sexual structures, and they release ascospores in spring and early summer. As the season progresses, conidia also are produced on the stubble and on older leaf spots. Both kinds of spores are carried by air currents to wheat plants. Lower leaves are infected first, and the disease progresses to the upper leaves and leaf sheaths if weather conditions are favorable.

This disease develops over a wide range of temperatures and is favored by long periods (18 hours or more) of dew or rain. During wet growing seasons, large numbers of conidia are released into the air. With prolonged wetting of the foliage from rain or dew, high spore concentration in the air can result in development of severe tan spot epidemics.

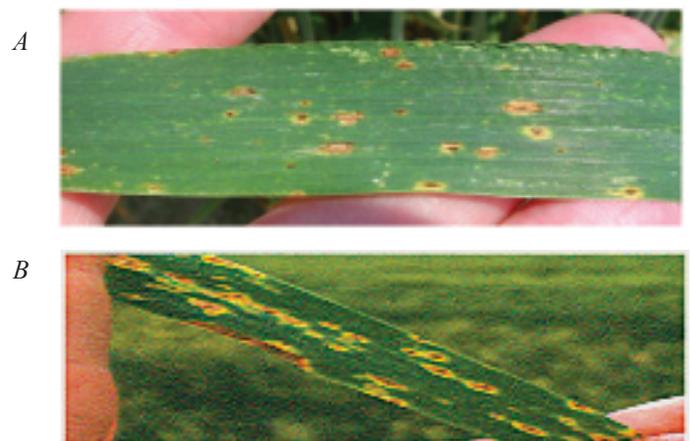


Figure 1. A. Lesions of *Pyrenophora tritici-repentis*.  
B. Lesions of *Stagonospora nodorum*.

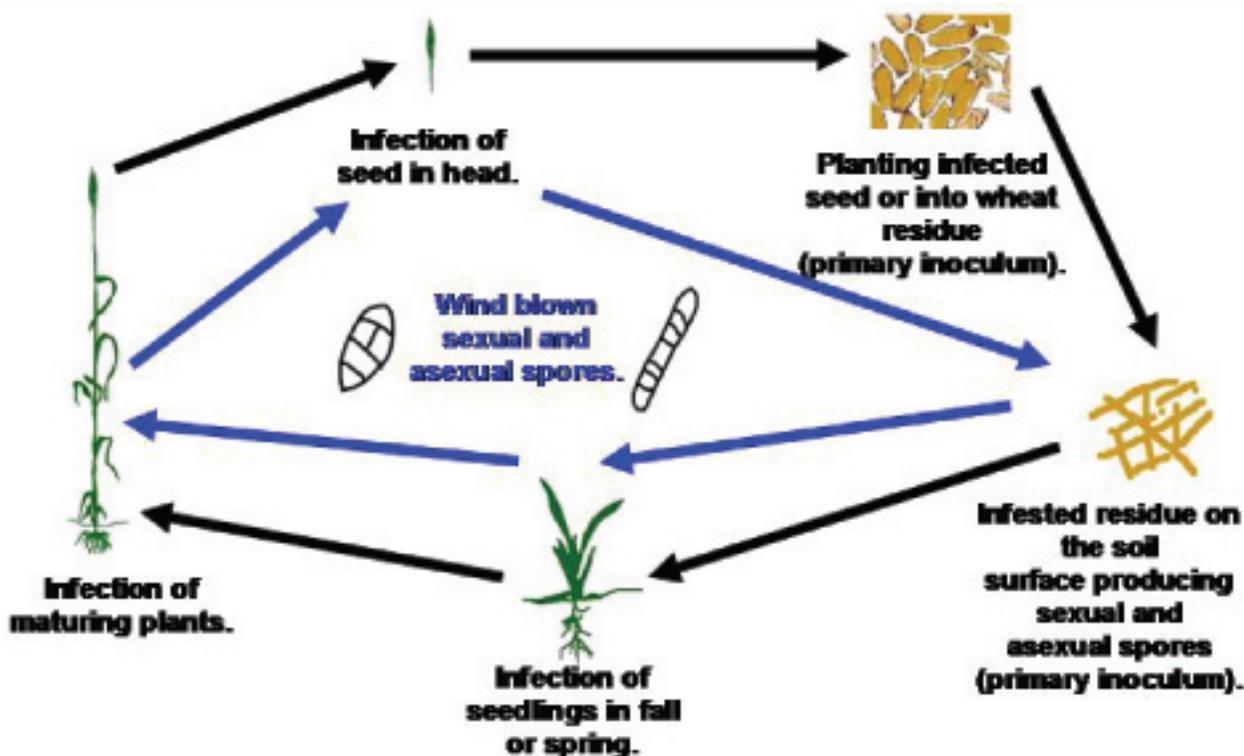


Figure 2. Disease cycle of *Pyrenophora tritici-repentis*.

The spores germinate and infect wheat over a wide range of temperatures if the leaves are wet for a long enough period. Severe spotting will occur on susceptible varieties when the leaves are wet for 12 hours, but severe spotting will not occur on moderately resistant varieties unless the leaves are wet for 18 to 24 or more hours. Wheat becomes severely spotted when many spores are present and there are multiple periods of extended (24 hours or greater) rainy, misty, or foggy weather.

## Management

Rotating crops and burying wheat stubble by tillage can reduce the level of disease early in the season. Wheat growers should rotate wheat with soybeans and corn. Oat and barley also are satisfactory rotation crops. Corn is not a host of tan spot, but planting wheat into corn residue dramatically increases the risk of head scab infection.

Fungicide application focuses on maintaining the flag leaf and head as free from disease as possible. The flag leaf, glumes, and awns contribute greatly to yield and test weight. A healthy flag leaf and head are essential for high-yielding plants.

Several fungicides are available to help control tan spot, other fungal leaf spots, and leaf rust. Most fungicides that control *Stagonospora* and *Septoria* leaf blotch also control tan spot. Fungicides should be applied to prevent disease development on the flag leaf and the leaf below the flag leaf. Initiate applications when lesions begin to develop on the leaf below the flag leaf on susceptible varieties.

*To obtain current fungicide application information, go to the Ohio Field Crop Disease web site at: <http://www.ohio-state.edu/ohiofieldcropdisease>.*

Visit Ohio State University Extension's web site "Ohioline" at:  
<http://ohioline.osu.edu>

OSU Extension embraces human diversity and is committed to ensuring that all educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, age, gender identity or expression, disability, religion, sexual orientation, national origin, or veteran status.

Keith L. Smith, Associate Vice President for Agricultural Administration and Director, OSU Extension

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

11/2004-sa