

YELLOW RUST OR STRIPE RUST OF WHEAT

Causal organism: *Puccinia striiformis* var. *tritici*

Order: Uredinales

Family: Pucciniaceae

Symptoms

1. The first sign of stripe rust is the appearance of yellow streaks (pre-pustules), followed by small, bright yellow, elongated uredial pustules arranged in conspicuous rows on the leaves, leaf sheaths, glumes and awns.
2. Mature pustules will break open and release yellow-orange masses of urediniospores.
3. In some varieties, long, narrow yellow stripes will develop on leaves.
4. The infected tissues may become brown and dry as the plant matures or becomes stressed.
5. Severe early infection can result in plant stunting.



Epidemiology

Puccinia striiformis var. *tritici* can survive as dormant mycelium on wheat. Urediniospores can perpetuate the disease on green host tissue, such as volunteer wheat or susceptible wheat growing in other fields. Stripe rust is most common in higher elevations and cooler climates. The pathogen is best sustained when night time temperatures are <60°F (15°C). Urediniospores are spread via wind currents to healthy plants where they can initiate new infections. Heavy dew or intermittent rains can accelerate the spread of the disease.

MANAGEMENT

Field Monitoring: Become familiar with stripe rust symptoms and anticipate environmental conditions that are conducive for the disease. Check fields periodically and early in the season.

Genetic Control: Use of resistant varieties is the best way to control wheat losses to stripe rust. Two types of genetic resistance to stripe rust are known: (a) seedling resistance and (b) adult plant resistance.

Chemical Control: Several fungicides are currently labeled for stripe rust on wheat. Due to constant changes in fungicide contact your local county Extension agent for the most up-to-date information. Always follow product labels for recommendations, precautions and restrictions.

Cultural Control: Cultural measures can reduce the loss caused by stripe rust to some degree; however, wind dispersal of spores up to hundreds of miles can initiate seasonal epidemics of the disease. Weather systems could bring in rust spores and allow the disease to establish where environmental conditions are favourable for its development. Genetic resistance and constant monitoring when conditions are conducive for stripe rust are imperative for adequate stripe rust management.

Control: Selection of resistant varieties is the only hope.