

GOVERNMENT OF JAMMU & KASHMIR
DIRECTORATE OF AGRICULTURE, JAMMU
(www.diragriamu.nic.in)

ADVISORY FOR THE CONTROL OF YELLOW RUST

Stripe or **yellow rust** caused by a fungal pathogen, *Puccinia striiformis* is principally a disease of wheat grown in cooler weather (02-15°C), which are generally associated with higher elevations, northern latitudes or cooler years. **It takes its name from the characteristic stripe of uredinia that produce yellow colored urediniospores.** Because of the disease's early attack, stunted and weakened plants often occur. Losses can be severe (50%) due to shriveled grain and damaged tillers. In extreme situations, stripe rust can cause 100% losses.

The general consensus is that most of the grain yield losses attributed to leaf and stripe rusts are due to infection of the flag leaf, which is thought to be responsible for greater than 70% of grain filling; thus, field scouting is very important for monitoring of diseases and for diagnosis of problems before they get out of hand.

In wake of recurrence potential of the disease, as last year (*Rabi* 2013-14); about 161 hectares of wheat in five districts (Kathua, Jammu, Samba, Udhampur and Rajouri) of the state was affected by yellow rust. Besides, during 1st Week of February, 2014 - the incidence was also reported from the border belt of R S Pura and Marh area.

Accordingly, In order to contain this disease from becoming an epidemic, this Directorate intends to impress upon all the Officers/stakeholders; as extension machinery of the Agriculture Department to extend more and more know how about the said disease to the grass root level for adoption of GOOD AGRICULTURAL PRACTICES (like popularizing the use of zero till practices in basmati growing area of Jammu, Samba and Kathua districts) and exercising PROPER SURVEILLANCE for early detection.

Brief about its pathogenicity and predisposing factors.

1. *Wind direction and a specific range of temperatures are essential for the onset and development of stripe rust. Relative low temperatures and moisture are needed for spore germination, initial infection and subsequent sporulation and secondary infections during a growing season.*
2. *Infection may occur in the early spring, since mycelium remains viable to -5 °C. Urediniospores germinate optimally between 5 and 15 °C with limits near 0 and 20 °C. Disease development is most rapid between 10 and 15 °C with intermittent rain.*

The descriptive manifestation of the disease and its management is given hereunder for wider publicity and use.

Symptoms:

- 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. Mature pustules will break open and release yellow-orange masses of Urediniospores.
- In some varieties, long, narrow yellow stripes will develop on leaves. The infected tissues may become brown and dry as the plant matures or becomes stressed.
- Severe early infection can result in plant stunting.



Management:

- Encourage farmers for cultivation of Yellow Rust resistant varieties and adopt timely sowing.
- One spray of **Propiconazole 25EC** (Tilt 25 EC) @ 0.1 per cent or **Tebuconazole 250 EC** (Folicur 250 EC) @ 0.1 per cent or **Triademefon** (Bayleton 25 WP) @ 0.1 per cent be given at the foci of infection to avoid its further spread.
- **One ml** of chemical should be mixed in **one litre water** and thus 200 ml of fungicide mixed with 200 L of water should be sprayed in one acre wheat crop. If needed, farmers are advised to repeat the spray.
- For the farmers who have applied one type of fungicide in the previous year, it is suggested to apply alternative recommended fungicide this year. For example if they have sprayed Propiconazole last year, they may spray other recommended fungicide this year.
- Farmers should spray the crop when weather is clear i. e. no rain, no fog / dew etc.

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