

## **Alternaria Leaf Blight of Wheat**

**Pathogen:** *Alternaria triticina*

**Systematic Position:** Subdivision: Deuteromycotina; Class: Hyphomycetes; Order: Moniliales; Family: Dematiaceae

**Distribution & Importance:** Alternaria leaf blight of wheat was first recorded in India by Kulkarni in 1924 from Maharashtra. The disease is common in the eastern and central areas of the Asian subcontinent. It has been reported in Argentina, Italy, Mexico, and North Africa.

**Symptoms:** The first symptom appears when plants are 7-8 weeks old. The lowermost leaves are always the first to show signs of infection, which gradually spreads to the upper leaves. Symptoms begin as small, oval chlorotic lesions which are irregularly scattered on the lowermost leaves. Over time, the lesions enlarge become irregular in shape and develop into dark brown or grey sunken lesions. Lesion may have a bright yellow marginal zone and can grow up to 1 cm or more in diameter. Under moist conditions lesions may be covered by black powdery conidia. At later stages of the disease, lesions will merge together resulting in the death of the entire leaf. In severe cases, leaf sheaths, awns and glumes are also affected and have a burnt appearance.

**Pathogen:** Hyphae of the fungus are branched, septate and olive coloured. Conidiophores are septate, coloured usually unbranched, singly produced, emerge through stomata. Conidia are borne singly or in chains, obclavate and muriform, beaked, dark in colour having 3-10 transverse septa and 1-5 longitudinal septa.

**Disease Cycle:** *Alternaria triticina* infection has been shown to be both soilborne and seedborne and can be dispersed by wind. However, the soilborne inoculum may not play a role in the perpetuation of the fungus under very hot conditions. It is primarily perpetuated, then, as conidia on the seed surface and/or as mycelium inside the seed. The initial inoculum carried with the seed may be able to multiply on decaying vegetable matter to such an extent that the soil itself can become infested. The pathogen has been shown to survive in seed for 10 months. Sporulation on lower leaves provides inoculum that can be dispersed by wind, leading to secondary spread of the disease. High humidity or irrigation, as well as warmer temperatures (20 to 25°C), favour infection and disease development.

### **Management:**

1. Always use healthy seeds from certified sources.
2. Infected crops should be destroyed by burning and ploughing.
3. Infested fields should not be re-sown for a minimum of two years.
4. Avoid overhead irrigation, if possible to reduce periods of leaf wetness.
5. Apply adequate fertilizers.
6. Seed Treatment with Thiram, Captan, Ceresan or Rovral @ 2.5 g/kg Seeds has been shown to be effective in reducing the level of infection.
7. Some resistant varieties of wheat recommended for Uttar Pradesh and Bihar: UP 262, UP172, HD1941, HW2449, Janak, K899
8. Fungicide spraying of mancozeb, zineb (@ 0.25%) or Propiconazole (Tilt 25 EC) (@ 0.1%) is very effective at 15 days interval twice in the crop season.