Reference: - eagri.org

DISEASES OF WHEAT

S. No	Name of Diseases	Scientific Name
1.	Black or stem rust	Puccinia graminis tritici
2.	Brown or leaf rust	Puccinia <i>triticina</i>
3.	Yellow or stripe rust	Puccinia_striiformis
4.	Loose smut	<i>Ustilago</i> tritici
5.	Flag smut	Urocystis tritici
6.	HILL BUNT OR STINKING SMUT	Tilletia caries / T.foetida
7.	Karnal bunt	Neovassia indica
8.	Foot rot	Pythium graminicolum
9.	Powdery mildew	Erysiphe graminis
10.	Leaf blight	Alternaria triticina

1. Black or stem rust - Puccinia graminis tritici

Symptom

- Symptoms are produced on almost all aerial parts of the wheat plant but are most common on stem, leaf sheaths and upper and lower leaf surfaces.
- They erupt through the epidermis of the host and are surrounded by tattered host tissue.
- The pustules are dusty in appearance due to the vast number of spores produced.





2. Brown or leaf rust - Puccinia triticina

Symptom

• The most common site for symptoms is on leaf blades, however, sheaths, glumes and awns may occasionally become infected and exhibit symptoms.



3. Yellow or stripe rust - (Puccinia_striiformis)

Symptom

- Mainly occur on leaves than the leaf sheaths and stem.
- Bright yellow pustules (Uredia) appear on leaves at early stage of crop and pustules are arranged in linear rows as stripes.
- The stripes are yellow to orange yellow. The teliospores are also arranged in long stripes and are dull black in colour.



Favorable Conditions

- Low temperature (15-20°C) and high humidity during November December favour black and brown rusts.
- Temperature less < 10o favours yellow rusts.



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Management

- Avoid excess dose of nitrogenous fertilizers.
- Grow resistant varieties like PBW 343, PBW 550, PBW 17

4. Loose smut - (Ustilago tritici)

Symptoms

- The entire inflorescence is commonly affected and appears as a mass of olive-black spores, initially covered by a thin gray membrane.
- Once the membrane ruptures, the head appears powdery.



5. Flag smut - Urocystis tritici

Symptoms

- The symptoms can be seen on stem, clum and leaves from late seedling stage to maturity.
- The seedling infection leads to twisting and drooping of leaves followed by withering.
- Grey to grayish black sori occurs on leaf blade and sheath. The sorus contains black powdery mass of spores.







Favorable Conditions

- Temperature of 18-24°C.
- Relative humidity 65% and above.

Management

- Treat the seeds with carboxin at 2g /kg.
- Grow resistant varieties like Pusa 44 and WG 377.

6. HILL BUNT OR STINKING SMUT (Tilletia caries / T.foetida)

Symptoms

- The fungus attacks seedling of 8-10 days old and become systemic and grows along the tip of shoot.
- At the time of flowering hyphae concentrate in the inflorescence and spikelets and transforming the ovary into smut sorus of dark green.
- The diseased plants mature earlier and all the spikelets are affected.



Favorable Conditions

- Temperature of 18-20°C.
- High soil moisture.

Management

- Grow resistant varieties like Kalyan sona, S227, PV18, HD2021, HD4513 and HD4519.
- Treat the seeds with carboxin or carbendazim at 2g/kg.

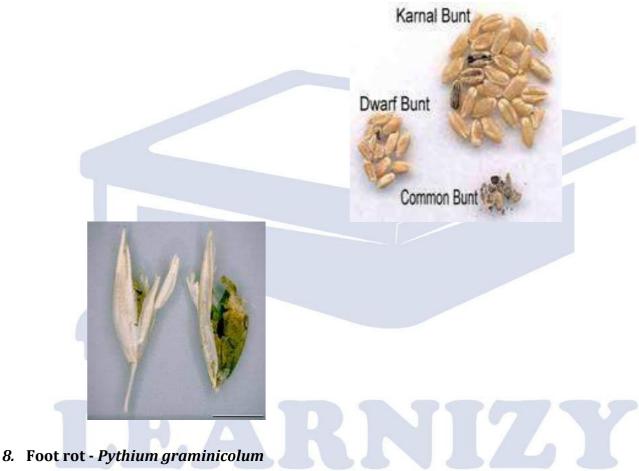


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7. Karnal bunt - Neovassia indica

Symptoms

- Symptoms of Karnal bunt are often difficult to distinguish in the field due to the fact that incidence of infected kernels on a given head is low.
- Symptoms are most readily detected on seed after harvest.



Symptoms

- The disease mainly occurs in seedlings and roots and rootlets become brown in colour.
- Seedlings become pale green and have stunted growth.
- Fungus produces sporangia and zoospores and oospores.

Favorable Conditions

Wet weather and high rainfall.

Management

- Follow crop rotation.
- Treat the seeds with <u>Carboxin</u> or Carbendazim at 2g/kg.

9. Powdery mildew - Erysiphe graminis

Symptoms

- Greyish white powdery growth appears on the leaf, sheath, stem and floral parts.
- Powdery growth later become black <u>lesion</u> and cause drying of leaves and other parts.



Favorable Conditions

Temperature of 20-21°C.

Management

• Spray wet table Sulphur 0.2% or Carbendazim @ 500 g/ha.

10. Leaf blight - Alternaria triticina

Symptoms

- Reddish brown oval spots appear on young seedlings with bright yellow margin.
- In severe cases, several spots coalesce to cause drying of leaves.

Favorable Conditions

• Temperature of 25°C and high relative humidity.

Management

Spray the crop with Mancozeb or Zineb at 2 kg/ha.

