**Wheat Smut**

**Description and Importance:**

* Smut mean sooty (black) or charcoal like powder
* Responsible for heavy losses when susceptible varieties with infected seeds are grown year after year
* Cause losses 3-30 %

**Etiology:**

Causal organism: *Ustilago tritici*

Order: Ustilaginales

Family: Ustilaginaceae

**Symptoms:**

* Head of affected plants converted into black mass of spores & no grain formation
* Affected young spike lets covered by silvery membrane
* Only the awns of awned varieties escape transformation
* Spores easily separate & blown off by wind leaving bear rachis

**Disease cycle:**

* Air dried spores can survive for 12 months at 0-10 c
* Pathogen is internally seed-borne
* Infection occur when flowers are in full bloom & ovary is just developed after fertilization

**Epidemiology:**

* **Temp 22-25 °C**
* RH 60-85 %

**Management:**

* Solar energy treatment: Presoaking period of 4 hrs followed by 1 hr exposure to sun in summer
* Hot water treatment: 4-5 hrs in a tub at ordinary temp, at 132 F for 5 min & 132 F for 7 min
* Seed treatment with Vitavax & Baviston @ 2.5-3g/kg are systemic fungicides & effective
* Resistant varieties (Perwaz, Watan, Sehar, Shafaq)