

Smut Fungi

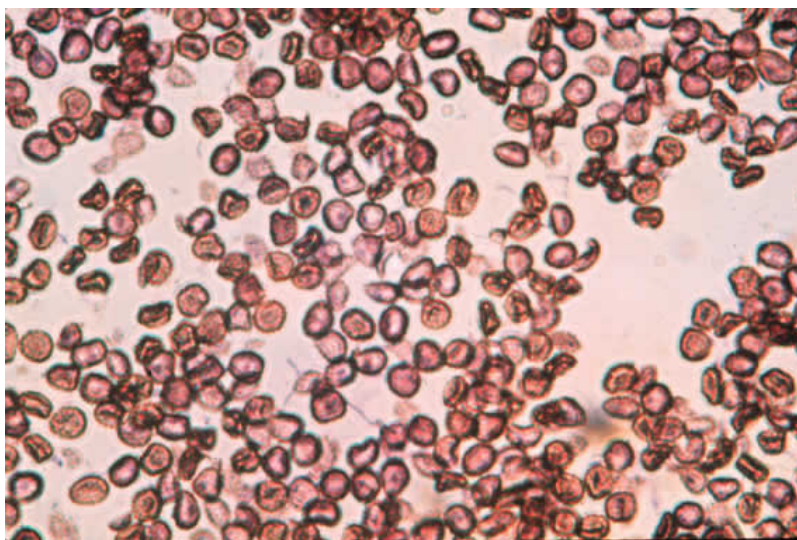
Important diseases: Smut diseases on small grains, grasses, onions, herbaceous ornamentals.

Smut fungi are Basidiomycetes and include several important genera including *Ustilago*, *Tilletia*, *Entyloma*, and *Urocystis*. The most economically important smut diseases are on cereals and grasses. Examples of smut diseases are corn smut (*Ustilago maydis*), loose smut (*Ustilago nuda*), covered smut of barley (*Ustilago hordei*), stinking smut (*Tilletia foetida*), dwarf bunt of wheat (*Tilletia caries*), white smut (*Entyloma compositarum*), and onion smut (*Urocystis cepulae*).





Smut fungi attack any aboveground plant parts including leaves, stems, and flowers. The fungus infects individual plant tissues causing an enlargement (gall or boil) that is initially fleshy and white, but as the fungus ages and produces spores it becomes a black, powdery spore mass (sorus). Individual florets may be replaced by a spore mass as with loose smut or the whole grain head may be converted into black, smutted masses enclosed within thin membranes as with covered smut.



Spores (called teliospores or chlamydospores) of smut fungi are generally darkly pigmented, spherical, and ornate. Spores may be covered with spines (*Ustilago*) or net-like ridges (*Tilletia*). Pictured are chlamydospores of *Ustilago maydis*.