

Smuts, Rusts, Periconia, and Myxomycetes

Fungal category: Ustilaginales. Basidiomycetes.

Characteristics

Distribution

Smuts: 2 families, 50 genera and 950 species.
Rusts: 14 families, 105 genera and 5,000 species.
Periconia: 20 species
Myxomycetes: 45 general and 500 species.

Where Found

On cereal crops, grasses, weeds, other fungi, and on other flowering plants.

Mode of Dissemination

Smuts and Rusts have both wet and dry spores. Wind disperses the Urediniospores, teliospores, basidiospores, and aeciospores. The basidiospores and aeciospores have an active spore release mechanism.

Growth Indoors

Smuts and Rusts do not usually grow indoors. They are parasitic plant pathogens that require a living host for the completion of their life cycle. Matures within 4 to 8 days.

Other Comments

Smuts are members of the Basidiomycetes and have two spore types: teliospores (dry, powdery stage) and basidiospores (yeast stage).

Rusts are members of the Basidiomycetes class. They have a complex life cycle, producing five different spore types in two different plant hosts. Spore types include: basidiospores, pycniospores, aeciospores, Urediniospores, and teliospores.

The myxomycetes have an interesting life cycle which includes a wet spore phase and a dry spore phase. When conditions are favorable, they move about like amoebae, resembling primitive animals. When conditions are not favorable, they form a resting body (sclerotium) with dry, airborne spores. The myxomycetes are not considered to be true fungi but are classified as protozoans.

Potential Health Effects

Allergens

Type I allergies (hay fever, asthma).

Potential Opportunist or Pathogen

No reports of human infection by the plant parasitic forms.

Laboratory Notes

Growth/Culture Characteristics

The airborne phase (teliospores) of Smuts and Rusts require a living host for growth and will not develop on laboratory media. The yeast phase (basidiospores) is saprophytic and will grow on general fungal media.

Spore Trap Recognition

Smut teliospores cannot easily be distinguished from the myxomycetes, rusts, and certain species of Periconia. They are reported in the "round, brown" spore category: "Smuts, Periconia, myxomycetes, and Rusts."

Tape Lift Recognition

Uredospore's and teliospores are distinctive and readily identifiable on tape lifts. They may be found in dust as part of the normal influx of outdoor microbial particles.

