

Covered Kernel Smut Sorghum: Symptoms, Management

Information	Details
Disease Name	Covered Kernel Smut (Head Smut)
Host Plants	Sorghum, including johnsongrass
Causal Agent	Fungus: Sporisorium sorghi
Prevalence	More common with untreated seeds
Symptoms	Infected heads display powdery dark brown spores covered by a sturdy membrane. These spores spread to healthy seeds, initiating new infections.
Life Cycle	Infected seeds sprout with spores, infecting young sorghum plants. The fungus grows harmlessly within until plant maturity. Then, spores replace kernels and are enclosed by a covering that releases infectious spores, contaminating seeds and soil.
Beneficial Conditions	Planting seeds in warmer, moist soil reduces the disease occurrence.
Varieties of the Fungus	Multiple types with distinct features exist.
Characteristics of Smut Sori	<ul style="list-style-type: none"> - Replaces sorghum grains- Spore-producing structures- Persistent peridium membrane- Varied sizes, from hidden by glumes to >1 cm- Often conical or oval, resembling sorghum seeds- Colors: whitish, gray, brown, sometimes with stripes- Sizes: 0.4-1.3 cm in length, 0.2-0.4 cm in width- Localized sori on head's top, bottom, or side
Distinctive Features	<ul style="list-style-type: none"> - Conical or oval-shaped spore-producing structures- Covered by glumes, extending to >1 cm- Glumes maintain normal color- Resemble elongated sorghum seeds- Colors vary- Partial head infection common- Severe cases result in destroyed panicle branches
Symptoms of Covered Kernel Smut	<ul style="list-style-type: none"> - Replaces individual grains with smut sori- Sori covered by creamy skin- Appear in specific head parts or all over- Ratoon crops have higher incidence
Unusual Symptoms	<ul style="list-style-type: none"> - Individual spikelets or inflorescences missing in smutted panicles- Results in twisted, distorted branches with large, superficial smut sori
Management	<ul style="list-style-type: none"> - Cultural Method- Crop rotation: Avoid consecutive planting of sorghum or related grass crops- Treating seeds: Apply fungicides to sorghum seeds before planting- Using healthy seeds: Source certified disease-free seeds- Keeping things clean: Remove and destroy infected plant debris- Planting strong kinds: Choose sorghum varieties resistant to loose smut- Picking the right planting time: Opt for periods with less favorable disease conditions