



## Small Grains XII

### **Loose Smut/False Loose Smut (oat, barley)**

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#### **Identification (and life cycle/seasonal history)**

Loose smut of oats and false loose smut of barley are caused by the fungus *Ustilago nigra* (Syn. *U. avenae*). The fungus is widespread in most barley growing regions of North America and probably the world. Strains pathogenic to barley or oat are not known to cause disease in the other host. The pathogen is seedborne in both barley and oat, and infects plants between germination and seedling emergence. The fungus grows internally within the plant throughout the season, but plants are generally asymptomatic through the heading. During the boot stage, the fungus invades floral tissues and converts them into masses of dark brown teliospores. The teliospores are dispersed by wind to healthy plants, where they infect the seed and start the process over again. The pathogen survives between barley or oat crops in contaminated seed.

#### **Plant Response and Damage**

Disease symptoms of loose smut and false loose smut are similar and are obvious after heading as dark brown heads with masses of teliospores. Affected heads tend to be taller and emerge slightly earlier than healthy heads. Awns may or may not be present on diseased heads. As the teliospores are dispersed, a bare or nearly bare rachis appears. Plant damage is generally low from this disease (1% or less incidence), but can approach 10% if untreated.

#### **Management Approaches**

##### **Biological Control**

Biological control strategies have not been developed for false loose smut of barley or loose smut of oat.

##### **Cultural Control**

Plant only high quality seed free of the pathogen. Varieties are available that are resistant to most races of the fungus and provide excellent control. Hot water treatments may reduce or eliminate the pathogen from seed, but can also reduce germination and seed quality.

##### **Chemical Control**

Seed treatment with surface-active or systemic fungicides gives excellent disease control and should be used routinely.

#### *Product List for Loose Smut False Loose Smut:*

<b>Pesticide</b>	<b>Product per 100 lbs seed</b>	<b>Remarks</b>
Difenoconazole		
Dividend Extreme	1-4 fl oz	Seed treatment; 55 day PHI
Dividend	0.5-1 fl oz	Seed treatment; 55 day PHI
PCNB		
PCNB 2-E Liquid	4.2-12.3 fl oz	Seed treatment
Tebuconazole: various formulations and mixtures available		
Raxil-Thiram	3.5-4.6 fl oz	Seed treatment
Raxil MD	5-6.5 fl oz	Seed treatment
Raxil MD-W	5 fl oz	Seed treatment
Raxil MD Extra	5 fl oz	Seed treatment
Raxil Xt	0.16-0.20 oz	Seed treatment
Triadimenol		
Baytan 30	0.75-1.5 fl oz	Seed treatment; poor control

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