**Grain smut/Kernel smut / Covered smut / Short smut –**Sphacelotheca sorghi
**Symptoms**
The [individual grains are replaced by smut sori](http://www.eagri.org/eagri50/PATH272/lecture02/Grain%20smut.JPG). The sori are oval or cyclindrical and are covered with a tough creamy skin ([peridium](http://en.wikipedia.org/wiki/Peridium)) which often persists unbroken up to thrashing. [Ratoon](http://en.wikipedia.org/wiki/Ratooning) crops exhibit higher incidence of disease.

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| http://www.eagri.org/eagri50/PATH272/lecture02/006_clip_image004.jpg | Grain smut  |
| loose smut | http://www.eagri.org/eagri50/PATH272/lecture02/006_clip_image008.jpg |

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| http://www.eagri.org/eagri50/PATH272/lecture02/006_clip_image002_0000.jpg |
| **Symptoms** |

**Head smut -**[***Sphacelotheca***](http://en.wikipedia.org/wiki/Sphacelotheca_reiliana) reiliana
**Symptoms**
The entire head is replaced by large [**sori**](http://en.wikipedia.org/wiki/Sorus). The sorus is covered by a whitish grey membrane of fungal tissue, which ruptures, before the head emerges from the boot leaf to expose a mass of brown smut spores. Spores are embedded in long, thin, dark colored filaments which are the vascular bundles of the infected head.

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| http://www.eagri.org/eagri50/PATH272/lecture02/006_clip_image004_0000.jpg |
| **Symptoms** |

**Management for all smuts**

* Treat the seed with Captan or Thiram at 4 g/kg.
* Use disease free seeds.
* Follow crop rotation.
* Collect the smutted ear heads in cloth bags and bury in soil.