



## THE BIOLOGY OF FUNGAL PATHOGENS Vol. 4: Fungal Pathogens and Diseases of Cereals (4)

Edited by Dr. Joseph-Alexander Verreet and Dr. Holger Klink,  
Department of Plant Pathology, Christian-Albrechts University Kiel

Scientific Advisor (Eyespot Disease): Prof. Dr. Pedro W. Crous,  
Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands

Video Production and 3D Animation:  
STUMM-FILM Dr. Rolf Stumm Medien GmbH, Ludwigsburg, Germany

2006; DVD; running time: approx. 23 min.  
ISBN:978-0-89054-350-4

APS PRESS: [www.apsnet.org/apsstore/shopapspress/Pages/43504.aspx](http://www.apsnet.org/apsstore/shopapspress/Pages/43504.aspx)

### 4.1 Eyespot Disease of Small Grains (13:00 min)

Where small grains are grown continuously and the climate is cool and moist, eyespot disease, also called strawbreaker foot rot, is a significant yield-limiting disease. This infection of the stem base is caused by fungi of the genus *Helgardia* (formerly *Pseudocercospora*): *Helgardia herpotrichoides* (teleomorph *Oculimacula yallundae*) and *Helgardia acuformis* (teleomorph *Oculimacula acuformis*). Both species differ in terms of morphology and growth characteristics. This movie depicts the life cycles of both species using three-dimensional computer animations blended with real images. Particularly, the modes of infection as well as epidemiological spread of the disease are shown. Finally, methods for successful disease management are explained.

### 4.2 Bunt and Smut Diseases of Cereals (10:00 min)

Common bunt of wheat caused by *Tilletia caries* and loose smut of barley caused by *Ustilago nuda* are cereal diseases that have been increasingly forgotten as a result of modern seed treatments. However, when untreated seed is used, infection by these damaging fungal pathogens can lead to substantial losses in yield and seed quality. Using *Tilletia caries* and *Ustilago nuda* as examples, this movie illustrates the life cycles of bunt and smut fungi with extensive detail, thus leading to a better understanding of the development and epidemiological spread of these fascinating fungi. All stages of the life cycles are explained using photolike three-dimensional computer animations, macro images, and real-image video sequences.



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