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5.1 Pythium Root Rot of Cereals (10:00 min)

Death of seedlings due to rotting of their roots is known as 'damping-off'. This disease is often caused by oomycetes in the genus *Pythium*, soilborne microorganisms related to brown algae. The circle of host plants parasitized by *Pythium* includes a wide variety of crops from virtually all climatic zones. By infecting germinating seeds and seedlings of all major grain crops, *Pythium* can cause significant losses in terms of quality and yield. Pythium root rot of cereals is so ubiquitous that it has been rightly called the 'common cold' of cereals. This movie depicts the life cycle of *Pythium* using 3D computer animations blended with real images. Particularly, the formation and spread of motile zoospores is shown in detail. Finally, methods for successful disease management are explained.

5.2 Rhizoctonia Root Rot of Cereals (9:00 min)

The fungus *Rhizoctonia solani* is a widespread inhabitant of soil. Hyphal anastomosis criteria are used to place isolates of *Rhizoctonia solani* into taxonomically distinct groups called 'anastomosis groups' (AG). *Rhizoctonia solani* strains classified in AG-8 are especially pathogenic to cereals, causing a root rot and stunting of wheat and barley plants, known as Rhizoctonia bare patch. The disease can be increased in direct-seed systems that lack tillage. The life cycle of *Rhizoctonia solani* is explained in clear, easy-to-understand 3D animations and real-image video. The closely related fungus *Rhizoctonia cerealis* causing sharp eyespot of wheat is also described, followed by sequences focusing on disease management methods, including seed treatment.



Winner of the 2009 Scientific and Popular Scientific Films

Pythium Root Rot of Cereals was awarded top prize at the
26th International Film Festival AGROFILM 2009

