

Rhizoctonia

The hidden pathogen

What is Rhizoctonia

Rhizoctonia is a soil borne fungus that causes a symptom known to growers as damping off or root rot. This disease affects seeds, and emerging seedlings, but only causes minor damage to older plants. It has a wide host range affecting many crops, not just horticultural.

Grower issues

It is common that on the Northern Adelaide Plains growers experience damping off. Growers often find they have pre-emergent damping off, where the seedlings rot and there is a lack of germination. Alternatively, they experience post emergent damping off, where a lesion is observed just above the soil. This causes the plants to collapse and die. Under moisture stress crops are more susceptible to the disease. Soil under moderate wet conditions rather than waterlogged soil increases the disease. Growers often chose to dip their plants in a fungicide such as Previcur, which is systemic before planting to reduce the incidence of soil borne disease if they believe they have an issue with the disease.

Symptoms



Cucumber seedling shows a brown sunken lesion at the base of the stem. This causes the plants to fall over and wilt leading to plant death.



Cucumber seedling with low plant establishment, plant wilt and death from damping off

Photos: Dr S Coventry, HortEx.

Soil and plant health

Rhizoctonia survives between crops on the plant trash. It is common in soil, particularly on decaying material. This means that left-over material from the previous crop, even incorporated into the ground may harbor the pathogen. Healthy soils with sufficient organic matter may harbor beneficial soil microbes that can reduce Rhizoctonia.

HortEx Trials

Through preliminary trials conducted by HortEx, it was found *Rhizoctonia solani* was found in most soil tests taken across Virginia. The exception seems to be where growers incorporate large amounts of compost through their soil before replanting. The trials, highlighted the most common groups found were Astomosis group (AG) 2.1 and Astomosis group (AG) 4.

What next

Further investigations in collaboration with SARDI will try to explore what these AG groups mean to the crops development, and better ways of controlling soil borne diseases on your farm.

Rhizoctonia mycelium that invades your plant causing disease

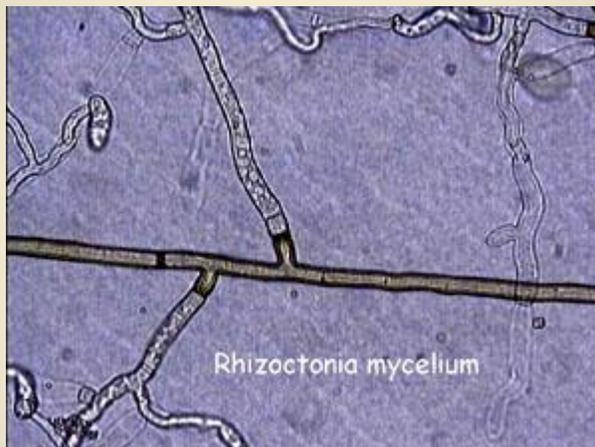


Photo: North Carolina State University, Plant Pathology Extension, <http://www.ces.ncsu.edu/>

Simple disease cycle of *Rhizoctonia solani*

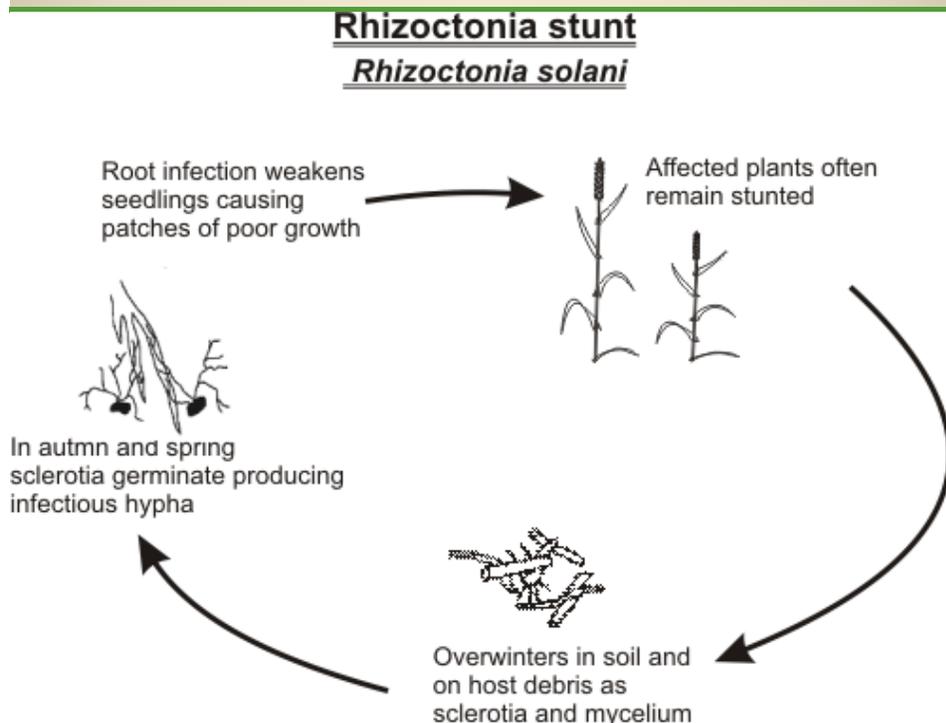


Diagram: Encyclopidia of cereal diseases, AHDB.org.uk