ONIONS

Common diseases in onions and their management

White Rot

PATHOGEN	*Schlerotium cepivorum*
OCCURS	Pre-emergent, early leaf
LIFESPAN	Long term
ENVIRONMENT	Cool, wet soils 14-18°C

More common in spring onions, white rot is caused by Sclerotium cepivorum which forms small black bodies which are the schlerotia of the fungus. It can survive for many years in the soil and prefers cool and wet soils, ideally in a temperature range of 14-18°C.

MANAGEMENT

- Farm hygiene is the priority – it can be transported via infected soil on farm equipment
- Keep the nutrition balance with manganese and copper availability
- Fungicides – Hort Innovation project VN20007 is currently investigating the efficacy of two new fungicides for White Rot
- Cover crops and rotations – will increase soil microbial diversity, but long rotations between onion crops is required as it can survive for more than 25 years
- Increased plant spacing – tightly packed plants allow for easy movement between plants.

Black Mould

PATHOGEN	*Aspergillus niger*
OCCURS	Post harvest, storage
SYMPTOMS	Physical damage or bruising through the stalk
LIFESPAN	Long term
ENVIRONMENT	High humidity >76%RH, High Temperatures (>30°C in field; >24°C in storage)

MANAGEMENT

- Withdraw irrigation 21 days prior to harvest to prevent moisture build-up, which can escalate infection significantly
- Avoid bruising or mechanical damage to the bulbs to reduce infection points
- Dry or cure the bulbs at 36% RH and at 38°C
- Fungicides can be applied (fludioxonil + cyprodinil)
- Application of copper prior to harvest can be beneficial to reduce storage rot.

Pink Root

PATHOGEN	*Setophoma terrestris* (previously called *Phoma terrestris* or *Pyrenochaeta terrestris)*
OCCURS	Post harvest, storage
SYMPTOMS	Wilting, yellowing and brown tip of leaves, soft bulbs
LIFESPAN	Short term – 3 years
ENVIRONMENT	Warm temperatures (24-28°C)

MANAGEMENT

- Long crop rotations in the order of 3-6 years. This pathogen has a range of host plants including pumpkin, bean, carrot and pepper families, as well as many legumes, maize, millet and sorghum. It is also known to form disease complexes with root pathogens such as pythium, rhizoctonia and fusarium.
- Harvest before the soil temperature gets to 30°C
- Avoid plant moisture stress – regular and less irrigation
- Soil fumigation may be helpful.

Basal Rot

PATHOGEN	*Fusarium oxysporum* and other *Fusarium* spp
OCCURS	Young seedlings
SYMPTOMS	Yellow to light brown discolouration around the base of the stem, wilting, death
LIFESPAN	>10 years
ENVIRONMENT	Temperatures (5-15°C), damp, cool, compacted soils

MANAGEMENT

- Raised beds or well drained soil
- Treat seeds/seedlings with a registered fungicide
- Host plants carrying Fusarium are wide including legumes and most vegetable crops
- Avoid using excessive amounts of ammonium forms of nitrogen, with a balance of Ca and Zn if needed
- Avoid plant damage, including mechanical, insect, nematode and herbicide injury
- Soil fumigation may be helpful.

Hort Innovation ONION FUND

FIND OUT MORE

Watch the webinar visit soilwealth.com.au/resources/webinar-recordings/soilborne-disease-management-in-onions/

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