

Damping off and downy mildew

Damping off (DO)

Summary

Seedling brassicas can be attacked by DO, which covers a range of fungi that cause plant death and gaps in establishing crops. Causal pathogens are *Pythium* and *Fusarium spp.* in the North Island, and *Rhizoctonia solani* in the South Island. Early infections are known as damping off, while later are wire stem.

Identification

Young plants wilt and die from lesions at and below soil level. Infections of *R. solani* at later growth stages result in young plants turning purple and surviving only by the vascular strands (or wire stem), eventually dying.



Gaps in swede stand caused by DO.

Importance

Infection is common in second year brassica crops where gaps in establishment occur.

Spread

All the fungi are soil-borne and spores can build up over successive susceptible crops in the same ground. Wet, cold conditions are conducive to infection, when host seedling growth may be restricted.



Wire stem in swedes.

Prevention and management

Seed coating with fungicides provides early control of damping off. Long rotations between brassica crops will also reduce losses.

Downy mildew (DM)

Summary

DM is caused by the fungus *Peronospora parasitica*, which infects seedlings, leaves, flowering stems and seed pods.

Identification

On seedling leaves, DM shows up as black dots and leaf yellowing and reddening, with purplish grey sporulation on the underside of leaves. On older leaves, DM is shown as lesions with leaf yellowing, often accompanied by black speckling. Affected leaves die off prematurely.



DM symptoms on kale leaf.

Importance

DM can greatly affect feed quality and yield.

Spread

DM can remain in the soil as free living spores or in trash. In spring, these spores infect leaves, with rapid build up in mild, moist weather conditions. DM can also be introduced via infected seed.



Early symptoms of DM on underside of swede leaf.

Prevention and management

Sowing clean seed minimises infection, along with thorough cultivation and good weed control. Good crop rotations are also essential, especially in areas with high levels of DM present. If infection does occur, grazing affected plants does limit the spread of the disease within the crop.