



Primary
Industries

Blueberry Replant Diseases & Disorders

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Presentation overview

- What is replant disease?
- What is known about this disease overseas – on blueberries & tree crops?
- What do we know of this disease in Australia?
- How can we manage it?

What is replant disease?

Definition

- Poor establishment & growth after replanting the same or related plant species on a site

Symptoms

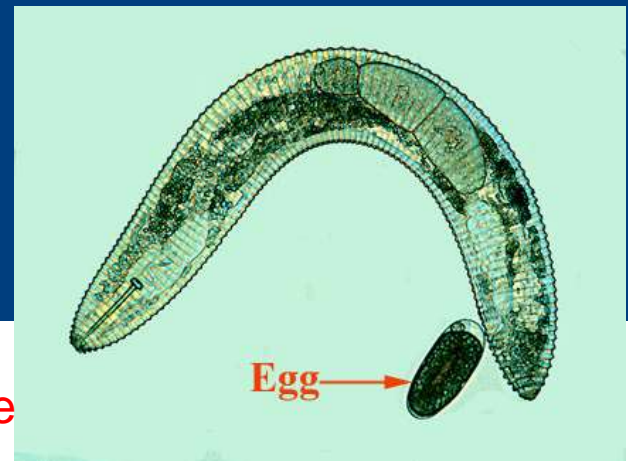
- Stunted growth, shortened internodes
- Small root system
- Rotting and discoloured roots
- Death of young plants
- Reduced productivity

What do we know about this disease – on blueberries & tree crops?

- S-East USA – associated with ring nematodes
- These nematodes can affect a wide range of host plants – including bananas
- They are ectoparasites
- Population counts 2,900/Litre soil
- Many other nematode species on blueberries are known to affect woody hosts
e.g. root lesion nematodes



Ring nematode



Potential Bacterial, Fungal & Oomycete causes of Replant disease

- *Ralstonia* – bacterial wilt
- *Rhizoctonia* – rots of root cortex & collar
- *Cylindrocarpon* (*Ilyionectria*) – root & collar rot
- *Phytophthora* – root & collar rot
- *Pythium* – feeder root rot

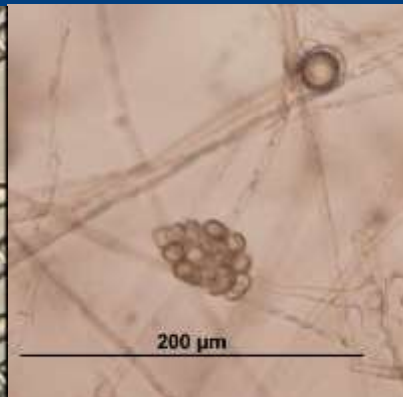
Phytophthora



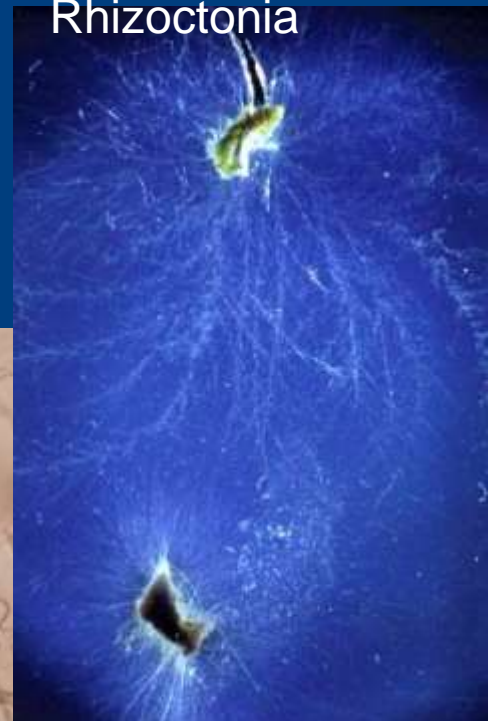
Ilyionectria



Pythium



Rhizoctonia



Replant disease controls

- Fumigation of soil gives some short-term benefits but high pathogen populations return
- Biofumigation – cover crop or as mustard meal (*Brassica juncea* + *Sinapis alba*)
- Composts for general disease suppression
- Microbial biocontrols – bacteria such as *Pseudomonas* spp. following soil solarisation
- Microbial biocontrols – Fungi that feed on nematodes – *Arthrobotrys*, *Dactylella*, *Isaria*

General management options

- Avoid over-watering – use less more often
- Preventative measures - crop & farm hygiene & biosecurity: e.g. over-boots for all visitors
- No registered chemicals – but some could be developed
- Microbial biocontrols: Products containing beneficial bacteria & fungi
- Plant defence activators :Silicates, organic acids & products containing plant hormones

Summary

- Have re-plant disease problems diagnosed correctly – at a diagnostic laboratory
- Consider need for a research project
- Use a range of management options – starting with preventative actions - crop & farm hygiene
- Be aware of new developments from R&D (go to group meetings & read industry magazines)

