



Primary  
Industries

# Parsley & Leafy Brassica disease management

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# Common parsley diseases

- Bacterial leaf spot
- Septoria (fungal) leaf spot
- Mosaic virus
- Botrytis Blight (grey mould)
- Seedling root rot – *Pythium* spp.
- Root knot nematodes
- Summer root rot – Cause ????
- Disorder – Leaf and Shoot blight (Reverse osmosis)

# Bacterial leaf spot



No black dots in leaf lesions

- *Pseudomonas syringae*
- Use good seed
- Favoured by wet weather
- Avoid too much water (stop irrigation early in cool weather)
- Avoid working in wet crops
- Copper can reduce spread
- Plough in old crops



# Septoria leaf spot



# Mosaic virus



- Control aphids
- Manage weeds



# Parsley summer root rot

A disease complex  
of different fungi & bacteria





# Pythium root rot





# Pythium root rot

Also occurs in hydroponic & soilless systems. There are 2 key pathogens:  
*P. sulcatum* and *P. mastophorum*





# Undetermined root rots





# Managing parsley root rots

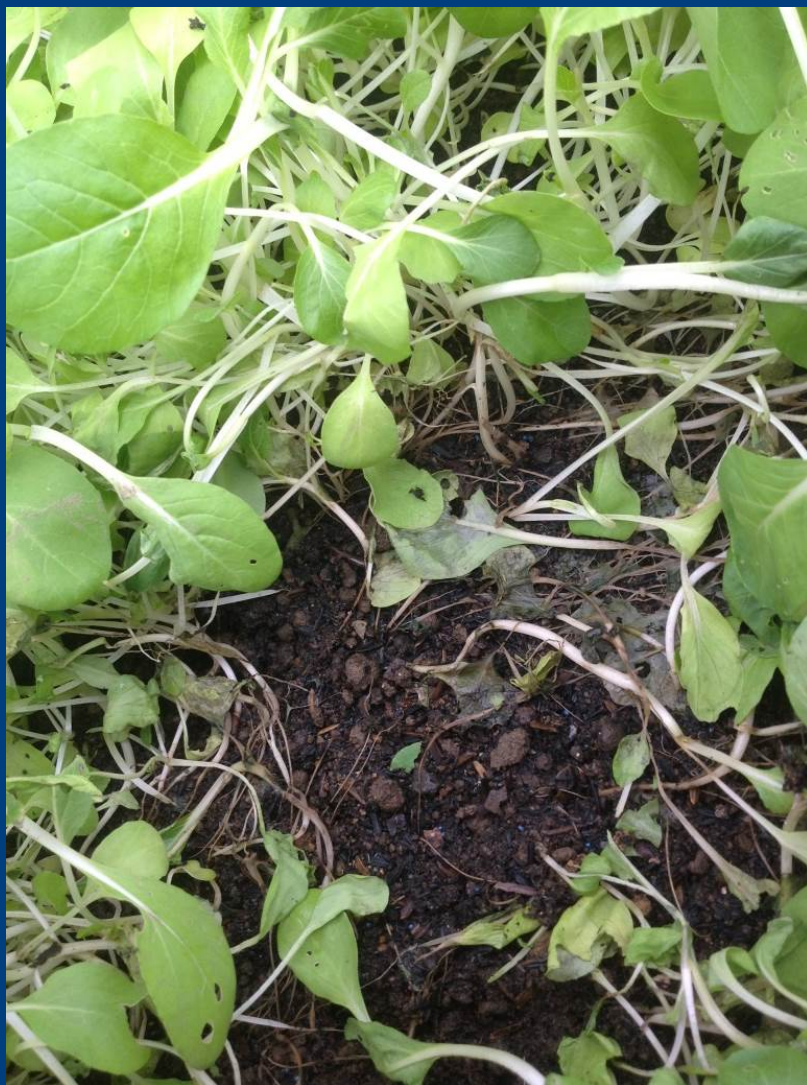
- No chemical controls are registered – permits only
- Use quality seed that has been stored in a cool dry place
- Ensure beds are prepared so that soil drains well – high beds & good structure
- Apply quality composted organic matter
- Avoid excess herbicide use
- Use biological controls (*Bacillus* & *Pseudomonas* spp bacteria; & *Trichoderma* spp. fungi) to stimulate plant growth & suppress disease
- Practice farm & crop hygiene



# 9 Key diseases of Leafy Brassicas

- Seedling damping off and root rots
- Bacterial soft rot
- Bacterial leaf spots
- Downy mildew
- Alternaria leaf spot
- White leaf spot
- White blister
- Club root
- Turnip mosaic virus

# Seedling damping off – Root rot



- Use quality seed that has been stored in a cool dry place
- Do not use too much nitrogen fertiliser
- Do not over-irrigate
- Apply registered chemicals as directed on the label
- Biological controls help



# Bacterial soft rot



- Avoid waterlogged soils – improve drainage
- Control insects that wound plant roots and stems – caterpillars & flies
- Do not use excess nitrogen fertiliser

# Bacterial leaf spots





# Downy mildew





# Alternaria leaf spot





# White leaf spot



# White blister



- Apply fungicides as directed on labels
- Rotate chemicals
- Avoid excess water on leaves – do not irrigate late in the afternoon



# Managing leaf diseases

- Use quality seed – some pathogens can be seed-borne
- Avoid wet leaves – avoid late afternoon irrigation
- Reduce plant density – allow more air to flow across leaves
- Do not use too much nitrogen fertiliser
- Control insect pests of leaves – aphids, thrips etc.
- Use registered fungicides according to label directions

# Club root



- Lime soil to pH7
- Provide Calcium & Boron supplements
- Drench with fungicide (Shirlan®) at sowing
- Rotate crops – spring onions





# Turnip mosaic virus



- Control aphids
- Control brassica & mustard weeds

# Conclusions

- Summer root rot of parsley is a complex disease with several possible causes –fungi and bacteria
- Please provide samples of parsley with suspected summer root rot
- Industry needs to review chemical options for parsley diseases – there are no fungicides registered!
- See disease chemical tables handout
- Improve crop and farm hygiene & biosecurity



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**Thank You**



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