

CHICKPEA DISEASE

FACT SHEET

GRDC
Grains
Research &
Development
Corporation

SEPTEMBER 2008

Ascochyta blight lesions usually begin as a pale-green discolouration on leaves and stems.

Ascochyta blight detection in chickpeas

Ascochyta blight, caused by the fungus *Phoma rabiei* (formerly *Ascochyta rabiei*), was identified for the first time in central Queensland in spring 2008. Now that a disease incursion has occurred, growers in this region need to prioritise the control and management of Ascochyta in their chickpea crops.

While the hot dry climate of central Queensland is less conducive to ascochyta blight than southern areas, the region is not immune. Cool, wet winter conditions favour the pathogen. If Ascochyta blight becomes endemic in central Queensland the industry will face considerable managerial and financial costs.

Ascochyta blight is managed through crop rotation, hygiene, seed treatment, prophylactic fungicide application and planting varieties with improved resistance. The current chickpea varieties grown in central Queensland are very susceptible to Ascochyta blight.

Initial crop infection is due to the introduction of either infected planting seed or from movement of infected trash by wind, machinery or animals. Subsequent in-crop infection occurs when inoculum is moved higher in the canopy or to surrounding plants by wind, rain splash during wet weather or by transfer on skin, clothing and mud on vehicles during crop inspections. There are no other known hosts of *Phoma rabiei* in Australia.

Description:

Early infection in seedlings causes wilting of the upper foliage and development of small water-soaked spots.

Patches of wilted, pruned, and dying plants develop within the crop; these patches appear from a distance as premature haying-off.

KEY POINTS

- Monitor crops regularly and thoroughly;
- Ensure excellent hygiene when moving between crops to avoid disease transmission;
- Have all suspect samples tested immediately;
- Treat outbreaks immediately with fungicides and repeat applications as prescribed; and
- Seek advice from your agronomist, local QDPI&F office or from Pulse Australia (see over page).

Identification:

- Lesions usually begin as a pale-green discolouration on leaves and stems.
- On leaves, the round lesions have dark-brown margins and pale-grey sunken centres.
- On stems the lesions are oval-shaped, and brown-black in colour.
- Near the centre of the lesions, fruiting bodies called pycnidia develop (appearing as black specks), often in concentric rings.
- These fruiting bodies produce spores, which spread by rain splash to infect other plants.
- Lesions often girdle the stems of the plant, causing them to weaken and subsequently break off.
- Circular lesions also develop on pods; these pods may produce infected seed.

Crop Inspection:

When inspecting crops, look for signs of wilting in upper foliage and small areas of dead or dying plants.

Check in a range of locations across the field following a 'V' or 'W' pattern.

Spend at least 1 to 2 hours inspecting each crop for Ascochyta blight.

Ensure good hygiene when moving between areas of crop within and between paddocks.

If Ascochyta is suspected:

- Any suspected samples should be placed into a plastic bag, sealed, and kept cool.
- Bring samples directly into local QDPI&F offices at either Emerald or Biloela for further identification.
- Unnecessary movement within a suspected Ascochyta-infected crop should be avoided until the sample has been fully assessed.
- Most importantly, do not visit other chickpea crops until mud and dirt has been washed from vehicles, boots and clothing.



Hygiene:

- Farmers and advisers should take precautions to prevent the spread of *Ascochyta* on clothing, footwear and vehicles.
- The recommended protocol is for clothing to be washed, changed or disinfected before entering other chickpea paddocks.
- Boots must be washed in a mixture of 10 per cent bleach and 90 per cent water solution or methylated spirits upon leaving an infected chickpea crop.
- Clothing must be machine-washed in hot water prior to entering another chickpea crop.
- Extra care should be taken to remove soil and plant material from boots and vehicles.
- Hands and arms should be washed in warm soapy water or a 10 per cent solution of a disinfectant such as Hibitane®.
- The use of heavy-duty plastic bags to cover boots and legs is a common practice when checking crops, which are then removed before entering the next crop.
- Farmcleanse® can be used to clean equipment.



Management:

Disease management strategies should be determined on a case-by-case basis and may consist of the following components.

- Spray the entire crop with a registered fungicide (chlorothalonil or mancozeb).
- If practical, spray the obviously affected areas last to reduce the movement of inoculum (spores and infected plant parts) within the crop.
- Apply a second spray 10 to 14 days after the first application.
- Continue to monitor the infection levels and spray on an as needs basis immediately before expected rain events.
- Highly infected patches, if limited in area, may need to be sprayed out with a mixture of glyphosate and metsulfuron-methyl.
- After harvest of infected crops, the entire paddock should be ploughed to incorporate crop residue, to prevent further spread and to hasten residue decay.
- DO NOT keep planting seed from an infected crop.
- DO NOT grow chickpeas in an infected paddock for a minimum of three years.

Seek advice and consult the *Chickpea Disease Management Strategy – Northern Region 2008* found on the Pulse Australia website - www.pulseaus.com.au.

Patches of wilted, pruned, and dying plants can be the first indication of *Ascochyta* blight in crops that have not been inspected regularly. These patches appear from a distance as premature haying-off.

Useful resources

- **Symptoms and Identification of Ascochyta Blight in Chickpea (Northern Pulse Bulletin No.3)** www.pulseaus.com.au
- **Protocol for managing an outbreak of chickpea Ascochyta blight in central Queensland** www.dpi.qld.gov.au
- **Chickpea Disease Management Strategy – Northern Region 2008** www.pulseaus.com.au
- **Chickpea Disorders: the Ute Guide – Ground Cover Direct** Free phone 1800 11 00 44
- **DPI&F – Emerald, Anne Shepherd** 0407 730 476 anne.shepherd@dpi.qld.gov.au
- **DPI&F – Biloela, Col Douglas** 0439 875 799 col.douglas@dpi.qld.gov.au
- **Dr Mal Ryley – Principal Plant Pathologist DPI&F** 07 4688 1316; 0427 406017 malcolm.ryley@dpi.qld.gov.au
- **Gordon Cumming – Pulse Australia** 0408 923 474 pulse.gordon@bigpond.com
- **Jayne Gentry – Pulse Development Officer DPI&F** 0428 459 138 jayne.gentry@dpi.qld.gov.au

DISCLAIMER

Any recommendations, suggestions or opinions contained in this publication do not necessarily represent the policy or views of the Grains Research and Development Corporation. No person should act on the basis of the contents of this publication without first obtaining specific, independent professional advice. The Corporation and contributors to this Fact Sheet may identify products by proprietary or trade names to

help readers identify particular types of products. We do not endorse or recommend the products of any manufacturer referred to. Other products may perform as well as or better than those specifically referred to. The GRDC will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in this publication.