Ascochyta blight detection in chickpea
- A guide to Identification and Management -

Ascochyta blight, caused by the fungus Phoma rabiei (formerly Ascochyta rabiei) is a serious disease of chickpeas. In the chickpea growing regions where Ascochyta blight is present, the disease is managed through crop rotation, hygiene, seed treatment, prophylactic fungicide application and planting varieties with improved resistance.

All growers and advisors need to be regularly inspecting their crops from emergence through flowering right up to plant maturity. Especially 10 to 14 days after rain events as this is when new infections from the rain will be clearly evident.

Initial crop infection is due to the introduction of either infected planting seed or from movement of infected trash by wind, machinery or animals. Spores of the fungus can survive for a short time on skin, clothing as well as machinery. Subsequent in-crop infection occurs when inoculum is moved higher in the canopy or to surrounding plants by wind or rain splash during wet weather. There are no other known hosts of Phoma rabiei in Australia.

**Description and Identification:** *(refer to Northern Pulse Bulletin PA 2008 #23 for detailed images)*

- Early infection in seedlings causes wilting of the upper foliage, and development of small water-soaked spots commonly on the leaves
- Patches of wilted, pruned, and dying plants develop within the crop; these patches appear from a distance as premature haying off.
- 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, while 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; such 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 hour inspecting each crop for Ascochyta blight.
- Ensure good hygiene when moving between crops and farms.

**If Ascochyta is suspected:**

- Any suspected samples should be placed into a plastic bag, sealed, and kept cool.
- Bring samples directly into local NSW DPI or Queensland DPI&F offices 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 advisors 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 when moving between chickpea paddocks.
- Boots should be washed in a mixture of 10% bleach and 90% water solution or methylated spirits upon leaving an infected chickpea crop.
- Clothing must be machine-washed in hot water prior before 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 suitable disinfectant.
- The use of heavy-duty plastic bags to cover boots and legs is a common practice when checking crops and which are then removed before entering the next crop.
- Farmcleanse® can be used to clean equipment.

Management: *(refer to Chickpea Disease Management Strategy – Northern Region)*
Disease Management strategies will be determined on a case by case basis and may consist of the following components.
- Spraying 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) by machinery within the crop.
- Continue to monitor the infection levels and spray on a needs basis immediately before expected rain events.
- Highly infected patches may need to be sprayed out with a mixture of glyphosate and metsulfuron. Then be ploughed soon after to incorporate the crop residue and prevent the further spread of inoculum.
- DO NOT keep planting seed from an infected crop.
- DO NOT grow chickpeas in an infected paddock for a minimum of 3 years.

Further Reading:
Chickpea Disease Management Strategy – Northern Region.
Protocol for managing an outbreak of chickpea Ascochyta blight in central Queensland.
Variety Management Practices (VMP’S)


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