



Ascochyta Blight of Field Peas

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Ascochyta blight, is a serious disease of field peas in Victoria and South Australia, however it can be managed through an integrated approach using stubble management, rate and time of sowing and chemical seed dressing.

Symptoms

Ascochyta blight causes a purplish-black discolouration and streaking of the lower stem (Figure 1). Severe stem infections may also cause stem or foot-rot which kills the plant.

Conspicuous spotting of the leaves and pods also occurs. The leaf spots may be either small, irregular, dark-brown and scattered over the leaf, or a few large, circular brown spots (Figure 2).

Spots on the pods may coalesce to form large, sunken, purplish-black areas.

Infected seeds may be discoloured and appear purplish-brown. Discolouration is usually more pronounced on those areas of the seed coat next to diseased areas on the surface of the pod. Lightly infected seed may appear healthy.



Figure 1. Typical lesion girdling the lower stem caused by *Ascochyta* infection.



Figure 2. Irregular shaped lesions or flecks on infected leaves. These are dark brown or black.

Economic importance

The disease is widespread in field pea crops in Victoria, but its severity varies greatly from crop to crop and between seasons. In wet seasons heavy losses occur, but in a dry season, crop losses are light. However, individual crop losses as high as 45% have been reported.

Disease cycle

Ascochyta blight is caused by the pathogens *Mycosphaerella pinodes*, *Phoma medicaginis* var. *pinodella* and *Ascochyta pisi*. Surveys have shown that *Mycosphaerella pinodes* predominates in Victoria.

The fungi that cause ascochyta blight may either be seedborne, soilborne, or survive in pea trash. The disease usually becomes established when spores of the fungi, produced on old pea stubble, are carried into the new crop by wind. Infection may occur at any stage of plant growth. During wet weather the disease may spread rapidly. Spores produced on infected plants are transferred onto adjacent healthy plants by wind and rainsplash.

The disease can also become established by sowing of infected seed. The proportion of diseased seedlings arising from any infected seed lot is influenced by seasonal conditions and soil factors. Moisture is essential for the development and spread of the disease. In a dry year, the planting of infected seed may not produce a diseased crop, but under wet conditions severe disease is likely.

The fungi are able to survive in soil for several years. Soilborne inoculum can cause severe root rot and lesions on the lower stem.

Management

Ascochyta blight is best controlled by destroying infected pea trash and self-sown plants. The severity of disease may also be reduced by crop rotation, by the use of disease-free seed and by the use of a fungicidal seed dressing.

Before sowing

Use clean seed

Seed should be tested to ensure it is clean. Only use seed if less than 5% is infected. Using old or damaged seed can reduce seedling vigour and increase susceptibility to infection.

Refer to the Agnote *Seed testing in pulse crops* for information on where to have seed tested.

Destroy old pea crop residues

Destroying pea stubble by grazing, burning and cultivation will reduce the disease risk by minimising the number of spores available to infect new crops. Self sown peas must also be controlled to prevent carry-over of the disease.

Avoid planting this season's crop near old field pea stubble

Previous pea crop residues can harbour the ascochyta blight pathogens. Aim for a separation of at least 500 m from last year's pea paddock.

Crop rotation

The blight fungi can survive in soil and on old pea trash, it is only safe to recrop an area with peas after all pea debris has decomposed. Peas should not be sown on land planted to peas the previous year nor on land adjacent to pea stubble. Where possible, peas should not be grown in the same paddock more than once in three years. If disease occurs, the rotation should be extended to one in four or five years.

At sowing

Sowing dates and seeding rates

Follow the recommended sowing rates and sowing dates for your district. Avoid early sowing at high seeding rates. This increases exposure of pea seedlings to the ascochyta pathogens and produces crops with a large canopy, increased lodging and high humidity and a greater risk of developing disease.

Chemical control

Fungicidal seed dressings registered for use on ascochyta blight of field peas, when applied correctly, will control this seed-borne disease and protect young plants from early infection. It is recommended that all pea seed be treated with a fungicide. Where seed is also to be inoculated the fungicide is best applied after inoculation. Fungicides and inoculant should never be mixed together.

Note: Fungicides used to control downy mildew have no activity against ascochyta blight fungi.

More information

- www.dpi.gov.au (click on Agriculture and Food, then Information notes then Crops and pastures, then select Legume crops)
- Aftab M, Freeman A and Bretag T, *Seed health testing in pulse crops*
- Wurst M, Hawthorne W, Nikandrow N, Ramsey M, (2002) *Winter Pulse Disorders: The Ute Guide*.
- *Victorian Winter Crop Summary*

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