



Powdery Mildew of Field Pea

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Powdery mildew can be a serious disease of peas in Victoria. It occurs sporadically when warm humid conditions favour its growth late in the season. It can be controlled through crop rotation, variety selection and strategic use of foliar fungicides.

Symptoms

Infected plants are covered with a white powdery film and severely infected foliage looks blue-white, while tissue below these infected areas may turn purple. All aerial parts of the plant may become infected, resulting in withering of the whole plant. Severe pod infection can cause a grey-brown discolouration of the seeds. These seeds have an objectionable flavour that lowers the quality of the grain. (See figures 1 to 3)



Figure 2. Powdery mildew on field pea pod



Figure 1. Powdery mildew on field pea leaf and stipule

Economic Importance

Severe infections can significantly reduce yield by 10 – 20%. Powdery mildew is most prevalent late in the season. Crops sown late are more likely to be affected by mildew than early sown crops.

Severe pod infection can lead to poor seed quality.



Figure 3. Powdery mildew resistant plant beside a badly infected plant.

Disease Cycle

The disease powdery mildew, caused by the pathogen *Erysiphe pisi*, overwinters on infected pea trash and produces spores, which are blown by wind into new crops. Under favourable conditions the disease may completely colonise a plant in 5-6 days. Once a few plants become infected, the disease rapidly spreads to adjacent areas.

Warm (15-25°C), humid (over 70% RH) conditions for 4-5 days late in the growing season during flowering and pod filling are favourable for disease development. Heavy rainfall is not favourable for the disease, as it will actually wash spores off plants. Night time dews are sufficient for the disease to develop.

The disease may also be seed-borne, but this source of infection is usually less important.

Management

Before sowing

Varietal selection

Growing a resistant variety is the most effective means of controlling powdery mildew. Mukta and Yarrum are the resistant varieties currently available.

Crop rotation

- Leave 4 years between field pea crops in the same paddock.
- Control volunteer field peas which can harbour disease.
- Avoid sowing field pea crops adjacent to last season's stubble.
- Incorporate or burn infected pea stubble soon after harvest where practicable.

After Sowing

Foliar Fungicides

- From flowering onwards monitor crop. Check across the whole paddock as disease severity may be variable. Early detection and early spraying is critical.
- The fungicides are protectants and will only protect the uninfected foliage they are sprayed onto. They have limited systemic activity and will not protect the growth occurring after time of spraying. Depending on disease pressure, foliage is protected for about 14 days.
- Good plant coverage with the fungicides is essential.
- Before using any chemicals check that they are currently registered for use.

More Information

- www.dpi.vic.gov.au (click on Information Notes, Crops and Pastures, then select Legume crops)
- Wurst M, Hawthorne W, Nikandrow N, Ramsey M, (2002) *Winter Pulse Disorders: The Ute Guide*.
- *Pulse Seed Treatments and Foliar Fungicides* (2006). Pulse Australia fact sheet by Wayne Hawthorne, Jenny Davidson and Kurt Lindbeck.
- *Victorian Winter Crop Summary*

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