Technical Update 12

Foliar Diseases in Peas

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Local climatic variations significantly influence foliar disease development in vining and combining peas. Fungicides can be effective under specific conditions, but their success depends on weather patterns favouring disease. Preventive or routine applications are not consistently cost-effective.

Downy mildew (*Peronospora viciae*)
Caused by a soil-borne fungus infects plants early in the season.
Affected plants often exhibit stunted growth, grey mycelial growth on leaf undersides, plant death, yellow blotches on pods, and poorly developed, blemished seeds. Varietal differences exist and are detailed in the Descriptive Lists.

Grey mould *(Botrytis cinerea)*
Initially targets wet flower petals, which either detach and lodge in leaf axils or adhere to developing pods after pod set. The fungus spreads from the rotting petals to green plant tissue, leading to stem and pod rot. Infected stems may die prematurely, while pods can abort or become diseased, with seeds and pods rotting entirely. Beyond reducing yield, the disease also blemishes produce, diminishing the quality of peas for processing or seed use.

Leaf and pod spot *(Didymella pinodes*, *Didymella pinodella* and *Ascochyta pisi)*
Severe infections typically develop after extended periods of wet weather and may appear on crops slightly later than Botrytis. The disease often manifests as purple-brown flecks on the leaves, followed by general browning or blackening of the stems before lesions form on the pods. As the fungi are seed-borne, planting infected seeds the following year can lead to seedling losses and subsequent leaf and pod spotting, resulting in more significant yield reductions.

Sclerotinia *(Sclerotinia sclerotiorum)*
Sclerotinia is favoured by warm, wet conditions. Infection occurs during flowering when sections of stems of individual or groups of plants, become bleached and wilt or collapse. The fungus produces a fluffy white mycelium over the infection site. Pods can also become infected. Black, elongated sclerotia develop within the stem or on pods and these can contaminate the harvested produce.

Powdery mildew *(Erysiphe pisi)*
This pathogen appears late in the season, forming a white powdery coating on plants. The disease is most prevalent following warm days combined with cool, humid nights. Late-maturing combining peas and late-sown vining peas are particularly vulnerable. Commercial varieties show varying levels of susceptibility, with details provided in the Descriptive Lists.

CONTROL

Once Botrytis and leaf and pod spot are established, they cannot be effectively controlled. Preventative sprays are more beneficial than curative treatments. The decision to apply fungicides should depend on weather conditions during flowering and pod set. For combining peas, yield improvements are only expected in seasons with unsettled weather during these critical growth periods, while no benefits are seen in dry seasons.

For vining peas, treatment responses are limited to conditions that favour Botrytis or Sclerotinia. Therefore, routine treatments for every drilling each year are not warranted.

COMBINING PEAS

The main foliar diseases affecting combining peas are downy mildew and Botrytis. Information on the resistance of different varieties to downy mildew can be found in the latest PGRO Descriptive List of Peas and the PGRO Descriptive List of Vining Peas.

Fungicidal seed treatments to prevent primary infection by downy mildew are no longer available. Prepper seed treatment (fludioxonil) has a label recommendation for control of *Ascochyta pisi* leaf and pod spot. To prevent Ascochyta infection in crops, seeds should be tested before planting and only used if infection levels are below 5%. Foliar fungicides are available to control leaf and pod spot.

When weather conditions are changeable at the first pod set stage (when the first pods appear on the lowest nodes), a fungicide spray should be applied to control Botrytis and Sclerotinia. If the weather is stable during this period, spraying is unnecessary.

For powdery mildew concerns, applying sulphur can help reduce the risk of infection.

VINING PEAS

Downy mildew is the main disease with incidences of powdery mildew increasing over recent years.

There are no longer any fungicidal seed treatments to prevent primary infection with downy mildew. Prepper seed treatment (fludioxonil) has a label recommendation for control of *Ascochyta pisi* leaf and pod spot. To prevent development of Ascochyta infection in crops, seed should be tested before planting and used only when levels of infection are 5% or below. Foliar applied fungicides are available in peas to control leaf and pod spot.

Botrytis is a common problem in wet weather. Again, the timing of the spray is important and if the outlook is for changeable weather at the first pod set stage, then a single spray should be applied at that time. Where there is a high risk of Sclerotinia, azoxystrobin or cyprodinil + fludioxonil will provide a satisfactory level of protection when the products are used at the recommended rates. As often there are several drillings of vining peas reaching the first pod set stage in sequence, the weather conditions should be reviewed regularly. There is seldom a need to treat all sowings of vining peas routinely.

If powdery mildew is a potential risk, applying sulphur will reduce infection.

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