



Technical Update 34

Pea Foot Rots and Associated Soil Tests

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FOOT ROT IN PEAS

Foot rot diseases in peas are caused by a complex of soil borne pathogens. The most common pathogens are *Fusarium solani*, *Didymella pinodella* and *Aphanomyces euteiches*. These pathogens can occur individually or in combination, and yield losses can be severe.

Development of foot rot diseases is encouraged by poor soil structure, compaction and water logging. All three pathogens produce long-lasting resting spores which survive in soils for more than ten years. Frequent legume cropping leads to the build-up of pathogen levels in soils. Work has shown that some degree of yield loss can occur even where relatively low levels of pathogens are present, and the above ground symptoms of the disease may not be obvious.

Soils tests are available at PGRO to test levels of the above-mentioned foot rot pathogens in soils. These levels are linked to risks of foot rot development when conditions are favourable for disease development. Test results allow growers to avoid planting peas in fields which show a high risk of foot rot pathogen presence.

TEST FOR PATHOGEN LEVELS

The test determines levels of *Fusarium solani*, *Didymella pinodella* and *Aphanomyces euteiches* in soil samples. A foot rot score is assigned to the individual pathogens and an overall risk score for the soil which indicates the risk level of disease development is given.

Pathogen	Low risk	Medium risk	High risk
<i>Aphanomyces euteiches</i>	0 - 1.8	1.81 - 3.2	3.21 - 5
<i>Didymella pinodella</i>	0 - 1	1.01 - 1.99	>2
<i>Fusarium solani</i>	0 - 1	1.01 - 1.99	>2

Soil samples should be collected at the latest in autumn before pea planting. Test results will also be valid for soils tested up to 2 years in advance of planting peas due to the long-lasting nature of the pathogen spores. Occasionally, soil samples may have to be taken from fields containing standing crops, e.g. sugar beet. In these cases, soil from the surface should be discarded as some residual herbicides can affect the result. Test results will be provided 4 weeks after receiving soils. Details on how to take representative soil samples can be found in Technical Update 42 – 'Guide when Sampling Soil for Microbe Analysis'.

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