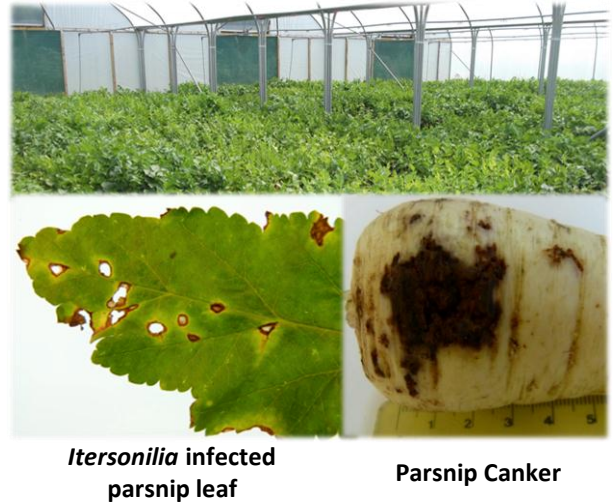


Screening parsnip lines for resistance to canker

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Background

- Parsnips are a speciality crop in the UK, covering an area of 3100ha with a value of £64M annually.
- A major constraint to production is crop losses associated with root canker diseases caused by fungal pathogens such as *Itersonilia* and *Mycocentrospora* spp.
- Some resistance to parsnip canker exists but is difficult to exploit this using traditional breeding methods.
- This project aims to develop genetic marker technologies to identify and exploit these sources of resistance.
- Rapid resistance screening methods and a better understanding of canker pathogens is also be investigated.



Itersonilia pastinacae

- *I. pastinacae* is a seed borne pathogen that produces ballistospores and chlamydospores that result in both foliar and root symptoms.
- Parsnip seedling and root tests were developed which have identified a range of resistance to *Itersonilia* in different breeding lines produced by Elsoms .
- After screening of further lines, genetic markers will be developed to facilitate the introgression of resistance into new parsnip cultivars.

Future Work

- Parsnip lines will be screened for resistance to other canker pathogens such as *Mycocentrospora*.
- Whole Genome Sequencing will be carried out on *Itersonilia* isolates as a resource for future work and understanding of this pathogen, including the development of a DNA-based diagnostic test.

