Vegetable Genetic Improvement Network (VeGIN)

Identifying resistance to *Fusarium* basal rot in onion

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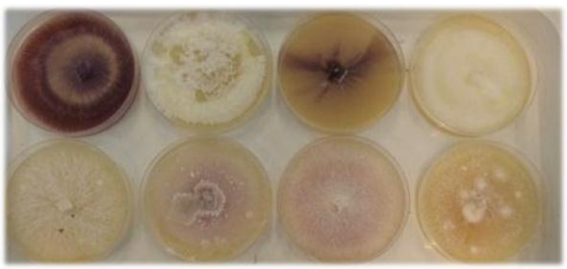
Background

- *Fusarium* basal rot is a global problem for onion growers and is caused by the soilborne fungus *Fusarium oxysporum.*
- The pathogen infects the roots and basal plate causing a bulb rot and is favoured by warm temperatures.
- Currently there is limited chemical control and little or no resistance in commercial onion cultivars.

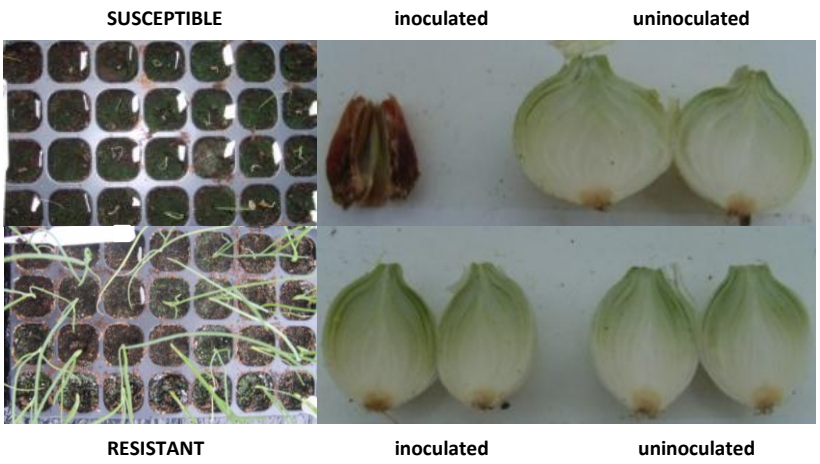
Symptoms of *Fusarium oxysporum* infection in onion

Screening for resistance to basal rot

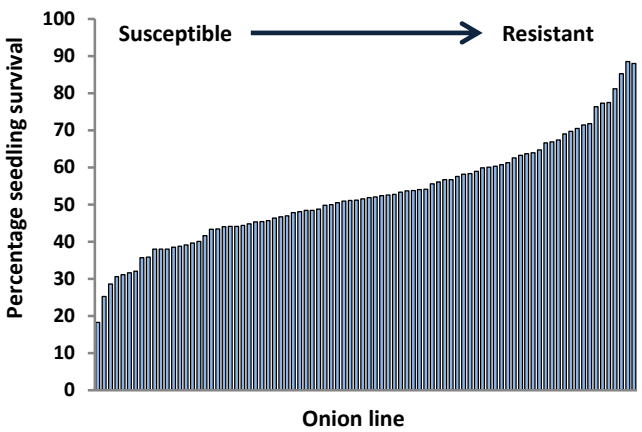
- A rapid seedling assay was developed to screen onion lines for basal rot resistance.
- High level of resistance was identified within an onion diversity set using the seedling assay and confirmed in tests on mature bulbs.
- A new project aimed at isolating the genes involved in this resistance and initiating a breeding programme has just been funded (BBSRC HAPI).



Different *Fusarium oxysporum* isolates in culture



Results of screening tests in onion seedlings (left) and bulbs (right) for susceptible (top) and resistant (bottom) lines



Seedling survival in different onion lines after inoculation with *F. oxysporum.*

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