BIOLOGICAL SEED TREATMENTS FOR ONION NECK ROT

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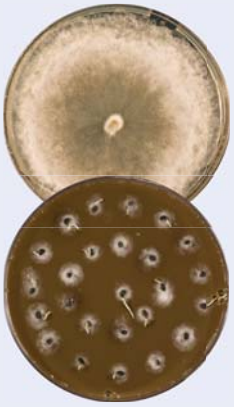
Background

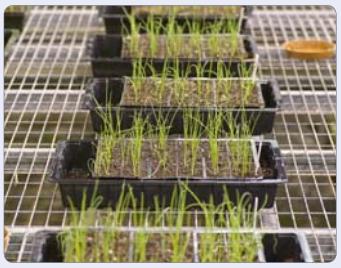
- Neck rot causes significant losses in stored onions with infection levels as high as 48% reported.
- It is caused by several species of *Botrytis*: *B. aclada, B. allii and B. byssoidea*.
- It can be seed-borne, so seed treatment with fungicides has been important for its control.
- There is currently a lack of approved seed treatments.
- This work aims to identify biological control agents (BCAs) with commercial potential as seed treatments for control of onion neck rot.

Evaluation

- A seed inoculation method has been developed which mimics natural infection: both external and internal inoculum.
- Infected seed was treated with a range of commercial and experimental BCAs.
- Seed tests do not give a good indication of the efficacy of BCAs, so transmission studies have been the main focus.



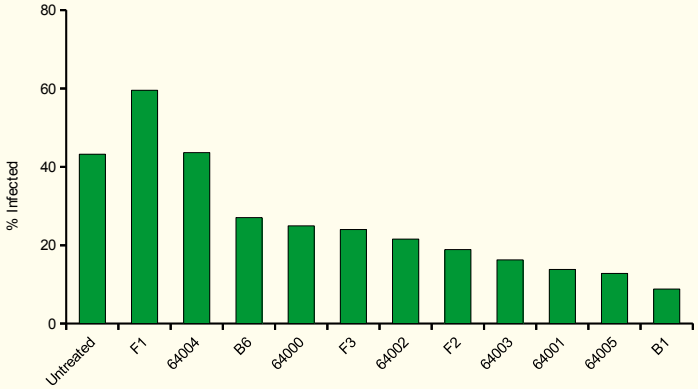
Transmission tests



Treated seeds are sown in module cells in the glasshouse.

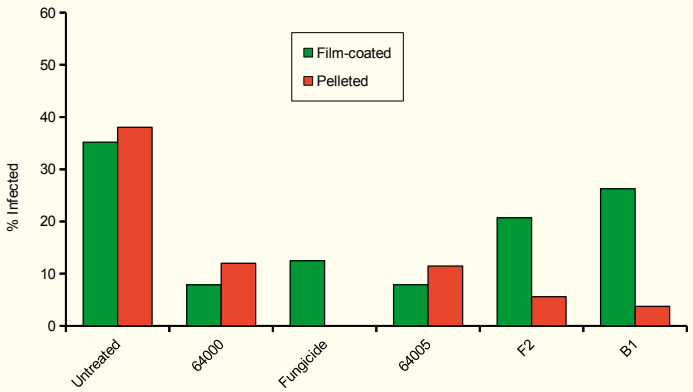
Leaves are harvested and checked for typical *B. aclada.*

Laboratory treatment



Laboratory scale treatments were used for initial evaluation of BCAs in transmission tests.

Commercial treatment



Commercial scale treatment with selected BCAs have given promising results in transmission tests.

Prospects

- Several promising treatments have been identified by transmission tests on both laboratory treated and commercially treated infected seed.
- The first field trials have been conducted in 2013, and harvested bulbs will be assessed in early 2014.
- The project is also evaluating the same BCA treatments for the control of *Itersonilia pastinaceae* in parsnip.

This work is part of a collaborative project involving Elsoms Seeds, BASF, Vegetable Consultancy Services (UK), The University of Warwick and Plant Health Solutions and is co-funded by the Technology Strategy Board, the UK's innovation agency.