BACTERIAL BLOTCH OF DELPHINIUMS: DETECTION IN AND TRANSMISSION BY SEED

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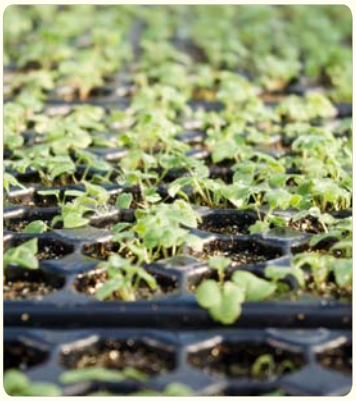
Background

- Delphiniums are a widely-grown herbaceous perennial, valued for their tall spikes of attractive flowers.
- Plants are usually raised from seed sown in multi-cell module trays in the glasshouse.
- Bacterial blotch of delphinium is a frequent problem in commercial nursery production.
- It is caused by *Pseudomonas syringae* pv. *delphinii* (*Psd*).
- As many pathovars of *P. syringae* are seed-borne, we investigated if this might also be the case for bacterial blotch of delphiniums.



Delphiniums are usually raised from seed sown in module trays.

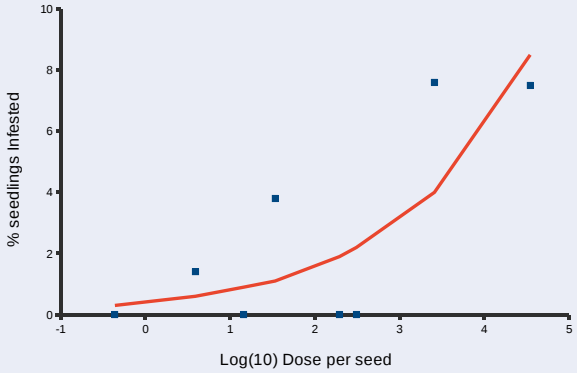
Seed testing

- A seed test method was devised and validated using spiked seed samples.
- Seventeen commercial seed lots were obtained from different companies.
- Tests were done on up to 3,000 seeds as sub-samples of 250 to 1,000 seeds.
- Seeds were soaked overnight, then crushed, diluted and plated on selective media.
- ID was confirmed by sub-culturing and pathogenicity tests.
- *Psd* was detected in 24% (4/17) of the seed lots tested:
  - infestation levels in positive lots: 0.04 to 0.32%;
  - infestation levels in negative lots: ≤ 0.2%.

Transmission tests

- Glasshouse experiments examined seed-to-seedling transmission.
- Seed was inoculated with a range of doses.
- Leaf samples were collected 35 d after sowing and tested for *Psd*.

First symptoms on cotyledon of seedling growing from an infested seed lot.



Discussion

- *Pseudomonas syringae* pv. *delphinii* can be detected and may be present on commercial delphinium seed and can be seed transmitted.
- The use of clean seed is likely to be an important tool in the management of bacterial blotch.
- Based on the dose-response data and limited spread data, testing a single sample of 1,000 seeds may provide a reasonable compromise between the cost of testing and scale of potential losses.

PLANT HEALTH SOLUTIONS

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