Performance of fungicide programmes based on 'Revus', 'Shirlan' and 'Dithane NT' in controlling potato blight in a Northern Ireland field trial, 2012

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Introduced in the 1960s, mancozeb was one of the most popular fungicides for late blight control in Northern Ireland for many years, but its use declined after fluazinam was approved in 1994. Trials in Belfast in the 1990s found season-long application of fluazinam to be more effective in terms of foliar and particularly tuber blight control than programmes based on mancozeb. However, no comparisons involving mancozeb have been made since 1998. For the past 15 years, the standard programmes used in trials in Belfast have started with 2 or 3 applications of a systemic or translaminar (metalaxyl-M or mandipropamid) mixed with a protectant, followed by fluazinam. However, reports from The Netherlands suggesting a decline in the performance of fluazinam prompted re-evaluation of mancozeb in a programme starting with mandipropamid+fluazinam.

Field trial 2012

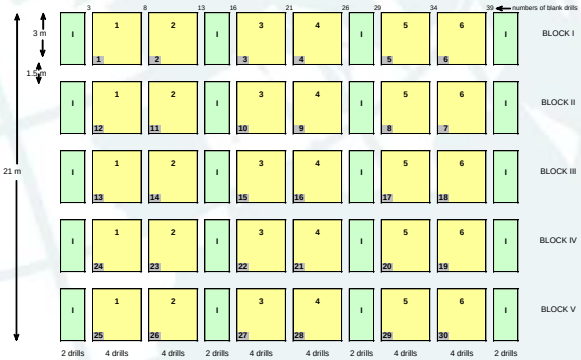
- Fully randomised block with 5 replicates
- Plots (yellow in diagram) 4 drills x 10 tubers
- Planted 21 May
- Fungicides applied 26 June - 30 August , 7-day intervals
- Unsprayed, infector drills (green) inoculated 2 July with 2011 isolates including 13_A2 and 8_A1
- Foliage blight assessed twice weekly
- Trial desiccated 6 and 13 September
- Harvested 9 October
- Yield and soft/blight assessed 16-17 October, 13-21 November 2012, 28-30 January 2013

Programmes reported here:

- mandipropamid + fluazinam (Revus + Shirlan, 150 + 100 g a.i./ha) x 2; fluazinam (Shirlan, 200 g a.i./ha) x 8
- mandipropamid + fluazinam (Revus + Shirlan, 150 + 100 g a.i./ha) x 2; mancozeb (Dithane NT, 1500 g a.i./ha) x 8

Growing conditions

Summer 2012 was cool and wet with little sunshine; growth was poor and blackleg was a problem.

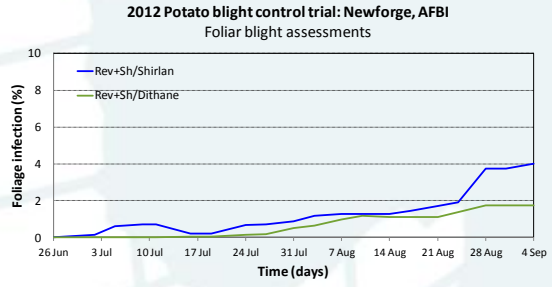


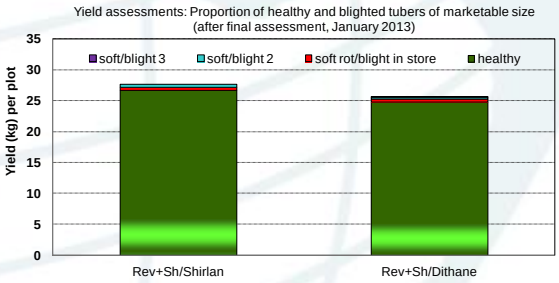
Foliar blight

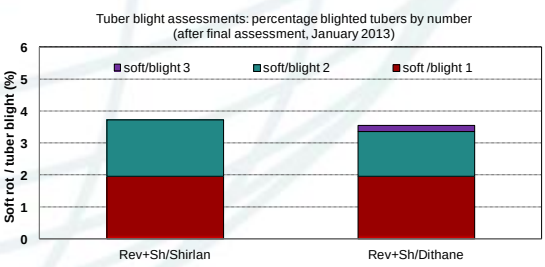
After inoculation, blight developed rapidly in the infector drills and they were dead by early August (above).

Both fungicide programmes gave good control of foliar blight.

At the final assessment, the mancozeb programme had significantly less infection (after angular transformation).







Yield and tuber blight

There were no significant differences between programmes in terms of yields, which were the poorest of recent years, nor in terms of the percentage rotted tubers in store. Very extensive soft rotting made it impossible to determine how much rotting was associated with blight.

Conclusions

The performance of the programme including Dithane NT was encouraging as it was comparable to or better than the standard. This is the first comparison involving mancozeb since the appearance of new genotypes including 13_A2 in the Northern Ireland population. It would be worthwhile to repeat the trial in a year with more normal tuber blight development.

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