Pathotype diversity and distribution of *Pyrenophora teres* f. *teres* in Australia.

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Net Form Net Blotch in Australia

Pyrenophora teres f. *teres* is the causal agent of the foliar disease net form of net blotch (NFNB) and is a serious pathogen in all barley growing regions of Australia (see map).
It is currently estimated to cause yield losses of $19million annually and has the potential to cost the industry $117million if no control measures are practiced (Murray and Brennan 2009).

The most recent national survey was conducted in 1999. Since then varieties have changed and new virulences have occurred.
In 2010, forty-nine isolates were pathotyped on a differential set containing 31 lines, 23 of which were used in the 1999 survey with the addition of 8 recently released cultivars.

What was found

Analysis was conducted with HaGiS: Spreadsheet for Automatic Habgood-Gilmour Calculation V.3.1 using a selection of 13 lines which gave clear differentiation. Disease reactions and corresponding rating shown in photo.

Pathotype numbers

- 25 pathotypes identified
- Seven pathotypes with more than one isolate

Dominant virulences

- North growing region most common virulences: Gilbert, Kombar, Patty, Skiff and Tallon
- South growing region most common virulence: Kombar
- West growing region most common virulence: Prior

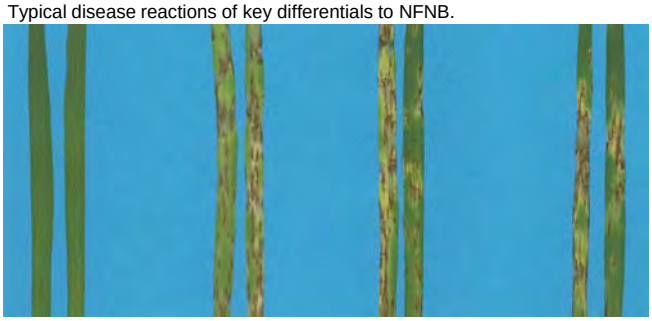
See graph 1.

Changes over time

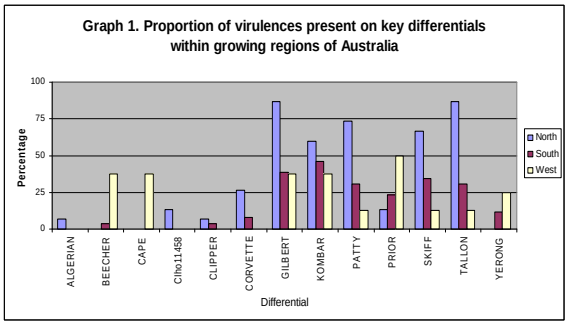
- Data from 1999 and 2010 was analysed to identify changes in the frequency of virulences within the isolates sampled across Australia. See graph 2.

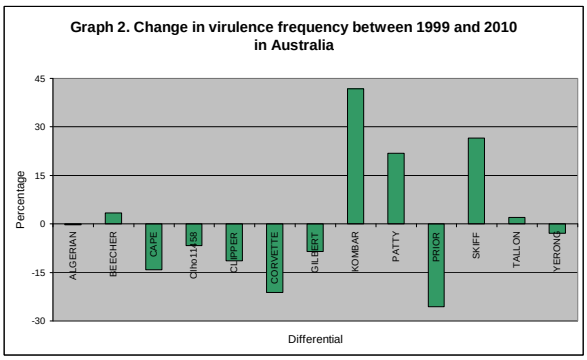
- Increase in frequency of Kombar, Patty and Skiff virulences
- Decrease in frequency of Corvette and Prior virulences

Typical disease reactions of key differentials to NFNB.

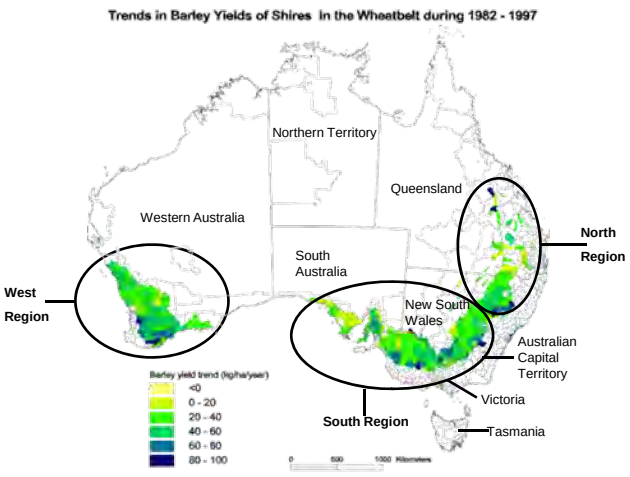


Skiff (2) Beecher (9) Prior (9) Kombar (9)





Barley growing regions of Australia.



More information

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References

Murray GM,Brennan JP (2009) *The current and potential costs from diseases of barley in Australia*, Grains Research and Development Corporation.
http://www.anra.gov.au/topics/land/pubs/landuse/landuse-productivity.html

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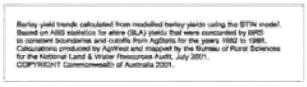

GRDC Grains Research & Development Corporation

Queensland Government