

FROST TOLERANCE OF TRITICALE VARIETIES

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Site: Streatham, Gnarwarre

BACKGROUND

Triticale is a popular feed grain cereal grown on most cropping enterprises in southern farming areas. It has proved to be a most versatile crop, with superior disease resistance over most other cereals and reasonable tolerance to wet soil conditions in the higher rainfall zones. Unfortunately, one of the criticisms of triticale and reasons why a greater area is not devoted to this crop on most farms is the poor tolerance to frost at flowering. While most cereals can suffer yield loss to frost at flowering, triticale is regarded as one of the most likely (compared to other cereals) to suffer serious yield loss in the event of frost at the critical time of flowering. This project is run in conjunction with triticale breeding and research at the University of New England in NSW and is primarily focused on identifying which triticale genotypes exhibit superior frost tolerance.

AIMS

1. To identify triticale genotypes which have superior frost tolerance at flowering.
2. To compare dry matter yield and growth characteristics of a range of triticale genotypes.
3. To compare grain yield and performance of a range new triticale genotypes in Southern Victoria and compare these to varieties currently grown.

RESULTS

Yield results of triticale grown on Southern Farming Systems (SFS) sites last season have highlighted a need for continued research into frost and its effects on cereals; triticale in particular.

Many triticale lines on the Streatham and Hamilton sites in particular were recognized as being moderately to severely effected by frost. Analysis of head and grain samples are still undergoing testing and further evaluation before firm results can be made available on individual frost effects on various lines in the research trial. Basic yield data (T/ha) from all SFS sites is now available

and is as follows. (Note : adjustment to yield data for Abacus on Gnarwarre site due to 60% + head loss - delayed harvest)

Site	Streatham	Gnarwarre	Hamilton	Average
	<i>t/ha</i>	<i>t/ha</i>	<i>t/ha</i>	<i>t/ha</i>
Genotype				
1. Maiden	3.16	3.05	1.66	2.62
2. AT43	3.01		2.60	2.80
3. Madonna	2.60	2.30	1.80	2.23
4. PT 513	2.10	2.74	1.30	2.05
5. PT 515	2.55	3.12	1.37	2.35
6. Abacus	2.93	3.03	2.46	2.70
7. Tahara	1.93	3.86	1.09	2.29
8. W 89	2.04	3.74	1.46	2.41
9. W 47	3.11	3.16	1.94	2.73
10. W 19	2.85	4.02	2.24	3.04
11. W 17	2.46	3.13	2.05	2.55
12. Currency	1.94	3.24	1.15	2.11
13. P 429	2.69	3.44	2.12	2.83
14. P 502	2.90	3.14	2.02	2.69
15. P 458	2.67	3.08	1.95	2.57
16. P 452	2.17	2.63	1.49	2.10
17. P 508	1.36	3.66	1.16	2.21
18. Muir	1.84	3.30	1.16	2.10
19. Treat	2.17	3.55	1.42	2.38
20. Credit	2.37	3.74	1.19	2.43
21. Samson	1.90	3.26	0.96	2.04
22. VC	1.36	3.42	1.82	2.20