

6. DEPARTMENT OF PRIMARY INDUSTRIES VARIETY TRIALS

6.1 CROP EVALUATION TRIALS IN SOUTHWEST VICTORIA

Abstract:

Crop evaluation field trials were conducted throughout Southwest Victoria to assess the suitability of current and potential varieties to the local environment. Most trials produced results useful to farmers, crop advisers and researchers. Particularly heavy rainfalls adversely affected some trials, especially in the Hamilton district. Several new varieties have been released and grain yield information is presented in this paper. Comprehensive data for the whole state and new variety descriptions are available in the Victorian Winter Crop Summary 2005 Edition.

Researchers:

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Acknowledgements:

Entries are from various breeding companies. DPI wishes to acknowledge the landholders who provided trial sites: John Hamilton, Andrew Morrison, Tony McMasters (through the SFS Streatham Committee), John Herrmann, Noel and Paul Mibus. Assistance with sowing and harvest was given by DPI staff Robert Morgan, Steve Holden, Bryce Eagleson, Sanchos de Silva and Chris Bluett.

Funding Organization:

GRDC and the Victorian Government

Location:

Sites were at Lake Bolac (aka Streatham), Inverleigh (aka Gnarwarre), Dunkeld and Tarrington (aka Hamilton)



Department of
Primary Industries

Growing Season Rainfall (April-Nov):

Streatham	406mm
Inverleigh	388mm
Hamilton	430mm

Background/Objectives:

Crop evaluation experiments are conducted by Department of Primary Industries every year with the aim of identifying high yielding varieties that meet specific grain quality requirements and are suitable for the regions long cool season conditions. Information from the experiments is used to select material for commercial release and provide current information to crop advisers and farmers.

Methodology:

Trials are arranged in a complete randomised block design with 3 replicates for each entry. All trials were sown on 1.7m raised beds except Canola at Tarrington and Inverleigh which was sown on the flat. Seed was sown and harvested with plot equipment. All grain yields are calculated for a 1.7m plot width.

Weed/Pest/Disease Control:

Grass and broadleaf weeds were controlled with registered chemicals. No fungicides or aphid controls were applied.

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6.1.1 DPI LONG SEASON BARLEY VARIETY TRIALS (VIC)

	Sowing Dates	Fertilizer	Rate	Harvest Dates
Streatham	27/05/2004	13-16-07	100 KG/HA	09/01/2005
Inverleigh	26/05/2004	D.A.P	100 KG/HA	17/12/2005
Hamilton	01/06/2004	D.A.P	100 KG/HA	10/01/2005

Results and Discussion:

Summary Discussion:

Gairdner is the reference variety for these trials. For a variety to be statistically better yielding than Gairdner it must have a value greater than 114 at Inverleigh and 121 at Streatham and Hamilton. This is only one year's result subsequently, results must be viewed along with earlier year's results when selecting varieties for the coming season. In 2004 season, Franklin produced significantly higher yields than Gairdner only at Inverleigh. The newly released malting variety, Quasar, out-yielded Gairdner.

Table of Results:

Name	Inverleigh	Hamilton	Streatham
Franklin	119	111	106
Gairdner	100	100	100
Quasar	*	*	128
Sherwood ⁸	130	114	185
Gairdner (t/ha)	2.46	2.41	2.80
CV%	7.0	11.5	11.2
LSD%	14	21	21
Site mean (t/ha)	2.85	2.53	3.18

Conclusions:

Despite suseptibility to scald, Gairdner is still a good choice of variety for barley growers who aim to produce a malting barley in high rainfall environments

Key Outcomes:

Quasar was released as a malting variety barley.

⁸ Note : Sherwood is for grain quality comparative purpose and is not available in Australia

6.1.2 DPI LONG SEASON WHEAT VARIETY TRIALS (VIC)

	Sowing Dates	Fertilizer	Rate	Harvest Dates
Streatham	27/05/2004	13-16-07	100 KG/HA	15/01/2005
Inverleigh	26/05/2004	D.A.P	100 KG/HA	17/12/2005
Hamilton	01/06/2004	D.A.P	100 KG/HA	12/01/2005

Results and Discussion:

Summary Discussion:

The wet year at Hamilton resulted in waterlogging which affected trials at the site. Kellalac is the reference variety. For a variety to be statistically better yielding than Kellalac it must have a value greater than 114 for Inveleigh and 117 for Streatham. This is only one year's result subsequently, results must be viewed along with earlier year's results when selecting varieties for the coming season. In 2004 season, Chara, Mackellar and Rudd produced higher yields than Kellalac at Inverleigh and Streatham. Screenings were adequate for most varieties.

Table of Results:

Name	Inverleigh	Hamilton	Streatham
Chara	115		117
Ega Gregory	84	too	115
EGA Wedgetail	108	variable	120
EGA Wylie	85	for	109
Kellalac	100	inclusion	100
Mackellar	149		150
PegasusII			
Rudd	147		143
Tennant	127		109
Torlesse			
Whistler	113		98
Wylah	126		111
Kellalac (t/ha)	1.96	2.06	3.39
CV%	7.0	16.9	7.8
LSD	14	35	17
Site Mean (t/ha)	2.32	2.55	4.31

Name	Inverleigh		Hamilton		Streatham	
	1000gw	% < 2.0mm	1000gw	% < 2.0mm	1000gw	% < 2.0mm
Chara	46.0	0.5	41.4	4.8	40.4	2.8
EGA Gregory	46.2	1.7				
EGA Wylie	43.0	1.8				
EGA Wedgetail	44.0	0.9	40.6	4.5	42.0	1.9
Kellalac	42.0	0.9	37.2	4.4	39.0	1.9
Mackellar	43.4	1.7	41.8	7.8	43.0	5.1
PegasusII			42.0	2.8		
Rudd	47.4	0.6	42.8	2.2	44.0	0.5
Tennant	53.4	1.3	49.4	5.0	52.2	5.8
Torlesse			40.4	27.7		
Whistler	40.6	1.5	39.4	7.4	38.8	3.4
Wylah	42.2	0.4	40.8	5.2	40.4	2.3

Note : PegasusII and Torlesse are New Zealand varieties that are not available in Australia.

Conclusions:

Chara and Mackellar are still suitable varieties for growing in high rainfall environments despite increased susceptibility to some diseases.

Key Outcomes:

Two new varieties were released; EGA Gregory and EGA Wylie.

6.1.3 DPI MID AND LONG SEASON TRITICALE VARIETY TRIALS (VIC)

	Sowing Dates	Fertilizer	Rate	Harvest Dates
Streatham	18/05/2004	13.16.0.7	100KG/HA	15/01/2005
Inverleigh	26/05/2004	D.A.P	100KG/HA	26/05/2004
Hamilton	12/05/2004	D.A.P	100KG/HA	12/01/2005

Results and Discussion:

Summary Discussion:

The wet year at Hamilton resulted in waterlogging which affected trials. No named variety yielded higher than Abacus at the Streatham long season trial. This result fits 5 year trends. No named variety yielded higher than Tahara at the mid season trials. Yukuri, Tickit and Treat yielded equally as well at Tahara at both mid season trials. Trial results over the last 5 years show that Kosciusko, Treat, Tickit and Tahara give similar yield in Southwest Victoria.

Table of Results:

Name	Hamilton	Streatham
Abacus		100
Breakwell	too variable	83
Jackie	for inclusion	82
Maiden		65
Abacus (t/ha)	2.99	4.06
CV%	22.0	6.7
LSD	34	9
Site mean (t/ha)	2.60	3.53

Name	Inverleigh	Streatham
Abacus	101	109
Credit	91	101
Kosciusko	91	92
Prime322	93	109
Yukuri	97	98
Tahara	100	100
Tickit	100	114
Treat	96	112
Tahara (t/ha)	2.79	3.58
CV%	2.3	8.8
LSD	4	16
Site mean (t/ha)	2.70	3.80

Conclusions:

Abacus, Tickit, Treat and Tahara are suitable grain producing triticale varieties for production in the high rainfall zone.

Key Outcomes:

A new variety free from PBR, Yukuri, was released.

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