

5.3.3 CANOLA VARIETY TRIALS (KEITH, BORDERTOWN, FRANCES, SA)

Abstract:

A wide range of canola varieties is available to farmers and variety choice should be made on herbicide tolerance type, maturity, oil content and particularly blackleg resistance rating. The blackleg resistance from *sylvestris* derived varieties must now be considered to be too dangerous to consider using these varieties. Do not use farmer retained seed of these varieties.

Researchers: Trent Potter, SARDI

Acknowledgements:

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Locations: Keith, Bordertown and Frances, South East South Australia

Growing Season Rainfall (April-Nov):

288 – 311 mm

Methodology:

- Trials were sown between 25 May and 4 June in the South East of SA (Table 1).
- Three replicates were used and plot size was 8 m by 8 rows at 15 cm row spacing.
- Seed was sown at 5 kg/ha with no seed treatments used.
- Fertiliser (140 kg/ha of 14:17:0:4:1.5) was applied at sowing while an additional 50 kg/ha N as Urea was applied about 6 weeks after sowing.
- All weeds were controlled by the appropriate herbicides with emergent insect control by Endosulfan.
- All trials were windrowed prior to harvest.

Conclusions:

The *sylvestris* based varieties should not now be sown due to the breakdown of this blackleg resistance throughout SA and also the fact that internal infection has been found throughout Victoria (S. Marcroft). A wide range of canola varieties is suited to all districts with several new varieties being released in 2005. Data are presented in Table 1 that can be used to help make variety choice.

Funding Organization: GRDC

Background/Objectives:

Trials were established to evaluate a range of canola varieties and breeders lines under a range of environments in the South East of SA. Varieties that were derived from *Brassica rapa* subspecies *sylvestris* were included to determine where the breakdown to this form of blackleg had occurred.

Results and Discussion:

Grain yields from 2004 and also the long term predicted yields from 1998 – 2004 are included in Table 1. Of the three sites, Keith suffered from a drier finish to the season than the other two sites, while Bordertown was affected to a lesser extent. Frances had no yield limiting factors, with high grain yields being obtained.

The yield loss suffered by Surpass 603CL indicates that the resistance to the *sylvestris* attacking strain of blackleg has broken down. This is shown by the data in Table 1 that indicates significant internal infection at all sites and plant death at Keith (this data was supplied by Dr Stephen Marcroft). Other sites in SA also showed high levels of plant death in Surpass 603CL and Surpass 501TT. It is recommended that farmers do not grow these varieties in future. Even though commercial seed will not be available in 2005 it is critical that farmers do not sow retained seed.

Summary Discussion:

Earlier maturing varieties in general performed best at Keith with later maturing varieties better suited to the higher rainfall of Frances (Table 1).

Key Outcomes:

The *sylvestris* based varieties should not now be sown due to the breakdown of this blackleg resistance. These trials are ongoing.

Table 1: Canola Yield Performance 2004 and Long Term (1998-2004) as a % of Ag-Spectrum and ATR-Beacon

VARIETY	SOUTH EAST			SOUTH EAST			
	2004			1998-2004			
	Keith	Bordertown	Frances	Keith	Bordertown	Frances	Struan
44C11	113	120	94	112	107	106	104
44C73	121	91	92	97	92	96	97
45C05	86	87	90	98	96	98	98
45C75	99	90	88	90	90	90	93
46C04	122	103	96	100	101	100	100
46C76	103	96	94	92	95	94	96
Ag-Comet	104	77	84	96	97	97	95
Ag-Emblem				97	101	99	97
Ag-Outback	117	101	97	102	101	102	101
Ag-Spectrum	100	100	100	100	100	100	100
AV-Sapphire	95	81	94	98	99	97	98
Hyola 61	118	112	99	100	98		
Kimberley	105	93	97	101	100	100	100
Lantern	103	91	89	96	96	97	97
MC201	66	66	83	79	80		
MC202	93	86	86	84	86		
Rainbow	114	104	92	94	98	95	98
Rivette	129	96	94	106	101	101	101
Rocket	77	67	97				
Skipton	115	111	98	100	102		
Surpass 603CL	37	76	96	93	96	96	94
Ag-Spectrum yield	973	1269	2594	1633	1813	1907	2699
ATR-Beacon	100	100	100	100	100		100
ATR-Grace	82	103	80	95	97		103
ATR-Hyden	90	85	102	99	93		104
ATR-Stubby	74	87	79	98	88		103
Bravo TT	97	106	100				
Tornado TT	97	113	96	100	100		
Tranby	79	84	81				
Trigold	103	114	80				
Trilogy	77	62	66				
ATR-Beacon yield	924	1046	2106	1781	1688		2098
Date sown	25-May	04-Jun	31-May				
Soil type	CL/lime	HCL	HCL				
A-O rain	288	308	311				
pH	7.3	7.8	7.2				
Stress factors	dl	dl					
# Polygenic variety	2, 10%	1, 7%	2, 0%				
# Sylvestris variety	5, 42%	2, 5%	2, 5%				

Site stress factors: de=moisture stress preflowering, dl=moisture stress post flowering,
Second figure is the percentage of plants that were dead (eg 3, 25%)

Data source: SAFCEP