

# Mid season triazine tolerant canola National Variety Trials (NVT) in New South Wales

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## Take Home Messages

- In 2007, the early-mid varieties <sup>ATR</sup>Cobbler and Tawriffic TT tended to most consistently produce the highest yields of triazine tolerant varieties grown in the mid maturity trials across most sites of the NSW regions.
- The variety with the highest and most consistent oil content was Tawriffic TT.
- The varieties <sup>ATR</sup>Cobbler, Tawriffic TT and CB<sup>TM</sup>Argyle are, on average, the highest yielding triazine tolerant canola varieties in NSW mid maturity NVT trials from 2000-2007. However, note that not all current varieties are listed.
- Variety choices need to be based on the variety's maturity, potential yield and oil content and blackleg resistance rating.

## Introduction

NVT is a national program of comparative crop variety testing with standardised trial management, data generation, collection and dissemination. The program is supported by the Australian Government and growers through the Grains Research and Development Corporation (GRDC) and is managed by the Australian Crop Accreditation System (ACAS) Limited. Further information can be found on the website: [www.nvtonline.com.au](http://www.nvtonline.com.au).

This report provides the yield and oil results for five sites in NSW in 2007 and the long-term yield results for 2000-2007 from the "main" mid maturity triazine tolerant canola variety trials, constituting part of the NVT.

## Methods

Information about methods used at each site can be viewed through the NVT online website [www.nvtonline.com.au](http://www.nvtonline.com.au).

The New South Wales NVT trials were conducted by Agrisearch Services Pty. Ltd. Using small plot equipment. Data was analysed using multi-environment trial (MET) analysis. The predictive ability of this method increases with the number of trials a variety has been in.

### **Bellata site:**

The trial was sown into a clay soil with good subsoil moisture on 16 May 2007. However, no rain fell at the site for the month of May. Fertilisers applied on that date were 120 kg/ha urea and 52.7 kg/ha Starter Z (N:P:K:S:Zn 10.5:19.2:0.2:2.2:2.5). The insecticide bifenthrin was applied at 0.10 L/ha and 2.0 L/ha atrazine was applied pre-emergent. Early growth and plant emergence was very good to excellent. The post-

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emergent herbicides 80 mL/ha haloxyfop-R 520 g/L (+ Uptake) and 300 mL/ha clopyralid were applied on 2 July. The trial was topdressed with 151.5 kg/ha sulfate of ammonia on 30 July. Aphids were controlled with 1 kg/ha pirimicarb on 8 September. The crop was desiccated with paraquat + diquat at 2 L/ha on 5 October and harvested on 16 October. Rainfall for 2007 was 415 mm, but with only 160 mm (April-September) growing season rainfall (171 mm April-October). Only 35 mm fell between August and the end of October.

### **Croppa Creek site:**

110 kg/ha urea was pre-drilled on 30 May. The site was sprayed 0.10 L/ha bifenthrin on the sowing date 11 May 2007. The trial was sown with 52.7 kg/ha Starter Z (N:P:K:S:Zn 10.5:19.2:0:2.2:2.5) and atrazine was applied at 2.0 L/ha. The post-emergent herbicides 80 mL/ha haloxyfop-R 520 g/L (+ Uptake) and 300 mL/ha clopyralid were applied on 19 July. The trial was topdressed with 152 kg/ha sulfate of ammonia on 30 July. The crop was desiccated with paraquat + diquat at 2.0 L/ha on 12 October. Harvest date is not provided. Rainfall for 2007 was 408 mm (144 mm in December), with only 162 mm (April-September) growing season rainfall (193 mm April-October). 67 mm fell between August and the end of October.

### **Mullaley site:**

120 kg/ha urea was pre-drilled on 30 April. The site was sprayed 0.10 L/ha bifenthrin on the sowing date 2 May 2007. The trial was sown with 42.7 kg/ha Starter Z (N:P:K:S:Zn 10.5:19.2:0:2.2:2.5) and atrazine was applied at 2.0 L/ha. The post-emergent herbicides 80 mL/ha haloxyfop-R 520 g/L (+ Uptake) and 300 mL/ha clopyralid were applied on 20 July. The trial was topdressed with 151.5 kg/ha sulphate of ammonia on 31 July. Aphids were controlled with 1 kg/ha pirimicarb on 10 September. The crop was desiccated with paraquat + diquat at 2 L/ha on 23 October and harvested on 31 October. Rainfall data for 2007 was not provided.

### **Wellington site:**

A knockdown of 1.5 L/ha glyphosate was applied on the sowing date 7 May 2007. The site was sprayed 0.10 L/ha bifenthrin. The trial was sown with 120 kg/ha Granulock 12 (N:P:K:S:Zn 11.9:17:0:5.5:0) and 1.5 L/ha trifluralin was applied. The post-emergent herbicides 80 mL/ha haloxyfop-R 520 g/L (+ Uptake) and 300 mL/ha clopyralid were applied on 22 June. The trial was harvested on 23 November. Rainfall for 2007 was 588 mm with only 223 mm (April-September) growing season rainfall (229 mm April-October) rainfall and 224 mm falling in November and December. Only 29 mm fell between August and the end of October.

### **Cowra site:**

A knockdown of 1.5 L/ha glyphosate was applied on the sowing date 8 May 2007. The site was sprayed 0.10 L/ha bifenthrin. The trial was sown with 120 kg/ha Granulock 12 (N:P:K:S:Zn 11.9:17:0:5.5:0) and 1.5 L/ha trifluralin was applied. 0.25 L/ha S-metalachlor was also applied on 8 May. The trial was harvested on 21 November. Rainfall for 2007 was 449 mm with only 245 mm growing season (April-October) rainfall and 85 mm falling in November and December. 78 mm fell between August and the end of October.

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### Harden site:

A knockdown of 1.50 L/ha glyphosate 540 g/L was applied on the sowing date of 9 May 2007. The site was sprayed 0.10 L/ha bifenthrin on the same day. The trial was sown with 115 kg/ha Granulock 12 (N:P:K:S:Zn 11.9:17:0:5.5:0) and trifluralin was applied at 1.50 L/ha. The herbicide 0.25 L/ha S-metolachlor 960g/L was also applied. The trial was harvested on 21 November. Rainfall for 2007 was 452 mm with only 237 mm growing season (April-October) rainfall and 83 mm falling in November and December. 83 mm fell between August and the end of October.

### Lockhart site:

A knockdown of 1.0 L/ha glyphosate 540 g/L was applied on 10 May, as was 1.5 L/ha trifluralin 480 g/L. Glyphosate was applied again at 1.0 L/ha on the sowing date of 22 May 2007. The site was sprayed with 0.10 L/ha bifenthrin on the same day. The trial was sown with 115 kg/ha Granulock 12 (N:P:K:S:Zn 11.9:17:0:5.5:0) and the herbicide 0.25 L/ha S-metolachlor 960g/L was also applied. The trial was topdressed with 150 kg/ha urea on 2 July. The trial was harvested on 16 November. Rainfall for 2007 was 317 mm with only 170 mm growing season (April-October) rainfall. Only 33 mm fell between August and the end of October.

## Results

**Table 1:**

Yield of canola varieties in the mid maturity triazine tolerant NVT trials in NSW in 2007, expressed as a percentage of <sup>ATR</sup>Summitt.

Variety	Maturity	North East				South East		South West
		Bellata	Croppa Creek	Mullaley	Wellington	Cowra	Harden	Lockhart
Summitt (t/ha)		0.90	1.55	1.73	0.77	1.48	1.62	1.06
		% <sup>ATR</sup> Summitt						
<sup>ATR</sup> Marlin	Mid-late	84	91	102	123	118	116	121
<sup>ATR</sup> Cobbler	Early-mid	127	113	101	162	135	115	125
<sup>ATR</sup> Summitt	Mid-late	100	100	100	100	100	100	100
Storm TT	Mid	*	*	*	*	101	96	98
Tawriffic TT	Mid	128	117	99	114	107	115	130
Rottnest TTC	Early-mid	113	91	94	114	126	114	117
Thunder TT	Mid-late	114	117	93	122	94	100	88
Flinders TTC	Mid-late	103	90	88	104	96	94	91
CB™ Argyle		119	101	84	125	109	113	127
<sup>ATR</sup> Barra	Mid-late	108	108	83	97	96	94	97
<sup>ATR</sup> Beacon	Early-mid	91	93	76	74	89	91	89
Bravo TT	Early-mid	128	97	74	121	95	92	108
<sup>ATR</sup> Banjo	Early	104	95	73	135	107	77	80
Monola™ 75 TT	Mid-late	100	96	72	147	105	95	87
Hurricane TT	Early-mid	76	88	71	110	*	*	*
Tornado TT	Mid	109	101	66	113	95	99	92
Site mean (t/ha)		0.93	1.51	1.45	0.90	1.50	1.6	1.08
CV (%)		10.89	7.63	13.6	14.75	15.02	4.5	5.27
LSD (%)		18	12	18	27	24	7	8

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\*Variety not entered at site.

In 2007, <sup>ATR</sup>Cobbler and Tawriffic TT tended to consistently produce the highest yields in the mid-maturity triazine tolerant trials across most NVT sites (Table 1). For the South East and South West regions, <sup>ATR</sup>Marlin, Rottnest TTC and CB<sup>TM</sup>Argyle also produced good yields in 2007 (in addition to <sup>ATR</sup>Cobbler and Tawriffic TT).

The variety with the highest and most consistent oil content was Tawriffic TT (Table 2). Tornado TT, <sup>ATR</sup>Marlin and <sup>ATR</sup>Barra also tended to produce above-average oil content.

**Table 2:**

Oil content (%) of canola varieties in the mid maturity triazine tolerant trials in NSW in 2007. No data was available for Wellington.

Variety	North East			South East		South West
	Bellata	Croppa Creek	Mullaley	Cowra	Harden	Lockhart
Tawriffic TT	40.4	42.3	39.1	38.9	40.6	39.3
<sup>ATR</sup> Marlin	37.6	41.3	38.2	38.3	40.0	38
Thunder TT	38.9	41.0	38.6	36.8	39.6	34.1
Storm TT	*	*	*	37.7	40.0	34.9
<sup>ATR</sup> Banjo	38.3	40.8	36.7	37.1	38.2	34.7
Tornado TT	39.7	40.4	37.3	38.2	40.7	37.1
<sup>ATR</sup> Barra	39.5	40.0	38.3	37.4	39.8	36.3
Flinders TTC	38.2	40.0	38	36.5	39.6	36.6
CB <sup>TM</sup> Argyle	38	40.0	37.6	37.1	38.7	37.1
Hurricane TT	39.1	39.8	37.8	*	*	*
<sup>ATR</sup> Cobbler	38.2	39.4	36.6	36.0	38.4	36
Rottnest TTC	37.5	38.6	37.2	36.0	37.4	34.8
<sup>ATR</sup> Summitt	36.5	38.4	37.7	35.9	38.9	35.4
Bravo TT	36.8	38.0	36.7	36.8	38.1	35.6
Monola <sup>TM</sup> 75 TT	36.3	38.0	36.4	35.6	37.8	35.5
<sup>ATR</sup> Beacon	36.2	37.4	36.4	36.0	37.5	34.8
Site mean (t/ha)	38.1	39.7	37.5	37.0	39.0	36.0

\* Variety not entered at site.

The varieties <sup>ATR</sup>Cobbler, Tawriffic TT and CB<sup>TM</sup>Argyle were, on estimated average, the highest yielding canola varieties in the mid maturity triazine tolerant trials in from 2000-2007 (Table 3). Thunder TT and <sup>ATR</sup>Marlin also produced above-average yields, as predicted by the MET data analysis.

Note that not all currently available varieties are listed in the table and that the prediction has better accuracy with an increased number of trials.

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**Table 3:**

Long-term predicted yield (t/ha) of canola varieties in mid maturity triazine tolerant trials from 2000 to 2007. Number of trials in brackets.

Variety	North East	North West	South East	South West
<sup>ATR</sup> Cobbler	1.32 (4)		1.75 (3)	
Tawriffic TT	1.30 (4)		1.73 (3)	
CB <sup>TM</sup> Argyle	1.28 (4)		1.73 (3)	
Bravo TT	1.23 (11)	1.69 (2)	1.70 (11)	1.55 (4)
<sup>ATR</sup> Marlin	1.23 (7)		1.70 (5)	1.55 (2)
Rottnest TTC	1.22 (4)		1.69 (3)	
Thunder TT	1.26 (11)	1.66 (2)	1.67 (11)	1.49 (4)
<sup>ATR</sup> 409	1.23 (7)		1.64 (5)	1.52 (2)
<sup>ATR</sup> Barra	1.20 (7)		1.64 (5)	1.48 (2)
Storm TT	1.21 (4)		1.63 (3)	
Flinders TTC	1.18 (7)		1.61 (5)	1.45 (2)
<sup>ATR</sup> Summitt	1.19 (11)	1.61 (2)	1.60 (11)	1.43 (4)
Tornado TT	1.16 (11)	1.59 (2)	1.58 (11)	1.44 (4)
CB <sup>TM</sup> Boomer	1.17 (4)		1.54 (6)	1.45 (2)
<sup>ATR</sup> Banjo	1.13 (4)		1.53 (3)	
Monola <sup>TM</sup> 75 TT	1.09 (4)		1.52 (3)	
<sup>ATR</sup> Beacon	1.12 (11)	1.54 (2)	1.51 (11)	1.35 (4)

### Commercial practice

In addition to a variety's track record for yield and oil content, growers should select a variety based on the maturity most suited to the growing season of the crop. Later sowing may require a slightly earlier maturing variety. The choice of variety also needs to match up the risk of blackleg to the variety's blackleg resistance rating, as fungicides alone will not give complete control of the disease when disease pressure is high. The triazine tolerant (TT) varieties are generally inherently lower yielding than conventional varieties. A conventional variety of canola is preferred to a TT if the weed population and herbicide rotation suits it.

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