

# CANOLA

By Jackie Bucat, DPIRD

## CANOLA VARIETY HIGHLIGHTS FOR 2020

- The new Nuseed hybrid TT variety, HyTTec<sup>®</sup> Trident, has high yields, predicted to be 10 to 20 per cent ahead of other hybrid varieties.
- Nuseed has released a new OP TT variety, ATR Flathead. Nuseed anticipates yields to be similar to ATR Bonito<sup>®</sup> with a higher blackleg resistance rating, provisionally identified as moderately resistant (MR).
- Pacific Seeds released Hyola<sup>®</sup> 540XC, first variety with a combination of glyphosate and Clearfield<sup>®</sup> tolerance (GT+CL). This is intended for use where imidazolinone soil residues may be present, after IMI cereal and pulse crops.
- Growers have started to use TruFlex<sup>®</sup> (TF) varieties in the 2019 season. New TruFlex<sup>®</sup> variety releases are Xseed<sup>™</sup> Raptor, InVigor<sup>®</sup> R4022P and Hyola<sup>®</sup> 540XC (GT+CL). These will complement previously released TruFlex<sup>®</sup> varieties Hyola<sup>®</sup> 410XX and the combination TT and glyphosate-tolerant (TT+GT) variety, Hyola<sup>®</sup> 530XT.
- This edition of the canola variety guide includes the first National Variety Trials (NVT) data for 2018 TT releases: early maturity varieties InVigor<sup>®</sup> T3510 and SF Spark TT and mid-maturity varieties Pioneer<sup>®</sup> 45T03 and Hyola<sup>®</sup> 550TT.

## WA CANOLA TYPES

There are numerous herbicide tolerance systems available in WA canola varieties.

- Triazine tolerant (TT) – tolerant to selected triazine herbicides.
- Glyphosate tolerant (GT) – tolerant to Monsanto glyphosate herbicide. This includes both Roundup Ready<sup>®</sup> and TruFlex<sup>®</sup> varieties.

TruFlex<sup>®</sup> has an extended spray window and greater flexibility of herbicide applications, compared with Roundup Ready<sup>®</sup> types. TruFlex<sup>®</sup> varieties

can be sprayed from emergence to first flower, compared with emergence to six-leaf stage for Roundup Ready<sup>®</sup> canola, and can have two applications at a higher label rate of 1.3kg/ha or three applications at 0.9kg/ha.

- Clearfield<sup>®</sup> (CL) – tolerant of imidazolinone (IMI) herbicides (marketed as Clearfield<sup>®</sup>).
- Conventional canola (CC) varieties do not have extra herbicide tolerance.
- All types of canola including CC varieties are tolerant of clopyralid and grass selective herbicides.

There are also several 'stacked' varieties with tolerance to more than one herbicide group.

- triazine tolerant and glyphosate tolerant (TT+GT), including TT+RR (BASF 300TR) and TT+TF (Hyola<sup>®</sup> 530XT)
- triazine tolerant and Clearfield<sup>®</sup> (TT+CL), Hyola<sup>®</sup>580CT
- glyphosate tolerant and Clearfield<sup>®</sup> (GT+CL) the Pacific Seeds TruFlex<sup>®</sup> variety, Hyola<sup>®</sup> 540XC.

Always check suitability of herbicides by referring to the herbicide label.

All canola varieties with glyphosate tolerance were developed using single gene genetic modification (GM).

There are also different canola breeding types:

- open pollinated (OP); and
- hybrid (Hy).

Only TT and conventional canola are available for purchase as open pollinated varieties. Open pollinated seed is created through self-pollination. Harvested OP seed is often retained on-farm for use at sowing. Hybrid seed is produced from managed crosses between different canola parent lines and is purchased each year.

PodGuard<sup>®</sup> is a trait from BASF that strengthens canola pods and reduces the risk of pod shatter.

## THE NATIONAL VARIETY TRIALS (NVT) PROGRAM

Yield and oil data in this report were generated from the GRDC National Variety Trials (NVT) and accessed from NVT online and from Neale Sutton at NVT.

The objective of the NVT system is to provide growers and their advisers with independent information on the performance of newly released varieties of winter field crops, relative to the current commercial varieties grown in their area. The intention is to have two years of data ready at the time each new variety is released for commercial production.

This report presents the results from the WA trials from 2014 to 2018. There were 190 successful canola trials in WA during this period and 693 nationally. The long-term multi-environment trials (MET) analysis uses data from all Australian NVT trials (WA, NSW, Vic and SA) from 2014 to 2018. All trial results are available online at [www.nvtonline.com.au](http://www.nvtonline.com.au) or on the NVT long term yield app. The NVT program is a GRDC investment.

Yield predictions are reported from the long-term MET, where data is analysed across years and environments. Summary yield data is presented for all herbicide tolerance types, and grouped by yield levels (Tables 2 and 3). The long-term MET predicted yield is presented for all trials where the variety was present in the trial. Not all WA trials were included in Tables 2 and 3; for example, there were a couple of trials outside the 0.5–3.5t/ha yield range shown. All data is available at [www.nvtonline.com.au](http://www.nvtonline.com.au).

Yield predictions are also presented for each Agzone for the TT and glyphosate-tolerant trials, using the long term MET data (Tables 4 to 11). Clearfield® varieties were not included in these tables due to the small proportion of area covered, only 1.3 per cent of the total area of canola in 2018 (CBH data). Full information about Clearfield® varieties is available from [www.nvtonline.com.au](http://www.nvtonline.com.au).

### Early and Mid trials

Canola trials are divided into Early and Mid trials (refer to canola Agzone map on the back cover). The Early trials are sown in shorter-season environments that may suit early maturity varieties, largely in Agzones 1, 4 and 5. Mid trials are sown in longer-season environments that may suit mid maturity varieties, largely in Agzones 3 and 6. Agzone 2 has a mix of both Early and Mid trials.

Early and Mid trials have similar sowing times and a similar complement of varieties. Results from the Early and Mid series are analysed separately, requiring the results to be presented separately (Tables 2 to 11).

### Oil concentration data

The NVT canola oil data analysis was completed by Andrew van Burgel, DPIRD. A single oil sample was analysed from each variety in each trial.

Oil concentrations are presented as the varietal difference, compared with the average oil concentration of all varieties of the same herbicide tolerance system.

### Relative value of yield and oil

Generally, yield affects crop financial value more than oil concentration. A relatively small yield increase of 100kg/ha will increase crop value by \$50/ha but a one per cent increase in oil concentration will only contribute an extra \$7.50/t/ha to crop value (at \$500/t canola price).

The yield that is the same value as a one per cent change in oil concentration (more than 42 per cent) is: 15kg/ha for a 1t/ha crop; 30kg/ha for a 2t/ha crop; and 45kg/ha for a 3t/ha crop.

### NVT agronomy

All trials are treated with Impact-in-Furrow® at 400mL/ha. Seeding rates are adjusted to target 40 plants/m<sup>2</sup> in the Early series trials and 50 plants/m<sup>2</sup> in the Mid series trials (see back cover for locations).

### BLACKLEG RESISTANCE DATA

Blackleg data was reproduced from a GRDC Factsheet, *2019 Spring Blackleg Management Guide*. Please refer to this for further information about the importance of blackleg ratings, resistance groups and management of blackleg.

### BUYING TT CANOLA FOR SEED AND SELLING CANOLA GRAIN

Some varieties have an end point royalty (EPR). This is a risk-sharing arrangement between growers and the company. It is imperative that growers continue to pay EPRs to support further OP releases. HyTTec® Trophy and now HyTTec® Trident are the first hybrid varieties to have an EPR.

Purchase commercially available seed from registered sellers (Table 1). Harvested crop can be retained on-farm for use as seed. However, retained seed from hybrid crops is not the same as the parent and can have reduced performance.

TABLE 1 Canola variety maturity, oil content, blackleg resistance rating, EPR, release and seed access.

Variety	Herbicide tolerance	Heterosis	Harvest maturity	Oil content (diff. to mean)	Blackleg resistance rating	Blackleg group	EPR \$/t	Release	Seed access
ATR Bonito <sup>Ⓟ</sup>	TT	OP	4	1.1	MS	A	5	2013	Nuseed
ATR Flathead#	TT	OP	4	-	-	-	5	2019	Nuseed
ATR-Gem <sup>Ⓟ</sup>	TT	OP	4	0.8	-	A	-	2011	Not for sale
ATR Mako <sup>Ⓟ</sup>	TT	OP	4	-0.7	MRMS	A	5	2015	Nuseed
ATR-Stingray <sup>Ⓟ</sup>	TT	OP	3	0.4	MRMS	C	-	2011	Nuseed
ATR Wahoo <sup>Ⓟ</sup>	TT	OP	6	0.3	MS	A	5	2013	Nuseed
DG 670TT	TT	Hy	6	-0.9	MR	BF	-	2017	Seednet
Hyola® 350TT	TT	Hy	3	-1.0	R	ABDF	-	2017	Advanta Seeds
Hyola® 550TT	TT	Hy	5	0.1	RMR	ABDF	-	2018	Advanta Seeds
Hyola® 559TT	TT	Hy	5	0.9	MR	ABD	-	2012	Advanta Seeds
Hyola® 650TT	TT	Hy	6	0.1	R	ABD	-	2013	Advanta Seeds
HyITec® Trident#	TT	Hy	3	0.6	R	ABDF	10	2019	Nuseed
HyITec® Trophy	TT	Hy	4	0.1	RMR	ABD	10	2017	Nuseed
InVigor® T 3510	TT	Hy	3	-0.7	MS	BF	-	2018	BASF
InVigor® T 4510	TT	Hy	4	-0.5	MRMS	BF	-	2016	BASF
Pioneer® 44T02 TT	TT	Hy	4	-0.1	RMR	ABD	-	2016	Pioneer
Pioneer® 45T03 TT	TT	Hy	5	0.0	RMR	ABD	-	2018	Pioneer
SF Ignite TT	TT	Hy	5	-0.2	MR	BF	-	2017	Seed Force
SF Spark TT	TT	Hy	3	0.4	RMR	ABDF	-	2018	Seed Force
SF Turbine TT	TT	Hy	4	-1.0	MRMS	BF	-	2015	Seed Force
Yetna <sup>Ⓟ</sup>	TT	OP	4	-2.9	-	-	5	2015	Agronomy for Profit
Hyola® 580CT	TT+CL	Hy	5	-0.7	R	BC	-	2018	Advanta Seeds
BASF 3000TR	TT+RR	Hy	3	0.2	MSS	B	-	2016	BASF
Hyola® 530XT	TT+TF	Hy	5	0.7	-	-	-	2018	Advanta Seeds
DG 408RR	RR	Hy	4	1.6	MS	AC	-	2017	Seednet
Hyola® 404RR	RR	Hy	4	0.9	MR	ABD	-	2010	Advanta Seeds
Hyola® 410XX	TF	Hy	4	0.7	-	-	-	2018	Advanta Seeds
Hyola® 506RR	RR	Hy	5	0.0	R	ABD	-	2017	Advanta Seeds
InVigor® R 3520	RR	Hy	3	0.0	MR	?	-	2017	BASF
InVigor® R 4022P#	TF	Hy	4	-	-	-	-	2019	BASF
InVigor® R 5520P	RR	Hy	5	-0.5	MRMS	AC	-	2016	BASF
Nuseed GT-42	RR	Hy	4	-0.9	R	ABDF	-	2016	Nuseed
Nuseed GT-53	RR	Hy	5	-0.7	R	ABDF	-	2016	Nuseed
Pioneer® 43Y23 RR	RR	Hy	3	-1.8	MR	B	-	2012	Pioneer
Pioneer® 43Y29 RR	RR	Hy	3	0.0	MR	BC	-	2018	Pioneer
Pioneer® 44Y27 RR	RR	Hy	4	-0.2	RMR	B	-	2017	Pioneer
Pioneer® 45Y25 RR	RR	Hy	5	0.3	MR	BC	-	2015	Pioneer
Pioneer® 45Y28 RR	RR	Hy	5	0.5	MR	BC	-	2018	Pioneer
Xseed Raptor#	TF	Hy	4	1.6	-	-	-	2019	Nuseed
Hyola 540XC#	TF+CL	HY	5	-	-	-	-	2019	Advanta Seeds
Banker CL	CL	Hy	6	0.2	MR	A	-	2016	Heritage Seeds
Hyola® 575CL	CL	Hy	5	0.0	R	BF	-	2010	Advanta Seeds
Pioneer® 43Y92 CL	CL	Hy	3	0.2	RMR	B	-	2017	Pioneer
Pioneer® 44Y90 CL	CL	Hy	4	0.4	RMR	B	-	2015	Pioneer
Pioneer® 45Y91 CL	CL	Hy	5	1.0	MR	B	-	2016	Pioneer
Pioneer® 45Y93 CL	CL	Hy	5	1.3	RMR	BC	-	2018	Pioneer
Saintly CL	CL	Hy	5	0.9	MR	B	-	2018	Heritage Seeds

Varieties ordered alphabetically, within herbicide types. Key for Herbicide tolerance and Heterosis on page 84. # = New releases.

**Maturity:** Information provided by licensees. Maturity key: 3 = early, 4 = early-mid, 5 = mid, 6 = mid-late, 7 = late.

**Oil content:** TT variety average 44.6%, RR variety average 45.6% and CL variety average 45.4%

Blackleg resistance rating key; R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible.

**TABLE 2 Mid WA NVT 2014–18 summary.**  
**Long-term MET predicted yields grouped by yield levels and presented as a percentage of the mean yield.**

Site mean yield (t/ha)				1.0–1.5	1.5–2.0	2.0–2.5	2.5–3.0	3.0–3.5
Type	Maturity	No. trials	[12]	[14]	[10]	[8]	[6]	
<b>TRIAZINE TOLERANT</b>								
ATR-Stingray <sup>®</sup>	TT OP	3	[34]	89	100	97	95	91
ATR Bonito <sup>®</sup>	TT OP	4	[49]	96	98	98	98	98
ATR Mako <sup>®</sup>	TT OP	4	[45]	99	97	98	98	99
ATR-Gem <sup>®</sup>	TT OP	4	[20]	93	95	96	96	96
Yetna <sup>®</sup>	TT OP	4	[2]	90	-	-	91	-
ATR Wahoo <sup>®</sup>	TT OP	6	[21]	92	96	99	99	99
HyITec <sup>®</sup> Trident	TT Hy	3	[9]	130	125	128	127	-
Hyola <sup>®</sup> 350TT	TT Hy	3	[16]	112	111	110	109	-
InVigor <sup>®</sup> T 3510	TT Hy	3	[5]	110	112	109	109	-
SF Spark TT	TT Hy	3	[4]	-	107	103	103	-
HyITec <sup>®</sup> Trophy	TT Hy	4	[16]	119	116	119	118	-
InVigor <sup>®</sup> T 4510	TT Hy	4	[30]	114	114	116	115	118
SF Turbine TT	TT Hy	4	[31]	108	110	109	108	109
Pioneer <sup>®</sup> 44T02 TT	TT Hy	4	[30]	112	108	107	106	108
Hyola <sup>®</sup> 550TT	TT Hy	5	[7]	-	109	111	111	-
SF Ignite TT	TT Hy	5	[28]	104	111	114	112	114
Hyola <sup>®</sup> 559TT	TT Hy	5	[50]	113	106	107	108	110
Pioneer <sup>®</sup> 45T03 TT	TT Hy	5	[5]	-	107	106	104	-
DG 670TT	TT Hy	6	[25]	106	109	113	112	114
Hyola <sup>®</sup> 650TT	TT Hy	6	[39]	108	104	107	108	111
<b>TRIAZINE TOLERANT + ROUNDUP READY<sup>®</sup></b>								
BASF 3000 TR	TT+RR Hy	3	[6]	104	99	97	97	-
Hyola <sup>®</sup> 530XT	TT+TF Hy	5	[1]	-	-	110	-	-
<b>TRIAZINE TOLERANT + CLEARFIELD<sup>®</sup></b>								
Hyola <sup>®</sup> 580CT	TT+CL Hy	5	[17]	103	101	102	103	-
	Type	Maturity	No. trials	[8]	[10]	[6]	[6]	[6]
<b>GLYPHOSATE TOLERANT</b>								
Pioneer <sup>®</sup> 43Y29 RR	RR Hy	3	[3]	-	109	108	-	107
Pioneer <sup>®</sup> 43Y23 (RR)	RR Hy	3	[19]	108	105	103	103	102
InVigor <sup>®</sup> R 3520	RR Hy	3	[9]	-	101	96	98	96
Pioneer <sup>®</sup> 44Y27 (RR)	RR Hy	4	[19]	114	112	109	110	108
Xseed <sup>®</sup> Raptor	TF+CL Hy	4	[1]	-	-	113	-	-
Hyola <sup>®</sup> 410XX	TF Hy	4	[1]	-	-	108	-	-
DG 408RR	RR Hy	4	[10]	108	104	105	105	105
Nuseed GT-42	RR Hy	4	[30]	103	98	101	100	102
Hyola <sup>®</sup> 404RR	RR Hy	4	[29]	104	98	96	97	97
Pioneer <sup>®</sup> 45Y28 RR	RR Hy	5	[10]	-	110	112	111	111
Nuseed GT-53	RR Hy	5	[31]	112	105	111	110	112
Pioneer <sup>®</sup> 45Y25 (RR)	RR Hy	5	[32]	102	105	109	108	109
InVigor <sup>®</sup> R 5520P	RR Hy	5	[19]	103	105	104	104	103
Hyola <sup>®</sup> 506RR	RR Hy	5	[18]	104	103	104	104	104
	Type	Maturity	No. trials	[5]	[7]	[8]	[5]	[6]
<b>CLEARFIELD<sup>®</sup></b>								
Pioneer <sup>®</sup> 43Y92 (CL)	CL Hy	3	[11]	-	111	111	109	109
Pioneer <sup>®</sup> 44Y90 (CL)	CL Hy	4	[25]	112	112	114	111	112
Pioneer <sup>®</sup> 45Y93 CL	CL Hy	5	[7]	110	113	116	-	-
Saintly CL	CL Hy	5	[15]	113	111	111	108	-
Pioneer <sup>®</sup> 45Y91 (CL)	CL Hy	5	[16]	104	107	108	105	105
Hyola <sup>®</sup> 575CL	CL Hy	5	[31]	91	93	92	92	90
Banker CL	CL Hy	6	[19]	106	109	111	108	-

**TABLE 3 Early WA NVT 2014–18 summary.**  
**Long-term MET predicted yields grouped by yield levels and presented as a percentage of the mean yield.**

Site mean yield (t/ha)				0.5–1.0	1.0–1.5	1.5–2.0	2.0–2.5	2.5–3.0
Type	Maturity	No. trials	[7]	[6]	[13]	[6]	[3]	
<b>TRIAZINE TOLERANT</b>								
ATR-Stingray <sup>db</sup>	TT OP	3	[22]	94	93	94	95	96
ATR Bonito <sup>db</sup>	TT OP	4	[37]	98	98	98	98	98
ATR Mako <sup>db</sup>	TT OP	4	[10]	97	100	101	-	101
ATR-Gem <sup>db</sup>	TT OP	4	[4]	88	94	96	-	-
Yetna <sup>db</sup>	TT OP	4	[3]	81	85	-	-	-
HyITec <sup>®</sup> Trident	TT Hy	3	[10]	147	131	128	126	-
SF Spark TT	TT Hy	3	[1]	-	-	115	-	-
Hyola <sup>®</sup> 350TT	TT Hy	3	[13]	108	110	110	109	108
InVigor <sup>®</sup> T 3510	TT Hy	3	[7]	121	112	109	109	-
InVigor <sup>®</sup> T 4510	TT Hy	4	[24]	121	115	113	112	111
HyITec <sup>®</sup> Trophy	TT Hy	4	[15]	126	115	113	113	111
Pioneer <sup>®</sup> 44T02 TT	TT Hy	4	[27]	117	112	111	110	109
SF Turbine TT	TT Hy	4	[22]	115	110	108	108	106
Hyola <sup>®</sup> 559TT	TT Hy	5	[33]	121	113	111	110	109
Hyola <sup>®</sup> 550TT	TT Hy	5	[1]	111	-	-	-	-
DG 670TT	TT Hy	6	[1]	102	-	-	-	-
Hyola <sup>®</sup> 650TT	TT Hy	6	[6]	94	100	101	-	-
<b>TRIAZINE TOLERANT + ROUNDUP READY<sup>®</sup></b>								
BASF 3000 TR	TT+RR Hy	3	[21]	124	109	105	106	104
<b>TRIAZINE TOLERANT + CLEARFIELD<sup>®</sup></b>								
Hyola <sup>®</sup> 580CT	TT+CL Hy	5	[2]	99	-	99	-	-
	Type	Maturity	No. trials	[3]	[4]	[10]	[6]	[2]
<b>GLYPHOSATE TOLERANT</b>								
Pioneer <sup>®</sup> 43Y29 RR	RR Hy	3	[6]	110	-	108	105	109
InVigor <sup>®</sup> R 3520	RR Hy	3	[19]	104	108	107	109	104
Pioneer <sup>®</sup> 43Y23 (RR)	RR Hy	3	[26]	107	109	106	107	102
Pioneer <sup>®</sup> 44Y27 (RR)	RR Hy	4	[17]	113	-	114	112	112
DG 408RR	RR Hy	4	[19]	116	113	111	110	105
Hyola <sup>®</sup> 404RR	RR Hy	4	[27]	106	106	103	104	99
Nuseed GT-42	RR Hy	4	[13]	100	98	98	98	99
Pioneer <sup>®</sup> 45Y28 RR	RR Hy	5	[6]	111	-	111	109	110
Nuseed GT-53	RR Hy	5	[17]	111	108	107	106	105
Pioneer <sup>®</sup> 45Y25 (RR)	RR Hy	5	[8]	105	102	106	103	-
Hyola <sup>®</sup> 506RR	RR Hy	5	[8]	109	106	106	105	-
	Type	Maturity	No. trials	[1]	[2]	[3]	[0]	[2]
<b>CLEARFIELD<sup>®</sup></b>								
Pioneer <sup>®</sup> 43Y92 (CL)	CL Hy	3	[6]	119	-	112	-	109
Pioneer <sup>®</sup> 44Y90 (CL)	CL Hy	4	[6]	118	-	113	-	110
Saintly CL	CL Hy	5	[1]	116	-	-	-	-
Hyola <sup>®</sup> 575CL	CL Hy	5	[7]	90	99	96	-	95
Banker CL	CL Hy	6	[2]	107	-	-	-	107

INTRO

WHEAT

BARLEY

CANOLA

OAT

PULSE GUIDE

LUPIN

CHICKPEA

FABA BEAN

FIELD PEA

LENTIL

VETCH

## TT NVT RESULTS

The new variety HyTTec® Trident has the highest predicted yield in the Mid NVT series, even though it is a short (3) maturity variety. HyTTec® Trophy and InVigor® T4510 were second and third highest yielding, respectively. The next highest yielding varieties were the longer-season varieties Hyola® 550TT, SF Ignite TT and DG 670TT, all with similar high yields, particularly in the higher-yielding trials.

HyTTec® Trident also has the highest predicted yield for the Early NVT series, followed by InVigor® T4510 and HyTTec® Trophy. SF Spark had a high yield in a single WA Early series trial. The next highest yielding varieties were Hyola® 559TT and Pioneer® 44T02TT.

Most recent data shows that ATR Bonito<sup>Ⓛ</sup> is still the most widely grown variety in WA, at 53 per cent of total canola area in 2018, or 73 per cent of the area of all TT canola. However, ATR Bonito<sup>Ⓛ</sup> yields are well below hybrid TT varieties in NVT. The lower yields are offset by lower seed prices and a lower risk production system. Current DPIRD recommendations to manage risk and profit are to consider changing to hybrid TT varieties when expected yields are around 1.3t/ha, and for all growers to test hybrid TT profitability with test strips on-farm.

## GT NVT YIELD RESULTS

Glyphosate tolerant (GT) varieties include both RR and TruFlex. Pioneer® 45Y28RR was the highest-yielding GT variety in the Mid trial series. Yields were especially high for the trials over 2.5t/ha. Pioneer® 44Y27RR was the second highest yielding variety overall and was highest yielding for Mid trials below 2t/ha and Agzone2. Xseed™ Raptor was the highest-yielding variety in the 2017 Kojonup trial, although further results are needed to confirm performance. The next highest yielding varieties were InVigor® R 4020P, Nuseed GT-53, and then Hyola® 410XX.

Pioneer® 44Y27RR was the highest yielding variety in the Early trial series, followed by Pioneer® 45Y28RR. The yield advantage of Pioneer® 44Y27RR was amplified at higher-yielding sites. The next highest yielding varieties were DG 408RR and Pioneer® 43Y29RR. DG 408RR had most competitive yields in 0.5-1.5t/ha yield range and Agzone 2 due to a very high yield in the Nyabing 2018 trial.

## CL NVT RESULTS

The early-mid maturity Pioneer® 44Y90 CL had the highest demonstrated yields across all yield groups overall, showing its adaptability. The new mid season variety Pioneer® 45Y93CL had the highest mean MET, suggesting its overall yields would be higher if it was present in each trial. The next highest yielding varieties were Pioneer® 43Y92CL and Saintry CL.

## RECENT VARIETY RELEASES

### Hybrid TT

**HyTTec® Trident** is a new hybrid release from Nuseed. It has the highest yields across Early and Mid trial series for all yield levels and years. It has been tested in 19 trials in 2017 and 2018. HyTTec® Trident has a resistant (R) blackleg rating and oil content of 0.6 per cent above average. HyTTec® Trident has an end point royalty (EPR) of \$10/t.

**InVigor® T3510** is a recent early maturity variety from BASF, showing similar yields to Hyola® 350TT.

**SF Spark TT** is an early maturity variety released by Seed Force in 2018. The predicted yield for the Early trial series was based on a single trial at Yealering in 2018. More testing is required to be confident of variety performance. SF Spark TT is in 16 WA trials this season.

**Hyola® 550TT** has slightly higher yields than Hyola 559TT in the Mid NVT series. It also has a higher blackleg rating of RMR.

### OP TT varieties

**ATR Flathead** is the new OP variety from Nuseed. It is in NVT for the first time in 2019 in 17 WA trials. Company information suggests yields similar to ATR Bonito<sup>Ⓛ</sup> but a higher blackleg resistance rating of MR (provisional).

### Glyphosate tolerant varieties (both RR and TruFlex® (TF) varieties)

**Hyola® 410XX** is a recent TruFlex® release from Pacific Seeds. There is only a single WA NVT result from Kojonup in 2017, however it is in 19 NVT Early and Mid-series trials in 2019. This variety needs further testing to build confidence in its performance.

**InVigor® R4022P** is the new release from BASF, with TruFlex® and Podguard®. It is in its first year of NVT (2019).

**Pioneer® 45Y28RR** was the highest-yielding variety in the Mid GT NVT series (along with the single WA trial for Xseed™ Raptor). Although it was released in 2018, 2020 will be the first growing season for commercial seed availability. Pioneer® 45Y28RR has been in 16 trials, all in 2017. It has a moderately resistant blackleg rating (MR).

**Xseed™ Raptor** is the 2019 TruFlex® release from Nuseed. Xseed Raptor showed promising yield from its single WA NVT entry at Kojonup. The

single WA oil result from Xseed™ Raptor is also promising, at 1.6 per cent above the RR average. More testing is required to be confident of variety performance. It is in 19 WA trials in 2019.

## Clearfield varieties

**Pioneer® 45Y93CL** was released last year. This was the highest yielding CL hybrid overall.

**Saintly CL** was a 2018 release from Heritage Seeds. It was particularly competitive for the yield range 1-1.5t/ha.

**TABLE 4 Agzone 2 Mid-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				1.27	1.44	2.66	2.04	2.09
	Type	Maturity	No. trials	[6]	[3]	[5]	[4]	[4]
<b>TT, TT+CL, TT+RR VARIETIES</b>								
ATR Bonito <sup>db</sup>	TT OP	4	[22]	96	96	98	99	97
ATR-Gem <sup>db</sup>	TT OP	4	[9]	92	91	-	-	-
ATR Mako <sup>db</sup>	TT OP	4	[20]	98	98	98	98	99
ATR-Stingray <sup>db</sup>	TT OP	3	[20]	90	94	96	99	91
DG 670TT	TT Hy	6	[9]	-	-	110	-	106
Hyola® 350TT	TT Hy	3	[5]	-	-	-	108	110
Hyola® 550TT	TT Hy	5	[3]	-	-	-	-	111
Hyola® 559TT	TT Hy	5	[22]	114	112	108	105	111
Hyola® 650TT	TT Hy	6	[13]	108	102	107	104	107
HyITec® Trident	TT Hy	3	[5]	-	-	-	121	126
HyITec® Trophy	TT Hy	4	[8]	-	-	-	114	116
InVigor® T 3510	TT Hy	3	[4]	-	-	-	-	107
InVigor® T 4510	TT Hy	4	[13]	-	-	115	112	112
Pioneer® 44T02 TT	TT Hy	4	[16]	-	115	108	106	109
Pioneer® 45T03 TT	TT Hy	5	[1]	-	-	-	-	100
SF Ignite TT	TT Hy	5	[12]	-	-	111	110	105
SF Spark TT	TT Hy	3	[3]	-	-	-	-	103
SF Turbine TT	TT Hy	4	[16]	-	110	110	108	107
Yetna <sup>db</sup>	TT OP	4	[1]	-	91	-	-	-
Hyola 580CT	TT+CL Hy	5	[6]	-	-	-	101	102
BASF 3000TR	TT+RR Hy	3	[6]	-	-	-	98	102
Site mean yield (t/ha)				1.24	1.44	2.72	1.86	2.13
	Type	Maturity	No. trials	[4]	[3]	[4]	[3]	[3]
<b>RR AND TF VARIETIES</b>								
DG 408RR	RR Hy	4	[10]	-	-	105	104	106
Hyola® 404RR	RR Hy	4	[17]	101	107	98	97	103
Hyola® 506RR	RR Hy	5	[7]	-	-	104	103	103
InVigor® R 3520	RR Hy	3	[7]	-	-	100	-	104
InVigor® R 5520P	RR Hy	5	[6]	-	-	105	106	100
Nuseed GT-42	RR Hy	4	[14]	104	102	100	98	105
Nuseed GT-53	RR Hy	5	[15]	116	108	109	104	114
Pioneer® 43Y23 RR	RR Hy	3	[17]	105	110	105	106	103
Pioneer® 43Y29 RR	RR Hy	3	[1]	-	-	-	110	-
Pioneer® 44Y27 RR	RR Hy	4	[10]	-	-	112	112	107
Pioneer® 45Y25 RR	RR Hy	5	[14]	107	97	107	105	104
Pioneer® 45Y28 RR	RR Hy	5	[4]	-	-	-	109	108

## Combined herbicide tolerance varieties

**Hyola® 580CT** has a combination of TT and CL tolerance. It is intended for use where soil residues may be a problem, rather than for spraying with imidazolinone herbicides. Although Hyola® 580CT is a medium length maturity, it has fast development speed when sown in mid April, so may not suit very early sowing.

**Hyola® 530XT** is a TruFlex® variety with a combination of glyphosate and TT tolerance. NVT is limited to a single high yield result in Kojonup in 2017. More results are needed to be confident of variety performance and it is in 10 WA trials this season.

**Hyola® 540XC** is a TruFlex® variety, tolerant to both glyphosate and Clearfield® imidazolinone herbicide. It is released by Pacific Seeds and is entered into NVT for the first time in 2019.

**TABLE 5 Agzone 3 Mid-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				2.84	2.12	3.28	2.23	2.59
	Type	Maturity	No. trials	[3]	[3]	[2]	[3]	[3]
<b>TT, TT+CL, TT+RR VARIETIES</b>								
ATR Bonito <sup>db</sup>	TT OP	4	[13]	98	97	98	100	98
ATR-Gem <sup>db</sup>	TT OP	4	[6]	97	93	-	-	-
ATR Mako <sup>db</sup>	TT OP	4	[14]	100	96	98	96	99
ATR Stingray <sup>db</sup>	TT OP	3	[8]	91	99	93	-	-
ATR Wahoo <sup>db</sup>	TT OP	6	[12]	99	92	101	104	99
DG 670TT	TT Hy	6	[8]	-	-	118	120	113
Hyola® 350TT	TT Hy	3	[5]	-	-	-	110	110
Hyola® 550TT	TT Hy	5	[2]	-	-	-	-	113
Hyola® 559TT	TT Hy	5	[14]	109	109	110	103	110
Hyola® 650TT	TT Hy	6	[14]	110	103	112	107	110
HyTtec® Trident	TT Hy	3	[3]	-	-	-	-	130
HyTtec® Trophy	TT Hy	4	[4]	-	-	-	122	121
InVigor® T 4510	TT Hy	4	[8]	-	-	121	120	116
Pioneer® 44T02 TT	TT Hy	4	[8]	-	112	108	104	-
Pioneer® 45T03 TT	TT Hy	5	[2]	-	-	-	-	103
SF Ignite TT	TT Hy	5	[8]	-	-	118	123	112
SF Turbine TT	TT Hy	4	[11]	-	112	111	112	108
Hyola® 580CT	TT+CL Hy	5	[6]	-	-	-	102	104
Hyola® 530XT	TT+TF Hy	5	[1]	-	-	-	110	-
Site mean yield (t/ha)				3.24	2.03	3.19	2.26	2.46
	Type	Maturity	No. trials	[2]	[2]	[1]	[2]	[2]
<b>RR AND TF VARIETIES</b>								
Hyola® 404RR	RR Hy	4	[5]	98	101	-	92	-
Hyola® 410XX	TF Hy	4	[1]	-	-	-	108	-
Hyola® 506RR	RR Hy	5	[5]	-	-	105	104	104
InVigor® R 3520	RR Hy	3	[1]	-	-	95	-	-
InVigor® R 5520P	RR Hy	5	[6]	-	107	106	106	103
Nuseed GT-42	RR Hy	4	[7]	-	98	100	98	103
Nuseed GT-53	RR Hy	5	[7]	-	105	113	109	114
Pioneer® 43Y23 RR	RR Hy	3	[2]	-	110	-	102	-
Pioneer® 43Y29 RR	RR Hy	3	[1]	-	-	-	111	-
Pioneer® 44Y27 RR	RR Hy	4	[4]	-	-	114	111	110
Pioneer® 45Y25 RR	RR Hy	5	[8]	108	102	113	113	108
Pioneer® 45Y28 RR	RR Hy	5	[3]	-	-	-	114	112
Xseed™ Raptor	TF Hy	4	[1]	-	-	-	114	-



**TABLE 6 Agzone 5 Mid-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)					1.93	1.42	1.37	1.36
	Type	Maturity	No. trials	[0]	[1]	[1]	[1]	[1]
TT VARIETIES								
ATR Bonito <sup>db</sup>	TT OP	4	[4]	-	99	98	98	96
ATR-Gem <sup>db</sup>	TT OP	4	[1]	-	96	-	-	-
ATR Mako <sup>db</sup>	TT OP	4	[2]	-	95	106	-	-
ATR-Stingray <sup>db</sup>	TT OP	3	[2]	-	107	-	-	91
ATR Wahoo <sup>db</sup>	TT OP	6	[2]	-	98	108	-	-
DG 670TT	TT Hy	6	[2]	-	-	118	-	103
Hyola® 350TT	TT Hy	3	[2]	-	-	-	109	111
Hyola® 559TT	TT Hy	5	[4]	-	102	117	108	112
Hyola® 650TT	TT Hy	6	[2]	-	101	-	-	105
HyTtec® Trident	TT Hy	3	[1]	-	-	-	124	-
HyTtec® Trophy	TT Hy	4	[2]	-	-	-	116	116
InVigor® T 3510	TT Hy	3	[1]	-	-	-	-	109
InVigor® T 4510	TT Hy	4	[3]	-	-	116	113	111
Pioneer® 44T02 TT	TT Hy	4	[3]	-	106	-	107	112
SF Ignite TT	TT Hy	5	[2]	-	-	109	109	-
SF Turbine TT	TT Hy	4	[2]	-	-	97	107	-

**TABLE 7 Agzone 6 Mid-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				1.29	2.49	1.84	1.74	2.03
	Type	Maturity	No. trials	[1]	[3]	[1]	[3]	[2]
TT, TT+CL VARIETIES								
ATR Bonito <sup>db</sup>	TT OP	4	[10]	96	99	99	101	96
ATR-Gem <sup>db</sup>	TT OP	4	[4]	91	99	-	-	-
ATR Mako <sup>db</sup>	TT OP	4	[9]	98	100	98	97	96
ATR-Stingray <sup>db</sup>	TT OP	3	[4]	95	91	-	-	-
ATR Wahoo <sup>db</sup>	TT OP	6	[7]	-	105	100	106	91
DG 670TT	TT Hy	6	[6]	-	-	114	115	109
Hyola® 350TT	TT Hy	3	[4]	-	-	-	105	117
Hyola® 550TT	TT Hy	5	[2]	-	-	-	-	114
Hyola® 559TT	TT Hy	5	[10]	111	108	108	99	112
Hyola® 650TT	TT Hy	6	[10]	102	113	109	104	105
HyTtec® Trophy	TT Hy	4	[2]	-	-	-	113	124
InVigor® T 4510	TT Hy	4	[6]	-	-	116	113	119
Pioneer® 44T02 TT	TT Hy	4	[3]	-	103	-	-	-
Pioneer® 45T03 TT	TT Hy	5	[2]	-	-	-	-	108
SF Ignite TT	TT Hy	5	[6]	-	-	114	119	111
SF Spark TT	TT Hy	3	[1]	-	-	-	-	110
SF Turbine TT	TT Hy	4	[2]	-	106	-	108	-
Yetna <sup>db</sup>	TT OP	4	[1]	-	90	-	-	-
Hyola® 580CT	TT+CL Hy	5	[5]	-	-	-	101	101
Site mean yield (t/ha)				1.29	2.5	1.84	2.22	2.01
	Type	Maturity	No. trials	[1]	[3]	[1]	[3]	[2]
RR AND TF VARIETIES								
Hyola® 404RR	RR Hy	4	[7]	106	93	-	91	-
Hyola® 506RR	RR Hy	5	[6]	-	-	104	102	105
InVigor® R 3520	RR Hy	3	[1]	-	-	95	-	-
InVigor® R 5520P	RR Hy	5	[7]	-	102	104	105	107
Nuseed GT-42	RR Hy	4	[9]	-	102	100	96	99
Nuseed GT-53	RR Hy	5	[9]	-	114	110	100	109
Pioneer® 43Y29 RR	RR Hy	3	[1]	-	-	-	108	-
Pioneer® 44Y27 RR	RR Hy	4	[5]	-	-	109	105	119
Pioneer® 45Y25 RR	RR Hy	5	[10]	98	114	109	109	104
Pioneer® 45Y28 RR	RR Hy	5	[3]	-	-	-	108	113

**TABLE 8 Agzone 1 Early-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				0.71	-	3.07	1.3	1.52
	Type	Maturity	No. trials	[1]	[0]	[2]	[2]	[1]
<b>TT, TT+CL, TT+RR VARIETIES</b>								
ATR Bonito <sup>db</sup>	TT OP	4	[5]	101	-	96	97	99
ATR-Stingray <sup>db</sup>	TT OP	3	[1]	111	-	-	-	-
Hyola <sup>®</sup> 350TT	TT Hy	3	[3]	-	-	-	117	105
Hyola <sup>®</sup> 559TT	TT Hy	5	[6]	109	-	109	114	111
Hyola <sup>®</sup> 650TT	TT Hy	6	[1]	-	-	-	-	97
HyTtec <sup>®</sup> Trident	TT Hy	3	[2]	-	-	-	132	131
HyTtec <sup>®</sup> Trophy	TT Hy	4	[3]	-	-	-	113	117
InVigor <sup>®</sup> T 3510	TT Hy	3	[1]	-	-	-	-	112
InVigor <sup>®</sup> T 4510	TT Hy	4	[5]	-	-	117	120	110
Pioneer <sup>®</sup> 44T02 TT	TT Hy	4	[5]	-	-	112	115	110
SF Turbine TT	TT Hy	4	[2]	-	-	-	114	106
Hyola <sup>®</sup> 580CT	TT+CL Hy	5	[2]	-	-	-	99	99
BASF 3000TR	TT+RR Hy	3	[5]	-	-	90	100	114
Site mean yield (t/ha)				0.71	-	3.07	1.3	1.52
	Type	Maturity	No. trials	[1]	[0]	[2]	[2]	[1]
<b>RR VARIETIES</b>								
DG 408RR	RR Hy	4	[5]	-	-	107	114	110
Hyola <sup>®</sup> 404RR	RR Hy	4	[6]	111	-	97	103	106
Hyola <sup>®</sup> 506RR	RR Hy	5	[3]	-	-	-	109	103
InVigor <sup>®</sup> R 3520	RR Hy	3	[5]	-	-	101	105	114
Nuseed GT-42	RR Hy	4	[5]	-	-	101	100	96
Nuseed GT-53	RR Hy	5	[5]	-	-	108	111	104
Pioneer <sup>®</sup> 43Y23 RR	RR Hy	3	[6]	116	-	100	106	111
Pioneer <sup>®</sup> 43Y29 RR	RR Hy	3	[2]	-	-	-	109	-
Pioneer <sup>®</sup> 44Y27 RR	RR Hy	4	[5]	-	-	117	117	112
Pioneer <sup>®</sup> 45Y25 RR	RR Hy	5	[1]	-	-	114	-	-
Pioneer <sup>®</sup> 45Y28 RR	RR Hy	5	[2]	-	-	-	112	-

**TABLE 9 Agzone 2 Early-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				1.68	1.11	2.04	1.89	1.70
	Type	Maturity	No. trials	[2]	[2]	[3]	[2]	[3]
<b>TT, TT+RR VARIETIES</b>								
ATR Bonito <sup>Ⓛ</sup>	TT OP	4	[12]	97	97	98	98	98
ATR-Gem <sup>Ⓛ</sup>	TT OP	4	[2]	95	97	-	-	-
ATR Mako <sup>Ⓛ</sup>	TT OP	4	[3]	100	102	-	-	-
ATR-Stingray <sup>Ⓛ</sup>	TT OP	3	[10]	87	90	95	94	93
Hyola® 350TT	TT Hy	3	[4]	-	-	-	111	110
Hyola® 559TT	TT Hy	5	[12]	112	111	109	109	114
Hyola® 650TT	TT Hy	6	[3]	103	105	-	-	-
HyITec® Trident	TT Hy	3	[5]	-	-	-	123	131
HyITec® Trophy	TT Hy	4	[5]	-	-	-	110	115
InVigor® T 3510	TT Hy	3	[3]	-	-	-	-	112
InVigor® T 4510	TT Hy	4	[8]	-	-	111	112	116
Pioneer® 44T02 TT	TT Hy	4	[10]	-	112	109	110	112
SF Spark TT	TT Hy	3	[1]	-	-	-	-	115
SF Turbine TT	TT Hy	4	[10]	-	111	107	107	111
Yetna <sup>Ⓛ</sup>	TT OP	4	[2]	-	83	-	-	-
BASF 3000TR	TT+RR Hy	3	[10]	-	99	104	101	109
Site mean yield (t/ha)				1.66	1.08	2.02	1.89	1.74
	Type	Maturity	No. trials	[2]	[2]	[3]	[2]	[3]
<b>RR VARIETIES</b>								
DG 408RR	RR Hy	4	[8]	-	-	108	107	115
Hyola® 404RR	RR Hy	4	[12]	106	101	103	101	107
Hyola® 506RR	RR Hy	5	[3]	-	-	-	-	107
InVigor® R 3520	RR Hy	3	[8]	-	-	107	106	109
Nuseed GT-42	RR Hy	4	[5]	-	99	98	-	-
Nuseed GT-53	RR Hy	5	[10]	-	108	105	105	109
Pioneer® 43Y23 RR	RR Hy	3	[12]	105	104	106	104	110
Pioneer® 43Y29 RR	RR Hy	3	[2]	-	-	-	108	-
Pioneer® 44Y27 RR	RR Hy	4	[6]	-	-	111	113	113
Pioneer® 45Y25 RR	RR Hy	5	[4]	-	109	104	-	-
Pioneer® 45Y28 RR	RR Hy	5	[2]	-	-	-	110	-

INTRO

WHEAT

BARLEY

CANOLA

OAT

PULSE GUIDE

LUPIN

CHICKPEA

FABA BEAN

FIELD PEA

LENTIL

VETCH

**TABLE 10 Agzone 4 Early-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				0.49	-	2.25	2.22	1.78
	Type	Maturity	No. trials	[1]	[0]	[1]	[1]	[2]
<b>TT, TT+RR VARIETIES</b>								
ATR Bonito <sup>Ⓛ</sup>	TT OP	4	[5]	99	-	98	98	98
ATR Mako <sup>Ⓛ</sup>	TT OP	4	[1]	101	-	-	-	-
ATR-Stingray <sup>Ⓛ</sup>	TT OP	3	[3]	108	-	-	-	91
Hyola <sup>®</sup> 350TT	TT Hy	3	[2]	-	-	-	112	112
Hyola <sup>®</sup> 559TT	TT Hy	5	[4]	110	-	118	-	110
HyTTec <sup>®</sup> Trident	TT Hy	3	[3]	-	-	-	129	124
HyTTec <sup>®</sup> Trophy	TT Hy	4	[3]	-	-	-	113	110
InVigor <sup>®</sup> T 3510	TT Hy	3	[2]	-	-	-	-	108
InVigor <sup>®</sup> T 4510	TT Hy	4	[4]	-	-	118	115	115
Pioneer <sup>®</sup> 44T02 TT	TT Hy	4	[4]	-	-	116	112	111
SF Turbine TT	TT Hy	4	[2]	-	-	111	109	-
BASF 3000TR	TT+RR Hy	3	[4]	-	-	118	103	101
Site mean yield (t/ha)				0.49	-	2.25	2.22	1.78
	Type	Maturity	No. trials	[1]	[0]	[1]	[1]	[2]
<b>RR VARIETIES</b>								
DG 408RR	RR Hy	4	[4]	-	-	117	110	111
Hyola <sup>®</sup> 404RR	RR Hy	4	[5]	101	-	109	102	103
Hyola <sup>®</sup> 506RR	RR Hy	5	[2]	-	-	-	-	106
InVigor <sup>®</sup> R 3520	RR Hy	3	[4]	-	-	119	108	104
Nuseed GT-42	RR Hy	4	[1]	-	-	95	-	-
Pioneer <sup>®</sup> 43Y23 RR	RR Hy	3	[5]	111	-	116	106	105
Pioneer <sup>®</sup> 43Y29 RR	RR Hy	3	[1]	-	-	-	108	-
Pioneer <sup>®</sup> 44Y27 RR	RR Hy	4	[4]	-	-	119	115	112
Pioneer <sup>®</sup> 45Y28 RR	RR Hy	5	[1]	-	-	-	112	-

**TABLE 11 Agzone 5 Early-season canola NVT 2014–18. Long-term MET predicted yield expressed as a percentage of mean yield.**

Year				2014	2015	2016	2017	2018
Site mean yield (t/ha)				1.21	2.01	1.67	1.72	0.65
	Type	Maturity	No. trials	[4]	[2]	[3]	[3]	[1]
<b>TT, TT+RR VARIETIES</b>								
ATR Bonito <sup>Ⓛ</sup>	TT OP	4	[13]	99	99	98	99	96
ATR-Gem <sup>Ⓛ</sup>	TT OP	4	[1]	95	-	-	-	-
ATR Mako <sup>Ⓛ</sup>	TT OP	4	[5]	100	-	-	99	-
ATR-Stingray <sup>Ⓛ</sup>	TT OP	3	[7]	102	102	-	-	82
ATR Wahoo <sup>Ⓛ</sup>	TT OP	6	[1]	83	-	-	-	-
DG 670TT	TT Hy	6	[1]	-	-	-	-	101
Hyola® 350TT	TT Hy	3	[4]	-	-	-	107	111
Hyola® 550TT	TT Hy	5	[1]	-	-	-	-	111
Hyola® 559TT	TT Hy	5	[10]	110	112	112	-	150
Hyola® 650TT	TT Hy	6	[1]	97	-	-	-	-
HyITec® Trophy	TT Hy	4	[4]	-	-	-	117	152
InVigor® T 3510	TT Hy	3	[1]	-	-	-	-	151
InVigor® T 4510	TT Hy	4	[7]	-	-	113	113	149
Pioneer® 44T02 TT	TT Hy	4	[8]	-	110	111	111	-
SF Turbine TT	TT Hy	4	[8]	-	105	108	108	-
Yetna <sup>Ⓛ</sup>	TT OP	4	[1]	-	80	-	-	-
BASF 3000TR	TT+RR Hy	3	[2]	-	-	108	113	-
Site mean yield (t/ha)				1.47	-	1.67	2.66	-
	Type	Maturity	No. trials	[1]	[0]	[1]	[1]	[0]
<b>RR VARIETIES</b>								
DG 408RR	RR Hy	4	[2]	-	-	112	103	-
Hyola® 404RR	RR Hy	4	[3]	102	-	102	98	-
InVigor® R 3520	RR Hy	3	[2]	-	-	107	105	-
Nuseed GT-42	RR Hy	4	[2]	-	-	99	99	-
Nuseed GT-53	RR Hy	5	[2]	-	-	109	103	-
Pioneer® 43Y23 RR	RR Hy	3	[3]	109	-	106	102	-
Pioneer® 43Y29 RR	RR Hy	3	[1]	-	-	-	109	-
Pioneer® 44Y27 RR	RR Hy	4	[2]	-	-	118	111	-
Pioneer® 45Y25 RR	RR Hy	5	[2]	100	-	110	-	-
Pioneer® 45Y28 RR	RR Hy	5	[1]	-	-	-	110	-

INTRO

WHEAT

BARLEY

CANOLA

OAT

PULSE GUIDE

LUPIN

CHICKPEA

FABA BEAN

FIELD PEA

LENTIL

VETCH

## Canola seed commercialisation companies

### Agronomy for Profit

Peter Norris +61 (0)428 850 850

### BASF

[myseed.com.au/canola](http://myseed.com.au/canola)

David Peake +61 (0)408 780 577

### Heritage Seeds

[heritageseeds.com.au](http://heritageseeds.com.au)

Steve Amery +61 (0)409 000 398

Tim O'Dea +61 (0)429 203 505

### Nuseed

[nuseed.com.au](http://nuseed.com.au)

Andrew Suverijn +61 (0)409 484 702

Andrew Royce +61 (0)427 466 916

Michael Hickey +61 (0)438 913 106

### Pacific Seeds

[hyola.com.au](http://hyola.com.au)

Steve Lamb +61 (0)429 619 103

Tristan Wilson-Kerrigan +61 (0)448 014 892

Justin Kudnig +61 (0)408 408 616

### Pioneer Brand Seeds

[pioneerseeds.com.au](http://pioneerseeds.com.au)

Peter Bostock +61 (0)427 549 826

Erinn McCartney +61 (0)400 557 076

Tony Munns +61 (0)429 861 092

Rob Bagley +61 (0)428 212 652

Owen Boxall +61 (0)428 899 024

### Seednet

[seednet.com.au](http://seednet.com.au)

David Clegg +61 (0)408 630 641

### Seed Force

[seedforce.com](http://seedforce.com)

Nevenka McLennan +61 (0)491 211 104

David Leah +61 (0)447 565 457

## Registered trademarks

- Roundup Ready® and TruFlex® are registered trademarks of Monsanto Technology LLC, Monsanto Australia Pty Ltd.
- Hyola® is a registered trademark of Pacific Seeds Pty Limited.

- Clearfield®, InVigor® and Podguard® are registered trademarks of BASF Agricultural Solutions Seed US LLC.
- HyTTec® and Xseed™ are published trademarks of Nuseed Pty Ltd.

## Abbreviations

CC	conventional canola
CL	Clearfield®
GT	glyphosate tolerant
Hy	hybrid
MET	multi-environment trials
NVT	National Variety Trials
OP	open pollinated
RR	Roundup Ready®
TF	TruFlex®
TT	triazine tolerant

## Acknowledgements

The information contained in this guide is based on the work conducted by many research scientists, technical officers, plant breeders and service providers. The authors would like to thank the following groups and staff:

- GRDC: NVT (grain yield and oil data) and their service providers.
- Blackleg data was reproduced from a GRDC Factsheet, *2019 Spring Blackleg Management Guide*.
- DPIRD biometrics: Andrew van Burgel.
- Seed commercialisation companies for new variety information.