



Review of 2018 canola NVT – Good choices for 2019  
Jackie Bucat, DPIRD



# Acknowledgements



Department of  
**Primary Industries and  
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- Peter Bird, Neale Sutton, GRDC (NVT)
- Rob Dickie, CBH Group
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# Outline



Canola grown in 2018



New varieties



2018 NVT results



2013-2018 NVT Long  
term MET results



Agronomy trials  
OP or hybrid TT?



# WA canola types- % area sown in 2018

	OP	Hybrid
Triazine Tolerant (TT)	67%	5.3%
Roundup Ready (RR)		25.5%
Clearfield (CL)		1.3%
TT+RR		0.9%



Data courtesy of CBH

# WA canola types- % area sown in 2018

	OP varieties	%	Hybrid varieties	%
TT	ATR Bonito	53.01	Hyola 559TT	2.22
	ATR Stingray	6.72	InVigor T 4510	1.89
	ATR Mako	2.65	Pioneer 44T02 (TT)	0.56
	Thumper TT	1.08	Hyola 650TT	0.30
	ATR Wahoo	0.95		
	ATR Gem	0.68		
	Crusher TT	0.35		
RR			Hyola 404RR	8.40
			Pioneer 43Y23RR	7.86
			Nuseed GT-53	3.66
			Pioneer 44Y27RR	1.65
			Pioneer 45Y25RR	1.02
		InVigor R 5520P	0.65	
CL			Pioneer 44Y90CL	0.82
			Pioneer 45Y91CL	0.25

Data courtesy of CBH



## New varieties

Type	Variety	Maturity
GT	Pioneer 43Y29RR	3
	InVigor R 4020P	4
	Hyola 410XX	4
	InVigor R4022P	4
	Pioneer 45Y28RR	5



## New varieties

Type	Variety	Maturity	
GT	Pioneer 43Y29RR	3	43Y23 replacement
	InVigor R 4020P	4	Podguard
	Hyola 410XX	4	TruFlex
	InVigor R4022P	4	Podguard & TruFlex
	Pioneer 45Y28RR	5	Expected 2020



## New varieties

Type	Variety	Maturity
GT	Pioneer 43Y29RR	3
	InVigor R 4020P	4
	Hyola 410XX	4
	InVigor R4022P	4
	Pioneer 45Y28RR	5

Type	Variety	Maturity
TT	InVigor T 3510	3
	SF Spark TT	3
	Hyola 550TT	5
	Pioneer 45T03 TT	5
TT+GT	Hyola 530XT	5
TT+CL	Hyola 580CT	5





## Choosing your canola variety

- 1 • Choose type (weed control)
- 2 • Choose high yield (and oil)
- 3 • Track record
- 4 • Match maturity to environment
- 5 • Match maturity to sowing time (?)
- 2-6 • Other benefits- blackleg, podguard



# 2018 NVT sites



## Variety yield rank for 2018 Early GT (RR) NVT

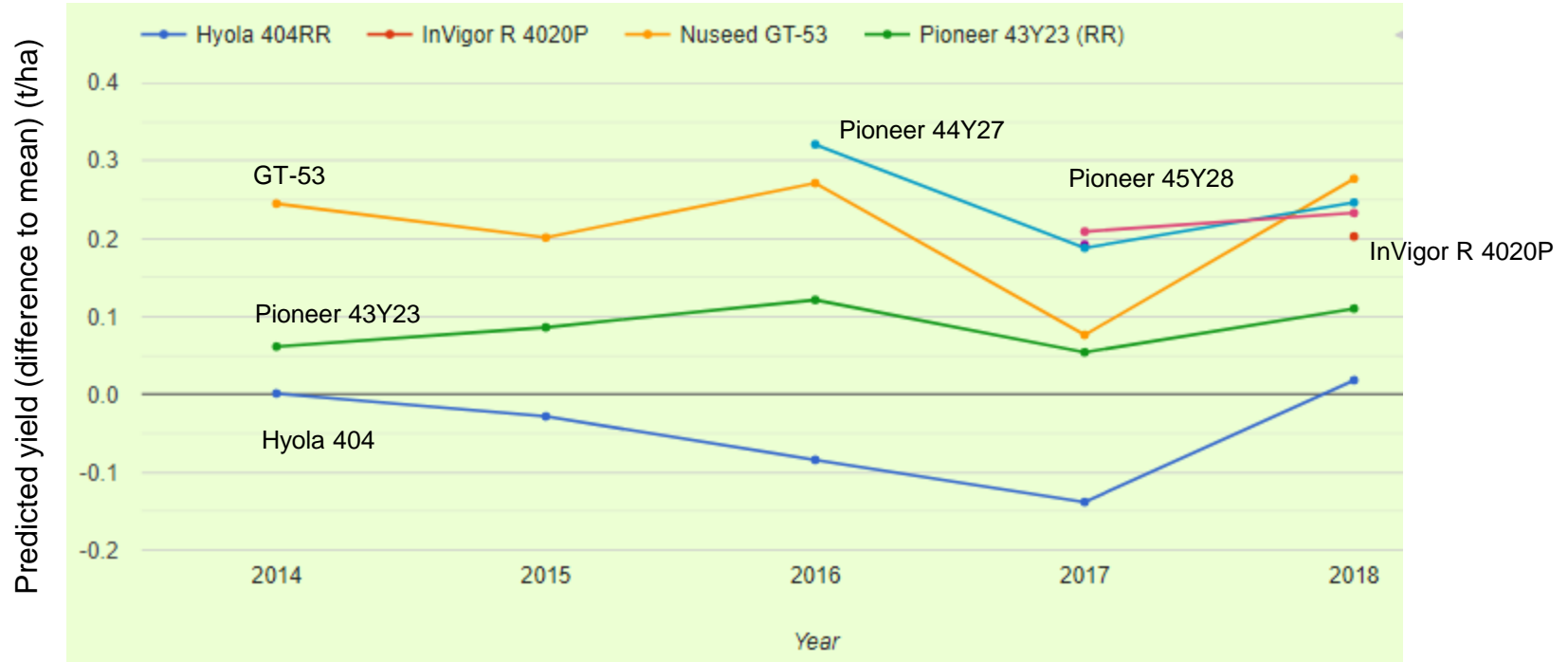
	Mingenew	Buntine	Kellerberrin	Merredin	Yealering	18 Rank on rank	2014-18 MET
<b>Site Mean (t/ha)</b>	1.49	2.25	1.94	2.03	1.5		
Pioneer 44Y27 (RR)	2	-	2	2	2	1	115
Pioneer 45Y28 (RR)	-	-	-	-	-	-	110
DG 408RR	4	1	1	1	5	2	109
Pioneer 43Y29 (RR)	-	-	-	-	-	-	108
InVigor R 3520	5	7	3	6	1	5	107
Nuseed GT-53	9	2	-	-	7	8	107
Pioneer 43Y23 (RR)	1	3	6	4	4	4	106
Hyola 506RR	8	5	4	3	8	7	106
Monola G11	-	-	4	7	-	6	105
Nuseed GT-41	3	4	-	-	3	3	103
Hyola 404RR	6	6	7	8	5	9	103
Nuseed GT-42	7	-	-	-	-	10	99
InVigor R 4020P	10	7	8	5	9	11	96

## Variety yield rank for 2018 Mid GT (RR) NVT

	Bolgart	Cunderdin	Katanning	Kojonup	Kendenup	Gibson	18 Rank on rank	2014-18 MET
Site Mean (t/ha)	2.41	2.4	1.48	2.60	2.3	2.50		
Pioneer 44Y27 (RR)	2	2	11	3	6	1	2	111
Pioneer 45Y28 (RR)	3	3	5	6	8	4	4	111
InVigor R 4020P	9	14	2	3	3	3	6	111
Nuseed GT-53	1	4	1	1	1	2	1	110
Pioneer 43Y29 (RR)	-	-	-	-	-	-	-	108
Hyola 410XX	-	-	-	-	-	-	-	108
Pioneer 45Y25 (RR)	6	-	-	2	2	5	2	106
DG 408RR	3	7	8	-	-	-	6	106
Pioneer 43Y23 (RR)	5	10	5	-	-	-	8	105
InVigor R 5520P	14	12	3	5	5	5	8	104
Hyola 506RR	7	9	10	10	9	8	11	104
Nuseed GT-42	8	1	4	7	4	7	4	101
DG 460RR	15	15	13	8	10	9	13	99
Hyola 404RR	10	11	14	-	-	-	13	99
InVigor R 3520	12	6	9	-	-	-	11	98
Nuseed GT-41	13	5	5	-	-	-	10	96



# Mid GT



# Glyphosate Tolerant (GT) reference sheet

## NVT 2014-18 MET, Oil and Blackleg data

Jackie Bucat, DPIRD  
GRDC RU19

GT	Variety maturity	Early trial series				Mid trial series					Oil	Blackleg
		0.5 - 1 t/ha	1 - 1.5 t/ha	1.5 - 2 t/ha	2 - 2.5 t/ha	1.0 - 1.5 t/ha	1.5 - 2.0 t/ha	2.0 - 2.5 t/ha	2.5 - 3.0 t/ha	3-3.5 t/ha	Diff to avg (45.9%)	rating bare seed
Pioneer 43Y29RR	3	109		108	105		109	108		107	-0.1	MR
Pioneer 43Y23RR		108	109	106	107	108	106	103	104	102	-1.8	MR
InVigor R 3520		105	108	108	109	-	101	96	98	96	-0.1	MR
<b>1</b> Pioneer 44Y27RR	4	112		115	112	114	112	109	110	108	-0.4	R-MR
DG 408RR		115	114	111	110	108	105	105	105	104	1.7	MS
InVigor R 4020P		-	92	98	96		112	110	111		-	-
Hyola 410XX		-	-	-	-	-	-	108	-	-	1.3	-
Hyola 404RR		107	106	103	104	104	98	96	97	97	1	R-MR
Nuseed GT-42		99	98	98	98	103	98	101	100	102	-	R
Nuseed GT-41		102	104	103	104	102	95	94	94	94	-1.1	MR
<b>2</b> Pioneer 45Y28RR	5	111		111	109		110	112	111	111	-	MR
Nuseed GT-53		110	108	107	106	112	106	111	110	112	-0.9	R
Pioneer 45Y25RR		103	102	106	103	102	105	109	108	109	0	R
Hyola 506RR		109	107	106	105	104	103	104	104	104	0.4	R
InVigor R 5520P		-	-	-	-	103	105	104	104	103	0.9	MR

# Glyphosate Tolerant (GT) reference sheet

## NVT 2014-18 MET, Oil and Blackleg data

Jackie Bucat, DPIRD  
GRDC RU19

GT	Variety maturity	Early trial series				Mid trial series					Oil	Blackleg
		0.5 - 1 t/ha	1 - 1.5 t/ha	1.5 - 2 t/ha	2 - 2.5 t/ha	1.0 - 1.5 t/ha	1.5 - 2.0 t/ha	2.0 - 2.5 t/ha	2.5 - 3.0 t/ha	3-3.5 t/ha	Diff to avg (45.9%)	rating bare seed
Pioneer 43Y29RR	3	109	108	108	105	109	108	108	107	107	-0.1	MR
Pioneer 43Y23RR		108	109	106	107	108	106	103	104	102	-1.8	MR
InVigor R 3520		105	108	108	109	-	101	96	98	96	-0.1	MR
1 Pioneer 44Y27RR	4	112	115	112	112	114	112	109	110	108	-0.4	R-MR
DG 408RR		115	114	111	110	108	105	105	105	104	1.7	MS
InVigor R 4020P		-	92	98	96		112	110	111		-	-
Hyola 410XX		-	-	-	-	-	-	108	-	-	1.3	-
Hyola 404RR		107	106	103	104	104	98	96	97	97	1	R-MR
Nuseed GT-42		99	98	98	98	103	98	101	100	102	-	R
Nuseed GT-41		102	104	103	104	102	95	94	94	94	-1.1	MR
2 Pioneer 45Y28RR	5	111	111	109	109	110	112	111	111	111	-	MR
Nuseed GT-53		110	108	107	106	112	106	111	110	112	-0.9	R
Pioneer 45Y25RR		103	102	106	103	102	105	109	108	109	0	R
Hyola 506RR		109	107	106	105	104	103	104	104	104	0.4	R
InVigor R 5520P		-	-	-	-	103	105	104	104	103	0.9	MR





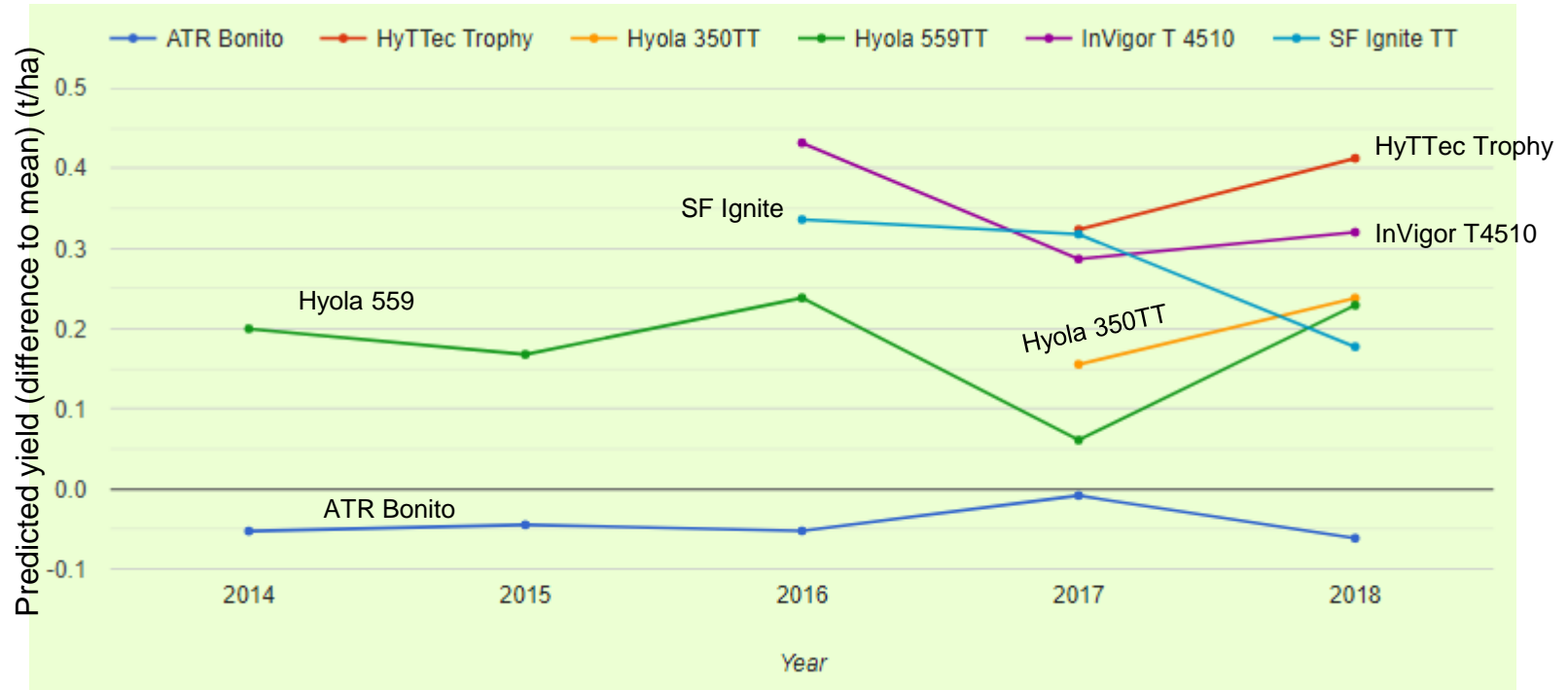
## Variety yield rank for 2018 Mid TT NVT

	Bolgart	Cunderdin	Williams	Wagin	Katanning	Kojonup	Kendenup	Scaddan	Gibson	Munglinup	19 Rank on rank	2014-18 MET
Site Mean (t/ha)	2.65	2.56	2.92	1.91	1.61	2.33	2.47	1.36	2.53	1.44		
HyTTec Trophy	10	2	1	4	1	1	-	1	2	-	1	118
InVigor T 4510	1	1	5	1	11	4	4	3	1	2	1	115
Hyola 350TT	9	9	6	6	17	2	6	2	8	1	8	111
Hyola 550TT	5	3	1	-	1	5	-	-	4	3	1	110
DG 670TT	4	11	3	7	5	3	3	8	6	9	5	110
SF Ignite TT	14	12	4	8	4	6	2	-	3	5	5	110
InVigor T 3510	13	14	-	3	16	-	-	5	-	-	12	110
Hyola 559TT	1	3	7	11	8	7	1	3	6	4	4	109
SF Turbine TT	7	8	9	5	3	7	5	-	-	-	5	109
Pioneer 44T02 TT	7	5	-	2	14	-	-	6	-	-	8	109
Hyola 650TT	3	5	8	9	6	10	7	6	9	6	8	107
Pioneer 45T03 TT	-	-	-	-	10	9	11	-	5	7	11	106
SF Spark TT	16	13	-	-	9	-	-	-	10	-	13	104
ATR Mako	15	16	12	9	15	13	9	-	12	11	13	98
ATR Bonito	12	15	11	13	18	12	12	10	14	10	16	98
ATR Wahoo	-	-	13	-	-	14	10	-	12	12	13	96
ATR Stingray	16	17	-	12	13	-	-	9	-	-	17	95

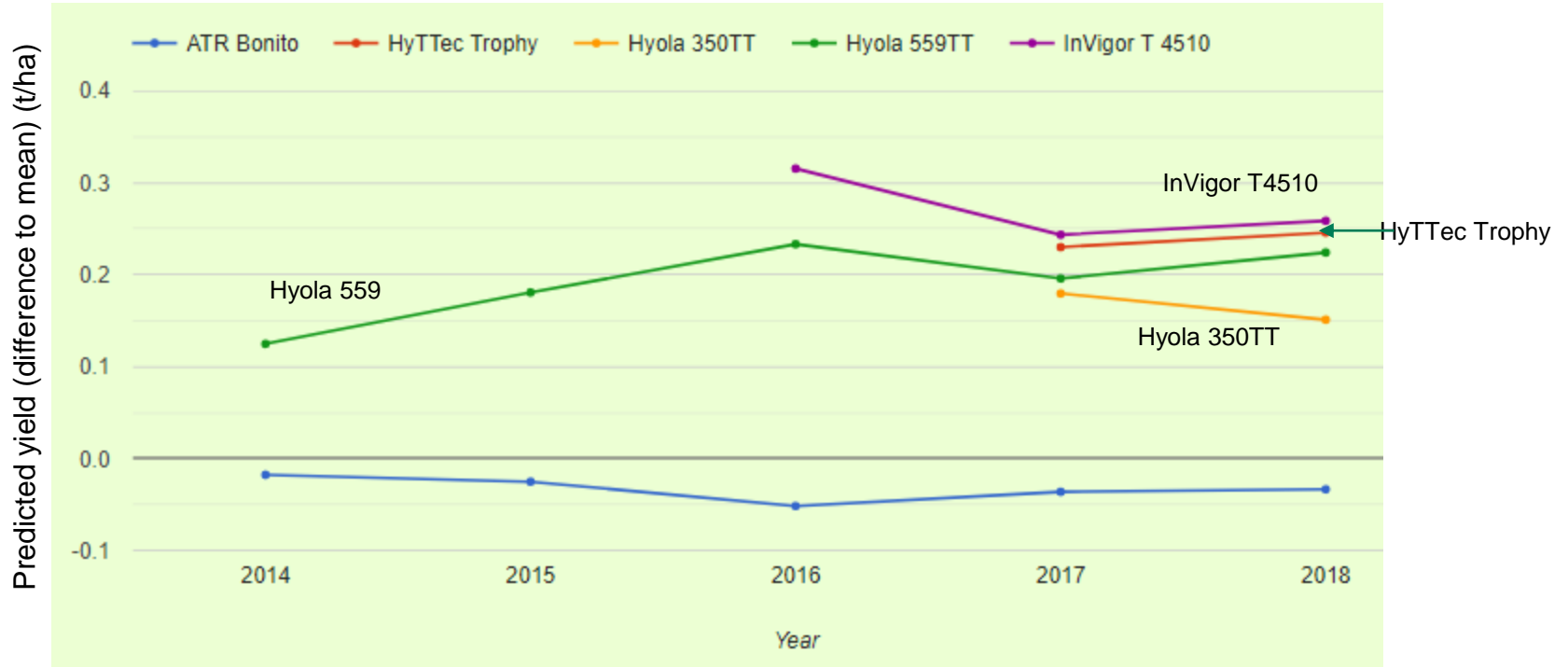
## Variety yield rank for 2018 Early TT NVT

Site Mean (t/ha)	Mingenew 1.5	Buntine 2.23	Kellerberrin 1.48	Merredin 1.83	Yealering 1.57	Hyden 0.6	Nyabing 1.3	18 Rank on rank	2014-18 NVT
SF Spark TT	-	-	-	-	1	-	-	1	115
InVigor T 4510	5	1	1	1	4	1	4	2	114
HyTTec Trophy	6	2	7	2	2	4	2	3	114
Hyola 559TT	4	4	4	3	5	3	5	3	113
Pioneer 44T02 TT	3	7	3	4	3	-	8	5	111
InVigor T 3510	6	4	6	5	6	1	6	5	110
Hyola 550TT	-	-	-	-	-	5	-	5	110
SF Turbine TT	8	3	-	-	7	-	1	5	109
Hyola 350TT	1	-	4	-	9	6	7	5	109
DG 670TT	-	-	-	-	-	7	-	10	101
Hyola 650TT	11	-	-	-	-	-	-	13	100
ATR Bonito	10	6	9	6	10	8	9	11	98
ATR Stingray	-	8	8	8	11	9	10	12	95

# Mid TT 14-18 NVT



# Early TT 14-18 NVT





# TT reference sheet- NVT 2014-18 MET

TT	Variety maturity	Early trial series				Mid trial series					Oil	Blackleg
		0.5-1.0 t/ha	1.0-1.5 t/ha	1.5-2.0 t/ha	2.0-2.5 t/ha	1.0-1.5 t/ha	1.5-2.0 t/ha	2.0-2.5 t/ha	2.5-3.0 t/ha	3.0-3.5 t/ha	Diff to avg (44.6%)	resistance bare seed
InVigor T 3510	3	123	112	109	109	112	111	110	109	-	-0.2	MR-MS
Hyola 350TT		107	110	110	109	110	112	109	109	-	-0.6	R
SF Spark TT		-	-	115	-	-	107	103	103	-	-	R
1 HyTTec Trophy	4	128	115	113	113	119	116	119	118		-0.5	R-MR
2 InVigor T 4510		122	116	113	112	114	114	116	115	118	-0.2	MR-MS
Pioneer 44T02 TT		118	112	111	110	112	108	107	107	108	0.3	R-MR
SF Turbine TT		116	111	108	108	108	110	110	108	109	-0.7	MR-MS
Hyola 550TT	5	110	-	-	-	-	109	111	111	-	-	-
SF Ignite TT		-	-	-	-	104	111	114	112	114	-0.2	MR
Hyola 559TT		123	113	111	110	113	106	107	108	110	1.4	MR
Pioneer 45T03 TT		-	-	-	-	-	107	106	104	-	-	-
DG 670TT	6	101	-	-	-	105	109	113	112	114	-0.5	MR
Hyola 650TT		92	100	101	-	108	104	107	108	111	0.5	R
<b>TT+GT (glyphosate tolerant)</b>												
BASF 3000 TR	3	128	109	105	106	-	-	110	-	-	0.5	MS-S
Hyola 530XT	5	-	-	-	-	104	99	96	97	-	1.1	-
<b>TT+CL</b>												
Hyola 580CT	5	99		99	-	102	101	102	103	-	-1.2	R-MR

# TT reference sheet- NVT 2014-18

Jackie Bucat, DPIRD  
GRDC RU19

TT	Variety maturity	Early trial series				Mid trial series					Oil	Blackleg
		0.5-1.0	1.0-1.5	1.5-2.0	2.0-2.5	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0	3.0-3.5	Diff to avg	resistance
		t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	(44.6%)	bare seed
InVigor T 3510	3	123	112	109	109	112	111	110	109	-	-0.2	MR-MS
Hyola 350TT		107	110	110	109	110	112	109	109	-	-0.6	R
SF Spark TT		-	-	115	-	-	107	103	103	-	-	R
1 HyTTec Trophy	4	128	115	113	113	119	116	119	118	-	-0.5	R-MR
2 InVigor T 4510		122	116	113	112	114	114	116	115	118	-0.2	MR-MS
Pioneer 44T02 TT		118	112	111	110	112	108	107	107	108	0.3	R-MR
SF Turbine TT		116	111	108	108	108	110	110	108	109	-0.7	MR-MS
Hyola 550TT	5	110	-	-	-	-	109	111	111	-	-	-
SF Ignite TT		-	-	-	-	104	111	114	112	114	-0.2	MR
Hyola 559TT		123	113	111	110	113	106	107	108	110	1.4	MR
Pioneer 45T03 TT		-	-	-	-	-	107	106	104	-	-	-
DG 670TT	6	101	-	-	-	105	109	113	112	114	-0.5	MR
Hyola 650TT		92	100	101	-	108	104	107	108	111	0.5	R
<b>TT+GT (glyphosate tolerant)</b>												
BASF 3000 TR	3	128	109	105	106	-	-	110	-	-	0.5	MS-S
Hyola 530XT	5	-	-	-	-	104	99	96	97	-	1.1	-
<b>TT+CL</b>												
Hyola 580CT	5	99		99	-	102	101	102	103	-	-1.2	R-MR

# 2018 TT OP vs Hybrid trials

Mark Seymour, DPIRD

## Varieties

Retained and graded OP seed (1-4 years) - ATR Bonito

Hybrids- Hyola 350TT, InVigor T4510, HyTTech Trophy, Pioneer 44T02 TT

## Density

Hybrids sown at 50 and 25 plants/m<sup>2</sup>,

OP at 50 p/m<sup>2</sup>

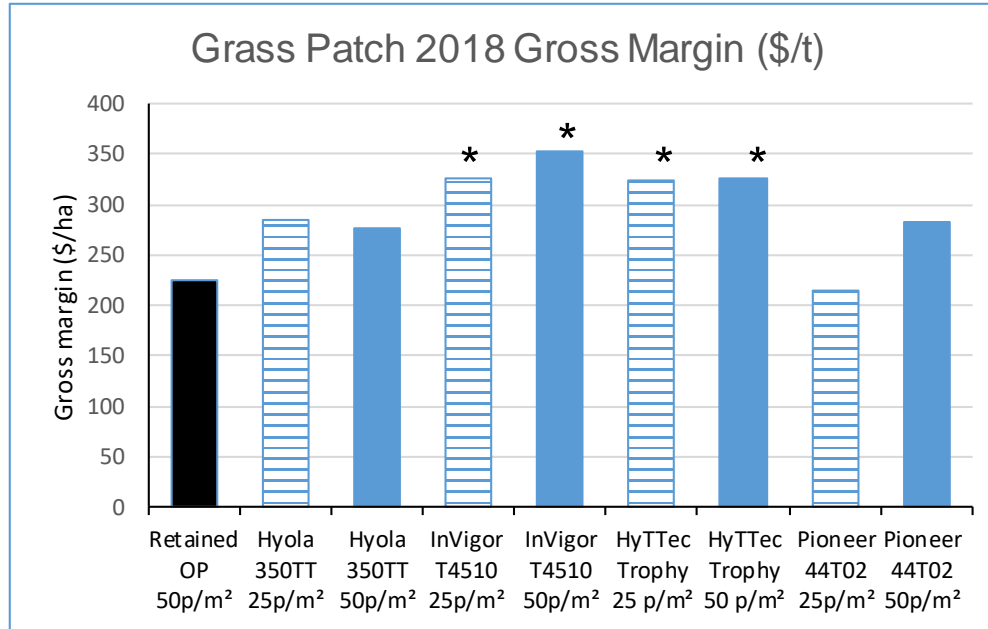
## Locations

Cunderdin 1.6t/ha

Merredin 1.0t/ha

Grass Patch 1.0t/ha

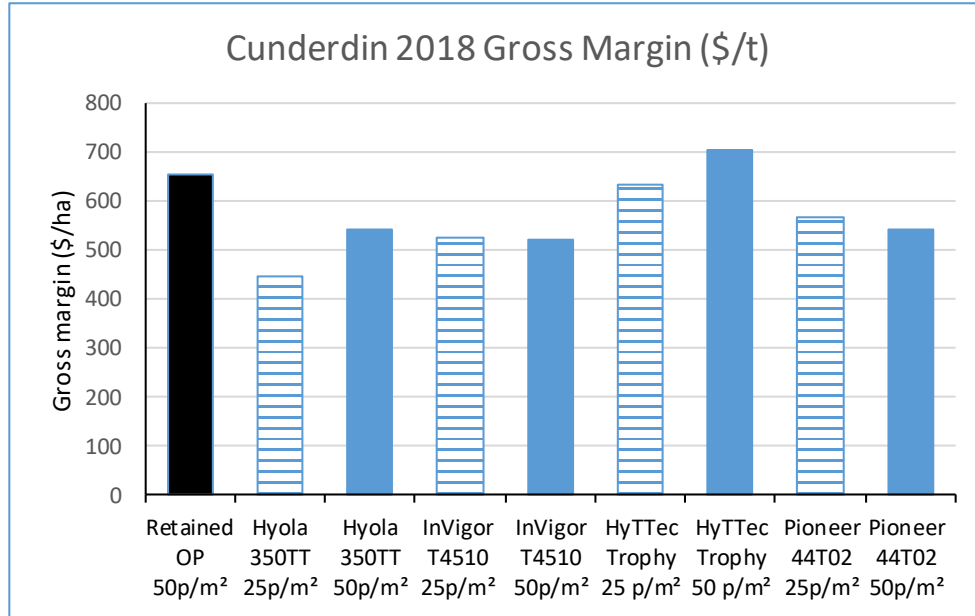
## InVigor T4510 and HyTTech Trophy hybrids were more profitable than ATR Bonito at Grass Patch in 2018



- greater profit in Grass Patch trial at 1t/ha but limited response at 2.6t/ha site at Cunderdin

Research by  
Mark Seymour  
DPIRD

No significant differences in gross margin from 50p/m<sup>2</sup> density hybrid treatments, compared with 25p/m<sup>2</sup> at any sites



- Increased yields with higher seeding rate of hybrids, but no difference in gross margin

Research by  
Mark Seymour  
DPIRD

## When to grow TT hybrid TTs

### Economic model

Yield thresholds based on NVT MET

(where yields generated with high seeding rates)

Seeding rate	1:1 return (equal profit)	1:2 return
2kg/ha	0.8	1.6
4kg/ha	1.4	2.8



## Extra gross return (\$/ha) of TT hybrid varieties compared with ATR Bonito return

For example, total return from InVigor T 3510 at 0.75t/ha crop = \$525 (\$425 + \$100),  
\$100 more than ATR Bonito gross return

TT variety	Variety maturity	Early trial series				Mid trial series				
		0.75 t/ha	1.25 t/ha	1.75 t/ha	2.25 t/ha	1.25 t/ha	1.75 t/ha	2.25 t/ha	2.75 t/ha	3.25 t/ha
ATR Bonito return (\$/ha)		425	709	993	1276	716	983	1276	1560	1862
InVigor T 3510	3	100	89	94	121	81	124	134	148	-
Hyola 350TT		29	70	98	113	63	128	113	138	-
SF Spark TT		-	-	157	-	-	87	48	59	-
HyTTec Trophy	4	110	92	109	141	113	149	216	249	-
InVigor T 4510		96	117	134	160	96	154	211	242	323
Pioneer 44T02TT		82	94	122	144	87	102	105	129	152
SF Turbine TT		67	76	76	98	47	106	124	120	142
Hyola 550TT	5	46	-	-	-	-	107	151	184	-
SF Ignite TT		-	-	-	-	24	124	185	195	249
Hyola 559TT		112	114	140	167	107	99	127	172	222
Pioneer 45T03TT		-	-	-	-	-	87	87	74	-
DG 670TT	6	4	-	-	-	28	100	166	187	240
Hyola 650TT		-28	10	25	-	61	65	109	150	214

60	>1:1 profit at 2.5kg/ha seeding rate
120	>1:1 Profit at 4kg/ha seeding rate
241	>1:2 profit at 4kg/ha seeding rate

Table based on NVT MET data 2014-18- Yields from trials with 40-50 plants/m<sup>2</sup> (high seeding rates)

## When to grow TT hybrids? Depends on risk profile



Where OP profit = hybrid profit, no value to grower to swap



Reduce financial risk by using where high expected yields



Use good seeding rate to reduce production risk

A low-angle photograph of a field of yellow flowers, likely rapeseed, reaching towards a bright sun in a clear blue sky. The sun is positioned in the upper center, creating a lens flare effect. The flowers are in the foreground and middle ground, with their dark green stems and bright yellow petals clearly visible. The overall mood is bright and positive.

**Thank you**

## TT OP or Hybrid TTs

- **Updated economic model (Zhang, CSIRO)**

Using MET yields, threshold is  
0.8t/ha for equal profit and  
1.6t/ha for 1:2 return (or is it??)

- **DPIRD density trials**

- **NVT Long term MET calculations**



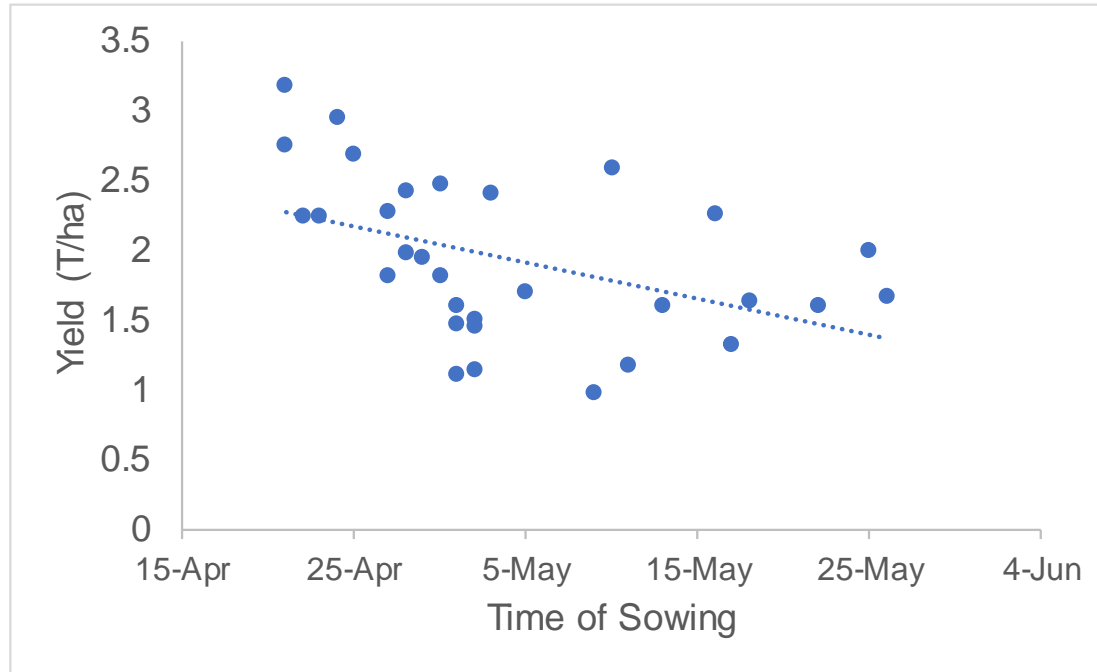
## Approximate hybrid seeding rate affordable (kg/ha) - for equal profit with ATR Bonito

TT variety	Seed cost (\$/kg)	Early trial series				Mid trial series				
		0.75	1.25	1.75	2.25	1.25	1.75	2.25	2.75	3.25
		t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha
ATR Bonito	3									
InVigor T 3510	26.5	4.1	3.7	3.9	4.9	3.4	5.0	5.4	5.9	-
Hyola 350TT	28	1.4	2.8	3.8	4.4	2.6	4.9	4.4	5.3	-
SF Spark TT	31	-	-	5.4	-	-	3.1	1.8	2.2	-
HyTTec Trophy	19.5	6.1	5.2	6.1	7.7	6.2	8.1	11.5	13.2	-
InVigor T 4510	27.5	3.8	4.6	5.2	6.1	3.8	5.9	8.0	9.1	12.1
Pioneer 44T02 TT	31	3.0	3.3	4.2	4.9	3.1	3.6	3.7	4.4	5.2
SF Turbine TT	31	2.4	2.7	2.8	3.5	1.8	3.7	4.3	4.2	4.9
Hyola 550TT	28	2.0	-	-	-	-	4.2	5.7	6.9	-
SF Ignite TT	31	-	-	-	-	1.1	4.3	6.3	6.6	8.3
Hyola 559TT	23	5.3	5.4	6.5	7.6	5.1	4.7	5.9	7.9	10.0
Pioneer 45T03 TT	31	-	-	-	-	-	3.1	3.1	2.7	-
DG 670TT	31	0.4	-	-	-	1.2	3.5	5.6	6.3	8.0
Hyola 650TT	23	-0.8	0.8	1.5	-	3.0	3.2	5.1	6.9	9.7

Based on NVT MET data 2014-18

Yields from trials with 40-50 plants/m<sup>2</sup> (high seeding rates)

## All varieties do well with early sowing -even early maturing varieties



Early maturity (3) RR varieties yield more with early sowing  
NVT results 2014-2018



	Seeds/kg	seed size	seeding rate 50 p/m <sup>2</sup>	Seeding rate 25 p/m <sup>2</sup>
ATR Bonito (OP)	199,250	5	6.5	
Hyola 350TT	129,000	7.8	6.6	3.3
InVigor T 4510	183,500	5.5	4.4	2.2
HyTTech Trophy	196,000	5.1	4.1	2.1
Pioneer 44T02 TT	241,000	4.2	3.3	1.7

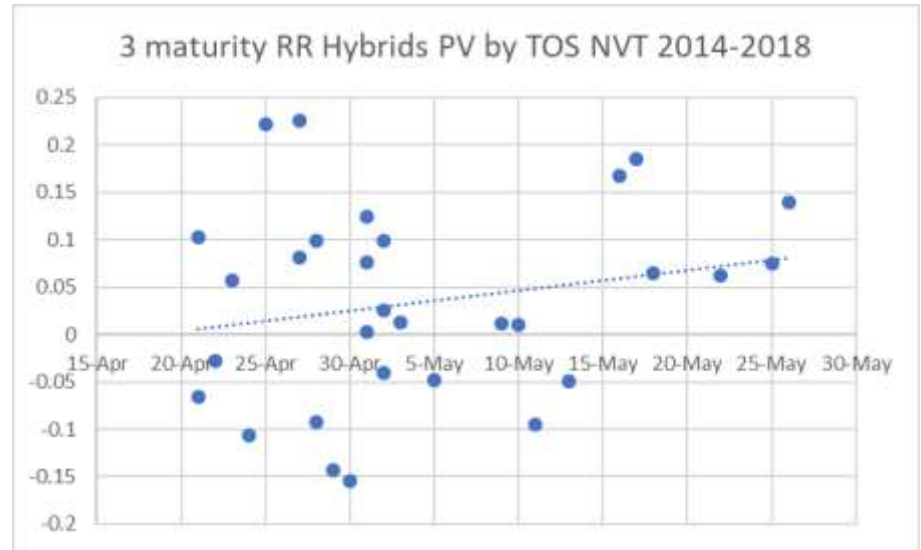
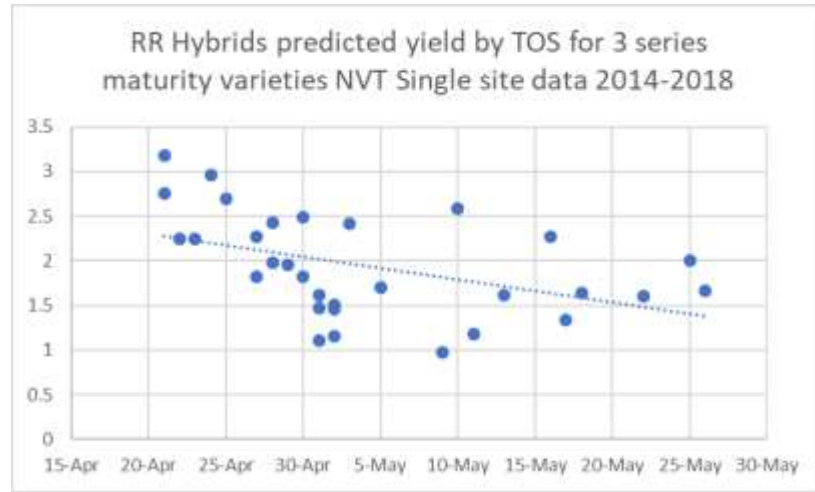
Research by  
Mark Seymour  
DPIRD

## Extra gross return (\$/ha) of TT hybrids compared with ATR Bonito return

For example, total return from InVigor T 3510 at 0.75t/ha crop = \$525 (\$425 + \$100), \$100 more than ATR Bonito gross return

		Early trial series				Mid trial series				
TT variety	Variety maturity	0.75 t/ha	1.25 t/ha	1.75 t/ha	2.25 t/ha	1.25 t/ha	1.75 t/ha	2.25 t/ha	2.75 t/ha	3.25 t/ha
ATR Bonito return (\$/ha)		425	709	993	1276	716	983	1276	1560	1862
InVigor T 3510	3	100	89	94	121	81	124	134	148	-
Hyola 350TT		29	70	98	113	63	128	113	138	-
SF Spark TT		-	-	157	-	-	87	48	59	-
HyTTec Trophy	4	110	92	109	141	113	149	216	249	-
InVigor T 4510		96	117	134	160	96	154	211	242	323
Pioneer 44T02TT		82	94	122	144	87	102	105	129	152
SF Turbine TT		67	76	76	98	47	106	124	120	142
Hyola 550TT	5	46	-	-	-	-	107	151	184	-
SF Ignite TT		-	-	-	-	24	124	185	195	249
Hyola 559TT		112	114	140	167	107	99	127	172	222
Pioneer 45T03TT		-	-	-	-	-	87	87	74	-
DG 670TT	6	4	-	-	-	28	100	166	187	240
Hyola 650TT		-28	10	25	-	61	65	109	150	214

## Relative performance of short season varieties increases when sown late



indicated by yield levels in MET tables

But likely to be greater differences with later sowing

Would it be worth having short season variety on hand in case of late breaks?

