

# HYOLA 580CT



**CLEARFIELD®  
+ TRIAZINE TOLERANT**



World's first Clearfield® + Triazine dual tolerant canola hybrid from Pacific Seeds



## HYBRID ATTRIBUTES

CT Technology shows up to \$1000/ha value in crop protection from Group B IMI soil residue (\*PSPE application timing)

Dual herbicide tolerance perfect for IWM cropping rotations and herbicide resistance management

Risk mitigation tool after low rainfall summers with dry soil profiles

Reliable 5 series hybrid with competitive yield potential

Specifically adapted to the 1.5t/ha to 3.5t/ha growing regions

High Blackleg rating of R with Groups BC - great for rotating

Good lodging resistance, even flowering and manageable height for direct harvesting

No vernalisation hold, with a moderate thermal time requirement: i.e. early sowing leads to earlier flowering maturity

Yield adaptability	1.5 - 3.5t/ha
Blackleg rating	R
Blackleg groups	BC
Oil potential	Moderate - high
Herbicide tolerance	CL + TT
Maturity	Mid-Early
Plant vigour	7
Plant height	Medium
#Lodging resistance	8
*Shatter tolerance	8
^Hectolitre weight	8
Growing regions	NSW, SA, Vic, WA
Irrigation/dryland	Both
Alternative to	HyTTec Trophy, InVigor T4510, ATR Bonito, ATR Wahoo, SF Ignite

(P) Indicates provisional rating and blackleg groups from Pacific Seeds blackleg nurseries and R gene screening

# Indicates observed visual rating from Pacific Seeds R&D internal replicated research trial evaluations

\*Indicates observed visual rating from Pacific Seeds R&D internal replicated research trial evaluations

^ Indicates calculated weight rating from Pacific Seeds R&D internal replicated research trial evaluations

Scale: 1 = poor - 9 = best

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CT TECHNOLOGY WITH  
HIGH IMI CARRYOVER

TT TECHNOLOGY WITH  
HIGH IMI CARRYOVER

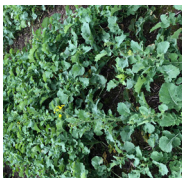
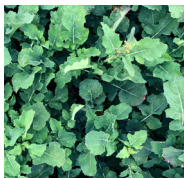
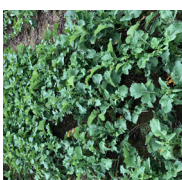
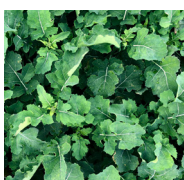
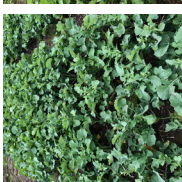
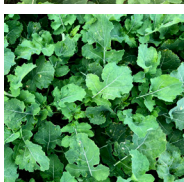
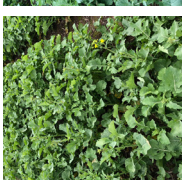
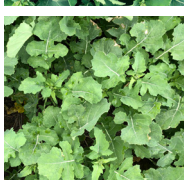
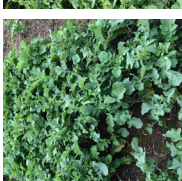
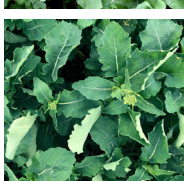
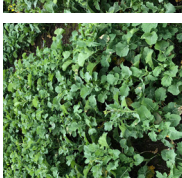

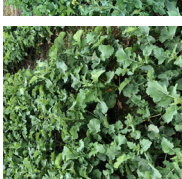

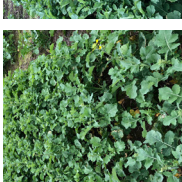

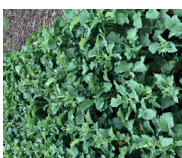


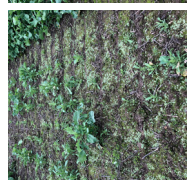
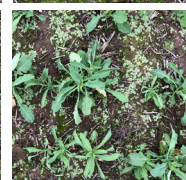
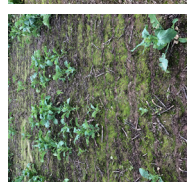

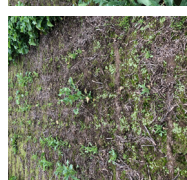
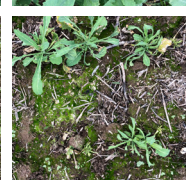
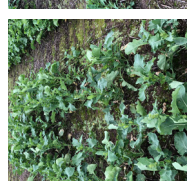
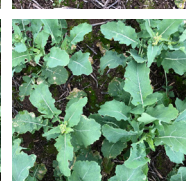
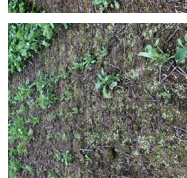

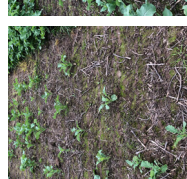

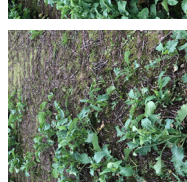
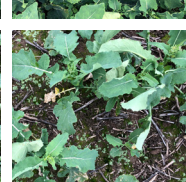


Compared to CT Technology	Summary of Treatment Results (TT Canola Losses)		
Herbicide Treatment Description	Yield kg/ha Loss Range	% Yield Loss Range	Gross Returns \$/ha Loss Range
Application Timing/IMI Rates	Loss Expressed from Lowest to Highest Yielding Trial Sites		
PSPE Low IMI Residue/TT spray - 93.75mL/ha Intervix®	30 - 1520	28.6 - 62.5	28 - 914
PSPE High IMI Residue/TT spray - 375mL/ha Intervix®	60 - 1890	15.2 - 84.7	36 - 1138
PSPE IMI Residue/TT spray - 5g/ha OnDuty®	40 - 1330	34.9 - 88.5	22 - 802
PSPE IMI Residue/TT spray - 20g/ha OnDuty®	70 - 1670	22.8 - 77.4	42 - 1007
(4-6L) IMI Tank Contamination/TT spray - 30mL/ha Intervix®	40 - 1830	14 - 76	26 - 1064

2019 Pacific Seeds Hyola CT Replicated IMI Residue Trials over 5 locations across Australia where Trial mean yields ranged from 0.15 – 3.67t/ha. Mean \*Effects are greater in soil types where the herbicides were more mobile due to acid soils and higher rainfall after sowing. Hyola® CT Technology has been developed specifically for normal crop growth protection against Imidazolinone soil residues and is not promoted or recommended for use as having high levels of tolerance to levels of Group B - SU carryover. Refer to Pacific Seeds Hyola® CT Stewardship guide for specific growing guidelines.

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## Hyola CT IMI Residue and Tank Contamination - Herbicide Treatment Comparisons

Hyola® 580CT	Low IMI Residue		Mod IMI Residue		Low OnDuty® Residue		High OnDuty® Residue		Low Clean® Residue		High Clean® Residue		Low IMI Contamination		Low Clean® Contamination		Standard TT Control									
	<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>Intervix®</b> 93mL/ha <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>Intervix®</b> 375mL/ha <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>OnDuty®</b> 5g/ha <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>Clean®</b> 2.5g/ha <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>Clean®</b> 10g/ha <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>			<p>Stage: IBS <b>Rustler®</b> 1L/ha Stage: PSPE <b>TT</b> 1.1kg/ha Stage: Post Em (4-6Leaf) <b>TT</b> 1.1kg/ha <b>Select®</b> 500mL/ha <b>Uptake®</b> 0.5%</p>	
OP TT Variety																										



## AGRONOMIC BENEFITS OF HYOLA CT TECHNOLOGY

"Hyola 580CT is dual herbicide tolerant technology that is effective on many of the broad-acre emerging weed spp. (i.e. brome and barley grass) and provides growers the flexibility of controlling a broader weed spectrum." **Dr Chris Preston - University of Adelaide**

Photo: Hyola 580CT vs an OP TT variety with 93ml/ha simulated IMI chemistry soil carryover in 2019 extension trials. "Hyola CT technology can be used to overcome plantback constraints often associated with the use of Imidazolinone herbicides, particularly in low rainfall environments and/or on soils of lower pH.

Sulfonylurea (SU), imidazolinone (IMI) or triazine herbicides are likely to cause the most concern, and residues, from the previous season may affect crop emergence or even kill sensitive crops or crop cultivars in the next season.

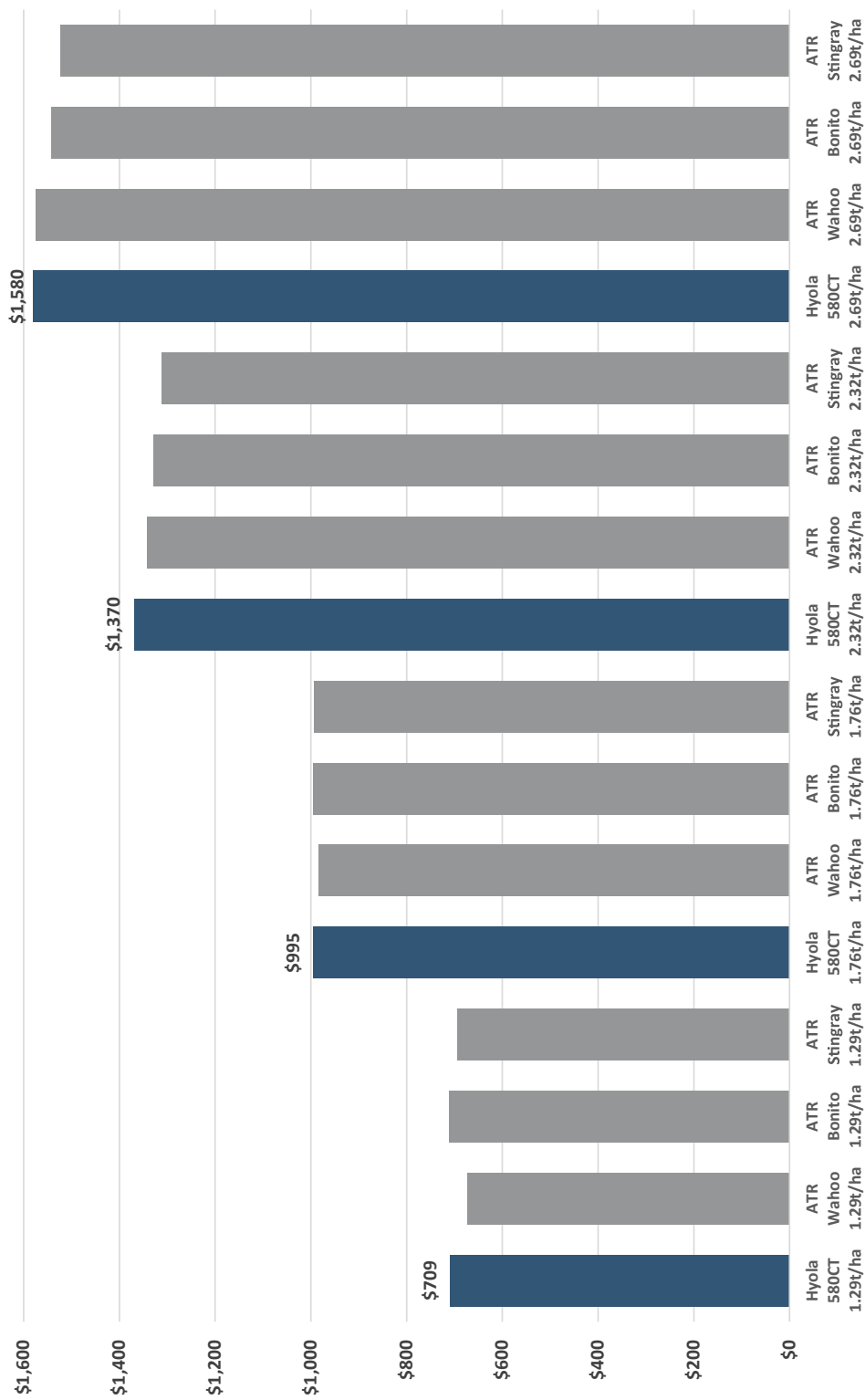
Diflufenican damage symptoms have also been reported following recent dry years on canola crops where products such as diflufenican (for example, Brodal® Options) were applied to lupin crops, or diflufenican/MCPA (for example, Tigrex®) or diflufenican/bromoxynil (for example, Jaguar®) were applied in wheat crops.

The soil pH will have an impact on which herbicides are more likely to persist. All other things being equal, imidazolinones will be more persistent on acid soils and sulphonyl ureas on alkaline soils. Source: <https://www.agric.wa.gov.au/grains-research-development/>



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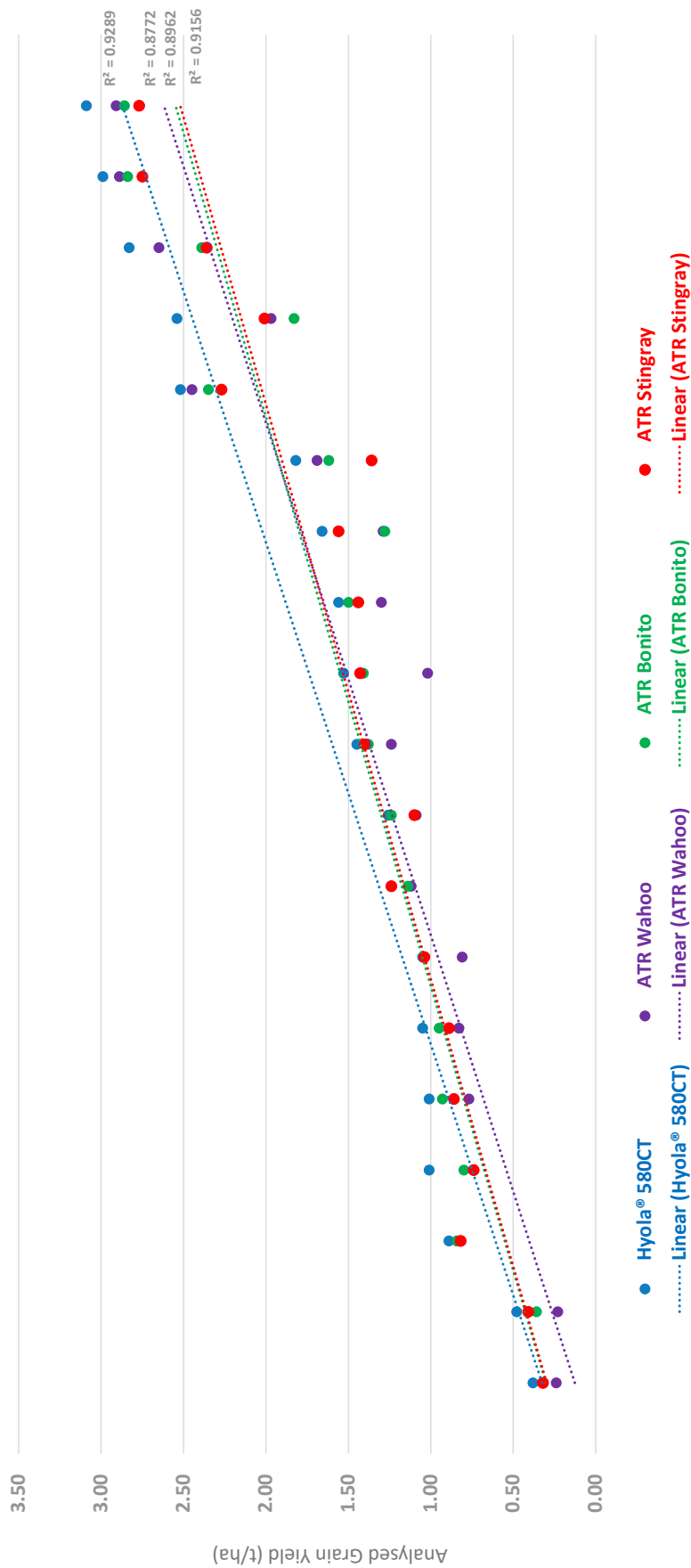
## 2015-2019 LONG TERM RESULTS SHOW HIGHER \$/HA RETURNS VS OP TT VARIETIES



2015-2019 GRDC NVT Long Term Analysis of Grain Yield t/ha - variation from mean by Yield Zone. 1.29 to 2.69 Yield Zones Mean Yield t/ha with Gross Returns (\$/ha) calculated using assumptions: Hybrid sowing 2kg/ha @ \$25/kg with OP varieties retained seed @ \$10/ha (2.5kg/ha sowing rate). EPR \$5/MT applies to ATR Bonito and ATR Wahoo. Base non-GM canola grain price is \$600/MT.

# CANOLA

## 2019 PACIFIC SEEDS RESEARCH TRIAL RESULTS - REGRESSION DATA - HYOLA® 580CT VS OP TT VARIETIES

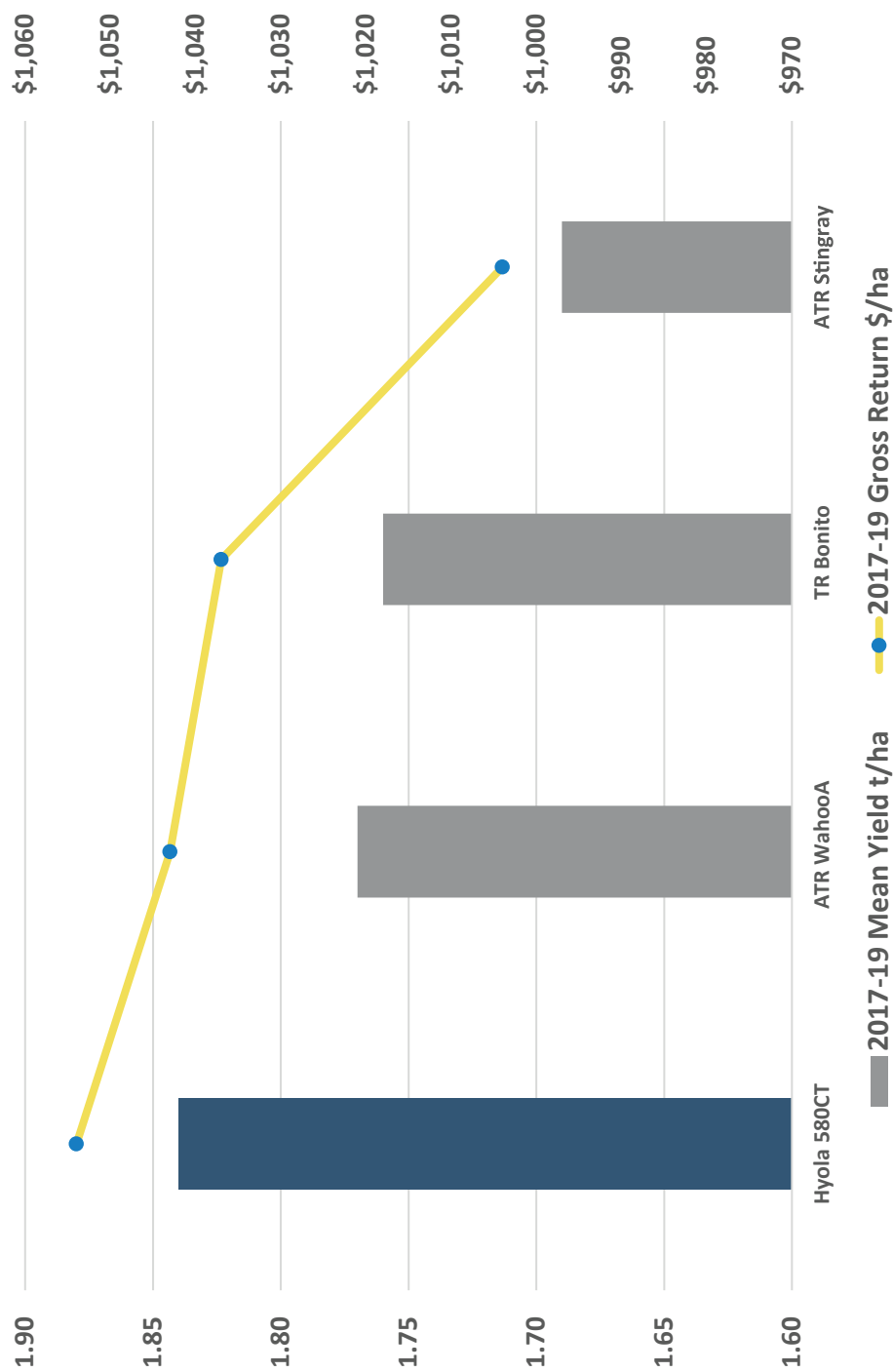


2019 Pacific Seeds Replicated Research Trial Results across 19 locations expressed as analysed Mean Yield (t/ha)



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2017-19 HIGHER GRAIN YIELDS & GROSS RETURNS VS OP TT VARIETIES

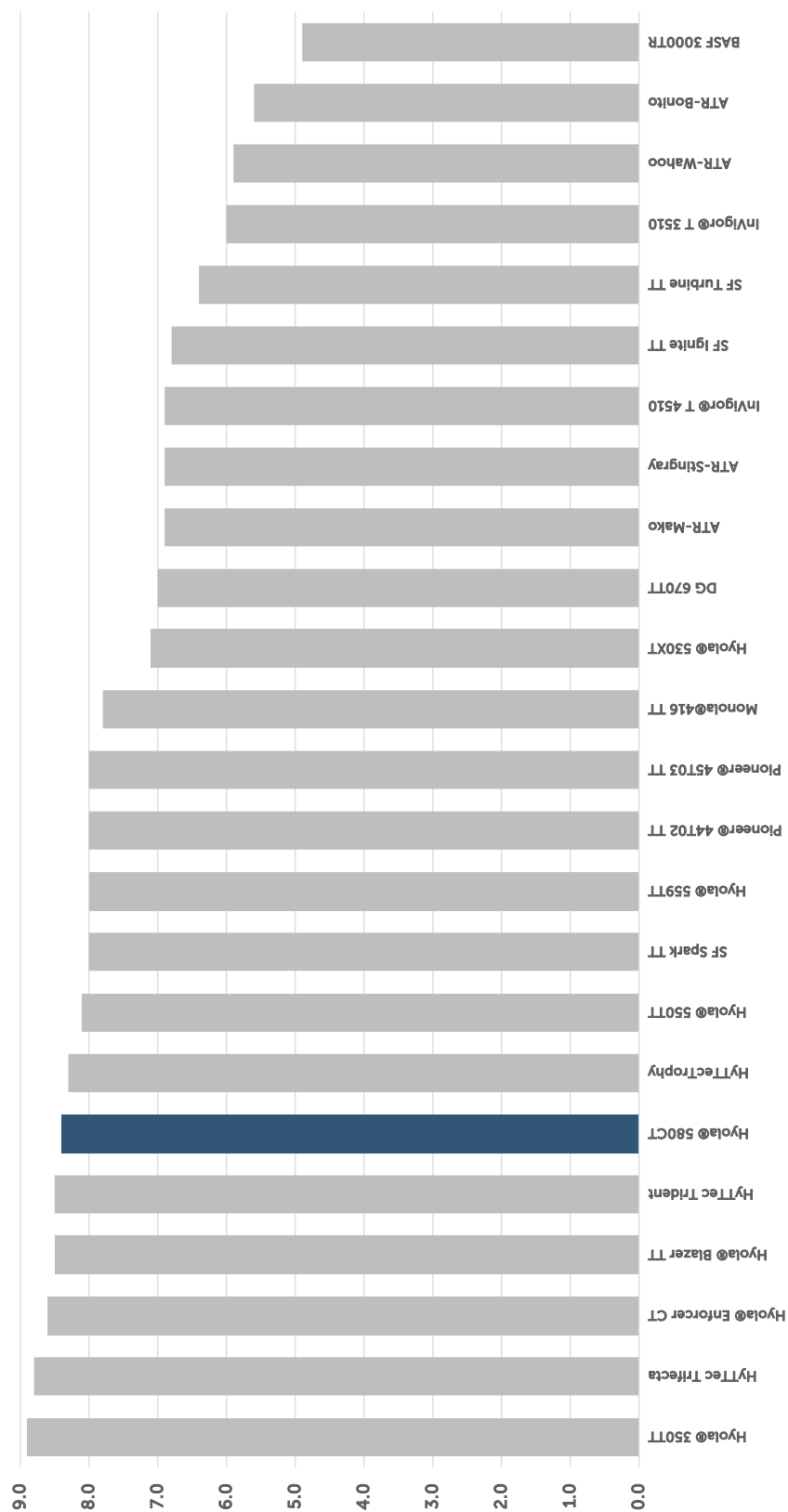


2017-2019 GRDC NVT Long Term Analysis of Grain Yield t/ha - variation from the mean by Year. 2017-19 Mean Yield (t/ha) with Gross Returns calculated using assumptions:  
Hybrid sowing 2kg/ha @ \$25/kg with OP varieties retained seed @ \$10/ha (2.5kg/ha sowing rate). EPR \$5/MT applies to ATR Bonito and ATR Wahoo. Base non-GM canola grain price is \$600/MT

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CT Technology Hybrids exhibit Official high rating of "R" for Blackleg Resistance

Value	Rating
8->	R
7.5-7.9	R-MR
6.5-7.49	MR
6-6.49	MR-MS
5-5.9	MS
4-4.9	MS-S
3-3.9	S
2-2.9	S-VS
0-1.9	VS



2020 Official GRDC Autumn Blackleg Ratings (bare seed comparison based on analysed values)

## HYOLA CT TECHNOLOGY STEWARDSHIP GUIDELINES

Pacific Seeds advocates the preservation of Australia's canola herbicide production systems through the correct selection and application of canola production systems. Part of any sustainable farming practice involves good stewardship, and adapting to new farming practices and technologies, especially with regards to integrated weed management (IWM).

Pacific Seeds also recommends that no more than two (2) Group B herbicides are applied in any four (4) year period on the same paddock as this is an important component of the Clearfield® stewardship program.

Where possible, care should be taken to avoid applications of Group B herbicides in consecutive years unless at least two years' previous good weed control has been achieved with methods other than Group B herbicides.

Pacific Seeds also encourages any person applying pesticides to keep accurate records of all herbicide usage.

To preserve the effectiveness of any herbicide a good resistance management approach is recommended. Intervix® herbicide is a Group B herbicide. Other group B (ALS inhibitors) include sulfonylureas, and triazolopyrimidines (sulphonamides).

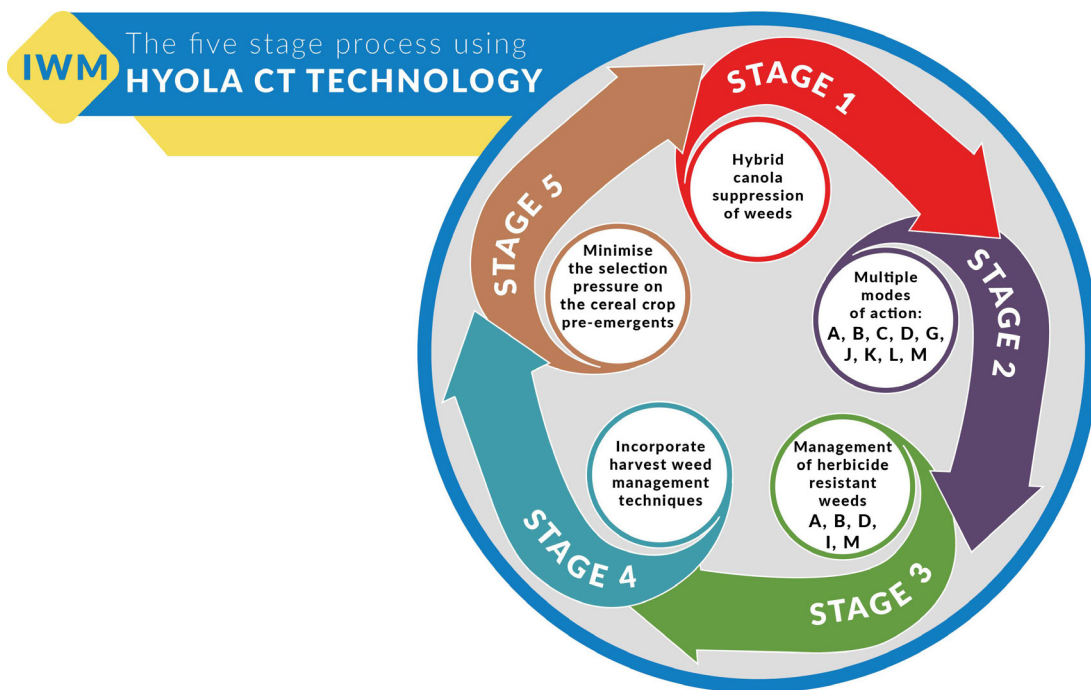
To assist with resistance management, rotate Clearfield® winter crops with spring crops to break the cycle of winter annual weeds and allow the use of alternate site of action herbicides. If winter cropping is rotated with a fallow season, control weeds before they set seed and use alternate mode of action herbicides. ALS-inhibiting herbicides should not be used more than 2 out of 4 years.



## HYOLA CT INTEGRATED WEED MANAGEMENT

When utilising the CT technology, a sound IWM strategy utilising alternative modes of action across pre-emergent, post emergent and fallow application in different crops should be adopted.

Also, the ongoing strategy should consider non-herbicide control measures such as harvest weed seed control (chaff carts, seed destructors, narrow windrow burn, chaff lining, chaff baling etc.).



Through Pacific Seeds leadership in developing new and novel canola dual herbicide tolerant technologies, we can provide growers with increased options and flexibility...“more tools in the tool box” during the canola phase of their cropping rotation.

This aligns well with the industry WEEDSMART’s “The Big 6” basis for an IWM program (<https://weedsmart.org.au/the-big-6/>), which can be summarised as followed:

1. ROTATE CROPS AND PASTURES
2. DOUBLE KNOCK – TO PRESERVE GLYPHOSATE
3. MIX AND ROTATE HERBICIDES
4. STOP WEED SEED SET
5. CROP COMPETITION
6. HARVEST WEED SEED CONTROL

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