

HYOLA 540XC

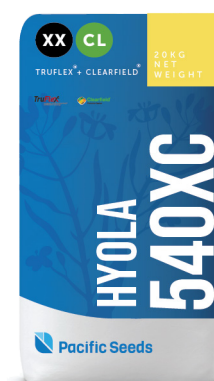


TRUFLEX®
+ CLEARFIELD®

TruFlex®
CANOLA Technology

Clearfield®
Production System

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



HYBRID ATTRIBUTES

XC technology shows up to \$750/ha value in crop protection from group B IMI soil residue (*PSPE application timing)

Excellent crop protection for group B IMI soil residue management as an enhanced risk mitigation tool after low rainfall summer dry profiles

Reliable 5 series hybrid with competitive yield potential with specific adaptation to the 1.75t/ha to 3.50t/ha growing regions

High blackleg rating of "R" official canola industry rating

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	1.75 - 3.5t/ha
Blackleg rating	R
Blackleg groups	BF (P)
Oil potential	Moderate - High
Herbicide tolerance	XX + CL
Maturity	Mid - Early
Plant vigour	8
Plant height	Medium - High
#Lodging resistance	9
**Shatter tolerance	8
^Hectolitre weight	8
Growing regions	NSW, SA ⁺ , Vic, WA
Irrigation/dryland	Both
Alternatives to	Xseed Raptor, 45Y28, GT53, InVigor R5520P, InVigor 4022P

+ means only if approved for commercial release in 2021 by SA government regulations.

(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 observed visual rating from Pacific Seeds R&D replicated research trial evaluations comparing Hyola products

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

Scale: 1 = poor - 9 = best

Clearfield® is a registered trademark of BASF.

Roundup Ready® and Truflex® are trademarks of Monsanto Technology LLC, used under license from Monsanto Australia Pty Ltd

2019 IMI Residue Research Trials showed up to \$750 per Ha Crop Protection



XX Technology with High
IMI Soil Carryover

XC Technology with High
IMI Soil Carryover

Compared to XC Technology	Summary of Treatment Results (XX 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/XX spray - 93.75mL/ha Intervix®	50 - 620	14.0 - 15.4	34 - 347
PSPE High IMI Residue/XX spray - 375mL/ha Intervix®	110 - 1080	22.6 - 26.7	61 - 602
PSPE IMI Residue/XX spray - 5g/ha OnDuty®	150 - 730	18.1 - 39.5	85 - 405
PSPE IMI Residue/XX spray - 20g/ha OnDuty®	260 - 1420	60.5 - 97.0	141 - 770
(4-6L) IMI Tank Contamination/XX spray - 30mL/ha Intervix®	140 - 350	8.70 - 32.6	76 - 198

2019 Pacific Seeds Hyola XC Replicated IMI Residue Trials over 4 locations across Australia where Trial mean yields ranged from 0.26 – 3.70t/ha

*Effects are greater in soil types where the herbicides were more mobile due to acid soils and higher rainfall after sowing. Hyola® XC 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® XC Stewardship guide for specific growing guidelines. Clearfield®, Intervix® and OnDuty® are registered trademarks of BASF.

CANOLA

Hyola XC IMI Residue and Tank Contamination - Herbicide Treatment Comparisons



Hyola® 540XC

Low IMI Residue	Mod IMI Residue	Low OnDuty® Residue	High OnDuty® Residue	Low Glean® Residue	High Glean® Residue	Low IMI Contamination	Low Glean® Contamination	Standard XX Control
Stage: IBS Rustler® 1L/ha Stage: PSPE Intervix® 95mL/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: PSPE Intervix® 375mL/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: PSPE OnDuty® 5g/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: PSPE OnDuty® 20g/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: PSPE Glean® 2.5g/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: PSPE Glean® 10g/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: Post Em (4-6Leaf) Intervix® 30mL/ha Stage: 1 st Flower RR 1.3kg/ha RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: Post Em (4-6Leaf) Glean® 1g/ha Stage: 1 st Flower RR 1.3kg/ha RR 1.3kg/ha	Stage: IBS Rustler® 1L/ha Stage: Post Em (4-6Leaf) RR 1.3kg/ha Stage: 1 st Flower RR 1.3kg/ha



Hyola® 410XX



HYOLA XC - CROP INVESTMENT PROTECTION BENEFITS TO GROWERS

Hyola® XC is technology is the latest in flexibility of spray timing with both quick knock down and extended residual protection available using key chemical groups that growers need, Hyola® XC technology has become a vital part in IWM soil residual carryover canola toolboxes and provide growers with inbuilt crop and investment protection.

Mixing and rotating herbicide actives in crop is now the most valuable tool in resistance management when compared to rotating over successive seasons with individual chemistries.

Visit: www.crop.bayer.com.au/tools-and-services/mix-it-up/ for more details.



Photo: Hyola 410XX (L) vs Hyola XC Technology (R), both with 93ml/ha simulated IMI chemistry soil carryover in 2019 agronomy extension trials (PSPE Application timing).

SOIL RESIDUAL FACTORS

Hyola XC 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.

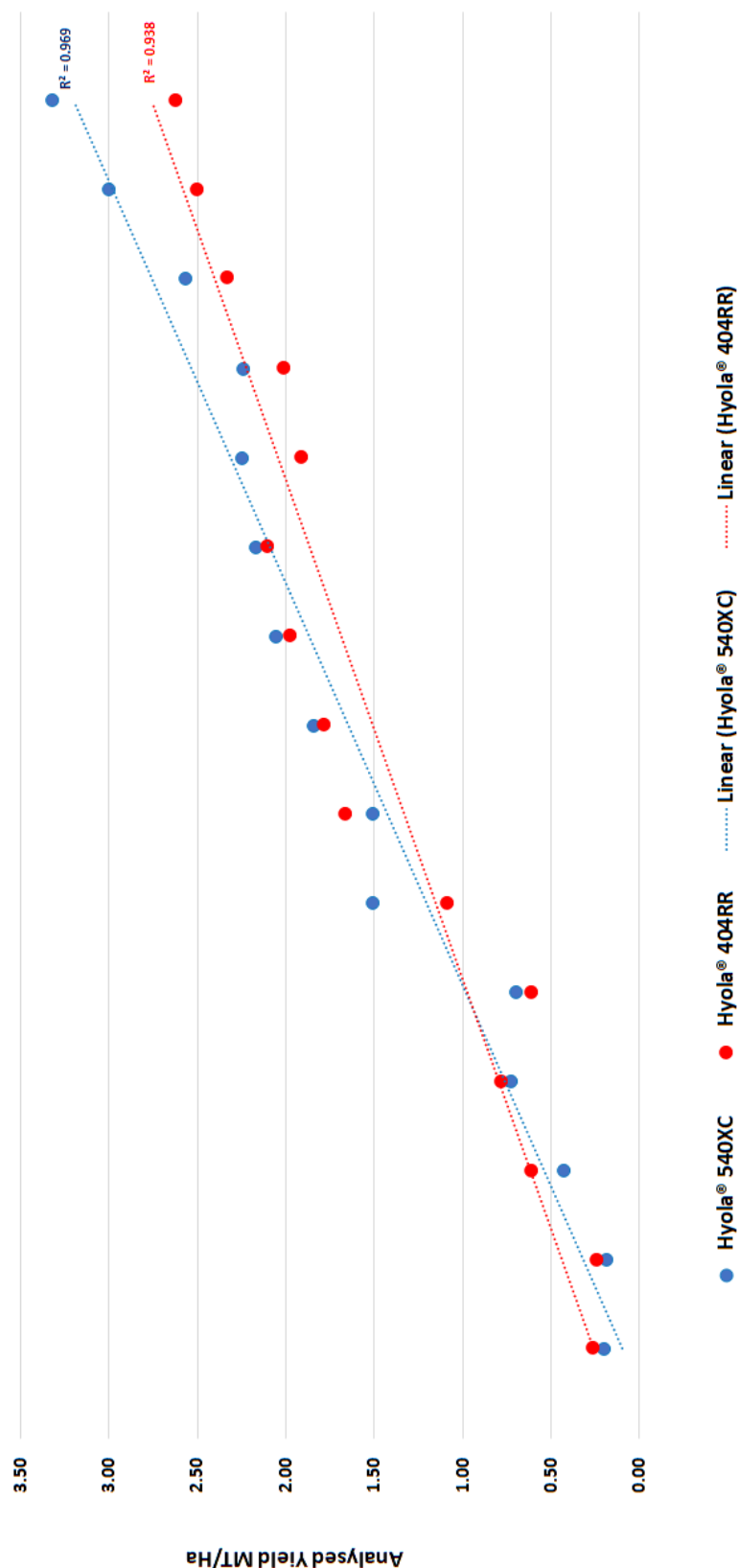
Sulfonylurea (SU), imidazolinone (IMI) or triazine herbicides are likely to cause the most concern, and residues, from the previous season may affect crop emergence or even kill sensitive crops or crop cultivars in the next season.

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/>

CANOLA

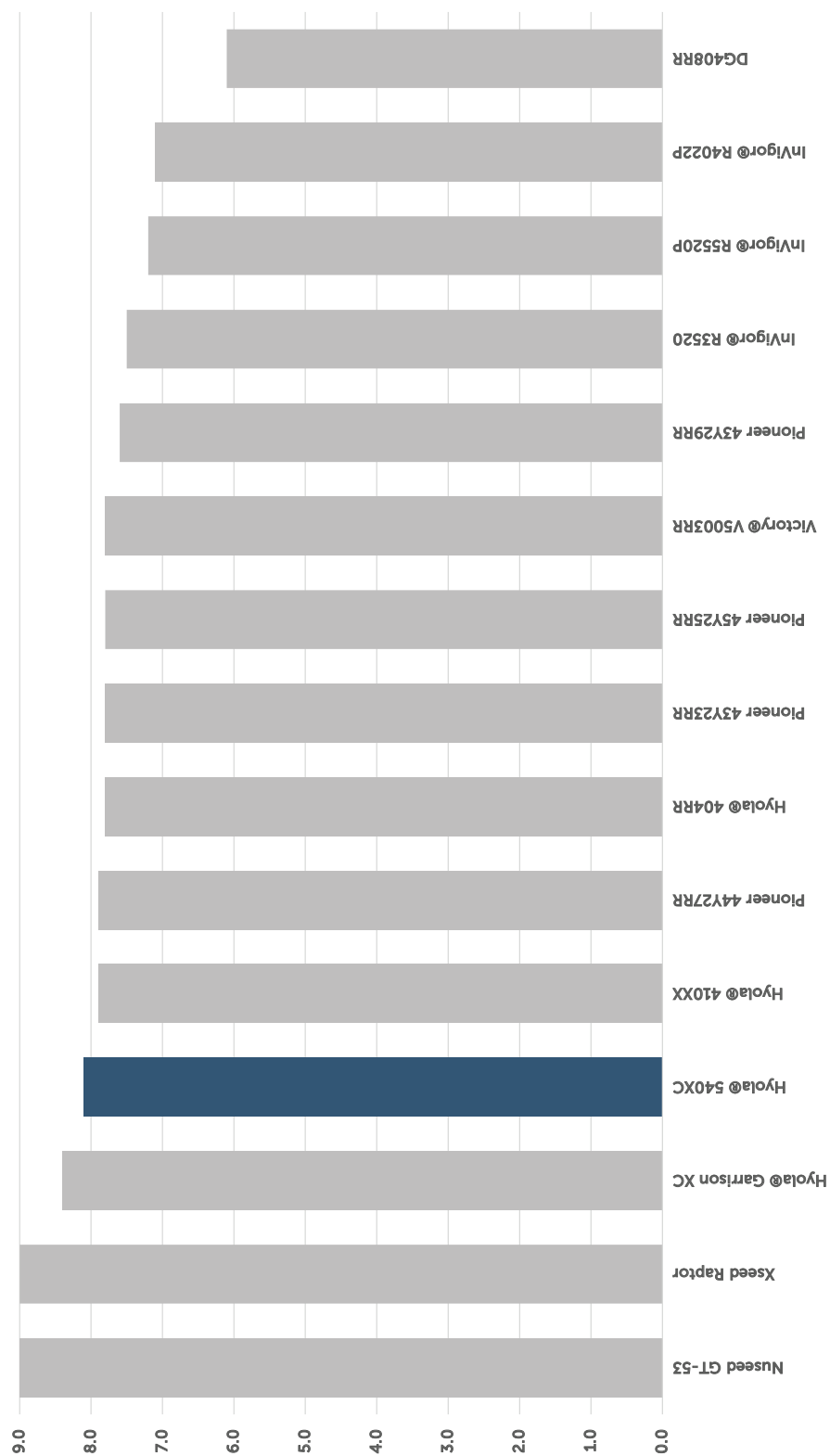
HYOLA 540XC SHOWS HIGHER YIELDS vs HYOLA 404RR WHEN GRAIN YIELDS ARE > 1.50 T/HA



Source: 2017 to 2019 Pacific Seeds Research Trial Regression Data - Hyola® 540XC vs Hyola® 404RR across increasing Trial Mean Yield (t/ha) environments.

CANOLA

Hyola XC Technology hybrids exhibit Official high ratings 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)

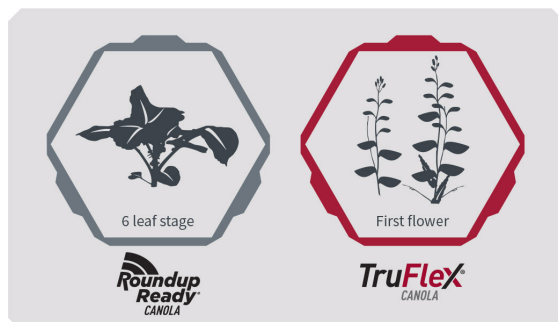


Pacific Seeds

Growing possibilities

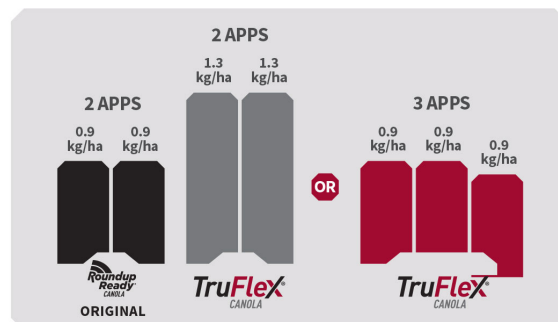
HYOLA XC - GROWER BENEFITS OF TRUFLEX TECHNOLOGY

EXTENDED SPRAY WINDOW EMERGENCE TO FIRST FLOWER



The window of application for Roundup Ready Herbicide with PLANTSHIELD by Monsanto will extend past the six-leaf stage all the way to first flower.

THE RATE FARMERS NEED FOR THEIR WEED CHALLENGES*



- * Of Roundup Ready Herbicide with PLANTSHIELD by Monsanto.
- * Either apply three applications at 0.9 kg/ha or apply two applications of 1.3 kg/ha of Roundup Ready Herbicide with PLANTSHIELD by Monsanto.

One of the smartest routes to high yield potential is through effective weed control. Here's how TruFlex® canola with Roundup Ready® Technology can help make it happen:

WEED CONTROL GROWERS CAN RELY ON

TruFlex® canola with Roundup Ready® Technology and Roundup Ready® Herbicide with PLANTSHIELD® by Monsanto were designed to work with each other. This combination provides you with the tools you need to effectively control weeds in your canola fields.

FLEXIBILITY IN SPRAY RATES AND TIMING

TruFlex canola gives you increased weed control flexibility. The window of application for Roundup Ready Herbicide with PLANTSHIELD by Monsanto will extend past the six-leaf stage to first flower. From emergence to first flower either apply three applications at the current rate of 0.9 kg/ha or apply two higher rates of 1.3 kg/ha.

SUPERIOR YIELD POTENTIAL

New advances in trait technology will help enable better weed control and crop safety compared to Roundup Ready® canola. It's a combination that could give you the opportunity to see a lot more yield potential at harvest time.

TruFlex®
CANOLA with Roundup Ready® Technology

HYOLA XC - CLEARFIELD HERBICIDE CHEMISTRY MANAGEMENT

When utilising the XC technology, a sound IWM strategy utilizing 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.).

Clearfield canola

Apply to canola crop at the 2 to 6 leaf stage. Apply to actively growing weeds in the 3-leaf to 2-tiller stage and broadleaf weeds in the 2 to 6 leaf stage. DO NOT apply **Clearfield** canola after 6 leaf stage.



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.

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 summarized 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



The information provided in this publication is intended as a guide only. Advanta Seeds Pty Ltd (including its officers, employees, contractors and agents) ('Advanta Seeds') can not guarantee that every statement is without flaw of any kind. While Advanta Seeds has taken all due care to ensure that the information provided is accurate at the time of publication, various factors, including planting times and environmental conditions may alter the characteristics and performance from plants. Advanta Seeds shall not be liable for any errors or omissions in the information or for any loss, injury, damage or other consequence whatsoever that you or any person might incur as a result of your use of or reliance upon the products (whether Advanta Seeds products or otherwise) and information which appear in this publication. To the maximum extent permitted by law, the liability of Advanta Seeds for any claim whatsoever arising out of the supply or use of or reliance upon the products and information in this publication (including liability for breach of any condition or warranty implied by the Trade Practices Act 1974 or any other law) is limited at its discretion, to the replacement of the products, the supply of equivalent products or the resupply of the publication. For application to specific conditions, seek further advice from a local professional.
© Advanta Seeds 2019.