

LRPB ANVIL CL PLUS

Quick Clearfield® Tolerant AH Wheat for WA

WHEAT



LRPB ANVIL CL PLUS

GIA & LongReach “Innovative Wheat Program”

- GIA have combined forces with LongReach to produce LRPB Anvil CL Plus
- The aim is to continue to develop improved high yield wheats with robust features in NEW IMI backgrounds and lift the bar for growers
- LRPB Anvil CL Plus is bred by GIA in a unique breeding background and derived from Mace with 2 IMI genes selected without crossing to existing varieties
- LRPB Anvil CL Plus is the first of our releases from this collaboration



GIA breeder, Dr Michael Materne



LRPB ANVIL CL PLUS

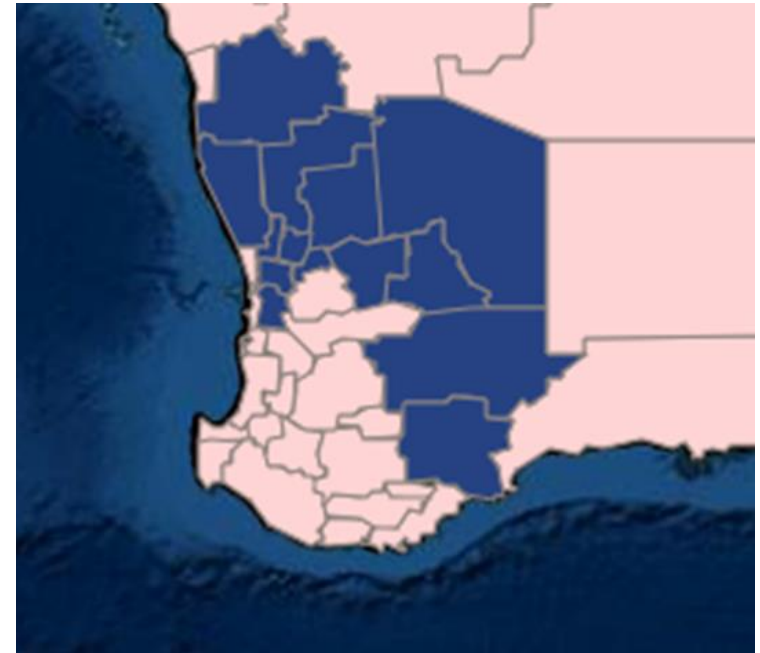
- AH Final Classification (WA/SA/Vic) with a quick maturity and large grain that suits tough environments
- LRPB Anvil is a Clearfield® Plus wheat with two-gene tolerance to label rates of Intervix® herbicide



LRPB Trojan susceptible (Left) vs tolerant LRPB Anvil CL Plus (Right) with 2X recommended IMI rate applied

LRPB ANVIL CL PLUS – Regions of fit WA

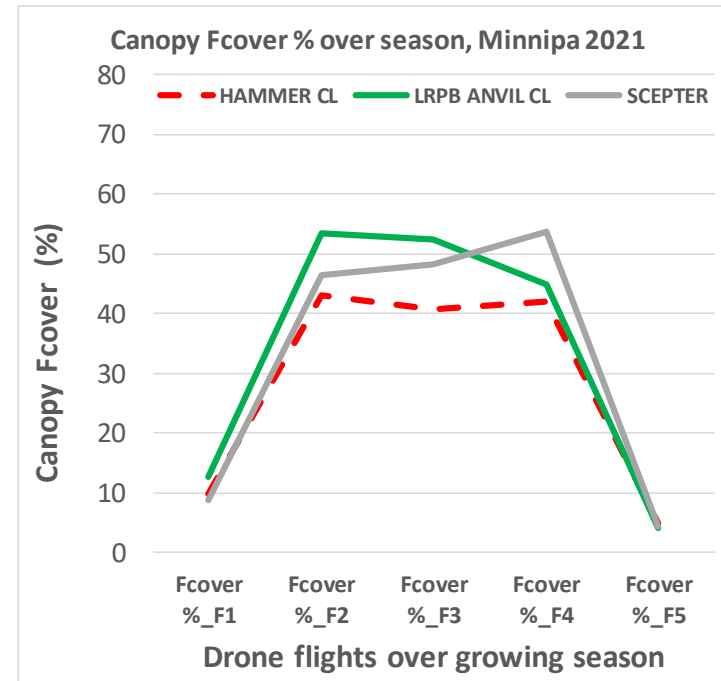
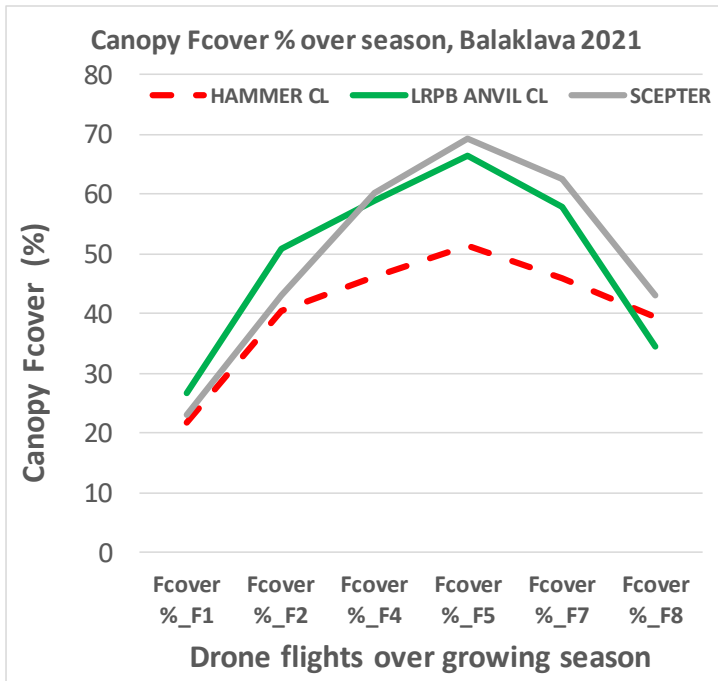
- Fast through grain-fill suits low to medium rainfall areas of WA
- A robust grain receivals package for dependable grain deliveries
- Anvil is best fit from the far North, through most of central wheat belt down the far eastern state boarder corridor
- Quality Classification – AH (Final)
- Alternative to Chief CL Plus and Hammer CL Plus in these regions
- Highest yielding AH IMI tolerant wheat in Agzones 1, 2, 4 & 5 of WA
- Comparative Disease package to established IMI tolerant varieties



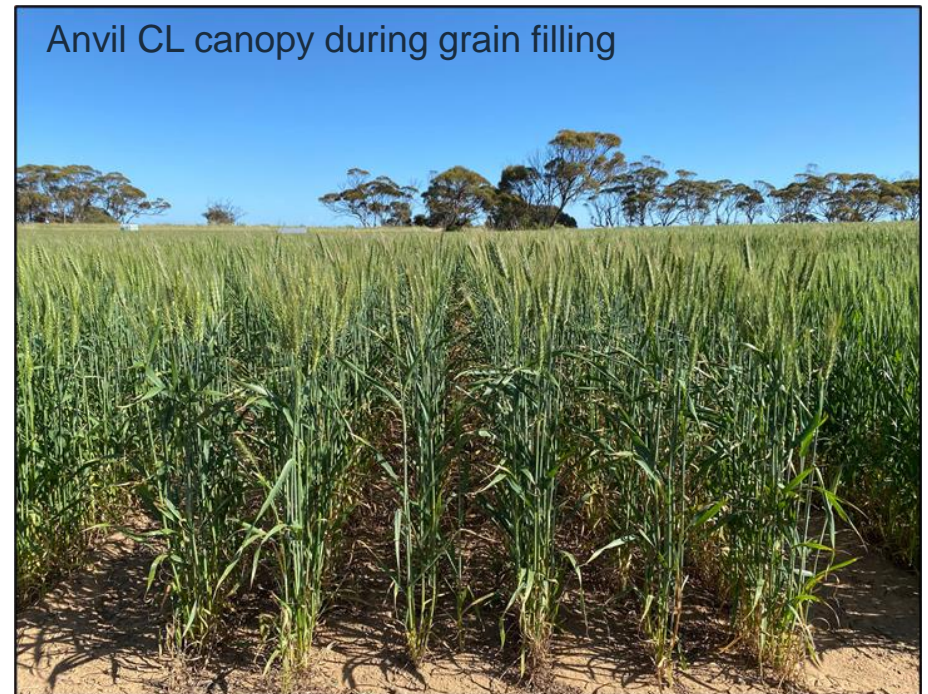
LRPB ANVIL CL PLUS - AGRONOMY

- Long first leaf helps for good establishment
- Early vigor that stands out at 4 leaf stage is a trait selected for within the Anvil population
- Bold early growth leads to good ground cover allowing Anvil to compete well in the paddock early in the season
- Medium coleoptile length similar to Mace parent
- Medium-tall height slightly taller than Scepter with semi-erect canopy that has an open habit and medium-large heads

Anvil CL Plus (LHS) compared to Scepter (RHS)



Anvil CL canopy during grain filling



Quick Maturity AH IMI Tolerant Wheat

Chief CL Plus (LHS) vs LRPB Anvil CL Plus (RHS)



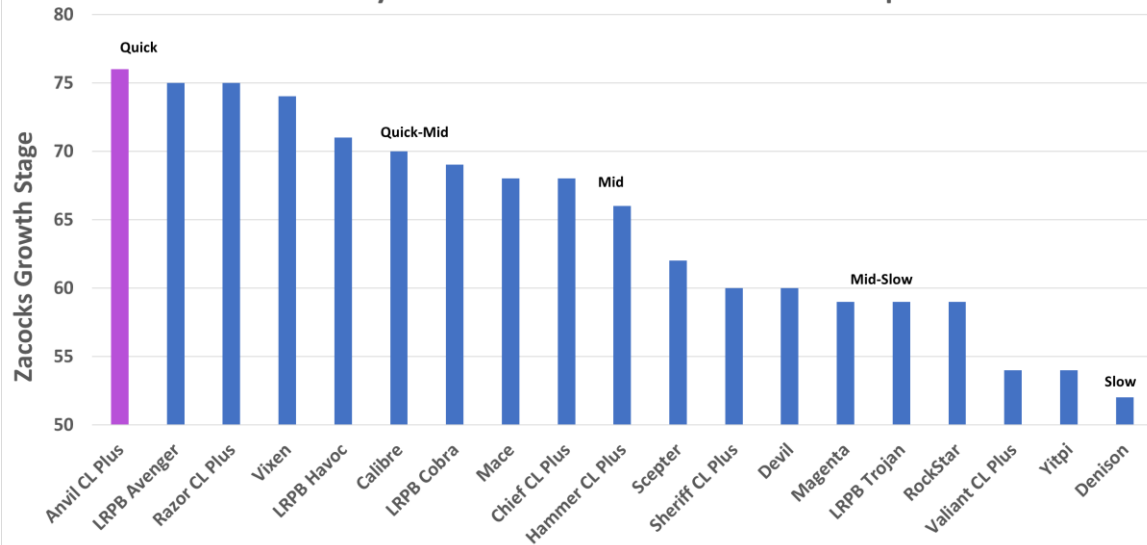
LRPB Anvil CL Plus

- Quick Maturity Wheat
- Differentiates from recent Clearfield® Plus wheat releases by being a much quicker maturity
- Fast through grain-fill which suits low to medium rainfall areas
- Ideal for Late break sowing from Late May to Early June

LRPB Anvil CL Plus is quick to head with rapid grain filling for tougher situations



Zadocks Maturity Score Cadoux Wheat NVT trial - 21 September 2022



Yield –Long Term MET Yield Performance WA

NVT Predicted yield Main Season MET (2018-2022) Yield Groupings (AgZone1, AgZone2, AgZone3, AgZone4, AgZone5 and AgZone6)



		Group	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	
		Mean Yield	0.36 t/ha	0.84 t/ha	1.32 t/ha	1.72 t/ha	2.21 t/ha	2.76 t/ha	3.24 t/ha	3.74 t/ha	4.20 t/ha	4.75 t/ha	5.23 t/ha	5.72 t/ha	6.33 t/ha	6.93 t/ha	
Variety	Trials	3	7	13	14	18	18	22	23	32	21	20	6	4	1		
AH	Scepter	202	118	115	113	112	111	109	109	109	108	108	108	106	108	107	Mid
AH	LRPB Anvil CL Plus	113	151	131	122	118	112	109	107	103	98	100	97	89	94	98	Quick
AH	Hammer CL Plus	125	127	115	111	108	104	104	102	101	100	101	99	97	99	101	Mid
AH	Valiant CL Plus	110	64	78	86	88	96	96	98	102	103	101	103	107	101	97	Slow
APW	Chief CL Plus	202	90	98	97	100	103	102	102	102	101	100	100	99	100	98	Mid-slow
ASW	Razor CL Plus	202	126	118	112	112	107	106	104	102	100	102	100	96	101	103	Quick-mid

Anvil CL Plus, Hammer CL Plus and Valiant CL Plus first included in 2020 WA NVT trials



Yield “Sweet-Spot” < 4 t/ha which fits vast expanses of the Low-Medium rainfall areas of WA needing an AH quality IMI wheat in the rotation

Yield – NVT Yield Performance for individual Years

NVT Predicted yield Main Season MET (2018-2022) Year Groupings (All AgZones)

		Group	2018	2019	2020	2021	2022		
		Mean Yield	3.53 t/ha	2.00 t/ha	2.80 t/ha	4.30 t/ha	4.63 t/ha		
Variety		Trials	38	39	43	37	45		
AH	Scepter	202	108	111	109	109	107	Mid	
AH	LRPB Anvil CL Plus	113			105	103	94	Quick	
AH	Hammer CL Plus	125			103	101	99	Mid	
AH	Valiant CL Plus	110			96	100	105	Slow	
APW	Chief CL Plus	202	102	101	100	102	99	Mid-slow	
ASW	Razor CL Plus	202	103	106	105	104	98	Quick-mid	

Anvil CL Plus, Hammer CL Plus and Valiant CL Plus first included in 2020 WA NVT trials

- LRPB Anvil CL Plus was included in WA NVT trials in 2020 (Agzones 2, 4 & 5) then in 2021 and 2022 (All Agzones)
- LRPB Anvil CL Plus stands out as a high yielding AH IMI wheat that is well adapted to the tougher environments and years like 2020 which is typical for WA
- The unusual higher yield 2022 season suited late varieties (Valiant CL Plus) which are too late to be Main Season sown in a typical WA season

DISEASE RATINGS

NVT Online WA disease resistances and tolerances - 6th March 2023 (with Black Point from LongReach data for Anvil)

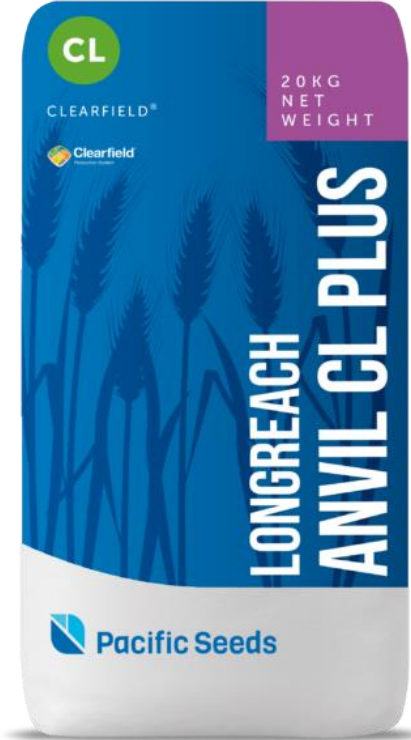
Variety	Leaf Rust Res	Stem Rust Res	Stripe Rust (West) Res	Black Point	CCN Res	Crown Rot Res	Powdery Mildew Res	Prat. Neglectus Res	Prat. Neglectus Tol	Prat. Thornei Res	Prat. Thornei Tol	Septoria Nodorum Blotch (Glume) Res	Septoria Nodorum Blotch (Leaf) Res	Septoria Tritici Blotch Res	Yellow Leaf Spot Res	
AH Scepter	MSS	MRMS	RMR	MS	MRMS	MSS	S	S	MTMI	MSS	MT	MSS	MRMS	S	MRMS	Mid
AH LRPB Anvil CL Plus	SVS	MR	RMR	MSS	MRMS	MSS	S	MSS	MII	S	VI	MSS	MSS	S	MSS	Quick
AH Hammer CL Plus	S	MR	RMR	MRMS (P)	MRMS	MSS	SVS	MSS	MTMI	S	I	MRMS	MRMS	MSS	MRMS	Mid
AH Valiant CL Plus	S	MR	RMR	-	MSS (P)	S	S	S	MII	S (P)	IVI	MRMS	MR	MRMS	MRMS	Slow
APW Chief CL Plus	MR	MR	S	MS	MS	MSS	S	MRMS	MT	MSS	IVI	MRMS	MS	MSS	MRMS	Mid-slow
ASW Razor CL Plus	S	MRMS	RMR	MS	MR	S	MSS	S	MT	MS	MI	MS	MS	SVS	MSS	Quick-mid

Comments

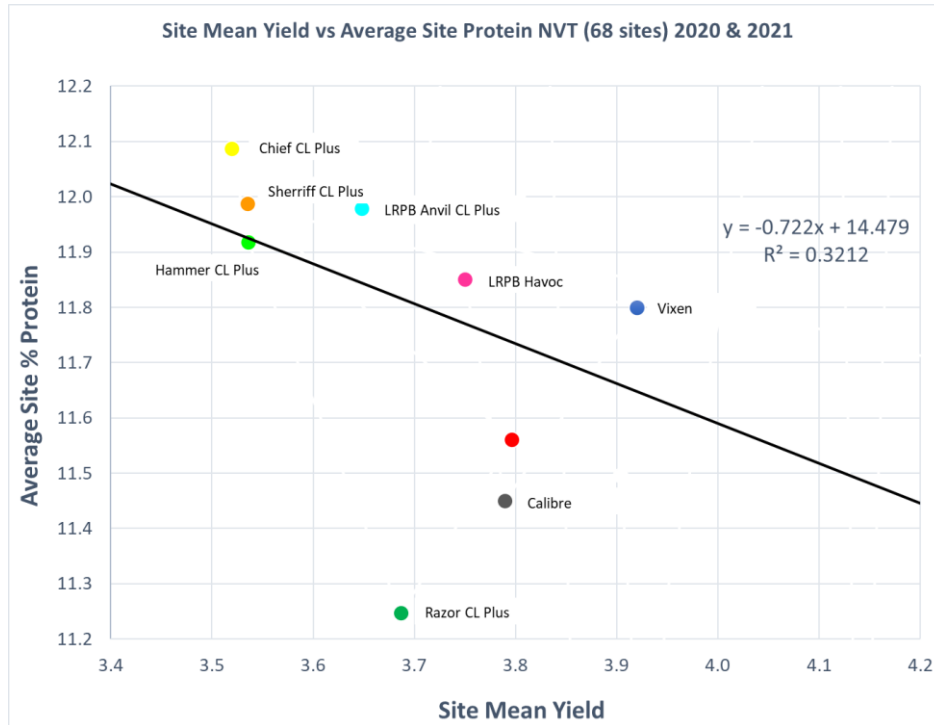
- Disease ratings are similar to existing Clearfield® Plus wheat varieties being grown in WA
- Strong Stem Rust and Stripe Rust resistance in WA
- Weak Leaf Rust resistance which is similar to most varieties currently in the market
- Useful resistance to CCN (MRMS) and Crown Rot (MSS)
- Acceptable Septoria Nodorum Blotch Leaf (MSS) and Glume (MSS) resistance
- Adequate Yellow Leaf Spot resistance (MSS), susceptible to Powdery Mildew (S) as most widely grown varieties are currently

LRPB ANVIL CL PLUS HARVEST

LRPB Anvil CL Plus
harvests well and is
paddock ready



GRAIN QUALITY AH FOR WA



Grain receivals - WA Main Season NVT summary 2021-2022 trials

Screenings (%)						
Variety	Classification	Sites	Sites >5%	Ave Screenings	Maxium	Minimum
LRPB Anvil CL Plus	AH	68	10	2.6	17.1	0.2
Chief CL Plus	APW (N)	68	15	3.6	27.7	0.2
Hammer CL Plus	AH (N)	68	25	5.1	30.2	0.2
Razor CL Plus	ASW	68	17	3.8	31.7	0.2
Scepter	AH	68	18	3.9	16.0	0.2
Sheriff CL Plus	APW (N)	68	17	4.3	43.2	0.1

Grain Size (g/1000 seeds)						
Variety Name	Classification	Sites	Sites <30	Ave 1000 GW	Maxium	Minimum
LRPB Anvil CL Plus	AH	68	3	40.5	55.2	25.2
Chief CL Plus	APW (N)	68	4	40.5	56.0	23.2
Hammer CL Plus	AH (N)	68	13	35.3	47.0	20.8
Razor CL Plus	ASW	68	6	37.6	49.5	18.9
Scepter	AH	68	3	39.3	55.5	23.3
Sheriff CL Plus	APW (N)	68	7	36.2	49.2	18.3

Protein %						
Variety	Classification	Sites	Sites <9.5%	Ave %	Maxium	Minimum
LRPB Anvil CL Plus	AH	68	3	12.0	15.6	8.6
Chief CL Plus	APW (N)	68	3	12.1	16.8	8.6
Hammer CL Plus	AH (N)	68	4	11.9	16.6	8.3
Razor CL Plus	ASW	68	10	11.2	15.2	8.0
Scepter	AH	68	8	11.6	16.4	8.1
Sheriff CL Plus	APW (N)	68	6	12.0	16.7	8.3

Test Weight - (kg/hectolitre)						
Variety	Classification	Sites	Sites <75kg/hectol	Ave Test Weight	Maxium	Minimum
LRPB Anvil CL Plus	AH	68	2	81.5	87.4	72.8
Chief CL Plus	APW (N)	68	5	80.3	86.6	67.0
Hammer CL Plus	AH (N)	68	4	80.7	87.1	68.4
Razor CL Plus	ASW	68	2	80.7	87.0	66.5
Scepter	AH	68	7	80.6	87.8	66.2
Sheriff CL Plus	APW (N)	68	5	80.5	87.4	68.0

- Large grain size with low screenings and good test weight has been measured throughout Anvil's development
- Excellent quality AH wheat which will have good domestic end use interest
- WA NVT data has shown Anvil CL to be a high yielding IMI tolerant variety while still maintaining better protein levels than many leading AH Varieties grown in WA

LRPB ANVIL CL PLUS

LRPB Anvil CL Plus is available through our Associate Network, for contact information please go to www.pacificseeds.com.au

As with other IMI Tolerant Wheat No Grower to Grower trading of LRPB Anvil CL Plus seed is allowed



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