

Our work at AGT is a search for the exemplary.

An intensive process of inter-crossing, field and laboratory experimentation, data collection and analysis, and genetic selection over many years culminates in the creation of each of our new field crop varieties. This exhaustive and innovative process leads to new varieties that greatly impact upon the profitability, sustainability and prosperity of grain growers all over the country.

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Varieties displaying the (D symbol are protected by Plant Breeders Rights (PBR) and all production (except seed saved for planting) is liable to an End Point Royalty (EPR), which funds future plant breeding. Growers of PBR protected varieties will be subject to a Growers License Agreement that acknowledges that an EPR has to be paid on all production other than seed saved for planting.



NVT long term MET analysis 2014-2018 Grain yield as % of region average

			Main season series						Early sown series				
		Agzone 1	Agzone 2	Agzone 3	Agzone 4	Agzone 5	Agzone 6	Agzone 1	Agzone 2*	Agzone 3*	Agzone 4	Agzone 5*	Agzone 6
Early and mid maturities	Chief CL Plus [⊕]	103	102	102	101	102	102						
	Corack [®]	101	104	103	104	105	100						
d mid r	Devil [®]	109	111	111	111	114	111						
ırlyanı	Havoc [®]	107	106	107	107	107	105						
Еа	Mace [®]	102	103	103	104	105	101						
	Ninja [®]	105	107	106	106	109	107						
	Razor CL Plus®	98	102	101	104	106	97						
ies	Bremer⊕	100	98	98	97	94	99	96	107	111	104	100	101
Mid and late maturities	Catapult ^{⊕*}	103	104	104	104	106	104	114			127	114	122
d late r	Cutlass [©]	100	101	100	100	101	103	107	117	112	114	108	110
/lid an	Kinsei⁰	105	105	105	103	102	107	109	125	118	118	109	119
2	Magenta [®]	99	98	98	98	99	101	102	114	114	112	106	104
	Scepter [®]	108	111	110	110	114	110	106*			118*	111	107*
	Trojan⁰	99	98	98	98	98	100	107	122	121	118	110	109
	Yitpi [⊕]	94	95	95	95	94	96	99	109	111	109	104	98
ters	EGA Wedgetail [⊕]							99	82	78	83	91	101
Winters	Illabo⊕							108	102	91	90	95	131
	Kittyhawk [®]							99	84	79	82	90	105
	Longsword®							105	103	99	92	96	124
	Trial mean (t/ha)	2.9	3.2	3.8	2.3	2.9	3.5	3.7	2.8	4.1	2.1	1.2	2.4

MET Multi Environment Trial, a comprehensive statistical analysis across sites and years used to predict the performance of varieties over a broad range of growing conditions.

Yield based on one year of data

NVT National Variety Trials, a national program of comparative crop variety testing with standardised trial management, data generation and collection, funded by the Grains Research & Development Corporation (GRDC).

		ation	st	ıst	t (old	t (new oe)	oot	ו Blotch	Mildew	int
		Quality Classification	Stem Rust	Stripe Rust	Leaf Rust (old pathotype)	Leaf Rust (new pathotype)	Yellow Spot	Nodorum Blotch	Powdery Mildew	Black Point
ties	Chief CL Plus [⊕]	APW	MR	S	R	R	MRMS	MS*	MSS*	MS
maturi	Corack [®]	APW	MR	MS	S	SVS	MR	MSS	SVS	S
l mid r	Devil [®]	AH/APWN	MSS*	MR*	MRMS	SVS*	MRMS*	_	_	_
Early and mid maturities	Havoc [®]	АН	S	MR	RMR	S	MRMS*	MRMS*	MS*	MS
Eal	Mace [®]	АН	MRMS	RMR	MS	MSS	MRMS	MS	MSS	MRMS
	Ninja [®]	ANW	SVS	MS	MS	S	MRMS	MS	SVS	MRMS
	Razor CL Plus®	ASW	MRMS	RMR	RMR	S	MS	MSS*	S*	MS
ties	Bremer [⊕]	АН	MR	MR	MR	MR	MSS	MS	SVS	MRMS
ıaturit	Catapult ^{⊕*}	TBA	MR*	RMR*	S*	S*	MRMS*	MRMS*	S*	MSS*
Mid and late maturities	Cutlass [®]	APWN	R	RMR	R	R	MSS	MRMS	S	MS
idanc	Kinsei [®]	ANW	MSS*	MRMS*	MR	SVS*	MS*	_	_	_
Σ	Magenta [®]	APW	RMR	MS	R	RMR	MR	MRMS	MRMS	MSS
	Scepter [®]	АН	MRMS	MR	MR	MSS	MRMS	MRMS	S	MS
	Trojan [®]	APW	MRMS	MR	MR	MR	MSS	MS	S	MS
	Yitpi [®]	АН	S	MRMS	MSS	S	SVS	MS	MRMS	MS
ers	EGA Wedgetail®	APW	MRMS	MS	MS	MSS	MSS	MRMS	_	MS
Winters	Illabo [®]	АН	MRMS	RMR	MS	S	MS	MRMS*	MR*	MRMS*
	Kittyhawk [®]	FEED	MRMS	RMR	MR	MS	MRMS	MR	_	MRMS
	Longsword [®]	FEED	MR	RMR	MR	MSS	MRMS	MR	MRMS*	MRMS

R Resistant
MR Moderately Resistant
MS Moderately Susceptible

S Susceptible VS Very Susceptible

^{*} Provisional ratings, to be used with caution

NVT long term MET analysis 2014-2018 Grain yield as % of region average

	Agzone 1	Agzone 2	Agzone 3	Agzone 4	Agzone 5	Agzone 6	Agzone 7	Agzone 8	All WA
Barlock [®]	105	100	104	105	102	102	104	106	104
Bateman [®]	107	108	100	121	117	102	107	118	110
Coyote [®]	111	111	103	119	119	105	111	122	113
Gunyidi [®]	102	100	101	107	103	103	101	109	103
Jurien [®]	111	104	108	106	107	106	110	114	109
Leeman [®]	101	105	99	96	105	99	102	98	101
Mandelup [®]	112	119	106	100	120	102	118	105	112
Wonga [®]	98	97	99	95	98	96	98	88	97
Trial mean (t/ha)	2.7	2.5	2.2	2.0	2.0	2.3	1.3	1.9	2.1

MET Multi Environment Trial, a comprehensive statistical analysis across sites and years used to predict the performance of varieties over a broad range of growing conditions.

NVT National Variety Trials, a national program of comparative crop variety testing with standardised trial management, data generation and collection, funded by the Grains Research & Development Corporation (GRDC).

Lupin Disease, agronomic and grain quality ratings

	Anthracnose	Stem phomopsis	BYMV	CMV	Grey Spot	Brown Spot
 Barlock⊕	R	MR	MS	RMR	R	MS
Bateman [®]	MR	MR	MR	MRMS	R	MS
Coyote ⁽⁾	R*	MS*	MRMS*	MR*	R*	MS*
Gunyidi⁰	MR	R	MS	MR	S	MS
Jurien [®]	R	R	MR	MRMS	R	MS
Leeman [©]	MR	R	MS	MS	R	MS
Mandelup [®]	MR	R	MS	MR	R	MS
Wonga [⊕]	R	R	MS	R	R	MS

R Resistant

MR Moderately Resistant

MS Moderately Susceptible

S SusceptibleVS Very Susceptible

* Provisional ratings, to be used with caution

Source / NVT and AGT data.



Catapult

- The highest yielding choice for late April sowing
- Very flexible sowing window
- Safer option for sowing dry when germination date is unknown
- Wide adaptation, will fit the front end of most growers' cropping programs
- Excellent choice for wheat on wheat situations
- Very good physical grain characteristics, classification expected for WA in late 2019
- A great alternative to Magenta[®], Trojan[®] and Cutlass[®]

Sometimes in breeding, you get unexpected but very exciting results. Out of a standard Mace[®] cross, Catapult[®] has emerged as an exceptionally unique combination of features that we believe will help growers increase productivity, while providing flexibility that has not been available previously.

Growers are continually looking for earlier sowing options that don't compromise on yield, to compliment high yielding main season varieties like Scepter® so that an increase in over-all farm yield is achieved. Catapult® may be viewed as a 'longer season' Scepter®, allowing growers to achieve Scepter-like yields when sown in late April. When sown around ANZAC day, Catapult® has consistently out-yielded Magenta®, Trojan® and Cutlass® (and other varieties used in this sowing window). This very high yield potential relative to other varieties has been recorded across a large range of growing conditions and environments, highlighting Catapult's® suitability for most cropping programs.

These days, much of the wheat crop is planted dry. In many instances germination of dry sown crops may be delayed considerably if the arrival of the break in the season is unknown, and therefore variety choice for these situations is very important. A variety like Catapult[®] is a great choice for dry sowing because it maintains its high yield over a wide range of germination dates, including well into May where it remains competitive with the benchmark variety Scepter[®].

Catapult $^{\scriptscriptstyle (\!\! 0)}$ is also one of the best choices for use in wheat on wheat rotations, with excellent yellow spot resistance.

Catapult[®] is very closely related to Scepter[®] and shares its physical grain quality characteristics of high test weight and low screenings. At time of writing, Catapult[®] does not have a quality classification for WA but we expect to receive a milling grade classification in late 2019.

Tested as	RAC2484
Pedigree	Mace [®] x Corack [®]
Released	Spring 2019
EPR	\$3.25 + GST/tonne
Seed Availability	AGT Affiliates, Retailers, Seed Sharing™

Cutlass⁽¹⁾

- Strong photoperiod sensitivity like Yitpi[®], offering sowing date flexibility
- Mid-late season maturity, potentially avoiding frost damage at flowering
- Higher yielding than other photoperiod sensitive varieties
- Excellent rust resistance
- Better yellow spot resistance than Yitpi[®]
- APWN quality classification

Modern farming systems call for a suite of varieties with a range of maturities in order to make use of suitable sowing conditions and to maximise yield.

Growers should consider Cutlass® when a mid to late April sowing opportunity presents itself, or when a later maturing variety may be needed to reduce risk of frost damage.

We believe that Cutlass[®] is an excellent choice for late April sowing. Cutlass[®], similar to Yitpi[®], uses strong photoperiod sensitivity to maintain sowing date flexibility. In most areas, like Yitpi[®], Cutlass[®] should suit a sowing window from late April to mid May.

Importantly, Cutlass[®] is substantially higher yielding than Yitpi[®]. From 2014 to 2018 in WA, Cutlass[®] out performed Yitpi [®]by 6%. We believe that this yield, combined with better leaf, stem, stripe rust and yellow spot resistance should make Cutlass[®] a clear choice when picking a wheat for earlier sowing or frost avoidance. Cutlass[®] is APW, but when its superior yield is considered, it is a better value option than Yitpi[®].

Tested as	RAC2069
Breeding	Fang [®] (a Spear type) as the major parent,
	Carnamah and Stylet as minor parents
Released	Spring 2015
EPR	\$3.00 + GST/tonne
Seed Availability	AGT Affiliates, Retailers, Seed Sharing™

llabo[®]

- Dual purpose winter wheat for grazing and grain production
- The highest yielding EGA Wedgetail[®] alternative available
- Mid winter maturity, 2-3 days quicker than EGA Wedgetail[®]
- Excellent resistance to stripe and leaf rust
- Black point and stem rust and powdery mildew
- AH quality classification

Traditionally mixed farming has had a strong presence in many regions of Western Australia. The mixture of crops and livestock have benefited farmers and helped in offsetting any unforeseen market risks. More recently farmers have looked to combine the two management systems through the implementation of dual purpose grazing crops, especially wheat, where EGA Wedgetail⁶ has been a popular choice for this situation.

Illabo® is the first variety to be released from our dedicated winter wheat breeding program at Wagga Wagga, and has been bred with the intent on offering growers an improved version of EGA Wedgetail®. The main improvement that Illabo® offers over EGA Wedgetail® is yield. Long term NVT early sown trial data predicts that Illabo® may outperform EGA Wedgetail® by 14%; and 13% higher than another EGA Wedgetail® alternative, Kittyhawk®. Illabo® also offers an improved disease resistance package over EGA Wedgetail®, with better stripe rust, powdery mildew and black point resistance.

Like its parent EGA Wedgetail⁶, Illabo⁶ requires a period of cold temperatures (vernalisation) before moving from vegetative to reproductive growth, and this maturity trigger allows Illabo⁶ to be sown early in the cropping program with the aim of producing increased dry matter to fill early feed gaps.

Grazing trial data collected from AGT's Kabinga Research farm at Collingullie showed that up to the appearance of the first node, Illabo[®] produced equivalent amounts of dry matter to that of EGA Wedgetail[®], and an extra 300 to 500 kg/ha of dry matter over Kittyhawk[®], depending on sowing date.

To maximise grain only yield, Illabo[®] appears ideally suited to mid-late April sowing in high yield environments, and mid-April planting in low yield environments.

Tested as	V09150-01
Breeding	EGA Wedgetail [®] as the major parent
Released	Spring 2018
EPR	\$3.50 + GST/tonne
Seed Availability	AGT Affiliates, Retailers, Seed Sharing™

Longsword

- A unique 'quick' maturing dual purpose winter wheat
- Wide sowing window, most suited to April sowings
- Widely adapted but mainly suits low-medium rainfall environments
- Good physical grain quality package with low screenings and high test weights
- Excellent rust resistance
- Good yellow spot resistance
- FEED quality classification

The first of its kind, Longsword® is a 'quick finishing' winter wheat, quicker thank EGA Wedgetail® and Illabo®. Unlike other long season varieties, Longsword® has Mace® as its major parent, a variety that is specifically suited to low and medium rainfall areas. But unlike Mace® (a traditional spring wheat), Longsword® has three winter genes, meaning that it is a true winter variety with a stronger vernalisation (cold) requirement before flowering can occur. However, once this requirement is met, Longsword® progresses through grain-fill quite quickly, similar to its parent Mace®.

This unique maturity offers many advantages to growers: it allows a flexible and wide sowing window, while helping to avoid stresses of drought and heat through grain fill that slower maturing winter wheat varieties experience. It also allows a longer safe period for grazing, helping to alleviate the feed-gap often faced by mixed farmers.

Grain of Longsword[®] is only deliverable as FEED into the bulk handling system. Although we are committed to releasing high performing milling grade wheat varieties, we believe Longsword's[®] uniqueness still offers value to growers who are looking to sow earlier than what spring wheats allow, for those requiring grazing value out of their variety, or those that have access to a grain market outside of the traditional bulk handling system.

Tested as	RAC2341
Breeding	Mace [®] as the major parent with a Merinda [®] type as the minor parent
Released	Spring 2017
EPR	\$2.75 + GST/tonne
Seed Availability	AGT Affiliates, Retailers, Seed Sharing™

Scepter

- The leading wheat variety in WA
- Mace[®] replacement
- Elite yielding, with improved yield over Mace[®]
- AH quality classification
- Mid season maturity, slightly later than Mace[®]
- Good physical grain quality package
- Yellow spot resistance equal to Mace[®]

In 2009 Mace[®] was released to WA growers presenting a big step forward in performance and profitability to other main season varieties. Higher yield, AH quality and better sprouting tolerance saw it grow in popularity. Scepter[®] builds on the success of Mace[®], and has now become the most widely grown wheat variety in WA.

From 2014-2018 Scepter was 7% higher yielding than Mace[®] in WA NVT's. This is a significant yield gain and should equate to considerable profitability increases for WA cereal growers.

We see Scepter[®] as the successor to Mace. With Mace[®] as its major parent, Scepter[®] looks and behaves very similar to Mace[®], so will likely fit into the same position in your rotation.

Tested as	RAC2182
Breeding	Mace [®] as the major parent, a Kukri [®] / Janz / Wyalkatchem [®] breeding line as the minor parent
Released	Spring 2015
EPR	\$3.25 + GST/tonne
Seed Availability	AGT Affiliates, Retailers, Seed Sharing™



Razor CL Plus®

- Derived from widely adapted variety Mace[®]
- Tolerant to Clearfield® Intervix® herbicide
- Early-mid maturity, slightly quicker than Mace[®], similar to Corack[®]
- Good physical grain package, with low screenings and high test weight
- ASW quality classification

The Clearfield® production system involving cereal varieties that are tolerant to Intervix® herbicide continues to play an integral part of in-crop weed management throughout WA. However, until now, there has been a significant yield gap between the best Clearfield® varieties (Justica CL Plus®, Grenade CL Plus®), and the best non-Clearfield® varieties (Mace®, Scepter®).

Razor CL Plus[®] addresses this issue, offering yields competitive with Mace[®] and Scepter[®], along with tolerance to Intervix[®] herbicide.

Razor CL Plus[®] has an ASW quality classification, and therefore growers will have to determine whether the yield advantage that Razor CL Plus[®] offers over other Clearfields[®] generates additional income in their unique situation. Does the yield advantage of Razor CL Plus[®] outweigh the potential price split between ASW and higher grades? How often do you achieve higher quality grades on your farm? Are you intending to grow a Clearfield[®] variety on a paddock that is set up to achieve higher protein grades, or are you using these varieties on poorer, problem paddocks? Answering these questions may help you decide if a high yielding, ASW, Clearfield[®] wheat variety has a fit in your program.

Tested as	RAC2517
Breeding	Mace [®] and a 2-gene Clearfield [®] tolerant donor
Released	Autumn 2018
EPR	\$3.30+ GST/tonne
Seed Availability	AGT Affiliates, Retailers



Coyote

- A higher yielding alternative to Jurien[®] and Mandelup[®]
- Widely adapted throughout WA lupin growing regions
- High and stable yields across a range of conditions
- Metribuzin tolerant
- Similar maturity to Jurien[®], slightly later than Mandelup[®]

In 2016 AGT took over the responsibility of breeding lupins from the WA Department of Primary Industries and Regional Development (DPIRD). We accepted this challenge because we believe that grain legumes are a critical component of a healthy and sustainable WA farming system.

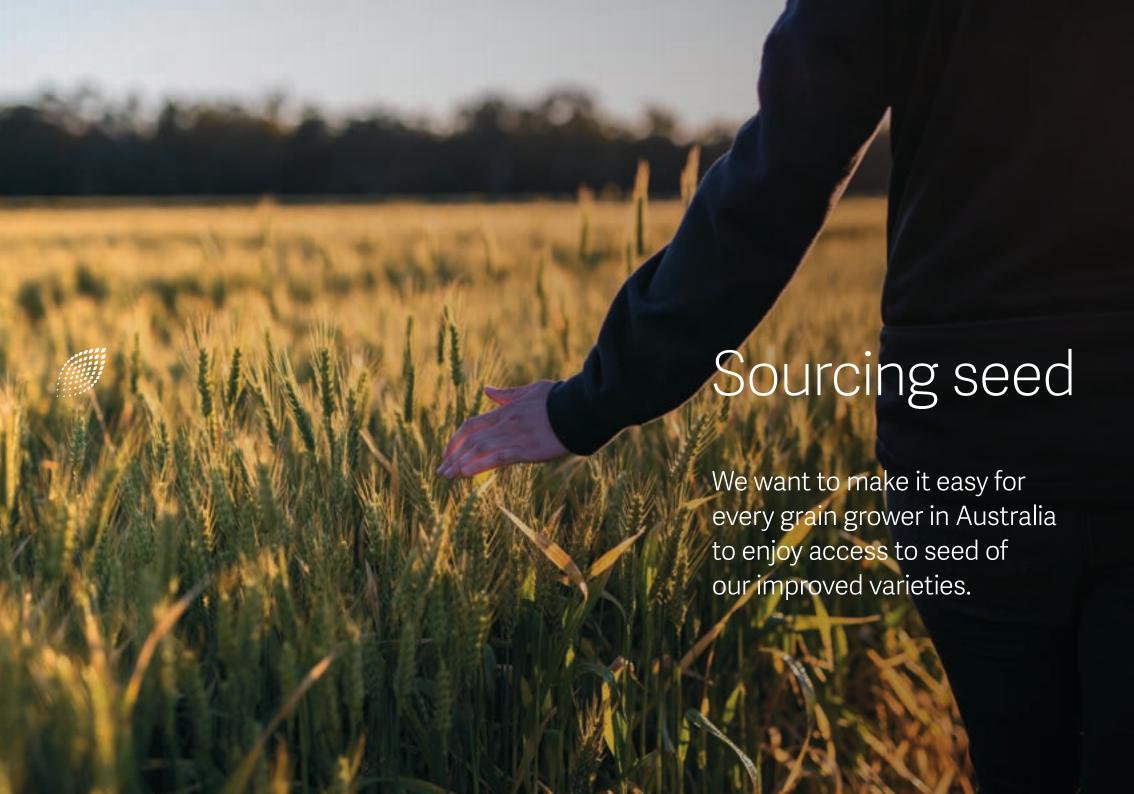
Coyote[®] (tested as WALAN2546) is the first narrow-leaf lupin variety to be released by AGT, selected from the advanced germplasm sourced from DPIRD.

Coyote[®] offers growers high, and most importantly, stable yields. Compared to market leading variety Jurien[®], Coyote[®] has been slightly higher yielding, but we believe its true value is in its yield stability, performing well across a very broad range of soil types, rainfall zones and yield potentials. Yield stability has been a major driver of our decision to release this variety.

In high rainfall environments where sheep graze lupin stubble over the summer, it is advantageous to monitor crops in season for stem phomopsis. Where the risk of stem phomopsis is high, monitor livestock when grazing stubbles or remove grazing livestock completely. Coyote's resistance to stem phomopsis is lower than Jurien and Mandelup.

The naming convention we have selected for our lupin varieties is Western Australian gold mines, with 'Coyote' being a mine located in the Tanami Desert in the state's north-east.

Tested as	WALAN2546
Pedigree	Various unreleased breeding lines
Released	Spring 2019
EPR	\$3.00 + GST/tonne
Seed Availability	AGT Affiliates, Retailers



AGT Affiliates AGT Affiliates are responsible for production, grading, sales and distribution of all our new and existing varieties. AGT Affiliates offer both wholesale and retail sales capacity and thereby growers can access seed of our varieties from AGT Affiliates directly, or through most agricultural merchandising retail stores. AGT does not sell seed direct to growers, nor does AGT earn any income from the sale of seed.

Australian Seed & Grain

3455 Miling-Moora Road

Moora WA 6510

Chris Martin

P 08 9651 1069

F 08 9651 1542

M 0427 511 609

sales@austseedgrain.com.au

www.austseedgrain.com.au

Coorow Seeds

14 South St

Coorow WA 6515

Tony Khuat

P 08 9952 1088

F 08 9952 1082

admin@coorowseeds.com.au

www.coorowseeds.com.au

Eastern Districts Seed Cleaning Co. (EDSCO)

Corner Mill St & Mather Rd Kellerberrin WA 6410

Administration Office

P 08 9045 4036

F 08 9045 4539

edsco@wn.com.au

www.easterndistrictsseedcleaningco.webs.com

Melchiorre Seeds

170 Clayton Rd

Narrogin WA 6312

Robert Melchiorre

P 08 9881 1155

F 08 9881 2896

M 0429 816 223

melchiorreseeds@westnet.com.au

www.melchiorreseeds.com.au

Multiseed Productions

4 Brockman Street Esperance WA 6450

Bill Sharp

P 08 9071 1053

F 08 9071 5007

M 0428 711 375

multiseed@westnet.com.au

MAGT Seed Sharing™

An initiative first developed by AGT, Seed Sharing[™] is a low cost way of introducing our improved genetics into your program. Seed Sharing[™] is a licensed farmer to farmer trading scheme whereby grain of selected AGT varieties may be traded between farmers to use as seed.

Farmers who have grown a crop using commercial seed purchased from a recognised seed retailer or AGT Affiliate may sell seed to another farmer at a price or arrangement negotiated between them, providing they complete an AGT Seed Sharing™ License Agreement form. End Point Royalties are not charged on seed sold through Seed Sharing™.

Seed Sharing[™] is allowed for all AGT wheat, triticale and durum varieties except Clearfield[®] Plus wheat varieties.

For the full terms and conditions and to download the AGT Seed Sharing™ License Agreement visit: agtbreeding.com.au/sourcing-seed/seed-sharing





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0417 919 299 0400 031 911 0408 137 922 (08) 7111 0201 agtbreeding.com.au

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