

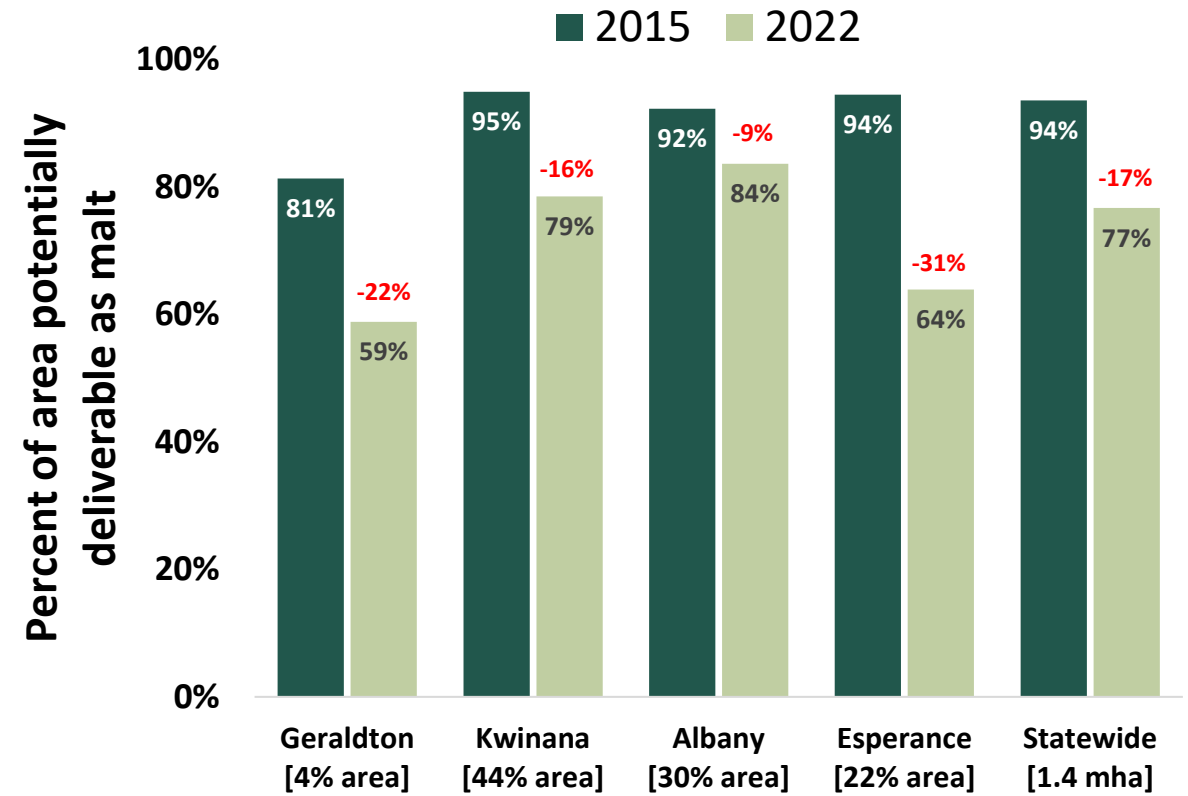
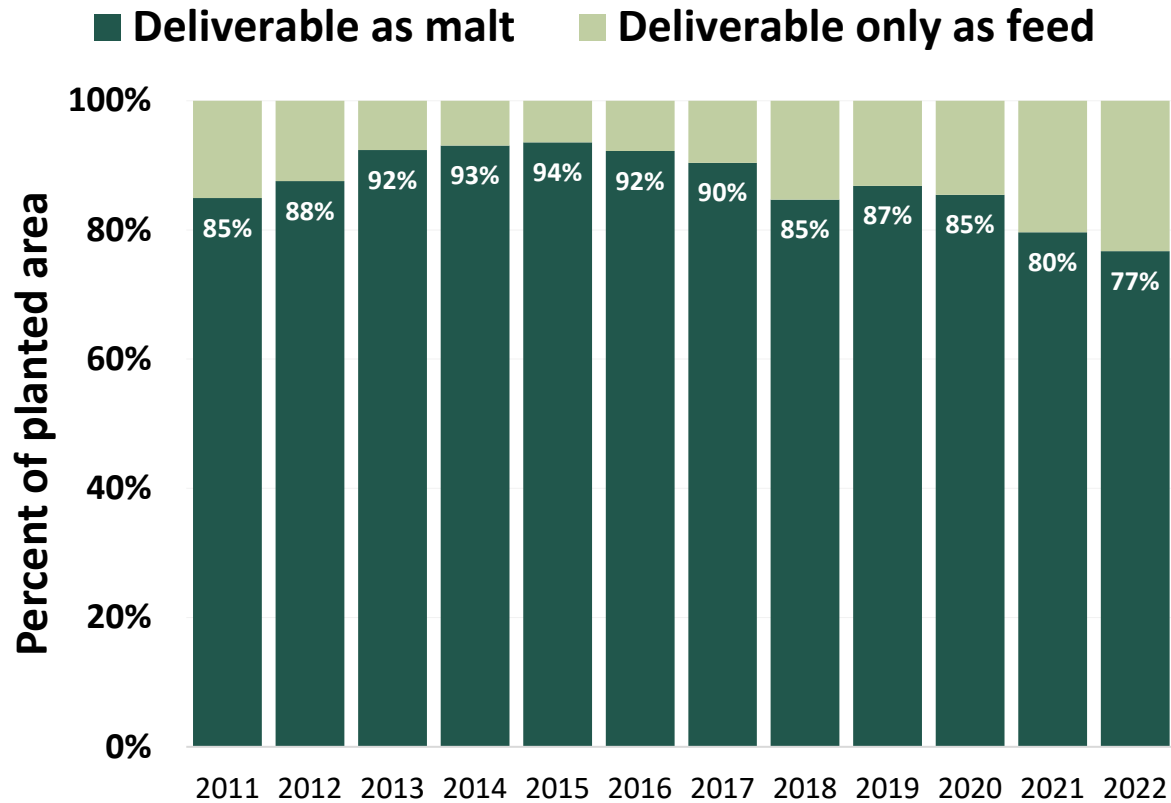
Barley and oat variety options for 2023

Blakely Paynter | DPIRD

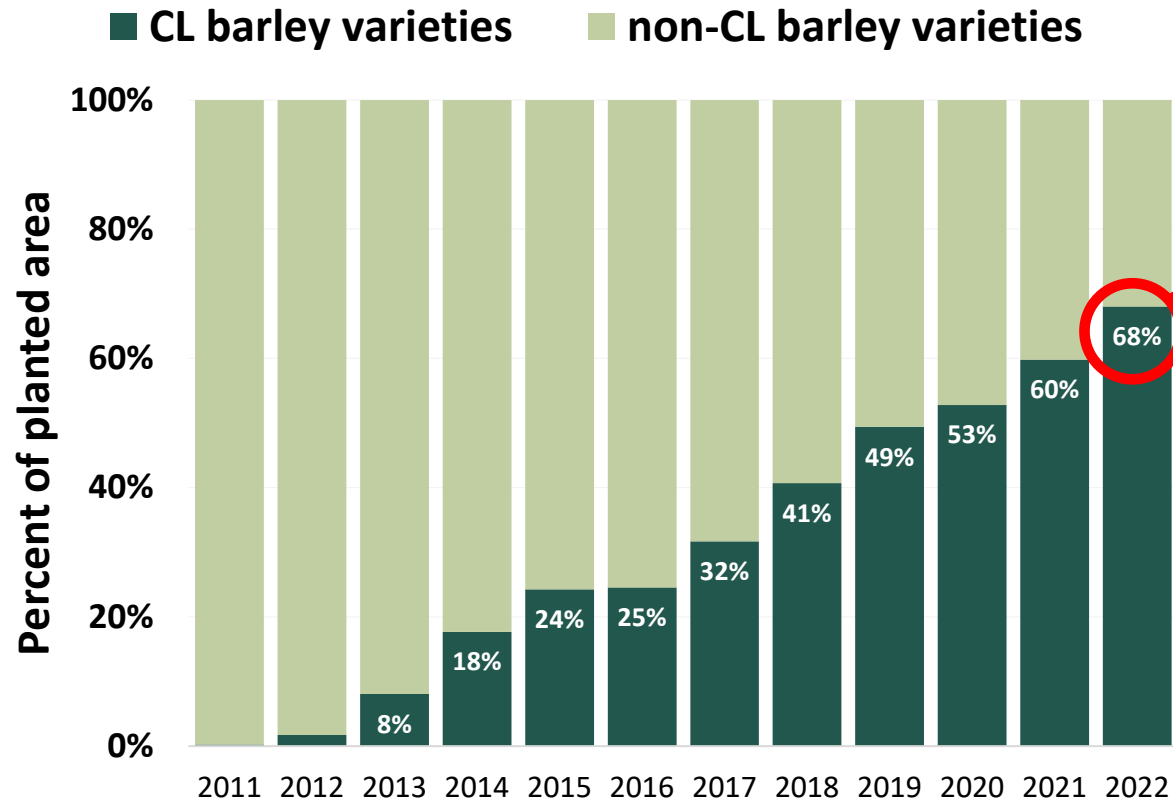
Barley variety choices for 2023



Feed-only varieties on the increase



Clearfield® varieties dominating

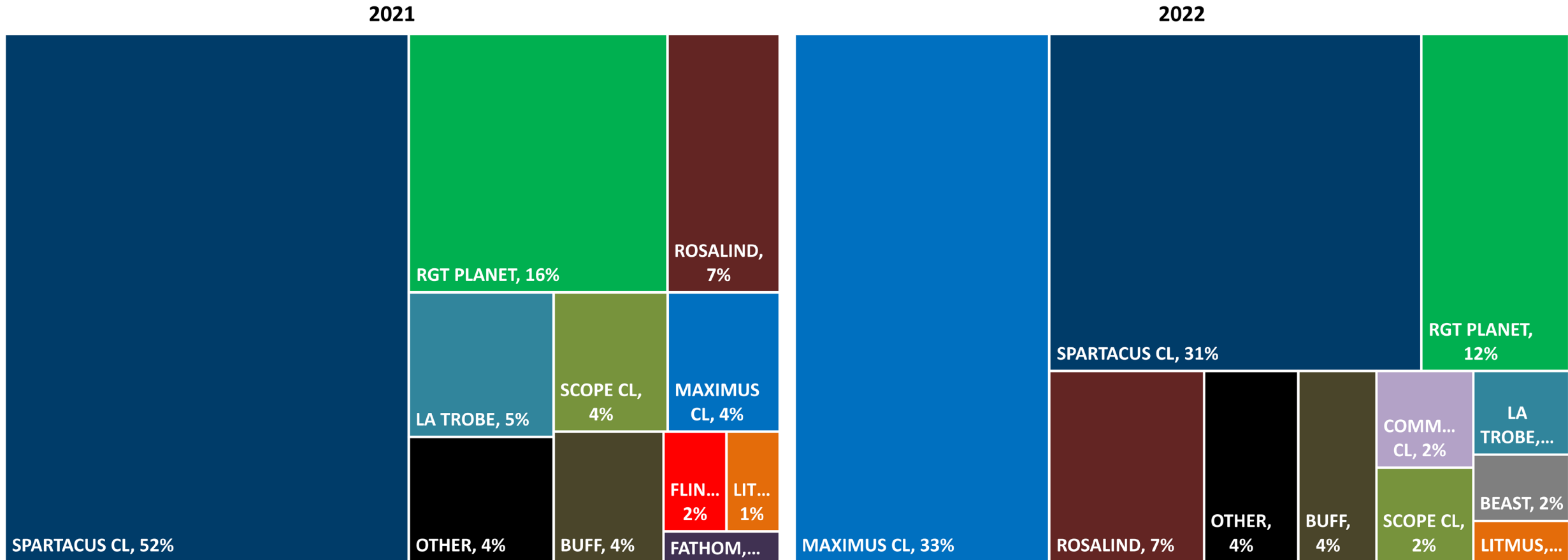


Could grow to 80+ %
if Zena CL and/or IGB22102T
replace RGT Planet and some feed-only

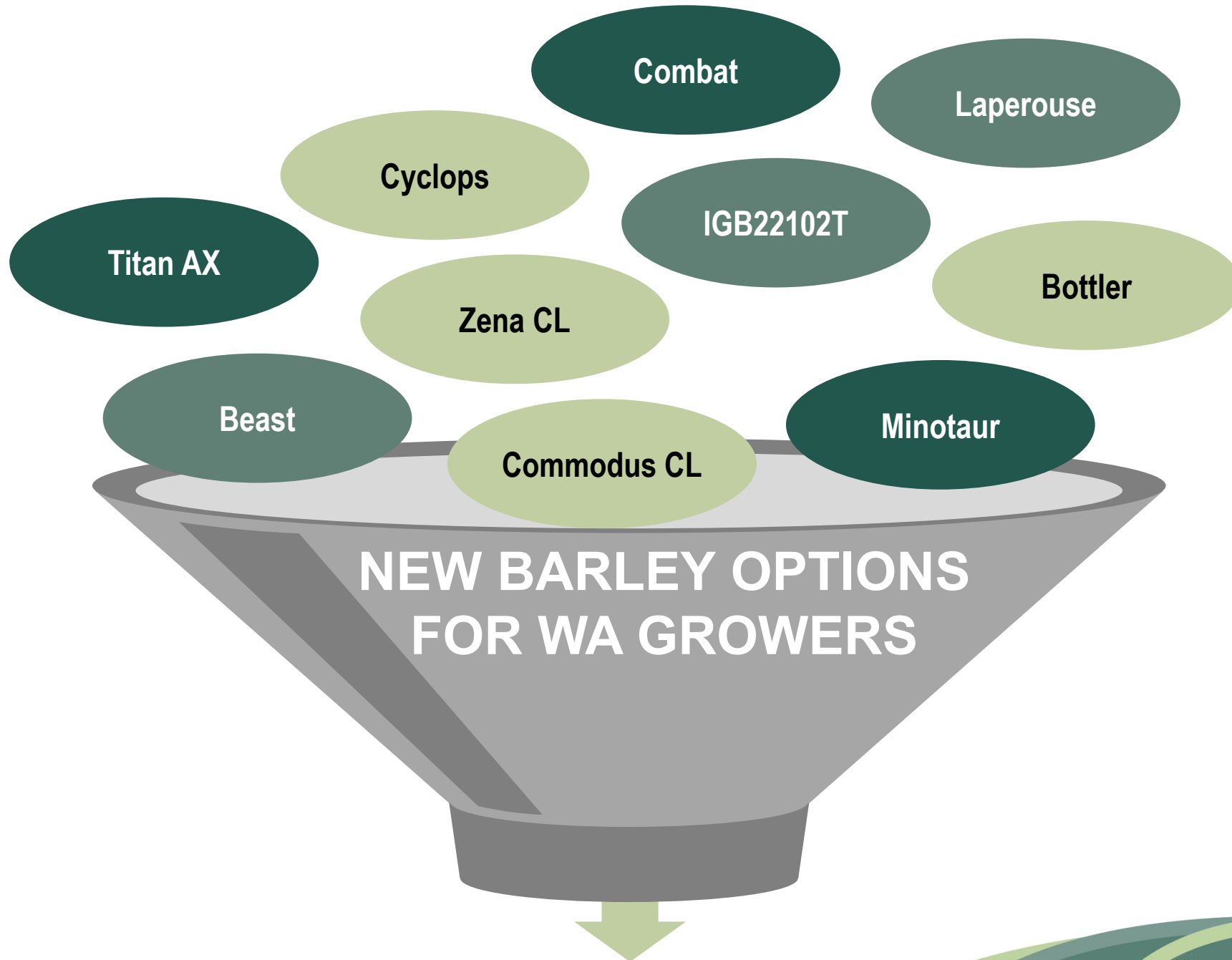
- Growing at 6% per annum
- Is this growth sustainable?
- What are the opportunities for the new AGT CoAXium® technology?

**There is a need for diversity
in our variety choices**

What barley variety are we sowing?



2022 saw the rise of Beast, Commodus CL, and Maximus CL



Which barley variety will you plant?

Scenario	1		2							
	MALT1 barley premium over feed (\$/t)									
	\$10	\$20	\$30	\$40	\$50	\$60	\$70	\$80	\$90	\$100
Feed price (\$/t)	Yield advantage of feed barley (%) to return the same profit as 1 t of malt barley									
\$220	5%	9%	14%	18%	23%	27%	32%	36%	41%	45%
\$240	4%	8%	13%	17%	21%	25%	29%	33%	38%	42%
\$260	4%	8%	12%	15%	19%	23%	27%	31%	35%	38%
\$280	4%	7%	11%	14%	18%	21%	25%	29%	32%	36%
\$300	3%	7%	10%	13%	17%	20%	23%	27%	30%	33%
\$320	3%	6%	9%	13%	16%	19%	22%	25%	28%	31%

	Scenario #1				Scenario #2			
	Grade	\$/t	% malt	Actual \$/t	Grade	\$/t	% malt	Actual \$/t
Premiums and costs	MALT1	\$50	60%	\$30	MALT1	\$100	50%	\$50
Premium over feed barley				\$10				\$10
Extra cost to grow for malt & deliver								
	REALISED PREMIUM \$20				REALISED PREMIUM \$40			

What feed varieties would make more money than a malt barley if the realised MALT1 premium was \$20 or \$40/t and the feed price was \$300/t?

Malt variety	Bass		Flinders		Maximus CL		RGT Planet		Spartacus CL	
	Yield advantage	≥7%	≥13%	≥7%	≥13%	≥7%	≥13%	≥7%	≥13%	≥7%
Beast	✓	✓	✓	✓	-	-	-	-	-	-
Bottler	-	-	-	-	-	-	-	-	-	-
Buff	✓	✓	✓	-	-	-	-	-	-	-
Combat	✓	✓	✓	✓	-	-	✓	-	✓	-
Commodus CL	✓	-	-	-	-	-	-	-	-	-
Compass	✓	-	✓	-	-	-	-	-	-	-
Cyclops	✓	✓	✓	✓	-	-	✓	-	✓	-
Fathom	✓	-	✓	-	-	-	-	-	-	-
La Trobe	✓	-	✓	-	-	-	-	-	-	-
Laperouse	✓	✓	✓	-	-	-	-	-	-	-
Leabrook	✓	✓	✓	-	-	-	-	-	-	-
LG Alestar	-	-	-	-	-	-	-	-	-	-
Litmus	-	-	-	-	-	-	-	-	-	-
Minotaur	✓	✓	✓	-	-	-	-	-	-	-
Mundah	-	-	-	-	-	-	-	-	-	-
Rosalind	✓	✓	✓	✓	-	-	-	-	-	-
Scope CL	-	-	-	-	-	-	-	-	-	-
Titan AX	✓	✓	✓	-	-	-	-	-	-	-
Zena CL	✓	-	-	-	-	-	-	-	-	-

Relative yield data from Table 10: 2023 DPIRD Crop Sowing Guide - Barley section (page 63)

Suggested variety options by rainfall zone

Rainfall zone	Plant height gene		
	sdw	erectoides	tall
Lower		Maximus CL Rosalind	Beast Buff Commodus CL Titan AX
Medium	Zena CL IGB22102T	Cyclops Maximus CL	Beast Combat Commodus CL Titan AX
Higher	Bass Flinders IGB22102T RGT Planet Zena CL	Cyclops Maximus CL	Combat Laperouse

Compass

RGT Planet

Minotaur

Maximus CL

Cyclops

Bass

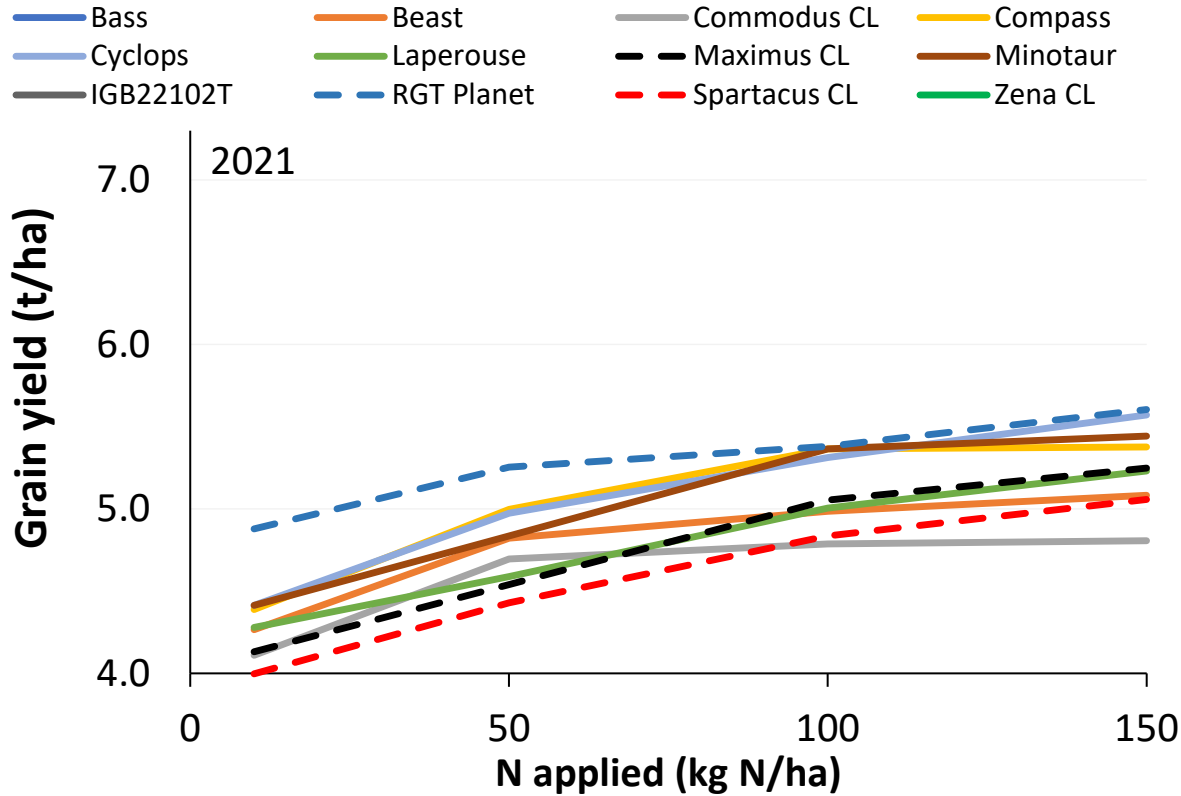
Beast

IGB22102T

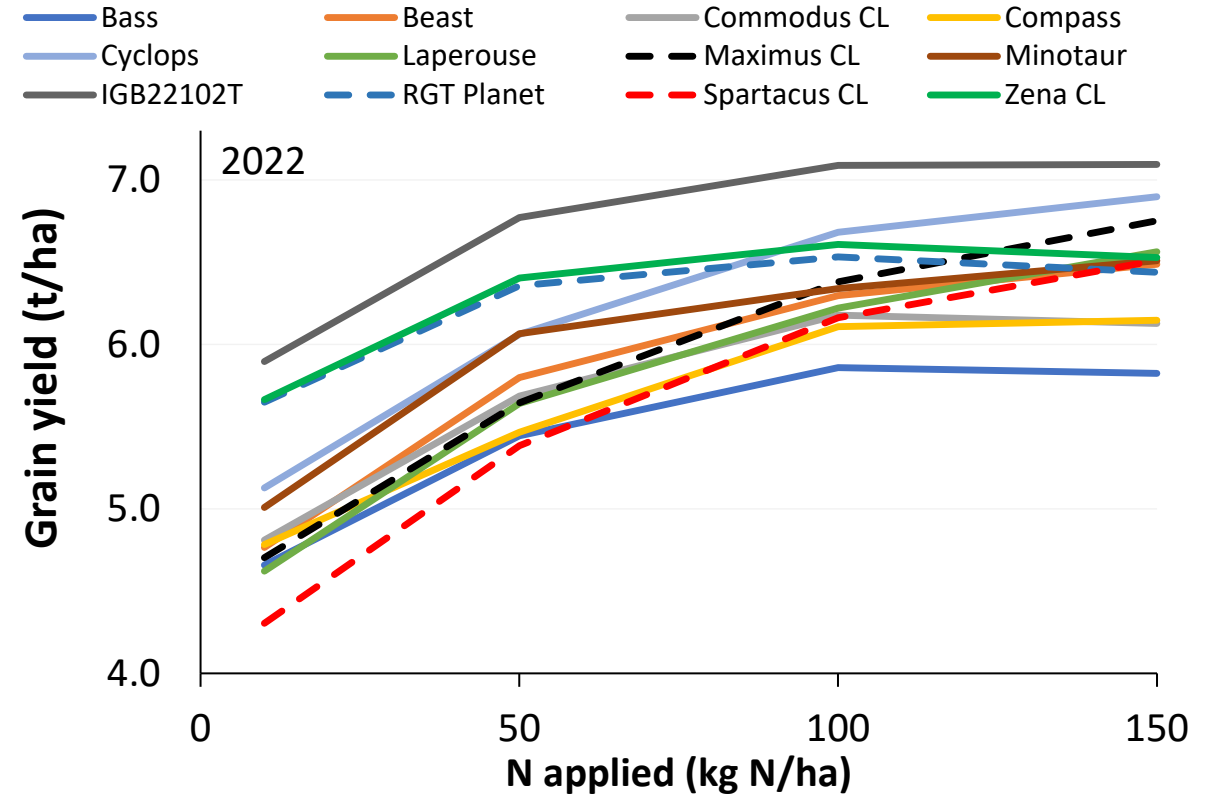
Commodus CL



Grain yield – response to applied N

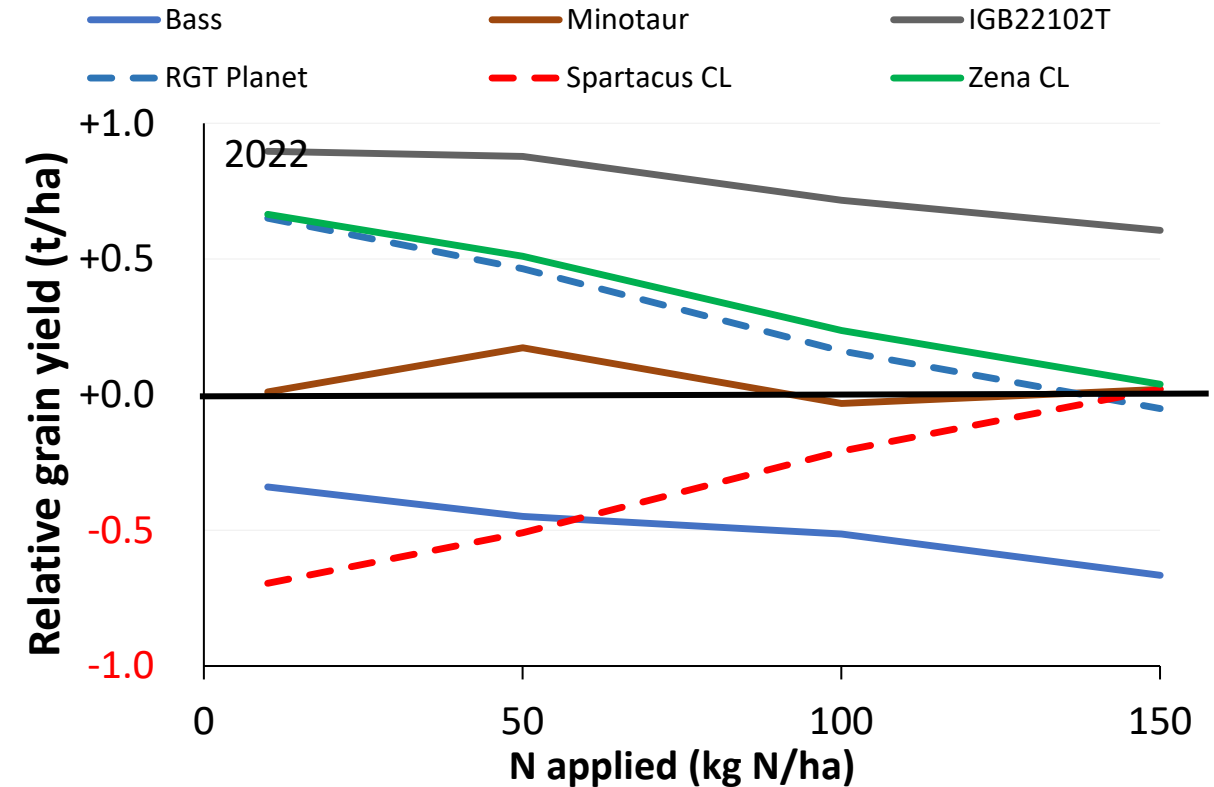
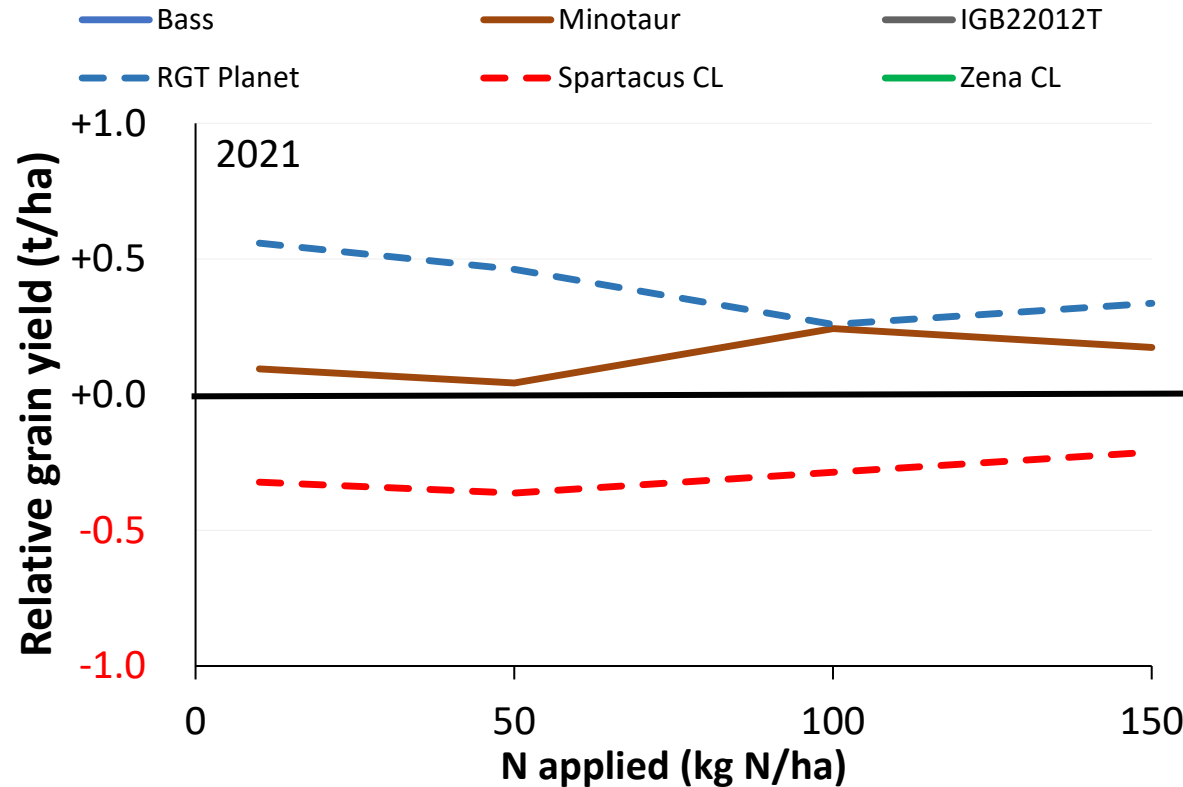


2021: 22% N response or 0.97 t/ha
Not strong V x N interactions



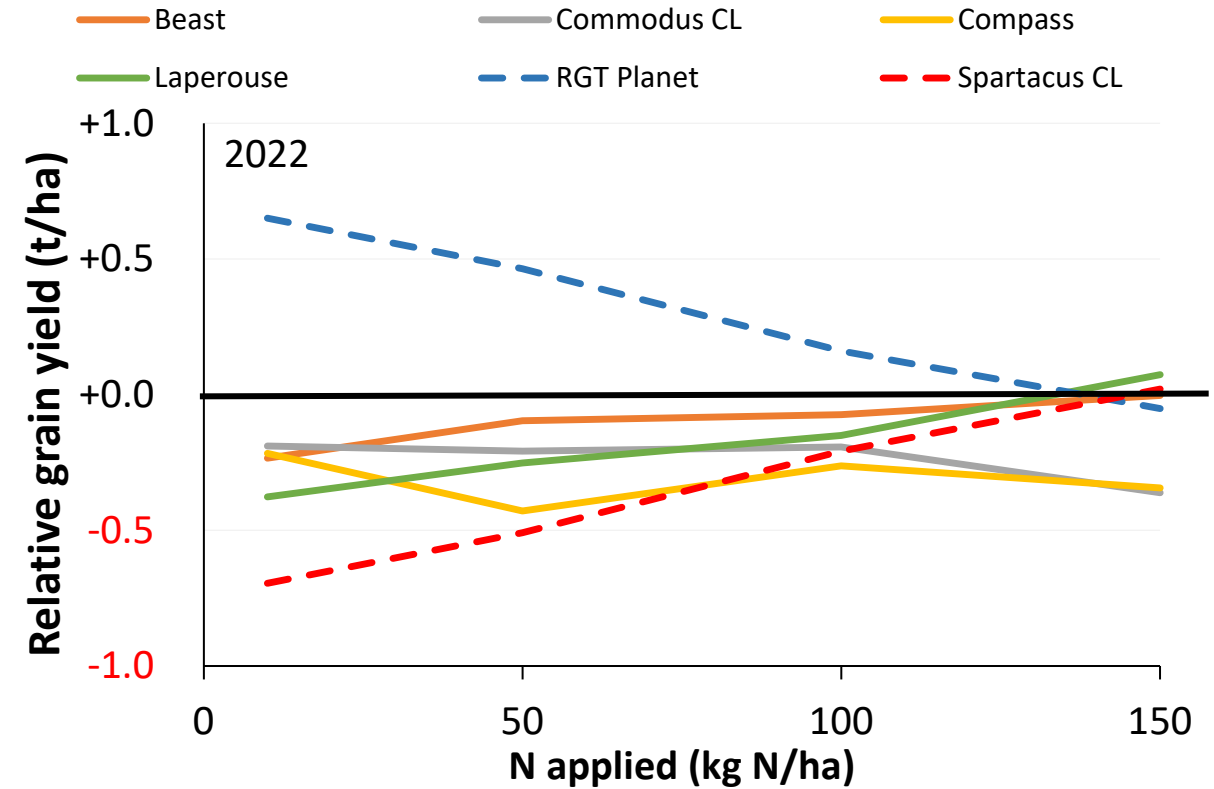
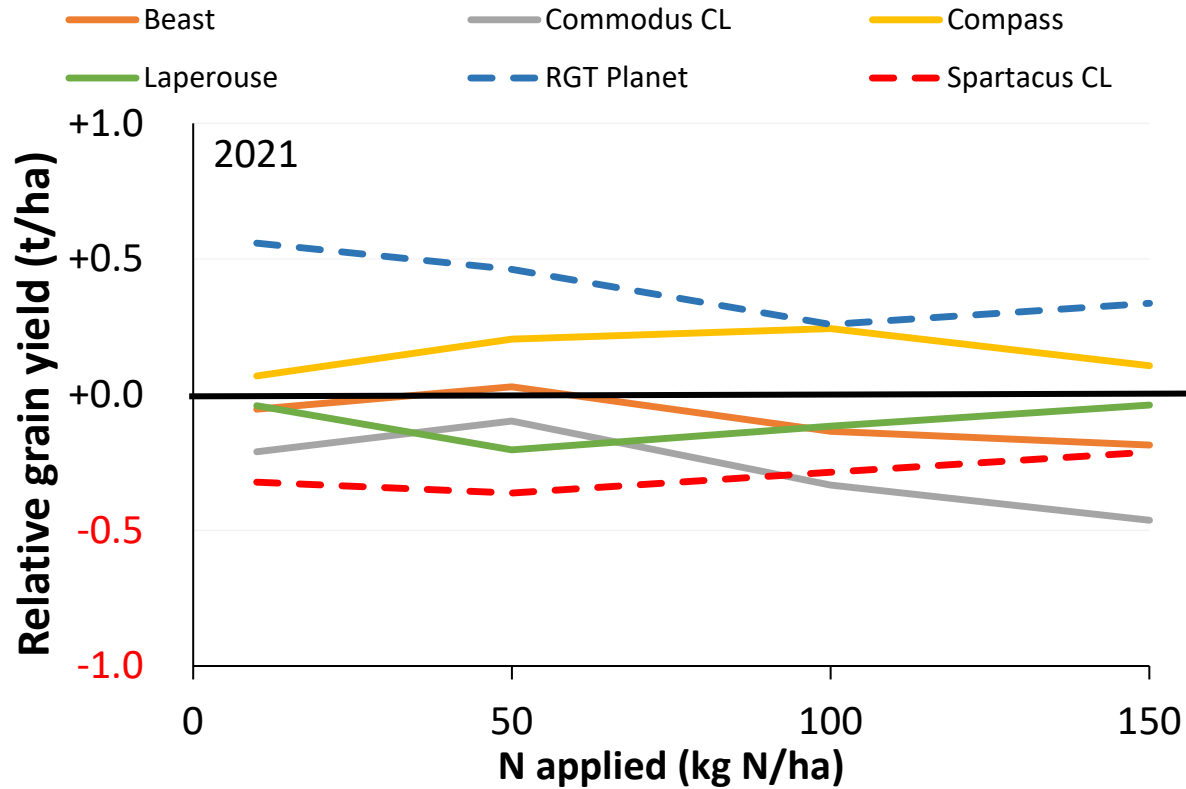
2022: 30% N response or 1.49 t/ha
Strong V x N interactions

Grain yield – sdw types



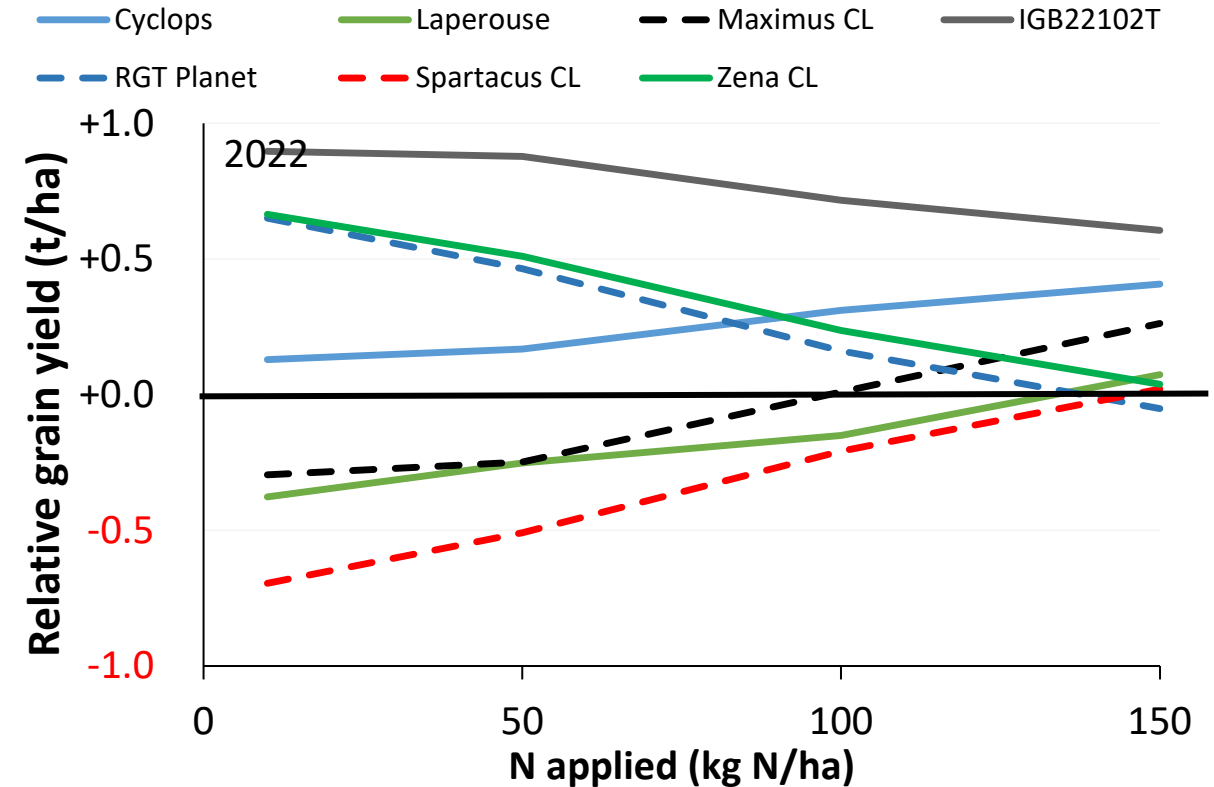
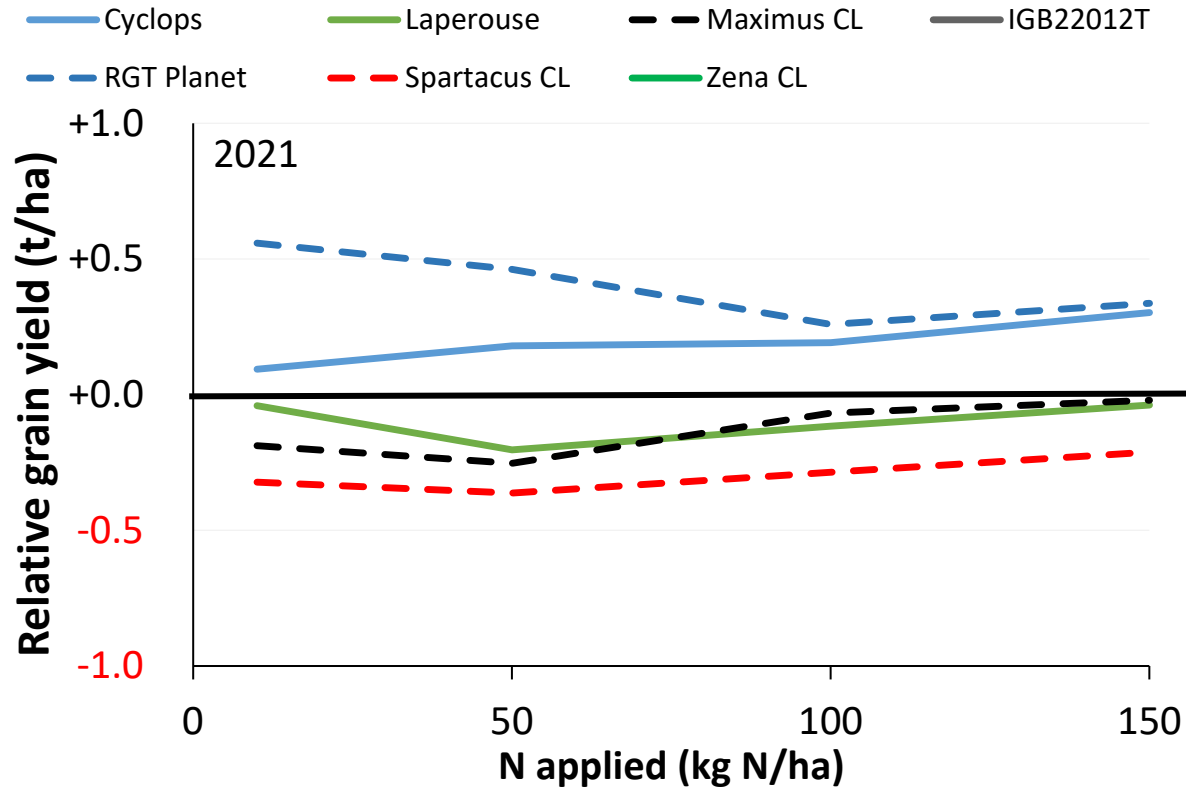
- **In 3+ t/ha environments:**
 - **IGB22102T looks exciting, while Zena CL mirrored RGT Planet**
 - **Minotaur's relative performance was unchanged with N supply**

Grain yield – tall types



- In 3+ t/ha environments:
 - Beast, Commodus CL, Compass & Laperouse similar N response
 - Spartacus CL more competitive with higher N supply

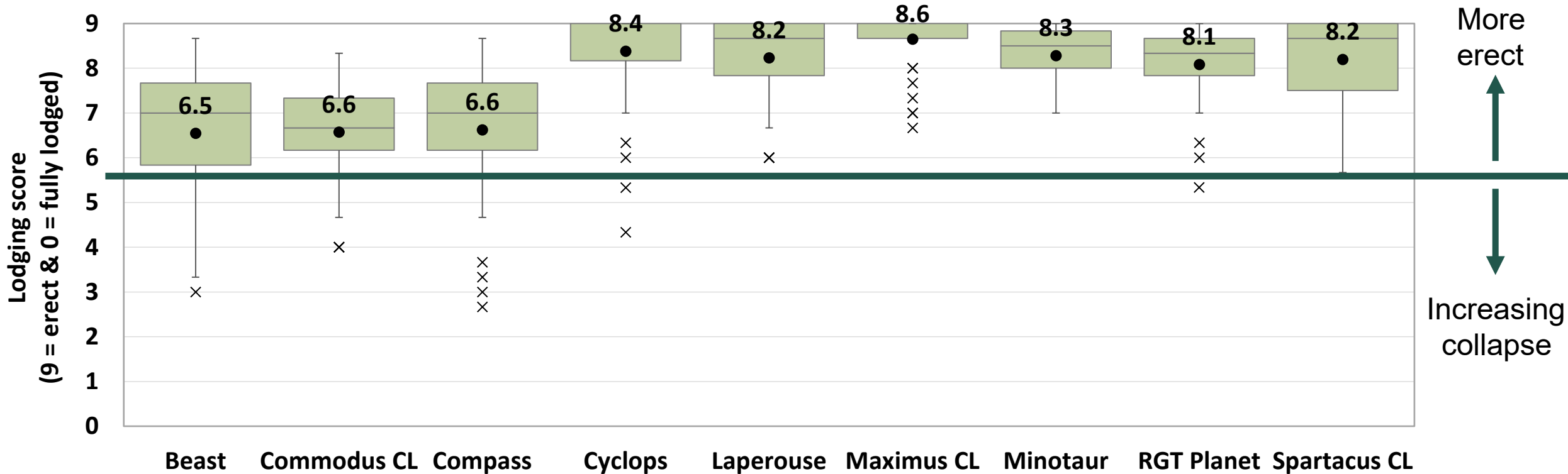
Grain yield – medium to high rainfall



- In 3+ t/ha environments:
 - Spartacus CL < Maximus CL < Cyclops with similar N response
 - Laperouse did not outperform RGT Planet

Straw strength

IGB22102T lodging risk similar to Spartacus CL



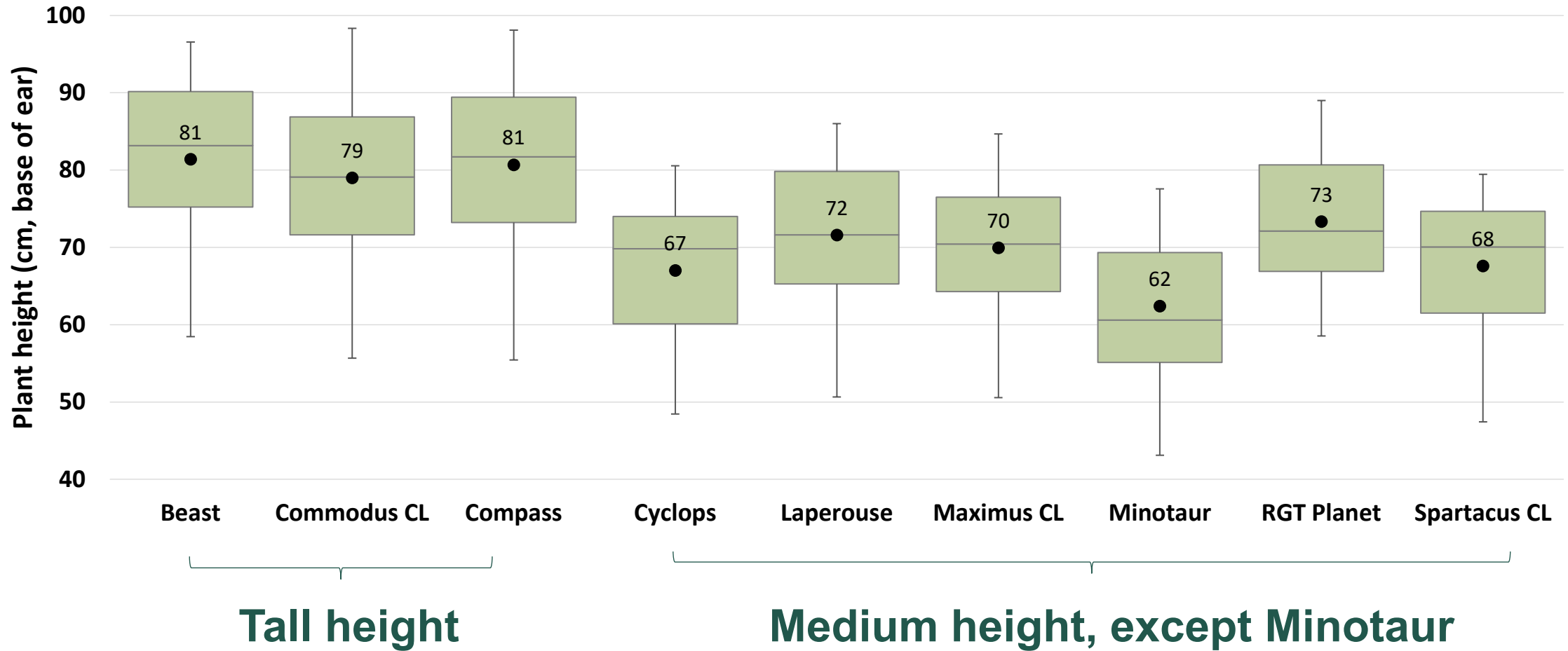
Prone to lodging

Less prone to lodging

Cyclops & Maximus CL were least likely to brackle

Plant height

**IGB22102T & Minotaur
are short height like Bass**



Gaps for scald, NFNB, SFNB, and BLR

Disease	Scald	NFNB	NFNB	NFNB	SFNB	PM	BLR
Pathotype	Medina	Beecher virulent	Beecher avirulent	Oxford virulent	South Perth	South Perth	5457 -
Beast	1	2	2	2	2	3	2
Bottler	1	2	2	2	1	3	2
Combat	2	2	2	1	2	3	1
Commodus CL	1	2	2	1	2	3	1
Compass	1	2	2	2	2	3	2
Cyclops	2	2	2	1	2	3	1
Maximus CL	3	2	2	1	2	3	2
Minotaur	1	2	2	2	1	2	1
RGT Planet	3	1	2	1	1	3	2
Spartacus CL	3	2	2	1	1	2	2
Titan AX	1	3	2	2	2	3	1
Zena CL	3	2	2	1	1	3	2

MR or better	3
MS to MRMS	2
S or worse	1

Lots of new pathotypes rendering some of these ratings questionable – need diversity in varieties planted

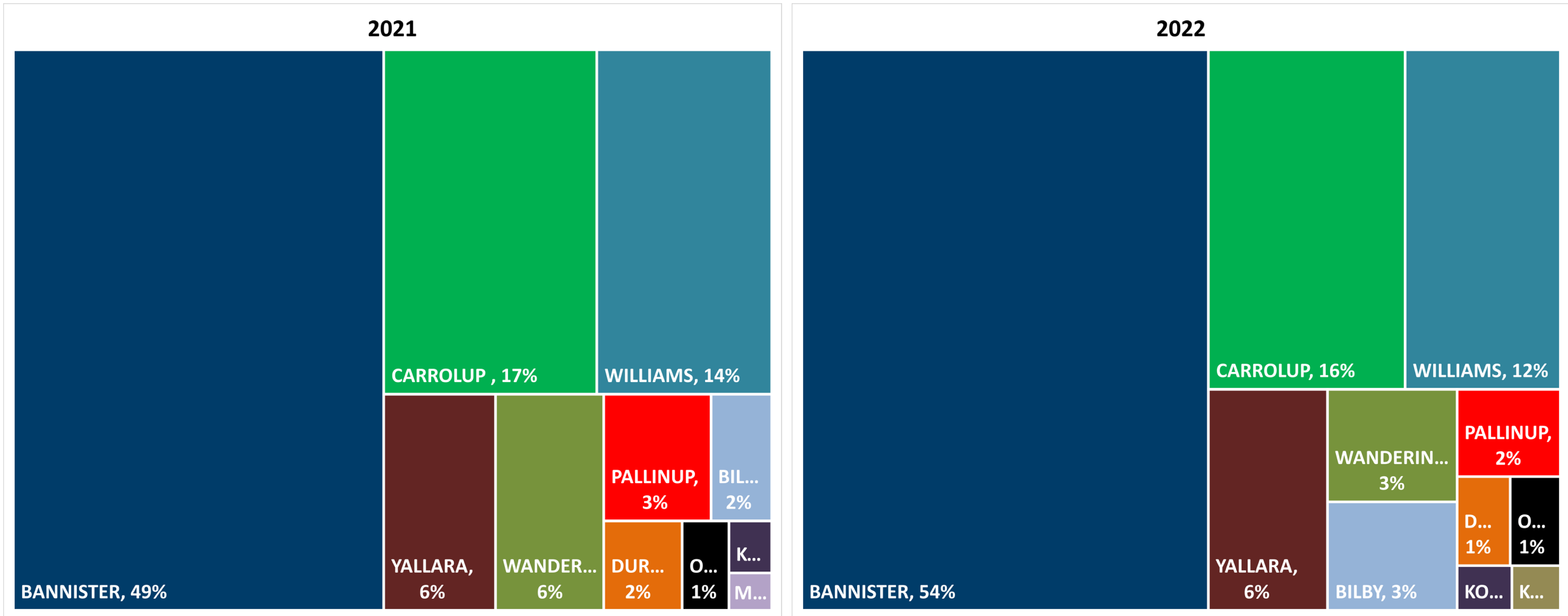
Top picks for 2023

- **Beast** – lower rainfall areas
- **Buff** – acid soils in low-medium rainfall areas
- **Combat** – medium-high rainfall areas with SFNB resistance
- **Commodus CL** – imi-technology in low rainfall areas
- **Cyclops** – new ‘Rosalind’ for medium and high rainfall areas
- **IGB22102T** – promising new variety from InterGrain
- **Maximus CL** – improved ‘Spartacus CL’
- **Zena CL** – alternative to RGT Planet, with imi-tolerance

**For more detailed barley variety information
consult the 2023 DPIRD Crop Sowing Guide**

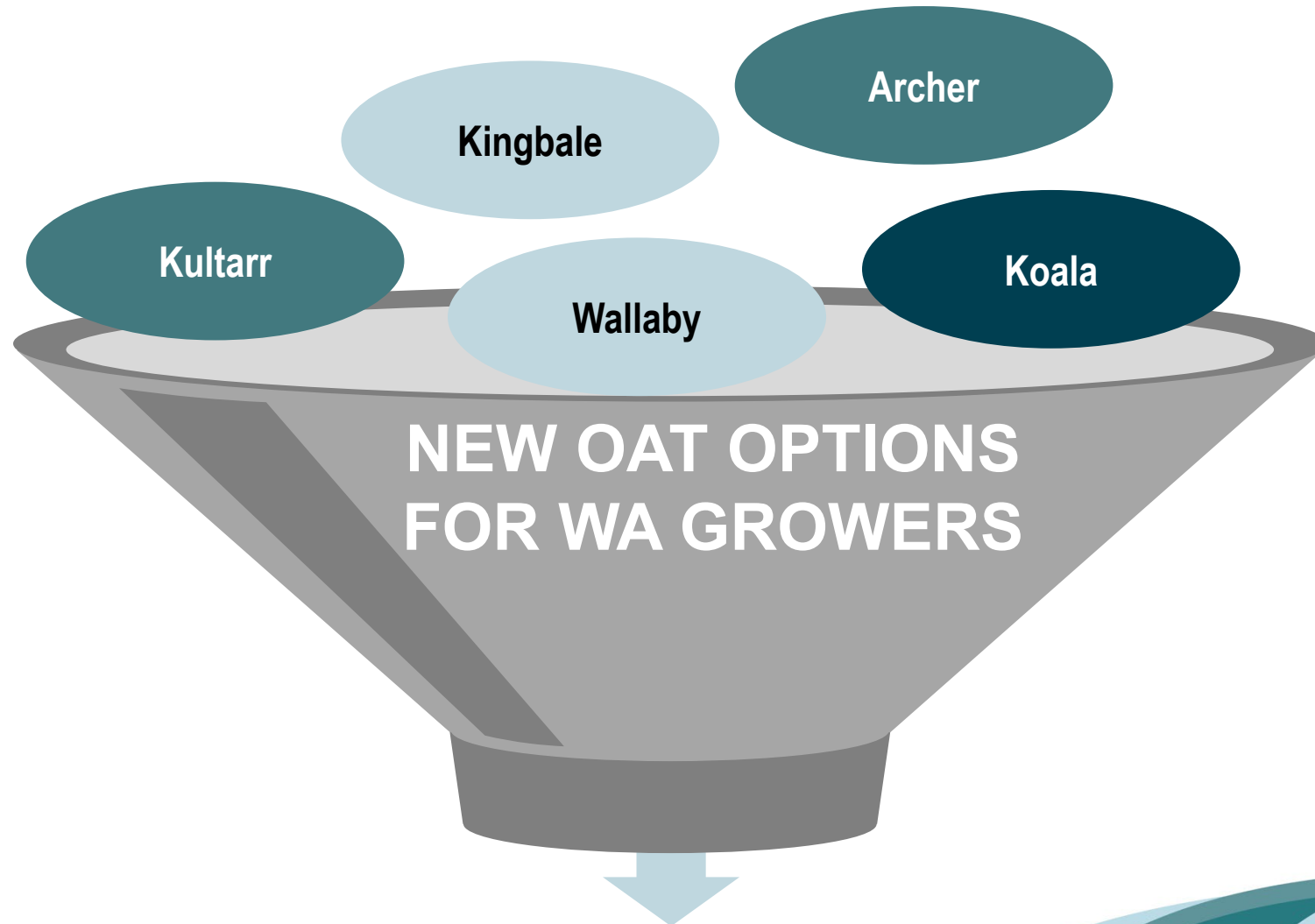
Oat variety choices for 2023

What oat are we sowing?

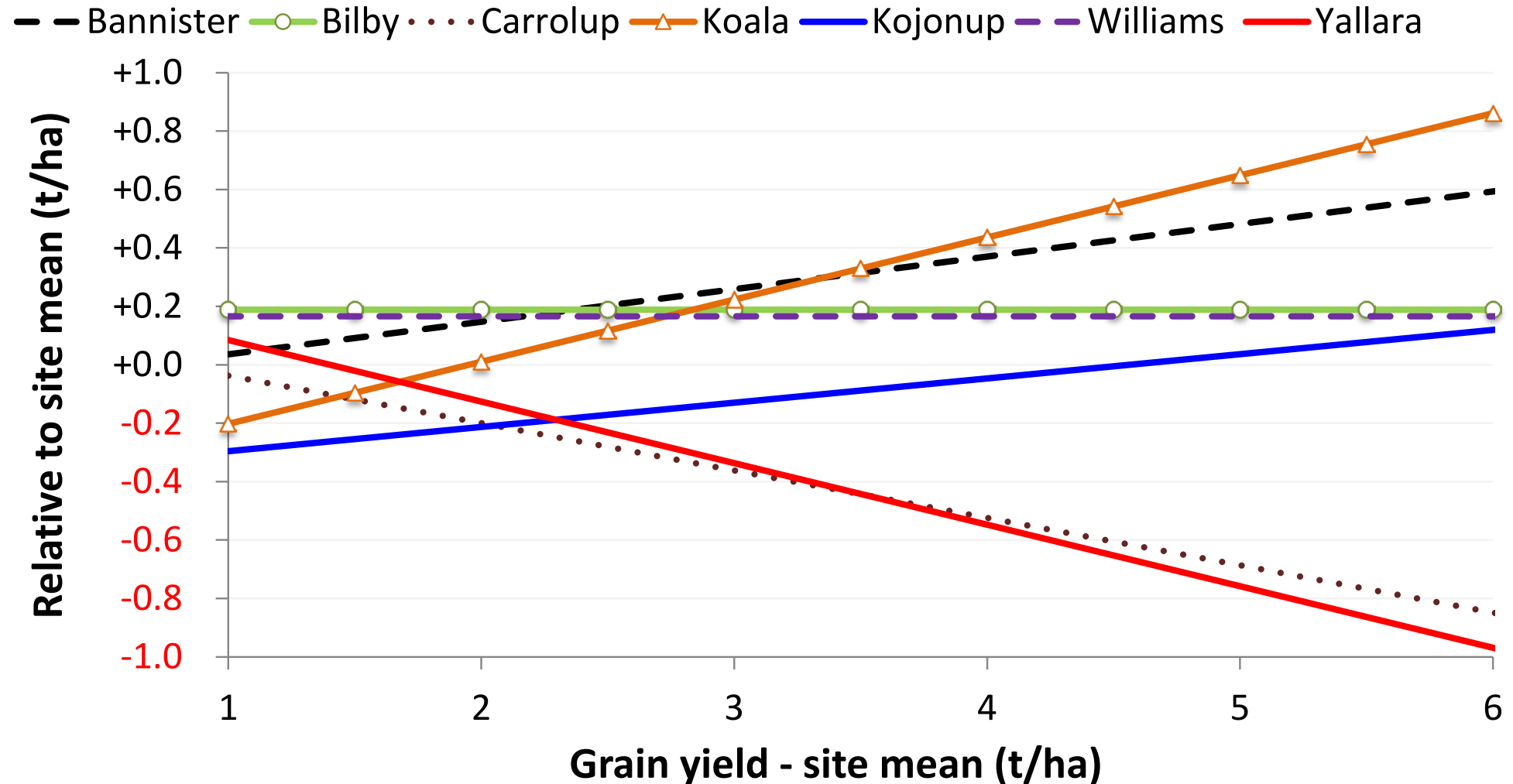


2022 saw Bannister continue it's dominance and the slow rise of Bilby

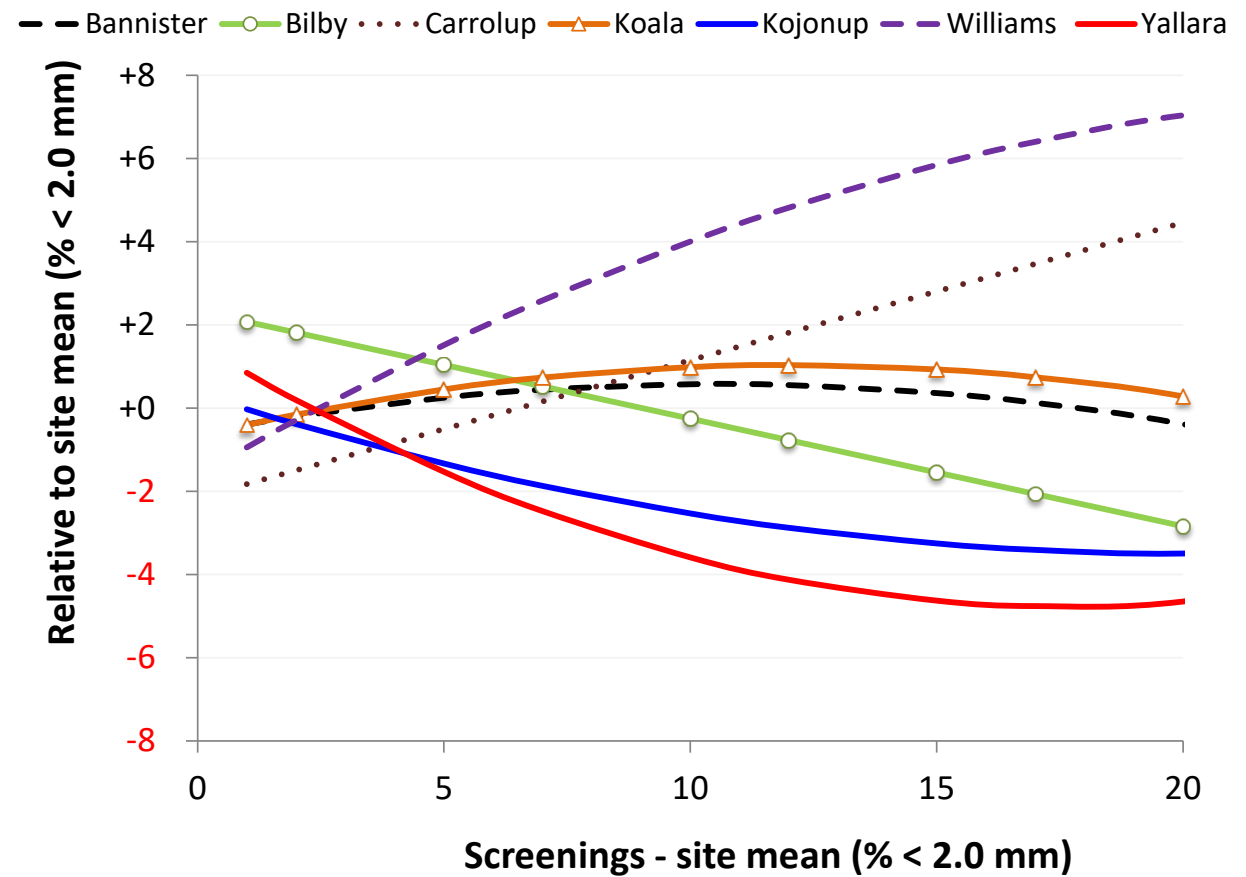
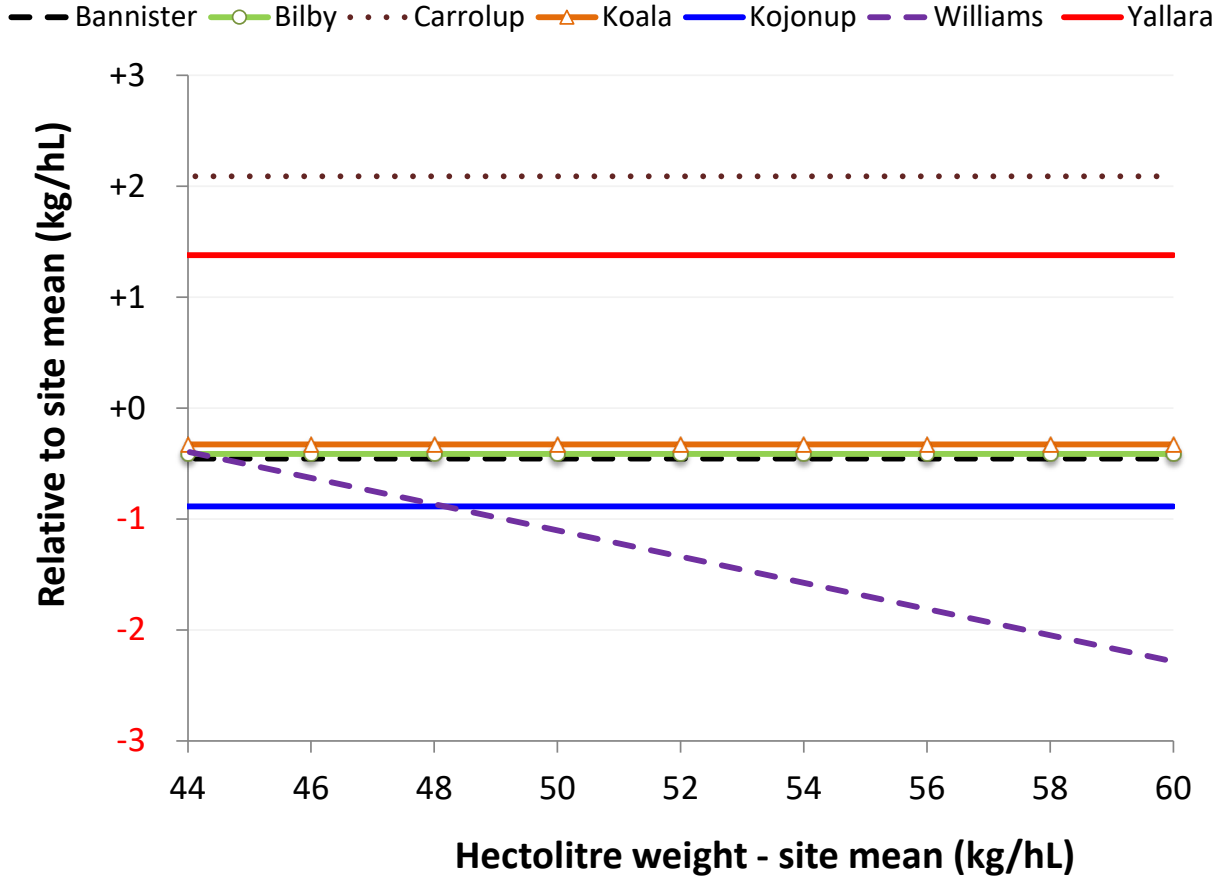
The new oat grain variety cupboard is bare compared to barley



Bilby and Koala – grain oats



Bilby and Koala – grain oats



Bilby and Koala – grain oats

- **Bilby** (98011-6/98240-19)
 - accredited milling oat
 - alternative to Williams
 - similar grain yield with improved test weight and lower screenings
 - disease is it's Achilles heal: SVS to septoria and stem rust, MRMS for leaf rust
- **Koala** (SV02088-70/Bannister)
 - not yet been evaluated for milling, question marks over it's β -glucan
 - later flowering than Bannister
 - improvement over Bannister at yields above 4t/ha
 - same test weight and screenings as Bannister
 - improvement over Bannister for stem rust, while septoria and leaf rust same

Archer and Kingbale – hay oats

- **Archer** (Euro/ND931075//Euro)
 - single gene, IMI-tolerant oat suitable for export hay
 - modelled on Yallara but with different agronomic traits (similar disease profile)
 - requires different management than Yallara to optimise performance
- **Kingbale** (MIOLRP-86-3/Echidna//Wallaroo)
 - single gene, IMI-tolerant oat suitable for export hay
 - modelled on Wintaroo with the same agronomic traits including disease
 - agronomic management is the same as for Wintaroo
 - later flowering type susceptible to lodging

**Sentry® is now approved for IBS application in Archer and Kingbale hay, forage, seed and grain (domestic feed market only) crops.
Cannot be delivered to CBH.**

Kultarr and Wallaby – hay oats

- **Kultarr** (IL3587/Mulgara)
 - being evaluated for it's potential as an export hay variety
 - suitable for low to medium rainfall areas
 - taller plant height suits more challenging years
 - valuable resistance to septoria (*MSSp*), leaf rust (*MRp*), and stem rust (*MSSp*)
- **Wallaby** (98228-3/00167-14)
 - being evaluated for it's potential as an export hay variety
 - suitable for medium to high rainfall areas
 - dwarf variety with a medium to tall plant height
 - valuable resistance to septoria (*MSSp*), leaf rust (*MRp*), and stem rust (*MSp*)

Brusher

Kultarr

Wallaby

Carrolup

Wallaby

Koorabup

13008-18

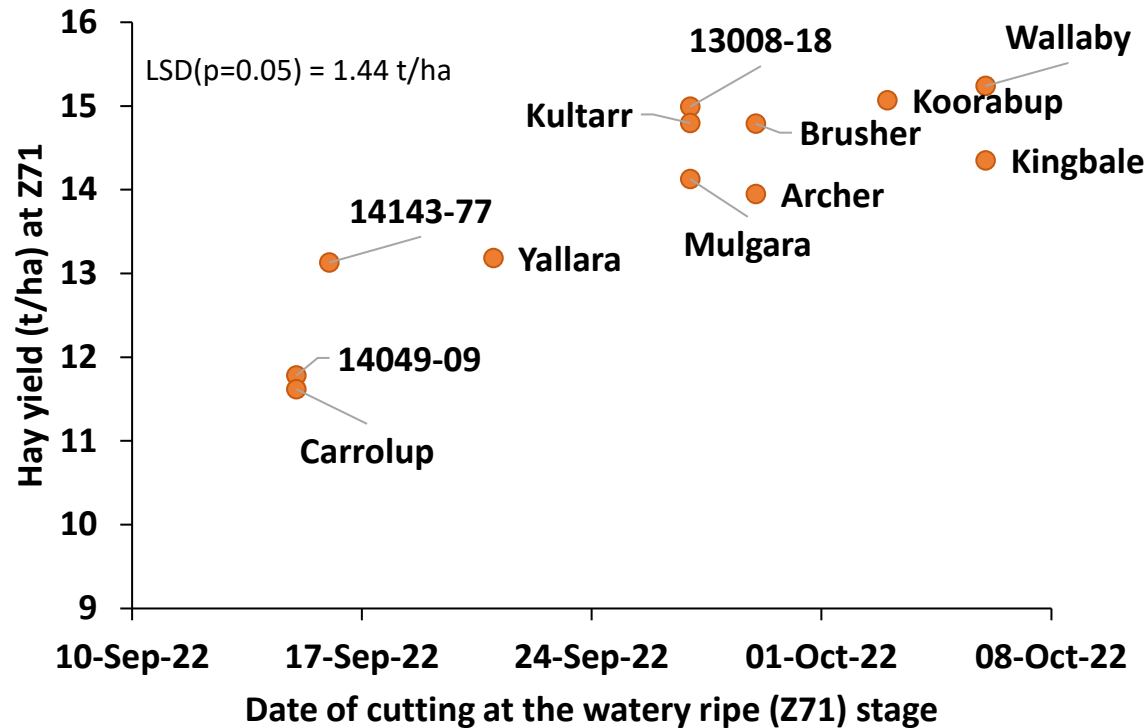
Archer

Kingbale

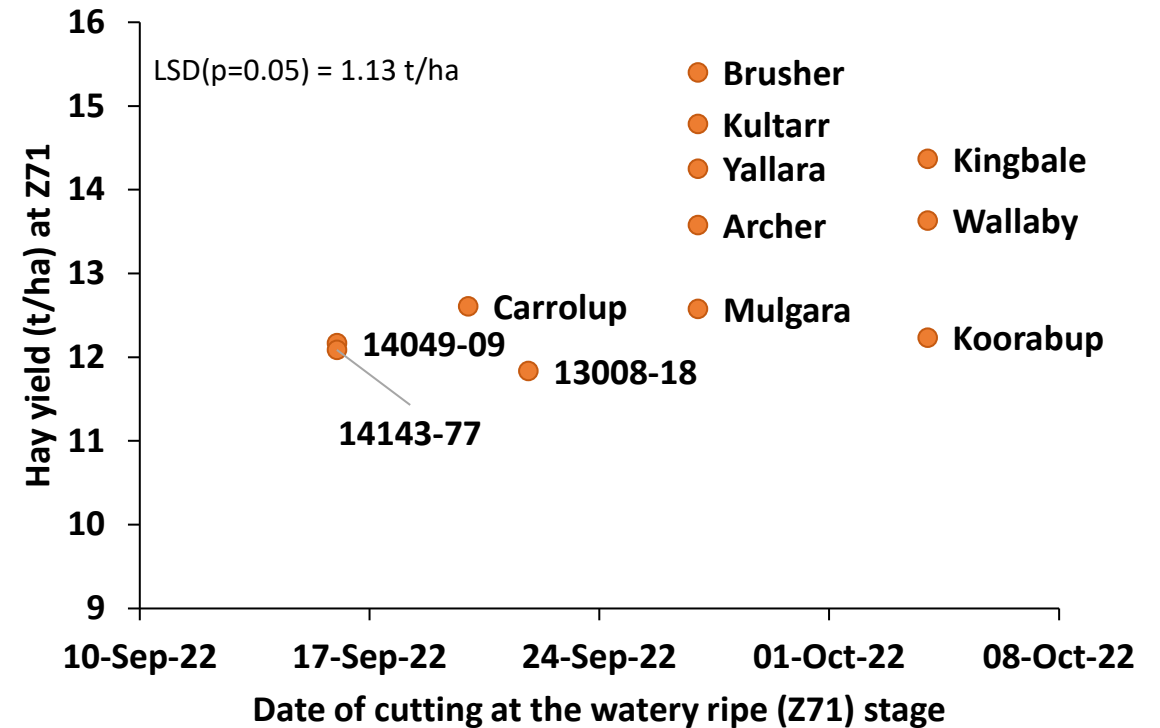


Hay oat yield in 2022

22WH16-A: Yerecoin (sown 26-May-22)



22NO27-A: York (sown 17-May-22)



- **3 week difference in cutting date between varieties**
- **Over three sites, Brusher was the highest yielding hay line**
- **Wallaby didn't lodge like Kingbale and had a similar yield**

Read 2023 DPIRD sowing guide for info on

- Lodging management
- GA and stuck panicles in hay oats
- Fungicide management for protecting hay quality in the swath
- Sowing date advice for grain and hay oats
- N fertiliser tips for grain and hay oats
- Grain staining
- Harvest timing for grain oats
- Red leather leaf is now officially present in WA

**For more detailed oat variety information
consult the 2023 DPIRD Crop Sowing Guide**

InterGrain oat breeding

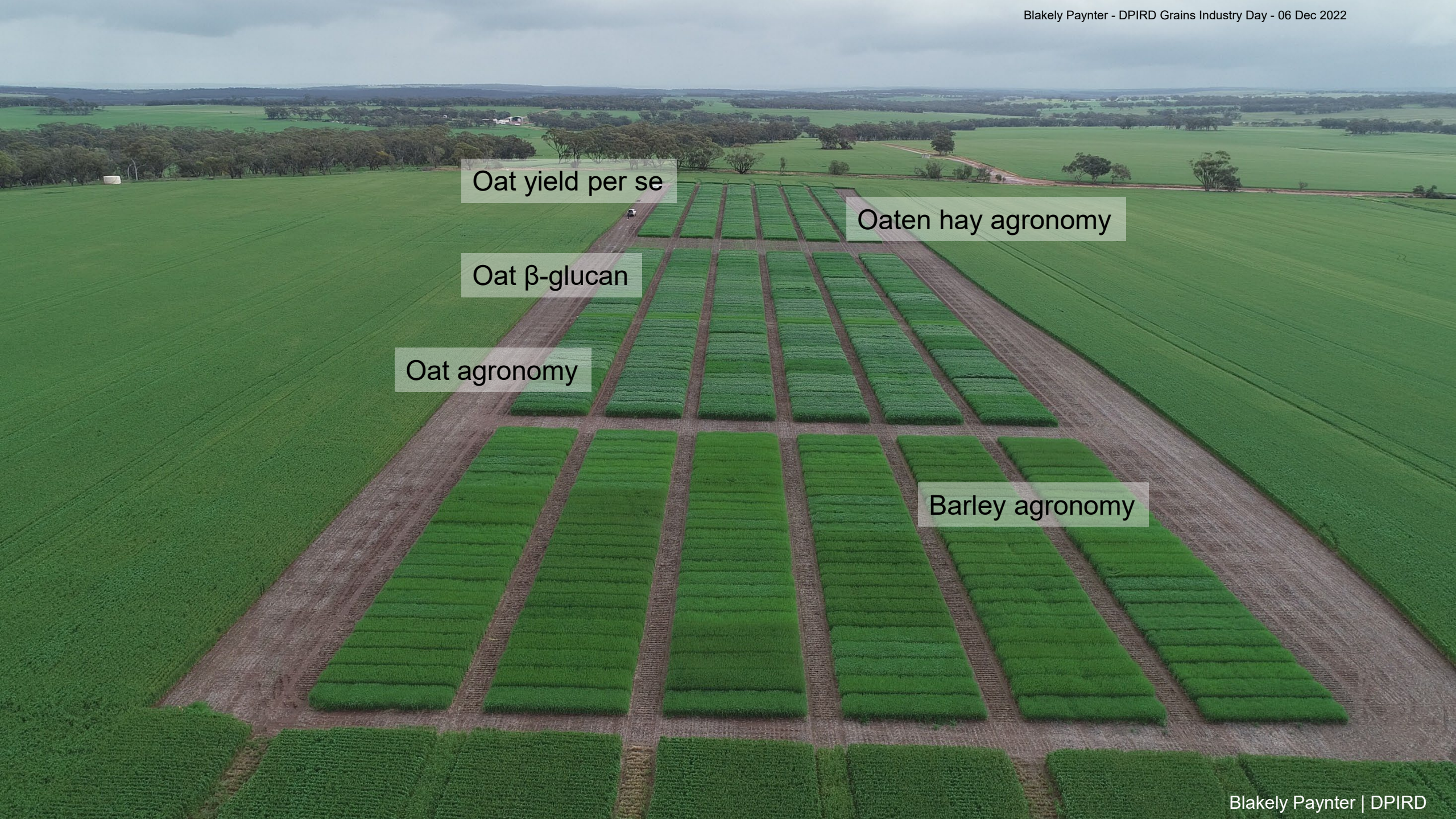
Oat germplasm
for yield per se

Barley agronomy

Oat agronomy

Oaten hay agronomy

Oat yield per se



Oat yield per se

Oaten hay agronomy

Oat β -glucan

Oat agronomy

Barley agronomy

Thank you

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