



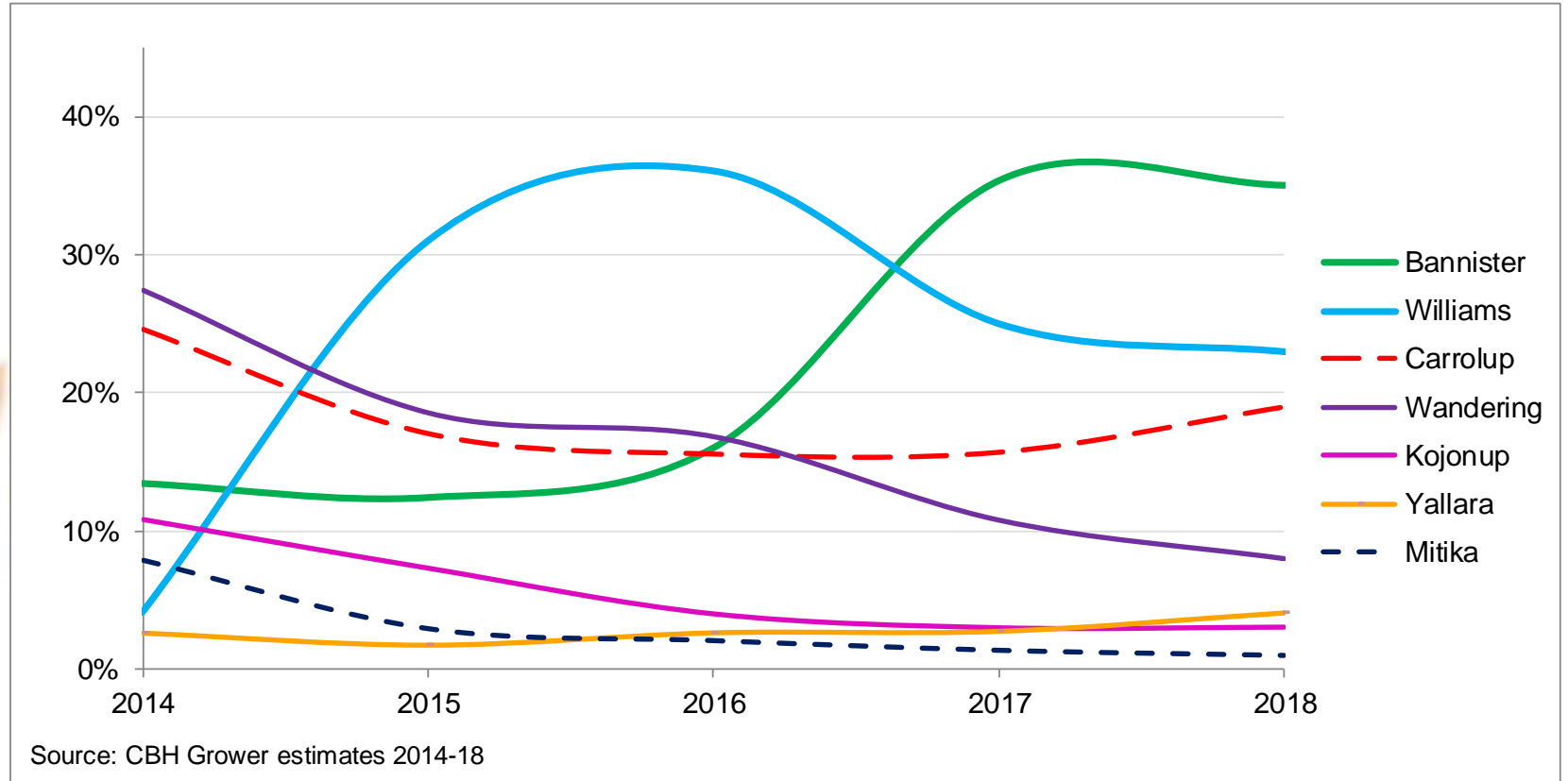
2019 OAT VARIETY AND AGRONOMY UPDATE

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GRDC
GRAINS RESEARCH
& DEVELOPMENT
CORPORATION

% Area sown in 2014-18 for oat grain





**National Variety Trial
results**

**Grain oat return \$/ha
2015-18**

**Meeting market
specifications 2019 +**

Changes to the Oat receival specs for 2019/20

Oat2 Screenings limit introduced:

Previously no limit on screenings %.

15% limit for 2019/20 harvest

Groat number reduced:

Previously allowed up to 144 groats per black plastic measure reduced to 77.



"I'm right there in the room, and no one even acknowledges me."

Variety trials - 2018



13 sites

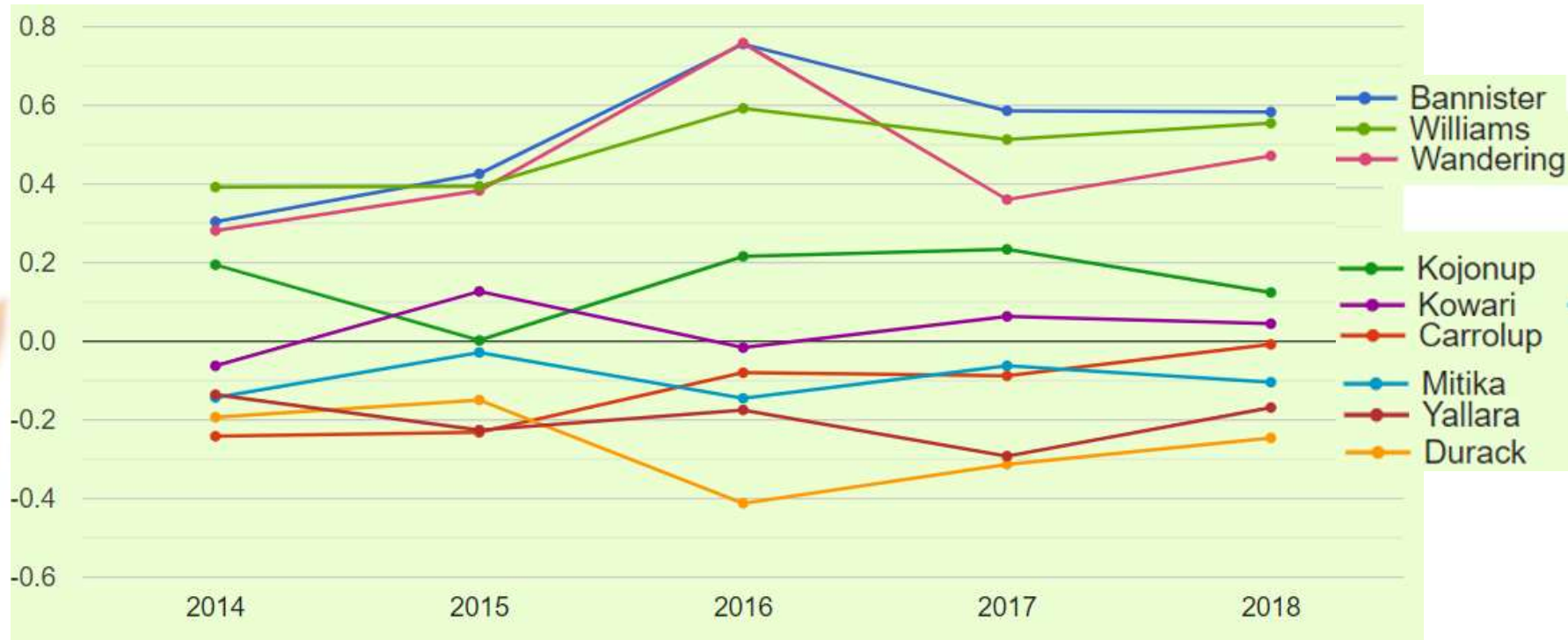
(10 NVT + 3 National Breeding Program)

5 sites = no data - herbicide damage

8 sites providing data in 2018.



Predicted yield (Variation from the mean)



Return \$/ha 2014-18 NVT

Assumptions	\$/ha
Operating costs including; Seed, fertilizer, chemicals, seeding, spraying, spreading, harvesting.	\$250 (York, Boyup Brook) \$230 (Merredin, Holt Rock, Cunderdin)
Freight + receival costs	As per 2018/19 CBH charges; From \$10.62 (York) to \$32.48 (Holt Rock)
EPR GRDC levy BAMA levy	EPR \$0-2.50/t GRDC levy 1.02% BAMA levy \$0.25/t



Return \$/ha – Boyup Brook

With 2019/20
quality spec.
applied

Variety	2015	2016	2017	2018	Avg	Likelihood	Likelihood
						Oat3	Oat1
Bannister	\$300	\$476	\$327	\$1,184	\$572	25%	75%
Carrolup	\$287	\$590	\$461	\$1,007	\$586	0%	100%
Durack	\$270	\$343	\$245	\$931	\$447	25%	75%
Kojonup	\$287	\$282	\$340	\$1,029	\$485	25%	50%
Kowari	-	\$121	\$234	\$905	\$420	67%	33%
Mitika	\$259	\$224	\$258	\$1,021	\$441	25%	50%
Wandering	\$259	\$366	\$313	\$1,112	\$513	25%	N/A
Williams	\$457	\$322	\$356	\$1,201	\$584	25%	50%
Yallara	\$274	\$230	\$387	\$924	\$454	25%	50%

Return \$/ha - Wagin

With 2019/20
quality spec.
applied

Variety	2016	2017	2018	Avg	Likelihood	Likelihood
					Oat3	Oat1
Bannister	\$393	\$660	\$1,333	\$796	33%	67%
Carrolup	\$347	\$372	\$989	\$569	0%	67%
Durack	\$175	\$451	\$868	\$498	33%	67%
Kojonup	\$336	\$430	\$1,093	\$620	33%	33%
Kowari	\$312	\$228	\$1,006	\$516	67%	33%
Mitika	\$257	\$296	\$983	\$512	33%	33%
Wandering	\$440	\$549	\$1,147	\$712	33%	N/A
Williams	\$314	\$414	\$1,234	\$654	33%	33%
Yallara	\$279	\$426	\$1,074	\$593	33%	67%

Return \$/ha – Holt Rock

With 2019/20
quality spec.
applied

Variety	2015	2017	2018	Avg	Likelihood	Likelihood
					Oat3	Oat1
Bannister	\$401	\$604	\$710	\$571	0%	100%
Carrolup	\$324	\$364	\$510	\$399	0%	100%
Durack	\$395	\$331	\$606	\$444	0%	100%
Kojonup	\$391	\$341	\$510	\$414	0%	67%
Kowari	-	\$405	\$533	\$469	0%	50%
Mitika	\$402	\$262	\$590	\$418	0%	100%
Wandering	\$498	\$432	\$670	\$533	0%	N/A
Williams	\$467	\$496	\$727	\$563	0%	100%
Yallara	\$420	\$311	\$559	\$430	0%	100%

Return \$/ha - York

With 2019/20
quality spec.
applied

Variety	2015	2016	2017	2018	Avg	Likelihood	Likelihood
						Oat3	Oat1
Bannister	\$339	\$1,012	\$679	\$914	\$736	0%	50%
Carrolup	\$289	\$720	\$442	\$201 *	\$483	25%	75%
Durack	\$391	\$604	\$511	\$572	\$519	0%	100%
Kojonup	\$353	\$831	\$584	\$780	\$637	0%	100%
Kowari	-	\$740	\$583	\$864	\$729	0%	100%
Mitika	\$360	\$709	\$599	\$871	\$635	0%	100%
Wandering	\$356	\$841	\$543	\$847	\$647	0%	N/A
Williams	\$310	\$895	\$582	\$312 *	\$595	25%	50%
Yallara	\$331	\$691	\$498	\$570	\$523	0%	100%

Return \$/ha – Merredin


With 2019/20
quality spec.
applied

Variety	2015	2016	2017	2018	Avg	Likelihood	Likelihood
						Oat3	Oat1
Bannister	\$242	\$665	\$557	\$78	\$385	25%	75%
Carrolup	\$215	\$484	\$397	\$64 *	\$365	25%	75%
Durack	\$154	\$487	\$124	\$269	\$258	0%	75%
Kojonup	\$190	\$508	\$435	\$17	\$288	25%	75%
Kowari	\$0	\$422	\$395	\$339	\$289	0%	33%
Mitika	\$225	\$564	\$451	\$65	\$326	25%	75%
Wandering	\$189	\$602	\$472	\$431	\$423	0%	N/A
Williams	\$202	\$618	\$469	\$110	\$350	25%	75%
Yallara	\$163	\$462	\$288	\$280	\$298	0%	75%



What matters?

1. Seasonal impacts

- Dry Spring =  screenings %
- Low rainfall agronomy research in **2014, 2015** = dry Spring
- Med-High rainfall agronomy research in **2016, 2017, 2018** = mild Spring

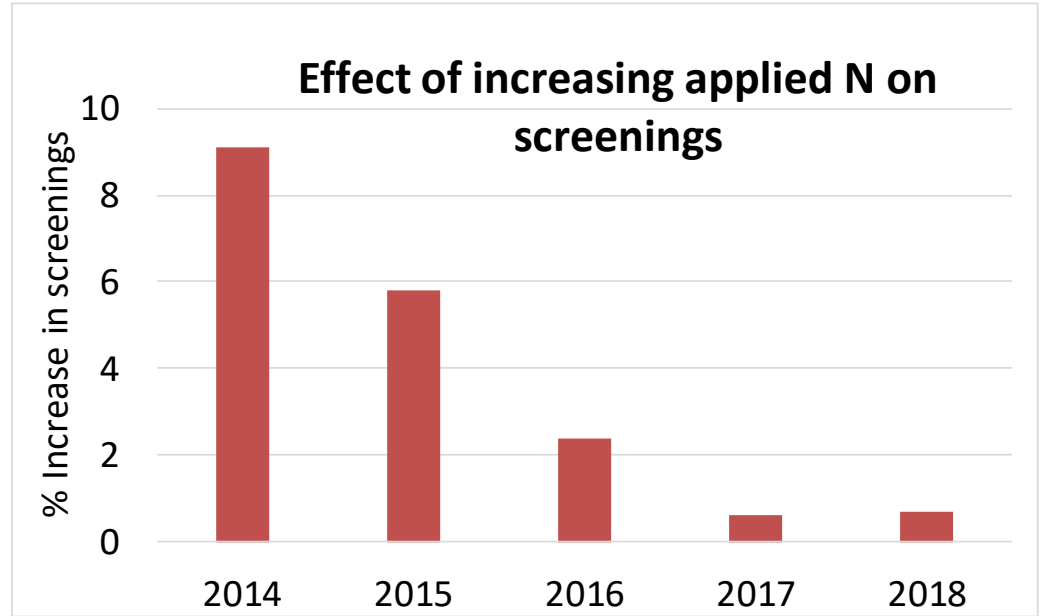
Year	Rainfall (May-Oct)	Site	N Applied (kg N/ha)	Screenings % Carrolup	Grade
2015	152	Holt Rock	20	11%	Cat2
2015	152	Holt Rock	40	12%	Cat2
2015	152	Holt Rock	0	13%	Cat2
2015	152	Holt Rock	80	14%	Cat2
2018	163	Lake Grace	30	11%	Cat2
2018	163	Lake Grace	0	11%	Cat2
2018	163	Lake Grace	60	12%	Cat2
2018	163	Lake Grace	90	12%	Cat2
2015	167	Cunderdin	0	8%	Cat1
2015	167	Cunderdin	40	10%	Cat1
2015	167	Cunderdin	80	13%	Cat2
2015	167	Cunderdin	20	14%	Cat2
2016	172	Varley	10	1.8%	Cat1
2016	172	Varley	30	1.9%	Cat1
2016	172	Varley	60	2.0%	Cat1
2015	214	Merredin	0	15%	Cat2
2015	214	Merredin	40	20%	Cat3
2015	214	Merredin	20	23%	Cat3
2015	214	Merredin	80	23%	Cat3
2017	217	Lake Grace	0	1%	Cat1
2017	217	Lake Grace	60	1%	Cat1
2017	217	Lake Grace	30	3%	Cat1
2017	217	Lake Grace	90	4%	Cat1
2014	217	Holt Rock	0	5%	Cat1
2014	217	Holt Rock	20	8%	Cat1
2014	217	Holt Rock	80	18%	Cat3
2017	224	Brookton	90	1%	Cat1
2017	224	Brookton	60	2%	Cat1
2017	224	Brookton	30	2%	Cat1
2017	224	Brookton	0	2%	Cat1
2016	225	Merredin	30	2%	Cat1
2016	225	Merredin	10	3%	Cat1
2016	225	Merredin	60	3%	Cat1
2016	229	Grass Patch	10	1%	Cat1
2016	229	Grass Patch	60	2%	Cat1
2016	229	Grass Patch	30	2%	Cat1
2017	251	Yerecoin	10	1%	Cat1
2017	251	Yerecoin	60	1%	Cat1
2017	251	Yerecoin	30	1%	Cat1
2017	251	Yerecoin	0	1%	Cat1
2014	259	Cunderdin	0	3%	Cat1
2014	259	Cunderdin	20	5%	Cat1
2014	259	Cunderdin	80	9%	Cat1
2016	283	Pingelly	30	6%	Cat1
2016	283	Pingelly	60	11%	Cat2
2016	283	Pingelly	90	15%	Cat2
2016	284	Muresk	30	4%	Cat1
2016	284	Muresk	60	6%	Cat1
2016	284	Muresk	90	7%	Cat1
2018	297.5	Yerecoin	30	2%	Cat1
2018	297.5	Yerecoin	60	2%	Cat1
2018	297.5	Yerecoin	0	2%	Cat1
2018	297.5	Yerecoin	90	3%	Cat1
2018	299	Brookton	30	2%	Cat1
2018	299	Brookton	0	2%	Cat1
2018	299	Brookton	60	2%	Cat1
2018	299	Brookton	90	2%	Cat1



What matters?

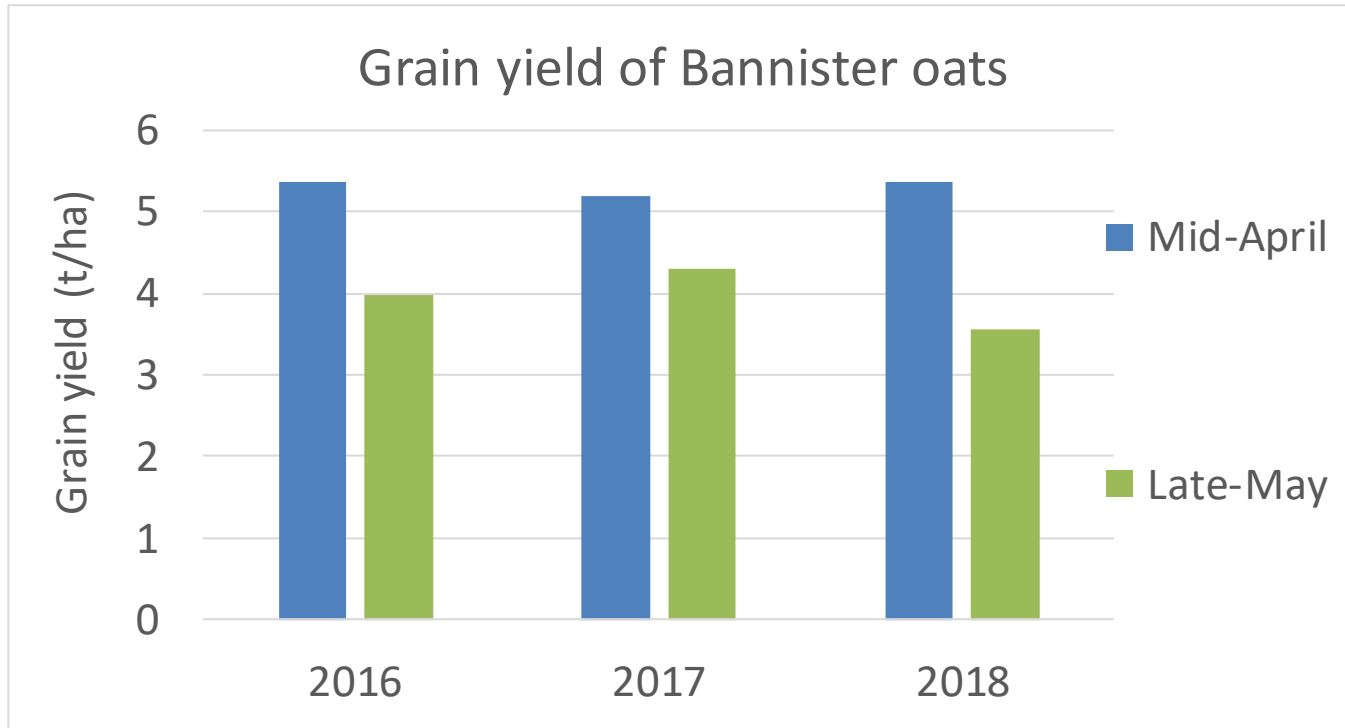
2. In-crop management

- Is not the primary driver of grain quality.
- N will have a greater effect on screenings in drier seasons →
- N timing research required.



What matters?

3. Can early sowing help? April vs May @ Muresk



April vs May @ Muresk

Grain quality

- **2/3 years** delaying sowing from mid-April until late-May resulted in higher screenings.

	2016	2018
Late-May	7.0%	6.3%
	↑	↑
Mid-April	3.1%	1.1%

- Delaying sowing had **no effect on hectolitre weight** in these seasons (2016-18).



New variety - Bilby



MEDIA RELEASE

'Bilby' Oat Variety SARDI 06204-16 – Milling Accreditation Oat1
21 February 2019

GIWA Oat Council: "Bilby" Oat Variety Accredited as OAT1

In a January 2019 commercial milling trial by Quaker Oats on behalf of the GIWA Oat Council, the recently released SARDI oat variety 06204-16 Bilby met industry requirements in terms of physical milling characteristics and nutritional β -glucan content and was classified as OAT1 milling grade.

Ash Wiese, Narrogin grower and GIWA Oat Council Chair commented:

"It's important that Western Australia maintain its reputation for high quality oats, and Bilby brings another level of quality with its high β -glucan levels."

"Bilby meets all of our requirements for quality, yield, milling performance and sensory testing."

"It is now up to farmers and the market to decide if this variety has a fit in our cropping system."

"It is encouraging to see that our breeders have been able to achieve increased β -glucan without compromising on other quality traits."

Bilby has been bred as a dwarf, mid-season, medium to high rainfall variety. With higher yield potential, higher β -glucan, a 1000 grain weight and reasonable physical grain qualities, Bilby is expected to provide options for Australian east coast growers as a potential replacement to Matka, and is expected to find a niche fit in Western Australia.

Dr Pamela Zwer, Principal Oat Breeder at SARDI's National Oat Breeding Program says:

"Bilby yields slightly lower than Bannister in Western Australia, but the important thing is that we're making headway in combining yield potential with nutritional benefits."

We're looking to the future by developing a new core breeding program that we hope will enable faster and greater genetic gain: two of the traits we are looking at are higher yield potential and greater β -glucan."



New variety - Bilby

Dwarf milling variety



Grain yield (t/ha)	Agzone 2	Agzone 3
Bilby	4.0	4.1
Bannister	4.3	4.5
Carrolup	3.5	4.0
Wandering	4.2	4.3
Williams	4.3	4.7
<i>Trials</i>	27	15



Source: National Oat Breeding Program



New variety - Bilby



- Grain quality
 - Hectolitre weight; lower than Bannister and Carrolup, higher than Williams
 - Screenings %; similar to Banister and Wandering, lower than Williams, higher than Mitika.
- Disease resistance
 - Resistant to leaf rust
 - Susceptible to septoria
 - See 2019 Oat Variety Sowing Guide for more info.

Research underway 2019/20

Grain

- **April sowing**

- Nutrition strategy
- Managing lodging risk
- Managing increased

- **Phenology**

- 'Treasure hunt' germplasm options for WA

Export hay

- Sowing date x nutrition x variety selection
- Fungicides – managing weather damage
- Oat diseases & management
- Plant growth regulators





Go green – select a high yield/low risk variety option

April sowing grain oats

+yield +quality = + management

Bilby – a variety is only as good as its performance in a tight season ???

Acknowledgements

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- The GRDC - our investment partner in this research.

Thank you

Visit dpird.wa.gov.au



Department of
Primary Industries and
Regional Development

Tactical Break Crop Agronomy Project (DAW00227)



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