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Cereal Varieties Update:

Value in agronomic features and end use

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Outline

- Variety progress and decision making
- Review of the new cereals lists
- Understanding agronomic value e.g. agronomic features and end use

<https://www.sruc.ac.uk/cerealslist>

<https://www.ahdb.org.uk/ri>

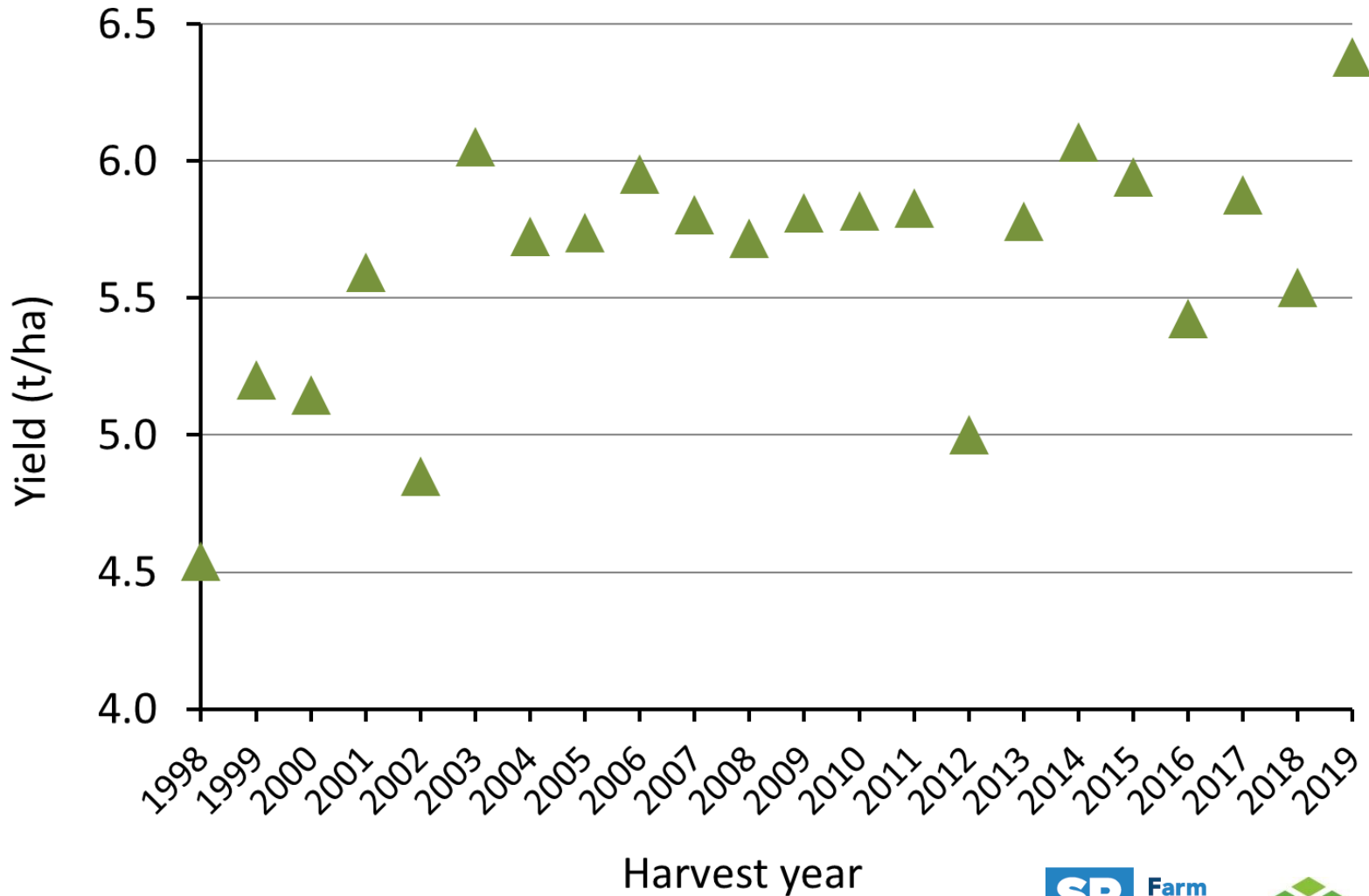


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Spring barley yields



(Source: Scottish Government)

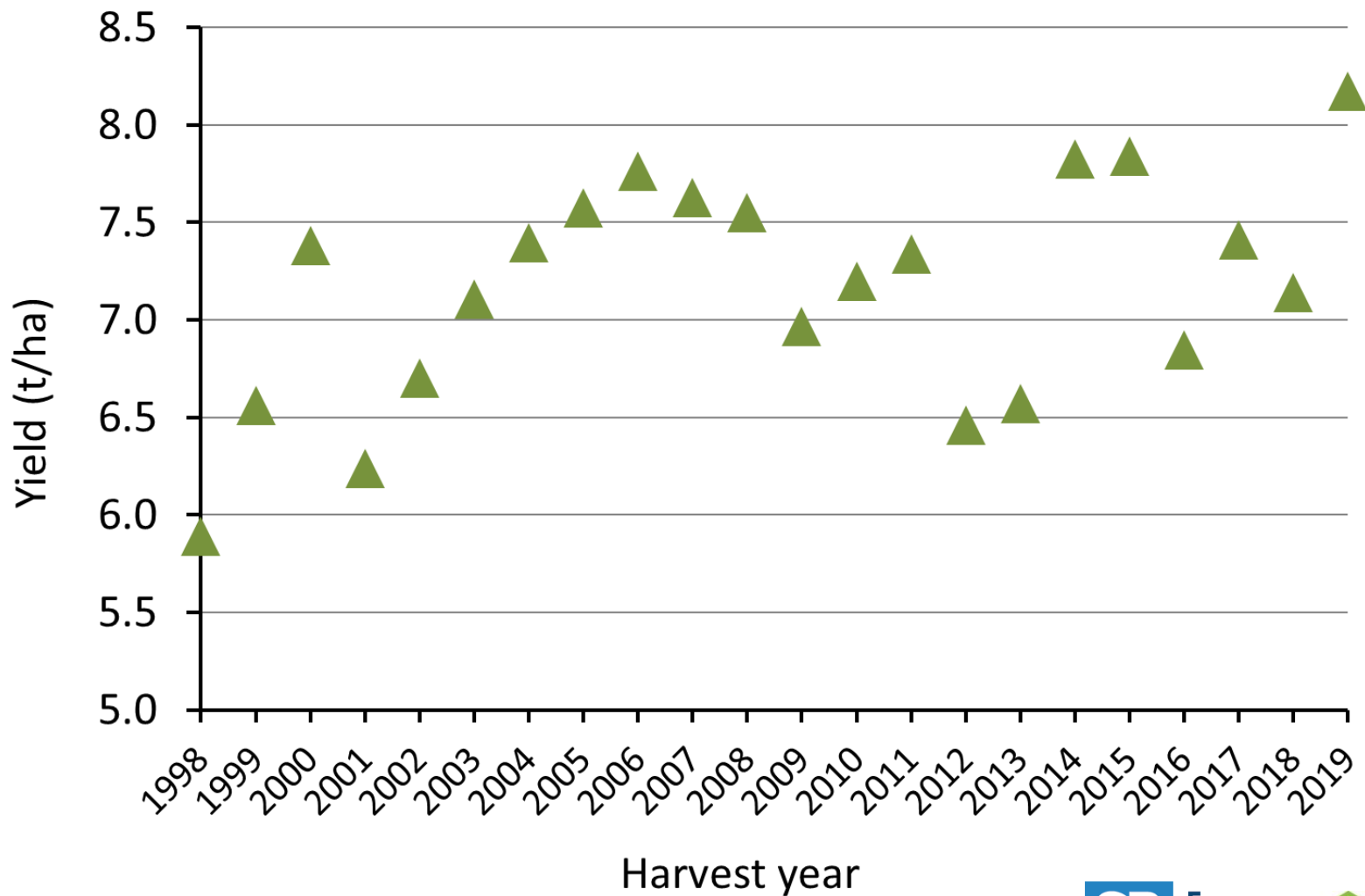


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Winter barley yields



(Source: Scottish Government)

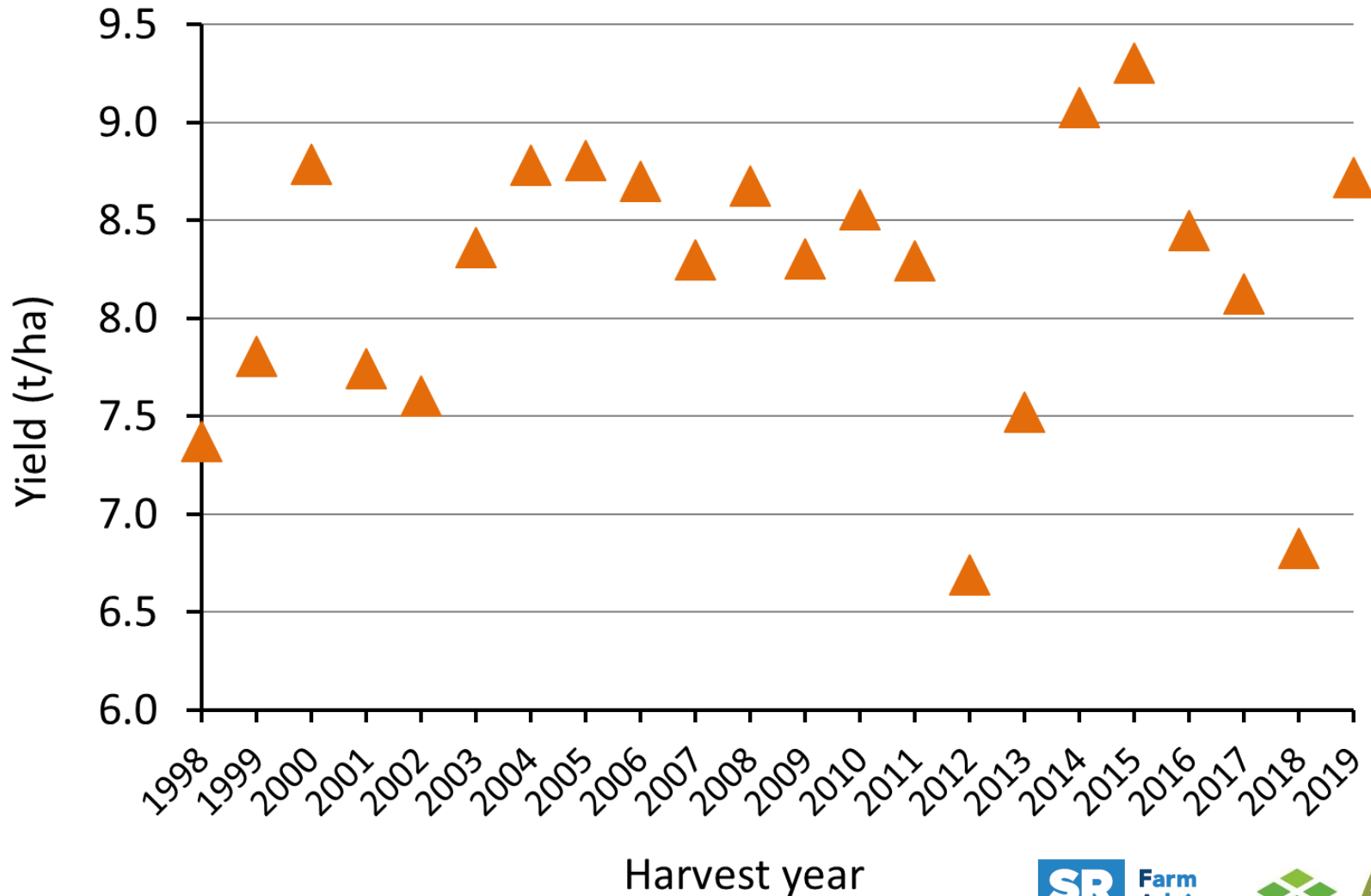


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Winter wheat yields



(Source: Scottish Government)



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Value in agronomic features and end use

- Consider how we value all agronomic and grain features along with yield
- National Listing (over two years) includes Value for Cultivation and Use (VCU)
- Recommended List trials include processing and end user tests, as well as scope for UK, regional or specific use
- The SRUC Scottish List includes varieties that are best suited to local markets and growing conditions

Good

Towards good

Intermediate

Towards poor

Poor



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Scottish List 2020/21: Spring barley

- Laureate had two-thirds of the 2019 malting intake
- LG Diablo developing market share
- KWS Sassy, Fairing and Sienna also have market share
- Concerto has become outclassed
- SY Tungsten (distilling & brewing), Firefoxx (distilling), SY Splendor (brewing) and Prospect (feed) are all RL Year 1



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Spring barley – Malting

Market options

Yield = 7.5 t/ha

Year First Listed	Recommendation		Grain yield as % of treated Control	Yield loss (%) if untreated	Malting market options and MBC† approval		
					Dist.	Brew	Grain
2018	R	LG Diablo	107	8	F	P	N
2020	P1	SY Tungsten	107	10	T	T	N
2020	P1	Firefoxx	107	11	T	N	N
2016	R	Laureate	104	7	F	F	N
2016	R	KWS Sassy	103	7	F	N	N
2015	R	Sienna	102	8	F	N	N
2018	P3	RGT Asteroid	102	6	P	P	P
2016	S	Fairing	95	9	N	N	F
2009	O	Concerto	93	8	F	F	N

Spring barley – Malting

Grain and agronomic features

Recommendation		Screenings <2.5 mm (%)	Specific weight (kg/hl)	Maturity days +/- Concerto	Straw strength 1 to 9; weak to stiff	Straw length (cm) no PGR
R	LG Diablo	3.4	67.1	+1	7	73
P1	SY Tungsten	[4.7]	67.7	+1	[7]	72
P1	Firefoxx	[3.7]	66.4	0	[7]	71
R	Laureate	3.6	66.5	+1	7	71
R	KWS Sassy	2.6	68.4	0	6	78
R	Sienna	3.8	70.4	+1	7	77
P3	RGT Asteroid	3.1	68.3	+1	7	73
S	Fairing	2.6	68.3	-2	7	72
O	Concerto	2.9	68.8	0	7	77

Spring barley – Malting

Agronomic features

Recommendation		Brackling risk 1 to 9; high to low	Disease resistance; 1 susceptible to 9 resistant	
			Mildew	Rhynchosporium
R	LG Diablo	8	9	5
P1	SY Tungsten	8	9	[4]
P1	Firefoxx	8	9	[5]
R	Laureate	8	9	6
R	KWS Sassy	6	9	6
R	Sienna	7	9	5
P3	RGT Asteroid	8	9	4
S	Fairing	8	9	6
O	Concerto	8	9	4

Spring barley – Brewing and feed

Market options

Yield = 7.5 t/ha

Year First Listed	Recommendation		Grain yield as % of treated Control	Yield loss (%) if untreated
2020	P1	SY Splendor	107	12
2019	P2	Cosmopolitan	106	8
2015	R	RGT Planet	103	8
2010	O	Propino	98	12
2020	P1	Prospect	105	8
2015	O	Scholar *	104	8

Spring barley – Brewing and feed

Grain and agronomic features

Recommendation		Screenings <2.5 mm (%)	Specific weight (kg/hl)	Maturity days +/- Concerto	Straw strength 1 to 9; weak to stiff	Straw length (cm) no PGR
P1	SY Splendor	[3.9]	68.1	+1	[7]	73
P2	Cosmopolitan	3.6	66.2	0	7	70
R	RGT Planet	3.6	67.8	0	7	73
O	Propino	2.1	68.2	-1	7	75
P1	Prospect	[4.5]	67.6	0	[7]	71
O	Scholar *	6.0	68.7	0	7	67

Scottish List 2020/21: Winter barley

- Plenty of choice in two-row feed and six-row hybrids
- Yield improvements in UK and North region variety trials
- Signs of progress in agronomic features



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Winter barley – Two-row feed

Yield = 9.9 t/ha

Year First Listed	Recommendation		Grain Yield as % of treated control	Yield loss (%) if untreated
2019	P2	LG Mountain	105	21
2017	R	KWS Creswell	102	28
2020	P1	KWS Hawking	102	21
2019	P2	LG Flynn	102	20
2016	R	KWS Orwell	101	22
2014	R	KWS Tower	101	26
2019	P2	Valerie	[101]	15
2020	P1	Jordan	101	14
2010	S	KWS Cassia	98	16



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Winter barley – Two-row feed

Grain and agronomic features

Recommendation		Screenings <2.5 mm (%)	Specific Weight (kg/hl)	Maturity days +/- KWS Orwell	Straw Strength 1 to 9; weak to stiff	Straw length (cm) with PGR
P2	LG Mountain	8.0	69.1	-1	7	84
R	KWS Creswell	7.7	68.0	-1	7	85
P1	KWS Hawking	8.3	68.5	0	7	84
P2	LG Flynn	5.2	70.2	0	7	90
R	KWS Orwell	6.3	67.9	0	8	84
R	KWS Tower	7.4	67.4	0	8	85
P2	Valerie	2.0	70.2	-1	8	85
P1	Jordan	5.8	68.9	0	7	82
S	KWS Cassia	5.3	71.2	0	7	88

Winter barley – Six-row feed

Yield = 9.9 t/ha

Year First Listed	Recommendation		Grain Yield as % of treated control	Yield loss (%) if untreated
2017	R	Funky	104	15
2018	P3	Belmont	107	31
2019	P2	SY Baracooda	107	20
2019	P2	SY Kingsbarn	107	20
2016	R	Bazooka	105	19
2018	P3	Libra	103	20

Winter barley – Six-row feed

Grain and agronomic features

Recommendation		Screenings <2.5 mm (%)	Specific Weight (kg/hl)	Maturity days +/- KWS Orwell	Straw Strength 1 to 9; weak to stiff	Straw length (cm) with PGR
R	Funky	16.4	68.9	-2	8	90
P3	Belmont	9.5	68.5	-1	7	104
P2	SY Baracooda	7.3	68.8	-1	7	108
P2	SY Kingsbarn	7.0	69.8	-1	7	101
R	Bazooka	8.8	68.9	-1	7	107
P3	Libra	8.1	70.8	-1	7	102

Scottish List 2020/21: Winter wheat

- Wide choice in distilling varieties
- Viscount and Leeds have been removed from the Scottish List
- Selected hard feed and milling varieties may add value to crop rotation and management

Winter wheat – Soft feed & distilling

Market options

Yield = 11.3 t/ha

Year First Listed	Recommendation		Grain yield as % of treated Control	Yield loss (%) if untreated	Use as a 2 nd cereal	Quality markets	
						Distilling	UK Milling
2019	P2	LG Skyscraper	103	22	Good	Med	---
2018	R	KWS Jackal	102	25	Good	Med	---
2018	R	Elation	101	24	Good	Good	---
2020	P1	RGT Saki	[101]	18	Good	Poor	---
2019	P2	LG Spotlight	100	23	Mod	Med	---
2017	R	LG Sundance	99	15	Mod	Med	---
2013	S	Revelation	95	19	Poor	Good	---

Winter wheat – Soft feed & distilling

Grain and agronomic features

Recommendation		Specific weight (kg/hl)	HFN (s)	Maturity days +/- Skyfall	Straw strength 1-9; weak to stiff		Straw length (cm) no PGR	Sprout -ing resist-ance
					without PGR	with PGR		
P2	LG Skyscraper	76.9	218	0	7	7	91	[6]
R	KWS Jackal	75.6	182	+1	7	7	86	[5]
R	Elation	77.4	206	+1	7	8	82	[6]
P1	RGT Saki	75.7	221	+3	7	8	87	[5]
P2	LG Spotlight	77.9	288	+1	7	8	93	[7]
R	LG Sundance	73.9	175	+2	6	7	86	[4]
S	Revelation	76.4	250	+3	7	8	85	5

Winter wheat – Soft feed & distilling

Disease resistance

Recommendation		Disease resistance; 1 susceptible to 9 resistant				
		Mildew	Yellow Rust **	Septoria tritici	Eye-spot	Fusarium
P2	LG Skyscraper	7	8	5.0	[4]	6
R	KWS Jackal	7	9	4.9	4	6
R	Elation	7	9	4.3	4	6
P1	RGT Saki	6	9	6.8	---	6
P2	LG Spotlight	6	8	5.1	[5]	6
R	LG Sundance	7	9	7.9	3	6
S	Revelation	6	9	6.0	7	6

Winter wheat – Biscuit and other choices

Market options

Yield = 11.3 t/ha

Year First Listed	Recommendation		Grain yield as % of treated Control	Yield loss (%) if untreated	Use as a 2 nd cereal	Quality markets	
						Distilling	UK Milling
2016	R	KWS Barrel	104	28	Mod	Poor	Biscuit
2018	R	Elicit	100	19	Mod	Good	Biscuit
2014	O	Zulu	98	28	Poor	Med	Biscuit
2015	O	KWS Lili	101	28	Poor	---	Bread
2019	P2	KWS Extase	100	6	Mod	---	Bread
2020	P1	SY Insitor	[105]	23	Good	---	---
2018	P3	Gleam	102	19	Good	---	---

Scottish List 2020/21: Spring oats and spring wheat

- More choices in spring oats. Check end use against market leaders Firth, Canyon and Conway.
- Good yield and grain quality in spring wheat



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Spring oats

Grain and agronomic features

Yield = 7.5 t/ha

Year first listed	Recommendation		UK Grain yield as % of treated control	Yield loss (%) if untreated	Kernel content (%)	Screenings <2.0mm (%)	Specific weight (kg/hl)
2018	P3	Delfin	105	6	73.6	3.1	52.0
2020	P1	WPB Isabel	104	15	76.8	2.3	55.7
2019	P2	Elison	104	8	73.7	3.0	52.6
2017	R	Yukon	103	5	74.3	3.0	51.9
2015	O	Aspen	102	17	75.2	2.3	52.8
2011	R	Canyon	101	8	74.0	2.2	52.9
2017	R	WPB Elyann	98	11	78.1	2.7	52.1
2014	R	Conway	95	9	75.6	2.8	51.9
2000	O	Firth	94	13	75.9	3.0	50.9

Spring wheat

Grain and agronomic features

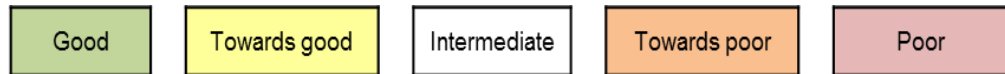
Yield = 7.2 t/ha

Year first listed	Recommendation		UK Grain yield as % of treated control	Yield loss (%) if untreated	nabim Group	Hagberg falling number	Specific weight (kg/hl)
2017	R	KWS Cochise	105	23	2	226	79.1
2019	P2	KWS Talisker	104	15	4	271	79.0
2020	P1	KWS Giraffe	103	---	4	271	79.8
2011	R	Mulika	94	15	1	307	77.1

Towards Agronomic Value

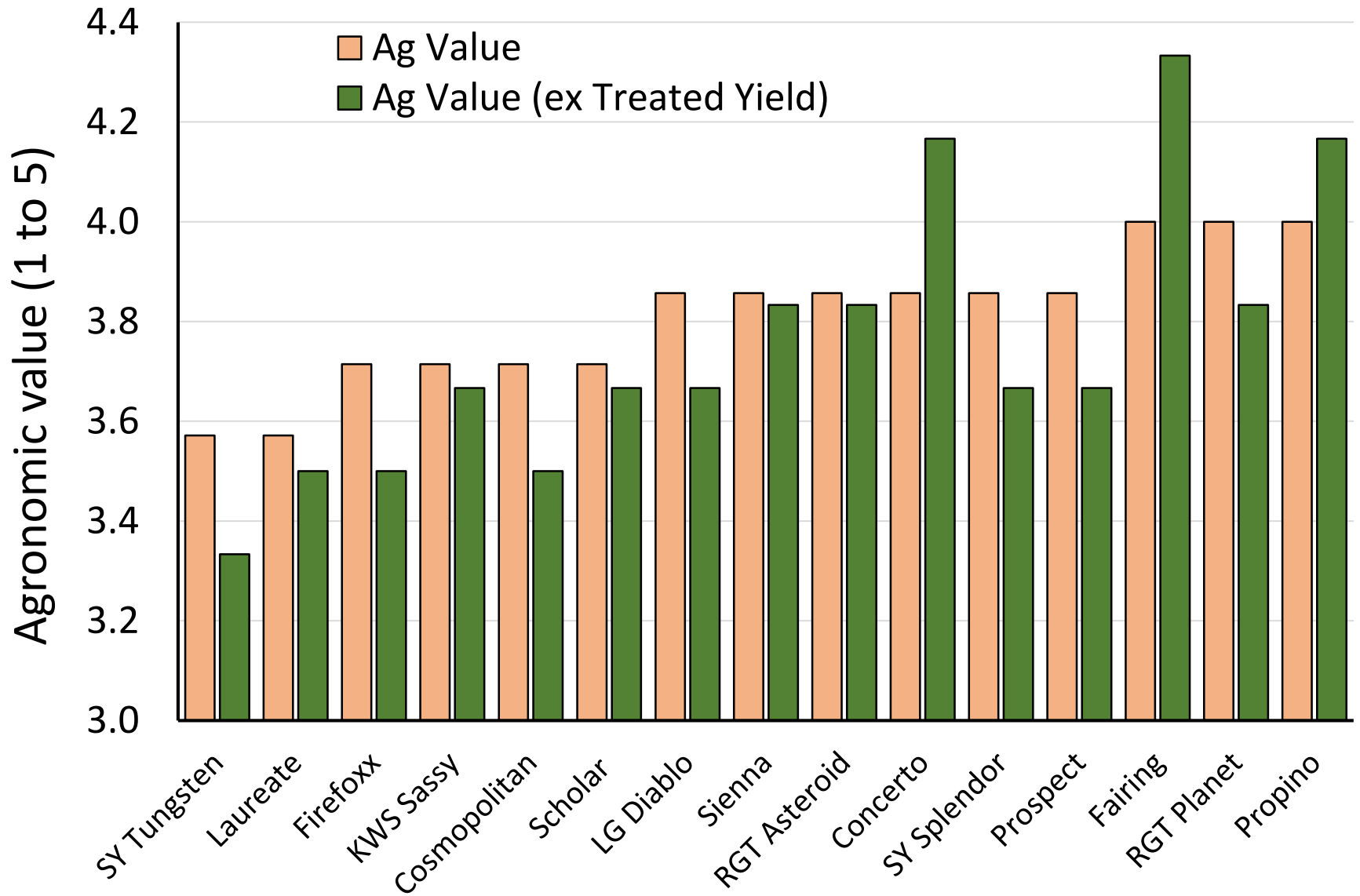
- Consider how we value grain and agronomic features along with yield
- National Listing procedure already includes standards and scoring for agronomic features as part of VCU

Use of 1 to 5 scale

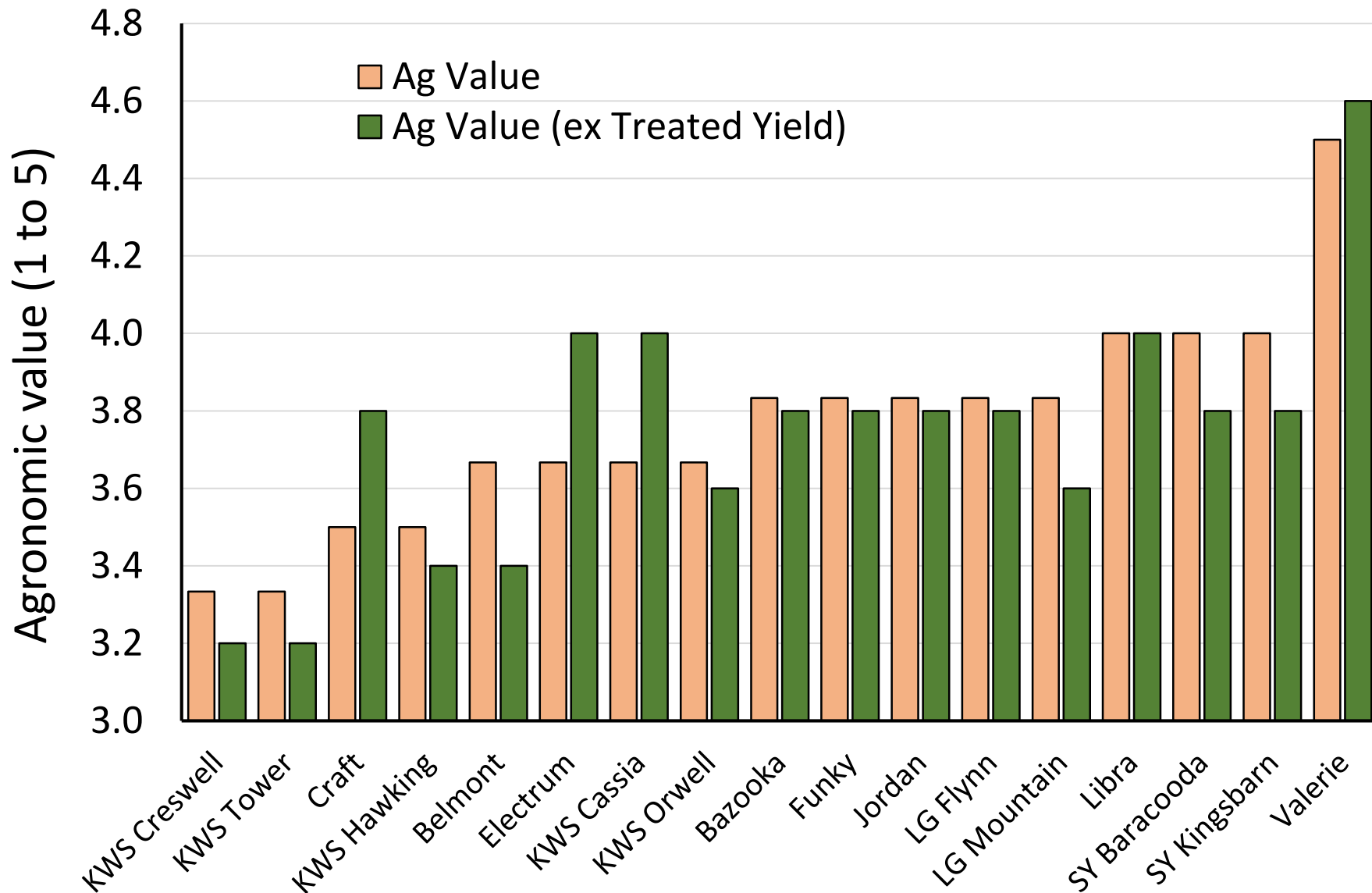


- Spring barley: Yield, Yield Loss (uT), Screenings, Specific Weight, Maturity, Straw Strength and Brackling
- Winter barley: Yield, Yield Loss (uT), Screenings, Specific Weight, Maturity and Straw Strength
- Winter wheat: Yield, Yield Loss (uT), Specific Weight, HFN, Maturity, Straw Strength, Sprouting, *Septoria*, 2nd Wheat Yield

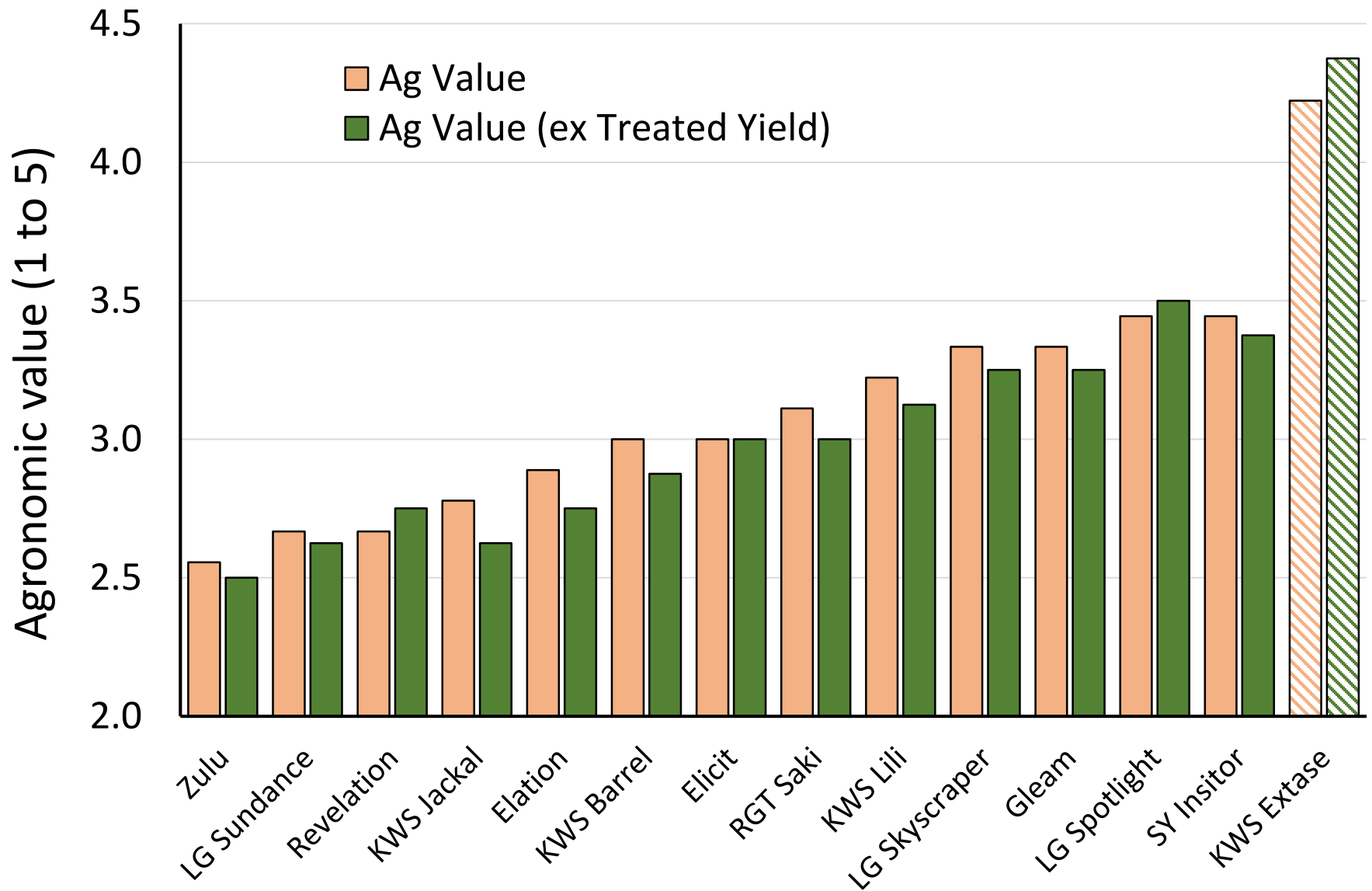
Agronomic value: Spring barley



Agronomic value: Winter barley



Agronomic value: Winter wheat



Summary

- Check new varieties to support the market leaders
- Take advantage of yield improvements
- Consider agronomic value as part of your crop management strategy
- Check end use when considering wider choice in winter cereals and spring oats

<https://www.sruc.ac.uk/cerealslist>

<https://www.ahdb.org.uk/rl>



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