

RECOMMENDED LISTS



AHDB Recommended Lists for cereals and oilseeds 2020/21

Summer edition



CEREALS & OILSEEDS

Produced in partnership with:



British Society of Plant Breeders



Maltsters Association of Great Britain



National Association of British and Irish Millers

Using the AHDB Recommended Lists (RL)

Understanding the Recommended Lists (RL)

This booklet contains tables for AHDB Recommended and Described varieties, as well as candidate varieties. Use the guidance in this section to interpret the data within the tables.

For further information on the trial and recommendation system, including the basis on which varieties are recommended and individual trial results visit ahdb.org.uk/rl

Recommended Lists app

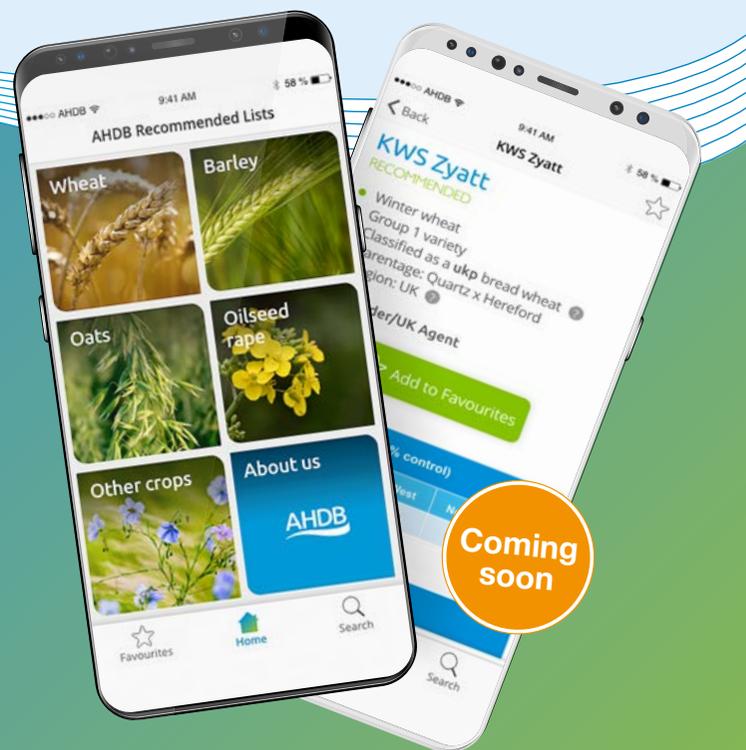
A new powerful and pint-sized way to deliver variety data to your fingertips...

RL

- Features recommended and described varieties
- Free to download (iOS and Android devices)
- Works offline
- Clearly designed menus and tables
- Powerful in-built search function
- 'Favourites' function
- 'Notes' function
- Latest information

ahdb.org.uk/rl

Available on Google Play and App Store



Contents	Page
Using the AHDB Recommended Lists (RL)	2
Winter wheat	
nabim overview	5
Recommended List	6
Candidate varieties	12
Varieties not added	14
Variety comments	15
Spring wheat	
Recommended List	21
Candidate varieties	22
Variety comments	23
Winter barley	
MAGB overview	25
Recommended List	26
Varieties not added	29
Candidate varieties	30
Variety comments	31
Spring barley	
Recommended List	34
Candidate varieties	37
Variety comments	38
Winter oats	
Recommended List	40
Variety comments	41
Spring oats	
Recommended List	42
Variety comments	43
Winter oilseed rape	
Regional rankings	45
Recommended List	46
Candidate varieties	50
Variety comments	51
Descriptive Lists	
Spring oilseed rape	55
Spring linseed	56
Winter triticale	57
Winter rye	58

Status in the Lists

Scope of recommendation

Refers to a UK or regional recommendation, or a recommendation for a specific end use or agronomic feature.

Varieties no longer listed

Varieties no longer recommended, or which the breeder has withdrawn from the RL. Before a variety is taken off the RL, it is normally removed from trials (indicated by an * in the tables).

Regional Lists for winter oilseed rape

Winter oilseed rape varieties are presented on a single UK list. Regional recommendations are maintained, with varieties ordered according to the scope of recommendation. Varieties that are suitable for both the East/West (up to Teesside) and North regions have a UK recommendation. When choosing a variety, consider those recommended for the UK and your region.

Clubroot-resistant oilseed rape varieties

The pathogen that causes clubroot has several strains. The relative proportion of these strains varies from location to location. Clubroot-resistant varieties are resistant to common clubroot strains and are recommended for growing on infected land. Some strains of clubroot may overcome the resistance in these varieties. Growing clubroot-resistant varieties repeatedly will select for these more virulent strains, potentially causing the resistance genes to become ineffective.

Candidate varieties

Candidate varieties are usually in their first or second year of RL trials, having completed at least 2 years of preliminary trials (e.g. National List trials). If data is sufficient, they are considered for recommendation in the autumn.

Varieties grown in trials but not added to the RL

These varieties were grown in RL trials but failed to meet the criteria for recommendation. Although not added to the RL, data are included for information, as seed may be available.

Descriptive List (DL) varieties

Descriptive Lists show trial data for spring oilseed rape, spring linseed, winter triticale and winter rye. The data available are presented for varieties for which seed is likely to be available. A place on the DL does not constitute a recommendation.

Described varieties for the major crops

These varieties are usually for niche markets. Although recommendation is not appropriate, there is demand for descriptive data within the RL system.

Yield and quality

Yields

Yields are calculated as a percentage of the controls. Various established varieties are selected as controls and the average UK yield of these varieties is set to 100%. For example, if the average yield of the control varieties is 10.2 t/ha, then a variety that yields 10.4 t/ha will be shown as having a yield of 102%.

Regional yields

Regional yields are calculated for winter wheat, winter barley, spring barley and winter oilseed rape. Regional yields are based on fewer trials and should be treated more cautiously. Divisions between regions are not absolute and growers are advised to consider the region that is most appropriate for their conditions.

Annual yields

Annual yields provide a breakdown of variety performance in different seasons over the years in which the variety has been tested. Consistent yields over several years may indicate that a variety offers a level of yield stability.

Oilseed rape gross output

Gross output is calculated from the seed yield, with an adjustment to take account of the oil content.

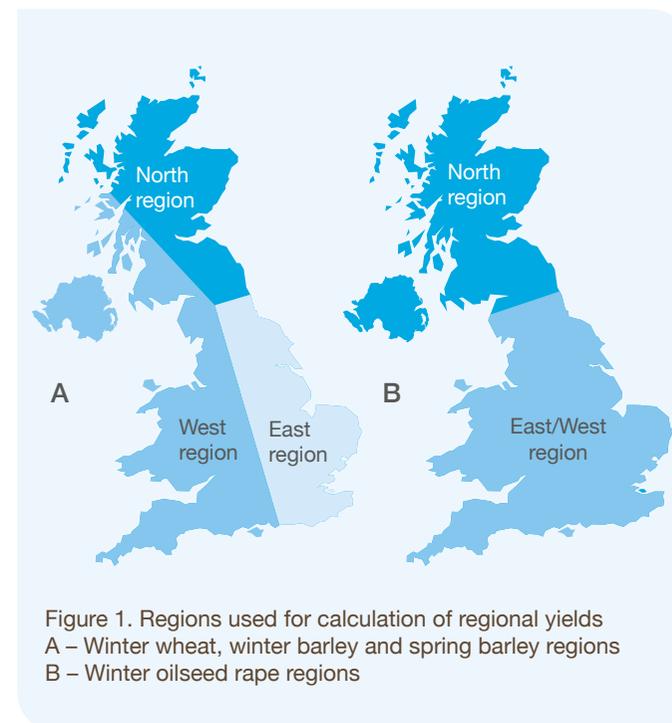


Figure 1. Regions used for calculation of regional yields
A – Winter wheat, winter barley and spring barley regions
B – Winter oilseed rape regions

Oat quality

Grain quality characteristics presented for oats include kernel content, specific weight and per cent screenings through a 2 mm sieve. High kernel content, high specific weight and low per cent screenings are preferred for milling.

Sprouting

Sprouting resistance is based on special irrigated test plots. A higher number represents better resistance to sprouting. Data are limited so, in the absence of a score, the Hagberg Falling Number (HFN) may provide some guidance – a variety with a low HFN may be prone to sprouting.

Agronomic traits

Brackling

Brackling is folding or breaking of the stem that occurs higher up the plant than in stem lodging (which occurs close to or below the ground). Assessments are carried out on spring barley at harvest. A high number on the 1–9 scale indicates high resistance to brackling.

Lodging

Lodging scores are calculated for varieties grown with and without plant growth regulator (PGR) application.

Ripening

Ripening is expressed as days earlier or later than a standard variety. Varieties with a negative number are earlier to mature than the standard variety. The numbers given have been collated from RL trials, but differences can be far greater on farm – particularly when growing conditions are more marginal.

Disease resistance ratings

Scores for disease resistance are based on a combination of natural infection and inoculated trials. Information is only used where relatively high levels of disease are present. This helps prevent low disease pressure being mistaken for resistance. With the exception of septoria tritici, all disease ratings are rounded up or down to the nearest whole number in the RL tables. Ratings to one decimal place can be viewed in the variety selection tool at ahdb.org.uk/vst

Varieties with ratings of 4 or lower can be interpreted as susceptible. Varieties with ratings of 8 or 9 can be said to have high resistance; however, the ratings cannot determine the durability of the resistance.

With the exception of eyespot, the disease rating scales are not linear. A difference of 1 on the scale reflects a larger difference in disease susceptibility at low ratings than at high ratings.

The ratings can be read alongside the untreated yield, which provides an indication of the potential yield reduction as a consequence of a combination of all diseases.

Basis of pest and disease resistance

Varietal resistance to pests and diseases forms the foundation of integrated pest management (IPM). Broadly speaking, there are two kinds of resistance, based on ‘minor’ and ‘major’ genes. Individually, minor genes give a low level of resistance, but can be combined to give moderate to high resistance. This type of resistance is usually durable. Alone, major genes can give a high level of resistance, but may be defeated by pathogen races relatively soon after release. Important exceptions to this are the very strong *mlo* resistance to mildew in spring barley and the moderate resistance to eyespot from *Pch1* in wheat, which have been durable for many years. Yellow rust ratings reflect resistance at the adult plant stage (generally, after stem extension). Many recommended varieties are susceptible to yellow rust at the seedling (juvenile) stage but go on to develop resistance at the adult stage. In such varieties, early yellow rust symptoms are not necessarily a cause for concern. For information on seedling and adult stage resistance, visit ahdb.org.uk/ukcpvs

The durability of new sources of resistance can be difficult to predict. A new major gene may be more durable when it is combined with a background of minor genes. As pathogen populations evolve, previously defeated genes may become effective again, so varietal disease ratings can go up as well as down.

Statistical significance (LSD)

Natural variability within and between trials means that smaller differences between mean yields of varieties may just be attributed to chance. For most numerical

characteristics in the tables, an average LSD (least significant difference) is reported. Differences between variety means that are larger than the LSD are likely to reflect genuine differences, as they would only occur by chance fewer than 1 in 20 times (5%). Differences smaller than the LSD are more likely to occur just by chance and should be treated with caution.

Milling wheat information

The largest single market for quality wheat is for flour production. Other uses include cereals foods, distilling, starch production and biofuels. Different uses require specific quality traits and farmers should speak to merchants before committing to varieties to ensure a suitable end market.

Exports – quality wheats

There is a core market overseas for UK-grown wheat and growers can capitalise on this opportunity when choosing varieties to grow. Overseas buyers have different requirements to domestic buyers and distance to a port needs to be considered.

AHDB has developed the **ukp** (soft biscuit wheat) and **uks** (bread wheat) classifications (Table 1). These help overseas buyers, who may be unfamiliar with individual varieties, to understand the qualities that the grain possesses. Overseas buyers commonly use the Chopin Alveograph test (see right). North African and Middle Eastern markets prefer a lower moisture content, often less than 14%.

Table 1. Typical specifications for exports

		
Minimum specific weight (kg/hl)	76	75
Maximum moisture content (%)	14	14
Maximum admix (%)	2	2
Minimum Hagberg Falling Number (HFN; s)	250	220
Protein content (%)	11.0–13.0	10.5–11.5
W	170 (min)	70–120
P/L	0.9 (max)	0.55 (max)

W and P/L values are determined by the Chopin Alveograph test, commonly used by overseas buyers. W represents a measure of the baking strength of a dough. A higher number represents a stronger flour. L represents the extensibility of the dough (time taken for a bubble to burst). P is the maximum pressure required. A low P/L measure represents a dough that is very extensible with low strength.

 = meets the specification for **ukp** bread wheat for export.  = meets the specification for **uks** biscuit wheat for export.

nabim overview



In recent years, 85% of wheat milled by **nabim** members has been home-grown. While developments in post-Brexit UK trade policy bring uncertainty across sectors, the nation's demand for flour-based foods will remain regardless and the UK milling industry will continue to require large quantities of domestic wheat. The popularity of milling varieties and the quality of recent harvests has led to an increase in domestic usage by flour millers, currently at one of its highest recorded levels.

Bread-making varieties

UK bread-making wheats comprise the majority of millers' requirements and the AHDB Recommended Lists (RL) continues to offer a range of competitive Group 1 and 2 varieties that meet both the agronomic needs of growers and the quality specifications of millers (Table 2).

Crusoe, Skyfall and KWS Zyatt remain reliable milling varieties and Crusoe is particularly favoured for its good bread-making quality. As the yields of milling varieties have increased in line with feed varieties, greater attention to nitrogen inputs is required than with 'older' varieties in order to achieve the necessary protein quality and gain the maximum premium.

Soft varieties

The UK biscuit (Group 3) wheat area had fallen to a low level in recent years, resulting in reduced supplies to the reliable domestic and export markets. Demand for these wheats remains strong as their unique protein quality is necessary to produce a range of flour types and products, for which domestic and export demand is growing, such as biscuits.

Group 4 soft wheats may also have a specific use in some flours and these varieties can find a milling home. Not all mills will be interested in these, however, so it is important to understand what your customers are looking for.

Table 2. Typical specifications for milling wheat

	 Group 1	 Group 2	 Group 3
Minimum specific weight (kg/hl)	76	76	74
Maximum moisture content (%)	15	15	15
Maximum admix (%)	2	2	2
Minimum Hagberg Falling Number (HFN; s)	250	250	220
Protein content (%)	13.0	12.5	11.5

Food safety

Farmers growing wheat for milling must remember that they are producing for human consumption and steps should be taken to ensure that it is food-safe, such as mycotoxin testing. New limits on ergot sclerotia in grain and ergot alkaloids in flour are likely to come into effect from July 2021 and growers should familiarise themselves with the tolerances of their miller customers to avoid potential rejections.

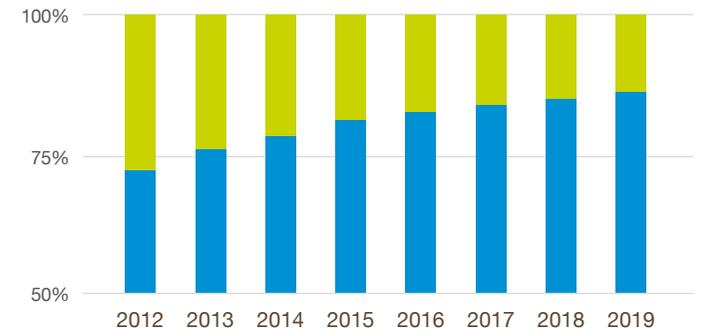
Know your market

The preference of local millers should be a significant factor affecting choice of milling variety. Growing for a specific market should be at the forefront of a farmer's mind if incomes are to be maximised from milling wheat. The **nabim** website features a tool that helps identify local mills and provides relevant contact details. This can be accessed using the following link: nabim.org.uk/mill-map

Other information on milling wheat quality requirements and the structure and needs of the milling industry can be found on the **nabim** website at nabim.org.uk



Large pool of RL quality milling varieties



Wheat usage by UK flour millers  Homegrown  Imported

Source: **nabim**

Winter wheat 2020/21

Market options, yield and grain quality



	KWS Zyatt				Skyfall				Crusoe				RGT Illustrious				KWS Extase				KWS Siskin				LG Detroit				KWS Lili				KWS Firefly				KWS Barrel				Elicot				KWS Basset				Zulu				LG Skyscraper				RGT Saki				LG Spotlight				KWS Jackal				Elation				Bennington				LG Sundance				LG Motown				Leeds				Viscount				Revelation				Average LSD (5%)			
End-use group	nabim Group 1				nabim Group 2				nabim Group 3				Soft Group 4																																																																																							
Scope of recommendation	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	N	UK	E&W	UK	UK	N	N	UK	C	*	*	*	*	*																																																																						
	C				C				C				NEW				C				*				*				*																																																																							

Fungicide-treated grain yield (% treated control)																									
United Kingdom (11.2 t/ha)	99	97	96	96	101	101	100	99	102	100	100	98	97	105	104	103	101	101	101	100	99	97	96	96	2.1
East region (11.1 t/ha)	99	97	96	96	100	101	100	99	102	100	99	98	97	106	104	102	101	101	101	100	99	97	96	96	2.3
West region (11.2 t/ha)	99	97	97	96	101	101	101	99	102	100	100	98	97	104	104	104	101	101	102	100	99	96	96	95	2.7
North region (11.3 t/ha)	97	96	92	92	100	98	[93]	101	98	104	100	97	98	103	[101]	100	102	101	96	99	98	98	99	95	3.1

Main market options (The specific attributes of varieties are different, so, whenever possible, varieties should not be mixed in store)																										
UK bread-making	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	Y	-	[Y]	[Y]	-	[Y]	[Y]	Y	-	[Y]	[Y]	[Y]	Y	Y	-	-
ukp [®] bread wheat for export	Y	-	Y	-	[Y]	Y	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
uks [®] soft wheat for export	-	-	-	-	-	-	-	-	[Y]	Y	Y	Y	Y	-	-	-	-	Y	Y	-	-	Y	Y	Y	-	-

Grain quality																									
Endosperm texture	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft							
Protein content (%)	12.4	12.4	12.9	12.2	12.0	11.9	12.3	11.5	11.9	11.3	11.7	11.6	11.7	11.4	11.6	11.4	11.1	11.6	11.7	11.3	11.4	11.4	11.4	11.8	0.2
Protein content (%) - Milling spec	13.2	13.3	13.5	13.0	12.6	12.6	12.9	12.2	12.6	12.0	12.3	12.3	12.4	12.1	12.1	12.1	12.0	12.3	12.3	12.1	12.0	12.2	12.2	12.5	0.3
Hagberg Falling Number	269	278	273	272	297	286	279	295	245	224	216	235	225	218	221	288	182	206	236	175	223	216	195	250	26.8
Specific weight (kg/hl)	77.8	78.3	77.9	77.2	78.4	77.2	77.6	77.3	75.8	77.1	76.9	77.5	76.0	76.9	75.7	77.9	75.6	77.4	77.5	73.9	75.6	77.8	75.9	76.4	0.7
Chopin alveograph W	181	-	217	-	199	164	212	[183]	[90]	96	90	93	103	-	-	[72]	[77]	94	91	[87]	[65]	-	-	-	19.8
Chopin alveograph P/L	0.7	-	0.6	-	0.6	0.5	0.7	[0.7]	[0.3]	0.4	0.3	0.4	0.3	-	-	[0.3]	[0.3]	0.3	0.4	[0.3]	[0.3]	-	-	-	0.1

Varieties no longer listed: Evolution, JB Diego, KWS Trinity and Myriad.
 Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.
 All yields in this table are taken from treated trials receiving a full fungicide and Plant Growth Regulator (PGR) programme.

UK = Recommended for the UK	C = Yield control (for current table). For this table KWS Santiago was also a yield control but is no longer listed	[] = Limited data	LSD = Least significant difference
E&W = Recommended for the East and West regions	* = Variety no longer under test in RL trials	Y = Suited to that market	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
N = Recommended for the North region		[Y] = May be suited to that market	

Winter wheat 2020/21

Market options, yield and grain quality



	SY Insitor	KWS Kinetic	Gleam	RGT Gravity	KWS Kerrin	Shabras	Graham	KWS Crispin	Theodore	Dunston	Costello	Average LSD (5%)
End-use group	Hard Group 4											
Scope of recommendation	UK	UK	UK	UK	E&W	UK	UK	UK	W	UK	UK	
	NEW	NEW						*	NEW	*		
Fungicide-treated grain yield (% treated control)												
United Kingdom (11.2 t/ha)	105	104	103	103	102	102	102	101	100	100	99	2.1
East region (11.1 t/ha)	104	104	103	103	102	102	101	101	100	100	99	2.3
West region (11.2 t/ha)	105	105	103	103	102	102	104	101	102	99	101	2.7
North region (11.3 t/ha)	[105]	[102]	102	102	103	102	99	96	[[91]]	99	98	3.1
Main market options (The specific attributes of varieties are different, so, whenever possible, varieties should not be mixed in store)												
UK bread-making	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	-	
ukp bread wheat for export	-	-	-	-	-	-	-	-	-	-	-	
uks soft wheat for export	-	-	-	-	-	-	-	-	-	-	-	
Grain quality												
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	10.7	11.3	11.3	11.4	10.9	11.4	11.4	11.7	12.1	11.6	12.0	0.2
Protein content (%) – Milling spec	11.2	12.0	12.0	12.0	11.5	12.1	11.9	12.5	12.7	12.4	12.5	0.3
Hagberg Falling Number	265	262	219	204	151	209	276	273	307	229	321	26.8
Specific weight (kg/hl)	78.3	78.5	76.3	76.0	76.3	75.9	76.8	77.0	73.8	76.9	80.7	0.7
Chopin alveograph W	-	-	-	-	-	-	[124]	-	-	-	-	19.8
Chopin alveograph P/L	-	-	-	-	-	-	[0.5]	-	-	-	-	0.1

Varieties no longer listed: Evolution, JB Diego, KWS Trinity and Myriad.

Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

All yields in this table are taken from treated trials receiving a full fungicide and Plant Growth Regulator (PGR) programme.

UK = Recommended for the UK

E&W = Recommended for the East and West regions

W = Recommended for the West region

* = Variety no longer under test in RL trials

[] = Limited data

[[]] = Very limited data

LSD = Least significant difference

Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter wheat 2020/21

Yield, agronomy and disease resistance



	KWS Zyatt	Skyfall	Crusoe	RGT Illustrious	KWS Extase	KWS Siskin	LG Detroit	KWS Lili	KWS Firefly	KWS Barrel	Elicot	KWS Basset	Zulu	LG Skyscraper	RGT Saki	LG Spotlight	KWS Jackal	Elation	Bennington	LG Sundance	LG Motown	Leeds	Viscount	Revelation	Average LSD (5%)																																	
End-use group	nabim Group 1				nabim Group 2				nabim Group 3					Soft Group 4																																												
Scope of recommendation	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	N	UK	E&W	UK	UK	N	N	UK																																		
	C				C				C					NEW									C									*									*									*								
Fungicide-treated grain yield (% treated control)																																																										
United Kingdom (11.2 t/ha)	99	97	96	96	101	101	100	99	102	100	100	98	97	105	104	103	101	101	101	100	99	97	96	96	2.1																																	
East region (11.1 t/ha)	99	97	96	96	100	101	100	99	102	100	99	98	97	106	104	102	101	101	101	100	99	97	96	96	2.3																																	
West region (11.2 t/ha)	99	97	97	96	101	101	101	99	102	100	100	98	97	104	104	104	101	101	102	100	99	96	96	95	2.7																																	
North region (11.3 t/ha)	97	96	92	92	100	98	[93]	101	98	104	100	97	98	103	[101]	100	102	101	96	99	98	98	99	95	3.1																																	
Untreated grain yield (% treated control)																																																										
United Kingdom (11.2 t/ha)	83	78	71	82	95	83	77	71	84	72	81	71	69	83	86	80	76	77	79	85	83	67	75	77	4.9																																	
Agronomic features																																																										
Resistance to lodging without PGR (1-9)	7	8	7	7	7	6	8	7	8	7	7	7	6	7	7	7	7	7	7	6	6	7	7	7	0.6																																	
Resistance to lodging with PGR (1-9)	8	8	8	8	8	7	7	8	8	8	8	8	7	7	8	8	7	8	8	7	6	8	8	8	0.5																																	
Height without PGR (cm)	84	83	81	89	90	84	85	81	82	83	85	85	89	91	87	93	86	82	91	86	83	85	80	85	1.7																																	
Ripening (days +/- Skyfall, -ve = earlier)	0	0	0	+1	0	0	+1	+2	+1	+1	+1	+1	0	0	+3	+1	+1	+1	+1	+2	0	+2	+1	+3	0.6																																	
Resistance to sprouting (1-9)	[5]	5	6	6	[7]	5	[6]	7	[6]	6	[5]	6	5	[6]	[5]	[7]	[5]	[6]	[5]	[4]	[5]	6	5	5	0.8																																	
Disease resistance																																																										
Mildew (1-9)	7	6	6	6	6	8	5	8	5	7	6	5	7	7	6	6	7	7	7	7	7	3	6	6	1.0																																	
Yellow rust (1-9) - see note below	7	5	9	9	9	9	9	7	9	9	9	8	5	8	9	8	9	9	5	9	9	6	6	9	0.7																																	
Brown rust (1-9) - see note below	6	8	3	6	7	5	5	4	6	5	7	5	7	6	8	7	5	6	7	6	7	7	8	8	1.1																																	
Septoria nodorum (1-9)	[6]	[6]	[6]	[6]	-	[6]	-	[6]	-	[6]	[6]	[6]	[6]	-	-	-	[5]	[6]	[7]	[6]	[6]	[6]	[7]	0.9																																		
Septoria tritici (1-9)	6.4	5.8	6.2	6.0	8.1	6.6	5.3	5.9	7.0	4.3	5.5	5.0	5.4	5.0	6.8	5.1	4.9	4.3	6.6	7.9	5.4	4.8	4.8	6.0	0.8																																	
Eyespot (1-9)	7@	6@	5	6@	[4]	5	[5]	4	[4]	5	4	5	4	[4]	-	[5]	4	4	4	3	4	5	4	7@	1.7																																	
Fusarium ear blight (1-9)	6	7	6	6	6	5	7	6	5	6	6	6	6	6	6	6	6	6	6	6	6	7	6	6	0.5																																	
Orange wheat blossom midge	-	R	-	-	-	-	R	-	R	R	R	R	R	R	R	R	R	R	-	R	R	R	R	-																																		

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

UK = Recommended for the UK	C = Yield control (for current table). For this table KWS Santiago was also a yield control but is no longer listed	[[]] = Very limited data	R = Believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in Recommended List tests
E&W = Recommended for the East and West regions	* = Variety no longer under test in RL trials	@ = Believed to carry the <i>Pch1</i> Rendezvous resistance gene to eyespot but this has not been verified in Recommended List tests	LSD = Least significant difference
N = Recommended for the North region	[] = Limited data		Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
W = Recommended for the West region			
PGR = Plant Growth Regulator			

Winter wheat 2020/21

Yield, agronomy and disease resistance



	SY Insitor	KWS Kinetic	Gleam	RGT Gravity	KWS Kerrin	Shabrac	Graham	KWS Crispin	Theodore	Dunston	Costello	Average LSD (5%)
End-use group	Hard Group 4											
Scope of recommendation	UK	UK	UK	UK	E&W	UK	UK	UK	W	UK	UK	
	NEW	NEW						*	NEW	*		
Fungicide-treated grain yield (% treated control)												
United Kingdom (11.2 t/ha)	105	104	103	103	102	102	102	101	100	100	99	2.1
East region (11.1 t/ha)	104	104	103	103	102	102	101	101	100	100	99	2.3
West region (11.2 t/ha)	105	105	103	103	102	102	104	101	102	99	101	2.7
North region (11.3 t/ha)	[105]	[102]	102	102	103	102	99	96	[[91]]	99	98	3.1
Untreated grain yield (% treated control)												
United Kingdom (11.2 t/ha)	82	79	84	79	79	81	88	83	90	82	81	4.9
Agronomic features												
Resistance to lodging without PGR (1–9)	6	7	7	7	7	7	7	7	7	7	7	0.6
Resistance to lodging with PGR (1–9)	7	8	7	7	7	7	8	7	8	8	8	0.5
Height without PGR (cm)	93	83	86	87	85	86	87	86	82	92	82	1.7
Ripening (days +/- Skyfall, -ve = earlier)	+1	0	0	+1	+1	0	0	+1	0	+1	+2	0.6
Resistance to sprouting (1–9)	[5]	[6]	[5]	[4]	[5]	[4]	7	5	[7]	[5]	6	0.8
Disease resistance												
Mildew (1–9)	6	6	6	4	7	6	7	6	7	5	8	1.0
Yellow rust (1–9) - see note below	7	6	7	8	7	7	8	9	9	7	9	0.7
Brown rust (1–9) - see note below	4	6	6	6	7	5	6	5	7	6	5	1.1
Septoria nodorum (1–9)	-	-	[6]	[6]	[6]	[6]	[6]	[6]	-	[6]	[6]	0.9
Septoria tritici (1–9)	6.6	5.0	6.3	4.8	4.9	6.3	6.8	5.9	8.2	6.6	6.1	0.8
Eyespot (1–9)	-	-	4	4	5	4	4	4	-	6@	5	1.7
Fusarium ear blight (1–9)	6	6	6	6	6	5	6	6	6	6	6	0.5
Orange wheat blossom midge	R	R	R	R	R	-	-	R	-	-	-	

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

Yellow and brown rust ratings

During 2019, higher than expected levels of yellow and brown rust were seen in some varieties in some trials. Careful analysis of the 2019 data from RL trials did not reveal dramatic changes in average disease ratings. These are national average ratings and it is not yet clear if the reported cases of high yellow and brown rust disease levels in 2019 indicate the initial emergence of new rust races or exceptionally high disease pressure at some sites. Given the highly dynamic nature of the yellow and brown rust populations in the UK in recent years, all varieties should be closely monitored for rusts: local rust populations may differ from the general UK population and may be more or less virulent on a variety than the RL rating suggests.

Winter wheat 2020/21

Supplementary data



KWS Zyatt Skyfall Crusoe RGT Illustrious KWS Extase KWS Siskin LG Detroit KWS Lili KWS Firefly KWS Barrel Elicit KWS Basset Zulu LG Skyscraper RGT Saki LG Spotlight KWS Jackal Elation Bennington LG Sundance LG Motown Leeds Viscount Revelation
 Average LSD (5%)

End-use group	nabim Group 1				nabim Group 2				nabim Group 3					Soft Group 4											
Scope of recommendation	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	N	UK	E&W	UK	UK	N	N	UK	
Breeder/UK contact	C				C				C					NEW C * * * * *											
Breeder	KWS	RAGT	Lim	R2n	Mom	KWS	LimEur	KWS	KWS	KWS	ElsW	KWS	Lim	LimEur	RAGT	LimEur	KWS	ElsW	ElsW	LimEur	LimEur	Mom	KWS	Lim	
UK contact	KWS	RAGT	Lim	RAGT	KWS	KWS	Lim	KWS	KWS	KWS	Els	KWS	Lim	Lim	RAGT	Lim	KWS	Els	Els	Lim	Lim	KWS	KWS	Lim	
Annual treated yield (% control)																									
2015 (12.1 t/ha)	99	97	92	94	-	101	-	99	-	100	99	99	96	-	-	-	102	102	100	99	99	97	97	96	2.3
2016 (11.0 t/ha)	98	96	95	92	99	99	99	100	100	101	102	95	98	108	-	104	102	101	102	102	101	100	98	94	2.1
2017 (11.1 t/ha)	101	98	96	97	99	99	99	99	102	101	99	97	95	104	104	104	101	101	100	98	97	97	97	96	2.2
2018 (10.4 t/ha)	98	98	96	97	102	101	99	99	102	99	98	100	98	103	103	100	101	101	102	102	98	96	98	97	2.0
2019 (11.3 t/ha)	97	96	100	95	102	100	101	100	103	102	100	99	99	105	104	103	101	101	99	99	99	94	98	94	2.1
Rotational position																									
First cereal (11.6 t/ha)	98	97	96	95	101	100	99	100	102	101	100	98	97	105	103	103	101	101	100	100	99	97	97	96	2.1
Second and more (9.8 t/ha)	99	98	93	94	100	100	100	98	100	100	100	98	96	104	[103]	101	102	102	100	101	99	97	[99]	95	3.5
Sowing date (most trials were sown in October)																									
Early sown (before 25 Sept) (11.2 t/ha)	[[104]]	98	95	97	-	102	-	[[103]]	[103]	98	100	100	98	-	-	103	102	100	100	[98]	[96]	[98]	[96]	96	6.6
Late sown (after 1 Nov) (9.6 t/ha)	97	97	94	95	[102]	100	[99]	100	[102]	100	97	98	99	[104]	[[107]]	[102]	101	[100]	99	100	97	100	[[99]]	[[97]]	4.2
Soil type (about 50% of trials are on medium soils)																									
Light soils (11.1 t/ha)	97	97	94	92	103	99	99	100	101	102	99	97	98	105	[102]	101	101	101	98	99	98	98	99	95	4.1
Heavy soils (11.3 t/ha)	100	97	97	97	101	101	101	99	103	100	99	98	97	105	104	103	101	101	102	100	98	98	96	96	2.6
Agronomic features																									
Lodging % without PGR	3	1	2	3	3	17	1	2	1	3	5	2	10	7	8	4	5	4	3	10	18	4	6	2	
Lodging % with PGR	1	2	3	1	2	7	4	2	1	2	3	1	8	11	4	2	10	2	3	12	20	2	3	3	
Latest safe sowing date #	End Jan	End Feb	End Jan	Mid Feb	[End Jan]	End Jan	[End Jan]	Mid Feb	[End Feb]	End Jan	End Jan	End Jan	End Feb	[End Jan]	[[End Jan]]	[End Feb]	End Jan	End Feb	Mid Feb	End Jan					
Speed of development to growth stage 31 (days +/- average)																									
Early sown (Sept)	-3	-3	0	+1	[-5]	-8	[+6]	-1	[-4]	+5	-2	-4	-1	[-5]	[+10]	[-6]	+5	+1	-6	+9	-3	-3	+1	+2	9.0
Med sown (Oct)	-4	-3	-1	+2	[-8]	-5	[+3]	-1	[-3]	0	+3	0	0	[0]	[+1]	[-3]	+3	-1	0	+4	-5	0	0	+4	7.1
Late sown (Nov)	-2	-2	-1	0	[-2]	-3	[+1]	+3	[+1]	+3	+2	-2	+1	[-4]	[0]	[-1]	+1	-1	-1	+3	0	0	+2	+3	4.2
Status in RL system																									
Year first listed	17	14	12	16	19	16	19	15	19	16	18	16	16	19	20	19	18	18	17	17	17	13	09	13	
RL status	-	-	-	-	P2	-	P2	*	P2	-	-	*	*	P2	P1	P2	-	-	*	-	*	*	*	*	

All yields in this table are taken from treated trials receiving a full fungicide and PGR programme.

UK = Recommended for the UK	C = Yield control (for current table). For this table KWS Santiago was also a yield control but is no longer listed	[[]] = Very limited data	ElsW = Elsoms Wheat Ltd (elsoms.com)	R2n = RAGT, France (ragt.co.uk)
E&W = Recommended for the East and West regions	* = Variety no longer under test in RL trials	# = Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for flowering	KWS = KWS UK (kws-uk.com)	RAGT = RAGT Seeds (ragt.co.uk)
N = Recommended for the North region	[] = Limited data	P1 = First year of recommendation	Lim = Limagrain UK (lgseeds.co.uk)	LSD = Least significant difference
PGR = Plant Growth Regulator		P2 = Second year of recommendation	LimEur = Limagrain Europe SA (lgseeds.co.uk)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
		Els = Elsoms Seeds (elsoms.com)	Mom = Momont, France (kws-uk.com)	

Winter wheat 2020/21

Supplementary data



	SY Invisor	KWS Kinetic	Gleam	RGT Gravity	KWS Kerrin	Shabras	Graham	KWS Crispin	Theodore	Dunston	Costello	Average LSD (5%)
End-use group	Hard Group 4											
Scope of recommendation	UK NEW	UK NEW	UK	UK	E&W	UK	UK	UK	W NEW	UK	UK	
Breeder/UK contact												
Breeder	SyP	KWS	SyP	R2n	KWS	SyP	SyP	KWS	DSV	ElsW	KWS	
UK contact	Syn	KWS	Syn	RAGT	KWS	Syn	Syn	KWS	DSV	Els	Sen	
Annual treated yield (% control)												
2015 (12.1 t/ha)	-	-	102	102	102	102	97	98	-	102	98	2.3
2016 (11.0 t/ha)	-	-	103	106	103	103	102	100	-	99	97	2.1
2017 (11.1 t/ha)	104	104	102	103	101	101	102	99	98	96	101	2.2
2018 (10.4 t/ha)	104	103	104	101	103	101	101	102	100	101	101	2.0
2019 (11.3 t/ha)	107	105	104	102	103	103	104	101	101	99	100	2.1
Rotational position												
First cereal (11.6 t/ha)	105	104	103	103	102	102	102	100	100	99	100	2.1
Second and more (9.8 t/ha)	[103]	[102]	104	103	103	102	100	98	[[99]]	100	98	3.5
Sowing date (most trials were sown in October)												
Early sown (before 25 Sept) (11.2 t/ha)	-	[100]	103	[100]	-	[[105]]	100	[[97]]	[[101]]	101	99	6.6
Late sown (after 1 Nov) (9.6 t/ha)	[[110]]	[[103]]	104	103	104	98	[100]	102	[[100]]	99	100	4.2
Soil type (about 50% of trials are on medium soils)												
Light soils (11.1 t/ha)	[108]	[104]	102	103	102	102	100	99	-	99	98	4.1
Heavy soils (11.3 t/ha)	104	105	103	102	101	101	102	101	101	100	100	2.6
Agronomic features												
Lodging % without PGR	11	4	4	5	6	9	5	9	6	2	2	
Lodging % with PGR	4	4	4	7	9	11	3	8	2	1	2	
Latest safe sowing date #	[[End Jan]]	[[End Jan]]	Mid Feb	End Jan	End Jan	End Jan	End Jan	Mid Feb	[[End Jan]]	End Jan	End Jan	
Speed of development to growth stage 31 (days +/- average)												
Early sown (Sept)	[-2]	[-4]	+8	+6	0	+2	+2	-5	[-3]	+5	-2	9.0
Med sown (Oct)	[0]	[+9]	+3	+3	+3	0	0	-6	[-4]	+2	-2	7.1
Late sown (Nov)	[+2]	[-2]	+4	-2	0	0	-3	-5	[0]	+1	-2	4.2
Status in RL system												
Year first listed	20	20	18	18	17	17	16	16	20	17	15	
RL status	P1	P1	-	-	-	-	-	*	P1	*	-	

All yields in this table are taken from treated trials receiving a full fungicide and PGR programme.

UK = Recommended for the UK	*	= Variety no longer under test in RL trials	P1 = First year of recommendation	R2n = RAGT, France (ragt.co.uk)	Syn = Syngenta UK Ltd (syngenta.co.uk)
E&W = Recommended for the East and West regions	[]	= Limited data	DSV = DSV UK (dsv-uk.co.uk)	RAGT = RAGT Seeds (ragt.co.uk)	LSD = Least significant difference
W = Recommended for the West region	[[]]	= Very limited data	Els = Elsoms Seeds (elsoms.com)	Sen = Senova (senova.uk.com)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
PGR = Plant Growth Regulator	#	= Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for flowering	ElsW = Elsoms Wheat Ltd (elsoms.com)	SyP = Syngenta Participations AG (syngenta.co.uk)	
			KWS = KWS UK (kws-uk.com)		

Winter wheat trials harvest 2020

Candidate varieties



Previous/proposed name Variety ID Yield treated (T) Yield untreated (UT) (as % treated controls) Lodging % (UT) Lodging % (T) Height (cm) (UT) Maturity (days +/- Skyfall) Mildew (1-9) Yellow rust (1-9) Brown rust (1-9) Septoria tritici (1-9) Eyespot (1-9) OWB resistance Endosperm texture Protein content % Hagberg Falling Number Specific weight (kg/hl) UK contact

Control varieties																				
Elation	EW2082	2490	101	79	1	0	84	0	7	9	6	4	4	R	Soft	11.9	210	77.3	Elsoms Seeds	
KWS Siskin	KWS W243	2315	101	88	4	3	87	0	8	9	5	7	5	-	Hard	12.1	266	77.2	KWS UK	
KWS Barrel	KWS W239	2311	100	76	0	0	86	+1	7	9	5	4	5	R	Soft	11.5	239	77.3	KWS UK	
Skyfall	SJ3326	2138	98	79	1	1	87	0	6	5	8	6	6@	R	Hard	12.9	275	78.9	RAGT Seeds	
KWS Santiago	CPBT W165	1916	101	71	1	1	91	0	5	7	4	4	4	R	Hard	11.7	200	75.4	KWS UK	
Selected as potential bread-making varieties																				
LG Seeker	LGWU149	2815	102	86	1	0	84	+1	8	7	9	6	[8]@	-	Hard	11.9	238	75.6	Limagrain UK	
Selected as potential biscuit-making varieties																				
LG Prince	LGWU153	2838	103	88	2	0	86	+1	5	9	8	6	[5]	R	Soft	11.7	238	74.5	Limagrain UK	
LG Illuminate	LGWU144	2810	102	91	1	1	85	0	5	9	8	7	[4]	R	Soft	12.3	234	76.4	Limagrain UK	
LG Astronomer	LGWU143	2809	102	91	1	0	90	0	4	9	9	7	[5]	R	Soft	12.0	226	78.1	Limagrain UK	
Merit	EW6364	2797	102	85	2	1	91	+1	4	9	8	7	[3]	R	Soft	12.0	245	76.8	Elsoms Wheat Ltd	
LG Quasar	LGWU151	2836	101	85	2	1	92	+1	6	8	8	6	[3]	R	Soft	11.8	213	75.4	Limagrain UK	
RGT Galactus	RW41785	2850	101	86	2	3	91	+1	6	8	9	6	[5]	R	Soft	12.0	210	74.6	RAGT Seeds	
Mean of controls (t/ha)			11.0	11.0	-	-	-	303	-	-	-	-	-	-	-	-	-	-	-	-
Overall mean			-	-	1	1	88	-	-	-	-	-	-	-	-	11.8	238	77.2		
LSD 5%			2.3	6.1	0.8	0.8	2.3	1.0	-	-	-	-	-	-	-	0.3	21.4	0.9		
Number of trials			31	8	9	9	11	9								10	9	10		

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

The 1-9 ratings are not comparable with those used on the Recommended List table.

See the AHDB Recommended List for full data on control varieties.

Candidate varieties will be considered for the 2021/22 AHDB Recommended List.

To allow direct comparisons, the data presented for control varieties is taken from trials in which the candidates were grown.

For latest information, visit ahdb.org.uk/rl

These summaries are derived from National List and British Society of Plant Breeders (BSPB) trials. Acknowledgement is made to the Animal and Plant Health Agency (APHA) and BSPB for the use of the data.

T = Data from trials treated with fungicide and Plant Growth Regulator (PGR)

UT = Data from trials without fungicide or PGR
R = Believed to be resistant to orange wheat blossom midge (OWBM)

@ = Believed to carry the *Pch1* Rendezvous resistance gene
[] = Limited data

LSD = Least significant difference
LSD 5%: Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter wheat trials harvest 2020

Candidate varieties



Previous/proposed name Variety ID Yield treated (T) Yield untreated (UT) (as % treated controls) Lodging % (UT) Lodging % (T) Height (cm) (UT) Maturity (days +/- Skyfall) Mildew (1-9) Yellow rust (1-9) Brown rust (1-9) Septoria tritici (1-9) Eyespot (1-9) OWBM resistance Endosperm texture Protein content % Hagberg Falling Number Specific weight (kg/hl) UK contact

Control varieties																			
Elation	EW2082	2490	101	79	1	0	84	0	7	9	6	4	4	R	Soft	11.9	210	77.3	Elsoms Seeds
KWS Siskin	KWS W243	2315	101	88	4	3	87	0	8	9	5	7	5	-	Hard	12.1	266	77.2	KWS UK
KWS Barrel	KWS W239	2311	100	76	0	0	86	+1	7	9	5	4	5	R	Soft	11.5	239	77.3	KWS UK
Skyfall	SJ3326	2138	98	79	1	1	87	0	6	5	8	6	6@	R	Hard	12.9	275	78.9	RAGT Seeds
KWS Santiago	CPBT W165	1916	101	71	1	1	91	0	5	7	4	4	4	R	Hard	11.7	200	75.4	KWS UK
Selected as potential feed varieties																			
LG Tapestry	LGWU148	2814	102	88	1	1	88	0	5	9	8	6	[2]	R	Soft	11.3	174	76.3	Limagrain UK
KWS Plectrum	KWSW358	2856	102	77	1	0	81	0	5	7	6	6	[3]	R	Soft	11.4	172	75.7	KWS UK
RGT Quicksilver	RW41783	2849	102	89	2	1	90	+2	5	9	8	7	[3]	R	Soft	11.6	211	73.8	RAGT Seeds
Swallow	BAW55	2823	100	83	0	0	82	0	5	7	6	6	[2]	R	Soft	11.4	236	76.3	Senova
KWS Cranium	KWSW360	2858	103	81	0	2	90	+2	4	9	5	6	[5]	R	Hard	11.5	256	75.3	KWS UK
SY Clipper	SY117710	2828	Data cannot be published as a variety has not completed National List testing																Syngenta UK Ltd
Banquo	BAW57	2825	103	85	1	2	89	0	7	9	5	5	[3]	R	Hard	11.9	235	76.6	Senova
Astound	EW5475B	2796	103	92	0	0	92	0	7	9	7	6	[5]	-	Hard	12.0	244	75.8	Elsoms Wheat Ltd
RGT Wolverine	RW41740	2846	102	81	1	1	90	+1	5	7	8	6	[6]	-	Hard	11.3	254	76.3	RAGT Seeds
RGT Silversurfer	RW41789	2851	101	87	3	3	91	0	5	9	7	7	[4]	R	Hard	11.7	245	76.1	RAGT Seeds
Mean of controls (t/ha)			11.0	11.0	-	-	-	303	-	-	-	-	-			-	-	-	
Overall mean			-	-	1	1	88	-	-	-	-	-	-			11.8	238	77.2	
LSD 5%			2.3	6.1	0.8	0.8	2.3	1.0	-	-	-	-	-			0.3	21.4	0.9	
Number of trials			31	8	9	9	11	9								10	9	10	

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

The 1-9 ratings are not comparable with those used on the Recommended List table.

See the AHDB Recommended List for full data on control varieties.

Candidate varieties will be considered for the 2021/22 AHDB Recommended List.

To allow direct comparisons, the data presented for control varieties is taken from trials in which the candidates were grown.

For latest information, visit ahdb.org.uk/rl

These summaries are derived from National List and British Society of Plant Breeders (BSPB) trials. Acknowledgement is made to the Animal and Plant Health Agency (APHA) and BSPB for the use of the data.

T = Data from trials treated with fungicide and Plant Growth Regulator (PGR)

UT = Data from trials without fungicide or PGR
R = Believed to be resistant to orange wheat blossom midge (OWBM)

@ = Believed to carry the *Pch1* Rendezvous resistance gene
[] = Limited data

LSD = Least significant difference
LSD 5%: Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter wheat varieties grown in RL trials in 2019 but not added to the AHDB Recommended List



	Control varieties					Other varieties		Average LSD (5%)
	Skyfall	KWS Siskin	KWS Santiago	KWS Barrel	Elation	RGT Lantern	KWS Parkin	
Fungicide-treated grain yield (% treated control)								
United Kingdom (11.2 t/ha)	97	101	101	100	101	102	102	2.1
East region (11.1 t/ha)	97	101	101	100	101	102	102	2.3
West region (11.2 t/ha)	97	101	101	100	101	103	101	2.7
North region (11.3 t/ha)	96	98	101	104	101	[100]	[101]	3.1
Untreated grain yield (% treated control)								
United Kingdom (11.2 t/ha)	78	83	67	72	77	78	81	4.9
Grain quality								
Endosperm texture	Hard	Hard	Hard	Soft	Soft	Hard	Hard	
Protein content (%)	12.4	11.9	11.5	11.3	11.6	11.2	11.3	0.2
Protein content (%) – Milling spec	13.3	12.6	12.3	12.0	12.3	11.9	11.9	0.3
Hagberg Falling Number	278	286	185	224	206	271	259	26.8
Specific weight (kg/hl)	78.3	77.2	75.5	77.1	77.4	75.7	76.3	0.7
Chopin alveograph W	-	164	-	96	94	-	-	19.8
Chopin alveograph P/L	-	0.5	-	0.4	0.3	-	-	0.1
Agronomic features								
Resistance to lodging without PGR (1–9)	8	6	7	7	7	7	8	0.6
Resistance to lodging with PGR (1–9)	8	7	8	8	8	8	8	0.5
Height without PGR (cm)	83	84	86	83	82	83	79	1.7
Ripening (days +/- Skyfall, -ve = earlier)	0	0	+1	+1	+1	+2	-1	0.6
Resistance to sprouting (1–9)	5	5	6	6	[6]	[7]	[6]	0.8
Disease resistance								
Mildew (1–9)	6	8	5	7	7	5	6	1.0
Yellow rust (1–9) – see note on right	5	9	7	9	9	7	9	0.7
Brown rust (1–9) – see note on right	8	5	4	5	6	6	5	1.1
Septoria nodorum (1–9)	[6]	[6]	[5]	[6]	[6]	-	-	0.9
Septoria tritici (1–9)	5.8	6.6	4.4	4.3	4.3	5.7	5.5	0.8
Eyespot (1–9)	6@	5	4	5	4	-	-	1.7
Fusarium ear blight (1–9)	7	5	6	6	6	6	6	0.5
Orange wheat blossom midge	R	-	R	R	R	R	-	

Yellow and brown rust ratings
 During 2019, higher than expected levels of yellow and brown rust were seen in some varieties in some trials. Careful analysis of the 2019 data from RL trials did not reveal dramatic changes in average disease ratings. These are national average ratings and it is not yet clear if the reported cases of high yellow and brown rust disease levels in 2019 indicate the initial emergence of new rust races or exceptionally high disease pressure at some sites. Given the highly dynamic nature of the yellow and brown rust populations in the UK in recent years, all varieties should be closely monitored for rusts: local rust populations may differ from the general UK population and may be more or less virulent on a variety than the RL rating suggests.

This table should be read in conjunction with the AHDB Recommended List of winter wheat varieties for 2020/21. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

[] = Limited data
 PGR = Plant Growth Regulator

@ = Believed to carry the *Pch1* Rendezvous resistance gene to eyespot but this has not been verified in Recommended List tests

R = Believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in Recommended List tests

LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter wheat 2020/21

Variety comments

nabim Group 1 varieties



Crusoe

Quality: A nabim Group 1 variety, classified as a **ukp** bread wheat for export. It has high Hagbergs and specific weights and has consistently given good proteins.

Agronomy: This short and relatively stiff-strawed variety has high resistance to yellow rust but is very susceptible to brown rust.

nabim comment: Has consistently demonstrated good protein content and quality. The breadcrumb structure is notably white and of good quality. The baking performance of this variety is good and, consequently, it remains popular with millers.

KWS Zyatt

Quality: A nabim Group 1 bread wheat, classified as a **ukp** bread wheat for export. KWS Zyatt has given high yields, combined with high specific weights and Hagbergs. It has given good proteins under a regime to achieve milling specification.

Agronomy: This short and relatively stiff-strawed variety has given high treated yields in the East and West regions, as well as in second-cereal situations and in trials on heavy soil. KWS Zyatt has good overall disease resistance, especially for eyespot (*Pch1*), yellow rust and mildew. It is a relatively early-maturing variety and limited data suggests it may have a tendency to sprout, so should be given priority at harvest.

nabim comment: This variety is popular with millers as it shows good gluten strength and milling quality, alongside a good baking performance. As a high-yielding variety, nitrogen applications may have to be adjusted to achieve protein specifications.

RGT Illustrious

Quality: A nabim Group 1 bread wheat with high Hagbergs that has given good proteins under a regime to achieve milling specification.

Agronomy: This medium-tall and relatively stiff-strawed variety has given UK yields comparable to Crusoe. It has good overall disease resistance, especially to yellow rust. RGT Illustrious carries the *Pch1* eyespot resistance gene.

nabim comment: This variety has a higher level of water absorption (a good feature) and demonstrates good bread-making potential, even at lower protein levels.

Skyfall

Quality: A nabim Group 1 bread wheat with high Hagbergs and specific weights that has given good proteins under a regime to achieve milling specification.

Agronomy: It is an awned wheat with short, stiff straw and is the only Group 1 variety with resistance to orange wheat blossom midge. This variety has good overall disease resistance, especially to brown rust and fusarium ear blight, and carries the *Pch1* eyespot resistance gene. Skyfall has a tendency for rapid growth and development in the spring, but this characteristic is less marked when it is sown after the end of September. It is also relatively early maturing and has a tendency to sprout, so should be given priority at harvest.

nabim comment: Large quantities of this variety continue to be seen by millers and it is popular, owing to its good milling and baking qualities. Because it is high yielding, nitrogen applications may have to be adjusted to achieve protein specifications.

Export specifications

ukp  = meets the specification for **ukp** bread wheat for export

uks  = meets the specification for **uks** biscuit wheat for export

For more information on export specifications, please see page 4.

Please note that comments made on resistance to orange wheat blossom midge are based on advice from plant breeders. Resistance has not been verified in RL tests.



Varietal resistance is the foundation for disease control

Fungicide Futures, a joint initiative between AHDB and the Fungicide Resistance Action Group UK (FRAG), provides information on how to build control and protect fungicide efficacy from the bottom up.

ahdb.org.uk/knowledge-library/fungicide-futures

Winter wheat 2020/21

Variety comments

nabim Group 2 varieties



KWS Extase ukp

Quality: A **nabim** Group 2 wheat, classified as a **ukp** bread wheat for export. KWS Extase has high Hagbergs and specific weights. It has given good proteins under a regime to achieve milling specification.

Agronomy: This variety has produced high treated yields in the West region and performed particularly well on lighter soils. It is a medium-tall variety, with relatively stiff straw. KWS Extase has given exceptionally high yields in untreated UK trials. It has high resistance to yellow rust and brown rust and the highest rating for resistance to septoria tritici for a bread-making variety.

nabim comment: This variety has protein levels similar to KWS Siskin and its performance is consistent with that of other Group 2 varieties. It shows some variability in its baking performance.

KWS Lili ukp

Quality: A **nabim** Group 2 wheat, classified as a **ukp** bread wheat for export. It has high Hagbergs in trials, but careful management is required to attain the required protein level for milling specification.

Agronomy: This variety has given high treated yields in the North region. It is a later-maturing variety, with short and relatively stiff straw. It has high resistance to mildew and yellow rust but is susceptible to brown rust. KWS Lili is no longer under test in RL trials.

nabim comment: This variety has lower protein levels than the other Group 2 varieties. There are some concerns with the breadcrumb structure of loaves made solely with this variety, but it will usually be used in grists.

KWS Siskin ukp

Quality: A high-yielding **nabim** Group 2 wheat and classified as a **ukp** bread wheat for export. It has high Hagbergs and has given good proteins under a regime to achieve milling specification.

Agronomy: This short-strawed variety has produced high treated yields in the East and West regions and has performed well in early-drilling situations. It has moderate resistance to lodging but responds well to plant growth regulators. KWS Siskin has high resistance to septoria tritici, mildew and yellow rust. It has a tendency to sprout, so should be given priority at harvest.

nabim comment: This variety has protein levels that are slightly higher than those of KWS Lili. Some yellowness may be seen in the flour colour. It has shown a degree of variability in its baking performance, so may be more suited to use in blends.

LG Detroit ukp

Quality: A **nabim** Group 2 wheat, classified as a **ukp** bread wheat for export and recommended for the East and West regions. It has high Hagbergs and has given good proteins under a regime to achieve milling specification.

Agronomy: This stiff-strawed variety has given its best relative performance in the West region, where it has produced high treated yields. LG Detroit has high resistance to yellow rust, above-average resistance to fusarium ear blight, and is the only Group 2 variety with resistance to orange wheat blossom midge.

nabim comment: This variety has protein levels similar to the Group 1 varieties. The gluten quality and baking performance show some variability.



Crop Research News

Crop Research News is a technical e-newsletter issued by AHDB Cereals & Oilseeds. Sign up for monthly information on agronomy publications, applied research findings and events

ahdb.org.uk/crn

Winter wheat 2020/21

Variety comments

nabim Group 3 varieties



Elicit uks

distilling: good

Quality: A nabim Group 3 wheat. It is classified as a uks soft wheat for export and rated as 'good' for distilling.

Agronomy: It is a relatively stiff-strawed variety. Elicit has high resistance to yellow rust and brown rust, combined with resistance to orange wheat blossom midge. Limited data suggests that this variety may have a tendency to sprout, so should be given priority at harvest.

nabim comment: This variety has shown slightly lower Hagberg Falling Number and slightly weaker gluten than other Group 3 varieties but meets the criteria for the group.

KWS Barrel uks

Quality: A nabim Group 3 wheat. It is classified as a uks soft wheat for export and is rated as 'poor' for distilling, due to low alcohol levels.

Agronomy: This short and relatively stiff-strawed variety has produced very high yields in the North region and has performed particularly well on lighter soils. KWS Barrel has high resistance to mildew and yellow rust and resistance to orange wheat blossom midge. It is susceptible to septoria tritici.

nabim comment: This variety fully meets the criteria for Group 3 wheat.

KWS Basset uks

Quality: A nabim Group 3 wheat. It is classified as a uks soft wheat for export and is rated as 'poor' for distilling, due to low alcohol levels.

Agronomy: This relatively stiff-strawed variety has high resistance to yellow rust and resistance to orange wheat blossom midge. KWS Basset is no longer under test in RL trials.

nabim comment: Although this variety has shown some variation in dough extensibility, it fully meets the criteria for a Group 3 variety.

KWS Firefly uks

Quality: A nabim Group 3 wheat, classified as a uks soft wheat for export. It has a low specific weight and is rated as 'poor' for distilling, due to low alcohol levels. It has given good proteins under a regime to achieve milling specification. KWS Firefly has improved Hagbergs over established Group 3 varieties.

Agronomy: This short, stiff-strawed variety has produced high treated yields in both the East and West regions. It has performed well on heavier soils and in a first-cereal position. KWS Firefly has the highest rating for resistance to septoria tritici for a Group 3 variety and has high resistance to yellow rust and resistance to orange wheat blossom midge.

nabim comment: This variety fully meets the group criteria.

Zulu uks

distilling: medium

Quality: A nabim Group 3 wheat. It is classified as a uks soft wheat for export and rated as 'medium' for distilling.

Agronomy: This variety has given its best relative performance in the North region. It has moderate resistance to lodging but responds well to plant growth regulators. Zulu has high resistance to mildew and brown rust, as well as resistance to orange wheat blossom midge. It has a tendency to sprout, so should be given priority at harvest. Zulu is no longer under test in RL trials.

nabim comment: This variety has consistently met the requirements of a Group 3 wheat.



HARVEST RESULTS

Access the latest information from AHDB Recommended List trials, including sowing lists and Harvest Result data, or sign up to Harvest Results – an e-newsletter sent out regularly during harvest.

ahdb.org.uk/harvestresults

Winter wheat 2020/21

Variety comments

Soft Group 4 varieties

Bennington

Quality: Recommended for the East and West regions as a soft-milling feed variety. It is classified as a **uks** soft wheat for export but is rated as 'poor' for distilling, due to low alcohol levels.

Agronomy: Bennington has given high treated UK yields in the West region and has performed well on heavier soils. This medium-tall and relatively stiff-strawed variety has high resistance to brown rust, mildew and septoria tritici. Bennington is no longer under test in RL trials.

Elation distilling: good

Quality: Recommended for the UK as a soft-milling feed variety. It is classified as a **uks** soft wheat for export and is rated as 'good' for distilling.

Agronomy: This short and relatively stiff-strawed variety has performed particularly well in a second-cereal rotation. Elation has high resistance to yellow rust and mildew and is resistant to orange wheat blossom midge. It is susceptible to septoria tritici.

KWS Jackal distilling: medium

Quality: Recommended for the North region as a soft-milling feed variety. It has a low specific weight. It is rated as 'medium' for distilling.

Agronomy: This variety has produced high treated yields in the North region. It has performed particularly well in a second-cereal situation and early-drilling situations. KWS Jackal has high resistance to yellow rust and mildew, as well as resistance to orange wheat blossom midge.

Leeds distilling: medium

Quality: Recommended for the North region as a soft-milling feed wheat with a high specific weight. It is classified as a **uks** soft wheat for export and is rated as 'medium' for distilling.

Agronomy: Leeds is a relatively stiff-strawed variety but is rather late maturing. It has high resistance to brown rust, resistance to orange wheat blossom midge and above-average resistance to fusarium ear blight. It is very susceptible to mildew. Leeds is no longer under test in RL trials.

LG Motown distilling: medium

Quality: Recommended for the UK as a soft-milling feed variety. It has a low specific weight and is rated as 'medium' for distilling.

Agronomy: This short-strawed variety has moderate resistance to lodging, which requires careful management. LG Motown has high resistance to yellow rust, mildew and brown rust, as well as resistance to orange wheat blossom midge. LG Motown is no longer under test in RL trials.

LG Skyscraper distilling: medium

Quality: Recommended for the UK as a soft-milling, very high-yielding feed variety. It is rated as 'medium' for distilling.

Agronomy: LG Skyscraper has given very high treated yields across the UK, particularly in the East and West regions. It has performed well across a range of soil types and rotational positions. This medium-tall variety has high resistance to yellow rust and mildew, as well as resistance to orange wheat blossom midge.

LG Spotlight distilling: medium

Quality: Recommended for the UK as a soft-milling, high-yielding feed variety. It has high Hagbergs and a high specific weight. It is rated as 'medium' for distilling.

Agronomy: LG Spotlight has given high UK yields in treated trials and has a very high yield potential in the West region. This medium-tall and relatively stiff-strawed variety has performed particularly well on heavier soils, in a first-cereal situation and early-drilling situations. It has high resistance to yellow rust, brown rust and resistance to orange wheat blossom midge.



The UK Cereal Pathogen Virulence Survey (UKCPVS) needs fresh leaf samples showing signs of wheat yellow rust, brown rust and powdery mildew, as well as barley powdery mildew

Guidelines have been developed to ensure samples reach the FREEPOST UKCPVS address in the best possible condition.

For complete information, visit ahdb.org.uk/ukcpvs



Winter wheat 2020/21

Variety comments

Soft Group 4 varieties

LG Sundance distilling: medium

Quality: Recommended as a UK soft-milling feed wheat. It has a low specific weight and is rated as 'medium' for distilling.

Agronomy: This relatively late-maturing variety has given its best relative performance in a second-cereal situation. It has moderate resistance to lodging but responds well to plant growth regulators. It has given high untreated yields in UK trials and has very high resistance to septoria tritici. LG Sundance has high resistance to yellow rust and mildew, as well as resistance to orange wheat blossom midge, but it is very susceptible to eyespot.

Revelation uks distilling: good

Quality: Recommended for the UK as a soft-milling feed wheat. It is classified as a **uks** wheat for export and rated as 'good' for distilling.

Agronomy: Revelation is a late-maturing variety with relatively stiff straw. It has a good overall disease package, with high resistance to yellow rust, brown rust and eyespot (*Pch1*). Revelation has slow primordial development and a range of other characteristics that could make it a useful candidate for very early drilling. Revelation is no longer under test in RL trials.

RGT Saki NEW

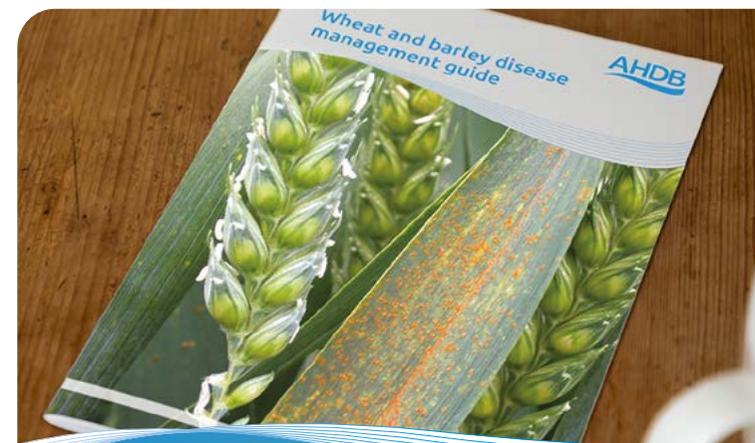
Quality: This new addition is a soft-milling, very high-yielding feed variety recommended for the UK. It has a low specific weight and is rated as 'poor' for distilling, due to low alcohol levels.

Agronomy: RGT Saki has produced very high treated yields in the East and West regions and has performed well across a range of rotational positions and soil types. It is a late-maturing variety, with relatively stiff straw. It has given high untreated yields in UK trials and has high resistance to yellow rust, brown rust and septoria tritici, as well as resistance to orange wheat blossom midge.

Viscount uks distilling: good

Quality: A soft-milling feed wheat recommended for the North region. It has a low specific weight. It is classified as a **uks** wheat for export and rated as 'good' for distilling.

Agronomy: This short and relatively stiff-strawed variety has high resistance to brown rust, as well as resistance to orange wheat blossom midge. Viscount is no longer under test in RL trials.



Disease management solutions for cereals

Options for integrated pest management (IPM)

Targets include:

- Barley yellow dwarf virus (BYDV)
- Brown rust
- Bunt
- Cereal mosaic viruses
- Ergot
- Eyespot
- Fusarium and microdochium
- Loose smut
- Septoria tritici
- Take-all
- Tan spot
- Yellow rust
- Net blotch
- Powdery mildew
- Ramularia
- Rhynchosporium

ahdb.org.uk/cereal-dmg

Winter wheat 2020/21

Variety comments

Hard Group 4 varieties

Costello

Quality: A hard-milling feed variety for the UK. It has high Hagbergs and a high specific weight.

Agronomy: This short and relatively stiff-strawed variety has high resistance to mildew and yellow rust. It is a relatively late-maturing variety.

Dunston

Quality: A hard-milling feed variety for the UK.

Agronomy: A medium-tall and relatively stiff-strawed variety. It has high resistance to yellow rust and septoria tritici. It also carries the *Pch1* gene for eyespot resistance. Dunston is no longer under test in RL trials.

Gleam

Quality: A high-yielding, hard-milling feed variety for the UK.

Agronomy: This high-yielding variety has performed well throughout the UK, across a range of years, rotational positions and soil types. Gleam has good overall resistance to the main foliar diseases, as well as resistance to orange wheat blossom midge.

Graham

Quality: A high-yielding, hard-milling feed variety for the UK with high Hagbergs.

Agronomy: This relatively stiff-strawed variety has given very high treated yields in the West region. Graham has performed particularly well in trials on heavier soils and in a first-cereal situation. It has given high untreated yields in UK trials and has high resistance to septoria tritici, mildew and yellow rust.

KWS Crispin

Quality: A hard-milling feed variety for the UK with high Hagbergs.

Agronomy: KWS Crispin performs best in a first-cereal situation and is suited to later drilling. It has high resistance to yellow rust and resistance to orange wheat blossom midge. KWS Crispin is no longer under test in RL trials.

KWS Kerrin

Quality: A high-yielding, hard-milling feed variety recommended for the East and West regions.

Agronomy: This high-yielding variety performs well across a range of soil types, rotational positions and is very high yielding in a late-drilling situation. It has high resistance to mildew, yellow rust and brown rust, as well as resistance to orange wheat blossom midge.

KWS Kinetic NEW

Quality: This new addition is a hard-milling, very high-yielding feed variety recommended for the UK. It has a high specific weight.

Agronomy: This very high-yielding variety has performed well throughout the UK, as well as across a range of rotational positions and soil types. This short and relatively stiff-strawed variety has resistance to orange wheat blossom midge.

RGT Gravity

Quality: A high-yielding, hard-milling feed variety for the UK.

Agronomy: This variety has given high treated yields throughout the UK, as well as across a range of soil types and rotational positions. RGT Gravity has high resistance to yellow rust and resistance to orange wheat blossom midge. It is susceptible to mildew.

Shabras

Quality: A high-yielding, hard-milling feed variety for the UK. It tends to give a low specific weight.

Agronomy: This high-yielding variety performs well throughout the UK and across a range of soil types and rotational positions. It has high resistance to yellow rust.

SY Insitor NEW

Quality: This new addition is a hard-milling, very high-yielding feed variety recommended for the UK. It has a high specific weight.

Agronomy: SY Insitor has given very high treated yields throughout the UK, as well as across a range of soil types and rotational positions. This medium-tall variety has moderate resistance to lodging but responds well to plant growth regulators. It has high resistance to yellow rust and septoria tritici and has resistance to orange wheat blossom midge. It is susceptible to brown rust.

Theodore NEW

Quality: This new addition is a hard-milling feed variety recommended for the West region. It has high Hagbergs but has a low specific weight.

Agronomy: Theodore has given high treated yields in the West region. It is a short and relatively stiff-strawed variety. It has given high untreated yields in UK trials and has high resistance to mildew, yellow rust and brown rust and the highest rating for resistance to septoria tritici on the 2020/21 Recommended List.

Spring wheat (for spring sowing) 2020



	Mulika	KWS Cochise	KWS Giraffe	KWS Chilham	KWS Talisker	Hexham	KWS Alderon	KWS Kilburn	Average LSD (5%)	Not added to Recommended List		
End-use group	nabim Group 1				nabim Group 2				Hard Group 4			
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK		Not added to RL		
	C	C	NEW				C					
UK yield as % control (spring sowing)												
Fungicide-treated (7.2 t/ha)	94	105	103	99	104	103	101	101	3.0	101		
Untreated (% treated control) (7.2 t/ha)	[79]	[82]	-	[85]	[89]	[93]	[83]	[80]	8.1	-		
UK yield as % control (autumn sowing)												
Fungicide-treated (9.2 t/ha)	96	103	[104]	101	102	106	101	[103]	5.5	[99]		
Grain quality (spring sowing)												
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard		Hard		
Protein content (%)	13.2	12.9	13.3	12.7	12.2	12.4	12.8	13.0	0.3	13.0		
Hagberg Falling Number	307	226	271	314	271	271	315	264	25	289		
Specific weight (kg/hl)	77.1	79.1	79.8	78.2	79.0	77.7	77.3	76.2	0.8	75.8		
Agronomic features (spring sowing)												
Resistance to lodging with PGR ∞	-	-	-	-	-	-	-	-	-	-		
Straw height without PGR (cm)	82	84	80	78	84	83	78	85	2.1	77		
Ripening (+/- Mulika, -ve = earlier)	0	+1	0	0	+1	+2	+2	+3	1.5	+1		
Resistance to sprouting ∞	-	-	-	-	-	-	-	-	-	-		
Disease resistance												
Mildew (1-9)	6	8	8	7	8	7	7	7	1.9	8		
Yellow rust (1-9)	7	5	6	7	9	9	6	5	1.1	8		
Brown rust (1-9)	5	7	5	4	3	5	7	[8]	2.0	8		
Septoria tritici (1-9)	6	6	6	7	6	7	6	6	0.9	6		
Orange wheat blossom midge	R	R	-	R	-	-	-	-	-	-		
Annual treated yield (% control, spring sowing)												
2015 (8.2 t/ha)	[95]	[102]	-	[98]	-	-	[103]	[99]	6.5	-		
2016 (8.5 t/ha)	[93]	[102]	-	[99]	[104]	[107]	[106]	[103]	8.1	-		
2017 (7.3 t/ha)	93	107	[103]	102	[105]	[103]	100	102	4.1	[104]		
2018 (5.5 t/ha)	[95]	[107]	[107]	[99]	[105]	[100]	[98]	[100]	5.4	[101]		
2019 (6.9 t/ha)	94	107	102	98	105	105	99	100	3.9	99		
Breeder/UK contact												
Breeder	BA	KWS	KWS	KWS	KWS	Sen	KWS	KWS		KWS		
UK contact	Sen	KWS	KWS	KWS	KWS	Sen	KWS	KWS		Sen		
Status in RL system												
Year first listed	11	17	20	17	19	19	12	14				
RL status	-	-	P1	-	P2	P2	-	-				

Varieties no longer listed: KWS Willow. On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

UK = Recommended for the UK
 C = Yield control (for current table)
 [] = Limited data
 PGR = Plant Growth Regulator

∞ = No data available
 R = Believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in Recommended List tests

P1 = First year of recommendation
 P2 = Second year of recommendation
 BA = Blackman Agriculture
 KWS = KWS UK (kws-uk.com)

Sen = Senova (senova.uk.com)
 LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Spring wheat (for spring sowing) trials harvest 2020

Candidate varieties



Previous/proposed name
 Variety ID
 Yield (spring sown) treated (T)
 Height (cm)
 Mildew (1–9)
 Yellow rust (1–9)
 Brown rust (1–9)
 Septoria tritici (1–9)
 OWBM resistance
 Endosperm texture
 Protein content %
 Hagberg Falling Number
 Specific weight (kg/ha)
 UK contact

Control varieties															
KWS Cochise	KWSW270	2476	107	76	8	5	7	6	R	Hard	13.1	218	78.2	KWS UK	
KWS Alderon	KWS-W185	2024	99	71	7	6	7	6	-	Hard	13.4	329	76.0	KWS UK	
Mulika	BA W4	1960	95	76	6	7	5	6	R	Hard	13.5	300	76.2	Senova	
Selected as potential bread-making varieties															
WPB Arcade	WPB13SD930-01	2876	[105]	77	9	4	9	-	-	Hard	[12.7]	299	[78.0]	LS Plant Breeding	
Selected as potential feed varieties															
WPB Escape	WPB13SD930-05	2877	[108]	72	8	8	6	-	-	Hard	[12.5]	254	[76.1]	LS Plant Breeding	
Mean of controls (t/ha)			6.3	-	-	-	-	-	-	-	-	-	-	-	
Overall mean			-	74.8	-	-	-	-	-	-	13.0	282	77.1		
LSD 5%			4.0	3.6	-	-	-	-	-	-	0.4	28.6	1.0		
Number of trials (for candidate varieties)			9	6	-	-	-	-	-	-	9	9	9		

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). The 1–9 ratings are not comparable to those used on the Recommended List table.

See the AHDB Recommended List for full data on control varieties.

Candidate varieties will be considered for the 2021 AHDB Recommended List.

These summaries are derived from National List and BSPB trials. Acknowledgement is made to APHA and BSPB for the use of the data.

T = Data from trials treated with fungicide and Plant Growth Regulator (PGR)
 [] = Limited data

R = Believed to be resistant to orange wheat blossom midge (OWBM)

LSD = Least significant difference
 LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Spring wheat 2020

Variety comments

nabim Group 1 varieties



Mulika

Quality: A **nabim** Group 1 variety for spring sowing. Mulika gives good Hagbergs and grain proteins. It remains a popular choice with growers.

Agronomy: This variety has given similar treated yields in both spring and late-autumn sowings. It has high resistance to yellow rust and is resistant to orange wheat blossom midge.

nabim comment: This variety has good rheological and baking qualities and is the spring variety of choice for most millers.

nabim Group 2 varieties



KWS Chilham

Quality: A **nabim** Group 2 variety for spring sowing. It gives good Hagbergs, grain proteins and specific weights.

Agronomy: This variety has given similar treated yields in both spring and late-autumn sowings. KWS Chilham has high resistance to yellow rust, mildew and septoria tritici and is resistant to orange wheat blossom midge. It is susceptible to brown rust.

nabim comment: This variety has shown lower protein levels than Mulika, but with a stronger gluten quality. The baking quality would not necessarily suit all end users.

KWS Cochise

Quality: A **nabim** Group 2 variety for spring sowing. It gives good grain proteins and specific weights.

Agronomy: This variety has a high treated yield potential in both spring and late-autumn sowings. KWS Cochise has a good overall disease package, with high resistance to mildew and brown rust, as well as resistance to orange wheat blossom midge.

nabim comment: This variety has shown good protein levels and specific weights, although there was a degree of variability in its baking performance.

KWS Giraffe NEW

Quality: This new addition is a **nabim** Group 2 variety for spring sowing. It gives good Hagbergs, grain proteins and specific weights.

Agronomy: KWS Giraffe has given high treated yields from spring sowing. Limited data suggests that it also has the potential to give high treated yields from late-autumn sowings. It has high resistance to mildew.

nabim comment: Over the three years of testing, this variety showed similar quality to Mulika. The gluten quality was good, although there was some variability in its baking performance.

Spring wheat trials are routinely treated with plant growth regulator and there has been little lodging in recent years. There is insufficient data to produce ratings or comments for newer varieties. Quality information is based on spring-sown wheats.

WeatherHub

The AHDB WeatherHub brings together sources of weather and related data. It includes information on air temperatures, rainfall, relative humidity, sunshine duration, wind speed, soil moisture, soil temperature and solar radiation. WeatherHub dashboards can be used to assist with pest, disease and soil management decisions.

ahdb.org.uk/weatherhub



Spring wheat 2020

Variety comments

Hard Group 4 varieties

Hexham

Quality: A hard feed variety for spring sowing.

Agronomy: Hexham has given high treated yields from both spring and late-autumn sowings. This is a later-maturing variety and has a good overall disease package, with very high resistance to yellow rust, as well as high resistance to mildew and septoria tritici.

KWS Alderon

Quality: A hard feed variety for spring sowing. It gives good grain proteins.

Agronomy: This short-strawed variety has given similar treated yields from spring and late-autumn sowings. It is a later-maturing variety and has a good overall disease package, with high resistance to mildew and brown rust.

KWS Kilburn

Quality: A hard feed variety for spring sowing. It gives good grain proteins.

Agronomy: Limited data suggests that it has the potential to give high treated yields from late-autumn sowings. This is a late-maturing variety, with high resistance to mildew. Limited data suggests it also has high resistance to brown rust.

KWS Talisker

Quality: A hard feed variety for spring sowing. It gives good specific weights.

Agronomy: KWS Talisker has given high treated yields from spring sowings. It has very high resistance to yellow rust and high resistance to mildew. It is very susceptible to brown rust.

The AHDB Nutrient Management Guide (RB209)

Download or order from ahdb.org.uk/rb209

Access RB209 on our app

Available on Google Play and App Store

GET IT ON Google Play

Download on the App Store

The Malting Barley Committee of the Maltsters' Association of Great Britain (MAGB) tests and approves barley varieties for brewing, malting and distilling. There is a considerable UK market for approved varieties, with approximately 1.8 million tonnes of UK malting barley purchased each year.

The local market varies considerably across the UK and should guide variety choice and management, particularly the management of nitrogen (Figure 2).

The testing of varieties for suitability in different malting markets takes several years and varieties are added to the RL while still undergoing testing. Farmers should speak to merchants before committing to varieties that are still under test to ensure an end market is available.

The MAGB website (ukmalt.com/home) offers further information on the market for malting barley. It also includes an up-to-date list of approved varieties and information on growing malting barley.

MBC Approved List – Winter barley	
Brewing use	Full approval: Craft, SY Venture Provisional approval: Electrum
Malt distilling use	None approved
Grain distilling use	None approved

MBC Approved List – Spring barley	
Brewing use	Full approval: Concerto, Laureate, RGT Planet, Propino Provisional approval: LG Diablo, RGT Asteroid, Cosmopolitan
Malt distilling use	Full approval: Concerto, Laureate, KWS Sassy, Sienna, LG Diablo Provisional approval: RGT Asteroid
Grain distilling use	Full approval: Fairing Provisional approval: RGT Asteroid

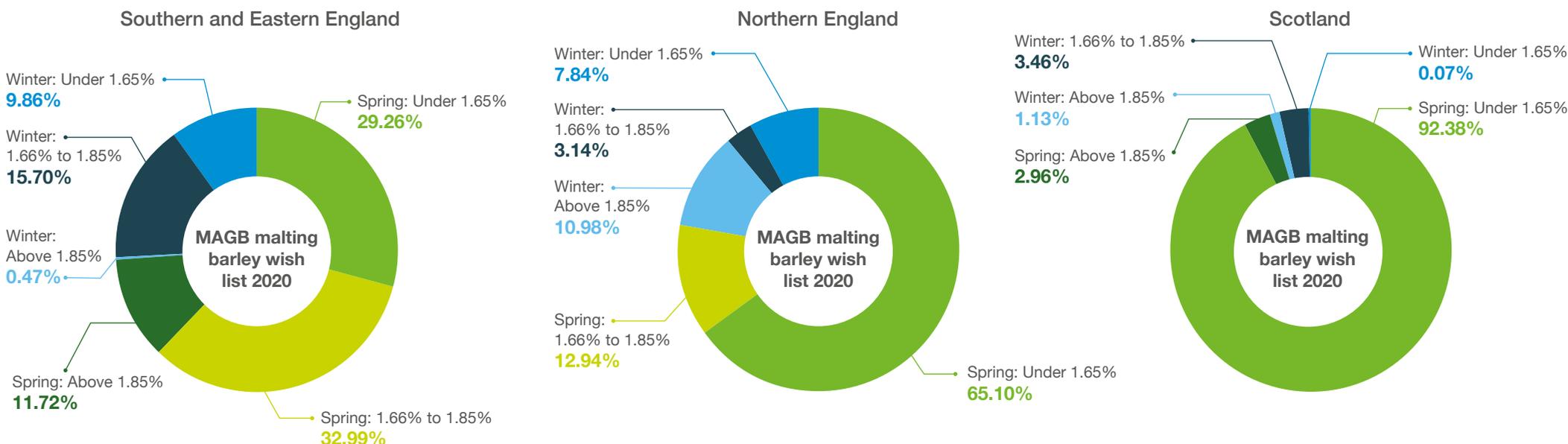


Figure 2. The chart above shows MAGB members' wish list for grain nitrogen levels in 2020 barley crop purchases from England and Scotland

Winter barley 2020/21

Market options, yield and grain quality



Electrum Craft SY Venture KWS Hawking LG Mountain KWS Gimlet Jordan LG Flynn KWS Orwell Valerie Surge KWS Creswell KWS Tower KWS Glacier California KWS Cassia Belmont \$ SY Kingsbarn \$ SY Baracooda \$ Bazooka \$ Belfry \$ KWS Astaire Funky Libra \$ Average LSD (5%)

End-use group	Two-row malting			Two-row feed													Six-row feed									
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	N	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK		
	C	*C		NEW					C						*				C		*	C				
Fungicide-treated grain yield (% treated control)																										
United Kingdom (10.0 t/ha)	97	96	92	104	104	103	103	102	102	101	101	100	99	99	99	99	97	108	108	108	106	106	105	104	103	2.3
East region (9.9 t/ha)	98	96	93	106	105	106	105	103	102	102	102	99	99	98	99	97	108	108	107	107	105	103	103	103	3.0	
West region (10.2 t/ha)	97	95	91	102	101	101	103	101	102	[100]	101	100	99	98	99	97	107	107	108	106	107	108	106	104	3.5	
North region (9.9 t/ha)	95	97	94	102	105	102	101	102	101	[101]	98	102	101	100	[97]	98	107	107	107	105	105	103	104	103	3.6	
Untreated grain yield (% treated control)																										
United Kingdom (10.0 t/ha)	79	77	67	83	83	83	89	82	80	86	87	72	73	78	79	81	77	88	88	87	91	89	89	83	4.1	
Main market options																										
MBC malting approval for brewing use	P	F	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grain quality																										
Specific weight (kg/hl)	69.3	69.4	70.0	68.5	69.1	68.3	68.9	70.2	67.9	70.2	69.3	68.0	67.4	69.1	68.1	71.2	68.5	69.8	68.8	68.9	68.2	65.7	68.9	70.8	0.9	
Screenings (% through 2.25 mm)	2.2	1.9	3.5	2.7	2.4	2.5	1.9	1.7	2.0	0.8	1.9	2.1	2.2	2.7	1.9	1.6	2.5	1.8	2.0	2.4	2.6	2.4	4.2	2.1	0.7	
Screenings (% through 2.5 mm)	6.7	6.4	11.7	8.3	8.0	7.9	5.8	5.2	6.3	2.0	6.0	7.7	7.4	9.4	6.6	5.3	9.5	7.0	7.3	8.8	9.9	8.3	16.4	8.1	2.1	
Nitrogen content (%)	1.68	1.66	1.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	[1.57]	-	0.1	
Status in RL system																										
Year first listed	18	16	12	20	19	19	20	19	16	19	16	17	14	13	13	10	18	19	19	16	16	18	17	18		

Varieties no longer listed: KWS Infinity and Sunningdale.

Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

UK = Recommended for the UK
W = Recommended for the West region
N = Recommended for the North region
* = Variety no longer under test in RL trials

C = Yield control (for current table)
\$ = Hybrid variety
[] = Limited data
F = Full MBC approval

P = Provisional MBC approval
LSD = Least significant difference
Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter barley 2020/21

Yield, agronomy and disease resistance



Electrum Craft SY Venture KWS Hawking LG Mountain KWS Gimlet Jordan LG Flynn KWS Orwell Valerie Surge KWS Creswell KWS Tower KWS Glacier California KWS Cassia Belmont \$ SY Kingsbarn \$ SY Baracooda \$ Bazoooka \$ Belfry \$ KWS Astaire Funky Libra \$ Average LSD (5%)

End-use group	Two-row malting			Two-row feed													Six-row feed										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	N	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK	UK		
	C	*C		NEW					C						*				C		*	C					
Fungicide-treated grain yield (% treated control)																											
United Kingdom (10.0 t/ha)	97	96	92	104	104	103	103	102	102	101	101	100	99	99	99	97	108	108	108	106	106	105	104	103		2.3	
East region (9.9 t/ha)	98	96	93	106	105	106	105	103	102	102	102	99	99	98	99	97	108	108	107	107	105	103	103	103		3.0	
West region (10.2 t/ha)	97	95	91	102	101	101	103	101	102	[100]	101	100	99	98	99	97	107	107	108	106	107	108	106	104		3.5	
North region (9.9 t/ha)	95	97	94	102	105	102	101	102	101	[101]	98	102	101	100	[97]	98	107	107	107	105	105	103	104	103		3.6	
Untreated grain yield (% treated control)																											
United Kingdom (10.0 t/ha)	79	77	67	83	83	83	89	82	80	86	87	72	73	78	79	81	77	88	88	87	91	89	89	83		4.1	
Agronomic features																											
Resistance to lodging (1-9)	7	8	7	7	7	7	7	7	8	8	7	7	8	7	8	7	7	7	7	8	8	8	8	7		-	
Straw height without PGR (cm)	92	89	86	[90]	85	98	[85]	94	86	89	86	87	90	84	92	91	109	111	118	114	108	105	93	108		4.6	
Straw height with PGR (cm)	88	87	82	84	84	92	82	90	84	85	84	85	85	80	88	88	104	101	108	107	100	98	90	102		2.5	
Ripening (+/-KWS Orwell, -ve = earlier)	-2	0	0	0	-1	0	0	0	0	-1	-1	-1	0	-1	-1	0	-1	-1	-1	-1	-1	0	-2	-1		1.0	
Winter hardiness #	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	
Disease resistance																											
Mildew (1-9)	6	6	6	5	5	6	5	4	3	6	6	5	5	4	6	4	5	6	7	5	5	6	5	5		0.8	
Yellow rust (1-9)	-	[8]	[8]	-	-	-	-	-	[7]	-	[8]	[8]	[8]	[8]	[7]	[5]	-	-	-	[9]	[8]	-	[9]	-		2.9	
Brown rust (1-9)	6	6	6	6	7	6	8	7	7	9	8	6	6	7	5	7	4	5	5	5	7	6	8	6		0.9	
Rhynchosporium (1-9)	7	6	5	6	5	6	7	6	6	6	7	6	6	4	6	5	6	6	7	6	6	7	7	7		1.4	
Net blotch (1-9)	6	6	4	6	6	6	5	6	5	6	6	4	4	6	6	6	6	5	5	6	5	6	5	6		1.2	
BaYMV	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		-

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). Comparisons of variety performance across regions are not valid. See page 3 for information on regional yields.

UK = Recommended for the UK
W = Recommended for the West region
N = Recommended for the North region
C = Yield control (for current table)
* = Variety no longer under test in RL trials

\$ = Hybrid variety
[] = Limited data
PGR = Plant Growth Regulator

= The winter hardiness scores are taken from extreme tests in the Jura mountains of France but currently insufficient data for 1-9 ratings
R = Resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1

LSD = Least significant difference
Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter barley 2020/21

Supplementary data



	Electrum	Craft	SY Venture	KWS Hawking	LG Mountain	KWS Gimlet	Jordan	LG Flynn	KWS Orwell	Valerie	Surge	KWS Creswell	KWS Tower	KWS Glacier	California	KWS Cassia	Belmont \$	SY Kingsbarn \$	SY Baracooda \$	Bazooka \$	Belfry \$	KWS Astaire	Funky	Libra \$	Average LSD (5%)	
End-use group	Two-row malting			Two-row feed													Six-row feed									
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	N	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK	UK		
	C	*C		NEW			NEW		C					*					C		*		C			
Breeder/UK contact																										
Breeder	SyP	SyP	SyP	KWS	LimEur	KWS	Ack	LimEur	KWS	Bre	SyP	KWS	KWS	KWS	Lim	KWS	SyP	SyP	SyP	SyP	SyP	KWS	KWSMR	SyP		
UK contact	Syn	Syn	Syn	KWS	Lim	KWS	ElsAck	Lim	KWS	Sen	Syn	KWS	KWS	KWS	Lim	KWS	Syn	Syn	Syn	Syn	Syn	KWS	KWS	Syn		
Annual treated yield (% control)																										
2015 (10.5 t/ha)	96	95	93	-	-	-	-	-	101	-	99	100	100	100	96	96	107	-	-	107	105	104	105	103	-	
2016 (9.5 t/ha)	97	95	92	-	104	102	-	102	102	101	101	100	100	99	99	98	109	107	108	107	106	106	104	103	-	
2017 (9.9 t/ha)	95	95	91	103	103	104	103	101	101	101	100	99	98	97	100	97	107	107	107	106	106	105	105	104	-	
2018 (10.2 t/ha)	97	97	95	104	104	102	102	103	101	102	100	101	102	100	98	98	108	107	108	104	105	104	103	103	-	
2019 (9.9 t/ha)	98	96	92	103	104	104	103	102	101	-	102	100	99	100	98	98	107	108	108	106	106	105	105	104	-	
Soil type (about 50% of trials are medium soils)																										
Light soils (9.9 t/ha)	96	96	94	102	104	102	102	102	100	101	100	101	100	100	97	97	106	106	105	105	104	103	104	102	3.2	
Heavy soils (9.8 t/ha)	97	94	93	106	107	104	103	104	102	[101]	102	99	99	99	100	97	107	108	106	107	109	106	104	105	4.3	
Agronomic characteristics																										
Lodging without PGR (%)	7	3	4	8	13	16	12	7	2	4	4	7	3	8	3	4	9	7	6	5	4	2	1	7	-	
Lodging with PGR (%)	4	2	3	2	6	6	6	4	2	1	3	4	3	8	2	3	9	2	5	4	2	3	2	4	-	
Malting quality																										
Hot water extract (l deg/kg)	305.9	307.8	305.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	[294.9]	-	3.7	
Status in RL system																										
Year first listed	18	16	12	20	19	19	20	19	16	19	16	17	14	13	13	10	18	19	19	16	16	18	17	18		
RL status	-	-	*	P1	P2	P2	P1	P2	-	P2	-	-	-	*	-	-	-	P2	P2	-	-	*	-	-		

All yields on this table are taken from treated trials receiving a full fungicide and PGR programme.

UK = Recommended for the UK	\$ = Hybrid variety	KWS = KWS UK (kws-uk.com)	Syn = Syngenta UK Ltd (syngenta.co.uk)	LSD = Least significant difference
W = Recommended for the West region	[] = Limited data	KWSMR = KWS Momont Recherche (kws-uk.com)	SyP = Syngenta Participations AG (syngenta.co.uk)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
N = Recommended for the North region	P1 = First year of recommendation	Lim = Limagrain UK (lgseeds.co.uk)		
C = Yield control (for current table)	P2 = Second year of recommendation	LimEur = Limagrain Europe SA (lgseeds.co.uk)		
* = Variety no longer under test in RL trials	Ack = Ackermann Saatzeit GmbH	Sen = Senova (senova.uk.com)		
PGR = Plant Growth Regulator	Bre = Saatzeit Josef Breun, Germany			
	ElsAck = Elsoms Ackermann Barley			

Winter barley varieties grown in RL trials in 2019 but not added to the AHDB Recommended List



	Control varieties					Other varieties				Average LSD (5%)	
	Craft	SY Venture	KWS Orwell	Bazooka \$	Funky	Zophia	Fay	KWS Patriot	SY Kingston \$		
Fungicide-treated grain yield (% treated control)						Two-row malting		Two-row feed		Six-row feed	
United Kingdom (10.0 t/ha)	96	92	102	106	104	96	96	103	107	2.3	
East region (9.9 t/ha)	96	93	102	107	103	97	96	103	106	3.0	
West region (10.2 t/ha)	95	91	102	106	106	96	97	103	108	3.5	
North region (9.9 t/ha)	97	94	101	105	104	94	95	104	107	3.6	
Untreated grain yield (% treated control)											
United Kingdom (10.0 t/ha)	77	67	80	87	89	83	80	84	91	4.1	
Main market options											
MBC malting approval for brewing use	F	F	-	-	-	T	T	-	-		
Grain quality											
Specific weight (kg/hl)	69.4	70.0	67.9	68.9	68.9	69.5	68.2	68.6	69.6	0.9	
Screenings (% through 2.25 mm)	1.9	3.5	2.0	2.4	4.2	2.1	2.0	2.0	2.4	0.7	
Screenings (% through 2.5 mm)	6.4	11.7	6.3	8.8	16.4	6.5	6.2	6.4	9.3	2.1	
Nitrogen content (%)	1.66	1.64	-	-	[1.57]	1.74	1.77	-	-	0.1	
Agronomic features											
Resistance to lodging (1–9)	8	7	8	7	8	7	7	7	7	-	
Straw height without PGR (cm)	89	86	86	114	93	[90]	[84]	[92]	[118]	4.6	
Straw height with PGR (cm)	87	82	84	107	90	87	81	89	105	2.5	
Ripening (+/- KWS Orwell, -ve = earlier)	0	0	0	-1	-2	-1	-2	-1	-2	1.0	
Disease resistance											
Mildew (1–9)	6	6	3	5	5	6	6	4	7	0.8	
Yellow rust (1–9)	[8]	[8]	[7]	[9]	[9]	-	-	-	-	2.9	
Brown rust (1–9)	6	6	7	5	8	7	7	6	6	0.9	
Rhynchosporium (1–9)	6	5	6	6	7	6	5	6	5	1.4	
Net blotch (1–9)	6	4	5	6	5	6	5	5	5	1.2	
BaYMV	R	R	R	R	R	R	R	R	R	-	

This table should be read in conjunction with the AHDB Recommended List of winter barley varieties for 2020/21. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

\$ = Hybrid variety
 [] = Limited data
 F = Full MBC approval

T = Under test for MBC approval
 PGR = Plant Growth Regulator
 R = Resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1

LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter barley trials harvest 2020

Candidate varieties



Previous/proposed name	Variety ID	Yield treated (T)	Yield untreated (UT) (% treated controls)	Lodging % (UT)	Lodging % (T)	Height (cm)	Maturity (days +/- KWS Orwell)	Mildew (1-9)	Yellow rust (1-9)	Brown rust (1-9)	Rhynchosporium (1-9)	Net blotch (1-9)	BaYMV	Variety type	Specific weight (kg/hl)	UK contact	
Control varieties																	
Funky	MH08KU37	2807	104	88	1	2	95	-2	5	[9]	8	7	5	R	6-row	69.8	KWS UK
Craft	SY212-128	2743	97	77	1	2	91	0	6	[8]	6	6	6	R	2-row	70.5	Syngenta UK Ltd
Bazooka	SY212-118	2737	105	84	6	5	112	0	5	[9]	5	6	6	R	6-row hybrid	70.4	Syngenta UK Ltd
KWS Orwell	KWSB111	2728	102	79	1	1	89	0	3	[7]	7	6	5	R	2-row	68.5	KWS UK
SY Venture	SYN 208-57	2443	93	64	2	2	87	0	6	[8]	6	5	4	R	2-row	71.0	Syngenta UK Ltd
Selected as potential malting varieties																	
Chester	AC12/245/1	3146	Data cannot be published as variety has not completed National List testing												Elsoms Ackermann Barley		
Selected as potential feed varieties																	
Bordeaux	NOS911.016-53	3132	108	[80]	23	1	[87]	0	6	-	4	4	6	R	2-row	70.8	Senova
KWS Tardis	KWSB134	3120	Data cannot be published as variety has not completed National List testing												KWS UK		
Bolton	AC13/084/42	3147	106	[81]	2	0	[87]	0	5	-	5	5	8	R	2-row	69.3	Elsoms Ackermann Barley
Pixie	BR12083P2	3131	106	[79]	2	2	[84]	0	6	-	5	5	7	R	2-row	70.3	Senova
SU Laubella	NORD13115/19	3144	Data cannot be published as variety has not completed National List testing												Saaten Union UK		
KWS Oasis	KWSB133	3119	105	[82]	4	2	[90]	0	5	-	6	6	8	R	2-row	69.6	KWS UK
Paloma	SEBC10	3127	Data cannot be published as variety has not completed National List testing												Senova		
SY Thunderbolt	SY217542	3116	109	[91]	21	8	[111]	-1	8	-	6	6	6	R	6-row hybrid	70.8	Syngenta UK Ltd
SY Armadillo	SY217581	3115	107	[85]	2	4	[112]	0	5	-	5	7	8	R	6-row hybrid	69.5	Syngenta UK Ltd
Mean of controls (t/ha)			10.2	10.2	-	-	-	285	-	-	-	-	-	-	-	-	-
Overall mean			-	-	4.9	2.6	96	-	-	-	-	-	-	-	-	69.7	-
LSD 5%			3.9	6.8	5.8	2.9	6.0	1.9	-	-	-	-	-	-	-	0.8	-
Number of trials (for candidate varieties)			19	8	2	5	4	9	-	-	-	-	-	-	-	10	-

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). The 1-9 ratings are not comparable with those used on the Recommended List table. See the AHDB Recommended List for full data on control varieties. Candidate varieties will be considered for the 2021/22 AHDB Recommended List. Yellow rust (1-9) ratings are not presented as there were no ratings for the candidate varieties. For latest information, visit ahdb.org.uk/rl. These summaries are derived from National List and BSPB trials. Acknowledgement is made to APHA and BSPB for the use of the data.

T = Data from trials treated with fungicide and PGR [] = Limited data R = Resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1 LSD = Least significant difference
 UT = Data from trials without fungicide or PGR LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter barley 2020/21

Variety comments

Winter barley two-row malting

Craft

Quality: Fully approved by Malting Barley Committee (MBC) for the production of malt for brewing, with a high specific weight.

Agronomy: Craft is a stiff-strawed variety with good overall disease resistance. It is also resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: Fully approved by MBC for brewing in 2018, Craft secured over 40% of the total winter malting barley purchased in 2019.

UK winter malting barley market share is given as % of MAGB member purchases (see page 25).

Electrum

Quality: A potential malting variety with a high specific weight, provisionally approved by MBC for brewing use.

Agronomy: This two-row variety has given its best relative performance in the East and West regions and on heavier soils. It is an early-maturing variety. Electrum has good overall disease resistance, including high resistance to rhynchosporium. It is also resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: Currently under test by MBC for brewing. Growers are advised to speak to merchants before committing to this or other varieties in this position.

SY Venture

Quality: Fully approved by MBC for the production of malt for brewing, with a high specific weight.

Agronomy: SY Venture has relatively short straw for a malting variety and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is susceptible to net blotch. SY Venture is no longer under test in RL trials.

MAGB comment: SY Venture has shown a reduction in market share due to the rise of Craft.



Ramularia identification

Ramularia leaf spot can easily be mistaken for other diseases. Mature ramularia lesions can be distinguished from other foliar symptoms by applying the '5Rs': (1) Ringed with yellow margin of chlorosis, (2) Rectangular shape, (3) Restricted by the leaf veins, (4) Reddish-brown colouration, (5) Right through the leaf

ahdb.org.uk/ramularia

Image credit: SRUC

Winter barley 2020/21

Variety comments

Winter barley two-row feed

California

A two-row feed variety recommended for the West region. It has high resistance to lodging and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Jordan **NEW**

This new addition is a high-yielding two-row feed variety for the UK. It has performed particularly well in the East and West regions, as well as on heavier soils. Jordan has given the highest yields in untreated UK trials for a two-row feed variety on the 2020/21 Recommended List. It has high resistance to brown rust and rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Cassia

A two-row feed variety with a very high specific weight, recommended since 2010. Despite now yielding 7% lower than the top-yielding two-row feed varieties on the 2020/21 Recommended List, this variety is still valued for producing consistently good grain quality. KWS Cassia has high resistance to brown rust, but it is susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Creswell

A two-row feed variety recommended for the North region. This relatively short-strawed variety is susceptible to net blotch. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Gimlet

A high-yielding two-row feed variety. This relatively tall variety has performed particularly well in the East region and on heavier soils. KWS Gimlet has shown no major weaknesses in disease resistance. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Glacier

A two-row feed variety with a high specific weight. It has very short straw. KWS Glacier has high resistance to brown rust, but it is susceptible to rhynchosporium and mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). KWS Glacier is no longer under test in RL trials.

KWS Hawking **NEW**

This new addition is a high-yielding two-row feed variety for the UK. It has performed particularly well in the East region and on heavier soils. Over three years of testing, KWS Hawking has shown no major weaknesses in disease resistance. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Orwell

A two-row feed variety, combining short straw with high resistance to lodging. KWS Orwell has high resistance to brown rust, but it is very susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Tower

A two-row feed variety with good lodging resistance. It is susceptible to net blotch, but it is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

LG Flynn

A two-row feed variety with a high specific weight. LG Flynn has given its best relative performance in the East region and on heavier soils, where it is high yielding. It has high resistance to brown rust, but it is susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

LG Mountain

A high-yielding two-row feed variety. This short-strawed variety has performed particularly well in the East and North regions. It has given the highest yields of all two-row feed varieties on both light and heavy soils. LG Mountain has high resistance to brown rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Surge

A two-row feed variety with short straw and a high specific weight. This variety has given its best relative performance in the East and West regions. Surge has given good yields in untreated UK trials. It has good overall disease resistance, including high resistance to brown rust and rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Valerie

A two-row feed variety with a high specific weight. This variety has given its best relative performance in the East region. Valerie combines good grain quality characteristics with high resistance to lodging. It has given good yields in untreated UK trials and has good overall disease resistance, including the highest rating for resistance to brown rust on the 2020/21 Recommended List. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Winter barley 2020/21

Variety comments

Winter barley six-row feed

Bazooka

A high-yielding six-row hybrid feed variety. This variety has given high yields in the East and West regions and has performed particularly well on heavier soils. Bazooka has also given good yields in untreated UK trials. It has resistance to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Belfry

A high-yielding six-row hybrid feed variety. This variety has performed particularly well in the West region. It has good resistance to lodging and is very high yielding on heavier soils. Belfry has given good yields in untreated UK trials and has high resistance to brown rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Belmont

A very high-yielding six-row hybrid feed variety. Belmont has given high yields across a range of soil types and across all regions, with a very high yield potential in the East region. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Belmont is susceptible to brown rust.

Funky

A six-row (non-hybrid) feed variety with relatively short, stiff straw. This variety tends to give a good specific weight but gives higher screening levels. It has given high yields in the West region. Funky has given good yields in untreated UK trials. It has high resistance to rhynchosporium and the highest rating for resistance to brown rust of all six-row varieties. It is an early-maturing variety, resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Astaire

A six-row (non-hybrid) feed variety with a low specific weight. This stiff-strawed variety has performed particularly well in the West region, where it has given very high yields, and performs well on heavier soils. KWS Astaire has good overall disease resistance, including high resistance to rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). KWS Astaire is no longer under test in RL trials.

Libra

A six-row hybrid feed variety with a very high specific weight. Libra has given specific weights that are comparable to KWS Cassia. This variety has high resistance to rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

SY Baracooda

A very high-yielding six-row hybrid feed variety. This variety has performed well across all regions, particularly in the West region, where it has given very high yields. It is a relatively tall variety but responds well to plant growth regulators. SY Baracooda has given good yields in untreated UK trials. It has high resistance to rhynchosporium and the highest rating for resistance to mildew on the 2020/21 Recommended List. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

SY Kingsbarn

A very high-yielding six-row hybrid feed variety with a high specific weight. This variety has performed well across all regions, as well as across a range of soil types. SY Kingsbarn responds well to plant growth regulators. It has given good yields in untreated UK trials and has no major weaknesses in disease resistance. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Spring barley 2020

Market options, yield and grain quality



Not added to Recommended List

SY Splendor Firefoxx Cosmopolitan SY Tungsten LG Diablo Laureate RGT Planet RGT Asteroid Iconic KWS Sassy Sienna Propino Fairing Concerto Fairway Prospect Average LSD (5%) RGT Slipstream Barbarella Jaspa

End-use group	Malting varieties														Feed varieties		Average LSD (5%)	Malting varieties		Feed varieties	
	UK	UK	UK	UK	UK	UK	UK	UK	W	UK	UK	UK	Sp	UK	UK	UK		UK	Not added to RL	Not added to RL	
Scope of recommendation	NEW	NEW		NEW		C	C		NEW				C	C	NEW	NEW	-	-	-		
Fungicide-treated grain yield (% treated control)																					
United Kingdom (7.5 t/ha)	107	106	105	105	105	104	103	103	102	101	101	98	96	95	106	105	2.3	104	103	103	
East region (7.7 t/ha)	105	105	105	103	106	105	103	104	101	99	98	96	96	95	106	108	3.5	104	103	102	
West region (7.4 t/ha)	[106]	[106]	105	[105]	102	104	104	102	[103]	100	100	98	97	96	[105]	[104]	3.8	[105]	[101]	[103]	
North region (7.5 t/ha)	107	107	106	107	107	104	103	102	103	103	102	98	95	93	106	105	3.1	104	105	104	
Main market options																					
MBC malting approval for brewing use	T	-	P	T	P	F	F	P	T	N	-	F	-	F	-	-		T	T	-	
MBC malting approval for malt distilling use	-	T	-	T	F	F	N	P	-	F	F	N	-	F	-	-		-	-	-	
MBC malting approval for grain distilling use	-	-	-	-	-	-	N	P	-	-	N	N	F	N	-	-		-	-	-	
Grain quality																					
Specific weight (kg/hl)	68.1	66.4	66.2	67.7	67.1	66.5	67.8	68.3	67.2	68.4	70.4	68.2	68.3	68.8	65.9	67.6	0.7	65.3	65.4	68.2	
Screenings (% through 2.25 mm)	[1.5]	[1.6]	1.6	[1.8]	1.4	1.5	1.4	1.2	[1.7]	1.1	1.6	0.9	1.1	1.2	[1.0]	[1.9]	0.5	[1.8]	[2.0]	[1.7]	
Screenings (% through 2.5 mm)	[3.9]	[3.7]	3.6	[4.7]	3.4	3.6	3.6	3.1	[4.1]	2.6	3.8	2.1	2.6	2.9	[2.4]	[4.5]	1.1	[4.4]	[4.3]	[4.0]	
Nitrogen content (%)	1.47	1.46	1.44	1.43	1.44	1.48	1.50	1.48	1.45	1.50	[1.51]	1.56	1.59	1.52	-	1.51	0.05	1.40	1.45	-	
Status in RL system																					
Year first listed	20	20	19	20	18	16	15	18	20	16	15	10	16	09	20	20					

Varieties no longer listed: Chanson, Hacker, KWS Irina, LG Tomahawk, Olympus, Ovation and Scholar.
 Growers are strongly advised to check with their buyer before committing to a malting variety without full MBC approval.
 Comparisons of variety performance across regions are not valid. See page 3 for information on regional yields.
 All yields on this table are taken from treated trials receiving a full fungicide programme.

UK = Recommended for the UK	C = Yield control (for current table). For this table KWS Irina was also a yield control but is no longer listed	N = Not approved by MBC for this segment	LSD = Least significant difference
W = Recommended for the West region	[] = Limited data	P = Provisional MBC approval	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
Sp = Fairing is suitable for the production of malt for grain distilling	F = Full MBC approval	T = Under test for MBC approval in this segment	

Spring barley 2020

Yield, agronomy and disease resistance

Not added to Recommended List



End-use group	Malting varieties														Feed varieties		Average LSD (5%)	Malting varieties		Feed varieties	
	UK	UK	UK	UK	UK	UK	UK	UK	W	UK	UK	UK	Sp	UK	UK	UK		Not added to RL	Not added to RL		
Scope of recommendation	NEW	NEW		NEW		C	C		NEW			C	C		NEW	NEW	-	-	-		
Fungicide-treated grain yield (% treated control)																					
United Kingdom (7.5 t/ha)	107	106	105	105	105	104	103	103	102	101	101	98	96	95	106	105	2.3	104	103	103	
East region (7.7 t/ha)	105	105	105	103	106	105	103	104	101	99	98	96	96	95	106	108	3.5	104	103	102	
West region (7.4 t/ha)	[106]	[106]	105	[105]	102	104	104	102	[103]	100	100	98	97	96	[105]	[104]	3.8	[105]	[101]	[103]	
North region (7.5 t/ha)	107	107	106	107	107	104	103	102	103	103	102	98	95	93	106	105	3.1	104	105	104	
Untreated grain yield (% treated control)																					
United Kingdom (7.5 t/ha)	95	95	97	95	97	97	95	97	96	94	93	86	87	87	95	97	3.4	91	94	93	
Agronomic features																					
Resistance to lodging (no PGR) (1-9)	[7]	[7]	7	[7]	7	7	7	7	[7]	6	7	7	7	7	[8]	[7]	0.5	[8]	[7]	[7]	
Straw height (cm)	73	71	70	72	73	71	73	73	76	78	77	75	72	77	71	71	1.5	68	75	70	
Ripening (+/- Concerto, -ve = earlier)	+1	0	0	+1	+1	+1	0	+1	0	0	+1	-1	-2	0	-1	0	0.8	-1	0	0	
Resistance to brackling (1-9)	9	8	7	8	8	8	8	8	8	6	7	8	8	8	9	9	0.8	9	8	9	
Disease resistance																					
Mildew (1-9)	9	9	9	9	9	9	9	9	9	9	9	6	9	9	9	9	0.7	9	9	9	
Yellow rust (1-9)	-	-	-	-	-	[5]	[4]	-	-	[6]	[6]	[4]	[9]	[8]	-	-	2.8	-	-	-	
Brown rust (1-9)	4	4	4	4	5	5	5	5	5	5	5	5	4	5	4	4	1.5	4	4	3	
Rhynchosporium (1-9)	[4]	[5]	6	[4]	5	6	5	4	[6]	6	5	5	6	4	[3]	[6]	2.3	[3]	[3]	[5]	

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). Comparisons of variety performance across regions are not valid. See page 3 for information on regional yields.

UK = Recommended for the UK
 W = Recommended for the West region
 PGR = Plant Growth Regulator

Sp = Fairing is suitable for the production of malt for grain distilling
 C = Yield control (for current table). For this table KWS Irina was also a yield control but is no longer listed

[] = Limited data
 LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Spring barley 2020

Supplementary data



Not added to Recommended List

SY Splendor
Firefoxx
Cosmopolitan
SY Tungsten
LG Diablo
Laureate
RGT Planet
RGT Asteroid
Iconic
KWS Sassy
Sienna
Propino
Fairing
Concerto
Fairway
Prospect
Average LSD (5%)
RGT Slipstream
Barbarella
Jaspa

End-use group	Malting varieties															Feed varieties		Malting varieties		Feed varieties	
	UK	UK	UK	UK	UK	UK	UK	UK	W	UK	UK	UK	Sp	UK	UK	UK	UK	Not added to RL	Not added to RL		
Scope of recommendation	NEW	NEW		NEW		C	C		NEW				C	C	NEW	NEW	-	-	-		
Breeder/UK contact																					
Breeder	-	Ack	Sej	-	LimEur	SyP	RAGT	R2n	Sec	KWS	LimEur	SyP	SyP	Lim	NS	Sej	RAGT	Ack	Nord		
UK contact	Syn	ElsAck	Sen	Syn	Lim	Syn	RAGT	RAGT	Agr	KWS	Lim	Syn	Syn	Lim	Sen	Sen	RAGT	ElsAck	SU		
Annual treated yield (% control)																					
2015 (8.6 t/ha)	-	-	-	-	105	104	103	101	-	101	99	97	95	94	-	-	-	-	-		
2016 (7.6 t/ha)	-	-	105	-	104	103	104	103	-	101	101	99	97	93	-	-	-	-	-		
2017 (7.3 t/ha)	107	106	106	105	106	103	103	103	104	101	101	98	95	96	106	106	-	105	103		
2018 (6.6 t/ha)	107	107	107	107	105	105	101	103	103	100	99	98	97	96	107	105	-	105	104		
2019 (7.6 t/ha)	107	106	105	104	105	105	104	103	100	101	101	96	96	96	107	106	-	104	103		
Malting quality																					
Hot water extract (l deg/kg)	315.7	315.4	314.4	316.8	315.5	315.4	315.2	315.0	316.7	315.7	315.7	312.7	310.9	315.9	[314.0]	314.3	1.8	315.7	315.3	[312.9]	
Status in RL system																					
Year first listed	20	20	19	20	18	16	15	18	20	16	15	10	16	09	20	20	-	-	-		
RL Status	P1	P1	P2	P1	-	-	-	-	P1	-	-	-	-	-	P1	P1	-	-	-		

All yields on this table are taken from treated trials receiving a full fungicide programme.

UK = Recommended for the UK	Ack = Ackermann Saatzeit GmbH (sz-ackermann.de)	R2n = RAGT, France (ragt.co.uk)	LSD = Least significant difference.
W = Recommended for the West region	Agri = Agrii (agrii.co.uk)	RAGT = RAGT Seeds (ragt.co.uk)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
Sp = Fairing is suitable for the production of malt for grain distilling	ElsAck = Elsoms Ackermann Barley	Sec = Secobra, France (secobra.com)	
C = Yield control (for current table). For this table KWS Irina was also a yield control but is no longer listed	KWS = KWS UK (kws-uk.com)	Sej = Sejet, Denmark (sejet.com)	
[] = Limited data	Lim = Limagrain UK (lgseeds.co.uk)	Sen = Senova (senova.uk.com)	
P1 = First year of recommendation	LimEur = Limagrain Europe SA (lgseeds.co.uk)	SU = Saaten Union UK (saaten-union.co.uk)	
P2 = Second year of recommendation	Nord = Nordsaat, Germany (nordsaat.de)	Syn = Syngenta UK Ltd (syngenta.co.uk)	
	NS = Nordic Seed, Denmark	SyP = Syngenta Participations AG (syngenta.co.uk)	

Spring barley trials harvest 2020

Candidate varieties



Previous/proposed name Variety ID Yield treated (T) Yield untreated (UT) (% treated controls) Lodging % (UT) Lodging % (T) Height (cm) Maturity (T) (days +/- Concerto) Brackling % (T) Mildew (1-9) Yellow rust (1-9) Brown rust (1-9) Rhynchosporium (1-9) Specific weight (kg/ha) (T) UK contact

Control varieties															
Laureate	SY412-328	2780	105	99	[11]	[10]	65	0	23	9	[5]	5	6	66.3	Syngenta UK Ltd
RGT Planet	LSB0769-3306	2691	102	95	[7]	[4]	69	0	19	9	[4]	5	5	67.5	RAGT Seeds
KWS Irina	KWS-09/320	2613	100	92	[3]	[1]	64	0	9	9	[6]	5	5	65.7	KWS UK
Propino	NFC 406-119	2336	97	84	[9]	[4]	69	-1	18	6	[4]	5	5	67.6	Syngenta UK Ltd
Concerto	NSL 03-5262	2288	96	90	[16]	[9]	72	0	21	9	[8]	5	4	67.8	Limagrain UK
Selected as potential malting varieties															
Skyway	NOS112.430-22	3206	Data cannot be published as variety has not completed National List testing										Agrii		
Cadiz	NOS112.417-03	3200	106	[98]	[19]	[4]	70	[0]	16	9	-	5	4	67.4	Senova
SY Emerson	SY417066	3165	Data cannot be published as variety has not completed National List testing										Syngenta UK Ltd		
SY Fable	SY417052	3162	Data cannot be published as variety has not completed National List testing										Syngenta UK Ltd		
Selected as potential feed varieties															
LG Mermaid	LGBU17-8519-D	3178	107	[99]	[9]	[5]	67	[+1]	13	9	-	5	6	68.0	Limagrain UK
AC17/02	Harrison	3183	Data cannot be published as variety has not completed National List testing										Elsoms Ackermann Barley		
Mean of controls (t/ha)			7.1	7.1	-	-	-	134	-	-	-	-	-	-	
Overall mean			-	-	-	-	67	-	18.6	-	-	-	-	66.8	
LSD 5%			3.2	4.9	-	-	2.3	1.1	8.1	-	-	-	-	0.8	
Number of trials (for candidate varieties)			19	9	2	6	11	7	15	-	-	-	-	10	

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

The 1-9 ratings are not comparable with those used on the Recommended List table.

See the AHDB Recommended List for full data on control varieties.

Candidate varieties will be considered for the 2021 AHDB Recommended List.

Yellow rust (1-9) ratings are not presented as there were no ratings for the candidate varieties.

For latest information, visit ahdb.org.uk/rl

These summaries are derived from National List and BSPB trials. Acknowledgement is made to APHA and BSPB for the use of the data.

T = Data from trials treated with fungicide

UT = Data from trials without fungicide or Plant Growth Regulator (PGR)

[] = Limited data

LSD = Least significant difference

LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Spring barley 2020

Variety comments

Malting varieties

Concerto

Quality: Fully approved by MBC for brewing and malt distilling use. May be suited to European markets.

Agronomy: Concerto is a well-established variety. It has moderate lodging resistance but high resistance to brackling. It has high resistance to mildew, but it is susceptible to rhynchosporium.

MAGB comment: Fully approved for both brewing and malt distilling, Concerto has seen a reduction in its share of the total spring barley market, as Laureate has risen.

Cosmopolitan

Quality: A high-yielding variety with potential for brewing. It has a low specific weight.

Agronomy: Cosmopolitan has given high treated yields across the UK and has a very high yield potential in the North. This relatively stiff, short-strawed variety has given good untreated yields in UK trials and has high resistance to mildew. It is susceptible to brown rust.

MAGB comment: Under test by MBC for brewing, with completion expected spring 2020. Growers are advised to speak to merchants before committing to this or other varieties in this position.

UK spring malting barley market share is given as a % of MAGB member purchases (see page 25).

Fairing

Quality: Fully approved by MBC for grain distilling use.

Agronomy: This variety is early maturing, with relatively stiff straw and high resistance to brackling. It has high resistance to mildew but it is susceptible to brown rust.

MAGB comment: Fully approved by MBC for grain distilling use in 2018. Growers are advised to speak to their merchants about end markets.

Firefox **NEW**

Quality: This new addition is a very high-yielding variety with potential for malt distilling. It has a similar specific weight to Laureate.

Agronomy: This variety has given very high treated yields, particularly in the West (based on limited data) and North regions. Limited data suggests that this variety has relatively stiff straw with high resistance to brackling. It has high resistance to mildew, but it is susceptible to brown rust.

MAGB comment: Under test by MBC for malt distilling, with completion expected spring 2021. Growers are advised to speak to merchants before committing to this or other varieties in this position.

Iconic **NEW**

Quality: This is a new addition for the West region with potential for brewing.

Agronomy: Limited data suggests that it has a high yield potential in the West region. It has relatively stiff straw (based on limited data) with high resistance to brackling. Iconic has given good yields in untreated UK trials and has high resistance to mildew.

MAGB comment: Under test by MBC for brewing, with completion expected spring 2021. Growers are advised to speak to merchants before committing to this or other varieties in this position.

KWS Sassy

Quality: Fully approved by MBC for malt distilling use.

Agronomy: This variety has given high treated yields in the North region. It has moderate resistance to both lodging and brackling. KWS Sassy has high resistance to mildew.

MAGB comment: Fully approved for malt distilling use since 2017. Growers are advised to speak to their merchants about end markets.

Laureate

Quality: A high-yielding variety with full MBC approval for brewing and malt distilling use.

Agronomy: This variety has given high yields in both fungicide-treated and untreated UK trials. Laureate has relatively stiff straw with high resistance to brackling. It has high resistance to mildew.

MAGB comment: Fully approved by MBC for brewing and malt distilling. Laureate holds over 50% of the UK spring barley market.

LG Diablo

Quality: A high-yielding variety with malting potential, provisionally approved by MBC for brewing (Provisional Approval 1) and fully approved by MBC for malt distilling use.

Agronomy: This variety has given very high yields in the North and East regions. It is a later-maturing variety with relatively stiff straw and high resistance to brackling. LG Diablo has given good yields in untreated UK trials and has high resistance to mildew.

MAGB comment: Fully approved by MBC for malt distilling use. Under test by MBC for brewing use, with completion expected spring 2020. Growers are advised to speak to merchants before committing to this or other varieties in this position.

Spring barley 2020

Variety comments

Malting varieties

Propino

Quality: Fully approved by MBC for brewing use and suited to European markets.

Agronomy: This variety has relatively stiff straw with high resistance to brackling. Propino does not carry the *m/o* mildew resistance gene.

MAGB comment: Fully approved by MBC for brewing, Propino has seen a reduced share of the spring barley market, with the rise of Laureate.

RGT Asteroid

Quality: A high-yielding variety with malting potential, provisionally approved by MBC for brewing, malt distilling and grain distilling.

Agronomy: This variety has given consistent yields across regions and years and is high yielding in the East region. It has relatively stiff straw with high resistance to brackling. RGT Asteroid has given good yields in untreated UK trials and has high resistance to mildew. It is susceptible to rhynchosporium.

MAGB comment: Under test by MBC for brewing, malt and grain distilling, with completion expected spring 2020. Growers are advised to speak to merchants before committing to this or other varieties in this position.

Mildew resistance

The *m/o* resistance gene in barley confers almost complete resistance to barley powdery mildew. All spring barley varieties on the current Recommended List, with the exception of Propino, carry this gene and can, therefore, be assumed to be resistant to powdery mildew.

RGT Planet

Quality: A high-yielding variety with full MBC approval for brewing.

Agronomy: This variety has given high treated yields across the UK. It has relatively stiff straw with high resistance to brackling. RGT Planet has high resistance to mildew.

MAGB comment: Fully approved by MBC for brewing since 2016, RGT Planet continues to hold its share of the spring barley market.

Sienna

Quality: Fully approved by MBC for malt distilling use. It tends to give a high specific weight.

Agronomy: This variety has given its best relative performance in the North region. It has good overall disease resistance, with high resistance to mildew.

MAGB comment: Fully approved for malt distilling use since 2017. Growers are advised to speak to their merchants about end markets.

SY Splendor NEW

Quality: This new addition is a very high-yielding variety with potential for brewing.

Agronomy: This variety has given very high treated yields, particularly in the West (based on limited data) and North regions. Limited data suggests that this variety has relatively stiff straw with very high resistance to brackling. It has high resistance to mildew, but it is susceptible to brown rust.

MAGB comment: Under test by MBC for brewing, with completion expected spring 2021. Growers are advised to speak to merchants before committing to this or other varieties in this position.

SY Tungsten NEW

Quality: This new addition is a high-yielding variety with potential for brewing and malt distilling.

Agronomy: This variety has given high treated yields throughout the UK and is very high yielding in the North region. Limited data suggests that this variety has relatively stiff straw with high resistance to brackling. It has high resistance to mildew, but it is susceptible to brown rust.

MAGB comment: Under test by MBC for brewing and malt distilling, with completion expected spring 2021. Growers are advised to speak to merchants before committing to this or other varieties in this position.

Feed varieties

Fairway NEW

This new addition is a very high-yielding feed variety for the UK with a low specific weight. This variety has given very high yields in both the East and North regions. Limited data suggests that this variety has stiff straw with very high resistance to brackling. Fairway has high resistance to mildew. It is susceptible to brown rust.

Prospect NEW

This new addition has given high treated yields across the UK and is the highest-yielding variety in the East region on the 2020 Recommended List. Limited data suggests that this variety has relatively stiff straw with very high resistance to brackling. Prospect has given good yields in untreated UK trials and has high resistance to mildew. It is susceptible to brown rust.

Winter oats 2020/21

Not added to Recommended List



	RGT Southwark	RGT Lineout	Dalguise	Mascani	Gerald	Peloton	Grafton	Fusion \$	Average LSD (5%)	Penrose
Variety type	Husked varieties					Naked varieties				Husked varieties
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK		Not added to RL
	C		C	C						
UK yield (% treated control)										
Fungicide-treated (8.9 t/ha)	104	100	99	97	96	77	73	72	3.0	101
Grain quality										
Kernel content (%)	73.9	73.9	74.1	76.7	71.7	-	-	-	1.0	74.7
Specific weight (kg/hl)	54.2	52.3	54.3	53.3	52.8	63.3	63.7	61.5	1.2	51.2
Screenings (% through 2.0 mm)	6.3	6.9	3.9	1.7	4.8	28.5	15.5	35.0	2.3	2.4
Agronomic features										
Resistance to lodging (1-9)	5	6	4	6	6	6	7	8	1.1	[6]
Straw length (cm)	122	114	121	118	118	115	120	81	2.8	115
Ripening (days +/- Mascani, -ve = earlier)	-1	-2	-1	0	+2	+1	-1	+3	0.9	+3
Disease resistance										
Mildew (1-9)	3	3	4	6	4	7	4	4	1.5	4
Crown rust (1-9)	8	5	4	6	5	6	4	3	0.9	[5]
Treated yields with and without PGR (% treated control)										
With PGR (9.0 t/ha)	103	100	99	97	96	76	72	71	3.1	101
Without PGR (8.8 t/ha)	104	100	99	97	96	78	74	73	3.3	101
Annual treated yield (% control)										
2015 (9.5 t/ha)	[103]	100	101	96	98	79	75	71	4.8	-
2016 (8.6 t/ha)	106	100	97	97	94	73	70	68	5.5	[101]
2017 (8.0 t/ha)	102	100	98	100	93	78	69	69	6.2	[102]
2018 (9.3 t/ha)	101	100	102	97	99	76	74	76	2.5	102
2019 (9.3 t/ha)	105	100	99	96	98	78	77	76	4.9	101
Breeder/UK contact										
Breeder	R2n	R2n	Sen	IBERS	IBERS	IBERS	IBERS	IBERS		IBERS
UK contact	RAGT	RAGT	Sen	Sen	Sen	Sen	Sen	Sen		Sen
Status in RL system										
Year first listed	18	16	03	04	93	17	00	10		
RL status	-	-	-	-	-	-	-	-		

Varieties no longer listed: Griffin. On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. disease resistance).

C = Yield control (for current table)
 \$ = Dwarf variety
 PGR = Plant Growth Regulator

IBERS = Institute of Biological, Environ. & Rural Sciences
 (aber.ac.uk)
 R2n = RAGT, France (ragt.co.uk)

RAGT = RAGT Seeds (ragt.co.uk)
 Sen = Senova (senova.uk.com)

LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter oats 2020/21

Variety comments

Husked varieties

Dalguise

A husked variety with a high specific weight, Dalguise has relatively long straw with low lodging resistance. It is relatively early maturing and is susceptible to both mildew and crown rust.

Gerald

A late-maturing husked variety with a low kernel content and moderate straw strength. It is susceptible to mildew.

Mascani

A husked variety with moderate straw strength. Mascani remains by far the most popular variety with oat millers and growers, valued for its grain quality characteristics. It is less susceptible to mildew than most varieties and has moderate resistance to crown rust.

RGT Lineout

An early-maturing husked variety with moderate straw strength. It is very susceptible to mildew.

RGT Southwark

A very high-yielding husked variety with a good specific weight and relatively long straw. RGT Southwark has high resistance to the common strains of crown rust, but it is very susceptible to mildew. It is relatively early maturing.

Naked varieties

Fusion

A huskless (naked), late-maturing oat variety with short, stiff straw. Fusion is susceptible to mildew and very susceptible to crown rust.

Grafton

A huskless (naked) variety with relatively long straw and moderate resistance to lodging. Grafton is a relatively early-maturing variety. It is susceptible to both mildew and crown rust.

Peloton

A huskless (naked) oat variety with a higher yield potential than older varieties. It has moderate resistance to lodging. Peloton has high resistance to mildew and moderate resistance to crown rust.

Dishing the dirt

New soils resources are available at:
ahdb.org.uk/greatsoils



Spring oats 2020



Described varieties

Variety type	Husked varieties									Average LSD (5%)	Naked varieties		
	Delfin	WPB Isabel	Elison	Yukon	Aspen	Canyon	WPB Elyann	Conway	Firth		Oliver	Madison	Kamil
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK		UK	UK	UK
		NEW			C	C	C					NEW	
UK yield (% treated control)													
Fungicide-treated (7.5 t/ha)	105	104	104	103	102	101	98	95	94	5.1	75	70	64
Untreated (% of treated control)	99	89	96	98	85	93	87	86	81	5.1	61	58	57
Grain quality													
Kernel content (%)	73.6	76.8	73.7	74.3	75.2	74.0	78.1	75.6	75.9	1.0	-	-	-
Specific weight (kg/hl)	52.0	55.7	52.6	51.9	52.8	52.9	52.1	51.9	50.9	0.9	62.9	57.3	65.9
Screenings (% through 2.0 mm)	3.1	2.3	3.0	3.0	2.3	2.2	2.7	2.8	3.0	1.6	[7.8]	[7.7]	[4.7]
Agronomic features													
Resistance to lodging (1-9)	8	[9]	[8]	8	7	7	6	8	7	0.9	8	[7]	8
Straw length (cm)	116	[114]	[113]	109	101	113	104	109	102	2.5	109	[105]	112
Ripening (days +/- Firth, -ve = earlier)	0	0	0	0	0	0	-1	0	0	1.1	0	0	+1
Disease resistance													
Mildew (1-9)	9	6	8	8	6	8	6	7	6	0.7	5	5	6
Crown rust (1-9)	4	5	3	5	5	4	5	4	4	1.0	3	4	4
Annual treated yield (% control)													
2015 (8.8 t/ha)	[101]	-	[103]	[101]	[104]	[98]	[97]	[89]	[94]	7.0	[74]	-	[64]
2016 (8.3 t/ha)	[104]	[103]	[104]	[102]	[100]	[101]	[99]	[97]	[95]	4.7	[72]	[72]	[61]
2017 (7.2 t/ha)	[112]	[111]	[102]	[106]	[101]	[103]	[96]	[98]	[101]	6.7	[77]	[70]	[62]
2018 (6.3 t/ha)	[105]	[100]	[102]	[100]	[102]	[96]	[103]	[96]	[95]	7.9	[71]	[71]	[67]
2019 (6.8 t/ha)	[104]	[106]	[111]	[106]	[102]	[105]	[93]	[98]	[85]	13.1	[77]	[63]	[68]
Breeder/UK contact													
Breeder	Nord	Weir	SE	Nord	Bau	Nord	Wier	IBERS	KWS		Selg	IBERS	Selg
UK contact	SU	KWS	Sen	SU	Sen	SU	KWS	Sen	KWS		Cope	Sen	Cope
Status in RL system													
Year first listed	18	20	19	17	15	11	17	14	00		18	20	18
RL status	-	P1	P2	-	-	-	-	-	-		-	P1	-

Naked spring oat varieties are described. Data are provided for information only and do not constitute a recommendation.

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

C = Yield control (for current table)	Cope = Trevor Cope Seeds (trevorcopeseeds.co.uk)	SE = Saatzeit Edelhof, Austria (saatzucht.edelhof.at)	Wier = Wiersum BV, Netherlands
[] = Limited data	IBERS = Institute of Biological, Environ. & Rural Sciences (aber.ac.uk)	Selg = Selgen, Czech Republic	LSD = Least significant difference
P1 = First year of recommendation	KWS = KWS UK (kws-uk.com)	Sen = Senova (senova.uk.com)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
P2 = Second year of recommendation	Nord = Nordsaat, Germany (nordsaat.de)	SU = Saaten Union UK (saaten-union.co.uk)	
Bau = Bauer, Germany			

Spring oats 2020

Variety comments

Husked varieties

Aspen

A relatively short husked variety that has given high yields in treated UK trials.

Canyon

A husked variety, Canyon has high resistance to mildew and has given high yields in untreated UK trials. It is susceptible to crown rust.

Conway

A husked variety with high resistance to lodging. Conway has good resistance to mildew, but it is susceptible to crown rust.

Delfin

A very high-yielding husked variety with high resistance to lodging. Delfin has excellent resistance to mildew and has given high yields in untreated UK trials. It is susceptible to crown rust.

Elison

A high-yielding husked variety. Limited data suggests that this variety has high resistance to lodging. It has high resistance to mildew and has given high yields in untreated UK trials. It is very susceptible to crown rust.

Firth

A husked variety, it is susceptible to crown rust.

WPB Elyann

WPB Elyann has replaced Canyon as the most popular husked spring oat variety. It is early maturing, with a high kernel content.

WPB Isabel **NEW**

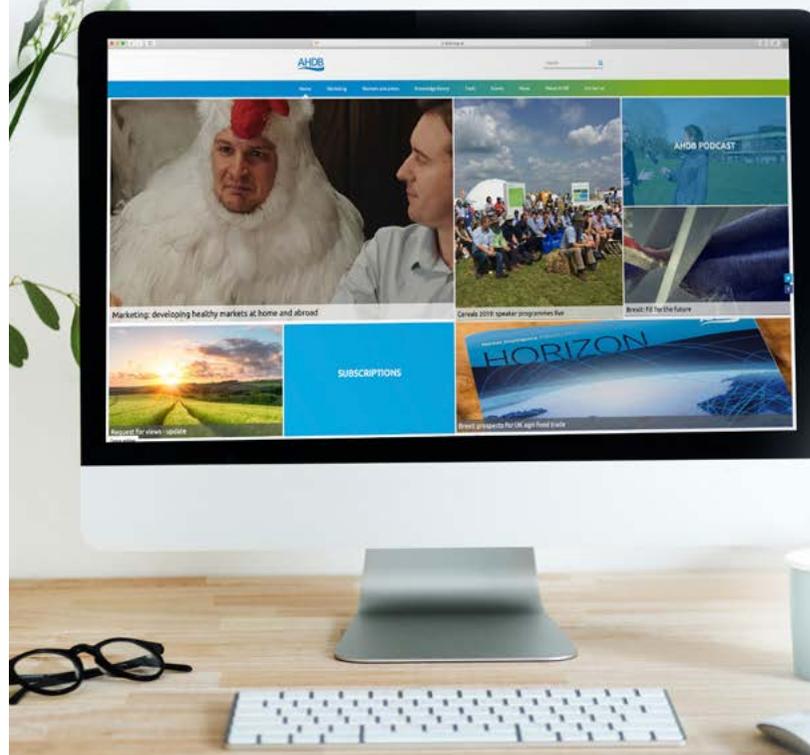
This new addition is a high-yielding husked variety with a high kernel content and specific weight. Limited data suggests that this variety has very high resistance to lodging.

Yukon

A high-yielding husked variety with high resistance to lodging. Yukon has high resistance to mildew and has given high yields in untreated UK trials.

A world of knowledge awaits at ahdb.org.uk

You can now find all of AHDB's resources in one place...



Quick links

- Varieties: ahdb.org.uk/rl
- Nutrients: ahdb.org.uk/rb209
- Diseases (cereals): ahdb.org.uk/cereal-dmg
- Diseases (oilseed rape): ahdb.org.uk/osr-dmg
- Pests: ahdb.org.uk/pests
- Weeds: ahdb.org.uk/arableweeds
- Soils: ahdb.org.uk/greatsoils
- Post-harvest: ahdb.org.uk/harvest-toolkit
- General: ahdb.org.uk/cereals

Recently added titles

- Recommended Lists for cereals and oilseeds 2020/21
- Nutrient management guide (RB209) 2020 edition
- Wheat and barley disease management guide
- Principles of soil management

Spring oats 2020

Variety comments

Described naked varieties

Kamil

A huskless (naked) oat variety with a good specific weight and high resistance to lodging. It is susceptible to crown rust.

Madison **NEW**

This new addition is a huskless (naked) oat variety with a good specific weight. It is susceptible to crown rust.

Oliver

A huskless (naked) oat variety with a good specific weight and high resistance to lodging. It is very susceptible to crown rust.

A new perspective on the RL

VARIETYSELECTION

- Identify the most promising varieties for your unique situation with our online variety selection tool
- Use filters to specify market requirements, account for key diseases and reflect preferred agronomic features
- Use agronomic merit scores to highlight varieties with the greatest genetic potential to resist lodging and key diseases
- Updated following the release of the RL each year

ahdb.org.uk/vst



Winter oilseed rape 2020/21 – regional rankings (East/West and North)

Ranked according to gross output for each region Note: varieties are tested in UK trials but some may only achieve recommendation for one region

	East/West Region					North Region			
	Scope of Recommendation	Gross Output (%C) (5.0 t/ha)	Seed Yield (%C) (4.7 t/ha)			Scope of Recommendation	Gross Output (%C) (5.7 t/ha)	Seed Yield (%C) (5.2 t/ha)	
Acacia	NEW	UK	110	109	Aurelia	NEW	UK	108	109
Ambassador	NEW	UK	108	109	Acacia	NEW	UK	108	107
Aurelia	NEW	UK	107	108	Aardvark	NEW	UK	106	105
Artemis	NEW	UK	107	106	Artemis	NEW	UK	[106]	[106]
Aspire		UK	106	105	Blazen	NEW	N	[105]	[107]
Aardvark	NEW	UK	105	105	Aspire		UK	105	105
Ballad		UK	105	104	Ambassador	NEW	UK	[104]	[105]
Crocodile \$	NEW	E/W Sp	105	106	Crome \$		UK Sp	104	103
Dazzler	NEW	E/W	104	103	DK Expansion		UK	104	104
Darling	NEW	E/W	103	103	DK Exsteel		N	103	103
Temptation		UK (Sp)	103	102	Nikita	*C	UK	102	102
DK Expansion		UK	103	103	Elevation	*	N	102	102
PT275		E/W	103	103	Barbados		N	102	103
Windozz	*	E/W	103	104	Ballad		UK	102	102
Croozier \$	NEW	E/W Sp	102	103	Anastasia	*	N	101	102
George		E/W	102	102	Kielder	*	N	99	99
Crome \$		UK Sp	102	100	Broadway	*	N	98	98
Architect	*	UK (Sp)	101	102	Butterfly	*	N	98	98
Elgar	*C	E/W	101	101	Temptation		UK (Sp)	98	97
Nikita	*C	UK	99	99	Architect	*	UK (Sp)	97	98
V 316 OL ~	C	UK Sp	98	99	V 316 OL ~	C	UK Sp	97	97
Nizza CL &	NEW	E/W Sp	96	97	PT279CL &		UK Sp	92	93
PT279CL &		UK Sp	96	96	Average LSD (5%)			6.0	5.7
Average LSD (5%)			4.8	4.5					

For the full dataset for these varieties see the Winter oilseed rape RL tables.

Sp = Specific recommendation
(Sp) = Resistance to Turnip Yellow Virus is no longer a specialist category. Architect and Temptation have a specific recommendation for this trait

\$ = Specific recommendation for growing on land infected with common strains of clubroot. These varieties should only be used in-line with current AHDB clubroot management guidelines, to reduce the risk of resistance breakdown. See page 3 for further information

& = Herbicide tolerant variety. PT279CL and Nizza CL have a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)
~ = HOLL (High Oleic, Low Linolenic) variety

C = Yield control
* = Variety no longer under test in RL trials in region
LSD = Least significant difference
Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter oilseed rape 2020/21

Yield, quality, agronomy and disease resistance



Recommended for the UK (both East/West and North regions) | Recommended for use on clubroot infected land only | Described varieties

Variety type	Recommended for the UK (both East/West and North regions)												Recommended for use on clubroot infected land only			Described varieties			
	Acacia	Ambassador	Aurelia	Artemis	Aspire	Aardvark	Ballad	DK Expansion	Temptation	Architect	Nikita	V 316 OL -	PT279CL &	Crome \$	Crocodile \$	Croozer \$	Average LSD (5%)	PX131	Resort †
Scope of recommendation	Conv	RH	RH	RH	Conv	Conv	Conv	RH	RH	RH	Conv	RH	RH	RH	RH	RH	RH	SD	RH
	UK	UK	UK	UK	UK	UK	UK	UK	(Sp)	(Sp)	UK	Sp	Sp	UK Sp	E/W Sp	E/W Sp		UK	UK
	NEW	NEW	NEW	NEW		NEW				*	*C	C			NEW	NEW		NEW	NEW
Gross output, yield adjusted for oil content (% treated control)																			
United Kingdom (5.1 t/ha)	109	108	108	107	106	105	105	103	103	101	100	98	96	102	104	102	4.5	97	94
East/West region (5.0 t/ha)	110	108	107	107	106	105	105	103	103	101	99	98	96	102	105	102	4.8	97	94
North region (5.7 t/ha)	108	[104]	108	[106]	105	106	102	104	98	97	102	97	92	104	[95]	[97]	6.0	98	93
Seed yield (% treated control)																			
United Kingdom (4.7 t/ha)	109	108	108	106	105	105	104	103	102	101	99	98	96	101	105	103	4.1	96	93
East/West region (4.7 t/ha)	109	109	108	106	105	105	104	103	102	102	99	99	96	100	106	103	4.5	95	93
North region (5.2 t/ha)	107	[105]	109	[106]	105	105	102	104	97	98	102	97	93	103	[96]	[97]	5.7	96	93
Untreated gross output, yield adjusted for oil content (% untreated control) □																			
United Kingdom (5.3 t/ha)	-	-	-	-	105	-	101	100	106	101	101	98	95	103	-	-	7.1	-	-
Untreated seed yield (% untreated control) □																			
United Kingdom (5.0 t/ha)	-	-	-	-	105	-	101	101	105	101	101	98	95	102	-	-	6.9	-	-
Agronomic features																			
Resistance to lodging (1-9)	[8]	[8]	[8]	[8]	8	[8]	8	8	8	8	8	8	8	8	[8]	[8]	0.2	[8]	[8]
Stem stiffness (1-9)	9	8	8	8	9	8	8	8	7	8	8	8	8	8	8	8	0.4	9	8
Shortness of stem (1-9)	7	6	6	5	7	6	7	5	6	6	7	6	6	6	6	6	0.2	9	6
Earliness of flowering (1-9)	6	7	7	6	7	8	7	6	6	6	7	6	6	7	6	8	0.3	6	7
Earliness of maturity (1-9)	5	6	5	6	5	5	4	5	5	6	5	5	6	5	5	6	0.4	4	5
Seed quality (at 9% moisture)																			
Oil content, fungicide-treated (%)	45.7	45.3	45.2	45.7	45.7	45.7	45.8	45.5	46.0	45.0	45.7	45.3	44.9	46.4	45.0	44.8	0.3	46.7	45.8
Glucosinolate (µmoles/g)	8.1	10.9	10.2	12.3	9.9	10.0	10.8	10.1	12.0	14.4	8.6	12.3	10.9	10.8	12.8	12.2	-	9.4	14.0
Disease resistance																			
Light leaf spot (1-9)	6	7	8	6	7	7	6	6	6	5	7	6	6	6	6	6	0.8	7	6
Stem canker (1-9)	5	8	8	7	6	6	5	7	5	5	4	5	5	4	4	9	0.9	6	6
TuYV	-	R	R	R	R	-	-	-	R	R	-	-	-	-	-	-		-	-

Varieties no longer listed in the UK (both East/West and North regions): Alizze, Campus and Mentor. Varieties no longer listed in the East/West region: Aquila, Ergo, Flamingo and Wembley. HEAR (High Erucic Acid) and semi-dwarf varieties are described. Data are provided for information only and do not constitute a recommendation. On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). The target (spring) plant population is 40 plants/m² for RL trials. Maximum seed rate is 70 seeds/m² and may be lower if conditions permit. Glucosinolate contents are taken from the National List trials data. See page 3 for information on regional yields.

UK = Recommended for both the East/West and North regions
 E/W = Recommended for the East/West region
 Sp = Specific recommendation
 (Sp) = Resistance to Turnip Yellows Virus is no longer a specialist category. Architect and Temptation have a specific recommendation for this trait
 Conv = Conventional open-pollinated variety
 RH = Restored hybrid
 SD = Semi-dwarf
 C = Yield control (for current table). For this table Campus and Alizze were also control varieties but are no longer listed
 * = Variety no longer under test in RL trials in region
 \$ = Specific recommendation for growing on land infected with common strains of clubroot. These varieties should only be used in-line with current AHDB clubroot management guidelines, to reduce the risk of resistance breakdown. See page 3 for further information
 & = Herbicide tolerant variety. PT279CL and Nizza CL have a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)
 ~ = HOLL (High Oleic, Low Linolenic) variety
 † = HEAR (High Erucic Acid) variety
 □ = Untreated yield data available for 2017, 2018 and 2019 only. Untreated trials are treated for sclerotinia at flowering
 [] = Limited data
 R = Believed to be resistant to Turnip Yellows Virus (TuYV) but this has not been verified in Recommended List tests
 LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter oilseed rape 2020/21

Yield, quality, agronomy and disease resistance



Recommended for the East/West region only Recommended for the North region only

	Dazzler	Darling	PT275	Windozz	George	Elgar	Nizza CL &	Blazen	DK Exsteel	Elevation	Barbados	Anastasia	Kielder	Broadway	Butterfly	Average LSD (5%)
Variety type	RH	RH	RH	RH	RH	Conv	RH	Conv	RH	Conv	Conv	Conv	Conv	Conv	Conv	
Scope of recommendation	E/W	E/W	E/W	E/W	E/W	E/W	Sp	N	N	N	N	N	N	N	N	
	NEW	NEW		*		*C	NEW	NEW		*		*	*	*	*	
Gross output, yield adjusted for oil content (% treated control)																
United Kingdom (5.1 t/ha)	103	103	102	102	102	100	96	103	101	98	99	98	96	94	99	4.5
East/West region (5.0 t/ha)	104	103	103	103	102	101	96	102	101	97	98	97	95	93	99	4.8
North region (5.7 t/ha)	[101]	[102]	98	99	101	98	[90]	[105]	103	102	102	101	99	98	98	6.0
Seed yield (% treated control)																
United Kingdom (4.7 t/ha)	102	103	102	104	102	101	97	104	101	98	99	99	96	94	99	4.1
East/West region (4.7 t/ha)	103	103	103	104	102	101	97	103	101	97	99	98	95	93	99	4.5
North region (5.2 t/ha)	[100]	[101]	98	101	100	98	[91]	[107]	103	102	103	102	99	98	98	5.7
Untreated gross output, yield adjusted for oil content (% untreated control) □																
United Kingdom (5.3 t/ha)	-	-	101	101	98	100	-	-	103	100	98	99	96	95	100	7.1
Untreated seed yield (% untreated control) □																
United Kingdom (5.0 t/ha)	-	-	101	102	98	101	-	-	103	99	99	101	95	95	100	6.9
Agronomic features																
Resistance to lodging (1-9)	[8]	[8]	8	8	8	8	[8]	[8]	8	8	8	8	8	8	8	0.2
Stem stiffness (1-9)	9	8	8	8	8	8	8	9	8	8	8	8	9	8	8	0.4
Shortness of stem (1-9)	6	6	6	7	7	6	6	6	5	7	6	7	6	6	7	0.2
Earliness of flowering (1-9)	8	7	5	8	7	6	7	6	6	5	6	6	7	7	6	0.3
Earliness of maturity (1-9)	6	5	5	5	5	6	5	5	5	5	4	5	5	5	4	0.4
Seed quality (at 9% moisture)																
Oil content, fungicide-treated (%)	46.2	46.0	45.5	44.5	45.4	45.1	45.0	44.8	45.5	45.6	45.0	44.6	45.9	45.2	45.4	0.3
Glucosinolate (µmoles/g)	11.1	12.2	8.4	9.6	9.6	9.6	14.9	10.7	11.9	10.6	11.1	11.1	13.3	8.2	10.2	-
Disease resistance																
Light leaf spot (1-9)	6	6	6	5	6	7	4	6	7	6	8	7	7	7	7	0.8
Stem canker (1-9)	8	8	5	5	9	6	6	7	8	5	7	5	3	4	6	0.9
TuYV	R	R	-	-	-	-	-	-	-	-	-	-	-	-	-	

Varieties no longer listed in the UK (both East/West and North regions): Alizze, Campus and Mentor. Varieties no longer listed in the East/West region: Aquila, Ergo, Flamingo and Wembley.

HEAR (High Erucic Acid) and semi-dwarf varieties are described. Data are provided for information only and do not constitute a recommendation.

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

The target (spring) plant population is 40 plants/m² for RL trials. Maximum seed rate is 70 seeds/m² and may be lower if conditions permit. Glucosinolate contents are taken from the National List trials data. See page 3 for information on regional yields.

E/W = Recommended for the East/West region	C = Yield control (for current table). For this table Campus and Alizze were also control varieties but are no longer listed	& = Herbicide tolerant variety. PT279CL and Nizza CL have a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)	□ = Untreated yield data available for 2017, 2018 and 2019 only. Untreated trials are treated for sclerotinia at flowering	been verified in Recommended List tests
N = Recommended for the North region	* = Variety no longer under test in RL trials in region		[] = Limited data	LSD = Least significant difference
Sp = Specific recommendation			R = Believed to be resistant to Turnip Yellows Virus (TuYV) but this has not	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
Conv = Conventional open-pollinated variety				
RH = Restored hybrid				

Winter oilseed rape 2020/21

Supplementary data



	Recommended for the UK (both East/West and North regions)													Recommended for use on clubroot infected land only			Described varieties			
	Acacia	Ambassador	Aurelia	Artemis	Aspire	Aardvark	Ballad	DK Expansion	Temptation	Architect	Nikita	V 316 OL ~	PT279CL &	Crome \$	Crocodile \$	Croozor \$	Average LSD (5%)	PX131	Resort †	
Variety type	Conv	RH	RH	RH	Conv	Conv	Conv	RH	RH	RH	Conv	RH	RH	RH	RH	RH		RH	SD	RH
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	(Sp)	(Sp)	UK	Sp	Sp	UK Sp	E/W Sp	E/W Sp		UK	UK	
	NEW	NEW	NEW	NEW		NEW				*	*C				NEW	NEW		NEW	NEW	
Breeder/UK contact																				
Breeder	LimEur	LimEur	LimEur	LimEur	LimEur	LimEur	KWSMR	MonTec	DSV	LimEur	LimEur	MonTec	PionOS	NPZ	Lemb	Lemb		PionOS	Lemb	
UK contact	Lim	Lim	Lim	Lim	Lim	Lim	KWS	Bay	DSV	Lim	Lim	Bay	Cor	LSPB	DSV	LSPB		Cor	LSPB	
Annual treated gross output, yield adjusted for oil content (% control) – UK																				
2016 (5.1 t/ha)	-	-	-	-	103	-	104	105	98	95	102	99	93	101	-	-	-	-	-	-
2017 (5.7 t/ha)	109	107	108	106	106	107	104	102	100	99	102	97	94	104	100	100	-	98	95	
2018 (5.5 t/ha)	108	105	107	105	105	105	101	101	102	100	101	97	95	103	99	97	-	100	94	
2019 (5.2 t/ha)	110	108	109	108	107	105	104	105	102	103	99	97	94	104	100	101	-	95	93	
Agromony																				
Plant height (cm)	150	161	155	167	147	154	150	165	154	161	148	157	156	154	153	152	2.7	122	155	
Status in RL system																				
Year first listed	20	20	20	20	19	20	19	19	19	18	16	15	19	19	20	20		20	20	
RL status	P1	P1	P1	P1	P2	P1	P2	P2	P2	*	*	-	P2	P2	P1	P1		P1	P1	

UK = Recommended for both the East/West and North regions
 E/W = Recommended for the East/West region
 Sp = Specific recommendation
 (Sp) = Resistance to Turnip Yellows Virus is no longer a specialist category. Architect and Temptation have a specific recommendation for this trait
 Conv = Conventional open-pollinated variety
 RH = Restored hybrid
 SD = Semi-dwarf
 C = Yield control (for current table). For this table Campus and Alizze were also control varieties but are no longer listed

* = Variety no longer under test in RL trials in region
 \$ = Specific recommendation for growing on land infected with common strains of clubroot. These varieties should only be used in-line with current AHDB clubroot management guidelines, to reduce the risk of resistance breakdown. See page 3 for further information
 & = Herbicide tolerant variety. PT279CL and Nizza CL have a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)
 ~ = HOLL (High Oleic, Low Linolenic) variety
 † = HEAR (High Erucic Acid) variety

P1 = First year of recommendation
 P2 = Second year of recommendation
 Bay = Bayer CropScience (bayercropscience.co.uk)
 Cor = Corteva Agriscience™ (corteva.co.uk/pioneer)
 DSV = DSV UK (dsv-uk.co.uk)
 KWS = KWS UK (kws-uk.com)
 KWSMR = KWS Momont Recherche (kws-uk.com)
 Lemb = Lembke, Germany
 Lim = Limagrain UK (lgseeds.co.uk)
 LimEur = Limagrain Europe SA (lgseeds.co.uk)

LSPB = LS Plant Breeding (lspb.eu)
 MonTec = Monsanto Technology LLC (monsanto.com)
 NPZ = NPZ-Lembke, Germany (npz.de)
 PionOS = Pioneer Overseas Corporation (corteva.co.uk/pioneer)
 LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter oilseed rape 2020/21

Supplementary data



	Recommended for the East/West region only								Recommended for the North region only								Average LSD (5%)
	Dazzler	Darling	PT275	Windozz	George	Elgar	Nizza CL &	Blazen	DK Exsteel	Elevation	Barbados	Anastasia	Kielder	Broadway	Butterfly		
Variety type	RH	RH	RH	RH	RH	Conv	RH	Conv	RH	Conv	Conv	Conv	Conv	Conv	Conv		
Scope of recommendation	E/W	E/W	E/W	E/W	E/W	E/W	Sp	N	N	N	N	N	N	N	N		
	NEW	NEW		*		*C	NEW	NEW		*		*	*	*	*		
Breeder/UK contact																	
Breeder	DSV	DSV	PionOS	R2n	SyP	Els	R2n	KWSMR	MonTec	Pick	KWSMR	Lim	Pars	Pick	KWSMR		
UK contact	DSV	DSV	Cor	RAGT	Syn	Els	RAGT	KWS	Bay	DLF	KWS	Lim	Els	DLF	KWS		
Annual treated gross output, yield adjusted for oil content (% control) – UK																	
2016 (5.1 t/ha)	-	-	99	99	99	98	-	-	102	99	[99]	[99]	98	98	96	-	
2017 (5.7 t/ha)	102	103	101	102	103	99	93	106	102	102	102	99	100	97	99	-	
2018 (5.5 t/ha)	100	101	101	101	101	99	93	104	101	101	100	99	95	95	99	-	
2019 (5.2 t/ha)	105	104	99	102	102	101	95	104	103	99	101	100	96	93	98	-	
Agronomy																	
Plant height (cm)	155	160	156	150	151	154	153	152	165	151	154	149	159	152	149	2.7	
Status in RL system																	
Year first listed	20	20	19	16	19	16	20	20	19	18	16	13	18	18	18		
RL status	P1	P1	P2	*	P2	*	P1	P1	P2	*	-	*	*	*	*		

E/W = Recommended for the East/West region
 N = Recommended for the North region
 Sp = Specific recommendation
 Conv = Conventional open-pollinated variety
 RH = Restored hybrid
 C = Yield control (for current table). For this table Campus and Alizze were also control varieties but are no longer listed
 * = Variety no longer under test in RL trials in region
 & = Herbicide tolerant variety. PT279CL and Nizza CL have a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)
 [] = Limited data
 P1 = First year of recommendation
 P2 = Second year of recommendation
 Bay = Bayer CropScience (bayercropscience.co.uk)
 Cor = Corteva Agriscience™ (corteva.co.uk/pioneer)
 DLF = DLF Seeds Ltd (dlf.co.uk)
 DSV = DSV UK (dsv-uk.co.uk)
 Els = Elsoms Seeds (elsoms.com)
 KWS = KWS UK (kws-uk.com)
 KWSMR = KWS Momont Recherche (kws-uk.com)
 Lim = Limagrain UK (lgseeds.co.uk)
 MonTec = Monsanto Technology LLC (monsanto.com)
 Pars = Parsons Seeds Ltd
 Pick = Mike Pickford
 PionOS = Pioneer Overseas Corporation (corteva.co.uk/pioneer)
 R2n = RAGT, France (ragt.co.uk)
 RAGT = RAGT Seeds (ragt.co.uk)
 SyP = Syngenta Participations AG (syngenta.co.uk)
 Syn = Syngenta UK Ltd (syngenta.co.uk)
 LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter oilseed rape trials harvest 2020

Candidate varieties



Previous/proposed name	Variety ID	Variety type	Gross output (%) – UK	Gross output (%) – East/West	Gross output (%) – North	Treated seed yield (%) – UK	Treated seed yield (%) – East/West	Treated seed yield (%) – North	Oil content (%)	Resistance to lodging (1–9)	Stem stiffness (1–9)	Height (cm)	Earliness of flowering (1–9)	Earliness of maturity (1–9)	Resistance to light leaf spot (1–9)	Resistance to stem canker (1–9)	TuYV Resistance	Breeder's claim	UK contact	
Control varieties																				
Elgar	SWO24120	2637	Conv	99	-	97	99	-	98	45.2	9	9	152	5	6	7	6	-	Elsoms Seeds	
Alizze	HR 158108	2622	RH	100	100	102	100	99	101	45.6	8	8	155	7	6	7	4	-	RAGT Seeds	
Nikita	LEL12/248	2574	Conv	99	97	101	99	98	101	45.3	9	8	147	6	5	7	4	-	Limagrains UK	
Campus	MH 06 CP 057	2535	Conv	103	103	104	103	103	104	45.3	8	8	157	5	6	6	6	-	KWS UK	
V 316 OL	MDS 16	2523	RH	99	101	96	99	101	97	45.1	9	8	160	5	6	6	5	-	Bayer Crop Science	
Candidate varieties – UK																				
Voltage	RAP 559	3125	RH	105	108	100	105	107	100	45.5	8	8	158	6	5	7	4	R	DSV UK	
Hermione	MH 15HT227	3144	RH	103	104	103	103	103	103	45.3	9	9	162	4	5	6	8	-	KWS UK	
Candidate varieties – East/West																				
LG Antigua	LE17/335	3111	RH		108			108		45.3	9	8	163	6	7	6	8	R	Limagrains UK	
LG Aviron	LE17/332	3110								Data cannot be published as variety has not completed National List testing										Limagrains UK
Respect	LSF17191W11	3117								Data cannot be published as variety has not completed National List testing										LS Plant Breeding
DK Expectation	DMH432	3098	RH		108			108		45.0	8	7	158	7	6	6	8	R	Bayer Crop Science	
Kazze	HRD1211	3104	RH		104			103		45.5	8	8	157	6	5	6	5	-	RAGT Seeds	
LE17/342		3113								Data cannot be published as variety has not completed National List testing										Limagrains UK
Blackmillion	HRE1296	3106	RH		107			105		46.1	8	7	167	5	6	5	7	-	RAGT Seeds	
LG Arcade	LE17/330	3109								Data cannot be published as variety has not completed National List testing										Limagrains UK
Blackpearl	NPZ17168W11	3119								Data cannot be published as variety has not completed National List testing										LS Plant Breeding
DK Imprint CL	CWH382	3092								Data cannot be published as variety has not completed National List testing										Bayer Crop Science
Mean of controls (t/ha)				5.3	5.1	6.0	4.9	4.8	5.5	-	-	-	-	-	-	-	-	-		
Overall mean				-	-	-	-	-	-	44.9	-	7.7	157	5.1	5.8	-	-	-		
LSD 5%				5.2	6.4	6.1	4.7	5.9	6.0	0.4	1.2	0.6	4.3	0.5	0.4	-	-	-		
Number of trials				19	12	7	19	12	7	19	5	14	21	21	19	-	-	-		

All values are UK values (except gross output and treated seed yield).

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).

The 1–9 ratings are not comparable with those used on the Recommended List table.

Candidate varieties will be considered for the 2021/22 AHDB Recommended List.

To allow direct comparisons, the data presented for control varieties is taken only from trials in which the candidate varieties have also been grown. See the AHDB Recommended List for full data on control varieties.

All data, except disease ratings, is taken from fungicide-treated trials.

For latest information, visit ahdb.org.uk/rl

These summaries are derived from National List and BSPB trials. Acknowledgement is made to APHA and BSPB for the use of the data.

Conv = Conventional open-pollinated variety
RH = Restored hybrid

R = Believed to be resistant to Turnip Yellows Virus (TuYV)
LSD = Least significant difference

LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter oilseed rape 2020/21

Variety comments

Varieties

Aardvark **NEW**

This new addition is a conventional, open-pollinated variety recommended for the UK. Aardvark has given a high treated gross output in both the East/West and North regions. This variety has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Aardvark has high resistance to light leaf spot. It is a relatively early-flowering variety.

Acacia **NEW**

This new addition is a conventional, open-pollinated variety recommended for the UK. Acacia has given a very high treated gross output in both the East/West and North regions. It has high resistance to lodging (based on limited data) and is very stiff-stemmed at maturity.

Ambassador **NEW**

This new addition is a restored hybrid variety recommended for the UK. This variety has given a very high treated gross output in the East/West. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Ambassador has high resistance to both light leaf spot and stem canker and is resistant to *Turnip yellows virus* (TuYV). It is a relatively early-maturing variety.

Anastasia

A conventional, open-pollinated variety recommended for the North region. Anastasia has high resistance to lodging, with good stem stiffness at maturity. It has high resistance to light leaf spot. Anastasia is no longer under test in RL trials.

Architect

A restored hybrid variety with a specific recommendation for resistance to *Turnip yellows virus* (TuYV) for the UK. Architect has high resistance to lodging, with good stem stiffness at maturity. It is a relatively early-maturing variety. Architect is no longer under test in RL trials.

Artemis **NEW**

This new addition is a restored hybrid variety recommended for the UK. This variety has given a very high treated gross output in both the East/West and North (based on limited data) regions. It is a relatively tall variety but has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Artemis has high resistance to stem canker and is resistant to *Turnip yellows virus* (TuYV). It is a relatively early-maturing variety.

Aspire

A conventional, open-pollinated variety recommended for the UK. Aspire has given a high treated gross output in both the East/West and North regions. It has high resistance to lodging and is very stiff-stemmed at maturity. Aspire has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

Aurelia **NEW**

This new addition is a restored hybrid variety recommended for the UK. This variety has given a very high treated gross output in both the East/West and North regions. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Aurelia has high resistance to light leaf spot and stem canker and is resistant to *Turnip yellows virus* (TuYV).

Ballad

A conventional, open-pollinated variety recommended for the UK. Ballad has given a high treated gross output in the East/West region. This variety has high resistance to lodging, with good stem stiffness at maturity. It is a relatively late-maturing variety.

Barbados

A conventional, open-pollinated variety recommended for the North region. This variety has high resistance to lodging, with good stem stiffness at maturity. Barbados has high resistance to both light leaf spot and stem canker. It is a relatively late-maturing variety.

Blazen **NEW**

This new addition is a conventional, open-pollinated variety recommended for the North region. Limited data suggests that this variety has given a high treated gross output in the North. It has high resistance to lodging (based on limited data) and is very stiff-stemmed at maturity. Blazen has high resistance to stem canker.

Broadway

A conventional, open-pollinated variety recommended for the North region. This variety has high resistance to lodging, with good stem stiffness at maturity. Broadway has high resistance to light leaf spot but is susceptible to stem canker. Broadway is no longer under test in RL trials.

Winter oilseed rape 2020/21

Variety comments

Butterfly

A conventional, open-pollinated variety recommended for the North region. It has high resistance to lodging, with good stem stiffness at maturity. Butterfly has high resistance to light leaf spot. It is a relatively late-maturing variety. Butterfly is no longer under test in RL trials.

Crocodile **NEW**

This new addition is a restored hybrid variety with a specific recommendation for the East/West region for its resistance to the common strains of clubroot, though it may be susceptible to strains found in some fields. Crocodile has given a high treated gross output in the East/West. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. It is susceptible to stem canker.

Crome

A restored hybrid variety with a specific recommendation for the UK for its resistance to the common strains of clubroot, though it may be susceptible to strains found in some fields. Crome has given a high treated gross output in the North region. This variety has high resistance to lodging, with good stem stiffness at maturity. It is susceptible to stem canker.

Croozer **NEW**

This new addition is a restored hybrid variety with a specific recommendation for the East/West region for its resistance to the common strains of clubroot, though it may be susceptible to strains found in some fields. This relatively early-flowering variety has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Croozer has very high resistance to stem canker. It is a relatively early-maturing variety.

Darling **NEW**

This new addition is a restored hybrid variety recommended for the East/West region. This variety has given a high treated gross output for the East/West. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Darling has high resistance to stem canker and is resistant to *Turnip yellows virus* (TuYV).

Dazzler **NEW**

This new addition is a restored hybrid variety recommended for the East/West region. This variety has given a high treated gross output for the East/West. This relatively early-flowering variety has high resistance to lodging (based on limited data) and is very stiff-stemmed at maturity. Dazzler has high resistance to stem canker and is resistant to *Turnip yellows virus* (TuYV). It is a relatively early-maturing variety.

DK Expansion

A restored hybrid variety recommended for the UK. This variety has given a high treated gross output in both the East/West and North regions. DK Expansion is a relatively tall variety but has high resistance to lodging, with good stem stiffness at maturity. It has high resistance to stem canker.

DK Exsteel

A restored hybrid variety for the North region. This variety has given a high treated gross output in the North. It is a relatively tall variety but has high resistance to lodging, with good stem stiffness at maturity. DK Exsteel has high resistance to both light leaf spot and stem canker.

Elevation

A conventional, open-pollinated variety recommended for the North region. Elevation has high resistance to lodging, with good stem stiffness at maturity. Elevation is no longer under test in RL trials.

Elgar

A conventional, open-pollinated variety recommended for the East/West region. Elgar has high resistance to lodging, with good stem stiffness at maturity. This variety has high resistance to light leaf spot and is a relatively early-maturing variety. Elgar is no longer under test in RL trials.

Winter oilseed rape 2020/21

Variety comments

George

A restored hybrid variety for the East/West region. It has high resistance to lodging, with good stem stiffness at maturity. George has very high resistance to stem canker.

Kielder

A conventional, open-pollinated variety recommended for the North region. This variety has high resistance to lodging and is very stiff-stemmed at maturity. It has high resistance to light leaf spot but is very susceptible to stem canker. Kielder is no longer under test in RL trials.

Nikita

A conventional, open-pollinated variety recommended for the UK. This variety has high resistance to lodging, with good stem stiffness at maturity. It has high resistance to light leaf spot but is susceptible to stem canker. Nikita is no longer under test in RL trials.

Nizza CL NEW

This new addition is a restored hybrid variety with a specific recommendation for the East/West region for its tolerance to specific herbicides. It has tolerance to specific Clearfield® herbicides containing imidazolinone. Growers are advised to see the BASF website (agricentre.basf.co.uk) for more information on the management and husbandry of these types of varieties. Nizza CL has high resistance to lodging (based on limited data), with good stem stiffness at maturity. It is susceptible to light leaf spot.

PT275

A restored hybrid variety recommended for the East/West region. PT275 has given a high treated gross output in the East/West. It has high resistance to lodging, with good stem stiffness at maturity.

PT279CL

A Clearfield® hybrid with a specific recommendation for the UK. Clearfield® hybrids are tolerant to specific Clearfield® herbicides that contain imidazolinone. PT279CL has high resistance to lodging, with good stem stiffness at maturity, and is relatively early maturing. Growers are advised to see the BASF website (agricentre.basf.co.uk) for more information about Clearfield® management and husbandry.

Temptation

A restored hybrid variety with a specific recommendation for the UK for its resistance to *Turnip yellows virus* (TuYV). Temptation has given a high treated gross output in the East/West region. It has high resistance to lodging.

V 316 OL

A restored hybrid variety with a specific recommendation for the UK for its high oleic, low linolenic (HOLL) oil type. It has high resistance to lodging, with good stem stiffness at maturity.

Windozz

A restored hybrid variety recommended for the East/West region. It has given a high treated gross output in the East/West. Windozz has high resistance to lodging, with good stem stiffness at maturity. It is a relatively early-flowering variety. Windozz is no longer under test in RL trials.

Winter oilseed rape 2020/21

Variety comments

Described varieties

PX131 **NEW**

Described for the UK. PX131 is a semi-dwarf hybrid (it is believed to carry the Ogu-INRA dwarfing gene in the heterozygous state). It is short, has high resistance to lodging and is very stiff-stemmed at maturity. PX131 has high resistance to light leaf spot but is a relatively late-maturing variety. PX131 has a high oil content.

Resort **NEW**

Described for the UK. A high erucic acid (HEAR) variety. HEAR varieties have a different oil profile (having around 50% erucic acid, compared with less than 2% for '00' varieties) and are used for a variety of industrial uses, such as specialist lubricants, inks, cosmetics and slip agents. Growers should take action to prevent high erucic volunteers (which can lead to deductions or rejections) from appearing in subsequent '00' oilseed rape crops.

Erucic acid risks

For rapeseed oil to be used in food products, erucic acid levels must, by law, not exceed five per cent. The current maximum level is set to two per cent in most contracts. AHDB has worked with industry to issue a set of guidelines to help farmers maintain low levels of the acid in their crops. The guidance is centred on five 'risk points':

- 1. Seed source:** Farm-saved seed carries a risk as it can become contaminated with seed from volunteers. Erucic acid tests should be conducted on all seed sources before drilling
- 2. Pre-planting:** After harvest, cultivations should be delayed (ideally, by at least four weeks) to allow OSR volunteers to germinate and be controlled
- 3. Established crop:** Fields with OSR volunteers and erucic acid-producing weed populations should be identified, as they are at higher risk
- 4. Harvest:** Poor segregation of crops also increases risk. Double-low OSR must be segregated from HEAR OSR and weed-prone crops at all times
- 5. Contracts:** It is essential to read and understand any contract before it is signed. Sealed and labelled representative samples of all seed should be retained in case of any dispute

ahdb.org.uk/erucic-acid



Image credit: Gary Naylor Photography

Spring oilseed rape Descriptive List 2020

DESCRIBED

	Performer	Lagonda	Lumen	Lexus	Builder	Sunder	Mirakel	Average LSD (5%)
Variety type	RH	RH	RH	RH	RH	RH	RH	
	NEW						C	
Gross output, yield adjusted for oil content (% control)								
UK without fungicide (3.2 t/ha)	[113]	[112]	[105]	[103]	101	101	98	8.5
Number of trials	4	6	9	6	11	11	11	
Seed yield (% control)								
UK without fungicide (3.0 t/ha)	[111]	[113]	[105]	[104]	101	100	98	8.6
Seed quality (at 9% moisture)								
Oil content (%)	[46.2]	[44.2]	[44.7]	[44.7]	45.6	45.9	44.4	0.6
Glucosinolate content (µmoles/g)	13.6	11.0	11.0	13.1	14.4	12.9	10.5	-
Agronomic features								
Shortness of stem (1–9)	[6]	6	7	6	6	7	7	0.3
Earliness of flowering (1–9)	[6]	7	7	7	7	7	7	0.7
Earliness of maturity (1–9)	[4]	5	7	5	4	4	7	1.2
Annual gross output, yield adjusted for oil content (% control)								
2014 (3.3 t/ha)	-	-	[109]	-	[94]	[94]	[103]	9.9
2015 #	-	-	-	-	-	-	-	-
2016 (3.0 t/ha)	-	[104]	[101]	[110]	[105]	[103]	[96]	24.1
2017 (3.2 t/ha)	[119]	[127]	[103]	[101]	[102]	[103]	[94]	16.6
2018 (3.2 t/ha)	[[120]]	[[116]]	[[110]]	[[107]]	[[109]]	[[104]]	[[97]]	-
2019 (3.6 t/ha)	[[101]]	[[103]]	[[107]]	[[99]]	[[104]]	[[107]]	[[94]]	-
Breeder/UK contact								
Breeder	BASF	NPZ	NPZ	NPZ	BASF	BASF	NPZ	
UK contact	BASF	DSV	DSV	DSV	BASF	BASF	DSV	
Status in DL system								
Year first listed	20	19	18	19	15	17	15	
DL status	P1	P2	-	P2	-	-	-	

Varieties no longer listed: Axana, Dodger, Makro and Tamarin.

On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (e.g. early maturity). Glucosinolate contents are taken from the National List trials data.

The data in this table are provided for information only and do not constitute a recommendation.

RH = Restored hybrid

C = Yield control (for current table). For this table Makro was also a yield control but is no longer listed

= There were no yield results for 2015 due to trial failure

[] = Limited data

[[]] = 1 trial only

P1 = First year of listing

P2 = Second year of listing

BASF = BASF Agricultural Solutions Seed US LLC (agriculture.basf.com/en/Crop-Protection.html)

DSV = DSV UK (dsv-uk.co.uk)

NPZ = NPZ-Lembke, Germany (npz.de)

LSD = Least significant difference

Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Spring linseed Descriptive List 2020

DESCRIBED

	Bliss	Juliet	Bingo	Bowler	Ineke	Octal	Batsman	Daniel	Empress	Aquarius	Lion	Festival	Abacus	Galaad	Faser	Omegalain	Marquise	Average LSD (5%)
Seed colour	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	NEW						C			*C	*	*	C		*	*	*	
Seed yield as % control																		
UK without fungicide (2.0 t/ha)	[113]	112	109	106	105	105	103	102	101	100	100	98	96	96	96	95	92	7.9
Number of trials	8	15	15	15	15	15	15	15	15	15	15	12	15	12	15	15	12	
Seed quality (at 9% moisture)																		
Oil content of seed (%)	[40.3]	41.6	40.0	40.8	39.6	40.8	40.3	39.7	40.2	42.9	42.7	42.7	39.8	40.3	39.3	43.0	40.6	0.4
Agronomic features																		
Plant height (cm)	54	59	54	54	62	54	57	56	52	55	53	55	54	45	53	54	48	2.5
Earliness of flowering (1–9)	6	4	5	3	2	3	6	6	6	5	5	4	5	8	6	5	7	0.9
Earliness of maturity (1–9)	[6]	4	5	6	4	5	6	5	6	6	6	6	7	8	6	6	7	0.7
Annual seed yield (% control)																		
2015 (1.7 t/ha)	-	[116]	[107]	[106]	[106]	[100]	[109]	[104]	[105]	[98]	[99]	-	[94]	-	[96]	[102]	[97]	12.0
2016 (2.2 t/ha)	-	[102]	[107]	[102]	[100]	[101]	[96]	[103]	[100]	[105]	[104]	[102]	[99]	[100]	[98]	[101]	[91]	8.9
2017 (1.7 t/ha)	[118]	[114]	[104]	[110]	[107]	[109]	[101]	[103]	[108]	[102]	[100]	[94]	[98]	[98]	[106]	[95]	-	13.0
2018 (2.5 t/ha)	[103]	[126]	[119]	[100]	[100]	[103]	[106]	[103]	[95]	[99]	[94]	[100]	[95]	[99]	[91]	[89]	[90]	13.7
2019 (2.1 t/ha)	[118]	[108]	[109]	[111]	[113]	[111]	[107]	[97]	[100]	[97]	[103]	[93]	[95]	[86]	[89]	[89]	[91]	12.5
Breeder/UK contact																		
Breeder	Bilt	GKI	Bilt	Bilt	JTSD	LaS	Bilt	Med	GIE	LimEur	Lim	LaS	JTSD	LaS	JTSD	TdL	GIE	
UK contact	Els	Agr	Els	Els	JTSD	Dalt	Els	Agr	PC	Bost	Lim	PC	JTSD	PC	JTSD	PC	PC	
Status in DL system																		
Year first listed	20	01	17	13	18	17	12	18	17	17	18	12	06	17	18	14	14	
DL status	P1	-	-	-	-	-	-	-	-	*	*	*	-	-	*	*	*	

Varieties no longer listed: Altess, Aries, Brighton, Carina and Kaolin.

On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (e.g. early maturity).

The data in this table are provided for information only and do not constitute a recommendation.

Data for the Year 3 candidates cannot be published as these varieties have not yet completed National List testing. For latest information, visit ahdb.org.uk/rl

B = Brown	Bilt = Van de Bilt, Netherlands	JTSD = JTSD Ltd (jtsd.co.uk)	TdL = Terre de Lin, France
C = Yield control (for current table)	Bost = Boston Seeds Ltd (bostonseeds.com)	LaS = Laboulet Semences, France	LSD = Least significant difference
* = Variety no longer under test in RL trials	Dalt = Dalton Seeds (dalmark.co.uk)	Lim = Limagrain UK (lgseeds.co.uk)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
[] = Limited data	Els = Elsoms Seeds (elsoms.com)	LimEur = Limagrain Europe SA (lgseeds.co.uk)	
P1 = First year of listing	GIE = GIE Linea, France	Med = Medovarsky	
Agr = Agrii (agrii.co.uk)	GKI = GK Kht, Hungary	PC = Premium Crops (premiumcrops.com)	

Winter triticale Descriptive List 2020/21



Year 3 Candidates

	Kasyno	KWS Fido	Cyrkon	Tribeca	Toro	Tender PZO	Securo	Agostino
	C				NEW	NEW	*	C
Grain yield (as % treated control)								
Fungicide-treated (10.2 t/ha)	107	105	100	100	[99]	[99]	96	95
Number of trials	10	10	10	10	6	6	10	10
Agronomic features								
Lodging (%)	[0]	[0]	[0]	[9]	[0]	[16]	[1]	[0]
Straw length (cm)	102	112	97	119	[101]	[125]	119	101
Ripening (days +/- Agostino, -ve = earlier)	[0]	[0]	[0]	[0]	[0]	[0]	[+1]	[0]
Grain quality								
Specific weight (kg/hl)	74.3	76.6	73.9	73.5	[72.6]	[75.6]	74.4	75.1
Protein content (%)	12.1	11.7	12.1	11.9	[12.6]	[12.6]	12.8	12.1
Breeder/UK contact								
Breeder	Dank	Lant	Hod	Desp	Hod	IGP	Eng	Lant
UK contact	Sen	Sen	Dalt	Els	Dalt	Sen	Cope	Sen
Status in DL system								
Year first listed	18	14	16	12	20	20	17	11
DL status	-	-	-	-	P1	P1	*	-

Average LSD (5%)	Trivalan \$	NORD11R875/008 \$	Temuco	Belcanto
7.6	-	-	[102]	[102]
	-	-	4	4
6.3	-	-	-	-
6.7	-	-	[109]	[112]
1.9	-	-	[-1]	[+3]
1.3	-	-	[72.8]	[78.6]
0.5	-	-	[11.9]	[12.6]
	-	Nord	Lant	Dank
	Els	SU	Sen	Sen
	-	-	-	-
	-	-	-	-

Varieties no longer listed: Dometica, Kereon and LD17.

The data in this table are provided for information only and do not constitute a recommendation.

\$ Data for these Year 3 candidates cannot be published as these varieties have not completed National List testing. For latest information, visit ahdb.org.uk/rl

C = Yield control (for current table)
 * = Variety no longer under test in RL trials
 [] = Limited data
 P1 = First year of listing
 Cope = Trevor Cope Seeds (trevorcopeseeds.co.uk)
 Dalt = Dalton Seeds (dalmark.co.uk)

Dank = Danko Hodowla Roslin, Poland (danko.pl)
 Desp = Maison Florimond Desprez, France (florimond-desprez.com)
 Els = Elsoms Seeds (elsoms.com)
 Eng = Saatucht Streng-Engelen

Hod = Hodowla Roslin Strzelce, Poland (hr-strzelce.pl)
 IGP = IG-Pflanzenzucht, Germany
 Lant = Lantmannen SW Seed BV (lantmannen.se)
 Sen = Senova (senova.uk.com)

LSD = Least significant difference
 Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

Winter rye Descriptive List 2020/21



Variety type	SU Performer	SU Cossani	SU Mephisto	SU Promotor	Inspector	Dukato
	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Conv
			C	NEW		
Grain yield (as % treated control)						
Fungicide-treated (9.8 t/ha)	106	101	100	99	90	89
Number of trials	13	13	13	7	13	13
Agronomic features						
Lodging (%)	[5]	[16]	[20]	[4]	[23]	[17]
Straw length (cm)	129	128	129	128	139	138
Ripening (days +/- SU Mephisto, -ve = earlier)	0	0	0	0	0	0
Grain quality						
Protein content (%)	9.4	9.6	9.6	9.6	10.2	9.9
Hagberg Falling Number	243	230	210	245	205	194
Specific weight (kg/hl)	78.4	77.2	77.2	77.9	78.7	78.4
Breeder/UK contact						
Breeder	Hybro	SU	Hybro	SU	PHP	Hybro
UK contact	SU	SU	SU	SU	SU	SU
Status in DL system						
Year first listed	17	18	15	20	16	17
DL status	-	-	-	P1	-	-

Year 3 Candidates				
Average LSD (5%)	KWS Serafino	Poseidon	SU Arvid	SU Nasri
	Hybrid	Hybrid	Hybrid	Hybrid
6.0	[111] 5	[104] 5	[103] 5	[98] 5
5.3	-	-	-	-
6.5	[131] [0]	[127] [0]	[133] [0]	[127] [0]
1.7				
0.4	[9.5]	[10.2]	[9.2]	[9.7]
19.6	[229]	[197]	[191]	[210]
0.9	[76.5]	[76.3]	[77.8]	[76.7]
	KWSGmbh KWS	NS Dalt	Hybro SU	Hybro SU
	-	-	-	-
	-	-	-	-

Varieties no longer listed: Tur.

The data in this table are provided for information only and do not constitute a recommendation.

Conv = Conventional variety
C = Yield control (for current table)
[] = Limited data
P1 = First year of listing

Dalt = Dalton Seeds (dalmark.co.uk)
Hybro = Hybro, Germany
KWS = KWS UK (kws-uk.com)
KWSGmbh = KWS Lochow GmbH (kws-uk.com)

NS = Nordic Seed, Denmark
PHP = P.H.Petersen, Germany (phpetersen.com)
SU = Saaten Union UK (saaten-union.co.uk)

LSD = Least significant difference
Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level



The AHDB Recommended Lists 2020/21 are managed by a project consortium of AHDB Cereals & Oilseeds, BSPB, MAGB and nabim.

Funding for the Recommended List trials and tests is provided by AHDB Cereals & Oilseeds but the production of the Lists would be impossible without the contribution and support of the industry.

Contact us

For specific Recommended Lists enquiries:

@ rl@ahdb.org.uk

📞 0247 693 5702

To order printed publications:

@ publications@ahdb.org.uk

📞 0247 799 0069

Preliminary data

The selection of new varieties to promote into AHDB Recommended List trials is made on the basis of preliminary data collected during National List and other trials and tests and these data also make a major contribution to the variety means presented in the Recommended List tables. Acknowledgement is made to Defra and the devolved governments as well as BSPB for the use of these data.



Processors

AHDB is grateful for the valuable contributions made by member companies of BBPA, BOBMA, MAGB and SWA who conduct distilling tests both at the preliminary and Recommended List stages.



Test and trials contractors

AHDB is grateful to the following organisations who, as well as undertaking contract work for the Recommended Lists, provide much valuable advice: ADAS, Agri-Food and Biosciences Institute, Biomathematics & Statistics Scotland, BSPB, Campden BRI, Envirofield, Harper Adams University, NIAB TAG, Pearce Seeds, Scottish Agronomy, SRUC, Stockbridge Technology Centre, Trials Force Ltd, and University College Dublin.



Committee members and growers

AHDB wishes to thank all those who give freely of their time to serve on our committees and to the numerous growers across the country who host Recommended Lists trials.



AHDB Cereals & Oilseeds

Stoneleigh Park
Kenilworth
Warwickshire
CV8 2TL

If you no longer wish to receive this information, please email us on comms@ahdb.org.uk

20015 0121

While the Agriculture and Horticulture Development Board seeks to ensure that the information contained within this document is accurate at the time of printing, no warranty is given in respect thereof and, to the maximum extent permitted by law, the Agriculture and Horticulture Development Board accepts no liability for loss, damage or injury howsoever caused (including that caused by negligence) or suffered directly or indirectly in relation to information and opinions contained in or omitted from this document.

© Agriculture and Horticulture Development Board 2020.
All rights reserved.

