RECOMMENDEDLISTS



AHDB Recommended Lists for cereals and oilseeds 2018/19 Summer edition



Produced in partnership with:



British Society of Plant Breeders

Maltsters Association of Great Britain



Using the AHDB Recommended Lists

Compare varieties for your intended market

Information on markets for wheat, barley, oilseed rape and oats is given on pages 4–6.

Varieties are presented in the Recommended List tables ranked by their UK treated yield within end-use groups. The tables provide full details of quality data and information on acceptable markets for each variety.

Assess the likely management inputs

For barley and winter wheat, separate tables are provided with agronomy information. For the other crops, this information is incorporated into a single table with the yield and quality information.

Use the information provided on the susceptibility of varieties to major diseases, pests and lodging in combination with regional information on page 7 to assess the likely management inputs.

Get more detail

Supplementary tables include annual yield data, which can indicate a variety's consistency of performance in different seasons. Other information in these tables includes yield data for different sowing dates, soil types and rotations.

Read a summary

Use the variety comments pages as a summary of the key features of each variety to help you decide if the variety is appropriate for your region and end markets.

Look at the trials data

Visit **cereals.ahdb.org.uk/monitoring** to use the Variety Selection Tool to visualise RL trials data from your region.

Variety information will also be available at a number of other events throughout the year. For more information, visit cereals.ahdb.org.uk/events

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Status in the Recommended Lists

Scope of recommendation

Scope of recommendation may refer to a UK, regional or specific recommendation. Further details for specific recommendations are given in the table footnotes.

Varieties no longer listed

Varieties no longer listed include those that are no longer recommended or have been withdrawn from the Recommended List by the breeder. Before a variety is taken off the List, it is removed from trials (indicated by an * in the tables).

Regional Lists for winter oilseed rape

For the first time, winter oilseed rape varieties have been presented on a single UK list. Regional recommendations are maintained with varieties ordered according to the scope of recommendation. This will enable you to compare performances of varieties throughout the UK. Varieties that are suitable for both the East/West (up to Teesside) and North regions have a UK recommendation. When choosing a variety consider both varieties that have been recommended for the UK and those recommended for your region.

Candidate varieties

Candidate varieties are usually in their first or second year of RL trials, having completed at least two years of preliminary trials, eg National List trials. They are considered for recommendation in the autumn if there are sufficient data.

Varieties grown in RL trials but not added to the AHDB Recommended List

These are varieties that were grown in RL trials but not added to the Recommended List, having failed to meet the criteria for a recommendation. Data are included for information as seed may be available for some of these varieties.

Descriptive List (DL) varieties

Descriptive Lists show trial data for spring oilseed rape, spring linseed, winter rye and winter triticale, where data are more limited than for other crops. The data available are presented for varieties for which seed is likely to be available. Although DL varieties have to meet basic yield guidelines to maintain a place on the DL, it does not constitute a recommendation.

Yield and quality

Yields

Yields are calculated as a percentage of the control. A range of established varieties are selected as controls and the average UK yield of these varieties is set to 100 per cent. For example, if the average yield of the control varieties is 10.2t/ha, a variety that yields 10.4t/ha will be shown as 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 which region is most appropriate for their conditions.

Annual yields

Annual yields provide a breakdown of variety performance in different seasons over the years the variety has been tested. Consistent high yields over a number of 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.

Oat quality

Grain quality characteristics presented for oats include kernel content, specific weight and per cent screenings through a 2.0mm 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 may provide some guidance – a variety with a low Hagberg may be prone to sprouting.

Agronomic traits

Brackling

Brackling is folding or breaking of the stems higher up the plant than stem lodging, where the damage 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.

Disease resistance ratings

Scores for disease resistance are based on natural infection and inoculated trials. Information is only used where relatively high levels of disease are present to prevent low disease pressure being mistaken for resistance. Varieties with ratings of 4 or less 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. If a variety relies on a single major resistance gene, a breakdown in resistance can see a variety with a score of 9 become very susceptible. The ratings can be read alongside the untreated yield, which provides an indication of the potential yield reduction as a consequence of disease. A combination of good disease resistance, straw strength and a high untreated yield, when compared with current varieties, is of high importance when selecting new varieties for the RL. Ratings are typically based on 3–5 years data. Due to major changes in wheat yellow rust in 2016, wheat yellow rust ratings are based on 2016 and 2017 information only.

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 it has been noted that differences can be far greater on farm, particularly where growing conditions are more marginal.

Flour milling

The largest single market for quality wheat is for flour production, with around six million tonnes of wheat being used by UK flour millers. Such is the importance of milling quality that wheat varieties are classified using four categories that have been defined by the National Association of British and Irish Millers (**nabim**).

Group 1 varieties are used for bread making and produce consistent milling and baking performance. Provided they achieve the specified quality requirements, millers will offer a premium above base prices. Lower protein Group 1 wheat will also be of value but may attract a lower premium. Group 1 varieties are not interchangeable and some are better suited to specific uses than others.

Group 2 varieties are also mainly used for bread making but, because of either their inherent inconsistency or specific characteristics, are not suited to all grists. These varieties are likely to attract varying market prices. Lower protein Group 2 wheats are also widely used by millers but will attract variable premiums.

Group 3 contains soft varieties for biscuit, cake and other flours where the main requirement is for softmilling characteristics, low protein, good extraction rates and an extensible, but not elastic, gluten.

Group 4 varieties are grown mainly as feed wheats. Some may be used by millers in certain 'general purpose' grists if they achieve the contractual standards but are unlikely to attract a premium. Some varieties may be suitable for export. Group 4 varieties are subdivided into hard endosperm and soft endosperm types and care should be taken to avoid mixing them.

Feed

Feed varieties currently comprise the majority of the varieties grown. Typical industry standards for feed wheat are a specific weight of 72kg/hl and a maximum moisture of 15 per cent. To reflect this, there is a minimum standard of 74kg/hl for feed wheat varieties for recommendation.

Cereal foods

Although most cereal food requirement is focused on maize and oats, a notable amount of wheat and barley (often malted) is also required. Much of the wheat used consists of Group 3 and 4 varieties. Quality requirements vary and premiums may be available, depending on markets and usage.

Distilling

Varieties most suitable for this market produce a high alcohol yield and have low viscosity. They are found in Group 3 and Group 4 soft categories.

Biofuels

Wheat is now an established UK biofuel crop. Processors require grain giving good alcohol yields and high processing efficiency. They do not currently specify preferred varieties.

2017 GB wheat area by end-use category

Source: AHDB Variety Survey 2017



Typical specifications

	nabim Group 1	nabim Group 2	nabim Group 3	ukp	uks
Specific weight	76kg/hl (min)	76kg/hl (min)	74kg/hl (min)	76kg/hl (min)	75kg/hl (min)
Moisture content	15% (max)	15% (max)	15% (max)	14% (max)	14% (max)
Admix	2% (max)				
Hagberg Falling Number (HFN)	250s (min)	250s (min)	220s (min)	250s (min)	220s (min)
Protein	13%	12.5%	11.5%	11–13%	10.5–11.5%
W	N/A	N/A	N/A	170 (min)	70–120
P/L	N/A	N/A	N/A	0.9 (max)	0.55 (max)

Starch production

Starch production requires similar characteristics to varieties for distilling but the industry currently does not have a preferred variety.

Exports

Exports play an important role and provide some support to wheat prices by preventing oversupply in the domestic market. The UK produces good quality milling wheat, which is highly sought after in countries such as Algeria, Morocco, Portugal and Spain.

There is a constant core market overseas and growers can capitalise on these market opportunities when choosing which variety to grow and when marketing grain. If you farm within an 80 mile radius of a port, your local market could be Spain, Algeria, Portugal, Turkey and the Netherlands.

Overseas buyers have different requirements to domestic buyers. AHDB has developed the **uks** (soft biscuit wheat) and **ukp** (bread wheat) classifications so overseas buyers who are unfamiliar with individual varieties can instantly understand what qualities the grain possesses. Overseas buyers commonly use the Chopin Alveograph test (see below). North African and Middle Eastern markets prefer a lower moisture content, often less than 14 per cent.

For further information on supplying the export market, please visit **cereals.ahdb.org.uk/exports**

The 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 which is very extensible with low strength.

Barley

Barley is currently enjoying a resurgence within the UK, with the crop area increasing year-on-year for the past three harvests. Spring barley in particular has benefited from the general trend towards spring-planted crops, due, in part, to interest in cultural control measures for agronomic challenges, such as black-grass and better relative economic returns. The main markets are malting, brewing and distilling, as well as animal feed.

The Maltsters' Association of Great Britain (MAGB) is the trade association of the UK malting industry and represents over 98 per cent of UK malt production. MAGB anticipates barley crop purchases at 1.9 million tonnes from England and Scotland from the 2018 crop.

Grain nitrogen band



Figure 1. The graph above shows MAGB members' wish list for grain nitrogen levels in 2018 barley crop purchases from England and Scotland

Exports

With bigger crops in recent years, exports of both malting and feed barley have become increasingly important. Malting barley exports are largely focused on Europe, with feed barley competing in both European and global markets. In 2015, the UK signed a protocol agreement with China for the export of UK barley. This was the result of many years of work by AHDB Cereals & Oilseeds, supported by UK government agencies and industry bodies.

Oilseed rape

Oilseed rape remains an important part of many rotations, although the area has declined since the record 0.76 million hectares in 2012. In 2017, the smallest area since 2009 was recorded, following lower prices and concerns over the loss of key inputs.



UK Area UK Price (delivered Erith) Source: *average price as at 21 December 2017, provisional area AHDB/Defra

The markets for oilseed rape include:

- Edible oil
- High oleic, low linolenic (HOLL) oilseed rape
- High erucic acid rapeseed (HEAR)
- Biodiesel

HOLL oilseed rape oil meets the food industry's needs as it is a low trans fatty acid and low saturated fat vegetable oil that is stable and performs well in high temperature uses. All HOLL rapeseed is currently grown under contract to ensure quality of supply and traceability. A rotation gap of three years is recommended between standard and HOLL crops. HOLL should not be grown on land previously used for HEAR. HOLL oil profile is also suitable for the general commodity crush if the contract specification is not achieved.

HEAR varieties are used in the relatively small industrial processing market. Care should be taken to keep HEAR varieties separate from others.

Oats

The main markets for oats are milling and feed, with the human and industrial market increasing in recent years. All varieties should be acceptable for both uses. Varieties may be either husked or huskless (naked). The 2017 UK oat area is estimated at 161,000ha, 14 per cent larger than 2016 and 14 per cent above the 2012–2016 average.



Market Intelligence from AHDB

Looking at the UK, EU and world markets, AHDB offers free up-to-the-minute data through a range of resources to support farmers in their decision-making:

- Real-time, contextualised price information and commentary on market movements in Grain Market Daily
- Regular market analysis
- Weekly grain and oilseeds round-up in Market Report
- Daily futures prices

Email cereals.subscriptions@ahdb.org.uk call 024 7647 8730 or visit cereals.ahdb.org.uk/markets for more information.

Regional markets

Information from the AHDB Variety Survey can be used to give an indication of the relative importance of different end-use markets in each region of the UK.

For wheat, bread making quality, varieties generally tend to be more popular in the East, while distilling varieties will be of greater importance further north.

For barley, spring malt varieties for brewing will be in greater demand in the South, while further north, malt distilling varieties will be more appropriate.

Regional trials data

The AHDB Cereals & Oilseeds Variety Selection Tool allows users to navigate the latest variety trials data and make comparisons – based on location-specific information – to help identify the most promising winter wheat and winter barley varieties for their unique situations.

By selecting geographical location, rotational position, soil type or sowing date, the tool visualises trials data in chart format for easy comparison of varieties. By selecting a 'district' (based on regional climates defined by the Met Office), trial data from other areas are excluded, potentially making the results more regionally relevant.



Barley Key



*Other includes provisionally approved varieties for malt in 2017.

Source: AHDB Variety Survey 2017



Regional disease risk

Variety treated yields are presented based on trials where the varieties received a full fungicide and plant growth regulator programme. Look at the untreated yield row for guidance on how the variety may perform under high disease pressure where crop protection may have been delayed.

Some diseases are economically important in all regions, for example, septoria tritici in wheat. Others, however, may be more common in specific regions. Yellow rust in wheat, for example, is of greater importance in the East and rhynchosporium in barley is of greater importance in the West and North.

Recommended Lists disease ratings are based on a 1–9 scale, where high numbers indicate high resistance. See page 3 for more information.

Disease risk



Oilseed rape disease risk



The disease ratings on the Recommended Lists are an indicator of variety performance in previous years. The fungi that cause disease are continually changing and varieties with a high rating may change within a season if new fungal races occur. Monitoring activities can help to give an early warning of such changes.

New races of yellow rust and brown rust have been identified in the UK Cereal Pathogen Virulence Survey. In 2016, major changes were seen in the susceptibility

Wheat disease risk

of some wheat varieties to yellow rust. Yellow rust ratings have therefore been calculated using 2016 and 2017 information only.

Isolates collected in 2016 revealed the presence of at least two new races that were widespread in the UK: Red 24 and Blue 7. Between them, these two races were shown to be behind some of the changes in variety resistance ratings. It is possible that further races were also responsible and the UKCPVS continues to work on isolates collected in 2017.

Further information and sampling guidelines can be found at **cereals.ahdb.org.uk/ukcpvs**



Barley disease risk



Winter wheat 2	201	8/1	9 - 1	nabi	m C	ігоц		1–3	and	So	ft G	гои	p 4	– M	arke	et o	ptic	ons,	yie	ld a	nd g	угаі	n qu	ialit	:y	North region
					6																					West East region region
RECOMMENDED	this	Watt Skyli	all this	Frinity RGTH	ustrious Cruse	e this	Siskin tws	i ^{jii} cordi	ale this p	barrel Elicit	Spyde	tws B	255et	this	ackal Hatif	on Benni	Ington LCSU	dance Hard	wicke savel	LO LCM	Moul	teeds	NNY'IS	d Reve	Jiscon Visco	unterage (sol)
End-use group	nabim	n Group	o 1			nabim	Group	2	nabim	Gгоир	3			Soft G	roup 4											
Scope of recommendation	UK	UK C	UK	UK	UK C	UK	UK	UK *	UK	UK NEW	E&W	UK	UK C	N NEW	UK NEW	E&W	UK	Ν	Ν	UK	UK	UK	Ν	UK	Ν	
Fungicide-treated grain yiel	ld (% tr	reated	contro	ι)																						
United Kingdom (11.0t/ha)	102	100	99	98	97	103	102	96	103	103	100	100	99	104	104	103	102	102	102	102	101	101	99	98	98	2.1
East region (10.9t/ha)	102	100	99	98	97	103	102	97	102	103	100	100	99	104	104	104	102	102	102	102	101	101	99	99	98	2.5
West region (11.3t/ha)	103	100	98	99	98	103	101	95	101	101	101	99	98	102	103	103	102	101	100	101	101	100	98	97	97	2.7
North region (10.7t/ha)	100	100	99	94	94	100	103	95	107	[104]	96	99	102	[105]	[103]	100	102	103	104	102	101	102	101	99	101	3.5
Main market options (The s	pecific	attribu	ites of	varietie	es are d	ifferen	it, so, v	henev	er poss	ible, va	arieties	should	l not b	e mixec	l in sto	ге)										
UK breadmaking	Υ	Y	Υ	Y	Υ	Y	Y	Υ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	Y	Υ	Υ	Y	Υ	-	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	-	-	[Y]	[Y]	Υ	-	[Y]	[Y]	[Y]	[Y]	-	[Y]	[Y]	Y	Υ	
ukp ^{##} bread wheat for export	Υ	-	-	-	Υ	Y	Y	Υ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
uks ²⁴ soft wheat for export	-	-	-	-	-	-	-	-	Y	Υ	-	Y	Υ	-	Υ	Y	-	-	-	-	Υ	Υ	[Y]	[Y]	[Y]	
Grain quality																										
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	
Protein content (%)	11.9	11.9	11.6	11.9	12.5	11.5	11.2	12.1	11.0	11.3	11.8	11.3	11.3	10.8	11.2	11.3	11.0	11.0	11.1	11.1	11.5	11.1	11.2	11.3	11.1	0.2
Protein content (%) – Milling spec	12.9	13.1	12.8	13.0	13.6	12.9	12.3	13.1	12.1	-	12.9	12.4	12.4	-	-	12.3	12.2	12.2	12.3	12.2	12.6	12.2	12.5	12.3	12.2	0.3
Hagberg Falling Number	274	294	348	278	275	302	305	335	224	206	286	234	234	160	200	237	175	206	216	219	267	212	240	253	192	20
Specific weight (kg/hl)	78.5	78.9	78.1	77.6	78.4	77.7	77.6	79.9	77.6	77.7	76.9	77.9	76.7	76.7	78.3	77.7	75.0	76.5	75.1	76.2	78.0	78.4	77.1	76.7	76.6	0.6
Chopin alveograph W	191	[216]	[241]	[260]	217	181	189	[200]	94	88	[136]	91	97	[75]	94	90	73	86	-	59	98	[74]	[91]	[78]	[91]	23
Chopin alveograph P/L	0.6	[1.5]	[0.9]	[1.2]	0.6	0.6	0.7	[0.6]	0.4	0.3	[0.4]	0.3	0.3	[0.3]	0.3	0.4	0.4	0.6	-	0.3	0.4	[0.2]	[0.2]	[0.3]	[0.3]	0.2

Varieties no longer listed: Belgrade, Britannia, Claire, Gallant and Relay.

Comparisons of varieties across regions are not valid.

E&W = Recommended for the East and West regions

= Recommended for the North region

UK = Recommended for the UK

= Variety no longer in trials

Ν

*

С	= Yield control	(for current table)
---	-----------------	---------------------

[]

[Y] = May be suited to that market

= Limited data

[[]] = Very limited data

Y = Suited to that market

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 2018/19 – Hard Group 4 – Market options, yield and grain quality

						2°											
AHDB		With		rin		erston	1390		pin		· · ·	.0	£ 0				e.
RECOMMENDED	RUTU	a clean	twste	shabras	4WS Silv	4WS Sal	Graham	4ms cr	Dickens	Evolutio	Freiston	Reflectiv	Dunston	costello	JB Diegt	Grafton	AVERS 50101
End-use group	Hard Gro	oup 4															
Scope of recommendation	UK	UK	E&W	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
	NEW	NEW			*	*C			*			*			С	*	
Fungicide-treated grain yield (% treat	ed contro	ol)															
United Kingdom (11.0t/ha)	106	105	105	104	104	103	103	102	102	102	102	102	102	101	101	99	2.1
East region (10.9t/ha)	106	106	105	104	104	104	102	103	102	103	102	102	102	101	100	99	2.5
West region (11.3t/ha)	106	104	104	104	103	102	106	103	102	100	103	102	101	102	101	98	2.7
North region (10.7t/ha)	[108]	[105]	107	105	104	104	101	98	103	104	103	102	103	100	101	[[101]]	3.5
Main market options (The specific att	ributes of	^F varieties	are diffe	rent, so, w	vhenever	possible,	varieties	should n	ot be mix	ed in stor	e)						
UK breadmaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ukp ^{fff} bread wheat for export	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
uks ^{for} soft wheat for export	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Grain quality																	
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	11.2	11.0	10.6	10.9	11.1	11.2	11.1	11.4	11.2	10.9	10.8	11.0	11.2	11.6	11.3	11.6	0.2
Protein content (%) – Milling spec	-	-	11.6	12.1	11.9	12.5	12.1	12.5	12.0	12.1	11.9	12.1	12.4	12.6	12.4	12.6	0.3
Hagberg Falling Number	195	203	139	202	299	171	286	283	257	202	174	246	225	336	319	324	20
Specific weight (kg/hl)	76.8	76.6	76.6	76.4	78.9	76.1	77.1	77.4	76.8	75.5	77.5	78.5	77.2	81.1	78.4	79.1	0.6
Chopin alveograph W	-	-	-	-	[174]	-	132	-	-	[145]	[75]	-	[73]	[187]	-	-	23
Chopin alveograph P/L	-	-	-	-	[1.4]	-	0.5	-	-	[1.2]	[0.9]	-	[0.6]	[0.8]	-	-	0.2

Varieties no longer listed: Belgrade, Britannia, Claire, Gallant and Relay.

Comparisons of varieties across regions are not valid.

UK = Recommended for the UK

*

- E&W = Recommended for the East and West regions
- Ν = Recommended for the North region
 - = Variety no longer in trials

- С = Yield control (for current table) = Limited data []
- [[]] = Very limited data
- Υ
 - = Suited to that market

[Y] = May be suited to that market LSD = Least significant difference

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

West East region regia

Winter wheat 2018/19) – r	nab	im	Gго	ups	s 1-	3 a	nd	Sof	t Gr	oup) 4 -	- Yi	eld,	agr	ono	omy	an	d d	ise	ase	гез	ista	anc	e	North
																										West East region region
RECOMMENDED	4245	tyatt Skyl	all the	Trinity	Illustrio	oe this	Siskin 4WS	Li ^{li} coré	iale this	Barrel	5840	er the	Basset	4 ² / ₂ / ₂ / ₂	Jackal Hatir	on Benn	ington LCS	undance Hard	wicke savel	10 J.C.M	NOTONUL WOR	ton Leed	s Myri	Reve	Jation Visco	unt Average LO LSO
End-use group	nabir	n Grou	ip 1			nabin	n Grou	p 2	nabin	n Group	o 3			Soft C	ігоир 4											
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E&W	UK	UK	Ν	UK	E&W	UK	Ν	Ν	UK	UK	UK	Ν	UK	Ν	
		С			С			*		NEW			С	NEW	NEW											
Fungicide-treated grain yield (% treated c	ontrol)																								
United Kingdom (11.0t/ha)	102	100	99	98	97	103	102	96	103	103	100	100	99	104	104	103	102	102	102	102	101	101	99	98	98	2.1
East region (10.9t/ha)	102	100	99	98	97	103	102	97	102	103	100	100	99	104	104	104	102	102	102	102	101	101	99	99	98	2.5
West region (11.3t/ha)	103	100	98	99	98	103	101	95	101	101	101	99	98	102	103	103	102	101	100	101	101	100	98	97	97	2.7
North region (10.7t/ha)	100	100	99	94	94	100	103	95	107	[104]	96	99	102	[105]	[103]	100	102	103	104	102	101	102	101	99	101	3.5
Untreated grain yield (% treated control)																										
United Kingdom (11.0t/ha)	89	82	77	83	76	86	74	64	74	86	82	75	74	79	82	87	87	84	78	88	88	71	67	80	74	6.1
Agronomic features																										
Resistance to lodging without PGR (1–9)	7	8	8	7	7	6	7	7	7	7	6	7	6	7	7	7	6	7	6	6	6	7	7	7	7	0.5
Resistance to lodging with PGR (1–9)	8	8	8	8	8	7	8	8	8	8	7	8	7	7	8	8	7	8	7	6	7	8	7	8	8	0.5
Height without PGR (cm)	83	82	80	88	80	83	81	78	82	85	89	84	89	85	81	90	86	79	87	82	88	85	88	85	80	1.9
Ripening (days +/- JB Diego, -ve = earlier)	0	0	+1	+1	+1	+1	+3	-2	+1	+1	+1	+2	+1	+1	+1	+1	+2	0	0	0	0	+2	+2	+3	+1	0.6
Resistance to sprouting (1–9)	[5]	5	6	[6]	6	[5]	7	6	[6]	-	[6]	[6]	5	-	-	[5]	[5]	[6]	[5]	[6]	[5]	6	6	5	5	1.0
Disease resistance																										
Mildew (1–9)	7	5	8	6	6	9	8	7	6	6	8	5	7	7	7	7	7	6	7	8	7	3	5	5	7	1.8
Yellow rust (1–9)	7	6	9	9	9	9	7	4	8	9	7	8	5	9	9	6	9	8	8	9	8	6	4	9	6	0.9
Brown rust (1–9)	6	9	7	6	3	5	4	4	6	7	7	5	5	5	6	7	6	6	4	7	7	5	5	8	9	1.0
Septoria nodorum (1–9)	[6]	[6]	[5]	[6]	6	[6]	[6]	[5]	[5]	-	[6]	[6]	[6]	-	-	[7]	[6]	[6]	[6]	[6]	[6]	[6]	[5]	[6]	[6]	0.6
Septoria tritici (1–9)	6.2	6.0	5.7	6.3	6.8	6.9	6.1	4.5	4.7	6.4	5.6	5.2	5.4	5.1	4.7	6.4	7.4	5.8	4.9	5.7	6.3	4.6	5.5	6.3	4.6	0.7
Eyespot (1–9)	7@	6@	5	6@	4	5	5	5	4	[4]	4	5	4	[4]	[4]	5	3	4	4	4	4	4	4	8@	5	1.2
Fusarium ear blight (1–9)	[6]	7	6	5	6	5	6	5	6	[6]	6	6	6	[6]	[6]	[6]	[6]	[5]	[6]	[6]	[6]	7	6	7	6	0.5
Orange wheat blossom midge	-	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 (eg high resistance). Comparisons of varieties across regions are not valid.

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[[]]

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UK = Recommended for th	e U	K
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- E&W = Recommended for the East and West regions
- N = Recommended for the North region
- * = Variety no longer in trials
- C = Yield control (for current table)

- Limited dataVery limited data
- = 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 2017/18 – Hard Group 4 – Yield, agronomy and disease resistance

						rone	0										
AHDB		avited		in		Nersu	ntiag		ISPIN .	s .(n 10	N 4	ion of	0	.	° °	(ageolo)
RECOMMENDED	RUTCI	Clean	4WS to	Shabra	4MS SI	4MSSe	Grahall	4ms	Dicker	Evolut.	Freisto	Reflect	Dunsto	costell	JBDie	uraftor	AVENES
End-use group	Hard Gr	oup 4															
Scope of recommendation	UK	UK	E&W	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
	NEW	NEW			*	*C			*			*			С	*	
Fungicide-treated grain yield (% treated co	ontrol)																
United Kingdom (11.0t/ha)	106	105	105	104	104	103	103	102	102	102	102	102	102	101	101	99	2.1
East region (10.9t/ha)	106	106	105	104	104	104	102	103	102	103	102	102	102	101	100	99	2.5
West region (11.3t/ha)	106	104	104	104	103	102	106	103	102	100	103	102	101	102	101	98	2.7
North region (10.7t/ha)	[108]	[105]	107	105	104	104	101	98	103	104	103	102	103	100	101	[[101]]	3.5
Untreated grain yield (% treated control)																	
United Kingdom (11.0t/ha)	83	88	83	83	81	69	88	86	78	81	86	68	89	83	74	74	6.1
Agronomic features																	
Resistance to lodging without PGR (1–9)	7	7	7	7	6	7	7	6	7	7	6	7	7	7	7	8	0.5
Resistance to lodging with PGR (1–9)	7	8	7	7	6	7	8	7	7	7	6	8	8	8	8	8	0.5
Height without PGR (cm)	86	86	83	85	88	85	86	85	85	89	91	80	92	81	87	75	1.9
Ripening (days +/- JB Diego, -ve = earlier)	+1	0	+1	0	+1	+2	0	+1	0	+2	0	0	+1	+2	0	-1	0.6
Resistance to sprouting (1–9)	-	-	[5]	[4]	[6]	5	[7]	[5]	5	6	[5]	5	[6]	7	7	5	1.0
Disease resistance																	
Mildew (1–9)	4	6	7	6	7	6	7	7	7	6	6	7	5	8	6	[7]	1.8
Yellow rust (1–9)	8	7	7	8	7	7	8	9	9	8	9	3	7	9	5	6	0.9
Brown rust (1–9)	6	6	7	4	7	5	6	5	6	7	7	9	6	5	6	6	1.0
Septoria nodorum (1–9)	-	-	[6]	[6]	[6]	5	[6]	[6]	[5]	[6]	[6]	[5]	[6]	[6]	6	[5]	0.6
Septoria tritici (1–9)	5.2	6.2	5.3	6.2	4.8	4.3	6.9	6.1	4.8	5.5	6.8	5.2	6.5	6.4	5.3	5.4	0.7
Eyespot (1–9)	[4]	[5]	5	5	5	4	4	4	4	5	4	5	6@	5	5	6@	1.2
Fusarium ear blight (1–9)	[6]	[6]	[6]	[5]	6	6	6	6	6	6	[6]	6	[6]	7	6	5	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 (eg high resistance). Comparisons of varieties across regions are not valid.

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[[]]

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UK = Recommended for the UK

= Limited data

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- E&W = Recommended for the East and West regions
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- * = Variety no longer in trials
- C = Yield control (for current table)

 Believed to carry the *Pch1* Rendezvous resistance gene to eyespot but this has not been verified in Recommended List tests Believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in Recommended List tests

R

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 2018/19 – Supplementary data nabim Groups 1–3 and Soft Group 4

RECOMMENDED	this	Lyatt Skyl	all this	Frinited RGT	UUSERIOU	oe the	Siskin	Lili Cordi	iale two	Barrel	Spyc	er twi	8355et	Y this	a lackal	ion Ben	ington Losu	ndance Hard	wicke savel	e to the	otown Moul	Leed Leed	5 Myri	ad Reve	ation Viscol	AVE189
End-use group	nabim	n Grou	р 1			nabin	n Group	o 2	nabin	n Group	o 3			Soft G	гоир 4											
Scope of recommendation	UK	UK C	UK	UK	UK C	UK	UK	UK *	UK	UK NEW	E&W	UK	UK C	N NEW	UK NEW	E&W	UK	Ν	Ν	UK	UK	UK	Ν	UK	Ν	
Breeder/UK contact																										
Breeder	KWS	RAGT	KWS	R2n	Lim	KWS	KWS	KWS	KWS	ElsW	BA	KWS	Lim	KWS	ElsW	ElsW	LimEur	Sej	SyP	LimEur	ElsW	Mom	Lim	Lim	KWS	
UK contact	KWS	RAGT	KWS	RAGT	Lim	KWS	KWS	KWS	KWS	Els	Sen	KWS	Lim	KWS	Els	Els	Lim	KWS	Syn	Lim	Els	KWS	Lim	Lim	KWS	
Annual treated yield (% control)																										
2013 (10.0t/ha)	-	102	[97]	[100]	97	[100]	[99]	96	[101]	-	[101]	[99]	98	-	-	-	-	-	-	-	-	101	98	99	99	3.6
2014 (11.7t/ha)	103	100	99	98	99	103	102	95	102	-	99	101	99	-	-	103	103	104	104	103	103	102	100	100	98	2.6
2015 (11.7t/ha)	102	100	100	98	96	105	102	94	104	103	99	102	99	105	105	103	102	103	104	102	101	101	101	99	101	2.6
2016 (10.6t/ha)	100	98	98	94	97	101	102	97	103	105	100	97	100	104	103	104	105	100	101	103	104	101	101	96	100	2.3
2017 (10.9t/ha)	103	99	99	99	98	102	101	97	103	101	100	99	99	103	103	102	100	102	100	99	99	100	98	98	99	2.1
Rotational position																										
First cereal (11.4t/ha)	101	100	99	97	97	103	102	96	103	102	100	100	100	104	103	103	102	102	101	101	101	101	99	98	99	2.1
Second and more (9.8t/ha)	103	101	99	98	96	103	101	95	103	103	100	101	98	105	105	103	104	103	105	103	102	101	100	99	99	3.3
Sowing date (most trials were sown in Octo	ber)																									
Early sown (before 15 Sept) (11.1t/ha)	-	99	100	[99]	97	-	[[105]]	-	99	[[103]]	100	102	[100]	[[104]]	[[101]]	[104]	[[99]]	-	-	[[99]]	-	101	-	100	98	4.1
Late sown (mid-Nov to end-Jan) (10.6t/ha)	[98]	98	99	97	96	102	103	[95]	103	[[102]]	101	100	101	[[104]]	[[103]]	[100]	[[104]]	[[101]]	[101]	[99]	[100]	103	[105]	[[100]]	[[101]]	4.1
Soil type (about 50% of trials are on mediu	m soils	;)																								
Light soils (10.7t/ha)	101	100	98	94	96	101	104	94	105	[103]	99	99	101	[103]	[105]	99	102	101	101	103	101	102	101	99	100	4.1
Heavy soils (11.4t/ha)	102	100	99	98	97	102	102	95	102	102	100	100	99	104	104	104	101	101	101	101	101	100	99	98	[97]	2.9
Agronomic features																										
Lodging % without PGR	2	1	1	2	2	10	1	1	1	3	9	2	7	2	3	3	6	1	11	12	7	2	4	2	3	
Lodging % with PGR	1	1	1	1	1	5	1	1	1	2	6	1	5	5	1	2	9	1	8	12	8	2	4	2	2	
	[Mid	End	End	Mid	End	End	Mid	Mid	End	[Mid	End	End	Mid	[End	[Mid	[Mid	[End	[End	[Mid	[End	[Mid	End	Mid	End	Mid	
Latest safe sowing date #	Feb]	Feb	Jan	Feb	Jan	Jan	Feb	Feb	Jan	Feb]	Jan	Jan	Feb	Jan]	Feb]	Feb]	Jan]	Jan]	Feb]	Jan]	Feb]	Feb	Feb	Jan	Feb	
Speed of development to growth stage 31 ((days +	/- ave	rage)																							
Early Sept sown	[0]	-6	-7	+1	+1	[-11]	-3	-2	+4	[-1]	+1	-5	0	[+6]	[-2]	[-9]	[+6]	[+1]	[+2]	[-5]	[-4]	-3	+3	+4	+1	9.6
Early Oct sown	[-1]	-1	+3	+2	+1	-4	-1	-3	+4	[+2]	-2	-2	+2	[+4]	[-1]	[0]	[+1]	[-1]	[-5]	[-5]	[+2]	0	+5	+2	0	6.6
Early Nov sown	[-3]	-1	0	[0]	-1	[-3]	+1	-1	[+3]	[0]	[-4]	[-2]	+2	[-2]	[-2]	[+2]	[+1]	[+2]	[-1]	[+1]	[+5]	+1	+4	+4	+1	4.9
Status in RL system				1.1]					-
Year first listed	17	14	15	16	12	16	15	04	16	18	16	16	14	18	18	17	17	17	17	17	17	13	13	13	09	
RL status	P2	-	-	-	_	-	-	*	_	P1	-	_	-	P1	P1	P2	P2	P2	P2	P2	P2	_	_	-	-	
All yields in this table are taken from treated trials	s receiv	ring a fu	ull fungi	cide an	d PGR	progra	mme.																			

UK E&W N	 Recommended for the UK Recommended for the East and West regions Recommended for the North region 	[[]] #	 Very limited data Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for 	ElsW = Elsoms Wheat Ltd (www.elsoms.com) KWS = KWS UK (www.kws-uk.com) Lim = Limagrain LIK (www.lgseeds.co.uk)	Sej Sen Svn	= Sejet, Denmark = Senova (www.senova.uk.com) = Syngenta LIK Ltd (www.syngenta.co.uk)
P1 P2	 First year of recommendation Second year of recommendation 	Agr	flowering = Agrii (www.agrii.co.uk)	LimEur = Limagrain Europe SA (www.lgseeds.co.uk) Mom = Momont, France	SyP	= Syngenta OrcEd (www.syngenta.co.uk) = Syngenta Participations AG (www.syngenta.co.uk)
* C []	 Variety no longer in trials Yield control (for current table) Limited data 	BA Bre Els	= Blackman Agriculture = Saatzucht Josef Breun, Germany = Elsoms Seeds Ltd (www.elsoms.com)	RAGT = RAGT Seeds, UK (www.ragt.co.uk) R2n = RAGT, France (www.ragt.co.uk) Sec = Secobra, France	LSD Avera apart	= Least significant difference age LSD (5%): Varieties that are more than one LSD t are significantly different at the 95% confidence level.

Winter wheat 2018/19 – Supplementary data Hard Group 4

RECOMPLADED result re	AHDB	CIT?	avited	eteri	II	WS ares	ione	antiago san	نى `	spin	is ution	n "tof	in section	on stor	i elle) Sie	9° _{cto} r	lerage
End-ug orup Hard Crow J Victor <	RECOMMENDED	RCI	Cles.	this	shab	Frine	this	Crati	this	Dicke	ENOL	Freis	Refle	Duns	COSt	JB V.	Crate	A"50
Scope of recommendationUK	End-use group	Hard Grou	јр 4															
NewNe	Scope of recommendation	UK	UK	E&W	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Difference (P) Contact PACI Syn KWS Syn	Provide a future state of	NEW	NEW			*	*C			*			*			С	*	
Dresser H2n SyP KWS SyP	Breeder/UK contact	Do	0.5	10110	0.5	1/11/0	10110	0.0	14110	0	0 ·	E1 14 (0.5	F 1 14/	10110		10110	
Over control PAGI Synt KVIS	Breeder	R2n	SyP	KWS	SyP	KWS	KWS	SyP	KWS	Sec	Sej	EISW	SyP	EISVV	KWS	Bre	KWS	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Appual treated yield (% control)	RAGI	Syn	KW3	Syn	KW3	KW3	Syn	KW3	Agr	LIIII	EIS	Syn	EIS	Sen	Sen	KW3	
Late solution - - - - - - 100 101 100 102 102 - 108 104 100 101 101 102 102 101 102 103 104 100 101 101 2.6 2015 (11.7L/ha) 105 104 103 104 101 101 101 101 101 105 102 101 199 2.6 2.6 2015 (10.6L/ha) 105 104 103 104 101 101 103 104 101 101 105 103 104 103 104 101 101 103 103 104 101 101 103 103 104 101 101 103 103 104 100 101 103 103 104 100 101 103 103 104 100 101 103 103 101 101 103 103 101 101 103 103 101 101 103 101 101 103						[101]	104	[101]	[100]	105	100		[00]		[00]	100	[07]	26
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	2014 (11 7t/ba)	-	-	-	-	105	104	104	104	105	102	-	[99] 103	-	100	100	[97]	3.0 2.6
Correct (10, K/ha) Tool T	2015 (11 7t/ba)	-	-	100	105	103	102	104	104	101	102	103	103	104	100	101	[101]	2.0
Construction Construction <th< td=""><th>2016 (10 6t/ba)</th><td>100</td><td>105</td><td>105</td><td>103</td><td>104</td><td>104</td><td>101</td><td>101</td><td>107</td><td>102</td><td>104</td><td>103</td><td>101</td><td>99</td><td>101</td><td>[99]</td><td>2.0</td></th<>	2016 (10 6t/ba)	100	105	105	103	104	104	101	101	107	102	104	103	101	99	101	[99]	2.0
Retational position Itor	2017 (10.9t/ha)	105	104	103	103	103	103	104	101	102	101	99	101	99	103	101	[98]	2.0
First cereal (11.4t/ha) 106 105 104 104 103 104 102 102 102 102 101 101 101 101 99 2.1 Second and more (9.8t/ha) 108 107 106 106 104 104 101 101 103 105 102 101 101 101 101 101 103 105 102 104 100 101 101 101 103 105 102 102 104 100 101 <t< td=""><th>Rotational position</th><td>100</td><td>101</td><td>100</td><td>100</td><td>100</td><td>100</td><td>101</td><td>101</td><td>100</td><td>101</td><td>00</td><td>101</td><td>00</td><td>100</td><td>101</td><td>[00]</td><td>2.1</td></t<>	Rotational position	100	101	100	100	100	100	101	101	100	101	00	101	00	100	101	[00]	2.1
Second and more (9.8;/ha) 108 107 106 106 104 101 101 103 103 105 102 104 100 101 197 3.3 Sowing date (most traits were sown in October) Early sown (before 15 Sept) (11.1t/ha) [[103]] [[106]] - - - 103 [105] - - [103] - - [[107] [104] 102 101 97 4.1 Late sown (mid-Nov to end-Jan) (10.6t/ha) [[106]] [[105] [105] 105 105 103 102 101 102 103 102 101 103 103 100 103 101 103 103 102 103 101 101 103 101 103<	First cereal (11.4t/ha)	106	105	104	104	104	103	104	102	102	102	102	102	101	101	101	99	2.1
Sowing date (most trials were sown in October) Image: constraint of the source of	Second and more (9.8t/ha)	108	107	106	106	104	104	101	101	103	103	105	102	104	100	101	[97]	3.3
Early sown (before 15 Sept) (11.1t/ha) [[103] [[106]] - - - 103 [105] - 103 [107] [107] [104] 102 101 97 4.1 Late sown (mid-Nov to end-Jan) (10.6t/ha) [[106]] [105] [100] 103 105 102 104 102 103 [101] 103 101 99 101 - 4.1 Soil type (about 50% of trials are on medium woits: U U 105 105 105 105 102 101 104 102 102 102 101 101 109 4.1 Light soils (10.7t/ha) [105] 103 102 101 104 102 101 101 100 109 4.1 Heavy soils (11.4t/ha) 106 103 102 101 104 102 101 101 100 103 101 100 103 101 100 103 101 100 103 101 100 101 100 101 100 101 100 101 100 10	Sowing date (most trials were sown in Octo	ber)															[]	
Late sown (mid-Nov to end-Jan) (10.6t/ha) [1105] [100] 103 105 [102] 104 102 103 [101] 99 101 - 4.1 Soil type (about 50% of trials are on medium soils) [105] [103] 105 103 102 101 104 104 104 102 102 102 101	Early sown (before 15 Sept) (11.1t/ha)	[[103]]	[[106]]	-	-	-	103	[105]	-	[103]	-	-	[[107]]	[104]	102	101	97	4.1
Soil type (about 50% of trials are on medium soils) Vertice vertices Light soils (10.7t/ha) [105] [103] 105 105 105 103 102 101 104 102 102 102 101 101 [96] 4.1 Heavy soils (11.4t/ha) 106 105 103 102 103 102 101 104 102 102 101 101 101 [96] 4.1 Heavy soils (11.4t/ha) 106 105 103 102 103 102 101 102 101 101 101 100 [99] 2.9 Agronnic features Vertice of the time of the	Late sown (mid-Nov to end-Jan) (10.6t/ha)	[[106]]	[[105]]	[105]	[100]	103	105	[102]	104	102	103	[100]	103	[101]	99	101	-	4.1
Light soils (10.7t/ha) [105] [103] 105 105 105 103 102 101 104 104 102 102 101 <	Soil type (about 50% of trials are on mediu	m soils)																
Heavy soils (11.4t/ha) 106 105 103 102 103 102 101 102 101 102 101 101 100 [99] 2.9 Agronomic features 3 2 4 6 16 4 4 7 4 4 15 2 1 1 3 1 Lodging % without PGR 4 2 6 5 15 3 2 5 5 3 17 1 2 1 3 2 2 2 2 <	Light soils (10.7t/ha)	[105]	[103]	105	105	105	103	102	101	104	104	102	102	102	101	101	[96]	4.1
Agronomic features Lodging % without PGR 3 2 4 6 16 4 4 7 4 4 15 2 1 1 3 1 Lodging % without PGR 4 2 6 5 15 3 2 5 5 3 17 1 2 2 2 <	Heavy soils (11.4t/ha)	106	105	103	102	103	104	103	102	101	102	101	102	101	101	100	[99]	2.9
Lodging % without PGR 3 2 4 6 16 4 4 7 4 4 15 2 1 1 3 1 Lodging % with PGR 4 2 6 5 15 3 2 5 5 3 17 1 2 1 3 1 3 3 3 3 3 3 3	Agronomic features																	
Lodging % with PGR 4 2 6 5 15 3 2 5 5 3 17 1 2 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 16 3 16 16 16 16 16 16 16 16 16 <	Lodging % without PGR	3	2	4	6	16	4	4	7	4	4	15	2	1	1	3	1	
Latest safe sowing date # [End Jan] [End Jan] [Mid Jan] [Mid Feb [Mi	Lodging % with PGR	4	2	6	5	15	3	2	5	5	3	17	1	2	1	2	1	
Speed of development to growth stage 31 (days +/- average) Early Sept sown [0] [+7] [-3] [-1] -4 +4 +4 -4 -2 -1 [-4] 0 [+4] 0 -1 +6 9.6 Early Sept sown [+5] [+5] [+4] [+1] -5 +4 -1 -5 -2 +1 [0] +1 [0] -1 -1 +2 6.6 Early Nov sown [-3] [+2] [-1] [-2] [-4] 0 [-4] -6] -1 +1 [0] +1 [0] -1 +1 +2 6.6 Early Nov sown [-3] [+2] [-1] [-2] [-4] 0 [-4] -6] -1 +1 [17] 0 [+2] -3 -1 0 4.9 4.9 Status in RL system Vear first listed 18 18 17 17 16 11 16 13 14 17 15 17 15 08 09 RL status P1 P1 <th>Latest safe sowing date #</th> <td>[End Jan]</td> <td>[End Jan]</td> <td>[End Jan]</td> <td>[Mid Feb]</td> <td>End Jan</td> <td>End Jan</td> <td>End Jan</td> <td>Mid Feb</td> <td>End Jan</td> <td>Mid Feb</td> <td>[Mid Feb]</td> <td>Mid Feb</td> <td>[Mid Feb]</td> <td>End Jan</td> <td>End Jan</td> <td>End Jan</td> <td></td>	Latest safe sowing date #	[End Jan]	[End Jan]	[End Jan]	[Mid Feb]	End Jan	End Jan	End Jan	Mid Feb	End Jan	Mid Feb	[Mid Feb]	Mid Feb	[Mid Feb]	End Jan	End Jan	End Jan	
Early Sept sown [0] [+7] [-3] [-1] -4 +4 +4 -4 -2 -1 [-4] 0 [+4] 0 -1 +6 9.6 Early Oct sown [+5] [+5] [+4] [+1] -5 +4 -1 -5 -2 +1 [0] +1 [0] -1 -1 +2 6.6 Early Nov sown [-3] [+2] [-1] [-2] [-4] 0 [-4] -6] -1 +1 [17] 0 [+2] -3 -1 0 4.9 Status in RL system Vear first listed 18 18 17 17 16 11 16 13 14 17 15 17 15 08 09 RL status P1 P1 P2 P2 * * - - * - P2 * * * * - * P2 * * * *	Speed of development to growth stage 31	(days +/- av	verage)	-	1							1		1				
Early Oct sown [+5] [+5] [+4] [+1] -5 +4 -1 -5 -2 +1 [0] +1 [0] -1 -1 +2 6.6 Early Nov sown [-3] [+2] [-1] [-2] [-4] 0 [-4] [-6] -1 +1 [0] +1 [0] -1 -1 +2 6.6 Status in RL system	Early Sept sown	[0]	[+7]	[-3]	[-1]	-4	+4	+4	-4	-2	-1	[-4]	0	[+4]	0	-1	+6	9.6
Early Nov sown [-3] [+2] [-1] [-2] [-4] 0 [-4] [-6] -1 +1 [+7] 0 [+2] -3 -1 0 4.9 Status in RL system Year first listed 18 17 17 16 11 16 13 14 17 15 17 15 08 09 RL status P1 P1 P2 P2 * * - * - P2 *	Early Oct sown	[+5]	[+5]	[+4]	[+1]	-5	+4	-1	-5	-2	+1	[0]	+1	[0]	-1	-1	+2	6.6
Status in RL system 18 18 17 16 11 16 13 14 17 15 08 09 RL status P1 P1 P2 * * - * - P2 * *	Early Nov sown	[-3]	[+2]	[-1]	[-2]	[-4]	0	[-4]	[-6]	-1	+1	[+7]	0	[+2]	-3	-1	0	4.9
Year first listed 18 17 17 16 11 16 13 14 17 15 17 15 08 09 RL status P1 P1 P2 P2 * * - * - P2 * * - * - P2 * * *	Status in RL system																	
RL status P1 P1 P2 P2 * * * - P2 * P2 *	Year first listed	18	18	17	17	16	11	16	16	13	14	17	15	17	15	08	09	
	RL status	P1	P1	P2	P2	*	*	-	-	*	-	P2	*	P2	-	-	*	

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

[[]]

#

UK = Recommended for the UK E&W = Recommended for the East and West regions

N = Recommended for the North region

- N = Recommended for the North region P1 = First year of recommendation
- P2 = Second year of recommendation
- * = Variety no longer in trials
- C = Yield control (for current table)
- [] = Limited data

- Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for flowering
- Agr = Agrii (www.agrii.co.uk)
- BA = Blackman Agriculture

= Very limited data

- Bre = Saatzucht Josef Breun, Germany
- Els = Elsoms Seeds Ltd (www.elsoms.com)

ElsW = Elsoms Wheat Ltd (www.elsoms.com)

KWS = KWS UK (www.kws-uk.com)

- Lim = Limagrain UK (www.lgseeds.co.uk)
- LimEur = Limagrain Europe SA (www.lgseeds.co.uk)

Mom = Momont, France

- RAGT = RAGT Seeds, UK (www.ragt.co.uk)
- R2n = RAGT, France (www.ragt.co.uk)
- Sec = Secobra, France

- Sej = Sejet, Denmark
- Sen = Senova (www.senova.uk.com)
- Syn = Syngenta UK Ltd (www.syngenta.co.uk)
- SyP = Syngenta Participations AG (www.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 wheat trials harvest 2018 - Candidate varieties

		Led .			W.	15)							୭			.0.		um	per
	IProP			att	eated cont	JT .	3	UT	Diegor	2	1.9)	1.9)	ricit	9)	stance	rettill	tentolo	ling Nº	1×9/hl
	aviousi	Ner Street) 	eate dunt	eate ino	olo inc	olo	(cm) turity	10	IL. N	rust of	ist air	strib ot		rests p	erm in	cont ero	69° .610	wet near
CANDIDATE	Prename	Variet	Vield	110° 0/0	roggi.	Lodgi	Heigh	Marays	Milde	Tellor	Brown	Septo	EXPESS	ONBI	Endos	Prote.	Hagpe	Spech	Ut co.
Control varieties																			
JB Diego	BR5251D35	1737	101	61	4	2	88	0	6	5	6	5	5	-	Hard	12.8	328	78.3	Senova
KWS Santiago	CPBT W165	1916	105	61	2	2	87	0	6	7	5	4	4	R	Hard	13.0	188	76.3	KWS UK
Сгизое	NAWW25	2009	98	66	1	2	80	+1	6	9	3	7	4	-	Hard	14.3	284	78.5	Limagrain UK
Skyfall	S.J3326	2138	99	75	1	2	83	0	5	6	9	6	6	R	Hard	13.5	266	79.0	RAGT Seeds
Zulu	LGW54	2155	98	58	5	5	89	0	7	5	5	5	4	R	Soft	12.9	229	76.4	Limagrain UK
Selected as potential br	ead making vari	eties																	
KWS Extase	MH15-39	2672	101	90	2	2	89	-1	7	9	7	7	[4]	-	Hard	13.0	325	78.0	KWS UK
LG Detroit	LGWU126	2629	101	71	1	3	85	+2	5	9	5	6	[4]	R	Hard	13.8	286	78.3	Limagrain UK
SY Medea	SY 115666	2656	98	73	4	4	85	+1	7	8	5	6	[5]	-	Hard	13.9	345	77.7	Syngenta UK Ltd
Selected as potential bis	scuit-making vai	rieties																	
KWS Firefly	KWSW308	2664	103	81	1	1	82	+1	6	9	8	6	[4]	R	Soft	13.1	257	76.4	KWS UK
LG Rhythm	LGWU128	2631	102	70	2	4	83	+1	6	7	6	6	[4]	R	Soft	12.6	204	75.7	Limagrain UK
Selected as potential fe	ed varieties																		
LG Skyscraper	LGWU123	2626	109	77	3	7	90	0	7	8	6	6	[4]	R	Soft	12.5	216	77.7	Limagrain UK
LG Spotlight	LGWU116	2619	106	75	2	1	92	+2	6	8	7	6	[4]	R	Soft	12.5	316	79.0	Limagrain UK
LG Interstellar	LGWU117	2620	106	67	5	3	94	+2	6	8	5	6	[4]	R	Soft	12.6	220	76.3	Limagrain UK
LG Sabertooth	LGWU124	2627	106	71	4	2	96	+2	7	8	7	6	[5]	R	Soft	12.2	268	75.9	Limagrain UK
SY Loki	SY 115590	2654	105	75	6	6	86	0	7	8	6	6	[4]	R	Soft	12.7	286	75.5	Syngenta UK Ltd
LG Jigsaw	LGWU119	2622	104	76	2	2	89	+2	4	8	7	6	[7]	R	Hard	12.4	207	77.4	Limagrain UK
Mean of controls (t/ha)			10.9	10.9	-	-	-	312	-	-	-	-	-			-	-	-	
Overall mean			-	-	2.8	3.4	87	-	-	-	-	-	-			12.9	259	77.7	
LSD 5%			3.4	5.3	0.7	0.7	2.6	1.4	-	-	-	-	-			0.3	30.7	1.0	
Number of trials			32	12	15	13	13	8	-	-	-	-	-			10	10	10	

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

Candidate varieties will be considered for the 2019/20 AHDB Recommended List.

- T = Data from trials treated with fungicide and PGR LSD 5% = Varieties that are more than one LSD apart
- UT = Data from trials without fungicide or PGR
 - = Believed to be resistant to orange wheat
- are significantly different at the 95% confidence level

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

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

These summaries are derived from National List and BSPB trials.

Acknowledgement is made to APHA and BSPB for the use of the data.

blossom midge = Limited data

R

[]

Winter wheat varieties grown in RL trials in 2017 but not added to the AHDB Recommended List

	Control varieties					Other varieties		
AHDB	safal	Clusoe	2344	KWS santiago	1801ego	RUTUNIVESE	4w5 luther	Par
Fungicide-treated grain yield (% treated co	ontrol)							
United Kingdom (11.0t/ha)	100	97	99	103	101	104	101	2.
East region (10.9t/ha)	100	97	99	104	100	104	101	2.
West region (11.3t/ha)	100	98	98	102	101	103	101	2.
North region (10.7t/ha)	100	94	102	104	101	[105]	[102]	3.
Untreated grain yield (% treated control)								
United Kingdom (11.0t/ha)	82	76	74	69	74	75	84	6
Grain quality								
Endosperm texture	Hard	Hard	Soft	Hard	Hard	Soft	Soft	
Protein content (%)	11.9	12.5	11.3	11.2	11.3	11.2	11.2	0
Protein content (%) – Milling spec	13.1	13.6	12.4	12.5	12.4	-	-	0
Hagberg Falling Number	294	275	234	171	319	173	233	2
Specific weight (kg/hl)	78.9	78.4	76.7	76.1	78.4	76.6	78.0	0
Chopin alveograph W	[216]	217	97	-	-	-	[89]	2
Chopin alveograph P/L	[1.5]	0.6	0.3	-	-	-	[0.5]	0
Agronomic features								
Resistance to lodging without PGR (1–9)	8	7	6	7	7	6	8	0
Resistance to lodging with PGR (1–9)	8	8	7	7	8	7	8	0
Height without PGR (cm)	82	80	89	85	87	91	82	1
Ripening (days +/- JB Diego, -ve = earlier)	0	+1	+1	+2	0	+2	+2	C
Resistance to sprouting (1–9)	5	6	5	5	7	-	-	1
Disease resistance								
Mildew (1–9)	5	6	7	6	6	5	6	1
Yellow rust (1–9)	6	9	5	7	5	8	8	0
Brown rust (1–9)	9	3	5	5	6	4	7	1
Septoria nodorum (1–9)	[6]	6	[6]	5	6	-	-	0
Septoria tritici (1–9)	6.0	6.8	5.4	4.3	5.3	5.2	5.1	0
Eyespot (1–9)	6@	4	4	4	5	[4]	[4]	1
Fusarium ear blight (1–9)	7	6	6	6	6	[6]	[6]	0
Orange wheat blossom midge	R	-	R	R	-	R	R	

This table should be read in conjunction with the AHDB Recommended List of winter wheat varieties for 2018/19.

R

[] = Limited data

= Believed to carry the *Pch1* Rendezvous resistance gene to eyespot but this has not @

been verified in Recommended List tests

= 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.

nabim Group 1 varieties



Crusoe ukp

Ouality: Crusoe is a **nabim** Group 1 variety and classified as a **ukp** bread wheat for export. It has a high specific weight and gives good proteins.

Agronomy: This short and relatively stiff-strawed variety has high resistance to yellow rust and septoria tritici. It is susceptible to eyespot and very vulnerable to brown rust.

nabim comment: Crusoe has consistently demonstrated good protein content and guality. The breadcrumb structure is notably white and of good quality. Large volumes of this variety continue to be seen and its baking performance remains good.

KWS Trinity

Quality: A nabim Group 1 bread wheat with high Hagbergs and specific weights.

Agronomy: This short-strawed, stiff variety has a treated UK vield around 1 per cent below Skyfall and has given particularly good relative yields when sown mid-September. It has high resistance to mildew. yellow rust and brown rust.

nabim comment: This high-yielding variety exhibits good gluten quality even at lower protein levels and has shown good baking performance. Nitrogen applications may have to be adjusted to achieve protein specifications.

KWS Zyatt ukp

Quality: A nabim Group 1 bread wheat and classified as a ukp bread wheat for export. KWS Zyatt has given high yields, combined with high specific weights and Hagbergs.

Agronomy: This short and relatively stiff-strawed variety has given high treated yields in the East and West regions. This relatively early-maturing variety has given high vields in second cereal situations and has performed well in trials on heavy soils. KWS Zyatt has good overall disease resistance, especially for eyespot (Pch1) and has given high untreated UK vields in trials. Limited data suggest it has a tendency to sprout, so should be given priority at harvest.

nabim comment: In the three years of testing, the performance of this variety was consistent with that of other Group 1 varieties, although with slightly lower protein and water absorption gualities. It has shown good breadmaking qualities. Because it is highyielding, nitrogen applications may have to be adjusted to achieve protein specifications.

RGT Illustrious

Ouality: A **nabim** Group 1 bread wheat with high Hagbergs and good specific weights.

Agronomy: This relatively stiff-strawed variety has given UK yields slightly above 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 breadmaking potential, even at lower protein levels. Because it is relatively high-yielding, nitrogen applications may have to be adjusted to achieve protein specifications.

Skyfall

Quality: A nabim Group 1 bread wheat with high Hagbergs and specific weights.

Agronomy: Its UK treated yield is 3 per cent higher than Crusoe. It is an awned wheat with short, stiff straw and is the only breadmaking winter wheat 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* evespot 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: This variety is very popular with millers because it shows good milling and baking qualities. Because it is high-yielding, nitrogen applications may have to be adjusted to achieve protein specifications.

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

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 about the different end-use groups, see page 4.

nabim Group 2 varieties



Cordiale ukp

Quality: A **nabim** Group 2 wheat and classified as a **ukp** bread wheat for export. Cordiale gives high Hagbergs and specific weights and gives good proteins.

Agronomy: This variety is early maturing and has short and relatively stiff straw. Cordiale has high resistance to mildew but is susceptible to brown rust and yellow rust. It is no longer in RL trials.

nabim comment: This variety continues to be popular with both millers and growers. It has higher than average Hagberg Falling Numbers, with good protein levels and specific weights as key features. Consistent milling and baking performance continues to be seen by millers.

KWS Lili ukp

Quality: A high-yielding **nabim** Group 2 wheat and classified as a **ukp** bread wheat for export. It has a high Hagberg in trials but careful management will be required to attain the required protein level for milling specification.

Agronomy: This variety has a treated UK yield potential six per cent above Cordiale and has given high yields in the East and North regions. KWS Lili has performed particularly well on lighter soils. It is a late maturing variety with short and relatively stiff straw. KWS Lili has high resistance to mildew and yellow rust but is susceptible to brown rust.

nabim comment: This variety has protein levels and specific weights that are lower than those of Cordiale. 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 good specific weights.

Agronomy: This short-strawed variety has produced high treated yields in the East and West regions and has also given high untreated UK yields in trials. 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. Limited data suggest this variety has a tendency to sprout, so it should be given priority at harvest.

nabim comment: This variety has protein levels and specific weights 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.

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

Making more meaningful variety choices



Variety Selection Tool

Compare the performance of varieties using the online tool based on variety trial information.



Local information

Use the tool to make comparisons using location-specific information.



Local focus

Select geographical location, rotational position, soil type or sowing date.

Lo Vi

Local impact

Visualise the results in chart or table format for easy variety comparison.

Access the tool and user guide at cereals.ahdb.org.uk/monitoring

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nabim Group 3 varieties



Elicit uks²²² NEW

Quality: Added to the AHDB Recommended List for 2018/19 as a high-yielding **nabim** Group 3 wheat. It is classified as a **uks** soft wheat for export.

Agronomy: This variety has produced high yields in the East region and limited data suggest this variety is also high-yielding in the North region. Elicit has improved septoria tritici resistance over established Group 3 varieties and has given high untreated UK yields in trials. It has high resistance to yellow rust and brown rust, combined with resistance to orange wheat blossom midge. Limited data suggest that this variety is susceptible to eyespot.

nabim comment: Over the three years of testing this variety showed slightly weaker gluten than other Group 3 varieties and a lower Hagberg Falling Number than that of Zulu, but it meets the criteria for the group.

KWS Barrel uks

Quality: A high-yielding **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, 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 yellow rust, combined with resistance to orange wheat blossom midge but is susceptible to eyespot.

nabim comment: So far relatively small quantities have been seen by millers. Over the three years of testing this variety fully met the Group 3 criteria.

KWS Basset uks

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

Agronomy: KWS Basset has high resistance to yellow rust, combined with resistance to orange wheat blossom midge. It is a relatively late maturing variety.

nabim comment: Although there was some variation in dough extensibility during the three years of testing, it fully meets the criteria for a Group 3 variety.

Spyder

Quality: A **nabim** Group 3 soft wheat, recommended for the East and West regions. It is rated as 'poor' for distilling due to low alcohol levels.

Agronomy: This variety has medium-long straw with moderate resistance to lodging but responds well to plant growth regulators. Spyder has high resistance to mildew, yellow rust and brown rust but is susceptible to eyespot.

nabim comment: So far relatively small quantities have been seen by millers. Over the three years of testing this variety showed slightly higher water absorption levels than other Group 3 varieties, but it meets the Group 3 criteria.

Zulu uks

Distilling: Medium

Quality: A **nabim** Group 3 variety. 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, where it has given high yields. It has moderate resistance to lodging but responds well to plant growth regulators. Zulu has high resistance to mildew, combined with orange wheat blossom midge resistance but is susceptible to eyespot. It has a tendency to sprout, so should be given priority at harvest.

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

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

New Farm Excellence Directory

The all-new AHDB Inspiring Farm Excellence 2018 Directory showcases the wide range of farmers and growers that make up our on-farm network. Across an extensive scope



of agricultural businesses, we have inspirational farmers opening their doors to others to learn, share and create new ideas to drive innovation and increase productivity.

You can read the directory at: ahdb.org.uk/farmexcellence

Soft Group 4 varieties

Bennington uks

Quality: Recommended for the East and West regions as a soft-milling, high-yielding 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: This is a medium-tall and relatively stiffstrawed variety which has performed particularly well on heavier soils. It has given high untreated yields in trials and has high resistance to brown rust and mildew.

Elation uks²²⁴ NEW

Quality: Added to the AHDB Recommended List for 2018/19 as a soft-milling, high-yielding feed variety for the UK. It is classified as a **uks** soft wheat for export and is rated as 'good' for distilling.

Agronomy: This is a high-yielding, short, relatively stiff-strawed variety which has performed particularly well in second cereal situations. Elation has high resistance to yellow rust and mildew and is resistant to orange wheat blossom midge. Limited data suggest that this variety is susceptible to eyespot.

Hardwicke

Distilling: Medium

Distilling: Good

Quality: Recommended as a soft milling feed wheat for the North region with a rating of 'medium' for distilling.

Agronomy: Hardwicke has short, stiff straw and gives a high yield in the North region. It has high resistance to yellow rust but is susceptible to eyespot.

KWS Jackal NEW

Quality: Added to the AHDB Recommended List for 2018/19 as a soft-milling Group 4 wheat for the North region. It is rated as 'medium' for distilling.

Agronomy: The variety has a very high yield potential in the North region, based on limited data. KWS Jackal has high resistance to yellow rust and mildew, combined with resistance to orange wheat blossom midge. Limited data suggest that this variety is susceptible to eyespot.

Leeds uks

Distilling: Medium

Distilling: Medium

Quality: A soft-milling feed wheat with a high specific weight, rated as 'medium' for distilling and classified as a **uks** soft wheat for export.

Agronomy: Leeds is a relatively stiff-strawed variety but is rather late maturing. It has above-average resistance to fusarium ear blight but is susceptible to eyespot and very susceptible to mildew. Leeds is resistant to orange wheat blossom midge.

LG Motown

Distilling: Medium

Quality: Recommended as a soft-milling feed variety. It is rated as 'medium' for distilling.

Agronomy: This variety has given high yields on light soils and in a second cereal situation. This shortstrawed variety has moderate resistance to lodging which requires careful management. LG Motown has given high untreated yields in trials and has high resistance to mildew, yellow rust and brown rust, combined with resistance to orange wheat blossom midge. It is susceptible to eyespot.

LG Sundance

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 performed particularly well in second cereal situations. It has given high untreated yields in trials and has the highest rating for resistance to septoria tritici on the Recommended List. This is combined with high resistance to yellow rust and mildew, and resistance to orange wheat blossom midge. The variety is very susceptible to eyespot. It has moderate resistance to lodging but responds well to plant growth regulators.

Moulton uks

Quality: Recommended as a soft-milling feed variety, with a high specific weight. It is classified as a **uks** soft wheat for export.

Agronomy: This variety has moderate resistance to lodging but responds well to plant growth regulators. Moulton has given high untreated yields in trials and has high resistance to yellow rust, mildew and brown rust. It is susceptible to eyespot.

Myriad uks

Distilling: Medium

Quality: Recommended for the North region as a soft-milling feed wheat, rated as 'medium' for distilling and classified as a **uks** soft wheat for export.

Agronomy: This variety yields higher in the North region and limited data suggest it performs well in a late drilling situation. It is resistant to orange wheat blossom midge and is susceptible to yellow rust and eyespot.

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

Soft Group 4 varieties – continued

Revelation uks

Distilling: Good

Quality: A soft-milling feed wheat, rated as 'good' for distilling and classified as a **uks** soft wheat for export.

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*) and above-average resistance to fusarium ear blight. Revelation has slow primordial development and a range of other characteristics that could make it a useful candidate for very early drilling.

Savello

Distilling: Medium

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

Agronomy: This variety has a high yield potential in the North region and has performed particularly well in second cereal situations. It has moderate resistance to lodging but responds well to plant growth regulators. Savello has high resistance to yellow rust and mildew. It is susceptible to brown rust and eyespot.

Viscount uks

Distilling: Good

Quality: A soft-milling feed wheat recommended for the North region, rated as 'good' for distilling and classified as a **uks** wheat for export.

Agronomy: This short and relatively stiff-strawed variety has high resistance to brown rust and mildew and is resistant to orange wheat blossom midge.

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



Arable Connections: Summer events

Summer open events are a great way to find out about local variety and market options, as well as the latest developments in agronomy.

It's why we've worked with several organisations to add value to established events this summer.

To chat with experts and pick up the latest technical publications, look out for Arable Connections activity near you...

3 to	14 June	Cereals event, Cambridgeshire*
	19 June	ADAS open day, Herefordshire
	21 June	Pearce Seeds, Dorset
	21 June	Morley Innovation Day, Norfolk
	28 June	NIAB open day, County Durham
	5 July	Cereals in Practice (with JHI & SRUC), Aberdeenshire

*AHDB is working in partnership with the organisers of Cereals 2018 to help them make the event more technically focused with knowledge exchange at its heart. Our expertise and independence will contribute and add value to the technical seminars, innovation areas and guided tours.

cereals.ahdb.org.uk/events

Hard Group 4 varieties

Costello

Quality: A hard-milling feed variety with high Hagbergs and specific weights.

Agronomy: This is a short-strawed variety with a relatively stiff straw and has high resistance to mildew, yellow rust and above average resistance to fusarium ear blight. It is a relatively late maturing variety.

Dickens

Quality: A hard-milling feed variety.

Agronomy: This variety has given its best relative performance in the North region and on lighter soils, where it has produced high yields. It has high resistance to mildew and yellow rust but is susceptible to eyespot. It is no longer in RL trials.

Dunston

Quality: A hard-milling feed variety.

Agronomy: This variety has given high yields in the North region and in UK untreated trials, as well as in both second cereal rotations and early sowing situations (based on limited data). Dunston has medium-tall, but relatively stiff straw. It has high resistance to yellow rust, septoria tritici and is believed to carry the *Pch1* gene for eyespot resistance.

Evolution

Quality: A hard-milling feed wheat that tends to give low specific weights.

Agronomy: This relatively late maturing variety has given high yields in trials on light soils and performs well in second cereal situations. Evolution has high resistance to yellow rust and brown rust.

Freiston

Quality: A hard-milling feed variety with good specific weights.

Agronomy: Freiston has given its best relative performance in the North and West regions, producing high yields in both areas. This variety has medium-tall straw with moderate resistance to lodging, which requires careful management. Freiston has produced high untreated yields in UK trials with a good overall disease resistance package giving high resistance to yellow rust, brown rust and septoria, although susceptible to eyespot.

Gleam NEW

Quality: Added to the AHDB Recommended List for 2018/19 as a very high-yielding, hard-milling UK variety.

Agronomy: This very high-yielding variety has performed well in both first and second cereal rotations. This variety is relatively stiff-strawed with high resistance to yellow rust, combined with resistance to orange wheat blossom midge. Gleam has given high untreated yields in trials.

Grafton

Quality: A hard-milling feed variety with high Hagbergs and specific weights.

Agronomy: Its treated yield is 7 per cent below the highest-yielding hard feed variety but growers value its early maturity and short, stiff straw. Grafton has slow primordial development and a range of other characteristics that can make it a useful candidate for very early sowing. Grafton is believed to carry the *Pch1* gene for eyespot resistance. It is no longer in RL trials.

Graham

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

Agronomy: This variety has given its best relative performance in the West region where it has produced some very high yields. It performs best in first cereal situations and is relatively stiff-strawed. Graham has given high untreated yields in trials and has high resistance to septoria tritici, mildew and yellow rust. It is susceptible to eyespot.

JB Diego

Quality: A hard-milling feed variety with high Hagbergs and specific weights.

Agronomy: Although 5 per cent lower yielding than the highest-yielding Group 4 feed variety, growers value its consistency and it is still a popular variety with a relatively stiff straw.

KWS Crispin

Quality: A hard-milling feed variety.

Agronomy: This variety produces high untreated yields. It has high resistance to mildew and yellow rust, combined with resistance to orange wheat blossom midge. KWS Crispin has moderate resistance to lodging but responds well to plant growth regulators. It is susceptible to eyespot.

KWS Kerrin

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

Agronomy: KWS Kerrin is a short variety with high resistance to mildew, yellow rust and brown rust, combined with resistance to orange wheat blossom midge. This variety is suited to both a first and second cereal rotation having very high yield in the second cereal position. KWS Kerrin also is very high-yielding in both late sowing (based on limited data) and light land situations.

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

Hard Group 4 varieties - continued

KWS Santiago

Quality: Recommended for the East and West regions as a hard-milling, high-yielding feed variety.

Agronomy: KWS Santiago has performed well on a range of soil types and rotational positions and is resistant to orange wheat blossom midge. KWS Santiago tends to give low Hagbergs, is relatively late maturing and is susceptible to septoria tritici and eyespot. It is no longer in RL trials.

KWS Silverstone

Quality: KWS Silverstone is a hard-milling, highyielding feed variety with high Hagbergs and specific weights.

Agronomy: The variety has a moderate resistance to lodging, which requires careful management, but has a very high yield potential on lighter soils. KWS Silverstone has high resistance to yellow rust, brown rust and mildew. It is no longer in RL trials.

Reflection

Quality: A hard-milling feed variety with a high specific weight.

Agronomy: This short and relatively stiff-strawed variety has high resistance to mildew and brown rust, combined with resistance to orange wheat blossom midge. It is very susceptible to yellow rust. It is no longer in RL trials.

RGT Gravity NEW

Quality: Added to the AHDB Recommended List for 2018/19 as a hard-milling, very high-yielding feed variety.

Agronomy: This variety has given very high treated yields across the UK, the highest on the 2018/19 Recommended List, and limited data suggest it has a very high yield potential in the North region. RGT Gravity has high resistance to yellow rust, combined with resistance to orange wheat blossom midge. It is susceptible to mildew, and limited data suggest it is susceptible to eyespot.

Shabras

Quality: Recommended as a hard-milling, highyielding feed variety.

Agronomy: Shabras has high resistance to yellow rust but is susceptible to brown rust. It is suited to both a first and second cereal rotation having a very high yield in the second cereal position. The variety is also very high-yielding in a light land situation.

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

Disease sampling in 2018

The UK Cereal Pathogen Virulence Survey is looking for fresh leaf samples showing signs of wheat yellow rust, brown rust and powdery mildew, as well as barley powdery mildew.

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



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

Wheat sown mid-November to late January - Supplementary data

This table is for supplementary information only on variety performance for varieties drilled in the mid-November to late January period. The data does not constitute a Recommended or Descriptive list. For details on recommended varieties of winter and spring wheat, refer to the relevant tables.

		itty	ctrious	N.					in .	110 ^W *	chise*	ilham*		Jet .			set .	ance				Le.	xon		<u>_</u>		Nr.
AHDB	42	STRUT	ins the second	y's skyfall	C1150	e Mulik?	4WS Li	twissie	twin	twis co	4ms	n' cordia	e this bi	Spyder	211111	4WS 8	as LCSUNO	NNYilad	Leeds	Viscoun	Hardwin	Bennin	Savello	Revelat	Moulton	LC MOEO	AVERS
End-use group	nabin	n Group	o 1				nabim	Group	2				nabim	Gгоир	o 3		Soft Gro	oup 4									
						С			С			*															
UK yield (% treated contr	ol)																										
Fungicide-treated (10.0t/ha)	102	102	102	101	99	96	106	106	104	103	102	98	107	105	104	104	[108]	108	107	[[105]]	[105]	105	104	[103]	103	102	4.4
Grain quality																											
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	
Protein content (%)	11.7	11.9	[11.8]	12.0	12.5	13.0	11.1	11.6	12.1	12.7	12.2	[12.2]	11.0	11.8	11.2	11.3	[[11.1]]	[[11.3]]	10.8	[[11.0]]	[[10.8]]	[11.3]	[11.2]	[11.1]	[11.5]	[11.3]	4.4
Hagberg Falling Number	356	290	[256]	300	286	325	321	293	276	253	336	[362]	224	281	233	241	[[202]]	[[236]]	205	[[206]]	[[212]]	[237]	[245]	[281]	[286]	[237]	36
Specific weight (kg/hl)	76.6	76.1	[76.9]	77.6	77.7	78.3	75.8	76.4	79.4	79.9	79.9	[78.7]	75.9	75.5	75.0	76.6	[[74.1]]	[[76.0]]	77.3	[[74.4]]	[[74.2]]	[76.6]	[74.1]	[74.9]	[77.1]	[75.1]	1.2
Agronomic features																											
Lodging %	[[0]]	[[2]]	[[0]]	[[1]]	[[0]]	[34]	[[0]]	[[3]]	[[5]]	[8]	[19]	-	[[18]]	[[8]]	[[0]]	[[0]]	-	-	[[6]]	-	-	[[5]]	[[4]]	-	[[7]]	[[7]]	2.0
Straw height with PGR (cm)	73	74	71	70	69	87	71	71	83	87	80	[68]	72	80	77	73	-	[81]	78	-	-	78	75	[[76]]	77	71	2.7
Ripening (+/- Mulika, -ve = earlier)	+2	+3	+1	+1	+3	0	+5	+2	0	+1	+1	[0]	+3	+2	+2	+3	[[+3]]	[+3]	+4	[[+2]]	[[+2]]	+2	+1	[[+6]]	+1	+1	1.6
Disease resistance																											
Mildew (1–9)	8	6	7	5	6	[7]	8	9	[6]	[8]	[7]	7	6	8	7	5	7	5	3	7	6	7	7	5	7	8	1.8
Yellow rust (1–9)	9	9	7	6	9	7	7	9	6	5	7	4	8	7	5	8	9	4	6	6	8	6	8	9	8	9	0.9
Brown rust (1–9)	7	6	6	9	3	4	4	5	7	8	4	4	6	7	5	5	6	5	5	9	6	7	4	8	7	7	1.(
Septoria tritici (1–9)	6	6	6	6	7	6	6	7	6	6	7	5	5	6	5	5	7	6	5	5	6	6	5	6	6	6	0.7
Fusarium ear blight (1–9)	6	5	6	7	6	[6]	6	5	[6]	-	-	5	6	6	6	6	6	6	7	6	5	6	6	7	6	6	0.5
Orange wheat blossom midge	-	-	-	R	-	R	-	-	-	R	R	-	R	-	R	R	R	R	R	R	-	-	-	-	-	R	
Breeder/UK contact																											
Breeder	KWS	R2n	KWS	RAGT	Lim	BA	KWS	KWS	KWS	KWS	KWS	KWS	KWS	BA	Lim	KWS	LimEur	Lim	Mom	KWS	Sej	ElsW	SyP	Lim	ElsW	LimEur	
UK contact	KWS	RAGT	KWS	RAGT	Lim	Sen	KWS	KWS	KWS	KWS	KWS	KWS	KWS	Sen	Lim	KWS	Lim	Lim	KWS	KWS	KWS	Els	Syn	Lim	Els	Lim	

Yields are expressed as % of the spring wheat controls. For full information on the late-sown yield performance of winter wheat varieties, please see the winter wheat Recommended List Supplementary data table. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance). All yields are taken from treated trials receiving a full fungicide and PGR programme.

+	= S	pring	wheat
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- C = Yield control (for current table)
- [] = Limited data
- [[]] = Very limited data
- = Variety no longer in trials
- R = Believed to be resistant to orange wheat blossom midge (OWBM), but this has not been verified in Recommended List tests
- Agr = Agrii (www.agrii.co.uk)
- BA = Blackman Agriculture
- Bre = Saatzucht Josef Breun, Germany
 - = Elsoms Seeds Ltd (www.elsoms.com)
- ElsW = Elsoms Wheat Ltd (www.elsoms.com)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.lgseeds.co.uk)
- LimEur = Limagrain Europe SA (www.lgseeds.co.uk)
- Mom = Momont, France
 - R2n = RAGT, France (www.ragt.co.uk)
 - RAGT = RAGT Seeds, UK (www.ragt.co.uk)
 - Sec = Secobra, France
 - Sej = Sejet, Denmark
 - Sen = Senova (www.senova.uk.com)
 - Syn = Syngenta UK Ltd (www.syngenta.co.uk)
 - SyP = Syngenta Participations AG (www.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.

There are insufficient data to provide late autumn listings for newer winter wheat varieties and their absence from the table does not imply that they are unsuitable for late-autumn sowing.

Els

Wheat sown mid-November to late January - Supplementary data

This table is for supplementary information only on variety performance for varieties drilled in the mid-November to late January period. The data does not constitute a Recommended or Descriptive list. For details on recommended varieties of winter and spring wheat, refer to the relevant tables.

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	L'NS Kerri	KWS Sant	w KWS CIES	e Evolution	KWS Silve	Reflectio	oickens	Graham	IB Diego	Dunston	Freiston	costello	KWSKIII	shabras	KWS Al	50
End-use group	Hard Group	4		· ·	•	· ·	•			·	·					
		*			*	*	*								С	
UK yield (% treated contr	ol)															
[:] ungicide-treated 10.0t/ha)	109	109	108	106	106	106	106	105	104	104	104	104	103	103	101	
Grain quality																
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	[10.5]	11.1	11.3	10.8	11.2	11.1	10.9	[11.2]	11.2	[11.2]	[10.8]	11.8	12.7	[11.0]	12.4	
lagberg Falling Number	[138]	181	285	213	308	238	267	[288]	330	[243]	[176]	344	287	[230]	328	
pecific weight (kg/hl)	[75.0]	74.5	76.5	74.3	78.2	77.0	75.5	[75.9]	77.4	[75.9]	[76.3]	80.4	77.7	[75.2]	78.1	
gronomic features																
odging %	[[14]]	[[5]]	[[18]]	[[1]]	[[29]]	[[0]]	[[4]]	-	[[7]]	[[0]]	[[15]]	[[0]]	-	[[1]]	[1]	
traw height with PGR cm)	73	76	73	74	78	69	77	[74]	77	80	81	69	92	73	78	
ipening (+/- Mulika, -ve earlier)	+2	+4	+3	+4	+3	+1	+2	[0]	+2	+2	+1	+3	[+2]	+2	+1	
isease resistance																
1ildew (1–9)	7	6	7	6	7	7	7	7	6	5	6	8	[7]	6	[8]	
ellow rust (1–9)	7	7	9	8	7	3	9	8	5	7	9	9	6	8	6	
rown rust (1–9)	7	5	5	7	7	9	6	6	6	6	7	5	9	4	5	
eptoria tritici (1–9)	5	4	6	6	5	5	5	7	5	7	7	6	6	6	6	
usarium ear blight (1–9)	6	6	6	6	6	6	6	6	6	6	6	7	-	5	[6]	
orange wheat blossom hidge	R	R	R	-	-	R	-	-	-	-	-	-	-	-	-	
reeder/UK contact																
Breeder	KWS	KWS	KWS	Sej	KWS	SyP	Sec	SyP	Bre	ElsW	ElsW	KWS	KWS	SyP	KWS	
JK contact	KWS	KWS	KWS	Lim	KWS	Syn	Agr	Syn	Sen	Els	Els	Sen	KWS	Syn	KWS	

Yields are expressed as % of the spring wheat controls. For full information on the late-sown yield performance of winter wheat varieties, please see the winter wheat Recommended List Supplementary data table. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance). All yields are taken from treated trials receiving a full fungicide and PGR programme.

+ = Spring wheat

- C = Yield control (for current table)
- [] = Limited data
- [[]] = Very limited data
 - = Variety no longer in trials
- R = Believed to be resistant to orange wheat blossom midge (OWBM), but this has not been verified in Recommended List tests
- Agr = Agrii (www.agrii.co.uk) BA = Blackman Agriculture

Els

- Bre = Saatzucht Josef Breu
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 - = Elsoms Seeds Ltd (www.elsoms.com)
- ElsW = Elsoms Wheat Ltd (www.elsoms.com)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.lgseeds.co.uk)
- LimEur = Limagrain Europe SA (www.lgseeds.co.uk)

- Mom = Momont, France
- R2n = RAGT, France (www.ragt.co.uk)
- RAGT = RAGT Seeds, UK (www.ragt.co.uk)
- Sec = Secobra, France
- Sej = Sejet, Denmark
- Sen = Senova (www.senova.uk.com)
- Syn = Syngenta UK Ltd (www.syngenta.co.uk)
- SyP = Syngenta Participations AG (www.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.

There are insufficient data to provide late autumn listings for newer winter wheat varieties and their absence from the table does not imply that they are unsuitable for late-autumn sowing.

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Spring wheat (for spring sowing) 2018

									Not added to Recommended	
									List	UK
AHDB			S ^D A	й Л			70			
		Cochi	the chille	Nillo	6	alder	Lilbu	1395010)	way	
RECOMMENDED	Mulike	INS	INS	INS	(Tana.	WSF	WST	AVSO	Jatha	
End-use group	nabim Group 1	nabim Grou	D 2	~	0	Hard Group 4		~	Hard Group 4	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK			New for this edition -
	С			C		С				see page 55 for the
UK yield as % control (spring sowing)										Spring wheat candidate
Fungicide-treated (7.7t/ha)	95	106	103	102	99	103	103	3.3	94	information.
Untreated (% treated control) (7.7t/ha)	79	[83]	[86]	82	76	83	81	5.5	[79]	
UK yield as % control (autumn sowing)										
Fungicide-treated (10.0t/ha)	96	103	102	104	-	101	103	4.4	97	
Grain quality (spring sowing)										
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard		Hard	
Protein content (%)	13.0	12.8	12.5	12.3	12.9	12.4	12.6	0.4	13.2	
Hagberg Falling Number	298	219	294	275	229	285	263	33	338	
Specific weight (kg/hl)	78.5	80.3	79.6	79.4	78.9	78.9	77.9	0.9	77.8	
Agronomic features (spring sowing)										
Resistance to lodging with PGR ∞	-	-	-	-	-	-	-	-	-	
Straw height without PGR (cm)	84	87	81	82	83	79	88	1.8	79	
Ripening (+/- Mulika, -ve = earlier)	0	0	+1	+1	0	+2	+3	1.7	+3	
Resistance to sprouting ∞	-	-	-	-	-	-	-	-	-	Variety no longer listed: Tybalt
Disease resistance										Varieties are presented in order of highest UK
Mildew (1–9)	[7]	[8]	[7]	[6]	[8]	[8]	[7]	3.5	[5]	On the 1–9 scales, high figures indicate that a
Yellow rust (1–9)	7	5	7	6	[5]	6	6	1.1	9	variety shows the character to a high degree
Brown rust (1–9)	4	8	4	7	-	5	9	2.0	9	(eg nign resistance).
Septoria tritici (1–9)	6	6	7	6	6	6	6	1.2	7	IIK – Becommended for the IIK
Fusarium ear blight (1–9)	[6]	-	-	[6]	[6]	[6]	-	-	-	C = Yield control (for the current table)
Orange wheat blossom midge	R	R	R	-	-	-	-		R	[] = Limited data
Annual treated yield (% control, spring sowing	1)									R = Believed to be resistant to orange
2013 (7.9t/ha)	[97]	-	-	[103]	[99]	[100]	[100]	8.0	-	wheat blossom midge (OWBM) but
2014 (7.2t/ha)	[[95]]	[[115]]	[[117]]	[[100]]	[[104]]	[[105]]	[[109]]	8.7	-	Recommended List tests
2015 (8.0t/ha)	[97]	[104]	[100]	[99]	[98]	[104]	[101]	6.2	[96]	∞ = No data available
2016 (8.5t/ha)	[93]	[103]	[100]	[100]	[96]	[106]	[104]	8.5	[92]	[[]] = 2 trials only
2017 (7.2t/ha)	94	109	104	104	102	102	104	3.7	94	BA = Blackman Agriculture
Breeder/UK contact										KWS = KWS UK (www.kws-uk.com)
Breeder	BA	KWS	KWS	KWS	KWS	KWS	KWS		BA	Sen = Senova (www.senova.uk.com)
UK contact	Sen	KWS	KWS	KWS	KWS	KWS	KWS		BA	LSD = Least significant difference
Status in RL system										Average LSD (5%): Varieties that are more
Year first listed	11	17	17	11	09	12	14		-	than one LSD apart are significantly different
RL status	-	P2	P2	-	-	-	-		-	at the 95% confidence level.

nabim Group 1 varieties



Mulika

Quality: A **nabim** Group 1 variety for both late autumn and spring sowing; it gives good Hagbergs, grain proteins and specific weights and remains a popular choice with growers.

Agronomy: This variety has high resistance to yellow rust and is resistant to orange wheat blossom midge but is susceptible to brown rust. Limited data suggest it has high resistance to mildew.

nabim comment: This variety has rheological and baking qualities that are good.

nabim Group 2 varieties



Granary

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

Agronomy: Limited data suggest it has high resistance to mildew.

nabim comment: This variety has gained a relatively small market share. It has a tendency to produce low Hagberg Falling Numbers.

KWS Chilham

Quality: A **nabim** Group 2 variety for both late autumn and spring sowing. It gives good Hagbergs and specific weights.

Agronomy: This variety has a high yield potential in spring sowings. KWS Chilham has high resistance to yellow rust and septoria tritici and is resistant to orange wheat blossom midge. It is susceptible to brown rust.

nabim comment: Over the three years of the testing it was observed to have lower protein levels than the Mulika control, 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 both late autumn and spring sowing. It gives good grain proteins and specific weights.

Agronomy: This variety has a high yield potential in spring sowings. KWS Cochise has a good overall disease package with high resistance to brown rust and orange wheat blossom midge resistance. Limited data suggest it has high resistance to mildew.

nabim comment: There was a degree of variability in performance over the three years of testing.

KWS Willow

Quality: A **nabim** Group 2 variety with good specific weights for both late autumn and spring sowing.

Agronomy: This variety has given high yields from late autumn sowings. Its yields from spring sowings are similar to KWS Chilham. KWS Willow has high resistance to brown rust.

nabim comment: This variety has a tendency to produce low Hagberg Falling Numbers and, overall, it has shown some variability especially with baking performance. As a result, it is more likely to be suited to uses in blends.

Group 4 feed varieties

KWS Alderon

Quality: A hard feed variety for both late autumn and spring sowing.

Agronomy: KWS Alderon has given high yields from spring sowings. This short-strawed variety has a good specific weight. Limited data suggest it has high resistance to mildew.

KWS Kilburn

Quality: A hard feed variety for both late autumn and spring sowing. KWS Kilburn is a high-yielding variety with good grain proteins.

Agronomy: This is a later maturing variety with high resistance to brown rust and limited data suggest it also has high resistance to mildew.

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

nabim overview

There is a consistent market for UK-grown quality wheat if the quality specifications are met. **nabim** member companies mill more than 5 million tonnes of wheat each year so we represent a well-established market. Many considerations will affect the choice but the preference of local millers should always be a significant factor.

New varieties

Although no new bread making varieties have been added to the RL, farmers still have the choice of six Group 1 winter varieties and three Group 2 winter varieties.

Crusoe and Gallant remain reliable milling varieties although their yields are comparatively low. In contrast, RGT Illustrious, Skyfall, KWS Trinity and KWS Zyatt all have higher yields, robust disease-resistance packages and reliable baking performances. However, their higher-yielding qualities mean that greater attention to nitrogen inputs is required than with the 'older' varieties, to ensure acceptable protein quantity and gain access to the highest possible wheat prices.

Group 3 biscuit wheat

The UK Group 3 biscuit wheat area has become smaller in recent years. This has resulted in reduced supplies to both the domestic and export markets. Generally, lower bread milling premiums have created a competitive opportunity for Group 3 varieties in the market.

The Group 3 variety, Elicit, is new this year and will, undoubtedly, help fill this market segment. Elicit has a combination of high yields and disease resistance. Of particular note is Elicit's septoria tritici rating, which is the highest of all the Group 3 varieties and has the highest untreated yield of this group.

Millers are looking forward to experiencing the performance of commercial quantities of this promising new variety from harvest 2018.

Spring wheats

For spring wheat, one Group 1 variety (Mulika) and five Group 2 varieties are available (Granary, KWS Chilham, KWS Cochise, KWS Willow and Tybalt). Not all of these perform equally and some may not find ready markets. Mulika remains in demand because of its excellent bread making gualities.

Wheat quality from the 2017 harvest

Harvest 2017 was a challenge for many UK wheat growers. Although it began earlier than normal in most areas, it became protracted by spells of rainfall with no time for the crop to dry between these periods.

Despite dry weather in April in most localities, yields were close to the five-year average. Protein levels were slightly higher for Group 1 wheats compared to 2016 although this depended on location and variety. The AHDB annual survey revealed that 69 per cent of bread making crops met the 13 per cent protein specification, and gluten strength was also significantly increased in many Group 1/2 wheat crops. Conversely, lower specific weights in some crops led to rejections at intake. The protracted and wet harvest also resulted in higher moisture levels, with many farmers having to dry harvest wheat, with the usual risks of overheating. Hagberg Falling Number levels in western areas, and parts of the South East, were also low.

Although a greater proportion of the crop was planted to Group 1 and 2 bread making varieties, the inconsistent harvest meant that only 24 per cent of Group 1 and 29 per cent of Group 2 met the normal full specification for high or medium-quality bread wheat.

A notable feature of the 2017 UK harvest was significantly lower water absorptions which are similar to those experienced in 2015. This is a worrying feature of harvests in the last decade and there needs to be a greater understanding of the environmental factors which cause this to happen.

Mycotoxins

Several important mycotoxins can be found commonly in UK grain. For DON and ZON their levels in wheat depend on the weather conditions during the growing season – rainfall during the flowering period for DON and rainfall before and during harvest for ZON. The presence of ochratoxin A is not determined by growing conditions but is very much dependent on conditions within grain stores.

In many areas, the wet harvest in 2017 provided optimum conditions for the development of ZON. The annual post-harvest monitoring of the new crop arriving at processor sites indicated that the risk from ZON was similar to that seen in the 'bad' year of 2012 when there were significant challenges to the supply chain. As a result of this, UK flour millers decided that, in order to minimise the risks to food safety, a ZON count would be required with every load of wheat arriving at a mill. This situation parallels that currently used for DON and has provided the required reassurance to our customers.

nabim member companies, other cereal processors and members of AIC will continue to monitor the levels of the key mycotoxins at the start of every new harvest and the processors will determine what information will be required from their suppliers.



Winter barley 2018/19 – Market options, yield and grain quality																						
																	2					Not added to Recommended List
RECOMMENDED	flection of the sector	ium core	t craft	Talif	mansyve	enture 4WS	Orwell	e this	Infinity	Cleswei Leswei	Clacier 4WS	rower Califo	inis (assia Belmc	Baloc	yas sunni	nodales ,	staire Belf	ys Funks	Libra	Average 10	Hiverac
End-use group	Тwo-г	ow mal	lting			Two-	row fee	ed						Six-го	w feed							Two-row feed
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	Ν	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK		Not added to RL
	OF recommendation UK UK <t< td=""><td></td></t<>																					
NEW NEW *C C NEW NEW Fungicide-treated grain yield (% treated control)																						
United Kingdom (9.6t/ha)	98	98	98	95	95	104	103	102	102	101	101	100	99	111	109	108	108	108	107	106	2.7	98
East region (9.6t/ha)	99	99	98	96	95	104	104	102	101	101	100	100	99	111	109	108	107	108	108	107	3.3	99
West region (9.6t/ha)	100	99	97	93	94	104	103	102	102	101	102	101	99	111	110	108	112	109	108	107	3.8	98
North region (9.4t/ha)	94	94	98	95	94	103	99	103	104	101	102	98	99	109	107	110	104	106	106	103	4.3	94
Untreated grain yield (% treated	contro	l)																				
United Kingdom (9.6t/ha)	83	76	79	77	72	83	89	81	76	80	78	82	83	82	91	90	93	92	92	87	4.5	79
Main market options																						
MBC malting approval for brewing use	Т	Т	Ρ	F	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Grain quality																						
Specific weight (kg/hl)	69.2	67.4	69.0	67.2	69.8	67.7	68.9	67.9	67.5	69.1	67.3	68.4	70.9	68.0	68.5	67.5	65.5	67.5	68.8	70.6	0.8	68.6
Screenings (% through 2.25mm)	1.5	3.0	1.5	3.6	3.3	2.1	2.0	3.0	2.3	2.4	-	[2.9]	2.1	2.1	2.5	2.8	[0.7]	3.3	5.9	1.5	1.7	1.2
Screenings (% through 2.5mm)	2.4	7.7	4.7	11.0	10.4	6.5	5.8	8.9	8.2	7.8	-	[10.2]	6.7	6.7	8.3	10.5	[2.2]	10.7	19.7	4.2	4.6	1.8
Nitrogen content (%)	1.64	1.59	1.61	1.63	1.60	-	-	-	-	-	-	-	-	-	-	-	-	-	[1.55]	-	0.10	1.63
Status in RL system																						
Year first listed	18	18	16	13	12	16	16	15	17	13	14	13	10	18	16	17	18	16	17	18		-

Varieties no longer listed: Flagon and Volume.

UK = Recommended for the UK

W = Recommended for the West region

= Recommended for the North region Ν

- Yield controls (for current table). For this table KWS Meridian and Volume were also yield controls but are no longer listed.
- = Variety no longer in trials

= Limited data

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= Full MBC approval F

Ρ = Provisional MBC approval

= Under test for MBC approval in this segment

\$ = Hybrid variety

Т

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 2018/19 – Yield, agronomy and disease resistance

																						Recommended List	1
RECOMMENDED	Election of the section of the secti	um coref	craft	Talis	mansyv	enture 4W	Surg	e twi	Infinity W	Creswell	Clacier 4W	Tower	tornia two	Bell	ont ⁵ Bal	JOKa ⁵ SUN	hingdale"	Astaire	ys Fun	ibre Libre	S Average	Hiverac Hiverac	4
End-use group	Тwo-го	ow malt	ing			Two-	ow fee	ed						Six- го	w feed							Two-row feed	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	Ν	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK		Not added to RL	
	NEW	NEW		* C	С					С				NEW			NEW			NEW			
Fungicide-treated grain yield (% treate	d contr	ol)																					
United Kingdom (9.6t/ha)	98	98	98	95	95	104	103	102	102	101	101	100	99	111	109	108	108	108	107	106	2.7	98	
East region (9.6t/ha)	99	99	98	96	95	104	104	102	101	101	100	100	99	111	109	108	107	108	108	107	3.3	99	
West region (9.6t/ha)	100	99	97	93	94	104	103	102	102	101	102	101	99	111	110	108	112	109	108	107	3.8	98	
North region (9.4t/ha)	94	94	98	95	94	103	99	103	104	101	102	98	99	109	107	110	104	106	106	103	4.3	94	
Untreated grain yield (% treated contro	ol)																						
United Kingdom (9.6t/ha)	83	76	79	77	72	83	89	81	76	80	78	82	83	82	91	90	93	92	92	87	4.5	79	
Agronomic features																							
Resistance to lodging (1–9)	7	7	8	6	7	8	7	7	7	6	7	8	7	7	7	7	8	8	8	7	-	6	
Straw height without PGR (cm)	93	95	92	97	86	87	89	90	88	85	91	92	90	109	114	109	105	107	95	107	3.7	93	
Straw height with PGR (cm)	90	94	89	96	84	86	86	89	87	82	89	91	90	108	110	105	102	102	93	105	2.0	94	
Ripening (+/-SY Venture, -ve = earlier)	-2	-1	0	-1	0	0	-1	0	-1	-1	-1	-1	0	0	-1	-1	0	-1	-1	-1	0.6	-1	
Winter hardiness #	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Disease resistance																							
Mildew (1–9)	6	5	6	6	6	3	5	4	4	4	5	6	4	6	4	6	7	5	5	4	1.4	5	
Yellow rust (1–9)	[8]	[4]	[8]	[9]	[7]	[7]	[7]	[7]	[8]	[9]	[8]	[7]	[6]	[8]	[9]	[6]	[9]	[8]	[9]	[9]	3.0	[4]	
Brown rust (1–9)	6	6	6	7	6	7	8	7	6	7	6	5	7	4	6	6	7	7	8	5	1.3	6	
Rhynchosporium (1–9)	6	7	6	6	4	6	7	6	6	4	5	6	4	7	7	7	7	7	7	7	1.3	5	
Net blotch (1–9)	5	6	6	5	5	5	7	6	4	6	3	6	5	6	6	6	6	6	5	6	2.8	5	
Ramularia (1–9)	5	5	5	4	5	5	5	6	5	5	4	6	_	5	5	5	5	5	5	5	1.3	5	
BaYMV	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 (eg high resistance). Comparisons of variety performance across regions are not valid.

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- UK = Recommended for the UK
- W = Recommended for the West region
- N = Recommended for the North region
- C = Yield controls (for current table). For this table Volume and KWS Meridian were also yield controls but are no longer listed.
- = Variety no longer in trials
- = Limited data
- = Hybrid variety
- = The winter hardiness scores are taken from extreme tests in the Jura mountains of France but currently insufficient data for 1–9 ratings
- 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.

Not added to

Whiter Duricy 201	0/12	· .	upp'	CIIIC			ucu																
	-					-											ÿ					Not added to Recommended List	1
RECOMMENDED	<i>tlecti</i>	um coref	craft	Talish	lan Sy Ver	ture tws	orwell Surg	twi-	Infinited when	Creswell	Clacier 44NS	cower calif	ornia	Beln	ont's Balc	oka suni	ingdales?	Astaire	Funky	Libra	AVET BO	e hiverac	
End-use group	Тwo-го	ow malti	ing			Two-i	ow fe	ed						Six-го	w feed							Two-row feed	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	Ν	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK		Not added to RL	
	NEW	NEW		*C	С					С				NEW			NEW			NEW			
Breeder/UK contact																							l
Breeder	SyP	SyP	SyP	Sen	SyP	KWS	SyP	KWS	KWS	KWS	KWS	Lim	KWS	SyP	SyP	SyP	KWS	SyP	-	SyP		-	
UK contact	Syn	Syn	Syn	Sen	Syn	KWS	Syn	KWS	KWS	KWS	KWS	Lim	KWS	Syn	Syn	Syn	KWS	Syn	KWS	Syn		SU	
Annual treated yield (% control)																							
2013 treated yield (8.9t/ha)	-	-	98	96	96	104	103	103	-	103	102	99	100	-	108	-	-	107	-	-	-	-	
2014 treated yield (9.8t/ha)	-	-	98	95	95	102	102	101	102	101	100	99	97	-	108	109	-	107	105	-	-	-	
2015 treated yield (10.4t/ha)	97	97	96	95	94	102	100	101	102	101	101	97	97	108	108	107	106	106	106	104	-	96	
2016 treated yield (9.2t/ha)	99	98	97	93	94	105	103	102	102	101	102	101	100	112	109	109	109	109	107	106	-	97	
2017 treated yield (9.5t/ha)	98	97	98	94	94	105	103	104	102	100	101	103	101	111	111	109	109	110	110	108	-	98	
Soil type (about 50% of trials are i	medium	soils)																					l
Light soils (9.5t/ha)	96	95	98	96	95	103	101	102	102	101	102	97	98	108	107	109	106	105	107	104	3.4	96	
Heavy soils (9.8t/ha)	99	100	96	94	95	104	104	101	100	101	101	102	99	110	111	106	107	110	107	107	4.1	98	l
Agronomic characteristics																							l
Lodging without PGR (%)	6	5	3	11	4	2	5	4	6	10	3	2	3	7	4	6	1	3	2	4	-	20	
Lodging with PGR (%)	3	4	1	8	2	1	3	2	3	7	1	2	2	5	1	3	0	1	1	1	-	11	l
Malting quality																							l
Hot water extract (l deg/kg)	305.1	306.0	308.8	308.0	306.3	-	-	-	-	-	-	-	-	-	-	-	-	-	[294.7]	-	4.3	302.6	l
Status in RL system																							l
Year first listed	18	18	16	13	12	16	16	15	17	13	14	13	10	18	16	17	18	16	17	18		-	
RL status	P1	P1	-	*	-	-	-	-	P2	-	-	-	-	P1	-	P2	P1	-	P2	P1		Not added	

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

UK W N P1 P2	 Recommended for the UK Recommended for the West region Recommended for the North region First year of recommendation Second year of recommendation 	C * [] \$ KWS	 Yield controls (for current table). For this table Volume and KWS Meridian were also yield controls but are no longer listed. Variety no longer in trials Limited data Hybrid variety KWS UK (www.kws-uk.com) 	Lim Sen Syn SyP SU	 Limagrain UK (www.lgseeds.co.uk) Senova (www.senova.uk.com) Syngenta UK Ltd (www.syngenta.co.uk) Syngenta Participations AG (www.syngenta.co.uk) Saaten Union UK (www.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.
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Winter barley trials harvest 2018 – Candidate varieties

	orsed				Wig	N			,e	`			, 9	`			alth
AHDB	slpropo.			ed the st	eateontrot.	UT .	Ð.		Ventur	9	L'AN	x (1.9)	orium	(1.9)	e		aight way
CANDIDATE	oreviour	iety	ID 10th	eat un treat	ieo doinc	olo dina	olo idht	Maturity /	S. den	1. 10 ^W LIE	and awn rul	inchos	y plot	i JAN	iety typ	cific	contact
	r nali	731	-lie.	610	1001	VOCT	Hell	1, 93,	Mile	Ter	\$10	PLUS	4e5	83	731	SPE	JH .
Control varieties																	
Volume	NFC 205-14	2244	105	78	5	4	104	-1	5	[8]	6	7	5	R	6-row hybrid	66.9	Syngenta UK Ltd
SY Venture	SYN 208-57	2443	94	65	6	3	86	0	6	[7]	6	4	5	R	2-row	69.3	Syngenta UK Ltd
Talisman	SJ063643	2517	93	73	15	9	96	-1	6	[9]	7	6	5	R	2-row	66.7	Senova
KWS Glacier	KWS B100	2523	101	75	11	6	84	0	4	[9]	7	4	6	R	2-row	68.5	KWS UK
Selected as potential m	alting varieties																
Adelac	AC11/031/21	2956				Data ca	annot be	published	l as varie	ety has no	ot comple	eted Nati	onal List	testing			Saaten Union UK
SY Ramone	SY 614060	2943				Data ca	annot be	published	l as varie	ety has no	ot comple	eted Nati	onal List	testing			Syngenta UK Ltd
Selected as potential fe	ed varieties																
KWS Gimlet	KWSB126	2969	107	[84]	4	3	[97]	-1	6	-	6	6	6	R	2-row	67.7	KWS UK
LG Mountain	LGBU14-6669	2976	107	[83]	12	4	[83]	-1	4	-	6	6	7	R	2-row	68.1	Limagrain UK
Sobell	SJ128113	2960	106	[84]	17	3	[86]	0	6	-	7	6	6	R	2-row	66.8	Senova
LG Flynn	LGBU13-6446-B	2974	105	[79]	5	3	[94]	0	4	-	6	7	6	R	2-row	69.3	Limagrain UK
Valerie	BR11500R6	2964				Data ca	annot be	published	l as varie	ety has no	ot comple	eted Nati	onal List	testing			Senova
Mackie	AC11/326/28	2955	104	[78]	6	3	[89]	0	5	-	6	5	6	-	2-row	67.4	Saaten Union UK
SY Kingsbarn	SY 214286	2945	111	[86]	5	2	[110]	0	6	-	6	7	6	R	6-row hybrid	69.3	Syngenta UK Ltd
SY Baracooda	SY 214287	2951	111	[88]	3	2	[115]	0	7	-	5	7	7	R	6-row hybrid	68.1	Syngenta UK Ltd
Mean of controls (t/ha)			9.3	9.3	-	-	-	296	-	-	-	-	-			-	
Overall mean			-	-	5.8	3.2	94.1	-	-	-	-	-	-			67.9	
LSD 5%			3.3	5.7	1.5	1.0	5.0	1.0	-	-	-	-	-			1.1	
Number of trials (for candidate varieties)			18	6	7	12	4	10	-	-	-	-	-			8	

KWS Meridian was also a control variety in 2016/17 trials, but data cannot be published as variety is no longer on the National List.

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

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

Candidate varieties will be considered for the 2019/20 AHDB Recommended List.

- [] = Limited data
- LSD = Least significant difference

= Data from trials treated with fungicide and PGR = Data from trials without fungicide or PGR

R = Resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1

LSD 5% : Varieties that are more than one LSD apart are significantly different at the 95% confidence level. See the AHDB Recommended List for full data on control varieties

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

Winter barley two-row malting

Coref NEW

Quality: A potential malting variety for brewing. Under test by MBC for brewing.

Agronomy: Added to the AHDB Recommended List for 2018/19 as a two-row potential malting variety. Coref has given its best relative performance in the East and West regions and on heavier soil. This variety has high resistance to rhyncosporium but limited data suggest it is susceptible to yellow rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

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

Craft

Provisional brewing

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

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

MAGB comment: Under test by MBC for brewing, with completion expected Spring 2018. Growers are advised to speak to merchants before committing to this or other varieties in this position.

UK winter malting barley market share is given as % of MAGB member purchases (see page 5).

Electrum NEW

Quality: A potential malting variety for brewing, with a high specific weight and low screenings. Under test by MBC for brewing.

Agronomy: Added to the AHDB Recommended List for 2018/19 as a two-row potential malting variety. Electrum has given its best relative performance in the East and West regions and on heavier soil. It is the earliest maturing winter barley on the Recommended List. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: 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

Brewing

Brewing

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 rhynchosporium.

MAGB comment: Widely accepted by the malting industry with the largest market share in this sector.

Talisman

Quality: Fully approved by MBC for the production of malt for brewing.

Agronomy: Talisman has high resistance to yellow rust (based on limited data) and brown rust and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It has moderate straw strength and is susceptible to ramularia. This variety is no longer in RL trials.

MAGB comment: Limited demand from the malting industry. Growers are advised to speak to their merchants about end markets.

Keeping you informed: disease and pest alerts



AHDB collects a vast amount of information from its variety and research site network across England and Scotland.

By sharing observations, AHDB can help flag up emerging issues, such as pest and disease hotspots.

AHDB uses several routes to keep you informed about the developments that really matter – web, blogs, email, tweets and news stories.

To find out more, visit cereals.ahdb.org.uk/monitoring

MBC Approved List

Brewing use

Full Approval: SY Venture, Talisman Provisional Approval: Craft

Malt distilling use None approved

Grain distilling use None approved



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).

KWS Cassia

A two-row feed variety with a very high specific weight. It has good lodging resistance and high resistance to brown rust but is susceptible to rhynchosporium and 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. KWS Cresswell is the highest-yielding tworow winter barley in the North region on the 2018/19 Recommended List and has relatively short straw. It is susceptible to mildew and net blotch. 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 but moderate straw strength. 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 Infinity

A two-row feed variety, which has given its best relative performance in the North region. This variety has high resistance to brown rust but is susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Orwell

The highest-yielding two-row feed variety on the 2018/19 Recommended List. It has short straw with high resistance to lodging. This variety has high resistance to brown rust but 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, resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is susceptible to ramularia and very susceptible to net blotch.

Surge

A high-yielding two-row feed variety, which has given its best relative performance in the East and West regions. It has given good yields in untreated trials and has high resistance to brown rust, rhynchosporium and net blotch. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Winter barley six-row feed

Bazooka

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

Belmont NEW

A six-row hybrid feed variety, added to the AHDB Recommended List for 2018/19. It has given very high yields in all regions and is the highest-yielding feed variety in the East region on the 2018/19 Recommended List. Belmont has high resistance to rhynchosporium but is susceptible to brown rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Funky

A high-yielding six-row (non-hybrid) feed variety with relatively short stiff straw. This variety has a good specific weight but has given higher screening levels. Funky has given good yields in untreated trials and 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 Astaire NEW

Added to the AHDB Recommended List for 2018/19 as a high-yielding six-row (non-hybrid) feed variety. This variety has a low specific weight but limited data suggest that screening levels are low. It has stiff straw and is the highest-yielding feed variety in the West region on the 2018/19 Recommended List. KWS Astaire has given good yields in untreated trials and has good overall disease resistance, with high resistance to mildew, brown rust and rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Libra NEW

Added to the AHDB Recommended List for 2018/19 as a six-row hybrid feed variety, combining high yields with very good grain quality characteristics. Libra has given specific weights comparable to KWS Cassia and significantly higher than other recommended six- and two-row varieties. This variety has high resistance to rhynchosporium but is susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Sunningdale

A high-yielding six-row hybrid feed variety. This variety has performed particularly well in the North region and on lighter soils, where it has given very high yields. Sunningdale has given good yields in untreated trials and has good overall disease resistance with high resistance to rhynchosporium. It has resistance to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Disease sampling in 2018

The UK Cereal Pathogen Virulence Survey is looking for fresh leaf samples showing signs of wheat yellow rust, brown rust and powdery mildew, as well as barley powdery mildew.

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



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

Keeping you informed: disease and pest alerts

AHDB collects a vast amount of information from its variety and research site network across England and Scotland.

By sharing observations, AHDB can help flag up emerging issues, such as pest and disease hotspots.

AHDB uses several routes to keep you informed about the developments that really matter – web, blogs, email, tweets and news stories.

To find out more, visit cereals.ahdb.org.uk/monitoring

Spring barley 2018 – Market options, yield and grain quality

AHDB		0	havit	et	0.	~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	eroid	57	6							all a
RECOMMENDED	LCDI	La Ton	PCT P	lan. Laures	the chanse	on KWSIN	n RCT A	twiss	as olympi	us sienna	Propino	Fairing	conce	scholar	Ovation	Hacker	AVE18 50101
End-use group	Malting	varieties												Feed var	ieties		
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	Nr	UK	W	
	NEW	NEW	С			С	NEW				С		С				
Fungicide-treated grain yield (% treated control)																
United Kingdom (7.7t/ha)	106	105	105	104	104	103	103	102	102	102	100	97	94	104	103	100	2.4
East region (7.9t/ha)	108	106	105	105	104	103	105	101	101	99	98	96	94	104	105	[98]	4.0
West region (7.8t/ha)	[102]	[100]	105	102	101	102	[102]	100	102	101	99	97	96	102	102	102	3.3
North region (7.4t/ha)	109	107	104	105	106	104	102	105	103	103	101	96	93	105	104	100	3.0
Main market options																	
MBC malting approval for brewing use	Т	-	F	F	Р	F	Т	Ν	-	-	F	-	F	-	-	-	
MBC malting approval for malt distilling use	Т	Т	Ν	F	-	Ν	Т	F	-	F	Ν	-	F	-	-	-	
MBC malting approval for grain distilling use	-	-	Ν	-	-	Ν	Т	-	Po	Ν	Ν	Po	Ν	-	-	-	
Grain quality																	
Specific weight (kg/hl)	67.5	66.3	68.1	66.6	66.2	66.3	68.7	68.6	67.1	70.9	68.7	68.7	69.3	69.0	66.6	70.0	0.6
Screenings (% through 2.25mm)	[1.4]	[1.7]	1.3	1.3	1.1	1.7	[1.0]	0.9	2.0	1.5	0.8	0.8	1.1	1.8	1.3	1.4	0.4
Screenings (% through 2.5mm)	[3.3]	[4.2]	3.5	3.2	3.0	4.5	[2.6]	2.2	5.2	3.6	1.9	2.1	2.7	5.8	3.7	3.4	1.0
Nitrogen content (%)	1.37	1.36	1.40	1.42	1.38	1.43	1.40	1.43	1.47	1.42	1.49	1.52	1.45	[1.42]	1.39	1.48	0.06
Status in RL system																	
Year first listed	18	18	15	16	17	14	18	16	15	15	10	16	09	15	16	14	

Varieties no longer listed: Belgravia, Dioptric, LG Opera, Octavia and Odyssey.

Growers are strongly advised to check with their buyer before committing to a malting variety without full MBC approval.

Varieties are presented in order of highest UK treated yield within end-use groups.

Comparisons of variety performance across regions are not valid.

UK Nr W	 Recommended for the UK Recommended for the North region Recommended for the West region 	F N P	= Full MBC approval = Not approved by MBC for this segment = Provisional MBC approval	C []	 Yield control (for current table). For this table Odyssey 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.
Sp	= Fairing is suitable for the production of malt for grain distilling	Po T	 Potential for this segment Under test for MBC approval in this segment 	~	 Limited data Variety lacking a gene for lipoxygenase production 	level.

West East region regio

AHDB			WH	x .				bio									2
RECOMMENDED	LCDI	ablo LC TOP	naha RCT PU	aneclaureat	e chanse	in' twi	ina Rut As	vere 4ms si	Olympi	us Sienna	Propino	Fairing	conce	tto scholar	ovation	Hacker	Average 15%
End-use group	Malting	varieties	5											Feed vari	eties		
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	Nr	UK	W	
	NEW	NEW	С			С	NEW				С		С				
Fungicide-treated grain yield (% treated control	l)																
United Kingdom (7.7t/ha)	106	105	105	104	104	103	103	102	102	102	100	97	94	104	103	100	2.4
East region (7.9t/ha)	108	106	105	105	104	103	105	101	101	99	98	96	94	104	105	[98]	4.0
West region (7.8t/ha)	[102]	[100]	105	102	101	102	[102]	100	102	101	99	97	96	102	102	102	3.3
North region (7.4t/ha)	109	107	104	105	106	104	102	105	103	103	101	96	93	105	104	100	3.0
Untreated grain yield (% treated control)																	
United Kingdom (7.7t/ha)	98	95	96	96	94	93	97	94	91	93	88	88	85	94	88	91	3.2
Agronomic features																	
Resistance to lodging (no PGR) (1–9)	7	7	7	7	6	8	7	6	7	7	7	7	6	7	7	7	0.4
Straw height (cm)	76	72	75	73	76	71	76	80	75	79	77	74	80	69	73	75	2.7
Ripening (+/-Concerto, -ve = earlier)	+1	+1	0	+1	-1	0	+1	0	+1	+1	-1	-2	0	0	+1	-1	0.8
Resistance to brackling (1–9)	8	7	8	8	7	9	8	6	7	7	8	7	8	9	7	8	0.6
Disease resistance																	
Mildew (1–9)	[9]	[9]	9	8	[8]	8	[9]	9	9	9	6	8	8	9	9	[9]	0.8
Yellow rust (1–9)	[5]	[8]	[5]	[6]	[6]	[6]	[8]	[5]	[7]	[6]	3	[8]	8	[8]	[6]	[6]	3.6
Brown rust (1–9)	5	4	4	5	5	4	5	5	4	6	5	4	5	5	4	5	2.0
Rhynchosporium (1–9)	5	6	6	6	5	5	6	5	6	6	5	7	4	5	6	5	1.2
Ramularia (1–9)	6	6	6	6	6	6	7	6	6	6	6	6	6	7	6	6	0.5

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance). Comparisons of variety performance across regions are not valid

VK = Recor Nr = Recor W = Recor Sp = Fairing grain o	mmended for the UK mmended for the North region mmended for the West region g is suitable for the production of malt for distilling	C [] ~	 Yield control (for current table). For this table Odyssey was also a yield control but is no longer listed. Limited data Variety lacking a gene for lipoxygenase 	LSD = Least significant difference Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
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North region

Spring barley 2018 – Supplementary data



AHDB	
RECOMMENDED	

AHDB		. 0	hant	et		4	2	roid	A					0			e.
RECOMMENDED	LCDI	spic La Tor	na. RCI PI	all Laure	ate Chant	or this	rine RGT A	the the	Sast. Olym	pus sienna	Propit	10 Fairing) conce	schol	ar ovation	Hacker	Averas 50/01
End-use group	Malting) varietie	s											Feed v	arieties		
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	Nr	UK	W	
	NEW	NEW	С			С	NEW				С		С				
Breeder/UK contact																	
Breeder	LimEur	LimEur	RAGT	SyP	-	KWS	R2n	KWS	LimEur	LimEur	SyP	SyP	Lim	SyP	LimEur	Sec	
UK contact	Lim	Lim	RAGT	Syn	SU	KWS	RAGT	KWS	Lim	Lim	Syn	Syn	Lim	Syn	Lim	Agr	
Annual treated yield (% control)																	
2013 treated yield (7.3t/ha)	-	-	104	104	-	103	-	102	101	100	102	95	94	105	104	99	-
2014 treated yield (8.1t/ha)	-	-	105	[103]	104	105	-	101	104	101	99	98	93	105	104	99	-
2015 treated yield (8.5t/ha)	106	105	104	105	105	103	102	103	102	100	98	96	94	103	105	99	-
2016 treated yield (7.6t/ha)	105	104	105	104	102	103	104	102	101	102	100	99	94	103	101	101	-
2017 treated yield (7.2t/ha)	107	105	104	104	104	102	104	102	102	103	99	96	97	104	102	100	-
Malting quality																	
Hot water extract (l deg/kg)	316.7	313.9	314.9	315.7	314.0	315.2	315.8	316.1	312.3	315.7	313.4	311.2	316.4	311.0	313.1	314.7	1.6
Status in RL system																	
Year first listed	18	18	15	16	17	14	18	16	15	15	10	16	09	15	16	14	
RL Status	P1	P1	_	_	P2	_	P1	_	_	_	_	P2	_	_	_	_	

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

~

P1

P2

Agr

- UK = Recommended for the UK
- Nr = Recommended for the North region
- W = Recommended for the West region
- = Fairing is suitable for the production of malt for Sp grain distilling
- С = Yield control (for current table). For this table Odyssey was also a yield control but is no longer listed.
- [] = Limited data

- = Variety lacking a gene for lipoxygenase
- production LSD = Least significant difference
 - = First year of recommendation
 - = Second year of recommendation
 - = Agrii (www.agrii.co.uk)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.lgseeds.co.uk)

- LimEur= Limagrain Europe SA (www.lgseeds.co.uk)
- RAGT = RAGT Seeds (www.ragt.co.uk)
- R2n = RAGT, France (www.ragt.co.uk)
- Sec = Secobra, France (www.secobra.com)
- SU = Saaten Union UK (www.saaten-union.co.uk)
- Syn = Syngenta UK Ltd (www.syngenta.co.uk)
- SyP = Syngenta Participations AG (www.syngenta.co.uk)

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

Spring barley trials harvest 2018 – Candidate varieties

		name			NT)				_) N	mpth
AHDB	USTOPOS ⁸	0	~	redthat	reated controls'	wi	al al	k. (2)	Concerto	010	رک	at (1-9)	the solution	ium ⁽⁾ eight	kell X
CANDIDATE	Previousi	Variety	IV Vield	treat ield ut	ater Lodging	John Loddin	Heigh	R CI. Maturity	brackli	ng Milde	NCT Yellow	FUS Brown	Rhynchost	specificum	UY CONFAC
Control varieties		· · · ·										· · · · · ·			
RGT Planet	LSB0769-3306	2691	105	95	[2]	3	77	+1	19	9	[5]	4	6	67.6	RAGT Seeds
KWS Irina	KWS-09/320	2613	103	89	[0]	0	74	+1	13	8	[6]	4	5	66.0	KWS UK
Propino	NFC 406-119	2336	100	85	[1]	2	79	0	21	6	3	5	5	68.3	Syngenta UK Ltd
Odyssey	NSL08-4556-A	2470	98	84	[5]	9	77	+1	27	9	7	4	5	68.1	Limagrain UK
Concerto	NSL 03-5262	2288	95	84	[3]	6	82	0	29	8	8	5	4	69.2	Limagrain UK
Selected as potential mall	ing varieties														
Cosmopolitan	SJ152037	3003	107	95	[1]	[2]	74	[+2]	33	-	-	5	6	66.2	Senova
Accurance	AC15/03	2986			Data	a cannot k	oe publisł	ned as var	iety has no	ot comple	ted Natio	nal List tes	sting		Saaten Union UK
SY Contour	SY415653	3019	105	94	[2]	[3]	73	[+3]	24	-	-	4	6	64.2	Syngenta UK Ltd
LG Goddess	LGBU14-1587-B	2999			Data	a cannot k	oe publisł	ned as var	iety has no	ot comple	ted Natio	nal List tes	sting		Limagrain UK
SY Dolomite	SY415584	3016	105	95	[1]	[2]	75	[+2]	21	-	-	4	5	65.6	Syngenta UK Ltd
SY Stanza	SY415538	3013	103	93	[1]	[1]	77	[+1]	18	-	-	4	5	66.6	Syngenta UK Ltd
RGT Orbiter	RP15034	2979	103	93	[1]	[4]	79	[+1]	18	-	-	4	5	67.2	RAGT Seeds
Selected as potential feed	varieties														
SY Kailash	SY415586	3017	106	96	[3]	[3]	75	[+3]	15	-	-	4	5	65.8	Syngenta UK Ltd
Embrace	SJ148377	3004	105	96	[3]	[5]	77	[+1]	19	-	-	5	5	66.8	Senova
Mean of controls (t/ha)			7.4	7.4	-	-	-	144	-	-	-	-	-	-	
Overall mean			-	-	-	-	76.3	-	23.3	-	-	-	-	67.1	
LSD 5%			2.7	4.1	-	-	5.5	1.2	8.4	-	-	-	-	0.9	
Number of trials (for candidate varieties)			21	12	4	6	14	5	10	-	-	-	-	9	

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

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

Candidate varieties will be considered for the 2019 AHDB Recommended List.

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

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

T = Data from trials treated with fungicide

UT = Data from trials without fungicide or PGR

[] = Limited data

LSD 5% : Varieties that are more than one LSD apart are significantly different at the 95% confidence level. These summaries are derived from National List and BSPB trials.

Acknowledgement is made to APHA and BSPB for the use of the data.

Spring barley 2018 – Variety comments

Malting varieties

Chanson

Quality: A high-yielding variety with potential for brewing. It is the first recommended variety lacking a gene for lipoxygenase production, which may have potential added benefits to the end user. It tends to give a low specific weight.

Agronomy: A high-yielding variety with moderate straw strength. Limited data suggest it has high resistance to mildew.

MAGB comment: Under test by MBC for brewing, with completion expected Spring 2018. Growers are advised to speak to merchants before committing to this or other varieties in this position.

Concerto

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

Agronomy: This variety has moderate lodging resistance but high resistance to brackling. Concerto has high resistance to mildew and yellow rust but is susceptible to rhynchosporium.

MAGB comment: Fully approved for both brewing and malt distilling, it now holds in excess of half the total spring barley market.

Fairing

Quality: Provisionally approved by MBC for grain distilling use.

Agronomy: This variety is a potential alternative to Belgravia for grain distilling. This variety is early maturing and has high resistance to mildew and rhynchosporium. It is susceptible to brown rust.

MAGB comment: Under test by MBC for grain distilling, with completion expected Spring 2018. Growers are advised to speak to merchants before committing to this or other varieties in this position.

KWS Irina

Quality: Fully approved by MBC for brewing use and may be suited to European markets. It tends to give a low specific weight.

Agronomy: This variety is stiff-strawed and has high brackling resistance. It has high resistance to mildew but is susceptible to brown rust.

MAGB comment: Although fully approved for brewing since 2015 growers are advised to speak to their merchants about end markets.

KWS Sassy

Quality: Fully approved by MBC for malt distilling use.

Agronomy: This variety has given high yields in the North region, with moderate resistance to lodging and brackling. It has very 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 approval by MBC for brewing and malt distilling use.

Agronomy: A high-yielding variety in both fungicide treated and untreated trials. Laureate has relatively stiff straw and high resistance to brackling. It has high resistance to mildew.

MAGB comment: Awarded full approval by MBC for brewing and malt distilling. Growers are advised to speak to their merchants about end markets.

LG Diablo NEW

Quality: Added to the AHDB Recommended List for 2018 as a very high-yielding variety with potential for brewing and malt distilling.

Agronomy: The highest yielding spring barley on the 2018 Recommended List in both fungicide treated and untreated trials, performing particularly well in the East and North regions. This variety has relatively stiff straw and high resistance to brackling. Limited data suggest it has high resistance to mildew.

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

LG Tomahawk NEW

Quality: Added to the AHDB Recommended List for 2018 as a high-yielding variety with potential for malt distilling. It tends to give a low specific weight.

Agronomy: This variety has given very high yields in the East and North regions. It has relatively stiff straw. Limited data suggest LG Tomahawk has very high resistance to mildew and high resistance to yellow rust but this variety is susceptible to brown rust.

MAGB comment: Under test by MBC for malt distilling. 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 % of MAGB member purchases (see page 5).

Malting varieties – continued

Olympus

Quality: A variety with potential for grain distilling use.

Agronomy: Olympus has very high resistance to mildew and limited data suggest that it also has high resistance to yellow rust. It is susceptible to brown rust.

Growers are advised to speak to merchants before committing to this or other varieties in this position.

Propino

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

Agronomy: Propino has relatively stiff straw with high resistance to brackling. It is very susceptible to yellow rust.

MAGB comment: Fully approved for brewing, it continues to hold its share of the spring barley market at around 20 per cent.

RGT Asteroid NEW

Quality: Added to the AHDB Recommended List for 2018 as a variety with potential for brewing, malt and grain distilling.

Agronomy: This variety has given its best relative performance in the East region and has relatively stiff straw and high resistance to brackling. It has given good yields in untreated trials. Limited data suggest RGT Asteroid has high resistance to mildew and yellow rust and is one of two varieties on the current list with a higher ramularia rating.

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

RGT Planet

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

Agronomy: This variety has performed well across the UK in both fungicide treated and untreated trials. It is the highest yielding spring barley in the West region on the 2018 Recommended List. It has relatively stiff straw and high resistance to brackling. RGT Planet has very high resistance to mildew but is susceptible to brown rust.

MAGB comment: Although fully approved for brewing since 2016 growers are advised to speak to their merchants about end markets.

Sienna

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

Agronomy: This variety has good overall disease resistance, with very 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.

Feed varieties

Hacker

A feed variety recommended for the West region with a high specific weight. It has relatively stiff straw and high resistance to brackling and limited data suggest it has very high resistance to mildew.

Ovation

A feed variety, which has given high yields in the East and North regions. Ovation has very high resistance to mildew but is susceptible to brown rust.

Scholar

A high-yielding feed variety with a good specific weight. Scholar has relatively stiff short straw with high resistance to brackling. This variety has very high resistance to mildew and is one of two varieties on the current list with a higher ramularia rating. Limited data suggest it also has high resistance to yellow rust.

MBC Approved List

Brewing use

Full Approval: Concerto, KWS Irina, Propino, RGT Planet, Laureate Provisional Approval: Chanson

Malt distilling use

Full Approval: Concerto, KWS Sassy, Laureate, Sienna

Grain distilling use Provisional Approval: Fairing



Winter oats 2018/19

Not added to Recommended List	1
oracle caple	A 199

AHDB	
RECOMMENDED	

AHDB		rious	mwark .			aut							.e.	Recomm Lis	nended st
RECOMMENDED	RUTV	RCT SC	uti. Giffin	Maest	PCT LI	Mascar	n Dalqui	se cerald	Pelot	Beacof	n Fusior	Uraftor	AVEI39500	coracle	tagle
Variety type	Husked	varieties							Naked v	arieties				Husked v	varieties
Scope of recommendation	UK	UK NEW	UK	UK	UK C	UK C	UK C	UK	UK	UK *	UK	UK		Not adde	ed to RL
UK yield (% treated control)															
Fungicide-treated (8.6t/ha)	106	106	105	103	101	99	99	98	79	74	74	71	4.3	102	101
Grain quality															
Kernel content (%)	73.9	75.4	75.2	76.7	75.1	77.8	75.5	72.8	-	-	-	-	1.1	74.9	75.4
Specific weight (kg/hl)	52.9	55.3	50.3	51.8	53.1	54.5	54.8	53.7	65.0	64.9	63.6	65.1	1.1	51.7	53.7
Screenings (% through 2.0mm)	6.4	5.0	3.2	9.2	5.0	1.3	2.9	3.3	25.2	15.7	35.3	14.6	2.6	2.4	5.8
Agronomic features															
Resistance to lodging (1–9)	4	4	4	6	6	6	3	6	6	6	8	6	1.7	5	2
Straw length (cm)	119	116	120	109	110	113	118	115	110	114	80	115	2.8	105	110
Ripening (days +/- Mascani, -ve = earlier)	-1	-1	+2	0	-2	0	0	+3	+1	+1	+3	-1	1.0	+2	-2
Disease resistance															
Mildew (1–9)	4	3	5	4	4	5	4	4	6	5	3	4	1.6	4	4
Crown rust (1–9)	8	7	6	3	5	6	4	5	6	5	3	4	0.9	5	4
Treated yields with and without PGR (% treat	ced contro	ol)													
With PGR (8.7t/ha)	107	105	104	102	101	100	99	97	77	73	73	69	4.3	102	102
Without PGR (8.6t/ha)	106	107	104	103	102	99	100	99	81	75	75	73	3.5	102	100
Annual treated yield (% control)															
2013 (8.5t/ha)	[105]	-	[113]	[93]	[100]	102	98	97	[81]	78	82	70	7.8	-	-
2014 (8.9t/ha)	[110]	[106]	[110]	109	102	99	100	102	[81]	73	78	68	5.5	[103]	[106]
2015 (9.4t/ha)	107	[105]	106	102	101	97	102	99	79	76	72	76	5.1	[106]	[96]
2016 (8.4t/ha)	105	109	101	100	102	99	99	96	75	73	70	71	4.4	102	100
2017 (7.9t/ha)	104	103	100	103	101	101	99	94	79	72	70	69	5.3	97	101
Breeder/UK contact															
Breeder	R2n	R2n	IBERS	IBERS	R2n	IBERS	Sen	IBERS	IBERS	IBERS	IBERS	IBERS		IBERS	SE
UK contact	RAGT	RAGT	Sen	Sen	RAGT	Sen	Sen	Sen	Sen	Sen	Sen	Sen		Sen	Cope
Status in RL system															
Year first listed	17	18	17	16	16	04	03	93	17	14	10	00		-	-
RL status	P2	P1	P2	-	-	-	-	-	P2	*	-	-		-	-

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

= Recommended for the UK UK

- \$ = Dwarf variety
- [] = Limited data
- = Yield control (for current table) С

= Variety no longer in trials

P1 = First year of recommendation

- P2 = Second year of recommendation
- Cope = Trevor Cope Seeds (www.trevorcopeseeds.co.uk)
- IBERS = Institute of Biological, Environmental & Rural Sciences
- RAGT = RAGT Seeds (www.ragt.co.uk)
- R2n = RAGT, France (www.ragt.co.uk)

- SE = Saatzucht Edelhof, Austria
- Sen = Senova (www.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.

Husked varieties

Dalguise

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

Gerald

A late maturing husked variety with moderate straw strength. It is susceptible to mildew.

Griffin

A late maturing, very high-yielding husked variety. It has relatively long straw, low lodging resistance and tends to give a low specific weight.

Maestro

A high-yielding husked variety. It tends to give low specific weights and a higher level of screenings than other husked varieties. It is susceptible to mildew and very susceptible to crown rust.

Mascani

A popular husked variety. Although it gives moderate yields this is compensated for by its combination of high kernel content and specific weight. Mascani is less susceptible to mildew than most varieties and has medium resistance to crown rust, though a race exists to which it could be susceptible. Mascani remains by far the most popular variety with oat millers and growers.

RGT Lineout

An early ripening husked variety. It is susceptible to mildew.

RGT Southwark NEW

Added to the AHDB Recommended List for 2018/19 as a very high-yielding husked variety with good specific weight and good resistance to the common strains of crown rust. It is early maturing with low lodging resistance. It is susceptible to mildew.

RGT Victorious

A very high-yielding husked variety with excellent resistance to the common strains of crown rust. It is early maturing, has relatively long straw with low lodging resistance and is susceptible to mildew.

Naked varieties

Beacon

A huskless (naked) oat variety with a specific weight similar to Grafton. It has medium resistance to both mildew and crown rust. It is no longer in RL trials.

Fusion

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

Grafton

A huskless (naked) variety with a yield potential 8 per cent below the variety Peloton. 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 medium resistance to both mildew and crown rust.

Disease sampling in 2018

The UK Cereal Pathogen Virulence Survey is looking for fresh leaf samples showing signs of wheat yellow rust, brown rust and powdery mildew, as well as barley powdery mildew.

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



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

Keeping you informed: disease and pest alerts



AHDB collects a vast amount of information from its variety and research site network across England and Scotland.

By sharing observations, AHDB can help flag up emerging issues, such as pest and disease hotspots.

AHDB uses several routes to keep you informed about the developments that really matter – web, blogs, email, tweets and news stories.

To find out more, visit cereals.ahdb.org.uk/monitoring

Spring oats 2018

AHDB							\$			0	Year 4 candidates	Described	varieties
RECOMMENDED	Delfin	TUKON	Aspen	Canyon	Montrose	WPBELYAL	Rotmar	Fifth	Conway	Averagesolo	Flison	Oliver	Kamil
Variety type	Husked var	ieties									Husked variety	Naked varie	tiest
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK		Candidate	UK	UK
	NEW		С	С	*		*	С				NEW	NEW
UK yield (% treated control)													
Fungicide-treated (8.2t/ha)	105	103	102	100	99	99	98	97	95	3.5	103	74	63
Untreated (% of treated control)	99	95	86	92	83	87	82	83	85	3.5	[96]	61	57
Grain quality													
Kernel content (%)	75.3	75.6	76.8	75.5	76.0	79.8	75.0	77.9	77.5	0.9	[75.0]	-	-
Specific weight (kg/hl)	53.7	53.6	54.4	54.6	55.1	53.5	53.4	52.9	53.7	0.6	[54.2]	65.0	67.4
Screenings (% through 2.0mm)	2.3	2.6	1.6	1.7	1.5	2.3	3.2	2.8	2.4	2.0	[2.1]	[13.4]	[7.8]
Agronomic features													
Resistance to lodging (1-9)	8	8	7	7	7	7	7	7	8	1.1	[9]	7	8
Straw length (cm)	[116]	111	102	113	107	104	112	104	109	2.4	[112]	[109]	[112]
Ripening (days +/- Firth, -ve = earlier)	-1	-1	-1	0	-1	-1	-1	0	-1	1.0	0	0	0
Disease resistance													
Mildew (1–9)	9	8	6	8	4	7	5	6	7	1.0	8	4	5
Crown rust (1–9)	[4]	[5]	4	4	3	[5]	8	4	4	1.2	[4]	[3]	[4]
Annual treated yield (% control)													
2013 (8.4t/ha)	-	[99]	[105]	[96]	[103]	[100]	[97]	[99]	[96]	4.9	-	-	-
2014 (8.8t/ha)	[104]	[103]	[101]	[102]	[98]	[101]	[94]	[97]	[96]	6.8	-	[73]	[65]
2015 (8.7t/ha)	[102]	[103]	[106]	[99]	[96]	[99]	[100]	[95]	[90]	6.9	[104]	[75]	[65]
2016 (8.2t/ha)	[105]	[104]	[101]	[102]	[100]	[101]	[101]	[97]	[98]	5.5	[105]	[73]	[62]
2017 (7.3t/ha)	[109]	[104]	[99]	[101]	[99]	[94]	[97]	[100]	[96]	6.4	[100]	[76]	[61]
Breeder/UK contact													
Breeder	Nord	Nord	Bau	Nord	Lant	Wier	Selg	KWS	IBERS		SE		
UK contact	SU	SU	Sen	SU	Sen	KWS	Cope	KWS	Sen		Sen	Cope	Cope
Status in RL system													
Year first listed	18	17	15	11	15	17	11	00	14		-	18	18
RL status	P1	P2	-	-	*	P2	*	-	-		-	P1	P1

Variety no longer listed: Atego

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

†

UK = Recommended for the UK

- [] = Limited data
- C = Yield control (for current table)
- * = Variety no longer in trials
- P1 = First year of recommendation
- P2 = Second year of recommendation

- = Naked spring oat varieties are described, not recommended
- Bau = Bauer, Germany
- Cope = Trevor Cope Seeds (www.trevorcopeseeds.co.uk)
- IBERS = Institute of Biological, Environmental & Rural
 - Sciences
- KWS = KWS UK (www.kws-uk.com)
- Lant = Lantmannen SW Seed BV, Sweden
- Nord = Nordsaat, Germany
- Selg = Selgen, Czech Republic
- Sen = Senova (www.senova.uk.com)
- SE = Saatzucht Edelhof, Austria

SU = Saaten Union UK (www.saaten-union.co.uk)

Wier = Wiersum BV, Netherlands

LSD = Least significant difference

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

Husked varieties

Aspen

A popular, early maturing, high-yielding husked variety with a high specific weight. It is susceptible to crown rust.

Canyon

Canyon is the most popular spring oat variety. It is a husked variety with a high specific weight and good resistance to mildew. It is susceptible to crown rust but has given relatively high yields in untreated trials.

Conway

A husked variety with a high kernel content and good resistance to mildew. It is susceptible to crown rust.

Delfin NEW

Added to the AHDB Recommended List for 2018 as a very high-yielding variety with excellent resistance to mildew. It is early maturing and has high resistance to lodging. It has given high yields in untreated UK trials.

Firth

A husked variety with a high kernel content. It is susceptible to crown rust.

Montrose

An early maturing husked variety with a high specific weight. It is susceptible to mildew and very susceptible to crown rust. It is no longer in RL trials.

Rozmar

An early maturing husked variety with high resistance to crown rust. It is no longer in RL trials.

WPB Elyann

WPB Elyann is early maturing with a high kernel content. It has good resistance to mildew.

Yukon

An early maturing, high-yielding husked variety. It has high resistance to lodging and high resistance to mildew. It has given high yields in untreated UK trials.

Described naked varieties

Kamil NEW

A huskless (naked) oat variety with a good specific weight and high resistance to lodging.

Oliver NEW

A huskless (naked) oat variety with a good specific weight. It is susceptible to mildew.

RB209: Nutrient

Management

AHDB

AHDB Nutrient Management Guide (RB209) available to view via new App

The new Nutrient Management Guide (RB209) makes nutrient management planning more straightforward and accurate.

The app includes all seven sections:

- 1. Principles of nutrient management and fertiliser use
- 2. Organic materials
- 3. Grass and forage crops
- 4. Arable crops
- 5. Potatoes
- 6. Vegetables and bulbs
- 7. Fruit, vines and hops

Download now from the Apple Store and Google Play Store



Winter oilseed rape 2018/19 – Yield, quality, agronomy and disease resistance

RECOMMENDED	le Nik	1ta 131	601 Carr	PUS Archi	tect*	ion of se	cret*	00 ¹¹ E10	at flat	hingo we	nbley	JI ² He	ation tiel	der Bro	adway But	erft Bart	Ane Ane	stasia ST	1arnas 132	OL AVE	age LSD HIG	5°10
Recon (both	nmenc East/\	led for Nest ar	the UK nd Nort	(th regio	ons)		Recor East/	nmend West r	led for egion c	the only		Recor North	nmend regior	led for n only	the						Descr variel	ibed ies
Variety type RH	Conv	RH	Conv	RH	RH	RH SD	RH	Conv	Conv	RH	RH	Conv	Conv	Conv	Conv	Conv	Conv	RH	RH		RH	RH
Scope of recommendation UK	UK	UK	UK	Sp	Sp	UK	E/W	E/W	E/W	E/W	E/W	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν		E/W	Ν
		С	С	NEW								NEW	NEW	NEW	NEW			*	*			
Gross output, yield adjusted for oil conter	nt (% c	ontrol)																			
United Kingdom (5.4t/ha) 105	105	105	104	102	99	97	106	106	105	105	104	103	102	100	103	98	101	101	101	4.5	93	92
East/West region (5.4t/ha) 105	105	105	104	102	99	98	107	107	105	105	105	102	101	99	102	97	[100]	100	101	4.8	94	[92]
North region (5.6t/ha) 105	105	102	106	99	96	95	[102]	[100]	105	[102]	102	107	107	107	106	106	105	103	102	6.1	92	95
Seed yield (% control)																						
United Kingdom (5.0t/ha) 105	104	105	104	103	98	99	107	106	104	105	104	103	101	100	103	99	102	102	101	4.2	94	93
East/West region (5.0t/ha) 105	104	105	103	103	98	99	108	107	104	105	104	102	101	99	102	98	[102]	102	101	4.5	94	[92]
North region (5.2t/ha) 104	104	102	105	100	95	97	[103]	[100]	104	[103]	103	107	105	106	106	106	106	105	101	5.8	92	96
Agronomic features																						
Resistance to lodging (1–9) 8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0.2	8	8
Stem stiffness (1–9) 8	8	8	8	8	9	9	8	8	8	8	8	8	9	8	8	8	8	7	8	0.4	8	8
Shortness of stem (1–9) 6	7	6	6	6	7	9	7	6	7	6	6	7	6	6	7	6	7	7	6	0.2	6	6
Earliness of flowering (1–9) 8	7	7	6	6	7	7	8	7	6	8	7	5	7	6	6	5	6	7	6	0.3	6	5
Earliness of maturity (1–9) 5	5	5	5	6	5	5	5	6	5	6	5	5	5	4	4	4	5	5	5	0.4	5	5
Seed quality (at 9% moisture)																						
Oil content, fungicide-treated (%) 46.0	46.2	45.7	45.7	45.1	46.2	44.5	44.8	45.4	46.2	45.2	45.6	45.8	46.3	45.7	45.7	45.2	44.8	44.4	46.2	0.2	45.4	45.3
Glucosinolate (µmoles/g of seed) 13.0	9.5	12.9	11.2	14.4	10.2	10.7	10.6	10.5	12.0	12.3	12.0	10.6	13.3	8.2	10.2	12.0	11.1	12.3	9.9	-	12.3	11.7
Disease resistance																						
Light leaf spot (1–9) 7	7	6	6	6	6	7	5	7	7	7	6	6	7	7	6	7	7	6	7	0.8	5	6

Varieties no longer listed in the East/West region: Amalie, Angus, Arazzo, Fencer, Harper, Incentive, Picto, Popular, SY Harnas, Trinity and Troy.

Varieties no longer listed in the North region: Amalie, DK Exentiel, DK Explicit, PT234 and Troy.

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg 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.

UK = Recommended for both the East/West and North regions E/W = Recommended for the East/West region N = Recommended for the North region	C []	 Yield control (for current table) PT211, PR46W21 and Trinity were also yield controls but are no longer listed Limited data 	\$	 Mentor is recommended for growing on land infected with common strains of clubroot; Mentor may, however, be infected by some strains and infections that have been reported in some fields. 	LSD = Least significant difference Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level.
Sp = Specific recommendation	~ V	= HOLL (high oleic, low linolenic) variety	#	= Semi-dwarf varieties believed to carry the Bzh	
Conv = Conventional open-pollinated variety	Ŧ	resistance to Turnip Yellows Virus (TuYV)		dwarfing gene in the heterozygous state but	
SD = Semi-dwarf	&	= Clearfield® variety, with tolerance to specific	+	= HEAB (High Frucic Acid) variety	
* = Variety no longer in trial in region		imidazolinone herbicides	1		

									·· • •														
AHDB				<u></u>	.5	*	⁶³ .(*	ı		°,	क्ष		.05		Jai	613	v0 ⁵		1.0°	,	elsolisi	2
RECOMMENDED	Alitze	e Nikita	132	Campi	Archite	Ment	of sec.	windo	E193	Flamin	Wemb	Aquila	Eleve	tield	er oroad	Butte	Baiba	Anast	STHE	V 13240	Avera	59 E100 T	othin
	Recon (both	nmended East/We	l for th st and	e UK North r	egions)			Recom East/W	mende /est re	d for th gion onl	ie y		Reco Norti	mmen h regio	ded for n only	the						Descri varieti	oed es
Variety type	RH	Conv	RH	Conv	RH	RH	RH SD	RH	Conv	Conv	RH	RH	Conv	Conv	Conv	Conv	Conv	Conv	RH	RH		RH	RH
Scope of recommendation	UK	UK	UK	UK	Sp	Sp	UK	E/W	E/W	E/W	E/W	E/W	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν		E/W	Ν
			С	С	NEW								NEW	NEW	NEW	NEW			*	*			
Breeder/UK contact																							
Breeder	R2n	LimEur	Mon	Mom	LimEur	NPZ	MonTec	R2n	Els	Mom	NPZ	LimEur	Pick	Pars	Pick	Mom	Mom	Lim	SyP	DSVMon		NPZ	DK
UK contact	RAGT	Lim	Mon	KWS	Lim	LSPB	Mon	RAGT	Els	KWS	LSPB	Lim	DLF	Els	DLF	KWS	KWS	Lim	Syn	Mon		LSPB	DK
Annual treated gross	s output	, yield ad	ljustec	l for oil	content	(% con	trol) - UK																
2014 (5.8t/ha)	103	103	103	101	-	94	93	100	100	101	100	102	-	-	-	-	98	[100]	101	99	-	90	[93]
2015 (6.0t/ha)	105	103	103	103	102	99	97	105	106	104	103	101	105	103	102	105	[100]	[102]	101	102	-	94	[93]
2016 (4.8t/ha)	105	107	105	106	98	95	94	104	103	107	102	105	104	105	105	103	[101]	[104]	101	[102]	-	91	[93]
2017 (5.4t/ha)	104	105	100	104	101	99	97	104	101	104	104	102	105	104	102	103	104	101	101	101	-	92	92
Agronomy																							
Plant height (cm)	155	150	160	159	162	151	121	151	154	152	153	158	152	159	153	150	156	151	152	157	3.2	155	164
Status in RL system																							
Year first listed	16	16	15	15	18	15	17	16	16	17	16	17	18	18	18	18	16	13	15	16		-	-
RL status	-	P1	-	-	P1	-	P2	-	-	P2	-	P2	P1	P1	P1	P1	-	-	*	*		-	-

UK	 Recommended for both the East/West and North regions 	[]	= Limited data
E/W N Sp	Recommended for the East/West regionRecommended for the North regionSpecific recommendation	† ¥	 HEAR (High Erucic Acid) vari Architect has a specific recorresistance to Turnip Yellows
Conv RH SD *	 Conventional open-pollinated variety Restored hybrid Semi-dwarf Variety no longer in trial in region 	\$	 Mentor is recommended for infected with common strain Mentor may, however, be info strains and infections that has in some fields
С	= Yield control (for current table) PT211, PR46W21 and Trinity were also yield controls but are no longer listed	#	 Semi-dwarf varieties believed dwarfing gene in the heteroz this has not been verified in I
P1 P2	= First year of recommendation = Second year of recommendation	&	= Clearfield® variety, with toler imidazolinone herbicides

- nic) variety
- iety
- mmendation for its Virus (TuYV)
- growing on land ns of clubroot; fected by some ave been reported
- ed to carry the Bzh zygous state but ŔĽ tests
- rance to specific

- DK = DEKALB (www.dekalb.co.uk)
- DLF = DLF Seeds Ltd (www.dlf.co.uk)
- DSVMon= DSV UK/Monsanto
- Els = Elsoms Seeds (www.elsoms.com)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.lgseeds.co.uk)
- LimEur = Limagrain Europe SA (www.lgseeds.co.uk)
- LSPB = LS Plant Breeding (www.lspb.eu)
- Mom = Momont, France
- Mon = Monsanto UK Ltd (www.monsanto.com)
- MonTec = Monsanto Technology LLC (www.monsanto.com)
- NPZ = NPZ-Lembke, Germany (www.npz.de)

- SyP = Syngenta Participations AG (www.syngenta.co.uk)
- Syn = Syngenta UK Ltd (www.syngenta.co.uk)
- Pars = Parsons Seeds Ltd
- Pick = Mike Pickford
- R2n = RAGT, France (www.ragt.co.uk)
- RAGT = RAGT Seeds (www.ragt.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 2018 – Candidate varieties

CANDIDATE	Previous I nam	e Variet	y variet	Jtype Close	OUTPUT CLOSS	output los	output 100	d seed yield	dela seed yiel	ed seed yiel	linest dela-hor tent ^{ela}	in sten	Jaing (1-9)	9) (cm) Fatin	Ess of Flows	ting (1.9) sof naturi	Resistant Resistant	est sport (1.9) Lee to stern carket (1.9) Breader's claim	EastWest region
Control varieties	X05140050	1070	DU	07			07	07		45.3	-	0	454		-				
PR40W21	X05W085C	1970	RH	97	98	96	97	97	96	45.7	8	8	154	5	6	4	3		DuPont Pioneer
PIZII Tripihy	X09W007C	2306	RH	100	99	102	100	99	102	45.6	9	8	160	4	6	6	5		DuPont Pioneer
	SWU3085	2440	Conv	99	99	99	99	99	99	45.2	8	/	153	4	6	6	6		Elsoms Seeds
Comput	MULOC OD 057	2523	RH	100	100	104	100	100	99	45.4	8	8	101	5	6	6	5	HOLL	IVIONSANTO UK LTO
Campus Candidate variation - UK	MH 06 CP 057	2535	Conv	105	105	104	104	105	104	45.6	8	1	161	4	6	6	5		KWS UK
Calludate varieties - UK		0004					ata aan	net he r		deeve	iotu koo	not or	- manalata a	d Notio		a atila a			
	IVIH TU BL 021	2904	Conv	107	106	100	107			as var	nety nas			a Natioi		esting	6		KWS UK
Aspire DK Exchool	CW/U276	2923	Conv	107	100	109	107	100	109	45.7	9	8	149	6	5	8	0		Limagrain UK
DK Exsteel	CWH376	2887	RH	105	101	109	104	101	109	45.7	8	(107	5	5	/	8		Monsanto UK Ltd
	CVVH375	2885	RH	105	102	109	105	102	109	45.3	9	8	162	6	0	8	8	Clearfield®	Nonsanto UK Liu
Capdidate variation - East/	X12007301	2897	RH	96	97	94	97	98	96	44.9	8	1	157	5	0	0	0	Clearneid®	DuPont Pioneer
Hunivers	MH 13 1076	2006	DЦ		107			107		45.2	Q	Q	161	5	6	6	7		KWS HK
PT275	1/1////////////////////////////////////	2805	BH		106			106		45.5	8	7	154	1	6	7	5		DuPont Pioneer
DK Expansion	DMH293	2030	BH		105			105		45.6	8	7	167	5	6	5	7		Monsanto LIK Ltd
George	BNIX3527	2002	BH		105			103		45.7	8	7	153	5	6	7	8		Syngenta LIK Ltd
Walker	SI M15065W/11	2950	BH		103			103		45.4	8	7	150	6	6	7	7		LS Plant Breeding
Alphabet	L F15/307	2922			100	D	ata can	not he r	hublishe	 d as var	ietv has	not co	ompleter	d Natio	nal List f	'estina	1		Limagrain LIK
Specialist varieties - UK	2210/001	LOLL					ata barn				ioty flac	1101 00	ompieree	a reactor		coung			Einagrain ort
Crome	RAP15073W15	2947	RH	105	103	107	103	102	106	46.4	8	8	157	5	6	6	4 (Clubroot resistant	LS Plant Breeding
Aspect	LE15/299	2920				D	ata can	not be r	publishe	ed as var	ietv has	not co	ompleted	d Natio	nal List f	estina			Limagrain UK
Temptation	WRH 486	2957	RH	101	101	100	100	101	100	45.9	8	7	153	4	6	6	5	TuYV resistant	DSV UK
																-			
Mean of controls (t/ha)				5.2	4.9	5.8	4.8	4.6	5.3	_	_	_	_	_	_	_	_		
Overall mean				-	_	-	_	_	-	45.4	8.2	7.2	157	4.9	5.7	-	-		
LSD 5%				5.6	7.3	5.7	5.1	6.7	5.6	0.4	0.5	0.4	4.2	0.4	0.4	_	-		
Number of trials				22	14	8	22	14	8	22	6	18	20	21	18	-	-		

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 (eg high resistance). The 1-9 ratings are not comparable to those used on the Recommended List table. Candidate varieties will be considered for the 2019/20 AHDB Recommended List.

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

HOLL = High oleic, low linolenic

= Clearfield® variety, with tolerance to specific imidazolinone herbicides &

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

Winter oilseed rape varieties grown in RL trials in 2017 but not added to the AHDB Recommended List

AHDB		~				~				*	ċ	(⁵		dient			6
RECOMMENDED	1 ³⁷⁶	Campus	P1211	Trinity	PRAGN	Diango	Sparrov	N ALTOW	Annalis	e 87,26	Ot seral	Leland	OVER	et ok piir	th Stowell	Halexia	Average
	Control v	arieties				Other va	rieties										
Variety type	RH	Conv	RH	Conv	RH	Conv	RH	RH	Conv	RH SD	RH SD	RH	RH	RH	RH	RH	
Region for which considered	-	-	-	-	-	UK	UK	UK	UK	UK	UK	E/W	E/W	E/W	Ν	Ν	
Gross output, yield adjusted for oil	content (%	control)															
United Kingdom (5.4t/ha)	105	104	97	97	97	106	103	103	100	96	94	104	103	92	102	102	4.5
East/West region (5.4t/ha)	105	104	97	97	97	106	104	103	101	96	93	105	103	92	103	102	4.8
North region (5.6t/ha)	102	106	99	99	94	104	101	103	96	94	95	[102]	[99]	[91]	101	99	6.1
Seed yield (% control)																	
United Kingdom (5.0t/ha)	105	104	97	98	97	105	103	103	98	95	95	105	103	95	103	102	4.2
East/West region (5.0t/ha)	105	103	97	98	97	106	103	103	99	95	95	105	103	95	103	103	4.5
North region (5.2t/ha)	102	105	99	99	94	104	101	104	94	94	97	[102]	[99]	[94]	101	100	5.8
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
Stem stiffness (1–9)	8	8	8	8	8	9	8	8	8	9	9	9	8	7	8	8	0.4
Shortness of stem (1–9)	6	6	6	7	6	7	6	6	6	9	8	6	6	6	6	6	0.2
Earliness of flowering (1–9)	7	6	6	6	7	6	7	7	6	5	6	7	8	7	6	7	0.3
Earliness of maturity (1–9)	5	5	5	5	6	4	5	5	4	5	5	5	6	6	5	5	0.4
Seed quality (at 9% moisture)																	
Oil content, fungicide-treated (%)	45.7	45.7	45.6	45.2	45.8	45.7	45.7	45.4	47.0	45.8	44.5	45.3	45.3	43.2	45.3	45.1	0.2
Glucosinolate (µmoles/g of seed)	12.9	11.2	10.6	10.0	12.6	10.5	11.3	12.7	10.9	10.3	12.4	10.5	12.2	11.7	11.5	11.6	-
Disease resistance																	
Light leaf spot (1–9)	6	6	6	6	4	6	6	7	6	7	7	6	5	5	6	6	0.8
Stem canker (1–9)	5	6	5	6	3	6	5	8	4	5	8	5	8	7	5	5	0.9

This table should be read in conjunction with the AHDB Recommended List of winter oilseed rape for 2018/19. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg 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.

= Considered for both the East/West and North

- Conv = Conventional open-pollinated variety
- RH = Restored hybrid [] = Limited data

regions

UK

- E/W = Considered for the East/West region N = Considered for the North region
- Sp = Specific recommendation
- SD = Semi-dwarf

- ¥ = TuYV variety
- \$ = Clubroot resistant variety
- ~ = HOLL (high oleic, low linolenic) variety
- 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 2018/19 – Variety comments

Varieties

Alizze

A restored hybrid variety recommended for the UK. This relatively early flowering variety has given high treated gross outputs in both regions. Alizze has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity. It has high resistance to light leaf spot.

Anastasia

A conventional, open-pollinated variety recommended for the North region. It has given a high treated gross output in the North region. Anastasia has high resistance to lodging with good stem stiffness at maturity. It has high resistance to light leaf spot.

Aquila

A restored hybrid variety recommended for the East/ West region. It has given a high treated gross output in the East/West region. This variety has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity. Aquila has high resistance to stem canker.

Architect NEW

A restored hybrid variety added to the 2018/19 Recommended List with a specific recommendation for resistance to Turnip Yellows Virus (TuYV). Architect has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity. It is a relatively early maturing variety.

Barbados

A conventional, open-pollinated variety recommended for the North region. It has a very high gross output in the North region. Barbados 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.

Broadway NEW

A conventional, open-pollinated variety added to the 2018/19 Recommended List for the North region. It has given a very high treated gross output in 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. It is a relatively late maturing variety.

Butterfly NEW

A conventional, open-pollinated variety added to the 2018/19 Recommended List for the North region. This variety has given a very high treated gross output in the North region. It has high resistance to lodging with good stem stiffness at maturity. Butterfly has high resistance to stem canker. It is a relatively late maturing variety.

Campus

A conventional, open-pollinated variety recommended for the UK, giving a very high treated gross output in the North region. Campus has high resistance to lodging with good stem stiffness at maturity.

DK Secret

This variety has a recommendation for the UK as a restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state). It is short with high resistance to lodging. It is very stiff-stemmed at maturity. DK Secret has high resistance to both light leaf spot and stem canker.

Elevation NEW

A conventional, open-pollinated variety added to the 2018/19 Recommended List for the North region. This variety has a very high treated gross output for the North region. Elevation has high resistance to lodging with good stem stiffness at maturity. It is susceptible to stem canker.

Elgar

A conventional, open-pollinated variety recommended for the East/West region. It has given a very high treated gross output in 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.

Flamingo

A conventional, open pollinated variety for the East/ West region. It has given a high treated gross output for the East/West region. This variety has high resistance to lodging with good stem stiffness at maturity. Flamingo has high resistance to light leaf spot but is susceptible to stem canker.

Kielder NEW

A conventional, open-pollinated variety added to the 2018/19 Recommended List for the North region. It has given a very high treated gross output in the North region. This variety has high resistance to lodging and is very stiff-stemmed at maturity. Kielder has high resistance to light leaf spot but is very susceptible to stem canker.

Varieties – continued

Mentor

A restored hybrid variety with a specific recommendation for its resistance to the common strains of clubroot, though it may be susceptible to strains found in some fields. This variety has high resistance to lodging when grown at the hybrid seed rate and is very stiff-stemmed at maturity. It is very susceptible to stem canker.

Nikita

A conventional, open-pollinated variety recommended for the UK and has given a high treated gross output in both the East/West and North regions. This variety has high resistance to lodging with good stem stiffness at maturity. Nikita has high resistance to light leaf spot but is susceptible to stem canker.

SY Harnas

A restored hybrid variety recommended for the North region. SY Harnas has high resistance to lodging when grown at the hybrid seed rate. It is susceptible to stem canker. SY Harnas is no longer in RL trials.

V 316 OL

A restored hybrid variety recommended for the UK with a specialist high oleic, low linolenic (HOLL) oil type. This variety has given high yields in the East/ West region. V316 OL has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity.

V 324 OL

A restored hybrid variety recommended for the North region with a specialist high oleic, low linolenic (HOLL) oil type. V324 OL has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity. It has high resistance to light leaf spot but is susceptible to stem canker. V324 OL is no longer in RL trials.

Wembley

A restored hybrid variety recommended for the East/ West region. This relatively early flowering variety has given a high treated gross output in the East/West. It has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity. Wembley has high resistance to light leaf spot. It is a relatively early maturing variety.

Windozz

A restored hybrid variety recommended for the East/ West region. It has given a very high treated gross output in the East/West. Windozz has high resistance to lodging when grown at the hybrid seed rate, combined with good stem stiffness at maturity. It is a relatively early flowering variety.

Described varieties

DK Imagis CL

Described for the North region. This variety is one of a number of available restored hybrid Clearfield varieties which have tolerance to specific imidazolinone (IMI) herbicides. Growers are advised to see the BASF website for more information on the management and husbandry of these types of varieties.

Ergo

Described for the East/West region. A high erucic acid (HEAR) variety. HEAR varieties have a different oil profile (having around 50 per cent erucic acid, compared to less than 2 per cent 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.

Spring oilseed rape Descriptive List 2018

												rear o canalateo
AHDB	er	det	, det		2et	te	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~	rtin	arin	verage (50/0)	5
DESCRIBED	Lume	Buille	Doga	Wat	SUNC	Mira.	Simu	Atal.	DOFC	Tame	A"SD"	Let
Variety type	RH	RH	RH	RH	RH	RH	RH	RH	RH	Conv		RH
	NEW			С		С		NEW		*		
Gross output, yield adjusted for oil content (%	6 control)											
UK without fungicide (3.2t/ha)	[105]	102	102	101	100	99	98	[98]	97	92	7.8	[106]
Number of trials	7	13	14	15	12	13	13	8	14	14		4
Seed yield (% control)												
UK without fungicide (3.0t/ha)	[105]	101	101	101	99	99	99	[98]	99	95	7.6	[106]
Seed quality (at 9% moisture)												
Oil content (%)	[44.8]	45.5	45.2	45.3	45.8	44.5	44.1	[45.0]	44.2	43.5	0.6	[44.8]
Glucosinolate content (µmoles/g)	10.1	13.8	15.2	14.7	10.6	10.0	13.3	10.9	9.7	16.1	-	13.1
Agronomic features												
Shortness of stem (1-9)	7	6	6	6	7	7	6	6	7	7	0.4	[6]
Earliness of flowering (1-9)	7	8	7	6	7	7	5	7	7	7	0.9	[6]
Earliness of maturity (1-9)	7	5	5	3	5	7	5	5	5	7	2.1	[5]
Annual gross output, yield adjusted for oil co	ntent (% con	trol)										
2012 (3.5t/ha)	-	[104]	[95]	[99]	-	[101]	[95]	-	[100]	[99]	23.7	-
2013 (3.0t/ha)	-	[107]	[107]	[100]	[101]	[100]	[102]	-	[105]	[97]	8.0	-
2014 (3.3t/ha)	[108]	[94]	[98]	[97]	[94]	[103]	[93]	[96]	[96]	[90]	9.2	-
2015 (no data)	-	-	-	-	-	-	-	-	-	-	-	-
2016 (3.0t/ha)	[102]	[105]	[101]	[104]	[103]	[96]	[100]	[99]	[87]	[87]	22.0	[111]
2017 (3.2t/ha)	[103]	[102]	[103]	[106]	[103]	[94]	[100]	[97]	[98]	[92]	16.6	[101]
Breeder/UK contact												
Breeder	NPZ	Bay	Bay	NPZ	Bay	NPZ	Lant	Eur	NPZ	Lant		
UK contact	DSV	Bay	Bay	DSV	Bay	DSV	Sen	GSd	DSV	Sen		LSPB
Status in DL system												
Year first listed	18	15	14	12	17	15	15	18	14	10		-
DL status	P1	-	-	-	P2	-	-	P1	-	*		-

Varieties no longer listed: Belinda, Colossus, Delight and Flower.

On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (eg early maturity). The data in this table are provided for information only and do not constitute a recommendation.

RH	= Restored hybrid	С	= Yield control (for current table)	Lant	= Lantmannen SW Seed BV, Sweden	Aver
Con	 Conventional open-pollinated variety Limited data 	Bay	= Bayer CropScience (www.bayercropscience.co.uk)	LSPE	 = LS Plant Breeding (www.lspb.eu) = NPZ-Lembke, Germany (www.ppz.de) 	apar level
P1 P2	= First year of listing = Second year of listing = Variety no longer in trials	DSV Eur GSd	= DSV UK (www.dsv-uk.com) = Euralis Semences (www.euralis.fr) = Grainseed (www.grainseed.co.uk)	Sen LSD	= NF2-Lefinke, Germany (www.np2.de) = Senova (www.senova.uk.com) = Least significant difference	

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

Voor 2 Condidatoo

AHDB				S	2	×	5	ς.			an		.or		2	8.		5° 2	,	alin	it .	6.	ilse c		Ina erage SD
DESCRIBED	Juliet	Bingo	Empl	Dani	e Ineke	Adual	Bowle	octa	Lion	Bats	+3011	Brigh	Aries	Festi	(3 ¹³³	435et	CUMU	Carine	omet	? phoe	Abac	Maro	Altes	CHEN	ANE O/O
Seed colour	В	В	В		· · ·	В	В	В	В	В	В	В	В	В				В			В		В	В	
				NEW	NEW				NEW	С			С			NEW				*	*C			*	
Seed yield as % control																									
UK without fungicide (1.9t/ha)	106	106	105	104	104	104	103	103	103	102	102	102	101	101	[101]	101	100	100	99	97	96	96	96	94	7.6
Number of trials	18	15	15	10	10	15	18	15	10	18	18	18	18	15	7	10	18	15	18	18	18	12	15	18	
Seed quality (at 9% moisture)																									
Oil content of seed (%)	41.9	40.4	40.6	40.2	39.9	43.2	41.0	41.3	42.9	40.9	41.7	40.5	41.2	42.9	[40.9]	39.7	40.6	41.8	43.7	40.5	40.1	40.7	39.0	39.7	0.4
Agronomic features																									
Plant height (cm)	60	56	54	58	64	58	56	56	56	60	56	60	57	58	48	55	64	60	56	61	56	50	49	50	2.3
Earliness of flowering (1-9)	4	5	6	[6]	[3]	6	4	4	5	6	5	4	4	4	[7]	[6]	4	4	6	5	6	8	7	7	0.9
Earliness of maturity (1-9)	4	5	5	5	4	6	5	5	6	6	5	5	5	6	[8]	6	5	5	6	6	7	7	8	7	0.8
Annual seed yield (% control)																									
2012 (1.9t/ha)	[88]	-	-	-	-	-	[105]	-	-	[102]	[110]	[112]	[100]	[104]	-	-	[101]	-	[96]	[106]	[98]	-	[106]	[93]	10.1
2013 (1.8t/ha)	116	106	109	-	-	108	99	102	-	108	103	102	96	107	-	-	105	109	100	98	95	102	96	105	7.4
2014 #	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2015 (1.7t/ha)	[114]	[106]	[104]	[102]	[104]	[96]	[105]	[99]	[98]	[107]	[88]	[100]	[101]	-	-	[94]	[104]	[98]	[100]	[97]	[92]	[95]	[87]	[97]	12.5
2016 (2.2t/ha)	[101]	[107]	[100]	[103]	[100]	[105]	[102]	[101]	[104]	[95]	[105]	[98]	[106]	[102]	[100]	[97]	[98]	[94]	[101]	[93]	[99]	[91]	[94]	[90]	9.5
2017 (1.7t/ha)	[113]	[103]	[107]	[102]	[105]	[101]	[109]	[108]	[99]	[99]	[102]	[98]	[104]	[93]	[97]	[105]	[93]	[96]	[94]	[94]	[97]	-	-	[86]	13.4
Breeder/UK contact																									
Breeder	GKI	Bilt	GIE	-	JTSD	LimEur	Bilt	LaS	Lim	Bilt	LaS	Bilt	Lim	LaS	LaS	JTSD	JTSD	LimEur	TdL	Pars	JTSD	GIE	GIE	GKI	
UK contact	Agr	Els	PC	Agr	JTSD	Lim	Els	Dalt	Lim	Els	Dalt	Els	Lim	PC	PC	JTSD	JTSD	Lim	PC	JTSD	JTSD	PC	PC	Agr	
Status in DL system	atus in DL system																								
Year first listed	01	17	17	18	18	17	13	17	18	12	09	11	09	12	17	18	14	17	14	15	06	14	09	09	
DL status	-	P2	P2	P1	P1	P2	-	P2	P1	-	-	-	-	-	P2	P1	-	P2	-	*	*	-	-	*	

Varieties no longer listed: Duchess, Pilgrim and Serpent.

On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (eg early maturity). The data in this table are provided for information only and do not constitute a recommendation.

В

Agr

Bilt

- [] = Limited data
- = Variety no longer in trials
- С = Yield control (for current table)
- # = There were no yield results for 2014 due to trial failure
- P1 = First year of listing
- P2 = Second year of listing

- = Brown
- = Agrii (www.agrii.co.uk)
- = Van de Bilt, Netherlands
- = Dalton Seeds (www.dalmark.co.uk) Dalt Els
 - = Elsoms Seeds (www.elsoms.com)
- GIE = GIE Linea, France

- GKI = GK Kht, Hungary
- JTSD = JTSD Ltd (www.jtsd.co.uk)
- LaS = Laboulet Semences, France
- Lim = Limagrain UK (www.lgseeds.co.uk)
- LimEur= Limagrain Europe SA (www.lgseeds.co.uk)
- Pars = Parsons Seeds Ltd

= Premium Crops (www.premiumcrops.com) PC TdL = Terre de Lin, France

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

Winter triticale Descriptive List 2018/19

AHDB		. 20		<u>م</u> .						0	
DESCRIBED	4354100	4WS FIC	Tradiro	Dometic	Cynkon	1017	4 ereon	Securo	Tribeca	Agostin	
	NEW	С		NEW		NEW				С	
Grain yield (as % treated control)											
Fungicide-treated (9.8t/ha)	[107]	105	104	[100]	100	[99]	98	97	97	95	
Number of trials	6	10	10	6	10	6	10	8	10	10	
Agronomic features											
Lodging (%)	[0]	[0]	[3]	[0]	[0]	[4]	[3]	[3]	[2]	[0]	
Straw length (cm)	[100]	109	100	[108]	94	[103]	108	117	119	100	
Ripening (days +/- Agostino, -ve = earlier)	[0]	[0]	[1]	[-1]	[-1]	[-2]	[-2]	[1]	[0]	[0]	
Grain quality											
Specific weight (kg/hl)	[74.4]	76.5	71.3	[71.2]	73.8	[77.8]	75.1	74.5	73.4	75.6	
Protein content (%)	[11.1]	11.0	11.1	[10.9]	11.1	[11.6]	11.1	11.7	11.3	11.5	
Breeder/UK contact											
Breeder	Dank	Lant	Lant	Lant	Hod	LD	Desp	Eng	Desp	Lant	
UK contact	Sen	Sen	Sen	Sen	Dalt	Pick	Els	Соре	Els	Sen	
Status in DL system											
Year first listed	18	14	15	18	16	18	16	17	12	11	
DL status	P1	-	-	P1	-	P1	-	P2	-	-	

Varieties no longer listed: Adverdo

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

 = Limited data = Yield control (for current table) = First year of listing = Second year of listing = Trevor Cope Seeds 	Dalt= Dalton Seeds (www.dalmark.co.uk)Dank= Danko Hodowla Roslin, Poland (www.danko.pl)Desp= Maison Florimund Desprez, FranceEls= Elsoms Seeds (www.elsoms.com)Eng= Saatzucht Streng-Engelen	Hod = Hodowla Roslin Strzelce, Poland (www.hr-strzelce.pl) Lant = Lantmannen SW Seed BV, Sweden LD = Lemaire Deffontaines Pick = Mike Pickford	LSD = least significant difference Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level.
(www.trevorcopeseeds.co.uk)		Sen = Senova (www.senova.uk.com)	

AHDB	connet	ani	, Cr		enit	histo			139° (1)
DESCRIBED	SUPERI	SUCOSS	SUDrive	TUI	SUPHOL	SUMER	Inspecte	Dukato	AVERTISIS
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Conv	
		NEW				С			
Grain yield (as % treated control)									
Fungicide-treated (9.0t/ha)	108	104	102	101	101	100	94	91	6.7
Number of trials	10	8	10	10	12	12	12	10	
Agronomic features									
Lodging (%)	[5]	[11]	[11]	[0]	[10]	[10]	[14]	[19]	3.3
Straw length (cm)	131	132	130	133	133	130	143	142	6.0
Ripening (days +/- SU Mephisto, -ve = earlier)	+1	[0]	+1	+2	+2	0	+1	+1	2.4
Grain quality									
Protein content (%)	9.4	9.6	9.5	9.6	10.0	9.7	10.2	10.1	0.4
Hagberg Falling Number	232	222	189	181	205	199	204	191	22.5
Specific weight (kg/hl)	78.2	76.7	77.6	75.7	78.1	76.9	78.2	77.9	0.8
Breeder/UK contact									
Breeder	Hybro	-	Hybro	Dank	Hybro	Hybro	PHP	Hybro	
UK contact	SU	SU	SU	Sen	SU	SU	SU	SU	
Status in DL system									
Year first listed	17	18	17	17	16	15	16	17	
DL status	P2	P1	P2	P2	-	-	-	P2	

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

[]	= Limited data	Dank = Danko Hodowla Roslin, Poland (www.danko.pl)	LSD = least significant difference
Co	nv = Conventional variety	Hybro = Hybro, Germany	Average LSD (5%): Varieties that are more than one LSD
С	= Yield control (for current table)	PHP = P.H.Petersen, Germany	apart are significantly different at the 95% confidence
P1	= First year of listing	Sen = Senova (www.senova.uk.com)	ievei.
P2	= Second year of listing	SU = Saaten Union UK (www.saaten-union.co.uk)	

Spring wheat trials harvest 2018 – Candidate varieties (for spring sowing)

AHDB	
CANDIDATE	

in intrated																
AHDB		2		ing som	ng ted	n. UT	lika	ð	(1.9)	1.9)	. ici (1.5)	tance	reture	rent co	alling walth	N
CANDIDATE	Previous drie	Variety	ID Vield SP	ATT LEAST	treat Heigh	Cern days	Al-Mulden	1-91 Vellow	rust Brown	septoria	UNEW ONBW	resist Endosp	erm Protein	cont Hagbergt	specificwith	Ut contact
Control varieties																
Mulika	BA W4	1960	95	[74]	84	0	[7]	7	4	6	R	Hard	13.0	295	78.2	Senova
KWS Willow	CPBT W166	1964	102	[74]	82	0	[6]	6	7	6	-	Hard	12.3	277	79.1	KWS UK
KWS Alderon	KWS-W185	2024	104	[77]	80	+2	[8]	6	5	6	-	Hard	12.3	286	78.8	KWS UK
Selected as potential feed varieties																
Hexham	SEWC132	2693	[106]	[86]	86	[+2]	8	9	4	7	-	Hard	[12.5]	[266]	[79.2]	Senova
KWS Talisker	KWSW330	2690	[105]	[83]	87	[0]	9	9	3	7	-	Hard	[12.0]	[256]	[79.4]	KWS UK
Mean of controls (t/ha)			7.7	7.7	-	149	-	-	-	-	-	-	-	-	-	
Overall mean			-	-	84	-	-	-	-	-	-	-	12.8	278	79.3	
LSD 5%			4.4	8.1	2.5	3.0	-	-	-	-	-	-	0.6	41	1.0	
Number of trials (for candidate			5	5	8	2	-	-	-	-	-	-	5	5	5	

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

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

Candidate varieties will be considered for the 2019 AHDB Recommended List.

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

Т

[] = Limited data

LSD = Least significant difference

UT = Data from trials without fungicide or PGR

= Data from trials treated with fungicide and PGR LSD 5% : Varieties that are more than one LSD apart are significantly different at the 95% confidence level.

See the AHDB Recommended List for full data on control varieties

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

R = Believed to be resistant to orange wheat blossom midge



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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.









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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.



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