AHDB Recommended Lists for cereals and oilseeds 2016/17



Summer 2016 edition



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.

See for yourself

Visit the AHDB Cereals & Oilseeds stand at Cereals 2016 to see plots of all the Recommended List varieties and to pick up copies of the popular Recommended List Pocketbooks.

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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Glossary

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Varieties no longer listed include those that are no longer recommended or have been withdrawn from the Recommended List by the breeder.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

Oilseed rape varieties are presented in the AHDB Recommended List on a regional basis. Use the East/West List (pages 38–39) when choosing varieties up to Teesside. The North List (pages 42–43) is more appropriate when selecting a variety for the north of the UK. Varieties that are suitable for both regions are presented on both lists: the yields will differ because the information is based on regional trials.

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%. For example, if the average yield of the control varieties is 10.2 t/ha, a variety that yields 10.4 t/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 2.0 mm sieve. High kernal 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.

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.

Winter hardiness

Winter hardiness scores are calculated for winter barley. These ratings are mainly derived from a special cold tolerance test in the Jura mountains in France.

Market information

Wheat

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 which have been defined by the National Association of British and Irish Millers (nabim).

Group 1 varieties are used for breadmaking 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 breadmaking 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 soft-milling 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 72 kg/hl and a maximum moisture of 15%. To reflect this, there is a minimum standard of 74 kg/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.

Starch production

Starch production requires similar characteristics to varieties for distilling but the industry currently uses any variety.



Typical specifications



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 Netherlands.

Overseas buyers have different requirements to domestic buyers. AHDB Cereals & Oilseeds 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%.

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

	nabim Group 1	nabim Group 2	nabim Group 3	ukp	uks
Specific weight	76 kg/hl (min)	76 kg/hl (min)	74 kg/hl (min)	76 kg/hl (min)	75 kg/hl (min)
Moisture content	15% (max)				
Admix	2% (max)				
Hagberg Falling Number (HFN)	250 s (min)	250 s (min)	220 s (min)	250 s (min)	220 s (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)

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.

Market information

UK barley production has rebounded in recent years. 2013, 2014 and 2015 all recorded crops close to the 7Mt mark - a level not seen since the late 1990s. 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% of UK malt production. MAGB anticipates barley crop purchases at 1.9 million tonnes from England and Scotland from the 2016 crop.

The graph below shows MAGB members' wish list for 2016 barley crop purchases from England and Scotland



Exports

1.56% to 1.65%

Barley

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.

Above 1.85%

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. Lower prices and concerns over the loss of key inputs were behind the declines in 2014 and 2015.



The markets for oilseed rape include:

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

Winter

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.



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). Although down 3% from last year, the 2015 UK oat crop was still 8% above the average for 2010-2014.



AHDB/Defra

Market Intelligence from AHDB

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

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

Email cereals.subscriptions@ahdb.org.uk call 02476478730 or visit cereals.ahdb.org.uk/markets for more information.

MARKET INFORMATION AHDB RECOMMENDED LIST

Regional information

Regional markets

Information from the Agriculture and Horticulture Development Board 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, breadmaking quality varieties 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.



Group 3

Other

Group 4 soft Group 4 hard Total

Area by variety for harvest 2015



Source: Agriculture and Horticulture Development Board Variety Survey 2015

Regional information 🧭

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



Oilseed rape disease risk



Emerging disease threats

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

Wheat disease risk

give an early warning of such changes. The AHDB Cereals & Oilseeds website provides information on disease levels in untreated varieties (cereals.ahdb.org.uk/monitoring).

New races of yellow and brown rust are identified in the UK Cereal Pathogen Virulence Survey. The survey also identifies the susceptibility of varieties to yellow rust at seedling stages of development. This information is reported on cereals.ahdb.org.uk/ukcpvs



Barley disease risk



Winter wheat 2016/17 Market options, yield and grain quality

RECOMMENDED			NEW	с	с	*	NEW			NEW		NEW	NEW		E							*	NEW		С		NEW	*	NEW		NEW		*	с			
AHDB	Skyfall	KWS Trinity	RGT Illustrious	Crusoe	Gallant	Solstice	KWS Siskin	KWS Lili	Cordiale	KWS Barrel	Britannia	KWS Basset	Spyder	Zulu	RGT Conversio	Claire	Scout	Leeds	Myriad	Viscount	Revelation	Horatio	KWS Silverstone	Reflection	KWS Santiago	Evolution	Belgrade	KWS Kielder	Graham	Dickens	KWS Crispin	Costello	KWS Gator	JB Diego	Relay	Grafton	Average LSD (5%)
End-use group	nabin	n Gro	up1				nabii		up 2	nabir	n Gro	up 3						Soft	Group	o 4			Hard	Grou	ıp4												
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	Ν	Ν	UK	UK	UK	UK	E&W	UK	E&W	UK	UK	UK	UK	UK	UK	UK	E&W	UK	
Fungicide-treated grain yield (% treated	ed con	trol)																																			
United Kingdom (10.4 t/ha)	101	101	100	98	97	96	105	104	97	105	104	103	101	101	100	98	97	104	102	102	101	101	106	105	105	105	105	104	104	104	104	103	102	102	100	100	3.2
East region (10.3 t/ha)	101	101	101	98	97	94	106	103	97	104	104	104	102	101	98	98	94	104	101	101	101	101	106	104	105	105	105	103	103	102	104	103	101	101	100	100	2.0
West region (10.4 t/ha)	103	100	101	99	98	96	106	105	98	104	103	103	102	100	99	97	95	103	100	102	99	100	106	106	104	103	106	102	107	104	105	104	101	103	100	100	2.8
North region (9.5 t/ha)	103	104	[96]	96	95	98	[105]	108	96	[113]	106	[104]	[98]	105	105	-	98	107	106	105	103	104	[111]	107	107	107	[101]	108	[101]	108	[101]	103	107	102	102	101	3.9
Main market options (The specific attri	butes	of vari	eties a	are dif	ferent	, so, w	vhene	ver pos	ssible	, varie	ties sł	nould	not be	mixed	d in sto	ore)																					
UK breadmaking	Y	Υ	Y	Y	Y	Y	Υ	Y	Υ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	-	-	-	[Y]	Y	[Y]	-	[Y]	[Y]	Y	Y	[Y]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ukp ^{##} bread wheat for export	-	-	-	Y	Y	Y	[Y]	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
uks [#] soft wheat for export	-	-	-	-	-	-	-	-	-	[Y]	[Y]	[Y]	-	Y	-	Y	Y	Y	[Y]	[Y]	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Grain quality																																					
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	11.8	11.4	11.5	12.4	11.9	11.9	11.3	11.0	12.1	10.8	11.4	11.0	11.6	11.2	11.2	11.4	11.6	11.0	11.1	11.0	11.1	11.1	10.9	10.8	11.0	10.7	10.9	10.6	11.1	11.1	11.2	11.5	10.9	11.1	11.2	11.5	0.3
Hagberg Falling Number	282	332	262	260	303	260	294	283	317	218	215	219	270	225	226	249	229	198	228	177	236	238	282	230	157	185	190	195	266	243	265	313	199	303	274	293	21
Specific weight (kg/hl)	78.1	77.3	77.4	77.5	77.1	77.9	77.2	76.9	79.1	76.7	76.7	77.5	76.3	75.9	76.2	76.3	77.9	77.8	76.7	76.2	76.2	76.0	78.6	77.6	75.3	74.5	75.4	74.1	76.5	76.3	77.0	80.4	75.5	77.8	76.7	77.9	0.8
Chopin alveograph W	274	266	[266]	228	232	201	192	208	[233]	103	100	97	[140]	96	60	-	87	81	102	[93]	82	83	[180]	-	-	198	-	-	141	[128]	-	205	-	-	-	-	31
Chopin alveograph P/L	1.4	1.1	[1.3]	0.6	0.9	0.7	0.7	0.8	[0.8]	0.5	0.3	0.4	[0.5]	0.3	0.2	-	0.3	0.3	0.3	[0.3]	0.3	0.3	[1.5]	-	-	1.4	-	-	0.6	[0.5]	-	1.0	-	-	-	-	0.2

Varieties no longer listed: Alchemy, Beluga, Conqueror, Cougar, Cubanita, Delphi, Icon, Invicta, KWS Cashel, KWS Croft, KWS Target, Monterey, Panorama and Twister.

Varieties are presented in order of highest UK treated yield within end-use groups. Comparisons of varieties across regions are not valid.

UK = recommended for the UK

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). For this table Invicta was also a yield control but is no longer listed [] = limited data

Y = 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.

Winter wheat 2016/17 Yield, agronomy and disease resistance

RECOMMENDED			NEW	С	С	*	NEW			NEW		NEW	NEW		'n							*	NEW		С		NEW	*	NEW		NEW		*	с	and the second second		
AHDB	Skyfall	KWS Trinity	RGT Illustrious	Crusoe	Gallant	Solstice	KWS Siskin	KWS Lili	Cordiale	KWS Barrel	Britannia	KWS Basset	Spyder	Zulu	RGT Conversion	Claire	Scout	Leeds	Myriad	Viscount	Revelation	Horatio	KWS Silverstone	Reflection	KWS Santiago	Evolution	Belgrade	KWS Kielder	Graham	Dickens	KWS Crispin	Costello	KWS Gator	JB Diego	Relay	Grafton	Average LSD (5%)
End-use group	nabir	n Gro	oup 1				nabii	m <mark>Gr</mark> o	up 2	nabir	n <mark>Gr</mark> o	up 3						Soft	Group	o 4			Hard	Grou	р4												
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	Ν	Ν	UK	UK	UK	UK	E&W	UK	E&W	UK	UK	UK	UK	UK	UK	UK	E&W	UK	
Fungicide-treated grain yield (% treated	ed cont	trol)																																			
United Kingdom (10.4 t/ha)	101	101	100	98	97	96	105	104	97	105	104	103	101	101	100	98	97	104	102	102	101	101	106	105	105	105	105	104	104	104	104	103	102	102	100	100	3.2
East region (10.3 t/ha)	101	101	101	98	97	94	106	103	97	104	104	104	102	101	98	98	94	104	101	101	101	101	106	104	105	105	105	103	103	102	104	103	101	101	100	100	2.0
West region (10.4 t/ha)	103	100	101	99	98	96	106	105	98	104	103	103	102	100	99	97	95	103	100	102	99	100	106	106	104	103	106	102	107	104	105	104	101	103	100	100	2.8
North region (9.5 t/ha)	103	104	[96]	96	95	98	[105]	108	96	[113]	106	[104]	[98]	105	105	-	98	107	106	105	103	104	[111]	107	107	107	[101]	108	[101]	108	[101]	103	107	102	102	101	3.9
Untreated grain yield (% treated contro	ol)																																				
United Kingdom (10.4 t/ha)	87	82	90	85	68	67	96	83	71	80	85	84	91	82	82	76	80	78	80	77	87	79	87	88	75	87	94	72	94	84	95	92	79	84	85	80	5.8
Agronomic features																																					
Resistance to lodging without PGR (1–9)	8	7	[8]	7	7	7	[7]	7	8	[8]	6	[7]	[6]	6	7	[7]	7	7	6	[7]	7	7	[5]	7	7	7	[6]	7	[7]	7	[6]	7	8	7	7	[8]	1.0
Resistance to lodging with PGR (1–9)	8	8	8	8	8	8	7	8	8	8	7	8	7	7	8	8	8	8	7	7	8	8	6	8	7	7	6	8	8	7	6	8	8	8	8	8	0.7
Height without PGR (cm)	82	81	88	81	82	91	83	81	78	83	88	85	90	89	83	88	85	86	89	81	85	89	89	81	87	90	89	81	85	85	85	81	84	88	80	76	1.9
Ripening (days +/- JB Diego, -ve = earlier)	0	+1	+2	+1	-2	0	+1	+2	-2	+1	+2	+1	+1	+1	+1	0	+2	+2	+2	+1	+3	+1	0	0	+2	+2	-1	+3	0	0	+1	+1	+1	0	+1	-1	0.7
Resistance to sprouting (1–9)	5	[7]	[6]	6	6	6	[5]	[7]	6	[6]	[6]	[6]	[6]	6	[4]	[4]	6	6	[6]	4	5	6	[6]	[6]	5	5	[3]	6	[7]	5	[6]	[7]	6	7	6	5	0.9
Disease resistance																																					
Mildew (1–9)	6	9	7	7	6	4	9	9	6	7	6	4	9	7	8	4	6	3	6	[7]	6	7	8	7	4	6	9	5	8	8	9	8	6	6	6	7	1.8
Yellow rust (1–9)	6	9	9	9	4	3	9	7	5	8	8	9	8	9	8	6	9	7	8	5	9	5	8	6	6	9	7	3	8	9	9	9	8	7	9	6	0.7
Brown rust (1–9)	9	8	8	3	7	5	7	6	4	7	5	6	7	4	7	5	7	4	6	8	8	6	8	9	6	8	5	8	7	7	6	6	3	6	8	4	1.5
Septoria nodorum (1–9)	[5]	[5]	[6]	[6]	5	6	[6]	[6]	[5]	[5]	[5]	[6]	[6]	[6]	[6]	[5]	6	[6]	[5]	[6]	[6]	[5]	[5]	[6]	5	[6]	[6]	[5]	[6]	[5]	[6]	6	[5]	6	[5]	[5]	0.7
Septoria tritici (1–9)	6	5	6	6	4	5	7	6	5	5	6	5	6	6	5	5	6	5	5	5	6	5	5	5	4	6	6	5	7	5	6	6	5	5	6	5	0.6
Eyespot (1–9)	6@	6	[7]@	4	5	4	[4]	6	5	[5]	3	[5]	[4]	4	5	5	6	4	5	5	9@	5	[5]	5	5	5	[3]	6	[4]	4	[5]	[4]	4	4	4	6@	1.7
Fusarium ear blight (1–9)	7	6	6	6	5	6	6	6	5	6	6	6	6	6	6	6	6	7	6	6	7	6	6	6	6	6	6	6	7	6	6	6	6	6	6	5	0.4
Orange wheat blossom midge	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 varieties across regions are not valid.

UK = recommended for the UK

- * = variety no longer in trials
- E&W = recommended for the East and West regions
- N = recommended for the North region
- C = yield control (for current table). For this table
- Invicta was also a yield control but is no longer listed [] = limited data
- e 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 2016/17 – Supplementary data

was also a yield control but is no longer listed

time to give a sufficient cold period for flowering

RECOMMENDED			NEW	С	С	*	NEW			NEW		NEW	EW NEW C NEW * NEW * C																												
AHDB	Skyfall	KWS Trinity	RGT Illustrious	Crusoe	Gallant	Solstice	KWS Siskin	KWS Lili	Cordiale	KWS Barrel	Britannia	KWS Basset	Spyder	Zulu	RGT Conversion	Claire	Scout	Leeds	Myriad	Viscount	Revelation	Horatio	KWS Silverston	Reflection	KWS Santiago	Evolution	Belgrade	KWS Kielder	Graham	Dickens	KWS Crispin	Costello	KWS Gator	JB Diego	Relay	Grafton	Average LSD (5%)				
End-use group	nabim	n Grou	ıp1				nabi	m <mark>Gr</mark> o	up 2	nabir	m <mark>Gr</mark> o	up 3						Soft (Group	4			Harc	d Grou	ıp4																
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	Ν	Ν	UK	UK	UK	UK	E&W	UK	E&W	UK	UK	UK	UK	UK	UK	UK	E&W	UK					
Breeder/UK contact																																									
Breeder	RAGT I	KWS I	R2n	Lim	SyP	Lim	KWS	KWS	KWS	KWS	Lim	KWS	BA	Lim	RAGT	Lim	Sen	Mom	Lim	KWS	Lim	Lim	KWS	SyP	KWS	Sej	Sej	KWS	SyP	Sec	KWS	KWS	KWS	Bre	RAGT	<ws< td=""><td></td></ws<>					
UK contact	RAGT I	KWS R	RAGT	Lim	Syn	Lim	KWS	KWS	KWS	KWS	Lim	KWS	Sen	Lim	RAGT	Lim	Sen	KWS	Lim	KWS	Lim	Lim	KWS	Syn	KWS	Lim	SU	KWS	Syn	Agr	KWS	Sen	KWS	Sen	RAGT	<ws< td=""><td></td></ws<>					
Annual treated yield (% control)																																									
2011 (10.2 t/ha)	96	-	-	97	94	92	-	-	94	-	-	-	-	103	-	[95]	95	105	107	101	105	102	-	-	105	109	-	109	-	107	-	-	102	100	101	95	2.6				
2012 (8.8 t/ha)	104	103	-	96	103	97	-	107	100	-	105	-	-	101	107	[99]	94	108	101	108	99	103	-	114	106	104	-	98	-	103	-	107	102	102	97	102	3.1				
2013 (9.8 t/ha)	104	[99] [102]	99	94	99	[102]	[101]	98	[103]	[101]	[101]	[103]	101	[97]	-	-	103	100	101	101	100	[103]	[101]	106	105	[108]	108	[103]	107	[102]	[102]	103	102	102	[99]	3.5				
2014 (11.5 t/ha)	102	100	100	100	95	95	104	104	97	103	103	103	100	101	98	99	96	103	102	99	101	101	106	104	103	104	103	102	106	102	105	102	102	102	99	102	2.6				
2015 (11.6 t/ha)	102	102	99	98	97	96	106	104	96	106	105	104	101	101	99	[96]	[98]	103	103	103	101	99	106	103	105	104	103	106	103	103	103	103	[102]	102	102 [101]	3.1				
Rotational position																													4 105 104 105 104 101 102 100 100 3.4												
First cereal (10.8 t/ha)	101	101	100	98	97	95	105	105	97	105	103	103	102	101	100	98	96	104	102	102	101	101	106	106	105	104	105	104	105 104 105 104 101 102 100 100 3.4 102 104 102 102 105 102 102 99 3.9												
Second and more (9.5 t/ha)	103	102	101	98	96	97	105	102	97	105	105	104	100	101	100	-	96	104	101	101	101	101	106	104	106	106	105	106	102 104 102 102 105 102 102 99 3.9												
Sowing date (most trials were sown in	Octobe	er)																											104 - 102 - [104] 103 102 102 100 7.1												
Early sown (before 15 Sep) (10.8 t/ha)	-	103	[99]	[98]	96	94	-	-	-	[102]	-	[105]	[102]	-	[101]	99	96	[103]	-	101	102	104	-	-	105	-	-	- 104 - 102 - [104] 103 102 102 100 7.1													
Late sown (mid-Nov to end-Jan) (9.9 t/ha)	99	[99]	-	98	[97]	[95]	-	[105]	97	-	[106]	-	-	[102]	[98]	-	-	105	106	-	[99]	[101]	-	[104]	106	104	-	104 - 102 - [104] 103 102 100 7.1 104 - 105 - [101] 103 [101] 98] - 5.3													
Soil type (about 50% of trials are on me	dium so	oils)																									4 - 104 - 105 - [101] 103 [101] [98] - 5.3														
Light soils (9.7 t/ha)	103	102	[98]	98	94	96	[106]	107	95	[109]	105	[102]	[101]	103	104	98	97	106	104	104	102	103	[110]	106	106	107	[100]	106	[102]	106	[102]	104	104	103	101	99	5.0				
Heavy soils (10.7 t/ha)	101	101	101	99	97	95	105	104	96	103	104	103	101	101	99	-	94	103	102	99	101	100	105	105	105	104	105	104	104	102	104	104	100	101	99	[99]	4.4				
Agronomic features																																									
Lodging % without PGR	1	3	1	2	2	2	3	2	1	1	11	1	8	8	4	3	1	2	7	2	2	3	17	2	4	4	13	2	3	4	7	3	1	2	2	1					
Lodging % with PGR	1	0	1	1	1	1	4	1	1	2	7	2	6	4	2	2	1	2	4	3	1	2	15	1	3	3	8	1	2	3	8	1	1	2	1	1					
Latest safe sowing date #	[End Feb]	[End [Jan] F	Mid Feb]	End Jan	Mid Feb	End Jan	[End Jan]	[Mid Feb]	Mid Feb	[End Jan]	[Mid Feb]	[End Jan]	[End Jan]	[End Feb]	[End Jan]	End Feb	Mid Feb	End Feb	Mid Feb	Mid Feb	End Jan	Mid Feb	[End Jan]	[Mid Feb]	End Jan	[Mid Feb]	[End Jan]	End Jan	[End Jan]	End Jan	[Mid Feb]	[End Jan]	Mid Feb	End Jan	End Jan	End Jan					
Speed of development to growth stag	ge 31 (d	lays +/	'- aver	age)																																					
Early Sep sown	-6	[+1] [[+6]	+1	-2	-2	[-2]	[+6]	-2	[+7]	[0]	[-1]	[+6]	0	[+3]	+2	+3	-4	+3	+4	+6	-1	[-3]	[0]	+6	-2	[+7]	+7	[+6]	-1	[+3]	[+4]	+3	+2	-2	+5	8.5				
Early Oct sown	-3	[+2]	[0]	+1	-3	-2	[-5]	[+1]	-3	[+7]	[-2]	[-1]	[-2]	0	[+1]	+2	-1	-1	+6	+2	+4	-2	[-7]	[+1]	+3	-1	[-6]	+4	[+1]	[+1] -3 [-6] [0] +3 -1 +2 +4 6.0											
Early Nov sown	-1	[0] [[+1]	-3	0	0	[-4]	[+1]	-3	[+5]	[+1]	[-2]	[-2]	+2 [+2] +3 +2 0 +3 +3 +3 +1 [-4] [-1] +2 +1 [0] +3 [-2] -1 [-6] [-3] +1 -2 +1 0 4.4																											
Status in RL system	s in RL system																																								
Year first listed	14	15	16	12	09	02	16	15	04	16	15	16	16	14	15	99	09	13	13	09	13	12	16	15	11	14	16	13	16	13	16	15	12	08	12	09					
RL status	-	P2	P1	-	-	*	P1	P2	-	P1	P2	P1	P1	-	P2	-	-	-	-	-	-	*	P1	P2	-	-	P1	*	P1	-	P1	P2	*	-	-	-					
All yields in this table are taken from	ds 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	* C	= va = yi	ariety ield c	no lo ontro	onger i I (for c	in tria urren	ls t table	e). For	this t	able Ir	nvicta	Æ	Agr BA	= Agi = Bla	rii (ww ckmai	vw.agi n Agri	rii.co.u culture	ık) Ə			R: Se	2n = ec =	RAGT Secol	, Franc ora, Fra	ce (wv ance	vw.ra	gt.co.u	uk)				LSD	= lea	st sigi	nificant	differ	ence				

E&W = recommended for the East

and West regions Ν = recommended for the North

- [] = limited data # = latest safe sowing date is the advised latest sowing region P1 = first year of recommendation
- P2 = second year of recommendation

Mom = Momont, France RAGT = RAGT Seeds (www.ragt.co.uk)

Bre = Saatzucht Josef Breun, Germany

Lim = Limagrain UK (www.limagrain.co.uk)

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

- Sec = Secobra, France
- Sej = Sejet, Denmark
- Sen = Senova (www.senova.uk.com)
- SU = Saaten Union UK (www.saaten-union.co.uk)
- Syn = Syngenta UK Ltd (www.syngenta.co.uk) SyP = Syngenta Participants AG (www.syngenta.co.uk)

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

Winter wheat trials harvest 2016 – Candidate varieties

CANDIDATE	Previous/proposed name	Variety ID	Yield treated (T)	Yield untreated (UT) (as % treated controls)	Lodging % (UT)	Lodging % (T)	Height (cm) (UT)	Maturity (days +/- JB Diego)	Mildew (1–9)	Yellow rust (1–9)	Brown rust (1–9)	Septoria tritici (1–9)	Eyespot (1–9)	OWBM resistance	Other claim	Endosperm texture	Protein content %	Hagberg Falling Number	Specific wt (kg/hl)	UK contact
Control varieties																				
Gallant	NFC 10563	1766	97	60	1	1	82	-1	6	5	7	4	5			Hard	12.2	314	77.4	Syngenta UK
Crusoe	NAWW25	2009	97	81	2	1	83	0	7	9	4	6	4			Hard	12.6	274	78.0	Limagrain UK
Invicta	NA WW7	1853	99	79	1	1	89	+2	5	8	7	5	5			Soft	11.9	243	74.8	Limagrain UK
KWS Santiago	CPBT W165	1916	105	76	3	1	84	+1	4	6	5	4	5	R		Hard	11.5	157	75.4	KWS UK
JB Diego	BR5251D35	1737	102	81	2	0	87	0	6	7	5	5	4			Hard	11.6	290	77.5	Senova
Selected as potential br	eadmaking vari	ieties																		
KWS Zyatt	KWSW254	2417	105	95	1	0	82	-1	8	6	7	6	[8]		Pch1	Hard	12.1	271	77.9	KWS UK
LG Cassidy	LGW91	2456	104	81	2	1	84	+1	7	9	5	5	[5]			Hard	11.5	232	78.0	Limagrain UK
Selected as potential bi	scuit-making va	arieties																		
LG Bletchley	LGW98	2449	102	90	2	1	84	0	6	9	9	5	[7]	R		Soft	11.6	189	76.7	Limagrain UK
Selected as potential fe	ed varieties >																			
RGT Knightsbridge	RW41384	2368	107	82	4	2	84	+1	6	8	4	6	[5]	R		Soft	11.1	225	73.1	RAGT Seeds
Stratosphere	SJ8576003	2447	105	88	2	1	86	+1	7	8	5	5	[8]	R		Soft	11.2	201	73.3	Limagrain UK
Savello	SY113016	2406	105	85	3	2	89	0	8	9	5	5	[7]			Soft	11.3	210	74.3	Syngenta UK
Hardwicke	SJ9715202	2433			Data canno	ot be publ	lished as	variety ha	s not com	pleted N	ational Li	ist testing								KWS UK
RGT Westminster	RW41359	2367	105	85	3	0	84	+1	7	8	7	5	[7]			Soft	11.6	175	75.6	RAGT Seeds
Bennington	EW162	2386	105	92	2	0	89	+1	8	8	6	6	[6]			Soft	11.4	239	77.2	Elsoms Seeds
LG Sundance	LGW92	2455	105	91	2	3	87	+2	7	8	6	7	[6]	R		Soft	11.3	184	74.6	Limagrain UK
LG Motown	LGW97	2451	104	92	4	2	84	-1	8	9	8	6	[8]	R		Soft	11.4	208	75.5	Limagrain UK
Moulton	EW154	2385	104	92	5	2	89	0	7	9	7	7	[3]			Soft	11.8	261	77.2	Elsoms Seeds
KWS Kerrin	KWSW257	2420	108	89	2	1	86	0	7	9	7	5	[7]	R		Hard	10.8	133	76.1	KWS UK
Shabras	SY113014	2404	107	86	5	2	86	-1	7	9	4	6	[5]			Hard	11.2	194	76.0	Syngenta UK
Marlowe	SJ9726005	2413	107	80	10	4	90	+1	8	7	5	5	[5]	R		Hard	11.4	214	76.0	Senova
Dunston	EW122	2382	107	95	2	1	93	+1	6	9	7	6	[7]		Pch1	Hard	11.4	229	76.6	Elsoms Seeds
Freiston	EW133	2383	106	89	7	2	92	0	7	9	7	6	[3]			Hard	10.9	193	77.1	Elsoms Seeds
RGT Paddington †	RW41393	2371	105	76	1	0	84	0	6	6	5	5	[7]		Pch1	Hard	11.6	200	76.6	RAGT Seeds
Marston	DSV30118	2380	104	88	3	0	86	0	8	9	5	7	[4]			Hard	11.5	284	77.0	DSV UK
Mean of controls (t/ha)			11.2	11.2	-	-	-	-	-	-	-	-	-				-	-	-	
Overall mean			-	-	2.5	1.0	86	-	-	-	-	-	-				11.6	256	76.6	
LSD 5%			2.6	6.8	0.8	0.7	3.0	1.5	-	-	-	-	-				0.4	28.9	0.8	
Number of trials			25	7	9	11	14	7	-	-	-	-	-				9	9	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.

T = data from trials treated with fungicide and PGR

UT = data from trials without fungicide or PGR

tungicide or PGR T = candidate for Eas

Pch1 = the Rendezvous resistance gene to eyespot. This has not been verified in Recommended List tests

t = candidate for East region
 Candidate varieties will be considered for the 2017/18 AHDB
 Recommended List.

R = believed to be resistant to orange wheat blossom midge

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.

Winter wheat varieties grown in RL trials in 2015 but not added to the AHDB Recommended List

	Control va	arieties				Other varie	ties						
CEREALS & OILSEEDS	KWS Santiago	JB Diego	Invicta	Crusoe	Gallant	Butler	RGT Adventure	Sherlock	RGT Pembroke	RGT Marlborough	Mosaic	Amplify	Average LSD (5%)
Fungicide-treated grain yield (% treated control)													
United Kingdom (10.4 t/ha)	105	102	99	98	97	102	101	98	102	101	103	104	3.2
East region (10.3 t/ha)	105	101	98	98	97	102	102	97	102	100	103	105	2.0
West region (10.4 t/ha)	104	103	97	99	98	102	102	98	102	[97]	103	103	2.8
North region (9.5 t/ha)	107	102	101	96	95	[104]	[98]	[98]	[105]	[108]	[101]	[102]	3.9
Untreated grain yield (% treated control)													
United Kingdom (10.4 t/ha)	75	84	78	85	68	80	79	85	73	77	87	72	5.8
Grain quality													
Endosperm texture	Hard	Hard	Soft	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Hard	
Protein content (%)	11.0	11.1	11.3	12.4	11.9	11.5	11.5	11.7	10.9	11.2	10.9	11.5	0.3
Hagberg Falling Number	157	303	243	260	303	282	242	248	217	185	173	242	21
Specific weight (kg/hl)	75.3	77.8	74.9	77.5	77.1	76.7	76.7	79.1	77.6	76.1	77.2	77.6	0.8
Chopin alveograph W	-	-	79	228	232	206	245	[245]	104	79	-	229	31
Chopin alveograph P/L	-	-	0.3	0.6	0.9	0.6	0.9	[1.0]	0.4	0.3	-	0.8	0.2
Agronomic features													
Resistance to lodging without PGR (1–9)	7	7	7	7	7	[7]	[7]	[7]	[6]	[6]	[7]	[7]	1.0
Resistance to lodging with PGR (1–9)	7	8	8	8	8	8	8	8	7	7	8	8	0.7
Height without PGR (cm)	87	88	89	81	82	85	87	87	80	92	82	90	1.9
Ripening (days +/- JB Diego, -ve = earlier)	+2	0	+3	+1	-2	+2	0	0	+1	+1	+1	+1	0.7
Resistance to sprouting (1–9)	5	7	7	6	6	[6]	[6]	[7]	[6]	[5]	[4]	[6]	0.9
Disease resistance													
Mildew (1–9)	4	6	5	7	6	9	7	5	5	8	5	7	1.8
Yellow rust (1–9)	6	7	8	9	4	6	5	9	5	8	8	4	0.7
Brown rust (1–9)	6	6	6	3	7	5	5	9	5	9	4	6	1.5
Septoria nodorum (1–9)	5	5	[5]	[6]	5	[6]	[4]	[6]	[5]	[5]	[6]	[5]	0.7
Septoria tritici (1–9)	4	5	5	6	4	6	5	6	5	5	5	5	0.6
Eyespot (1–9)	5	4	5	4	5	[5]	[4]	[4]	[9]@	[4]	[4]	[3]	1.7
Fusarium ear blight (1–9)	6	6	6	6	5	6	5	6	6	6	6	6	0.4
Orange wheat blossom midge	R	-	-	-	-	-	-	R	R	R	R	R	

This table should be read in conjunction with the AHDB Recommended List of winter wheat varieties for 2016/17.

[] = 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 2016/17 – Variety comments 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.



Crusoe ukp

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

Agronomy: This short-strawed variety is 3% lower yielding than Skyfall. It has high resistance to mildew and yellow rust but is susceptible to eyespot and very susceptible to brown rust.

nabim comment: It has consistently demonstrated good protein content and quality. The bread crumb structure has been equal to that of Solstice. In the past three years, millers have seen increasing volumes of this variety. Its baking performance remains good.

Gallant ukp

Quality: Gallant is a **nabim** Group 1 variety which is also classified as a **ukp** bread wheat for export. It gives high Hagbergs and specific weights.

Agronomy: A very early maturing variety with short straw and a yield potential around 4% below Skyfall. It is susceptible to yellow rust and septoria tritici.

nabim comment: Its milling and baking qualities remain consistently good and it remains a popular variety with millers.

Export specifications



uks = meets the specification for uks biscuit wheat for export

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

KWS Trinity

Quality: A nabim Group 1 bread wheat with high yields. It has a high specific weight and Hagbergs.

Agronomy: This short-strawed variety has a treated UK yield similar to 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: In the three years of testing, the performance of this variety was consistent with that of other Group 1 varieties. It exhibits good gluten quality even at lower protein levels and has shown good baking performance. Because it is high yielding, nitrogen applications may have to be adjusted to achieve protein specifications.

NEW RGT Illustrious

Quality: Added to the AHDB Recommended List 2016/17 as a **nabim** Group 1 bread wheat with a high specific weight.

Agronomy: This stiff-strawed variety has a UK yield that is 2% higher than Crusoe and it also has a high untreated UK yield. RGT Illustrious is a later-maturing variety. It has good overall disease resistance, with high ratings for mildew, yellow rust, brown rust and eyespot (*Pch1*).

nabim comment: In the three years of testing, this variety has performed consistently well, giving higher levels of water absorption (a good feature) and demonstrating good breadmaking potential. Because it is high yielding, nitrogen applications may have to be adjusted to achieve protein specifications.

Skyfall

Quality: Skyfall is a **nabim** Group 1 bread wheat with high yields and high Hagbergs and specific weights. **Agronomy:** Its UK treated yield is 3% higher than Crusoe and it has given very high yields in the North and West regions. 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, fusarium ear blight and eyespot (*Pch1*). It has a tendency to 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 ripening and has a tendency to sprout, so should be given priority at harvest.

nabim comment: This high-yielding variety has shown good milling and baking qualities. Because it is high yielding, nitrogen applications may have to be adjusted to achieve protein specifications.

Solstice ukp

Quality: A popular **nabim** Group 1 variety giving high specific weights. It is classified as a **ukp** bread wheat for export and has support from end users.

Agronomy: This variety has medium-long but stiff straw. Solstice's yield potential is now 5% below the highest yielding Group 1 varieties in the UK and 7% below in the East region. It is susceptible to mildew, septoria tritici and eyespot and very susceptible to yellow rust. It is no longer in RL trials.

nabim comment: Solstice still remains popular with both farmers and millers because it has a good balance of protein content, milling characteristics, gluten properties and baking performance.

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.



Cordiale ukp

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

Agronomy: This variety is very early maturing and has short straw. It has a treated yield potential similar to the Group 1 variety Gallant. It is susceptible to brown rust. nabim comment: This remains the Group 2 variety of choice for most millers and growers. It has higher than average Hagbergs, with good protein levels and specific weights as key features. Consistent milling and baking performance continues to be seen by millers.

KWS Lili ukp²²⁴

Quality: A very high-yielding **nabim** Group 2 wheat. It is classified as a **ukp** bread wheat for export. **Agronomy:** This variety has a treated yield potential 7% above Cordiale and equivalent to many popular hard feed varieties. It has performed particularly well on lighter soils and seems best suited to first wheat situations. It has given high Hagbergs in trials but careful management will be required to attain the required protein level for milling specification. KWS Lili is a later-maturing variety with short straw and high resistance to mildew and yellow rust. **nabim comment:** The performance of this variety has been variable throughout the three years of testing. There are some concerns with the breadcrumb structure of loaves made solely with this variety but it will usually be used in grists.

NEW KWS Siskin ukp

Quality: Added to the AHDB Recommended List 2016/17 as a very high-yielding **nabim** Group 2 wheat and classified as a **ukp** bread wheat for export. It has high Hagbergs and specific weights.

Agronomy: This short-strawed variety has produced high treated yields in all regions and has also given the highest untreated UK yields on the 2016/17 Recommended List. KWS Siskin has a good overall disease package: it is one of only two varieties with a rating of 7 for resistance to septoria tritici and has high resistance to mildew, yellow rust and brown rust. Limited data suggest it is susceptible to eyespot. Limited data suggest this variety has a tendency to sprout, so it should be given priority at harvest. **nabim comment:** Over the three years of testing, this variety showed a degree of variability in its baking performance so may be more suited to use in blends. Some yellowness may be seen in the flour colour.



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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.



Britannia uks

Quality: A high-yielding **nabim** Group 3 wheat, classified as a **uks** soft wheat for export but not suitable for distilling. **Agronomy:** This variety has a yield potential 3% above Zulu and equal to the highest yielding soft feed variety. It has moderate resistance to lodging but responds well to plant growth regulators. Britannia is a later-maturing variety, which has high resistance to yellow rust but is very susceptible to eyespot.

nabim comment: Over the three years of testing, this variety gave a sound performance and demonstrated high gluten extensibility. It fully meets the Group 3 criteria.

Claire uks

Distilling: Medium

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

Agronomy: Claire has a treated yield potential some 7% lower than the highest yielding Group 3 variety but it is a slow-developing variety which has proved useful for very early drilling. It is susceptible to mildew and rather susceptible to sprouting.

nabim comment: This early sowing biscuit wheat continues to be the benchmark for Group 3. It is preferred by millers because of its milling qualities, bright white flour colour, and its gluten characteristics, which result in high dough extensibility.

NEW KWS Barrel uks

Quality: Added to the AHDB Recommended List 2016/17 as a very high-yielding **nabim** Group 3 variety. It is classified as a **uks** soft wheat for export but is not suitable for distilling.

Agronomy: This short, stiff-strawed variety has produced the highest UK yields of all soft wheat varieties and performs particularly well on lighter soils. Limited data suggest it is a slow-developing variety that may be suitable for very early sowing. It has high resistance to mildew, yellow rust and brown rust, combined with resistance to orange wheat blossom midge.

nabim comment: Over the three years of testing, this variety fully met the Group 3 criteria.

NEW KWS Basset uks

Quality: Added to the AHDB Recommended List 2016/17 as a high-yielding **nabim** Group 3 variety. It is classified as a **uks** soft wheat for export but is not suitable for distilling. **Agronomy:** KWS Basset has given high specific weights and has high resistance to yellow rust, combined with resistance to orange wheat blossom midge. It is susceptible to mildew.

nabim comment: Over the three years of testing, this variety fully met the Group 3 criteria, although there was some variation in dough extensibility.

RGT Conversion

Distilling: Good

Quality: A **nabim** Group 3 variety, rated as 'good' for distilling.

Agronomy: This short-strawed variety has given its best relative performance in the North region, where it has given very high yields. RGT Conversion has high resistance to mildew, yellow rust and brown rust. Limited data suggest it is susceptible to sprouting. Limited data suggest it is a slow-developing variety that may be suitable for very early sowing.

nabim comment: Over the three years of testing, this variety had a slightly less resistant gluten quality but good extensibility compared to the control varieties. However, it meets the Group 3 criteria.

Scout uks

Quality: A **nabim** Group 3 wheat, Scout is classified as a **uks** soft wheat for export but is not suitable for distilling. It gives a high specific weight.

Agronomy: This later maturing variety has high resistance to yellow rust and brown rust, combined with resistance to orange wheat blossom midge. Scout has slow primordial development and a range of other characteristics that can make it a useful candidate for early drilling.

nabim comment: This variety remains popular with growers and many millers. It exhibits similar quality attributes to those of Claire.

NEW Spyder

Quality: Added to the AHDB Recommended List 2016/17 as a **nabim** Group 3 variety for the East and West regions. It is not suitable for distilling.

Agronomy: This variety has moderate resistance to lodging but responds well to plant growth regulators. Spyder has given high untreated UK yields. It has high resistance to mildew, yellow rust and brown rust but limited data suggest it is susceptible to eyespot. nabim comment: 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, 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 very high yields. It has moderate resistance to lodging but responds well to plant growth regulators. Zulu has high resistance to mildew and yellow rust, combined with orange wheat blossom midge resistance. It is susceptible to brown rust and eyespot.

nabim comment: Although a slightly softer milling variety than either Scout or Claire, it consistently meets 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.

Hard Group 4 varieties

NEW Belgrade

Soft Group 4 varieties

Horatio uks

Distilling: Medium

Quality: Horatio is a soft-milling feed variety rated as 'medium' for distilling and classified as a **uks** soft wheat for export.

Agronomy: It tends to give its highest relative yields when sown before the middle of September. It has high resistance to mildew and to orange wheat blossom midge. It is no longer in RL trials.

Leeds uks

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: It has a high UK yield and has given very high yields in the North region but is rather late maturing. It has high resistance to yellow rust and above-average resistance to fusarium ear blight but is susceptible to brown rust and very susceptible to mildew. Leeds is resistant to orange wheat blossom midge.

Myriad uks

Distilling: Medium

Quality: Recommended for the North region as a softmilling feed wheat, rated as 'medium' for distilling and classified as a **uks** soft wheat for export. **Agronomy:** It is high yielding in the North region, is resistant to orange wheat blossom midge and has high resistance to yellow rust. Myriad has moderate resistance to lodging but responds well to plant growth regulators.

Revelation uks

Quality: A soft-milling feed wheat, rated as 'good' for distilling and classified as a **uks** soft wheat for export. **Agronomy:** Rather late-maturing, this variety 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.

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-strawed variety has high resistance to brown rust and is resistant to orange wheat blossom midge. It is susceptible to sprouting and tends to give low Hagbergs.

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ariety has a good nce to yellow above-average **Quality:** Added to the AHDB Recommended List 2016/17 as a hard-milling feed variety for the East and West regions.

Distilling: Good

Agronomy: This relatively early maturing variety has produced high treated and untreated yields in the East and West regions. It has moderate lodging resistance and limited data suggest it is susceptible to sprouting. Belgrade has high resistance to mildew and yellow rust but limited data suggest it is very susceptible to eyespot.

Costello

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

Agronomy: Costello's treated yield potential is 3% below that of the highest yielding varieties but it has given high yields in untreated trials. It has high resistance to mildew and yellow rust but limited data suggest it is susceptible to eyespot.

Dickens

Quality: A hard-milling feed wheat.

Agronomy: A high-yielding variety which performs well on lighter soils. It has high resistance to mildew, yellow rust and brown rust but is susceptible to eyespot.

Evolution

Quality: A high-yielding, hard-milling feed variety that tends to give low specific weights.

Agronomy: This relatively late-maturing variety has given very high yields in trials on light soils and performs well in second cereal situations. It has no serious disease weaknesses, with high resistance to yellow rust and brown rust.

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.

Grafton

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

Agronomy: Its treated yield is 6% below the highest yielding hard feed variety but growers value its early maturity and short, stiff straw. Grafton has high resistance to mildew and *Pch1* eyespot resistance but is susceptible to brown rust. It has slow primordial development and a range of other characteristics that can make it a useful candidate for very early sowing.

NEW Graham

Quality: Added to the AHDB Recommended List 2016/17 as a hard-milling feed variety.

Agronomy: In treated trials, this variety has performed best as a first cereal and has given the highest treated yield in the West region on the 2016/17 List. Graham has given high untreated UK yields and is one of only two varieties with a rating of 7 for septoria tritici. It also has high resistance to mildew, yellow rust and brown rust, combined with above-average resistance to fusarium ear blight. Limited data suggest it is susceptible to eyespot.

JB Diego

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

Agronomy: It has high resistance to yellow rust but is susceptible to eyespot. Although 4% lower yielding than the highest-yielding feed variety, growers value its consistency and it was again very popular in 2015.

NEW KWS Crispin

Quality: Added to the AHDB Recommended List 2016/17 as a hard-milling feed variety with a high specific weight. **Agronomy:** This variety has produced high treated and untreated UK yields, performing best in first cereal situations. KWS Crispin has moderate resistance to lodging but no serious disease weaknesses. It has high resistance to mildew and yellow rust, combined with resistance to orange wheat blossom midge.

KWS Gator

Quality: A hard-milling feed variety.

Agronomy: KWS Gator has given its best relative yields as a second cereal. It has stiff straw and resistance to orange wheat blossom midge. It has high resistance to yellow rust but is susceptible to eyespot and very susceptible to brown rust. It is no longer in RL trials.

KWS Kielder

Quality: A hard-milling feed wheat. It tends to give a low specific weight.

Agronomy: A short-strawed wheat, it performs well in second cereal situations and has given very high yields in the North region but is rather late maturing. KWS Kielder is resistant to orange wheat blossom midge and has high resistance to brown rust but it is very susceptible to yellow rust. It is no longer in RL trials.

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. It tends to give low Hagbergs, is relatively late maturing and is susceptible to mildew and septoria tritici.

NEW KWS Silverstone

Quality: Added to the AHDB Recommended List 2016/17 as a hard-milling, very high-yielding feed variety with high Hagbergs and specific weights.

Agronomy: This variety has produced the highest UK yields on the 2016/17 Recommended List but only has moderate resistance to lodging, which needs careful management. Limited data suggest it has a very high yield potential on less fertile, lighter soils. KWS Silverstone has high resistance to mildew, yellow rust and brown rust.

Reflection

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

Agronomy: This short-strawed variety is high yielding, especially when grown as a first cereal, and has high resistance to mildew and brown rust. It is resistant to orange wheat blossom midge.

Relay

Quality: A hard-milling feed variety recommended for the East and West regions, which has given high Hagbergs. **Agronomy:** This variety has short, stiff straw. Relay has high resistance to yellow rust and brown rust but it is susceptible to eyespot.

Disease sampling in 2016

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/monitoring



Wheat sown mid-November to late January

The data for the spring wheat varieties constitute a Recommended List.

The winter wheat data presented do not constitute a Recommended List and are shown to allow direct comparisons with data for the spring wheat varieties.

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	Skyfall	KWSTrinit	Crusoe	Gallant	Mulika +	Solstice	kws Lili	KWS Willo	Tybalt +	Cordiale	Britannia	Zulu	RGT Conv	Leeds	Horatio	KWS Sant	Dickens	Evolution	Reflection	KWS Kielc	KWS Gato	Costello	Belvoir +	KWS Alde	JB Diego	Relay	Average LSD (5%)
End-use group	nabin	n Group	1				nabim	Group	2		nabim	n Group	3	Soft G	roup 4	Hard (Group 4										
Scope of recommendation	-	-	-	-	UK	-	-	UK	UK	-	-	-	-	-	-	-	-	-	-	-	-	-	UK	UK	-	-	
UK yield (% treated control)																											
Fungicide-treated (9.7 t/ha)	102	102	99	99	98	97	106	105	100	99	107	104	101	107	103	107	107	106	106	106	104	104	103	103	101	99	5.2
Grain quality																											
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	[11.2]	[11.0]	[11.8]	[11.8]	12.4	[11.7]	[10.8]	11.5	11.9	[11.5]	[11.3]	[10.3]	[10.8]	[10.7]	-	[10.6]	[9.8]	[10.1]	[10.4]	[10.3]	-	[11.2]	11.0	11.9	[10.9]	-	0.8
Hagberg Falling Number	[293]	[349]	[313]	[348]	325	[290]	[311]	261	311	[351]	[251]	[248]	[246]	[240]	-	[175]	[277]	[206]	[229]	[243]	-	[324]	224	327	[339]	-	62
Specific weight (kg/hl)	[77.1]	[77.1]	[78.2]	[77.1]	78.3	[79.0]	[77.0]	79.4	76.3	[79.2]	[76.3]	[74.8]	[75.2]	[76.9]	-	[73.9]	[75.7]	[74.2]	[76.7]	[73.4]	-	[80.1]	76.7	77.6	[78.0]	-	1.6
Agronomic features																											
Lodging %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Straw height with PGR (cm)	69	73	69	[71]	86	75	70	83	82	67	77	76	70	78	78	77	77	74	68	71	74	68	75	76	[76]	69	3.2
Ripening (days +/- Mulika, -ve = earlier)) [+1]	[+3]	[+5]	[-3]	[0]	-	[+7]	[-1]	[-1]	[-1]	[+4]	[+3]	[+1]	[+5]	-	[+7]	[+3]	[+4]	[+2]	[+6]	[+6]	[+4]	[-1]	[0]	[+4]	-	2.6
Latest safe sowing date #	[End Feb]	[End Jan]	End Jan	Mid Feb	-	End Jan	[Mid Feb]	-	-	Mid Feb	[Mid Feb]	[End Feb]	[End Jan]	Mid Feb	Mid Feb	End Jan	End Jan	[Mid Feb]	[Mid Feb]	End Jan	Mid Feb	[End Jan]	-	-	End Jan	Mid Feb	
Disease resistance																											
Mildew (1–9)	6	9	7	6	[7]	4	9	[8]	8	6	6	7	8	3	7	4	8	6	7	5	6	8	[6]	6	6	6	1.3
Yellow rust (1–9)	6	9	9	4	7	3	7	7	7	5	8	9	8	7	5	6	9	9	6	3	8	9	6	7	7	9	0.6
Brown rust (1–9)	9	8	3	7	4	5	6	9	5	4	5	4	7	4	6	6	7	8	9	8	3	6	8	6	6	8	1.2
Septoria tritici (1–9)	6	5	6	4	6	5	6	6	6	5	6	6	5	5	5	4	5	6	5	5	5	6	5	6	5	6	1.1
Fusarium ear blight (1–9)	7	6	6	5	[6]	6	6	[6]	[5]	5	6	6	6	7	6	6	6	6	6	6	6	6	[6]	[6]	6	6	0.3
Orange wheat blossom midge	R	-	-	-	R	-	-	-	-	-	-	R	-	R	R	R	-	-	R	R	R	-	R	-	-	-	
Breeder/UK contact																											
Breeder	RAGT	KWS	Lim	SyP	BA	Lim	KWS	KWS	Wier	KWS	Lim	Lim	RAGT	Mom	Lim	KWS	Sec	Sej	SyP	KWS	KWS	KWS	KWS	KWS	Bre	RAGT	
UK contact	RAGT	KWS	Lim	Syn	Sen	Lim	KWS	KWS	Lim	KWS	Lim	Lim	RAGT	KWS	Lim	KWS	Agr	Lim	Syn	KWS	KWS	Sen	KWS	KWS	Sen	RAGT	
Status in RL system																											
Year first listed					11			11	03														03	12			
RL status					-			-	-														*	-			

Spring wheat varieties no longer listed: Ashby and Paragon.

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

UK = recommended for the UK

C = yield control (for current table)

[] = limited data

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

* = no longer in late-sown wheat trials # = latest safe sowing date is the advised latest date to give sufficient cold for flowering; spring Bre = Saatzucht Josef Breun, Germany

wheats have no vernalisation requirement blossom midge (OWBM), but this has not been verified in Recommended List tests

- Agr = Agrii (www.agrii.co.uk)
- BA = Blackman Agriculture
- KWS = KWS UK (www.kws-uk.com)
- Mom = Momont, France RAGT = RAGT Seeds, UK (www.ragt.co.uk) Wier = Wiersum, Netherlands

- Sec = Secobra, France Sej = Sejet, Denmark Sen = Senova (www.senova.uk.com)
- Syn = Syngenta UK Ltd (www.syngenta.co.uk) Average LSD (5%): Varieties
- Lim = Limagrain UK (www.limagrain.co.uk) SyP = Syngenta Participations AG
 - (www.syngenta.co.uk)
- that are more than one LSD apart are significantly different at the 95% confidence level.

LSD = least significant

difference

Spring wheat (for spring sowing) 2016

RECOMMENDED	С		С			С	*		
AHDB	Mulika	Granary	Tybalt	KWS Willow	KWS Kilbum	KWS Alderon	Belvoir	Average LSD (5%)	
End-use group	nabim Group 1	nabim Group 2			Hard Group 4				
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK		
UK yield (% control)									UK
Fungicide-treated (7.5 t/ha)	97	102	101	101	104	102	101	4.4	С
Grain quality									*
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard		[]
Protein content (%)	13.3	13.0	12.6	12.5	13.0	13.0	12.2	0.4	∞
Hagberg Falling Number	309	257	303	264	246	321	225	33	R
Specific weight (kg/hl)	77.7	78.3	75.9	78.5	76.4	77.0	77.0	1.0	
Agronomic features									
Resistance to lodging with PGR ∞	-	-	-	-	-	-	-	-	
Straw height without PGR (cm)	82	82	79	83	87	75	77	2.0	P2
Ripening (days +/- Mulika, -ve = earlier)	0	+1	0	+1	+2	+2	+1	1.2	LSI
Resistance to sprouting ∞	-	-	-	-	-	-	-	-	BA
Disease resistance									KV
Mildew (1–9)	[7]	[7]	8	[8]	[7]	6	[6]	1.3	Lin
Yellow rust (1–9)	7	5	7	7	6	7	6	0.6	
Brown rust (1–9)	4	6	5	9	9	6	8	1.2	Ser
Septoria tritici (1–9)	6	6	6	6	6	6	5	1.1	10/
Fusarium ear blight (1–9)	[6]	[6]	[5]	[6]	-	[6]	[6]	0.3	VVI
Orange wheat blossom midge	R	-	-	-	-	-	R		
Annual treated yield (% control)									
2011 (6.7 t/ha)	[99]	-	[102]	[101]	[103]	[99]	[104]	7.6	
2012 (7.3 t/ha)	[99]	[108]	[100]	[100]	[110]	[101]	[100]	7.5	
2013 (7.9 t/ha)	[97]	[99]	[103]	[103]	[100]	[100]	[97]	7.2	
2014 (2 trials only)	-	-	-	-	-	-	-	-	
2015 (8.0 t/ha)	[97]	[98]	[99]	[99]	[101]	[104]	[101]	5.7	
Breeder/UK contact									
Breeder	BA	KWS	Wier	KWS	KWS	KWS	KWS		Ave
UK contact	Sen	KWS	Lim	KWS	KWS	KWS	KWS		are
Status in RL system									sig
Year first listed	11	09	03	11	14	12	03		cor
RL status	-	-	-	-	P2	-	*		



C = recommended for the UK = yield control (for current

- table)
- = variety no longer in trials
- = limited data
- = no data available
- believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in
- Recommended List tests = second year of recommendation
- LSD = least significant difference
- BA = Blackman Agriculture
- WS = KWS UK
- (www.kws-uk.com) Lim = Limagrain UK
- (www.limagrain.co.uk) Sen = Senova
- (www.senova.uk.com)
- Nier = Wiersum BV, Netherlands

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

Varieties no longer listed: Ashby and Paragon.

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

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

Spring wheat 2016 – Variety comments

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 Group 1 varieties

Mulika

Quality: A **nabim** Group 1 variety recommended 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 but is susceptible to brown rust. Limited data suggest it has high resistance to mildew. Mulika is the only spring wheat breadmaking variety with resistance to orange wheat blossom midge.

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: Granary is the highest yielding Group 2 variety when spring-sown. Limited data suggest it has high resistance to mildew.

nabim comment: This is a variety with a tendency to produce low Hagbergs and relatively small quantities of this variety have been seen by millers.

KWS Willow

Quality: A **nabim** Group 2 variety with good specific weights but which tends to give low grain proteins when late autumn-sown.

Agronomy: This variety has given high yields from late autumn sowings. Its yields from spring sowings are similar to Tybalt. KWS Willow has high resistance to yellow rust and brown rust. Limited data suggest it also has high resistance to mildew.

nabim comment: This variety has Hagbergs which tend to be low 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.

Tybalt

Quality: A **nabim** Group 2 spring wheat variety recommended for both late autumn and spring sowing. It tends to give lower specific weights.

Agronomy: Tybalt gives its best yields from spring sowing and is 5% lower-yielding than KWS Willow when late autumn-sown. It has high resistance to mildew and yellow rust but has weak straw.

nabim comment: This variety has a tendency to show low protein content and softer grain. It shows fair baking performance and will be used at low grist inclusion levels by most millers.

Group 4 feed varieties

Belvoir

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

Agronomy: Belvoir has high resistance to brown rust and is resistant to orange wheat blossom midge. It has moderate straw strength. It is no longer in RL trials.

KWS Alderon

Quality: A hard feed variety recommended for both late autumn and spring sowing. It has a good specific weight. **Agronomy:** KWS Alderon has high resistance to yellow rust.

KWS Kilburn

Quality: A hard feed variety recommended for spring sowing only. It is a high-yielding variety with a good specific weight.

Agronomy: KWS Kilburn has high resistance to brown rust and limited data suggest it also has high resistance to mildew.

New varieties

The Recommended List (RL) remains vibrant as new varieties with improved characteristics are developed. For each of the past three years a new Group 1 variety has joined the RL, offering growers a broad range of quality breadmaking varieties from which to select. Skyfall, which joined in 2013, has lived up to expectations and achieved a strong market position. KWSTrinity joined in 2014 but so far insufficient quantities have been grown to adequately comment in detail. However, it appears to be similar to Skyfall with a high yielding potential. RGT Ilustrious achieved provisional Group 1 status this year and appears to be consistently good in its breadmaking performance, and this will be commercially assessed early in 2016.

Varieties with yields much above those of Gallant or Crusoe may be at risk of lower protein levels unless nitrogen applications are well managed. The key will be wellconsidered nitrogen applications made at the most effective timings. Experience from Skyfall indicates that growers should have a clear strategy for nitrogen application determined by whether they are aiming for the milling market or merely aiming to achieve high yields. The two goals are seldom the same!

This year, KWS Siskin joined the RL as a Group 2 category wheat, making three winter varieties from which to choose. Cordiale is a well-established variety that performs well in most baking systems and is preferred by many millers. KWS Lili joined the RL in 2015 but is yet to become established with millers. Although no longer on the RL, Panorama is still purchased by many millers and extends grower choice.

Three Group 3 wheat varieties have joined the Recommended List. KWS Barrel, KWS Bassett and Spyder (from Senova), all have good biscuit-making qualities, in addition to good yield and disease resistance attributes. The key success criteria for Group 3 varieties are to have consistent rheology, with doughs that can be easily extended but are not elastic. Group 3 now contains eight varieties, so choice remains wide with Claire and Scout continuing to be popular with most millers.

The provisional Group 1 system

A new feature to the assessment of Group 1 varieties was introduced in December 2013 when Skyfall obtained 'Provisional' Group 1 status and it was also used for KWS Trinity in 2015. Both these varieties were confirmed to 'Full' Group 1 status after the milling, baking and testing of commercial quantities. Much has been learnt about the new procedure and improvements have been made.

This year, commercial quantities of RGT Illustrious will be assessed in this way. It will be milled and baked, with results being reviewed. Hopefully, it will achieve 'Full' approved status in early April, before planting decisions for 2016 are made.

The trend towards Group 1 varieties

The UK wheat market is dominated by Group 4 varieties grown for their yield potential. The growth of this category has limited the area of varieties grown for milling. However, the advent of the higher-yielding Group 1 varieties appears to have reversed this trend.

Wheat quality from 2015 harvest

Overall, protein levels were approximately 0.5% above the five-year average and the quality was also adequate for most baking purposes. Hagberg Falling Number (HFN) levels were lower in some later-harvested crops, especially those from the north of England.

For a third year out of the past five, water absorption levels were lower than anticipated. The water absorption of flour is a key parameter for bakers because not only does it affect the amount of water that is required to make the dough but it may also impact on the consistency of doughs and the bread baked from them. Preliminary work commissioned by **nabim** will be followed by a larger research project funded from the AHDB Cereals & Oilseeds levy to investigate the environmental and varietal factors that impact on water absorption levels and grain quality.

Sulphur applications

The importance of sulphur as a nutrient for good plant growth has been well understood for many years. The decline in sulphur depositions as air quality has improved has reduced availability for optimum crop growth in some locations. Growers of bread wheat varieties appreciate that protein quality is dependent on adequate applications of both sulphur and nitrogen. These elements interact to provide strong gluten and the other proteins required for good baking performance. The importance of regular testing for soil sulphur and adjusting applications is the key to success. Further information is available in the AHDB Cereals & Oilseeds Information Sheet 28 'Sulphur for cereals and oilseed rape'.

There is increasing awareness of the need to reduce levels of acrylamide in baked or fried foods. Acrylamide forms during baking, when the protein asparagine interacts with certain types of sugars. Currently, one of the most effective ways of reducing asparagine in bread and other baked products is by adequate application of sulphur to the growing crop.

Good storage

However good the quality of wheat at harvest, the full marketability will not be achieved without good storage. With the current relatively low price of wheat, more of the crop is likely to be stored on-farm for longer. This means that attention to the detail of good storage will be essential. Most growers have robust systems to monitor and control conditions, especially temperature and moisture levels. Anecdotal evidence in 2015 suggested increased levels of odours in wheat, which are often indicative of fungal growth. Similarly, there appeared to be higher than normal frequencies of the storage mycotoxin, Ochratoxin A, being detected.

The 'Grain storage guide for cereals and oilseeds' (AHDB Cereals & Oilseeds) provides essential information about optimising storage conditions.

Winter barley 2016/17 Market options, yield and grain quality

RECOMMENDED	NEW		с	*	*	*	NEW	NEW		с		*	*	с		*	*	NEW	NEW	с		Notaddeo	l to Recom	nmended Lis
AHDB	Craft	Talisman	SY Venture	Flagon	Cassata	Pearl	KWS Orwell	Surge	KWS Infinity	KWS Glacier	KWS Tower	Cavalier	Retriever	KWS Cassia	California	Matros	Florentine	Bazooka \$	Belfry \$	Volume \$	Average LSD (5%)	Kathmandu	Shadow	Verity
End-use group	Two-r	ow mal	ting				Two-ro	w feed										Six-ro	w feed			Two-row	/ feed	Six-row feed
Scope of recommendation	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	UK	Ν	UK	UK	W	E	UK	UK	UK	UK		Not added	I to Recom	mended List
Fungicide-treated grain yield (% treated	ted contr	ol)																						
United Kingdom (9.4 t/ha)	97	96	95	92	91	89	102	102	102	101	101	99	98	98	98	98	96	107	106	104	2.9	101	96	103
East region (9.6 t/ha)	97	97	96	92	92	89	102	102	102	102	101	99	98	97	98	99	97	108	105	104	3.5	102	97	102
West region (9.5 t/ha)	96	93	95	92	90	88	102	101	101	100	100	97	98	98	98	96	96	108	106	104	3.7	98	94	103
North region (8.8 t/ha)	98	95	92	91	91	88	102	99	102	101	102	100	101	100	97	98	96	108	107	105	4.3	102	94	105
Untreated grain yield (% treated cont	rol)																							
United Kingdom (9.4 t/ha)	80	79	74	78	75	73	83	89	80	81	80	75	75	82	81	86	78	90	90	83	4.9	85	81	91
Main market options																								
IBD malting approval for brewing use	Т	F	F	F	F	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Grain quality																								
Specific weight (kg/hl)	69.3	67.3	69.8	69.5	68.5	70.5	67.7	68.9	68.0	69.5	67.6	69.7	66.1	70.8	68.7	67.3	68.1	68.4	67.4	68.1	0.8	66.2	68.7	65.1
Screenings (% through 2.25 mm)	1.8	3.5	2.6	2.2	1.8	1.6	1.9	1.8	2.8	2.0	1.5	2.6	-	1.6	[1.7]	2.5	-	2.7	3.2	4.9	1.3	3.4	2.3	2.0
Screenings (% through 2.5 mm)	4.2	9.3	6.6	5.6	4.6	3.6	4.8	4.1	6.9	5.2	4.0	6.5	-	3.8	[4.7]	6.0	-	8.1	9.0	13.4	2.9	8.6	5.9	4.9
Nitrogen content (%)	1.61	1.64	1.69	1.66	1.67	1.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	-	1.66	-
Status in RL system																								
Year first listed	16	13	12	05	07	99	16	16	15	13	14	14	07	10	13	13	11	16	16	09		-	-	-

Varieties no longer listed: Daxor, Escadre, KWS Meridian and Saffron.

Varieties are presented in order of highest UK treated yield within end-use groups. Comparisons of variety performance across regions are not valid.

- UK = recommended for the UK
- E = recommended for the East region
- W = recommended for the West region
- N = recommended for the North region
- C = yield control (for current table). For this table KWS
- Meridian was also a yield control but is no longer listed * = variety no longer in trials
- Sp = Cassata has a specific recommendation for growers
 - wanting a BaYMV resistant variety for malting
- \$ = hybrid varietyF= full IBD approval[] = limited dataT= under test for IBI
 - T = under test for IBD approval in this segment
 - 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 2016/17 Yield, agronomy and disease resistance

RECOMMENDED	NEW		С	*	*	*	NEW	NEW		С		*	*	С		*	*	NEW	NEW	С		Notadded	to Recon	nmended List
AHDB	Craft	Talisman	SY Venture	Flagon	Cassata	Pearl	KWS Orwell	Surge	KWS Infinity	KWS Glacier	KWS Tower	Cavalier	Retriever	KWS Cassia	California	Matros	Florentine	Bazooka \$	Belfry \$	Volume \$	Average LSD (5%)	Kathmandu	Shadow	Verity
End-use group	Two-r	ow malt	ing				Two-ro	w feed										Six-ro	wfeed			Two-row	feed	Six-row feed
Scope of recommendation	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	UK	Ν	UK	UK	W	E	UK	UK	UK	UK		Not added	to Recom	nmended List
Fungicide-treated grain yield (% treated	ed contr	ol)																						
United Kingdom (9.4 t/ha)	97	96	95	92	91	89	102	102	102	101	101	99	98	98	98	98	96	107	106	104	2.9	101	96	103
East region (9.6 t/ha)	97	97	96	92	92	89	102	102	102	102	101	99	98	97	98	99	97	108	105	104	3.5	102	97	102
West region (9.5 t/ha)	96	93	95	92	90	88	102	101	101	100	100	97	98	98	98	96	96	108	106	104	3.7	98	94	103
North region (8.8 t/ha)	98	95	92	91	91	88	102	99	102	101	102	100	101	100	97	98	96	108	107	105	4.3	102	94	105
Untreated grain yield (% treated control	ol)																							
United Kingdom (9.4 t/ha)	80	79	74	78	75	73	83	89	80	81	80	75	75	82	81	86	78	90	90	83	4.9	85	81	91
Agronomic features																								
Resistance to lodging (1–9)	8	6	7	5	8	7	8	7	7	6	7	6	6	7	8	7	8	8	8	7	-	7	6	8
Straw height without PGR (cm)	[98]	[104]	95	104	101	106	[94]	[96]	[96]	[92]	[99]	[90]	95	96	98	103	98	[120]	[113]	110	6.3	[93]	[96]	[119]
Straw height with PGR (cm)	88	95	85	98	90	98	85	84	88	83	89	83	86	88	90	95	88	108	100	101	2.0	78	89	109
Ripening (days +/- Cassata, -ve = earlier)	0	-1	0	-1	0	0	0	0	0	-1	0	-1	-1	0	-1	+1	-1	-1	-1	-1	0.9	-1	+1	0
Winter hardiness #	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disease resistance																								
Mildew (1–9)	6	6	6	6	4	6	3	6	3	3	5	5	5	4	6	7	5	5	6	5	2.2	7	6	6
Yellow rust (1–9)	[8]	[8]	[7]	[7]	2	[6]	[7]	[8]	[7]	[8]	[8]	[9]	[9]	[5]	[6]	[5]	[8]	[8]	[8]	7	2.9	[7]	[8]	[7]
Brown rust (1–9)	7	7	5	7	6	5	7	8	6	7	6	6	6	7	5	8	6	6	7	6	1.3	8	7	8
Rhynchosporium (1–9)	6	6	4	6	6	5	6	7	6	5	6	5	4	4	5	7	6	8	7	7	1.4	7	6	7
Net blotch (1–9)	7	5	6	4	3	5	5	5	5	6	4	5	5	6	7	6	7	6	7	6	2.2	5	5	7
BaYMV	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.

= hybrid variety

UK = recommended for the UK	
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- E = recommended for the East region
- W = recommended for the West region
- N = recommended for the North region
- Meridian was also a yield control but is no longer listed * = variety no longer in trials Sp = Cassata has a specific recommendation for growers

wanting a BaYMV resistant variety for malting

- C = yield control (for current table). For this table KWS # = the winter hardiness scores are taken from extreme tests in the Jura mountains of France but there are insufficient data for 1–9 ratings
 - R = resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1

[] = 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.

YIELD, AGRONOMY AND DISEASE RESISTANCE AHDB RECOMMENDED LIST



Winter barley 2016/17 – Supplementary data

RECOMMENDED	NEW		С	*	*	*	NEW	NEW		с		*	*	С		*	*	NEW	NEW	С		Notaddec	to Recom	nmended List
AHDB	Craft	Talisman	SY Venture	Flagon	Cassata	Pearl	KWS Orwell	Surge	KWS Infinity	KWS Glacier	KWSTower	Cavalier	Retriever	KWS Cassia	California	Matros	Florentine	Bazooka \$	Belfry \$	Volume \$	Average LSD (5%)	Kathmandu	Shadow	Verity
End-use group	Two-i	row mal	ting				Two-ro	w feed										Six-ro	w feed			Two-row	feed	Six-row feed
Scope of recommendation	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	UK	Ν	UK	UK	W	E	UK	UK	UK	UK		Not addec	to Recom	mended List
Breeder/UK contact																								
Breeder	Syn	Sen	SyP	SyP	Lim	Lim	KWS	Syn	KWS	KWS	KWS	Lim	Sej	KWS	Lim	Sej	Sen	Syn	Syn	SyP		Sej	Syn	Bre
UK contact	Syn	Sen	Syn	Syn	Lim	Lim	KWS	Syn	KWS	KWS	KWS	Lim	Lim	KWS	Lim	Lim	Sen	Syn	Syn	Syn		Sen	Syn	Sen
Annual treated yield (% control)																								
2011 treated yield (8.8 t/ha)	-	100	94	89	89	85	-	-	-	100	101	106	101	99	98	100	97	-	-	104	4.2	-	-	-
2012 treated yield (8.7 t/ha)	-	93	95	91	92	91	-	-	103	102	102	96	96	100	100	98	96	-	-	105	3.6	-	-	-
2013 treated yield (8.8 t/ha)	99	96	97	90	93	[87]	104	103	103	103	101	101	103	99	98	95	97	105	105	102	3.5	102	99	103
2014 treated yield (9.8 t/ha)	98	95	95	95	92	91	101	102	100	101	99	95	95	96	99	96	96	107	106	105	3.2	100	96	104
2015 treated yield (10.6 t/ha)	95	96	94	-	90	88	101	100	101	101	101	98	101	96	95	99	95	109	105	106	3.1	101	94	102
Soil type (about 50% of trials are media	um soils)																							
Light soils (9.0 t/ha)	97	97	95	93	91	89	103	101	101	100	102	99	100	98	97	98	97	109	106	105	3.6	102	96	104
Heavy soils (10.0 t/ha)	94	95	97	89	91	87	100	101	101	102	100	97	97	97	99	95	96	106	105	104	4.9	98	95	100
Agronomic characteristics																								
Lodging without PGR (%)	2	5	1	18	1	3	0	5	3	5	3	11	7	2	0	3	0	1	0	4	-	4	2	0
Lodging with PGR (%)	0	4	1	9	0	2	0	1	1	3	0	3	2	0	0	2	0	0	0	1	-	0	7	0
Malting quality																								
Hot water extract (I deg/kg)	310.5	308.2	308.3	305.6	305.2	304.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	-
Status in RL system																								
Year first listed	16	13	12	05	07	99	16	16	15	13	14	14	07	10	13	13	11	16	16	09		-	-	-
RL status	P1	-	-	*	*	*	P1	P1	P2	-	-	*	*	-	-	*	*	P1	P1	-		-	-	-

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

UK = recommended for the UK E = recommended for the East region W = recommended for the West region N = recommended for the North region Sp = Cassata has a specific recommendation for growers wanting a BaYMV resistant variety for malting	 \$ = hybrid variety * = variety no longer in trials C = yield control (for current table). For this table KWS Meridian was also a yield control but is no longer listed [] = limited data [] LSD = least significant difference 	P1 = first year of recommendation P2 = second year of recommendation	Bre= Saatzucht Josef Breun, GermanyKWS= KWS UK (www.kws-uk.com)Lim= Limagrain UK (www.limagrain.co.uk)Sej= Sejet, DenmarkSen= Senova (www.senova.uk.com)Syn= Syngenta UK Ltd (www.syngenta.co.uk)SyP= Syngenta Participants AG (www.syngenta.co.uk)	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level.

Winter barley trials harvest 2016 – Candidate varieties

CANDIDATE	Previous/Proposed name	Variety ID	Yield treated (T)	Yield untreated (UT) (% treated control)	Lodging % (UT)	Lodging % (T)	Height (cm)	Maturity (days +/- Cassata)	Mildew (1–9)	Yellow rust (1–9)	Brown rust (1–9)	Rhynchosporium (1–9)	Net blotch (1–9)	BaYMV	Variety type	Specific weight (kg/hl)	UK contact
Control varieties																	
SY Venture	SYN 208-57	2443	94	74	3	0	82	0	6	[7]	5	4	6	R	2-row	70.3	Syngenta UK Ltd
Volume	NFC 205-14	2244	106	86	5	0	104	-2	5	7	6	7	6	R	6-row hybrid	68.6	Syngenta UK Ltd
KWS Meridian	LP 6-728	2436	103	97	0	0	111	-1	8	[7]	8	7	7	R	6-row	65.8	KWS UK
KWS Glacier	KWS B100	2523	101	83	7	2	82	-1	3	[8]	7	5	6	R	2-row	69.7	KWS UK
KWS Cassia	CPBT B88	2309	96	83	0	0	87	0	4	[5]	7	4	6	R	2-row	71.0	KWS UK
Selected as potential malt	ing varieties																
Rubinesse	SC82909NH	2834	95	[84]	2	1	83	0	7	[8]	7	7	6	R	2-row	68.9	Agrii
Selected as potential feed	varieties																
Sunningdale	SY213144	2822	107	[91]	1	1	108	-2	6	[6]	7	7	7	R	6-row hybrid	68.0	Syngenta UK Ltd
Funky	MH08KU37	2807	105	[92]	0	0	94	-2	5	[9]	8	7	7	R	6-row	69.3	KWS UK
KWS Creswell	KWSB114	2804	103	[80]	4	0	85	-1	5	[7]	5	6	5	R	2-row	68.2	KWS UK
Mean of controls (t/ha)			10.2	10.2	-	-	-	-	-	-	-	-	-			-	
Overall mean			-	-	2.4	0.3	92	-	-	-	-	-	-			68.3	
LSD 5%			2.9	4.4	7.5	1.2	4.3	1.3	-	-	-	-	-			1.1	
Number of trials			20	9	3	5	9	9	-	-	-	-	-			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.

[] = limited data

Candidate varieties will be considered for the 2017/18 AHDB Recommended List.

- LSD = least significant difference
- R = resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1
- T = data from trials treated with fungicide and PGR
- UT = data from trials without fungicide or PGR

See the AHDB Recommended List for full data on control varieties (pages 22-24).

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 2016/17 – Variety comments

Two-row malting varieties

Cassata

A specific recommendation for growers wanting a malting variety with resistance to barley mosaic virus.

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

Agronomy: Cassata has a yield some 4% lower than SY Venture. It is a stiff-strawed variety that is susceptible to mildew and very susceptible to yellow rust and net blotch. Cassata is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is no longer in RL trials.

MAGB comment: Market share continues to decrease.

NEW Craft

Quality: Added to the Recommended List 2016/17 as a potential malting variety for brewing, with a high specific weight.

Agronomy: Craft is stiff-strawed, with high resistance to vellow rust, brown rust and net blotch. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

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

Flagon

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

Agronomy: Flagon has a yield some 3% lower than SY Venture. It has high resistance to yellow rust and brown rust but is susceptible to net blotch. This variety has moderate straw strength, requiring careful management. It is no longer in RL trials.

MAGB comment: Decline in popularity has been arrested. Growers are advised to speak to their merchants about end markets.

Pearl

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

Agronomy: Pearl's yield is now 7% below the highest yielding variety with full IBD approval. It is no longer in RL trials.

MAGB comment: Market share continues to decrease.

SY Venture

Quality: Fully approved by IBD 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). Limited data suggest it has high resistance to vellow rust but 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 IBD for the production of malt for brewing.

Agronomy: The highest yielding malting winter barley variety with full IBD approval. Talisman has high resistance to yellow and brown rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

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

IBD Approved List

Brewing use

Full approval: Cassata, Flagon, Pearl, SY Venture, Talisman

Malt distilling use None approved

Grain distilling use None approved



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

Two-row feed varieties

California

Quality: A two-row feed variety recommended for the West region.

Agronomy: It has good lodging resistance and high resistance to net blotch. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Cavalier

Quality: A two-row feed variety recommended for the North region, with a high specific weight.

Agronomy: It has short straw, is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) and limited data suggest high resistance to yellow rust. It is no longer in RL trials.

Florentine

Quality: A two-row feed variety.

Agronomy: It has high resistance to lodging, yellow rust and net blotch. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is no longer in RL trials.

KWS Cassia

Quality: A two-row feed variety with a high specific weight.

Agronomy: It has 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).

Winter barley 2016/17 – Variety comments

KWS Glacier

Quality: A two-row feed variety with a high specific weight.

Agronomy: This short-strawed variety has high resistance to brown rust and limited data suggest it has high resistance to yellow rust but it is very susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Infinity

Quality: A high-yielding two-row feed variety. **Agronomy:** It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) but is very susceptible to mildew.

NEW KWS Orwell

Quality: Added to the Recommended List 2016/17 as a high-yielding two-row feed variety.

Agronomy: It is the highest yielding two-row feed variety on the 2016/17 Recommended List. KWS Orwell has high resistance to lodging and brown rust but it is very susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) and limited data suggest it has high resistance to yellow rust.

KWS Tower

Quality: A two-row feed variety.

Agronomy: It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Limited data suggest it has high resistance to yellow rust but it is susceptible to net blotch.

Matros

Quality: A two-row feed variety with a specific recommendation for the East region.

Agronomy: It has a good untreated yield and high resistance to mildew, brown rust and rhynchosporium. It is no longer in RL trials.

Retriever

Quality: A two-row feed variety. It tends to give low specific weights.

Agronomy: Retriever is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It has high resistance to yellow rust but is susceptible to rhynchosporium. It is no longer in RL trials.

NEW Surge

Quality: Added to the Recommended List 2016/17 as a high-yielding two-row feed variety.

Agronomy: Surge has a good untreated yield 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) and limited data suggest it also has high resistance to yellow rust.

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.

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



Six-row feed varieties

NEW Bazooka

Quality: Added to the Recommended List 2016/17 as a very high-yielding six-row hybrid feed variety. **Agronomy:** It is the highest yielding feed variety in all regions on the 2016/17 Recommended List and although it is taller than Volume it has high resistance to lodging. This variety has given good yields in untreated trials. It has high resistance to rhynchosporium and limited data suggest it has high resistance to yellow rust. It is also resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

NEW Belfry

Quality: Added to the Recommended List 2016/17 as a sixrow hybrid feed variety with very high yields in all regions. **Agronomy:** This variety has high resistance to lodging, brown rust, rhynchosporium and net blotch and limited data suggest it also has high resistance to yellow rust. It has given high yields in untreated trials. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Volume

Quality: A hybrid six-row feed variety that has performed well in all regions and has a very high UK treated yield. **Agronomy:** This variety has high resistance to rhynchosporium and yellow rust and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Spring barley 2016 Market options, yield and grain quality

RECOMMENDED		NEW		NEW		NEW			С	с	NEW	с		NEW			*	*	*	
									Ũ	Ŭ		Ŭ							5	
AHDB	RGT Planet	Laureate	KWS Irina	KWS Sassy	Olympus	Origin	Octavia	Sienna	Odyssey	Propino	Fairing	Concerto	Belgravia	Ovation	Scholar	Hacker	Kelim	Waggon	Westminste	Average LSD (5%)
End-use group	Maltin	g varieties	6											Feed va						
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	Nr	UK	UK	W	UK	UK	UK	
Fungicide-treated grain yield (% treated	ed contro	ol)																		
United Kingdom (7.4 t/ha)	108	107	106	105	104	104	103	103	102	101	98	96	94	107	106	102	100	99	93	2.4
East region (7.5 t/ha)	108	108	105	104	104	105	105	101	103	100	98	96	-	108	106	100	97	97	[93]	3.1
West region (7.7 t/ha)	108	105	106	102	105	104	101	103	101	101	98	97	-	107	106	103	100	99	94	3.0
North region (7.0 t/ha)	107	109	107	108	105	103	105	103	101	102	97	95	93	108	107	101	100	100	93	2.2
Main market options																				
IBD malting approval for brewing use	Р	Т	F	Т	-	Т	Р	Р	F	F	-	F	Ν	-	-	-	-	-	-	
IBD malting approval for malt distilling use	Ν	Т	Ν	Т	Р	Т	Р	Р	F	Ν	-	F	F	-	-	-	-	-	-	
IBD malting approval for grain distilling use	Ν	-	Ν	-	Р	-	Ν	Ν	Ν	Ν	Т	Ν	F	-	-	-	-	-	-	
Grain quality																				
Specific weight (kg/hl)	67.8	66.4	65.9	67.9	66.8	66.8	66.7	70.7	68.1	68.0	68.3	68.8	67.8	66.5	68.3	69.7	67.5	67.4	70.0	0.8
Screenings (% through 2.25 mm)	1.5	1.5	1.7	1.3	1.8	1.5	1.4	1.5	1.4	1.1	1.3	1.3	1.7	1.5	2.0	1.6	[2.7]	-	[1.2]	0.4
Screenings (% through 2.5 mm)	3.8	3.0	4.2	2.8	4.8	4.1	3.2	3.2	3.5	2.3	2.9	2.8	4.1	3.9	5.8	3.4	[7.2]	-	[3.3]	1.1
Nitrogen content (%)	1.38	1.41	1.41	1.42	1.46	1.36	1.37	1.41	1.42	1.47	1.49	1.44	[1.52]	1.38	[1.40]	1.46	[1.49]	-	-	0.06
Status in RL system																				
Year first listed	15	16	14	16	15	16	15	15	12	10	16	09	08	16	15	14	13	05	05	

Varieties no longer listed: Deveron, Garner, Moonshine, NFC Tipple, Optic, Quench, Rhyncostar, Sanette, Shada, Tesla and Vault.

Growers are strongly advised to check with their buyer before committing to a malting variety without full IBD 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 = recommended for the UK
- Nr = recommended for the North region
- W = recommended for the West region
- Sp = Fairing is under test for the production of malt for grain distilling
- F = full IBD approval
- N = not approved by IBD for this segment
- P = provisional IBD approval
- T = under test for IBD approval in this segment
- [] = limited data
- C = yield control (for current table). For this table NFC Tipple and Sanette were also yield controls but are no longer listed
- * = variety no longer in trials LSD = least significant difference
- Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level.

Spring barley 2016 Yield, agronomy and disease resistance

RECOMMENDED		NEW		NEW		NEW			с	С	NEW	С		NEW			*	*	*	
AHDB	RGT Planet	Laureate	KWS Irina	KWS Sassy	Olympus	Origin	Octavia	Sienna	Odyssey	Propino	Fairing	Concerto	Belgravia	Ovation	Scholar	Hacker	Kelim	Waggon	Westminster	Average LSD (5%)
End-use group	Maltin	g varieties	\$											Feed va						
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	Nr	UK	UK	W	UK	UK	UK	
Fungicide-treated grain yield (% treated	ed contro	ol)																		
United Kingdom (7.4 t/ha)	108	107	106	105	104	104	103	103	102	101	98	96	94	107	106	102	100	99	93	2.4
East region (7.5 t/ha)	108	108	105	104	104	105	105	101	103	100	98	96	-	108	106	100	97	97	[93]	3.1
West region (7.7 t/ha)	108	105	106	102	105	104	101	103	101	101	98	97	-	107	106	103	100	99	94	3.0
North region (7.0 t/ha)	107	109	107	108	105	103	105	103	101	102	97	95	93	108	107	101	100	100	93	2.2
Untreated grain yield (% treated control	ol)																			
United Kingdom (7.4 t/ha)	92	94	90	90	88	88	87	89	85	85	85	81	80	87	90	88	86	84	81	2.8
Agronomic features																				
Resistance to lodging (no PGR) (1–9)	7	7	8	6	7	7	6	7	6	7	7	6	-	7	7	8	7	7	7	0.5
Straw height (cm)	74	73	70	79	74	73	73	78	75	76	74	79	78	73	69	75	79	75	82	1.6
Ripening (days +/- Concerto, -ve = earlier)	-1	0	-1	0	0	0	-1	0	0	-1	-2	0	-1	0	0	-1	0	-2	-1	0.7
Resistance to brackling (1–9)	8	8	9	6	6	6	6	8	8	8	7	8	7	7	9	9	9	8	7	0.7
Disease resistance																				
Mildew (1–9)	9	8	9	9	9	8	9	9	9	6	8	8	[8]	8	9	[9]	8	[9]	[9]	0.8
Yellow rust (1–9)	[4]	[7]	[6]	[7]	[8]	[9]	[7]	[6]	8	4	[9]	8	7	[5]	[8]	[5]	5	7	8	2.0
Brown rust (1–9)	4	[6]	5	[5]	5	[5]	5	5	4	5	[4]	6	5	[4]	5	5	4	5	6	1.3
Rhynchosporium (1–9)	5	6	5	5	6	6	6	6	6	6	8	4	5	7	5	6	6	3	7	1.1
Ramularia (1–9)	8	[7]	7	[6]	6	[7]	7	6	6	6	[6]	6	6	[6]	8	6	8	8	7	2.4

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.

UK = recommended for the UK

Nr = recommended for the North region

W = recommended for the West region

Sp = Fairing is under test for the production of malt for grain distilling

= yield control (for current table). For this table NFC Tipple and Sanette were also yield controls but are no longer listed С *

= variety no longer in trials

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

Spring barley 2016 – Supplementary data

RECOMMENDED		NEW		NEW		NEW			С	С	NEW	С		NEW			*	*	*	
AHDB	RGT Planet	Laureate	KWS Irina	KWS Sassy	Olympus	Origin	Octavia	Sienna	Odyssey	Propino	Fairing	Concerto	Belgravia	Ovation	Scholar	Hacker	Kelim	Waggon	Westminster	Average LSD (5%)
End-use group	Maltir	ng varietie	s											Feed va						
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	Nr	UK	UK	W	UK	UK	UK	
Breeder/UK contact																				
Breeder	RAGT	Syn	KWS	KWS	LimEur	LimEur	LimEur	LimEur	Lim	SyP	Syn	Lim	Lim	LimEur	Syn	Sec	SyP	SyP	Lim	
UK contact	RAGT	Syn	KWS	KWS	Lim	Lim	Lim	Lim	Lim	Syn	Syn	Lim	Lim	Lim	Syn	Agr	Syn	Syn	Lim	
Annual treated yield (% control)																				
2011 treated (7.3 t/ha)	-	-	105	-	-	-	-	-	106	99	-	95	94	-	-	101	104	99	95	3.1
2012 treated (6.6 t/ha)	110	-	108	-	101	-	102	103	101	100	-	98	91	-	104	104	99	99	94	3.2
2013 treated (7.0 t/ha)	107	107	106	106	104	107	104	103	100	105	97	97	[97]	107	[109]	103	102	101	[92]	3.6
2014 treated (7.9 t/ha)	108	105	108	103	107	103	102	104	100	101	100	95	95	107	107	102	96	100	91	2.7
2015 treated (8.4 t/ha)	107	108	105	105	105	103	104	102	103	100	98	97	93	108	105	102	100	98	95	2.3
Malting quality																				
Hot water extract (I deg/kg)	315.2	315.7	315.0	315.9	312.6	315.5	316.6	316.1	314.0	313.9	311.5	316.2	[311.3]	-	-	-	-	-	-	2.0
Status in RL system																				
Year first listed	15	16	14	16	15	16	15	15	12	10	16	09	08	16	15	14	13	05	05	
RL status	P2	P1	-	P1	P2	P1	P2	P2	-	-	P1	-	-	P1	P2	-	*	*	*	

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

UK = recommended for the UK

Nr = recommended for the North region

W = recommended for the West region

Sp = Fairing is under test for the production of malt for grain distilling

C = yield control (for current table). For this table NFC Tipple and Sanette were also yield controls but are no longer listed

- * = variety no longer in trials
- [] = limited data
- LSD = least significant difference
- P1 = first year of recommendation
- P2 = second year of recommendation
- Agr = Agrii (www.agrii.co.uk)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.limagrain.co.uk)
- LimEur = Limagrain Europe SA
- RAGT = RAGT Seeds (www.ragt.co.uk)
- Sec = Secobra, France
- Syn = Syngenta UK Ltd (www.syngenta.co.uk)
- SyP = Syngenta Participants 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 2016 – Candidate varieties

CANDIDATE	Previous/Proposed name	Variety ID	Yield treated (T)	Yield untreated (UT) (% treated control)	Lodging % (UT)	Height (cm)	Maturity (days +/- Concerto) (T)	Brackling % (T)	Mildew (1–9)	Yellow rust (1–9)	Brown rust (1–9)	Rhynchosporium (1–9)	Specific weight (kg/hl)	UK contact
Control varieties														
Odyssey	NSL08-4556-A	2470	101	85	8	76	0	18	9	8	4	6	69.2	Limagrain UK
Propino	NFC 406-119	2336	101	84	2	77	-1	15	6	4	5	6	69.2	Syngenta UK Ltd
NFCTipple	NFC-401-11	1966	97	81	3	70	-1	16	5	6	6	4	69.4	Syngenta UK Ltd
Concerto	NSL 03-5262	2288	96	81	8	80	0	13	8	8	6	4	69.8	Limagrain UK
Sanette	SY 409-226	2572	105	88	4	72	0	14	9	[7]	4	6	68.3	Syngenta UK Ltd
Selected as potential malting va	arieties													
Chanson	AC11/684/22	2841	108	91	[5]	78	[-1]	20	9	[7]	5	5	66.6	Saaten Union UK
LG Opera	LGB12-2616-A	2845	107	90	[6]	73	[-1]	18	9	[9]	5	6	67.9	Limagrain UK
Dioptric	SY413372			Data c	annot be p	ublished as	s variety has	not yet com	npleted Nat	ional List te	sting			Syngenta UK
LG Okapi	LGB12-3064-A			Data c	annot be p	ublished as	s variety has	not yet com	npleted Nat	ional List te	sting			Limagrain UK
Acorn	AC10/697/42	2838	103	90	[2]	81	[+1]	12	9	[9]	5	8	69.0	Saaten Union UK
Mean of controls (t/ha)			8.1	8.1	-	-	-	-	-	-	-	-	-	
Overall mean			-	-	-	76	-	17	-	-	-	-	68.6	
LSD 5%			3.1	4.3	-	7.1	1.1	7.2	-	-	-	-	0.7	
Number of trials			20	11	5	16	7	14	-	-	-	-	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.

T = data from trials treated with fungicide

UT = data from trials without fungicide or PGR [] = limited data

Candidate varieties will be considered for the 2017 AHDB Recommended List.

See the AHDB Recommended List for full data on control varieties (pages 28-30).

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

Lodging % (T) data not presented as there was no data for the candidate varieties.

Spring barley 2016 – Variety comments

Malting varieties

Belgravia

Quality: Recommended for the North region with full IBD approval for malt and grain distilling.

Agronomy: Belgravia has high resistance to mildew but moderate resistance to lodging.

MAGB comment: Fully approved for malt distilling and currently the only variety fully approved for grain distilling.

Concerto

Quality: Fully IBD approved for UK brewing and malt distilling.

Agronomy: This variety has moderate lodging resistance but good 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.

NEW Fairing

Quality: Added to the AHDB Recommended List 2016 as a specific recommendation for its grain distilling potential. **Agronomy:** This variety is a potential alternative to Belgravia for grain distilling. It has produced yields 4% above Belgravia in the North region. This variety is relatively early maturing and has high resistance to mildew and rhynchosporium. Limited data suggest that it has high resistance to yellow rust but it is susceptible to brown rust. **MAGB comment:** Under test by IBD for grain distilling. Growers are advised to speak to merchants before committing to this or other varieties in this position.

KWS Irina

Quality: Fully approved by IBD for brewing. It tends to give a rather low specific weight.

Agronomy: This variety has given very high treated yields with relatively short straw, combined with the highest lodging and brackling resistance scores of all malting varieties on the list. It has high resistance to mildew. MAGB comment: Fully approved for brewing since 2015, growers are advised to speak to their merchants about end markets.

NEW KWS Sassy

Quality: Added to the AHDB Recommended List 2016 as a very high-yielding variety with potential for brewing and malt distilling.

Agronomy: This variety has a very high UK yield with its best relative performance in the North region. It has high resistance to mildew but only moderate resistance to lodging and brackling.

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

NEW Laureate

Quality: Added to the AHDB Recommended List 2016 as a very high-yielding variety with potential for brewing and malt distilling. It tends to give moderate specific weights. **Agronomy:** This variety has performed well in all regions and has the highest treated yields in the North region, where it has out-yielded Concerto by 14%. Laureate has a high untreated yield and has good resistance to brackling. It has high resistance to mildew.

MAGB comment: Under test by IBD for brewing and 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).

New export market for barley

In 2015, work undertaken by the AHDB Cereals & Oilseeds Exports team resulted in the opening up of the Chinese market for barley, when the UK joined the list of only eight countries that have the required protocol agreement in place.

China's barley imports have risen quickly over recent years; China imported 7 million tonnes of barley in 2014/15. With barley production set to increase in the UK, access to this potentially lucrative market could help prevent over-supply in the domestic market and help uphold farm-gate prices.

For more information on the market access and development work carried out by AHDB Cereals & Oilseeds, visit **cereals.ahdb.org.uk/exports**



IBD Approved List

Brewing use

Full approval: Concerto, KWS Irina, Odyssey, Propino Provisional approval 1: Octavia, RGT Planet, Sienna

Malt distilling use

Full approval: Belgravia, Concerto, Odyssey Provisional approval 1: Octavia, Olympus, Sienna

Grain distilling use Full approval: Belgravia Provisional approval 1: Olympus



Spring barley 2016 – Variety comments

Octavia

Quality: A variety with provisional IBD approval for brewing and malt distilling.

Agronomy: Octavia has high resistance to mildew but has moderate lodging and brackling resistance.

MAGB comment: Under test by IBD for brewing and malt distilling, with completion expected spring 2016.

Odyssey

Quality: Fully IBD approved for brewing and malt distilling. **Agronomy:** This variety has moderate lodging resistance but good resistance to brackling. Odyssey has high resistance to mildew and yellow rust but is susceptible to brown rust.

MAGB comment: Fully approved for malt distilling and brewing.

Olympus

Quality: A high-yielding variety with provisional IBD approval for malt and grain distilling.

Agronomy: Olympus has high resistance to mildew and limited data suggest that it also has high resistance to yellow rust. It has produced yields 12% above Belgravia in the North region and if managed for grain distilling, may be a potential alternative to Belgravia in that market. MAGB comment: Under test by IBD for malt and grain distilling, with completion expected spring 2016.

NEW Origin

Quality: Added to the AHDB Recommended List 2016 as a high-yielding variety with potential for brewing and malt distilling. It tends to give moderate specific weights. **Agronomy:** Origin has high resistance to mildew and limited data suggest it has high resistance to yellow rust. **MAGB comment:** Under test by IBD for brewing and malt distilling. Growers are advised to speak to merchants before committing to this or other varieties in this position.

Propino

Quality: Fully IBD approved for brewing. **Agronomy:** Propino has good brackling resistance but is

susceptible to yellow rust.

MAGB comment: Fully approved for brewing, it continues to hold its share of the spring barley market at around 16%.

RGT Planet

Quality: A very high-yielding variety with provisional approval by IBD for brewing.

Agronomy: This variety has given the highest treated UK yields of all varieties on the 2016 Recommended List. RGT Planet also has a high untreated yield and has good resistance to brackling. It has high resistance to mildew and ramularia but is susceptible to brown rust. Limited data suggest it is susceptible to yellow rust.

MAGB comment: Under test by IBD for brewing, with completion expected spring 2016.

Sienna

Quality: A variety with provisional IBD approval for brewing and malt distilling.

Agronomy: This variety has a good specific weight and high resistance to brackling and mildew.

MAGB comment: Under test by IBD for brewing and malt distilling, with completion expected spring 2016.

Feed varieties

Hacker

Quality: A feed variety recommended for the West region. It has a good specific weight.

Agronomy: Hacker has high resistance to lodging, brackling and mildew.

Kelim

Quality: A feed variety.

Agronomy: Kelim has high resistance to brackling, mildew and ramularia but is susceptible to brown rust. It is no longer in RL trials.

NEW Ovation

Quality: Added to the AHDB Recommended List 2016 as a very high-yielding feed variety. Ovation tends to give moderate specific weights.

Agronomy: Ovation has high resistance to mildew and rhynchosporium but limited data suggest it is susceptible to brown rust.

Scholar

Quality: A very high-yielding feed variety. **Agronomy:** Scholar has relatively short straw, combined with high brackling resistance. This variety has high resistance to mildew and ramularia and limited data suggest it also has high resistance to yellow rust.

Waggon

Quality: A feed variety.

Agronomy: A relatively early maturing feed variety with good brackling resistance. It has high resistance to mildew and ramularia but is very susceptible to rhynchosporium. It is no longer in RL trials.

Westminster

Quality: A feed variety.

Agronomy: Westminster is now 15% lower yielding than the highest yielding variety but has remained popular with mixed arable/livestock farmers because of its combination of longer than average straw and good disease resistance. It has high resistance to mildew, yellow rust and rhynchosporium. It is no longer in RL trials.

Winter oats 2016/17

RECOMMENDED	NEW	NEW		С	с						Year 4	Candidates	. nor	Notadded
AHDB	Maestro	RGT Lineout	Gerald	Dalguise	Mascani ~	Fusion \$	Beacon	Grafton	Average LSD (5%)	Griffin	RGT Victorious	Wenlock \$	Peloton	Fergus
Variety type	Husked	varieties				Naked vari	eties			Husked va	rieties		Naked variety	Husked variet
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK		Candidate	Candidate	Candidate	Candidate	Not added to the F
UK yield (% treated control)														
Fungicide-treated (8.4 t/ha)	105	102	100	100	97	75	73	71	5.1	109	108	105	79	103
Grain quality														
Kernel content (%)	77.1	76.3	74.1	76.0	78.0	-	-	-	1.2	75.5	74.0	73.8	-	73.9
Specific weight (kg/hl)	52.1	53.2	53.8	54.7	54.8	64.1	65.5	65.3	1.5	51.1	53.9	50.8	67.2	49.8
Screenings (% through 2.0 mm)	8.9	4.5	3.0	3.2	1.4	38.6	16.8	16.3	4.0	2.4	6.8	4.3	25.7	3.3
Agronomic features														
Resistance to lodging (1–9)	[5]	[7]	5	4	6	8	5	5	1.5	[5]	[2]	[5]	[6]	[6]
Straw length (cm)	109	111	115	117	114	82	114	116	3.4	120	119	100	111	110
Ripening (days +/- Mascani, -ve = earlier)	-1	-2	+2	-1	0	+2	0	-1	1.2	+1	-1	+2	0	0
Disease resistance														
Mildew (1–9)	[5]	[4]	3	3	5	3	8	3	1.6	[5]	[3]	[2]	[6]	[7]
Crown rust (1–9)	4	6	5	4	7	3	5	5	1.4	6	8	6	7	5
Treated yields with and without PGR	(% treated	d control)												
With PGR (8.5 t/ha)	105	102	99	101	97	74	72	69	5.6	110	109	102	76	102
Without PGR (8.4 t/ha)	106	102	102	100	97	76	74	73	5.1	108	108	107	82	104
Annual treated yield (% control)														
2011 (7.8 t/ha)	-	-	107	103	95	80	[77]	72	12.0	-	-	-	-	-
2012 (7.3 t/ha)	[112]	[104]	101	103	94	66	65	73	9.1	-	-	-	-	[101]
2013 (8.6 t/ha)	[90]	[97]	95	96	100	80	76	68	7.4	[110]	[102]	[111]	[79]	[107]
2014 (9.0 t/ha)	107	100	100	98	97	76	72	67	4.9	[108]	[108]	[103]	[80]	102
2015 (9.3 t/ha)	102	101	99	102	98	72	75	75	3.5	106	107	102	79	102
Breeder/UK contact														
Breeder	IBERS	R2n	IBERS	Sen	IBERS	IBERS	IBERS	IBERS		IBERS	R2n	IBERS	IBERS	IBERS
UK contact	Sen	RAGT	Sen	Sen	Sen	Sen	Sen	Sen		Sen	RAGT	Sen	Sen	Sen
Status in RL system														
Year first listed	16	16	93	03	04	10	14	00		-	-	-	-	-
RL status	P1	P1	-	-	-	-	-	-		-	-	-	-	-

Varieties no longer listed: Balado and Rhapsody.

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

UK = recommended for the UK

\$ = Fusion and Wenlock are dwarf varieties

~ = a race of crown rust has been identified which may affect Mascani

but infection levels in trials have been low so far

[] = limited data

C = yield control (for current table).

For this table Balado was also a

yield control but is no longer listed Sen = Senova (www.senova.uk.com)

RAGT = RAGT Seeds (www.ragt.co.uk) R2n = RAGT, France (www.ragt.co.uk)

IBERS = Institute of Biological, Environmental & Rural Sciences P1 = first year of LSD = least significant difference

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



Husked varieties

Dalguise

A husked variety with a high specific weight. It has low lodging resistance, is susceptible to crown rust and very susceptible to mildew.

Gerald

A husked variety. Gerald has been a very successful and popular variety but it is now declining as Mascani's market share continues to grow. It is a relatively late-maturing variety with moderate straw strength. It is very susceptible to mildew.

NEW Maestro

Added to the AHDB Recommended List 2016/17 as a highyielding husked variety. It has given yields around 8% above Mascani and has a high kernel content but tends to give a higher level of screenings than other husked varieties. Limited data suggest it has moderate lodging resistance and it is susceptible to crown rust.

Mascani

A husked variety which is the most popular winter oat variety with both millers and growers. It tends to give moderate yields but this is compensated for by high kernel content and specific weight. Mascani is less susceptible to mildew than Gerald and has the best available winter oat resistance to crown rust, though a race exists to which it could be susceptible.

NEW RGT Lineout

A husked variety, added to the AHDB Recommended List 2016/17. RGT Lineout has given yields around 5% above Mascani and is earlier to mature. Limited data suggest it has above average lodging resistance but is susceptible to mildew.

Naked varieties

Beacon

A huskless (naked) variety with yields and specific weights similar to Grafton. It has moderate lodging resistance but high resistance to mildew.

Fusion

A huskless (naked) variety with short, stiff straw. Fusion has given yields 4% above Grafton, with similar specific weights. Fusion is relatively late maturing and very susceptible to both mildew and crown rust.

Grafton

A huskless (naked) variety with a yield potential 4% below Fusion and a similar specific weight. It has moderate resistance to lodging and is very susceptible to mildew.

Spring oats 2016

RECOMMENDED			С	с	с				Yea	r 4 Candida	tes	Ν	ot added	l to the RL
AHDB	Aspen	Montrose	Canyon	Rozmar	Firth	Conway	Atego	Average LSD (5%)	Yukon	Harmony	WPB Elyann		Symphony	WPB Valdez
Variety type	Husked	d varieties							Husked varie	ties		Huske	ed varieti	es
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK		Candidate	Candidate	Candidate		Notaddec	to the RL
UK yield (% treated control)														
Fungicide-treated (8.2 t/ha)	108	103	102	99	99	98	96	4.2	105	105	103		102	101
Untreated (% of treated control)	91	87	93	82	86	87	77	5.6	[97]	[95]	[91]		86	92
Grain quality														
Kernel content (%)	77.8	76.8	75.9	75.1	78.5	78.1	76.7	1.0	[76.3]	[78.8]	[81.0]		77.2	76.1
Specific weight (kg/hl)	55.2	56.0	55.5	54.0	54.2	54.7	54.0	0.8	[54.6]	[52.7]	[54.7]		53.9	52.2
Screenings (% through 2.0 mm)	1.8	1.2	1.7	3.5	2.9	1.9	4.0	1.5	[2.6]	[1.1]	[2.0]		1.8	4.4
Agronomic features														
Resistance to lodging (1–9)	7	7	7	6	7	8	7	0.9	[8]	[8]	[7]		7	8
Straw length (cm)	108	113	119	118	110	112	106	2.3	[117]	[114]	[109]		123	115
Ripening (days +/- Firth, -ve = earlier)	-1	-1	-1	0	0	0	-2	1.1	-1	-1	-2		0	0
Disease resistance														
Mildew (1–9)	6	4	8	5	7	7	3	0.7	8	8	7		5	7
Crown rust (1–9)	4	3	5	8	5	4	4	1.5	[6]	[3]	[5]		[4]	[8]
Annual treated yield (% control)														
2011 (7.8 t/ha)	[108]	[106]	[105]	[98]	[98]	[102]	[97]	5.6	-	-	-		-	-
2012 (7.7 t/ha)	[113]	[106]	[98]	[100]	[102]	[100]	[100]	10.4	-	-	-		[101]	[99]
2013 (8.1 t/ha)	[108]	[106]	[99]	[100]	[101]	[99]	[98]	5.3	[101]	[101]	[102]		[104]	[105]
2014 (8.6 t/ha)	[102]	[99]	[105]	[96]	[99]	[98]	[95]	6.4	[105]	[108]	[103]		[99]	[99]
2015 (8.5 t/ha)	[108]	[98]	[101]	[102]	[97]	[92]	[92]	6.2	[105]	[101]	[100]		[101]	[100]
Breeder/UK contact														
Breeder	Bau	Lant	Nord	Selg	KWS	IBERS	Selg		Nord	Nord	Wier		Nord	Wier
UK contact	Sen	Sen	SU	Соре	KWS	Sen	Соре		SU	SU	KWS		SU	KWS
Status in RL system														
Year first listed	15	15	11	11	00	14	07		-	-	-		-	-
RL status	P2	P2	-	-	-	-	-		-	-	-		-	-

Varieties no longer listed: Monaco, SW Argyle and Husky. Lennon has also been removed (it was a Described variety). 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)
- P2 = second year of recommendation
- Bau = Bauer, Germany
- Cope = Trevor Cope Seeds (www.trevorcopeseeds.co.uk)
- e) 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)
- 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.

Spring oats 2016 – Variety comments

Husked varieties

Aspen

A very high-yielding husked variety. It has a high specific weight and kernel content and it has given relatively high yields in untreated trials. Aspen is susceptible to crown rust.

Atego

A husked variety that is early to mature. It is very susceptible to mildew and susceptible to crown rust.

Canyon

Canyon has replaced Firth as the most popular spring oat variety. It is a husked variety with a high specific weight. It has high resistance to mildew and has given relatively high yields in untreated trials.

Conway

A husked variety with a high kernel content, Conway has high resistance to lodging and above-average mildew resistance but is susceptible to crown rust.

Firth

A husked variety that remains popular and widely used by millers. It has a high kernel content and above-average resistance to mildew.

Montrose

A high-yielding husked variety with a high specific weight. It is susceptible to mildew and very susceptible to crown rust.

Rozmar

A husked variety with a mean yield that is similar to Firth's but with a lower kernel content. It has high resistance to crown rust.

Winter oilseed rape 2016/17 – East/West region Yield, quality, agronomy and disease resistance

RECOMMENDED	NEW	NEW	NEW		NEW			*		NEW							C*		C*	*	*	*	NEW	C*	*		
AHDB	Elgar	Windozz	Wembley	V316 OL ~	Alizze	Incentive	Arazzo	Charger	SY Harnas	Angus	Picto	Popular	Campus	Fencer	Mentor \$	Harper	PT211	Trinity	PR46W21	Rivalda	Marathon	Avatar	Amalie ¥	DK Cabernet	Quartz	Troy #	Average LSD (5%)
Variety type	Conv	RH	RH	RH	RH	RH	RH	Conv	RH	RH	Conv	RH	Conv	RH	RH	RH	RH	Conv	RH	Conv	RH	RH	Conv	Conv	Conv	RH SD	
Scope of recommendation	E/W	E/W	E/W	UK	UK	UK	E/W	E/W	UK	E/W	E/W	E/W	UK	E/W	Sp	E/W	UK	E/W	E/W	E/W	E/W	E/W	Sp	E/W	E/W	Sp	
Gross output, yield adjusted for oil co	ontent (°	% contro	ol)																								
Fungicide-treated (5.3 t/ha)	111	109	109	108	108	107	106	106	105	105	105	105	105	104	102	102	101	101	101	101	101	100	99	99	97	97	4.0
Seed yield (% control)																											
Fungicide-treated (5.0 t/ha)	110	110	109	107	107	106	108	107	107	106	106	104	104	103	101	102	101	101	100	101	102	100	100	99	97	97	3.8
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	8	8	8	8	8	8	0.2
Stem stiffness (1–9)	9	8	8	8	8	8	8	9	7	8	8	8	8	8	9	8	8	8	8	7	8	7	8	9	7	9	0.4
Shortness of stem (1–9)	6	7	7	6	6	6	6	7	7	6	6	6	6	6	7	6	6	7	6	7	7	7	7	7	7	8	0.2
Earliness of flowering (1–9)	7	8	8	7	8	7	8	8	7	8	6	6	6	7	6	8	6	6	6	7	7	8	6	5	5	6	0.3
Earliness of maturity (1–9)	6	6	5	5	5	5	5	5	5	6	5	5	5	5	5	6	5	5	5	5	5	6	5	5	5	5	0.4
Seed quality (at 9% moisture)																											
Oil content, fungicide-treated (%)	45.3	44.6	45.0	45.7	45.7	45.5	43.5	43.9	44.1	44.7	44.1	45.8	45.3	45.8	45.9	45.0	45.3	45.1	45.6	44.4	43.8	45.1	44.5	44.7	44.8	44.4	0.3
Glucosinolate (µmoles/g of seed)	10.5	10.6	12.3	12.9	13.0	10.1	12.0	10.3	12.3	13.4	11.6	10.4	11.2	9.0	10.2	10.0	10.6	10.0	12.6	12.2	10.9	10.1	13.7	10.1	10.4	12.0	-
Disease resistance																											
Light leaf spot (1–9)	7	5	6	6	7	6	6	4	6	5	6	6	6	5	6	6	6	6	4	5	5	4	6	6	5	6	0.7
Stem canker (1–9)	6	5	5	6	5	4	4	4	5	8	5	4	5	8	3	8	5	6	3	5	3	4	5	6	9	4	1.1

Varieties no longer listed in the East/West region: Compass, Cracker, DK Camelot, DK Expower, DK Imagine CL (Described variety), Fashion and Sesame. 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
- Sp = specific recommendation
- Conv = conventional variety RH = restored hybrid
- SD = semi-dwarf
- * = variety no longer in trial in region

- C = yield control (for current table). For this table Vision was also a yield control but is no longer listed for the East/West region
- [] = limited data
- ~ = HOLL (high oleic, low linolenic) variety
- ¥ = Amalie has a specific recommendation for its resistance to Turnip Yellows Virus (TuYV)
- \$ = Mentor is recommended for growing on land infected with common strains of clubroot; it may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf variety believed to carry the *Bzh* dwarfing gene in the heterozygous state but this has not been verified in RL tests

LSD = least significant difference

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

Winter oilseed rape 2016/17 – East/West region Supplementary data

RECOMMENDED	NEW	NEW	NEW		NEW			*		NEW							C*		C*	*	*	*	NEW	C*	*		
AHDB	Elgar	Windozz	Wembley	V316 OL ~	Alizze	Incentive	Arazzo	Charger	SY Hamas	Angus	Picto	Popular	Campus	Fencer	Mentor \$	Harper	PT211	Trinity	PR46W21	Rivalda	Marathon	Avatar	Amalie ¥	DK Cabernet	Quartz	Troy #	Average LSD (5%)
Variety type	Conv	RH	RH	RH	RH	RH	RH	Conv	RH	RH	Conv	RH	Conv	RH	RH	RH	RH	Conv	RH	Conv	RH	RH	Conv	Conv	Conv	RHSD	
Scope of recommendation	E/W	E/W	E/W	UK	UK	UK	E/W	E/W	UK	E/W	E/W	E/W	UK	E/W	Sp	E/W	UK	E/W	E/W	E/W	E/W	E/W	Sp	E/W	E/W	Sp	
Breeder/UK contact																											
Breeder	Els	R2n	NPZ	Mon	R2n	LSPB	LSPB	Mom	Syn	NPZ	Mom	DSV	Mom	Bay	NPZ	BayR	DP	Lant	DP	KWS	DSV	LSPB	LimEur	DK	KWS	LSPB	
UK contact	Els	RAGT	LSPB	Mon	RAGT	DSV	RAGT	KWS	Syn	LSPB	KWS	DSV	KWS	Bay	LSPB	Bay	DP	Els	DP	KWS	DSV	LSPB	Lim	DK	KWS	DSV	
Annual treated gross output, yield ad	ljusted f	for oil co	ontent (%	% contro	ol)																						
2012 (4.6 t/ha)	-	-	-	[102]	-	[108]	[101]	[114]	[99]	-	[103]	[104]	[98]	[98]	[101]	[96]	102	[97]	100	100	101	97	[100]	98	95	98	7.2
2013 (5.4 t/ha)	103	104	108	102	104	105	103	102	106	105	105	103	105	105	100	103	104	107	100	99	101	101	94	99	103	97	4.8
2014 (5.6 t/ha)	111	110	109	115	111	109	107	106	109	106	107	110	108	105	104	105	101	98	102	102	100	101	-	98	96	96	5.9
2015 (5.8 t/ha)	114	111	108	107	107	108	107	105	103	104	103	102	104	103	102	102	99	102	101	102	101	104	100	102	96	97	5.8
Agronomy																											
Plant height (cm)	149	148	148	157	152	153	150	139	147	155	153	150	155	151	148	150	154	144	151	145	143	147	147	147	139	132	2.7
Harvest method – gross output, yield	adjuste	ed for oi	l conten	t (% co	ntrol)																						
Swathed (5.7 t/ha)	[114]	[115]	[112]	[104]	[116]	[110]	[104]	[108]	[100]	[107]	[99]	[103]	[102]	[103]	[104]	[101]	[101]	[99]	102	[98]	[100]	[99]	[100]	97	[99]	92	7.6
Desiccated (5.2 t/ha)	112	110	109	111	109	107	107	105	106	106	106	106	106	105	103	102	102	102	101	101	101	101	100	99	97	97	3.5
Status in RL system																											
Year first listed	16	16	16	15	16	14	15	14	15	16	15	15	15	15	15	14	13	14	09	13	13	13	16	10	13	13	
RL status	P1	P1	P1	P2	P1	-	P2	*	P2	P1	P2	P2	P2	P2	P2	-	*	-	*	*	*	*	P1	*	*	-	

- UK = recommended for both the East/West and North regions
- E/W = recommended for the East/West region
- Sp = specific recommendation
- RH = restored hybrid Conv = conventional variety
- SD = semi-dwarf
- = variety no longer in trial in region
- C = yield control (for current table). For this table Vision was also a yield control but is no longer listed for the East/West region
- [] = limited data
- P1 = first year of recommendation
- P2 = second year of recommendation

- Mentor is recommended for growing on land infected with common strains of clubroot; it may, however, be infected by some strains and infections have been reported in some fields
- semi-dwarf variety believed to carry the Bzh dwarfing gene in the heterozygous state but this has not been verified in Recommended List tests
- = HOLL (high oleic, low linolenic) variety
- Amalie has a specific recommendation for its resistance to Turnip Yellows Virus (TuYV)
- Bay = Bayer CropScience (www.bayercropscience.co.uk)
- BayR = Bayer CropScience Raps (www.bayercropscience.co.uk)
- DK = DEKALB (www.dekalb.co.uk)

\$

¥

- DP = DuPont Pioneer (www.pioneer.com/uk)
- DSV = DSV United Kingdom (www.dsv-uk.co.uk)
- Els = Elsoms Seeds (www.elsoms.com)

- KWS = KWS UK (www.kws-uk.com)
- Lant = Lantmannen SW Seed BV, Sweden
- Lim = Limagrain UK (www.limagrain.co.uk)
- LimEur = Limagrain Europe SA (www.limagrain.co.uk) LSPB = LS Plant Breeding (www.lspb.eu)
- Mom = Momont, France
- Mon = Monsanto UK Ltd (www.monsanto.com)
- NPZ = NPZ-Lembke, Germany (www.npz.de)
- RAGT = RAGT Seeds (www.ragt.co.uk)
- R2n = RAGT, France (www.ragt.co.uk)
- Syn = Syngenta UK Ltd (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 oilseed rape trials harvest 2016 – East/West region Candidate varieties

CANDIDATE	Previous name	Variety ID	Variety type	Gross output (%)	Treated seed yield (%)	Oil content (%)	Resistance to lodging (1–9)	Stem stiffness (1–9)	Height (cm)	Earliness of flowering (1–9)	Earliness of maturity (1–9)	Resistance to light leaf spot (1–9)	Resistance to stem canker (1–9)	Breeder's claims	UK contact
Control varieties															
DK Cabernet	SW 05015 A	2019	Conv	101	102	45.1	9	8	152	4	6	7	6		DEKALB
PT211	X05W085C	2306	RH	101	100	45.8	8	8	156	5	5	6	5		DuPont Pioneer
PR46W21	MLCH149	1970	RH	99	99	45.7	8	8	156	6	6	4	3		DuPont Pioneer
Vision	X09W007C	1953	Conv	99	100	44.5	8	8	150	5	6	5	6		Senova
Candidate varieties															
Hawai	MH 11J32	2752	RH		Dat	ta cannot be	e published	as variety	has not com	npleted Nat	ional List te	esting.			KWS UK
Aquila	LE13/266	2669	RH	106	106	45.5	8	7	157	6	6	6	8		Limagrain UK
Skye	SWO 3520	2731	Conv	106	106	45.0	9	8	146	6	6	6	6		Elsoms Seeds
Flamingo	MH 08 FL 164	2745	Conv		Dat	ta cannot be	e published	as variety	has not com	npleted Nat	ional List te	esting.			KWS UK
Artic	LEL13/268	2671	Conv	105	103	46.5	9	8	148	4	5	7	7		Limagrain UK
DK Exception	DGC250	2660	RH	104	105	44.6	8	7	162	5	6	6	9		Monsanto UK Ltd
Hasting	MH 11M16	2754	RH	104	104	45.3	8	7	154	3	5	7	8		KWS UK
Harpege	MH 11J17	2704	RH	104	103	45.5	8	8	151	5	6	6	7		KWS UK
Dariot	DMH 294	2720	RH	104	103	45.4	8	7	163	5	6	6	9		DSV UK
SY Florida	RNX3233	2738	RH	104	104	44.8	8	7	158	7	7	6	8		Syngenta UK
DK Exclaim	CWH297	2657	RH	103	103	45.0	8	7	164	4	6	7	8		Monsanto UK Ltd
INV1030	RG21306	2728	RH	102	100	46.8	8	7	156	5	6	7	9		Bayer CropScience
DK Secret	CWH315D	2658	RH SD	101	102	44.7	9	8	124	5	6	8	8		Monsanto UK Ltd
Specialist (Described) var	iety														
Ergo	SLM 1207	2677	RH	97	96	45.7	8	8	156	5	6	5	5	HEAR	LS Plant Breeding
Mean of controls (t/ha)				5.7	5.3	-	-	-	-	-	-	-	-		
Overall mean				-	-	45.2	8.2	7.4	152	5.0	5.9	-	-		
LSD 5%				4.7	4.4	0.4	0.4	0.5	4.6	0.5	0.4	-	-		
Number of trials				14	14	13	9	19	16	19	19	-	-		

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.

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

Conv = conventional open-pollinated variety

RH = restored hybrid

SD = semi-dwarf

HEAR = High Erucic Acid Rape

Candidate varieties will be considered for the 2017/18 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. All data except disease ratings are taken from fungicide-treated trials.

See the AHDB Recommended List for full data on control varieties (pages 38–39).

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

Winter oilseed rape varieties grown in RL trials in 2015 but not added to the AHDB Recommended List – East/West region

	Control va	arieties							
CEREALS & OILSEEDS	PR46W21	PT211	DK Cabernet	Vision	Nikita	Precision	Einstein	V 324 OL ~	Average LSD (5%)
Variety type	RH	RH	Conv	Conv	Conv	RH	RH	RH	
Gross output, yield adjusted for oil content (% control)									
Fungicide-treated (5.3 t/ha)	101	101	99	99	108	107	107	105	4.0
Seed yield (% control)									
Fungicide-treated (5.0 t/ha)	100	101	99	100	106	106	107	103	3.8
Agronomic features									
Resistance to lodging (1–9)	8	8	8	8	8	8	[8]	8	0.2
Stem stiffness (1–9)	8	8	9	8	8	8	8	8	0.4
Shortness of stem (1–9)	6	6	7	7	7	6	7	6	0.2
Earliness of flowering (1–9)	6	6	5	6	7	6	7	6	0.3
Earliness of maturity (1–9)	5	5	5	5	5	5	5	5	0.4
Seed quality (at 9% moisture)									
Oil content, fungicide-treated (%)	45.6	45.3	44.7	43.9	46.0	45.8	45.0	46.0	0.3
Glucosinolate (µmoles/g of seed)	12.6	10.6	10.1	13.8	9.5	9.5	9.9	9.9	-
Disease resistance									
Light leaf spot (1–9)	4	6	6	5	7	6	5	6	0.7
Stem canker (1–9)	3	5	6	5	4	4	4	5	1.1
Harvest method – gross output, yield adjusted for oil content (% cc	ntrol)								
Swathed (5.7 t/ha)	102	[101]	97	100	[108]	[106]	[106]	[102]	7.6
Desiccated (5.2 t/ha)	101	102	99	99	108	108	107	105	3.5

This table should be read in conjunction with the AHDB Recommended List of winter oilseed rape for 2016/17. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance).

Conv = conventional open-pollinated variety ~ = HOLL (high oleic, low linolenic) variety

- RH = restored hybrid
- [] = limited data

LSD = least significant difference

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

Winter oilseed rape 2016/17 – North region Yield, quality, agronomy and disease resistance

RECOMMENDED	NEW			NEW		NEW		NEW		*			C*			NEW	*		Described varie
AHDB	Alizze	SY Harnas	Anastasia	Barbados	Campus	Nikita	V316 OL ~	V324 OL ~	DK Explicit	Incentive	PT234	DK Exentiel	PT211	Mentor \$	Troy #	Amalie ¥	Cracker \$	Average LSD (5%)	DK Imagis CL &
Variety type	RH	RH	Conv	Conv	Conv	Conv	RH	RH	RH	RH	RH	RH	RH	RH	RH SD	Conv	RH		RH
Scope of recommendation	UK	UK	Ν	Ν	UK	Ν	UK	Ν	Ν	UK	Ν	Ν	UK	Sp	Sp	Sp	Sp		Described
Gross output, yield adjusted for oil o	content (%	6 control)																	
Fungicide-treated (5.2 t/ha)	111	111	110	110	110	110	109	109	108	108	107	107	104	103	97	[97]	93	5.6	103
Seed yield (% control)																			
Fungicide-treated (4.8 t/ha)	110	111	110	109	109	108	108	107	107	107	105	106	103	101	98	[98]	94	5.1	103
Agronomic features																			
Resistance to lodging (1–9)	8	8	8	8	8	8	8	8	7	8	8	8	8	8	8	8	8	0.2	8
Stem stiffness (1–9)	8	7	8	8	8	8	8	8	7	8	8	7	8	9	9	8	8	0.5	7
Shortness of stem (1–9)	6	7	7	6	6	7	6	6	5	6	6	6	6	7	8	7	6	0.3	6
Earliness of flowering (1–9)	8	7	6	5	6	7	7	6	6	7	7	7	6	6	6	6	7	0.4	5
Earliness of maturity (1–9)	5	5	5	4	5	5	5	5	5	5	6	6	5	5	5	5	5	0.5	5
Seed quality (at 9% moisture)																			
Oil content, fungicide-treated (%)	45.4	44.0	44.3	44.9	45.2	45.6	45.3	45.9	45.7	45.0	45.3	44.5	45.1	45.9	44.0	44.2	43.9	0.5	44.7
Glucosinolate (µmoles/g of seed)	13.0	12.3	11.1	12.0	11.2	9.5	12.9	9.9	10.4	10.1	10.4	11.4	10.6	10.2	12.0	13.7	10.4	-	11.7
Disease resistance																			
Light leaf spot (1–9)	7	6	6	7	6	7	6	6	6	6	6	6	6	6	6	6	7	0.7	6
Stem canker (1–9)	5	5	5	7	5	4	6	5	9	4	5	8	5	3	4	5	4	1.1	5

Varieties no longer listed in the North region: Artoga, Boheme, Catana, Compass and DK Expower.

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

There may be races of light leaf spot present in Scotland to which varieties with high resistance are susceptible.

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 National List trials data.

- UK = recommended for both the East/West and North regions
- N = recommended for the North region
- Sp = specific recommendation
- RH = restored hybrid
- Conv = conventional open-pollinated variety
- = variety no longer in trial in region
- C = yield control (for current table). For this table DK Cabernet, PR46W21, PT211 and Vision were the yield controls but only PT211 is still listed for the North region
- [] = limited data
- ~ = HOLL (high oleic, low linolenic) variety
- \$ = Cracker and Mentor are recommended for growing on land infected with common strains of clubroot; they may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf variety that is believed to carry the *Bzh* dwarfing gene in the heterozygous state but this has not been verified in RL tests
- ¥ = Amalie has a specific recommendation for its resistance to Turnip Yellows Virus (TuYV)
- & = Clearfield® variety, with tolerance to specific imidazolinone herbicides

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 2016/17 – North region Supplementary data

RECOMMENDED	NEW			NEW		NEW		NEW		×			C*			NEW	*		Described variet
AHDB	Alizze	SY Harnas	Anastasia	Barbados	Campus	Nikita	∨316 OL ~	V324 OL ~	DK Explicit	Incentive	PT234	DK Exentiel	PT211	Mentor \$	Troy #	Amalie ¥	Cracker \$	Average LSD (5%)	DK Imagis CL &
Variety type	RH	RH	Conv	Conv	Conv	Conv	RH	RH	RH	RH	RH	RH	RH	RH	RH SD	Conv	RH		RH
Scope of recommendation	UK	UK	Ν	Ν	UK	Ν	UK	Ν	Ν	UK	Ν	Ν	UK	Sp	Sp	Sp	Sp		Described
Breeder/UK contact																			
Breeder	R2n	Syn	Lim	Mom	Mom	LimEur	Mon	Mon	DK	LSPB	DP	Mon	DP	NPZ	LSPB	LimEur	LSPB		DK
UK contact	RAGT	Syn	Lim	KWS	KWS	Lim	Mon	Mon	DK	DSV	DP	DK	DP	LSPB	DSV	Lim	LSPB		DK
Annual treated gross output, yield a	djusted fo	or oil cont	ent (% cor	ntrol)															
2012 (4.3 t/ha)	-	[111]	[107]	-	[106]	-	[108]	-	[104]	[107]	[110]	[109]	[102]	[104]	[102]	[89]	[95]	15.9	[109]
2013 (5.1 t/ha)	[107]	[105]	[112]	[113]	[99]	[108]	[100]	[108]	[106]	[112]	[102]	[104]	[107]	[97]	[99]	[91]	[97]	12.4	[101]
2014 (5.4 t/ha)	[116]	[118]	[114]	[111]	[116]	[113]	[116]	[109]	[115]	[110]	[110]	[109]	[104]	[101]	96	-	[91]	9.6	[108]
2015 (6.0 t/ha)	[107]	[104]	[107]	[105]	[107]	[105]	[106]	[106]	[102]	[104]	[102]	[102]	[103]	[104]	[95]	[98]	[90]	6.3	[96]
Agronomy																			
Plant height (cm)	152	147	147	152	155	146	157	155	162	153	151	153	154	148	132	147	153	3.0	158
Harvest method – gross output, yiel	d adjuste	d for oil co	ontent (%	control)															
Swathed (5.3 t/ha)	[113]	[115]	[113]	[113]	[113]	[112]	[113]	[108]	[113]	[115]	[108]	[113]	[106]	[102]	[99]	[93]	[96]	9.4	[110]
Desiccated (5.0 t/ha)	111	110	109	109	110	109	109	110	107	106	106	104	103	103	97	101	92	6.3	100
Status in RL system																			
Year first listed	16	15	13	16	15	16	15	16	15	14	15	15	13	15	13	16	11		-
RL status	P1	P2	-	P1	P2	P1	P2	P1	P2	*	P2	P2	*	P2	-	P1	*		-

С = yield control (for current table). For this table DK Cabernet, PR46W21, PT211 and Vision were the yield controls but only PT211 is still listed for the North region UK = recommended for both the East/West and North regions

- Ν = recommended for the North region
- Sp = specific recommendation
- RH = restored hybrid
- Conv = conventional open-pollinated variety
- = variety no longer in trial in region
- [] = limited data
- P1 = first year of recommendation
- P2 = second year of recommendation

- \$ = Cracker and Mentor are recommended for growing on land infected with common strains of clubroot; they may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf variety that is believed to carry the Bzh dwarfing gene in the heterozygous state but this has not been verified in RL tests
- & = Clearfield® variety, with tolerance to specific imidazolinone herbicides
- ~ = HOLL (high oleic, low linolenic) variety
- ¥ = Amalie has a specific recommendation for its resistance to Turnip Yellows Virus (TuYV)

- = DEKALB (www.dekalb.co.uk)
- = DuPont Pioneer (www.pioneer.com/uk)
- DSV = DSV United Kingdom (www.dsv-uk.co.uk)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.limagrain.co.uk)
- LimEur = Limagrain Europe SA (www.limagrain.co.uk)
- LSPB = LS Plant Breeding (www.lspb.eu)
- Mom = Momont, France

DK

DP

- Mon = Monsanto UK Ltd (www.monsanto.com)
- NPZ = NPZ-Lembke, Germany (www.npz.de)
- R2n = RAGT, France (www.ragt.co.uk) RAGT = RAGT Seeds (www.ragt.co.uk)
- Syn = Syngenta UK Ltd (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 oilseed rape trials harvest 2016 - North region Candidate varieties

CANDIDATE	revious name	ariety ID	ariety type	ross output (%)	eated seed yield (%	il content (%)	esistance to lodging –9)	tem stiffness (1–9)	eight (cm)	arliness of owering (1–9)	arliness of maturity –9)	esistance to light af spot (1–9)	esistance to stem anker (1–9)	reeder's claims	K contact
	Ē	>	>	G		0	щ.С.	Ś	Ĩ	щĘ	ШС	ě e	Ĕö	ā	D
Control Varieties	X00\M/007C	2200	DU	101	101	44.0	0	0	150		-	0			DuDent Dieneer
PIZII Vicios	X09VV007C	2306	KH Curr	101	101	44.0	8	8	150	5	0	<u>б</u>	5		DuPont Ploneer
Vision	SVV 05015 A	1953	Conv	100	101	43.8	8	8	150	5	6	5	6		Senova
DK Cabernet	MLCH149	2019	Conv	100	101	44.0	9	8	152	4	6	7	6		DEKALB
PR46W21	X05W085C	1970	RH	98	97	45.2	8	8	156	6	6	4	3		DuPont Pioneer
Candidate varieties															
INV1030	RG21306	2728	RH	109	107	46.2	8	7	156	5	6	7	9		Bayer CropScience
Artic	LEL13/268	2671	Conv	108	106	45.9	9	8	148	4	5	7	7		Limagrain UK
Flamingo	MH 08 FL 164	2745	Conv		Data	cannot be p	published as	s variety ha	as not comp	leted Natio	nal List tes	ting.			KWS UK
Arabica	LEL13/270	2673	Conv	106	105	45.5	8	8	150	5	5	7	7		Limagrain UK
DK Exclaim	CWH297	2657	RH	105	105	44.1	8	7	164	4	6	7	8		Monsanto UK Ltd
DK Exalte	DGC220	2659	RH	105	106	44.5	8	7	154	6	6	8	8		Monsanto UK Ltd
DK Secret	CWH315D	2658	RH SD	96	97	43.8	9	8	124	5	6	8	8		Monsanto UK Ltd
Mean of controls (t/ha)				5.7	5.3	-	-	-	-	-	-	-	-		
Overall mean				-	-	44.5	8.2	7.4	152	5.0	5.9	-	-		
LSD 5%				7.1	8.9	0.6	0.4	0.5	4.6	0.5	0.4	-	-		
Number of trials				5	5	4	9	19	16	19	19	-	-		

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.

Conv = conventional open-pollinated variety RH = restored hybrid

= semi-dwarf

SD

Candidate varieties will be considered for the 2017/18 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.

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

See the AHDB Recommended List for full data on control varieties (pages 42-43).

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



Winter oilseed rape varieties grown in RL trials in 2015 but not added to the AHDB Recommended List – North region

	Control va	rieties			Other variet				
CEREALS & OILSEEDS	DK Cabernet	PR46W21	PT211	Vision	Precision	Gardenia	Pennine	SY Medal	Average LSD (5%)
Variety type	Conv	RH	RH	Conv	RH	Conv	Conv	RH	
Gross output, yield adjusted for oil content (% control)									
Fungicide-treated (5.2 t/ha)	99	99	104	99	107	106	105	105	5.6
Seed yield (% control)									
Fungicide-treated (4.8 t/ha)	99	98	103	100	106	105	104	106	5.1
Agronomic features									
Resistance to lodging (1–9)	8	8	8	8	8	8	8	8	0.2
Stem stiffness (1–9)	9	8	8	8	8	8	8	7	0.5
Shortness of stem (1–9)	7	6	6	7	6	7	7	7	0.3
Earliness of flowering (1–9)	5	6	6	6	6	5	7	6	0.4
Earliness of maturity (1–9)	5	5	5	5	5	6	6	6	0.5
Seed quality (at 9% moisture)									
Oil content, fungicide-treated (%)	44.2	45.1	45.1	43.5	45.4	45.4	45.4	44.0	0.5
Glucosinolate (µmoles/g of seed)	10.1	12.6	10.6	13.8	9.5	11.1	11.8	12.1	-
Disease resistance									
Light leaf spot (1–9)	6	4	6	5	6	6	6	6	0.7
Stem canker (1–9)	6	3	5	5	4	5	4	5	1.1
Harvest method – gross output, yield adjusted for oil content (% c	control)								
Swathed (5.3 t/ha)	100	97	[106]	97	[109]	[108]	[110]	[109]	9.4
Desiccated (5.0 t/ha)	98	99	103	100	107	106	103	103	6.3

This table should be read in conjunction with the AHDB Recommended List of winter oilseed rape for 2016/17. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance).

Conv = conventional open-pollinated variety

RH = restored hybrid

[] = limited data

LSD = least significant difference

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

Winter oilseed rape 2016/17 – Variety comments

Varieties

NEW Alizze

A restored hybrid variety added to the 2016/17 Recommended Lists for both the East/West and North regions. This relatively early flowering variety has given very high treated gross outputs and has given the highest gross output on the North region List. It is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. Alizze has high resistance to light leaf spot.

NEW Amalie

A conventional, open-pollinated variety added to the 2016/17 Recommended Lists with a specific UK recommendation for resistance to Turnip Yellows Virus (TuYV). It is stiff stemmed and has high resistance to lodging.

Anastasia

A conventional, open-pollinated variety recommended for the North region. It has given a very high treated gross output in the North, is stiff stemmed and has high resistance to lodging.

NEW Angus

A restored hybrid variety added to the 2016/17 Recommended List for the East/West region. It has given a high treated gross output in the East/West. It is stiff stemmed and limited data suggest it has high resistance to lodging when grown at the hybrid seed rate. It is a relatively early flowering and relatively early maturing variety. Angus has high resistance to stem canker.

Arazzo

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 is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. Arazzo is susceptible to stem canker.

Avatar

A restored hybrid variety recommended for the East/West region. It has high resistance to lodging when grown at the hybrid seed rate. Avatar is a relatively early flowering and relatively early maturing variety. It is susceptible to both stem canker and light leaf spot. It is no longer in RL trials.

NEW Barbados

A conventional, open-pollinated variety with a very high treated gross output, added to the 2016/17 Recommended List for the North region. It has given a very high treated gross output in the North and is very stiff stemmed, with high resistance to lodging. It has high resistance to light leaf spot and stem canker. It is a relatively late-maturing variety.

Campus

A conventional, open-pollinated variety recommended for both the East/West and North regions. It has given a high treated gross output in the East/West and a very high treated gross output in the North. Campus is stiff stemmed and has high resistance to lodging.

Cracker

This restored hybrid variety has a specific recommendation for the North region for its resistance to the common strains of clubroot, although it may be susceptible to strains found in some fields. It is stiff stemmed, with high lodging resistance when grown at the hybrid seed rate. Cracker has high light leaf spot resistance but high levels of the disease have been observed at some sites in northern Scotland and further tests are being undertaken. It is susceptible to stem canker.

Charger

A conventional, open-pollinated variety recommended for the East/West region. Relatively early flowering, it has given a high treated gross output in the East/West, is very stiff stemmed and has high resistance to lodging. It is susceptible to stem canker and light leaf spot. It is no longer in RL trials.

DK Cabernet

A conventional, open-pollinated variety recommended for the East/West region. It is very stiff stemmed and has high resistance to lodging. It is no longer in RL trials.

DK Exentiel

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

DK Explicit

A restored hybrid variety recommended for the North region. It is a relatively tall variety that has given a very high treated gross output in the North. It has very high resistance to stem canker.

NEW Elgar

A conventional, open-pollinated variety added to the 2016/17 Recommended List for the East/West region. It has given very high treated gross outputs and has given the highest gross output on the East/West region List. Elgar is very stiff stemmed and limited data suggest that it has high resistance to lodging. It is a relatively early maturing variety and has high resistance to light leaf spot.

Fencer

A restored hybrid variety recommended for the East/West region. It is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It has high resistance to stem canker.

Harper

A restored hybrid recommended for the East/West region. It has a high treated gross output in the East/West and has high resistance to lodging when grown at the hybrid seed rate. It is a relatively early flowering and early maturing variety. Harper has high stem canker resistance.

Incentive

A restored hybrid recommended for both the East/West and North regions. It has given a high treated gross output in the East/West and a very high treated gross output in the North. Incentive is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is susceptible to stem canker. It is no longer in RL trials in the North region.

Winter oilseed rape 2016/17 – Variety comments

Marathon

A restored hybrid recommended for the East/West region. It is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is very susceptible to stem canker. It is no longer in RL trials.

Mentor

A restored hybrid variety with a specific UK

recommendation for its resistance to the common strains of clubroot, although it may be susceptible to strains found in some fields. It is very stiff stemmed, with high lodging resistance when grown at the hybrid seed rate. It is very susceptible to stem canker.

NEW Nikita

A conventional, open-pollinated variety added to the 2016/17 Recommended List for the North region. It has given a very high treated gross output in the North and is very stiff stemmed, with high resistance to lodging. It has high resistance to light leaf spot but is susceptible to stem canker.

Picto

A conventional, open-pollinated variety recommended for the East/West region. It has given a high treated gross output in the East/West. It is stiff stemmed and has high resistance to lodging.

Popular

A restored hybrid variety recommended for the East/West region. It combines a high treated gross output in the East/West with good stem stiffness and high resistance to lodging. It is susceptible to stem canker.

PR46W21

A restored hybrid variety recommended for the East/West region. It is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is very susceptible to stem canker and susceptible to light leaf spot. It is no longer in RL trials.

PT211

A restored hybrid variety recommended for both the East/West and North regions. It is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is no longer in RL trials.

PT234

A restored hybrid variety recommended for the North region. This variety has given a high treated gross output in the North. It is a stiff-stemmed variety with high lodging resistance when grown at the hybrid seed rate. PT234 is a relatively early maturing variety.

Quartz

A conventional, open-pollinated variety recommended for the East/West region. It has high resistance to lodging and has very high resistance to stem canker. It is no longer in RL trials.

Rivalda

A conventional, open-pollinated variety recommended for the East/West region. It has high resistance to lodging. It is no longer in RL trials.

SY Harnas

A restored hybrid variety recommended for both the East/West and North regions. It has given a high treated gross output in the East/West and a very high treated gross output in the North. SY Harnas has high resistance to lodging when grown at the hybrid seed rate.

Trinity

A conventional, open-pollinated variety recommended for the East/West region. It is stiff-stemmed and has high resistance to lodging.

Troy

This variety has a specific recommendation for both the East/West and North regions as a restored hybrid, semidwarf variety (believed to carry the *Bzh* dwarfing gene in the heterozygous state). It is short and very stiff stemmed and has high lodging resistance but is susceptible to stem canker.

V316 OL

A restored hybrid HOLL (high oleic, low linolenic) variety recommended for both the East/West and North regions. Last year, V316 OL was the first high quality food grade oil variety to make the List on yield and agronomic performance. It has given very high treated gross outputs in both regions. It is a stiff-stemmed variety with high lodging resistance when grown at the hybrid seed rate.

NEW V324 OL

HOLL

HOLL

A restored hybrid HOLL (high oleic, low linolenic) variety added to the 2016/17 Recommended List for the North region. It has given very high treated gross outputs in the North. It is a stiff-stemmed variety with high lodging resistance when grown at the hybrid seed rate.

NEW Wembley

A restored hybrid variety added to the 2016/17 Recommended List for the East/West region. This relatively early flowering variety has given a very high treated gross output in the East/West. It is stiff stemmed and limited data suggest it has high resistance to lodging when grown at the hybrid seed rate.

NEW Windozz

A restored hybrid variety added to the 2016/17 Recommended List for the East/West region. It has given a very high treated gross output in the East/West. It is stiff stemmed and limited data suggest it has high resistance to lodging when grown at the hybrid seed rate. It is a relatively early flowering and relatively early maturing variety.

Described variety

DK Imagis CL

This variety, which is described for the North region, 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.

http://www.agricentre.basf.co.uk/agroportal/uk/en/crop_solutions/cereals_6/clearfield_1/clearfield_startpage.html

Spring oilseed rape Descriptive List 2016

DESCRIBED					с		*	с	*	*	*	*		Ye	ear 3 Candida	ates
AHDB	Mirakel	Dodger	Doktrin	Builder	Makro	Simba	Delight	Tamarin	Belinda	Larissa	Colossus	James	Average LSD (5%)	Medicus	Flower	Sunder
Variety type	RH	RH	RH	RH	RH	RH	RH	Conv	RH	Conv	Conv	Conv		RH	RH	RH
Gross output, yield adjusted for oil	content (%	control)														
UK without fungicide (3.0 t/ha)	[106]	[106]	[105]	[105]	102	[101]	99	98	97	92	91	91	6.3	[110]	[103]	[101]
Number of trials	7	10	10	7	15	7	16	15	15	12	13	12		6	5	6
Seed yield (% control)																
UK without fungicide (2.8 t/ha)	[106]	[105]	[105]	[103]	101	[102]	99	99	98	93	92	91	6.0	[109]	[99]	[99]
Seed quality (at 9% moisture)																
Oil content (%)	[44.4]	[44.9]	[44.1]	[45.0]	44.8	[43.9]	44.2	43.3	43.3	43.2	43.6	44.4	0.6	[44.8]	[46.7]	[45.5]
Glucosinolate content (µmoles/g)	10.0	15.2	9.7	13.8	14.7	13.3	14.7	16.1	14.5	13.4	12.8	14.8	-	8.2	10.6	10.6
Agronomic features																
Standing ability (1–9)	-	-	-	-	[8]	-	[8]	[8]	[8]	[8]	[9]	[9]	0.6	-	-	-
Shortness of stem (1–9)	6	6	7	6	6	7	7	7	7	7	6	7	0.3	[6]	[7]	[7]
Earliness of flowering (1–9)	[7]	7	7	[8]	5	[5]	8	7	8	6	5	6	0.9	[7]	[7]	[7]
Earliness of maturity (1–9)	[6]	[5]	[5]	[6]	2	[6]	6	7	7	6	3	6	2.2	[4]	[7]	[5]
Annual gross output, yield adjuste	d for oil con	tent (% contro	ol)													
2010 (2.9 t/ha)	-	-	-	-	[101]	-	[94]	[100]	[90]	[91]	[91]	[90]	13.2	-	-	-
2011 (2.7 t/ha)	-	[109]	[110]	-	[102]	-	[100]	[98]	[101]	[98]	[89]	[93]	11.9	-	-	-
2012 (two trials only)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2013 (3.0 t/ha)	[102]	[109]	[107]	[108]	[101]	[103]	[101]	[99]	[94]	[87]	[94]	[91]	8.8	[107]	[103]	[103]
2014 (3.1 t/ha)	[111]	[105]	[103]	[100]	[104]	[100]	[105]	[96]	[103]	-	-	-	12.1	[113]	[104]	[101]
2015 (no data)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Breeder/UK contact																
Breeder	NPZ	Bay	NPZ	Bay	NPZ	Lant	BayR	Lant	BayR	BayR	UG	UG		Lemb	Bay	Bay
UK contact	DSV	Bay	DSV	Bay	DSV	Sen	Bay	Sen	Bay	Bay	JTSD	JTSD		DSV	Bay	Bay
Status in DL system																
Year first listed	15	14	14	15	12	15	09	10	10	09	10	11				
DL status	P1	P2	P2	P1	-	P1	*	-	*	*	*	*				

On the 1–9 scales, 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

- Conv = conventional open-
- pollinated variety
- [] = limited data
- P2 = second year of listing * = variety no longer in trials
- C = yield control (for current table)

P1 = first year of listing

- Bay = Bayer CropScience (www.bayercropscience.co.uk)
- BayR = Bayer CropScience Raps (www.bayercropscience.co.uk)
- DSV = DSV United Kingdom (www.dsv-uk.co.uk) JTSD = John Turner Seed Developments (www.jtsd.co.uk)
- Lant = Lantmannen SW Seed BV, Sweden

- Lemb = Lembke, Germany
- NPZ = NPZ-Lembke, Germany (www.npz.de)
- Sen = Senova (www.senova.uk.com)
- UG = University of Guelph, Canada

LSD = least significant difference

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

Spring linseed Descriptive List 2016

DESCRIBED																		
	С	С							С							*	*	
AHDB	ų	man	iton	val	ulus	nix	<u>.</u>	ler		.5	quise	mma	s	less	galin	sna	ent	age (5%)
	Julie	Bats	Brigh	Festi	Cum	Phoe	Pilgn	Bow	Aries	Kaol	Marc	GK E	Altes	Duch	Ome	Abac	Serp	Aver
Seed colour	В	В	В	В	В	В	В	В	В	В	В	В	В	В	Y	В	В	
Seed yield as % control																		
Without fungicide, UK (1.8 t/ha)	109	103	101	100	100	99	98	98	97	97	96	96	96	95	95	94	92	10.9
Number of trials	17	19	19	16	14	14	14	19	19	19	16	19	19	19	14	18	19	
Seed quality (at 9% moisture)																		
Oil content of seed (%)	42.5	41.2	41.0	43.3	41.2	41.0	41.2	41.4	41.7	42.2	41.3	40.2	39.8	40.6	44.1	40.8	41.6	0.6
Agronomic features																		
Plant height (cm)	58	58	58	56	62	60	61	54	56	54	48	50	48	51	54	55	56	2.5
Earliness of flowering (1–9)	4	6	3	4	4	5	3	4	4	4	8	7	7	7	6	5	3	0.9
Earliness of maturity (1–9)	3	6	5	6	5	6	4	5	4	5	7	7	8	7	5	7	4	1.3
Annual seed yield (% control)																		
2010 (1.6 t/ha)	[117]	105	98	98	-	-	-	99	95	100	102	105	99	102	-	[99]	92	9.3
2011 (2.0 t/ha)	[118]	[101]	[100]	[97]	[93]	[100]	[95]	[92]	[99]	[88]	[88]	[88]	[95]	[82]	[88]	[90]	[92]	11.2
2012 (1.9 t/ha)	[88]	[101]	[111]	[103]	[100]	[105]	[96]	[104]	[99]	[109]	-	[92]	[105]	[107]	[95]	[97]	[100]	9.7
2013 (1.8 t/ha)	113	106	100	104	103	96	104	97	94	100	100	102	94	101	98	93	94	7.1
2014#	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2015 (1.8 t/ha)	[110]	[103]	[96]	-	[100]	[94]	[95]	[101]	[97]	[85]	[92]	[93]	[84]	[84]	[97]	[89]	[82]	13.9
Breeder/UK contact																		
Breeder	GKI	Bilt	Bilt	LaS	JTSD	Pars	JTSD	Bilt	Lim	LaS	GIE	GKI	GIE	GIE	TdL	JTSD	JTSD	
UK contact	Agr	Els	Els	Dalt	JTSD	JTSD	JTSD	Els	Lim	Dalt	PC	Agr	PC	PC	PC	JTSD	JTSD	
Status in DL system																		
Year first listed	01	12	11	12	14	15	14	13	09	09	14	09	09	12	14	06	13	
DL status	-	-	-	-	P2	P2	P2	-	-	-	P2	-	-	-	P2	×	×	

Varieties no longer listed: Baladin, Birdseye and Zenith.

On the 1–9 scales, 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.

- [] = limited data
- * = variety no longer in trials
- C = yield control (for current table)
- # = there were no yield results for 2014 due to trial failure
- P2 = second year of listing
- B = brown
- Y = yellow

- Agr = Agrii (www.agrii.co.uk)
- Bilt = van de Bilt, Netherlands
- Dalt = Dalton Seeds (www.dalmark.co.uk)
- Els = Elsoms Seeds (www.elsoms.com)
- GIE = GIE Linea, France
- GKI = GK Kht, Hungary

- JTSD = John Turner Seed Developments (www.jtsd.co.uk)
- LaS = Laboulet Semences, France
- Lim = Limagrain UK (www.limagrain.co.uk)
- Pars = Parsons Seeds Ltd
- PC = Premium Crops (www.premiumcrops.com)
- 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 2016/17

DESCRIBED			NEW	NEW	NEW	с		
AHDB	KWS Fido	Tradiro	Adverdo	Kereon	Cyrkon	Agostino	Tribeca	Average LSD (5%)
Grain yield (% treated control)								
Fungicide-treated (9.3 t/ha)	109	107	[103]	[102]	102	100	99	6.8
Number of trials	9	8	6	6	8	11	11	
Agronomic features								
Lodging (%)	[2]	[3]	-	-	-	[0]	-	11.8
Straw length (cm)	110	101	[100]	[109]	93	98	117	4.2
Ripening (days +/- Benetto, -ve = earlier)	[0]	[0]	[+1]	[-1]	[0]	[0]	[+1]	2.1
Grain quality								
Specific weight (kg/hl)	75.1	70.2	[72.5]	[73.4]	72.5	75.0	71.9	1.3
Protein content (%)	10.6	10.6	[10.2]	[10.5]	10.7	11.3	10.8	0.4
Breeder/UK contact								
Breeder	Lant	Lant	Lant	Desp	Dank	Lant	Desp	
UK contact	Sen	Sen	Sen	Els	Dalt	Sen	Els	
Status in DL system								
Year first listed	14	15	16	16	16	11	12	
DL status	-	P2	P1	P1	P1	-	-	

Varieties no longer listed: Benetto, Grenado, Toledo and Tulus.

For this table, Benetto was one of the two yield controls but is no longer on the Descriptive List. The data in this table are provided for information only and do not constitute a recommendation.

- [] = limited data
- P1 = first year of listing
- P2 = second year of listing C = yield control (for current table)
- Dank = Danko, Poland Desp = Maison Florimund Desprez, France Els = Elsoms Seeds (www.elsoms.com) Lant = Lantmannen SW seed BV, Sweden Sen = Senova (www.senova.uk.com)

Dalt = Dalton Seeds (www.dalmark.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 rye Descriptive List 2016/17

DESCRIBED	NEW	С	NEW			Yea	ar 3 Candida	tes	
AHDB	SU Phoenix	SU Mephisto	Inspector	Average LSD (5%)	SU Performer	SU Forsetti	SU Drive	Tur	Dukato
Variety type	Hybrid	Hybrid	Conv		Hybrid	Hybrid	Hybrid	Hybrid	Conv
Grain yield as % treated control									
Fungicide-treated (9.4 t/ha)	100	100	93	5.0	[109]	[106]	[103]	[100]	[91]
Number of trials	7	9	7		5	5	5	5	5
Agronomic features									
Lodging (%)	[6]	[10]	[20]	-	[15]	[43]	[8]	[3]	[84]
Straw length (cm)	138	137	145	7.4	[135]	[137]	[135]	[133]	[145]
Ripening (days +/- SU Mephisto, -ve = earlier)	[0]	[0]	[0]	2.4	[-1]	[-1]	[0]	[+1]	[-1]
Grain quality									
Protein content (%)	10.0	9.9	10.2	0.4	[9.7]	[9.6]	[9.7]	[9.8]	[10.2]
Hagberg Falling Number	220	209	223	22.3	[237]	[232]	[200]	[198]	[208]
Specific weight (kg/hl)	77.6	76.7	77.5	0.9	[77.4]	[77.8]	[76.9]	[74.8]	[77.2]
Breeder/UK contact									
Breeder	Hybro	Hybro	PHP		Hybro	Hybro	Hybro	Ros	Hybro
UK contact	SU	SU	SU		SU	SU	SU	Sen	SU
Status in DL system									
Year first listed	16	15	16						
DL status	P1	-	P1						

Variety no longer listed: Capitan.

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

[] = limited data

- Conv = conventional variety
- C = yield control (for current table) Ros = Hodowlla Roslin Smolice, Poland
- P1 = first year of listing
- Sen = Senova (www.senova.uk.com)

PHP = P.H.Petersen, Germany

Hybro = Hybro, Germany

SU = 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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nab

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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 and APHA for the use of these data.



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Committee members and growers

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