

# AHDB Recommended Lists for cereals and oilseeds 2023/24

## Summer edition



Produced in partnership with:



# Using the AHDB Recommended Lists (RL)

This booklet contains tables for AHDB recommended and described varieties, and lists of candidate varieties. Use the guidance in this section to interpret the data within the tables. The summer edition features extra information on quality and markets. It also includes variety comments and, where available, parentage information.

For further information on the trialling and recommendation system, including the basis on which varieties are recommended and individual trial results, visit [ahdb.org.uk/rl](http://ahdb.org.uk/rl)



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## Type of list

### Recommended lists

Recommended lists present data from many trials. Recommended varieties are considered to have the potential to provide a consistent economic benefit to the UK cereals or oilseeds industry.

### Descriptive lists

Descriptive lists show trial data for spring oilseed rape, spring linseed, winter triticale and winter rye. The data shown is presented for varieties for which seed is likely to be available. Data on described varieties is more limited and care should be taken when interpreting differences between varieties. A place on the descriptive list does not constitute a recommendation.

### Candidate lists

Current candidate varieties are given, along with their breeder or UK contact, on pages following the main RL tables. Candidate varieties are usually in their first or second year of RL trials, having completed at least two years of National List trials. If data is sufficient, they are considered for recommendation in the autumn.

Candidate lists with information on yields and agronomic features can be found on the AHDB website ([ahdb.org.uk/rl](http://ahdb.org.uk/rl)) once varieties have achieved National Listing. This information is also available on the RL app.

### Regional lists for winter oilseed rape

Winter oilseed rape varieties are presented on a single UK list. Regional recommendations are also maintained, with varieties ordered according to the scope of recommendation. Varieties that are suitable for both the East/West and North regions have a UK recommendation. When choosing a variety, consider those recommended for the UK and your region. Divisions between regions are not absolute and growers are advised to consider which region is most appropriate for their conditions (Figure 1).

### Varieties not added to the RL

For information on varieties grown in RL trials in 2022 but not added to the RL, visit [ahdb.org.uk/rl](http://ahdb.org.uk/rl)

## Status in the lists

### Scope of recommendation

This may refer to a UK or regional recommendation, or a recommendation for a specific end use or agronomic feature.

### Varieties no longer listed

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

### Clubroot-resistant oilseed rape varieties

The pathogen that causes clubroot has several strains. The relative proportion of these strains varies from location to location. Clubroot-resistant varieties are resistant to common clubroot strains and are recommended for growing on infected land. Some strains of clubroot may overcome the resistance in these varieties. Growing clubroot-resistant varieties repeatedly will select for these more virulent strains, potentially causing the resistance genes to become ineffective. These varieties should only be used in line with AHDB clubroot management guidelines, to reduce risk of resistance breakdown ([ahdb.org.uk/clubroot](http://ahdb.org.uk/clubroot)).

### Described varieties for the major crops

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

## Yield and quality

### Yields

Yields are calculated as a percentage of the controls. Established varieties are selected as controls and the average 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 having a yield of 102%.

### Regional yields

Regional yields are calculated for winter wheat, winter barley, spring barley and winter oilseed rape. Regional yields are based on fewer trials and should be treated

more cautiously. Divisions between regions are not absolute and growers are advised to consider which region is most appropriate for their conditions (Figure 1).

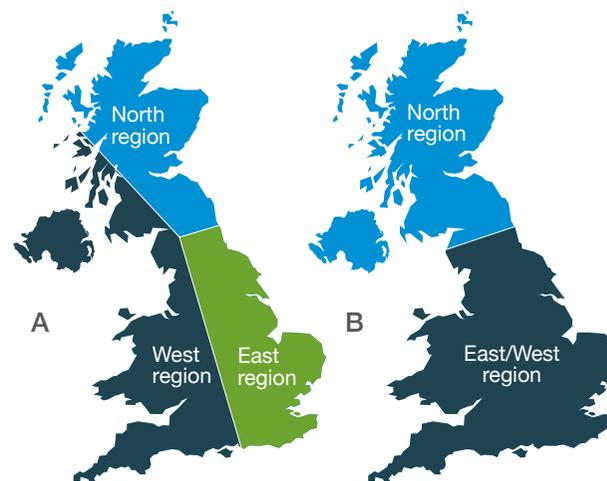


Figure 1. Regions used for calculation of regional yields  
A – Winter wheat, winter barley and spring barley regions  
B – Winter oilseed rape regions

### Annual yields

Collectively, annual yields provide a breakdown of variety performance in different seasons. Consistent yields over several years may indicate that a variety offers a level of yield stability.

### Oilseed rape gross output

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

### Oat quality

Grain quality characteristics presented for oats include kernel content, specific weight and per cent screenings through a 2 mm sieve (or 1.8 mm sieve in huskless (naked) oat varieties). High kernel content, high specific weight and low per cent screenings are preferred for milling.

### Linseed ALA content

The alpha-linolenic acid (ALA) content is reported for linseed. Premiums may be available for varieties with high ALA oil content.

## Agronomic traits

### Lodging

Lodging scores are calculated for varieties grown with or without plant growth regulator (PGR) application. A high number on the 1–9 scale, or a low percentage, indicates high resistance to lodging.

### Brackling

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

### Ripening

In cereal crops, 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 are from RL trial data, but differences can be far greater on farm, particularly where growing conditions are more marginal.

### Flowering and maturity in oilseeds

In oilseed crops, flowering and maturity are scored on a 1–9 scale, where 1 is late and 9 is early. Flowering is on a relative scale, with the earliest flowering variety scoring 9. Maturity is based on the degree of canopy senescence and is recorded just prior to swathing or desiccation.

### Sprouting

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

## Basis of pest and disease resistance

Varietal resistance to pests and diseases forms the foundation of integrated pest management (IPM). Broadly speaking, there are two kinds of resistance, based on ‘minor’ and ‘major’ genes. Individually, minor genes give a low level of resistance but can be combined to give moderate to high resistance. This type of resistance is usually durable. Alone, major genes can give a high level of resistance but may be defeated by specific pathogen races relatively soon after a variety is released.

Important exceptions are the very strong *mlo* resistance to mildew in spring barley and the moderate resistance to eyespot from *Pch1* in wheat, which have been durable for many years. The durability of new sources of resistance can be difficult to predict. A new major gene may be more durable when it is combined with a background of minor genes. As pathogen populations evolve, previously defeated genes may become effective again, so varietal disease ratings can go up as well as down.

The *mlo* resistance gene in spring barley confers almost complete resistance to barley powdery mildew. All spring barley varieties on the current recommended list carry this gene and can, therefore, be assumed to be resistant to powdery mildew.

### Statistical significance (LSD)

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

## Disease resistance ratings

Scores for disease resistance are based on a combination of natural infection and inoculated trials. Information is only used where relatively high levels of disease are present. This helps prevent low disease pressure being mistaken for resistance. 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.

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

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

### Parentage

Information on varietal parentage (where known) is given on the RL app, variety selection tools and variety comments. Parentage gives an indication of the genetics that a variety could have inherited, but not what it has actually inherited.

### Breeders claims

Some characteristics are presented as a ‘breeders claim’. Accepted breeders claims have clear genetic markers which allow breeders to verify if a variety has inherited the trait. These characters are not verified in RL tests and growers should contact the relevant breeding company for more information on these claims. Characters which are given as breeders claims include:

- Orange wheat blossom midge, *Barley yellow dwarf virus* (BYDV), and *Pch1* eyespot resistance gene in wheat
- *Barley yellow dwarf virus* (BYDV) and *Barley yellow mosaic virus* (BaYMV) in barley
- *Turnip yellows virus* (TuYV), clubroot resistance and pod shatter in oilseed rape

# Disease ratings updates

## Winter wheat septoria tritici

Introduced in 2013, the variety Cougar had the highest septoria tritici rating on the RL. However, by 2015 the variety showed a relatively large increase in disease levels, which resulted in a reduction in its disease resistance rating. AHDB-funded investigations, led by NIAB, showed that this was due to septoria tritici isolates able to overcome some resistance genes in Cougar. At that time, no other varieties were affected.

The use of Cougar in breeding programmes means that a number of newer varieties have Cougar in their parentage. In 2020, further new septoria tritici isolates were identified in Ireland that were able to cause disease on varieties descended from Cougar. Varietal resistance to septoria tritici is due to the cumulative effect of multiple genes and, as a result, the shift in disease resistance in each of the varieties was not the same.

In 2021, some Cougar-derived varieties in the UK suffered from higher levels of septoria tritici than would be expected from their RL 2020/21 ratings. This too was due to the widespread appearance of septoria tritici isolates that were more virulent on varieties with Cougar in their parentage.

As a result of the change in the septoria tritici population, the RL 2022/23 included septoria tritici disease resistance ratings prepared using both the standard three-year data set (2019–2021) and ratings using the 2021 data only. These one-year ratings revealed the full influence of the recently emerged Cougar virulent isolates on the resistance of Cougar-derived varieties.

## 2023/24 resistance ratings

The RL 2023/24 features ten varieties with Cougar in their background. Evidence from harvest 2022 results indicate that septoria tritici isolates virulent on Cougar-derived varieties remain widespread. However, analysis has shown that the effect of these isolates on variety ratings is adequately captured by ratings based on the normal three-year dataset. As a result, this is the only rating shown in the RL 2023/24 (see pages 10–11).

## Management implications

A more robust fungicide spray programme may be required to control septoria tritici on affected varieties. Current evidence suggests fungicide efficacy is not affected by the population change\*. For robust and independent evidence on the efficacy of new and existing fungicides, visit [ahdb.org.uk/fungicide-performance](http://ahdb.org.uk/fungicide-performance)

\*Sensitivity of the Cougar-virulent septoria tritici variants to fungicides is similar to the wider septoria tritici population (as tested in 2020 (Ireland, Teagasc) and 2015 (UK, AHDB)).

## Young plant resistance to yellow rust in winter wheat



Winter wheat features two broad types of resistance to yellow rust.

Adult plant resistance provides protection from around stem extension onwards, although timing is variety specific. The RL yellow rust disease ratings (1–9 scale) are based on this type of resistance.

Young plant resistance is effective at all growth stages. Some varieties are susceptible at the young plant stage but develop some level of adult plant resistance.

Each year, the United Kingdom Cereal Pathogen Virulence Survey (UKCPVS) selects five yellow rust strains (isolates) that best represent the diversity in the population. These are used to test whether recommended and candidate varieties in RL trials are resistant (r) or susceptible (s) to yellow rust at the young plant stage.

In the RL 2023/24, young plant resistance statuses are presented alongside adult plant resistance ratings (see pages 10–11). Status is based on UKCPVS results using isolates collected in 2021 unless RL field trial data before ear emergence in 2022 indicates that a resistant variety is actually susceptible in field trials.

Understanding varietal susceptibility at all growth stages can inform crop management plans. For further information, visit [ahdb.org.uk/yellow-rust-resistance](http://ahdb.org.uk/yellow-rust-resistance)

## Winter wheat eyespot ratings

Eyespot ratings are normally calculated using data arising from a small number of naturally infected and artificially inoculated trials. Over the last two years, data from the inoculated trials has not been consistent with that from the naturally infected trials. The ratings in the RL 2023/24 have been calculated using only the data from naturally infected trials. This means the ratings are based on a small dataset and should be treated with caution.

## Spring barley rhynchosporium ratings

Low disease levels in trials in 2020 and 2021 limited available data and resulted in low confidence in the rhynchosporium ratings for newer varieties (indicated by bracketed ratings), with some recommended with very low ratings. Sufficient data from 2022 has enabled more robust ratings to be calculated, producing ratings more in line with those expected for recommended varieties.

**RL review**

What did you recommend?

RL review results online:  
[ahdb.org.uk/rl-review](http://ahdb.org.uk/rl-review)

# Milling wheat information

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

## Exports – quality wheats

There is a core market overseas for UK-grown quality wheat and growers can capitalise on this opportunity when choosing varieties to grow. However, distance to a port needs to be considered. Overseas buyers have different requirements to domestic buyers. AHDB has developed the **uks** (soft biscuit wheat) and **ukp** (hard bread wheat) classifications. These help overseas buyers, who may be unfamiliar with individual varieties, to understand the qualities that the grain possesses. Overseas buyers commonly use the Chopin Alveograph test (see Table 1). North African and Middle Eastern markets prefer a lower moisture content, often less than 14%.

Each year, AHDB carries out a survey of around 130 commercially sourced wheat samples using the Alveograph and Wet Gluten tests. The varieties surveyed are all on the AHDB Recommended Lists and are selected based on the Planting and Variety Survey data.

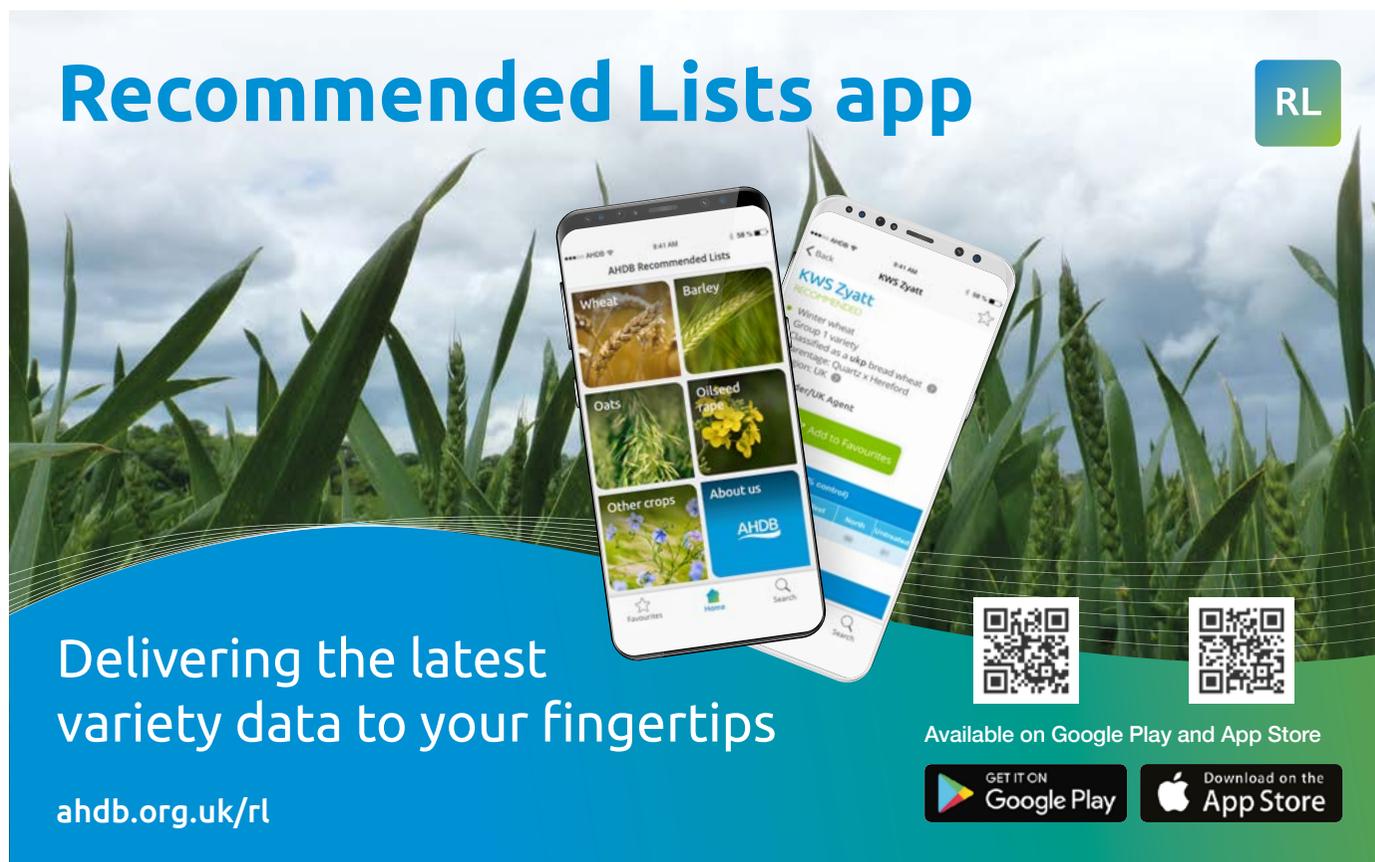
The survey helps to determine the quality of the farm-grown **ukp** and **uks** wheat varieties in each season and supports the marketing efforts of the export business sector ([ahdb.org.uk/cereal-exports](http://ahdb.org.uk/cereal-exports)).

Table 1. Typical specifications for exports

	ukp 	uks 
Minimum specific weight (kg/hl)	76	75
Maximum moisture content (%)	14	14
Maximum admix (%)	2	2
Minimum Hagberg Falling Number (HFN; s)	250	220
Protein content (%)	11.0–13.0	10.5–11.5
Chopin Alveograph W	170 (min)	70–120
Chopin Alveograph P/L	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 to burst the dough bubble. A low P/L measure represents a dough which is very extensible with low strength.

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



# Recommended Lists app

RL

Delivering the latest variety data to your fingertips

[ahdb.org.uk/rl](http://ahdb.org.uk/rl)

Available on Google Play and App Store

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# UK Flour Millers (UKFM) overview

UK Flour Millers represents the UK milling industry, which uses 4 million tonnes of homegrown wheat in an average year. Flour-based products are a cornerstone of the nation's diet and demand for flour is stable. Given the consistency of demand, it is no surprise that the UK milling industry is committed to continuous investment, with two new inland mills opened in 2021, offering farmers greater choice of destination for milling wheat.

The preference of local millers should always be a significant factor affecting choice of milling variety. Growing for a specific market should be at the forefront of a farmer's mind if incomes are to be maximised from milling wheat. The UK Flour Millers website features a tool that helps identify local mills and provides relevant contact details. This can be accessed using the following link: [ukflourmillers.org/millmap](http://ukflourmillers.org/millmap)

## Bread-making varieties

UK bread-making wheats comprise the majority of millers' requirements and the Group 1 and 2 varieties on the RL continue to meet milling quality thresholds as well as the agronomic needs of growers. The four Group 1 winter wheats remain reliable milling varieties and Crusoe is particularly favoured for its good bread-making quality. As the yields of modern milling varieties remain relatively high, greater attention to nitrogen inputs is required than with 'older' varieties in order to achieve the necessary protein quality and gain the maximum premium.

## A competitive market for milling wheat

There have not been new Group 1 winter varieties joining the RL for a number of years, reflected in the declining popularity of this Group across the country, despite a competitive milling market, particularly for higher protein wheat. Pressures around nitrogen fertiliser may also be contributing to this decline in popularity, despite an AHDB economic analysis suggesting that growers who have previously had success in achieving milling specification should continue to invest in the additional nitrogen fertiliser needed, see [ahdb.org.uk](http://ahdb.org.uk)

Table 2. Typical specifications for milling wheat

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

Specifications for milling wheat are flexible, with fallbacks for a range of parameters. For example, there are fallbacks for breadmaking wheat allowing for: Protein (12.0%), specific weight (200 kg/hl) and HFN (200s).

## Soft varieties

As has been a trend in recent years, a number of Group 3 wheats with excellent yield and agronomic characteristics have joined the RL. Demand for Group 3 wheats remains strong as their unique protein quality is needed to produce a range of flour types and products, for which domestic and export demand continues to expand.

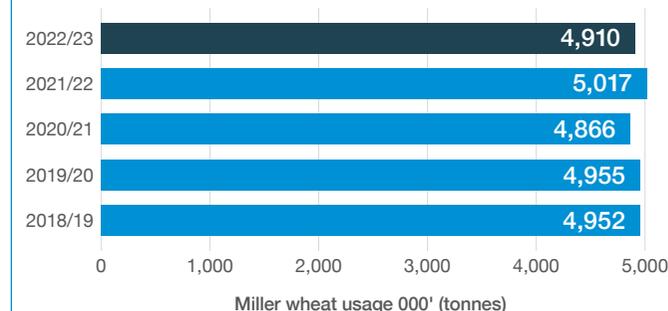
Group 4 soft wheats may also have a specific use in some flours and these varieties can find a milling home. However, not all mills will be interested in these, so it is important to speak to your buyers and understand what local markets are looking for.

## Ergot control

Ergot continues to be a problematic disease for arable farms across the country. Strict ergot limits affecting flour sold in Northern Ireland and EU member states have led to many mills reducing their tolerances to zero for ergot at intake. It is crucial that farmers view this as a food safety issue and address the disease on-farm by applying the available management strategies. Find out more at [ahdb.org.uk/ergot](http://ahdb.org.uk/ergot) Cleaning ergot sclerotia out of grain and knowing the specifications of your mill markets are key steps to avoiding costly rejections.

Other information on milling wheat quality requirements and the structure and needs of the milling industry can be found on the UK Flour Millers website at: [ukflourmillers.org/farmers](http://ukflourmillers.org/farmers)

## A competitive market for milling wheat

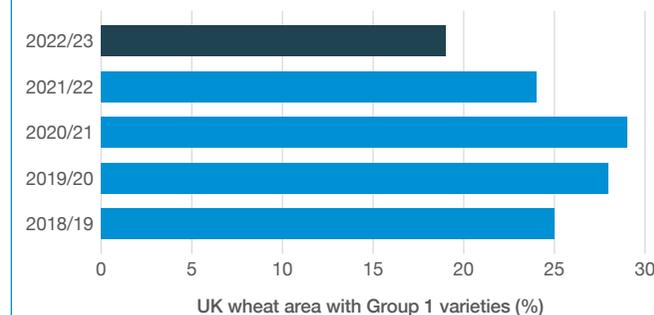


Source: UK Flour Millers wheat usage survey.

Actual data Estimated data



Figure 2. UK milling wheat demand is stable



Source: AHDB variety survey and NIAB Seed Production Figures Spring and winter wheat area included.

Actual data Estimated data



Figure 3. The Group 1 wheat area is declining

The above 2022/23 estimations are based off the NIAB seed production figures.

# Winter wheat 2023/24

## Market options, yield and grain quality



	KWS Zyatt	Skyfall	Crusoe	RGT Illustrious	KWS Extase	KWS Ultimatum	KWS Palladium	KWS Siskin	Mayflower	KWS Guium	RGT Wilkinson	LG Prince	KWS Brium	Merit	KWS Firefly	RGT Rashid	LG Illuminate	LG Astronomer	Elicit	Average LSD (5%)	
End-use group	UKFM Group 1				UKFM Group 2					UKFM Group 3											
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E	UK	E	UK	UK	UK		
Variety status	C				NEW					NEW										*	*
<b>Fungicide-treated grain yield (% treated control)</b>																					
United Kingdom (10.9 t/ha)	99	97	96	96	102	101	100	99	97	101	101	101	100	100	100	100	100	99	98	2.3	
East region (10.7 t/ha)	98	97	96	95	102	101	100	99	97	102	102	101	101	101	100	101	100	99	98	2.7	
West region (11.1 t/ha)	99	97	97	97	102	102	101	99	98	100	101	100	100	98	99	97	100	99	97	3.0	
North region (11.3 t/ha)	98	96	94	95	100	[103]	99	99	96	101	[100]	98	100	100	99	98	100	97	99	3.4	
<b>Main market options (The specific attributes of varieties are different, so, whenever possible, varieties should not be mixed in store)</b>																					
UK bread-making	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
UK distilling	-	-	-	-	-	-	-	-	-	[Y]	[Y]	[Y]	[Y]	[Y]	-	[Y]	[Y]	[Y]	[Y]	Y	
bread wheat for export	Y	-	Y	-	Y	[Y]	-	Y	[Y]	-	-	-	-	-	-	-	-	-	-	-	
soft wheat for export	-	-	-	-	-	-	-	-	-	-	[Y]	-	-	Y	Y	-	Y	-	Y	Y	
<b>Grain quality</b>																					
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	
Protein content (%)	12.0	12.0	12.5	12.0	11.7	11.6	11.6	11.6	11.8	11.0	11.2	11.0	11.3	11.3	11.5	11.0	11.5	11.5	11.4	0.2	
Protein content (%) – milling spec	12.6	13.1	13.4	12.6	12.5	12.3	12.4	12.4	12.8	11.8	[12.0]	12.1	11.9	12.6	12.4	12.1	12.6	12.5	12.4	0.5	
Hagberg Falling Number	271	290	279	276	294	287	320	297	304	257	264	266	278	269	248	236	262	245	227	22.6	
Specific weight (kg/hl)	78.4	79.2	78.5	78.2	79.4	79.6	77.6	77.5	79.2	78.8	75.4	75.0	78.0	77.1	76.1	77.0	77.0	78.2	77.1	0.6	
Chopin Alveograph W	[180]	268	239	-	198	189	[189]	168	209	[56]	96	[74]	[74]	85	93	[72]	84	[137]	[93]	30.4	
Chopin Alveograph P/L	[0.7]	1.0	0.6	-	0.6	0.7	[0.7]	0.6	0.8	[0.3]	0.3	[0.2]	[0.3]	0.2	0.3	[0.3]	0.3	[0.4]	[0.3]	0.2	

**Varieties no longer listed:** KWS Barrel, KWS Kerrin, LG Spotlight and RGT Gravity.  
 Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.  
 All yields in this table are taken from treated trials receiving a full fungicide and PGR programme.  
 Protein content (%) – milling spec data is taken from trials managed to a bread-milling protocol.

UKFM = UK Flour Millers	C = Yield control. For this table, KWS Barrel was also a control variety but is no longer listed	PGR = Plant growth regulator	LSD = Least significant difference
UK = Recommended for the UK	* = Variety no longer under test in RL trials	[ ] = Limited data	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
E = Recommended for the East region		Y = Suited to that market	
		[Y] = May be suited to that market	

# Winter wheat 2023/24

## Market options, yield and grain quality



	LG Redwaid	KWS Zealium	LG Skyscraper	RGT Bairstow	RGT Stokes	RGT Saki	Elation	KWS Jackal	Swallow	Champion	SY Insector	KWS Dawsum	Oxford	Gleam	Graham	KWS Cranium	LG Typhoon	RGT Wolverine	Costello	Theodore	Average LSD (5%)
End-use group	Soft Group 4									Hard Group 4											
Scope of recommendation	E&W	N	UK	UK	UK	UK	N	N	N	UK	UK	UK	E&W	UK	UK	UK	UK	Sp	UK	W	
Variety status	<b>NEW</b>	<b>NEW</b>	<b>C</b>				*	*					<b>NEW</b>	<b>C</b>						*	

### Fungicide-treated grain yield (% treated control)

United Kingdom (10.9 t/ha)	107	103	103	103	102	102	100	99	98	106	104	104	104	103	102	102	101	99	99	99	2.3
East region (10.7 t/ha)	107	103	103	103	101	102	100	99	98	107	104	103	104	103	101	103	101	99	99	99	2.7
West region (11.1 t/ha)	109	103	103	103	104	101	100	97	98	106	105	105	105	104	105	101	100	100	98	101	3.0
North region (11.3 t/ha)	[103]	[102]	102	103	103	102	101	100	101	102	105	105	[100]	103	102	102	101	100	101	[95]	3.4

### Main market options (The specific attributes of varieties are different, so, whenever possible, varieties should not be mixed in store)

UK bread-making	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UK distilling	[Y]	[Y]	[Y]	Y	Y	-	Y	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-
<b>ukp</b> bread wheat for export	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>uks</b> soft wheat for export	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-

### Grain quality

Endosperm texture	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard
Protein content (%)	11.1	10.9	11.2	11.1	11.1	11.2	11.3	10.9	11.1	11.2	10.7	11.1	11.3	11.1	11.1	11.1	11.0	10.9	11.6	11.8	0.2
Protein content (%) – milling spec	[11.5]	[12.0]	12.1	12.0	12.1	11.9	12.2	11.9	12.1	12.1	11.2	11.9	[12.4]	11.8	11.9	11.9	11.9	11.7	12.4	12.5	0.5
Hagberg Falling Number	172	218	227	239	255	231	220	193	269	251	279	311	218	237	281	293	183	283	324	303	22.6
Specific weight (kg/hl)	75.5	76.7	77.3	76.8	76.2	76.4	77.5	75.6	76.7	75.5	78.9	80.0	76.0	77.3	77.6	75.8	77.1	76.4	81.2	74.9	0.6
Chopin Alveograph W	-	[63]	-	[50]	[61]	-	[94]	-	-	-	-	-	-	-	-	-	-	[152]	-	-	30.4
Chopin Alveograph P/L	-	[0.4]	-	[0.3]	[0.3]	-	[0.3]	-	-	-	-	-	-	-	-	-	-	[0.7]	-	-	0.2

**Varieties no longer listed:** KWS Barrel, KWS Kerrin, LG Spotlight and RGT Gravity.

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

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

Protein content (%) – milling spec data is taken from trials managed to a bread-milling protocol.

UK = Recommended for the UK  
E = Recommended for the East region  
W = Recommended for the West region  
N = Recommended for the North region

Sp = Specific recommendation.  
RGT Wolverine has a specific recommendation for resistance to *Barley yellow dwarf virus* (BYDV). Resistance to BYDV has not been verified in RL tests

C = Yield control. For this table, KWS Barrel was also a control variety but is no longer listed

\* = Variety no longer under test in RL trials  
PGR = Plant growth regulator  
[ ] = 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 2023/24

## Yield, agronomy and disease resistance



	KWS Zyatt	Skyfall	Crusoe	RGT Illustrious	KWS Extase	KWS Ultimatum	KWS Palladium	KWS Siskin	Mayflower	KWS Guium	RGT Wilkinson	LG Prince	KWS Brium	Merit	KWS Firefly	RGT Rashid	LG Illuminate	LG Astronomer	Elicit	Average LSD (5%)
End-use group	UKFM Group 1				UKFM Group 2					UKFM Group 3										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E	UK	E	UK	UK	UK	
Variety status	C				NEW					NEW					*					
<b>Fungicide-treated grain yield (% treated control)</b>																				
United Kingdom (10.9 t/ha)	99	97	96	96	102	101	100	99	97	101	101	101	100	100	100	100	100	99	98	2.3
East region (10.7 t/ha)	98	97	96	95	102	101	100	99	97	102	102	101	101	101	100	101	100	99	98	2.7
West region (11.1 t/ha)	99	97	97	97	102	102	101	99	98	100	101	100	100	98	99	97	100	99	97	3.0
North region (11.3 t/ha)	98	96	94	95	100	[103]	99	99	96	101	[100]	98	100	100	99	98	100	97	99	3.4
<b>Untreated grain yield (% treated control)</b>																				
United Kingdom (10.9 t/ha)	75	70	76	85	97	93	94	87	93	80	87	85	83	84	80	81	87	88	82	5.6
<b>Agronomic features</b>																				
Resistance to lodging without PGR (1–9)	8	8	8	7	7	[7]	7	6	6	7	[8]	7	7	6	8	8	7	7	6	1.4
Resistance to lodging with PGR (1–9)	8	7	7	8	8	7	8	6	7	7	8	8	7	6	8	8	7	9	7	1.2
Straw length without PGR (cm)	85	85	82	89	91	85	83	84	89	90	83	83	92	88	83	86	83	88	86	1.6
Straw length with PGR (cm)	75	77	75	80	85	75	78	74	82	82	77	75	85	81	75	79	76	79	77	1.7
Ripening (days +/- Skyfall)	-1	0	+1	+1	-1	+1	-1	0	-1	+3	+2	+2	+2	+1	0	+3	+1	+1	+1	0.7
Resistance to sprouting (1–9)	6	6	6	6	6	[7]	[6]	4	[6]	[6]	[5]	[5]	[6]	[6]	5	[6]	[6]	[6]	5	1.0
<b>Disease resistance</b>																				
Mildew (1–9)	7	6	7	7	7	7	8	8	7	5	8	4	7	4	5	4	5	4	6	1.4
Yellow rust (1–9)	3	3	9	8	8	9	9	9	9	9	7	8	9	8	6	8	7	9	9	0.6
Yellow rust (young plant) – see page 5	s	s	r	s	r	r	r	r	r	r	s	r	r	r	s	r	r	r	s	
Brown rust (1–9)	7	9	3	6	6	6	5	5	6	3	5	7	5	7	5	6	6	8	6	0.9
Septoria tritici (1–9) – see page 5	6.1	5.4	6.2	5.7	7.8	6.4	7.4	6.8	8.9	5.1	5.5	5.9	5.6	5.4	5.1	6.4	5.8	6.2	5.0	0.9
Eyespot (1–9) – see page 5	[6]@	[5]@	[5]	[7]@	[4]	[5]	[6]	[4]	[6]@	[5]	[7]@	[4]	[6]	[3]	[4]	[6]	[6]	[5]	[6]	2.0
Fusarium ear blight (1–9)	6	7	7	6	6	7	6	6	6	7	6	6	6	6	5	7	6	6	6	0.4
Orange wheat blossom midge	-	R	-	-	-	-	-	-	-	R	-	R	-	R	R	R	R	R	R	

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

UKFM = UK Flour Millers  
 UK = Recommended for the UK  
 E = Recommended for the East region

C = Yield control. For this table, KWS Barrel was also a control variety but is no longer listed  
 \* = Variety no longer under test in RL trials  
 PGR = Plant growth regulator  
 [] = Limited data

r and s = Young plant resistance (r) or susceptible (s) to yellow rust as shown by UKCPVS tests and RL trial data  
 @ = Believed to carry the *Pch1* Rendezvous resistance gene to eyespot, but this has not been verified in RL tests

R = Believed to be resistant to orange wheat blossom midge (OWBM), 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 wheat 2023/24

## Yield, agronomy and disease resistance



	LG Redwald	KWS Zealum	LG Skyscraper	RGT Bairstow	RGT Stokes	RGT Saki	Elation	KWS Jackal	Swallow	Champion	SY Insitor	KWS Dawsum	Oxford	Gleam	Graham	KWS Cranium	LG Typhoon	RGT Wolverine	Costello	Theodore	Average LSD (5%)	
End-use group	Soft Group 4									Hard Group 4												
Scope of recommendation	E&W	N	UK	UK	UK	UK	N	N	N	UK	UK	UK	E&W	UK	UK	UK	UK	Sp	UK	W		
Variety status	<b>NEW</b>	<b>NEW</b>	<b>C</b>				*	*					<b>NEW</b>	<b>C</b>							*	
<b>Fungicide-treated grain yield (% treated control)</b>																						
United Kingdom (10.9 t/ha)	107	103	103	103	102	102	100	99	98	106	104	104	104	103	102	102	101	99	99	99	2.3	
East region (10.7 t/ha)	107	103	103	103	101	102	100	99	98	107	104	103	104	103	101	103	101	99	99	99	2.7	
West region (11.1 t/ha)	109	103	103	103	104	101	100	97	98	106	105	105	105	104	105	101	100	100	98	101	3.0	
North region (11.3 t/ha)	[103]	[102]	102	103	103	102	101	100	101	102	105	105	[100]	103	102	102	101	100	101	[95]	3.4	
<b>Untreated grain yield (% treated control)</b>																						
United Kingdom (10.9 t/ha)	92	86	86	87	87	86	80	78	80	93	82	95	89	84	93	82	92	74	86	93	5.6	
<b>Agronomic features</b>																						
Resistance to lodging without PGR (1–9)	[5]	[6]	6	6	5	6	7	7	8	6	6	7	[6]	7	7	8	7	7	7	6	1.4	
Resistance to lodging with PGR (1–9)	5	8	6	6	6	7	8	6	9	6	7	7	7	7	8	8	7	7	8	8	1.2	
Straw length without PGR (cm)	94	88	92	91	91	89	82	87	79	88	94	84	85	87	88	89	87	87	84	84	1.6	
Straw length with PGR (cm)	89	81	83	83	82	81	75	81	73	82	83	76	79	77	80	80	78	77	75	76	1.7	
Ripening (days +/- Skyfall)	+2	+2	0	+2	+2	+2	+1	+1	+1	0	+1	+1	+2	0	-1	+3	+1	+2	+2	0	0.7	
Resistance to sprouting (1–9)	[6]	[6]	6	[6]	[6]	5	6	6	[5]	[6]	5	[7]	[6]	6	6	[6]	[5]	[6]	6	[6]	1.0	
<b>Disease resistance</b>																						
Mildew (1–9)	6	7	7	6	5	5	7	7	6	7	7	8	6	7	6	6	6	6	8	7	1.4	
Yellow rust (1–9)	7	9	7	8	7	9	8	9	6	8	5	9	9	5	8	9	9	4	9	9	0.6	
Yellow rust (young plant) – see page 5	s	r	s	r	r	r	s	s	r	r	s	r	r	s	s	r	r	s	r	r		
Brown rust (1–9)	6	5	5	6	5	6	5	5	5	5	6	7	6	6	5	4	6	7	5	8	0.9	
Septoria tritici (1–9) – see page 5	6.7	5.8	4.9	6.0	6.3	5.4	4.3	5.0	5.3	8.1	6.4	6.4	6.4	5.7	6.7	5.9	7.3	5.9	5.8	9.1	0.9	
Eyespot (1–9) – see page 5	[6]	[6]	[6]	[4]	[5]	[5]	[5]	[5]	[4]	[5]	[4]	[6]	[5]	[5]	[4]	[5]	[6]	[4]	[4]	[4]	2.0	
Fusarium ear blight (1–9)	6	7	6	6	6	6	6	6	6	6	7	7	6	6	7	7	6	6	7	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 (e.g. high resistance). Comparisons of varieties across regions are not valid. See page 3 for information on regional yields.

UK = Recommended for the UK	Sp = Specific recommendation. RGT Wolverine has a specific recommendation for resistance to <i>Barley yellow dwarf virus</i> (BYDV). Resistance to BYDV has not been verified in RL tests	C = Yield control. For this table, KWS Barrel was also a control variety but is no longer listed	PGR = Plant growth regulator [ ] = Limited data r and s = Young plant resistance (r) or susceptible (s) to yellow rust as shown by UKCPVS tests and RL trial data	R = Believed to be resistant to orange wheat blossom midge (OWBM), 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
E = Recommended for the East region		* = Variety no longer under test in RL trials		
W = Recommended for the West region				
N = Recommended for the North region				

# Winter wheat 2023/24

## Supplementary data



	KWS Zyatt	Skyfall	Crusoe	RGT Illustrious	KWS Extase	KWS Ultimatum	KWS Palladium	KWS Siskin	Mayflower	KWS Guium	RGT Wilkinson	LG Prince	KWS Brium	Merit	KWS Firefly	RGT Rashid	LG Illuminate	LG Astronomer	Elicit	Average LSD (5%)
End-use group	UKFM Group 1				UKFM Group 2					UKFM Group 3										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	E	UK	E	UK	UK	UK	
Variety status	C				NEW					*C										
Breeder/UK contact	KWS	RGT	Lim	R2n	Mom	KWS	KWS	KWS	ElsW	KWS	R2n	LimEur	KWS	ElsW	KWS	RGT	LimEur	LimEur	ElsW	
UK contact	KWS	RGT	Lim	RGT	KWS	KWS	KWS	KWS	Els	KWS	RGT	Lim	KWS	Els	KWS	RGT	Lim	Lim	Els	
<b>Annual treated yield (% control)</b>																				
2018 (10.7 t/ha)	98	97	95	96	101	-	-	100	-	-	-	100	-	100	100	-	100	99	98	-
2019 (11.6 t/ha)	96	95	98	94	100	-	100	99	98	100	-	100	100	100	101	99	101	99	99	-
2020 (10.3 t/ha)	97	96	94	97	100	[103]	[100]	98	[96]	[103]	[102]	102	[102]	100	99	[100]	101	99	98	-
2021 (10.9 t/ha)	100	97	96	95	102	101	99	97	96	100	100	99	99	98	98	99	98	98	97	-
2022 (11.5 t/ha)	101	97	94	96	103	102	101	100	97	101	101	98	100	102	98	98	99	97	98	-
<b>Rotational position</b>																				
First cereal (11.2 t/ha)	98	96	96	96	101	101	100	99	97	101	101	100	100	100	100	99	100	99	98	2.3
Second and more (9.7 t/ha)	99	97	94	94	102	[102]	100	98	99	101	[101]	102	101	100	100	99	100	98	98	3.5
<b>Sowing date (most trials were sown in October)</b>																				
Early sown (before 25 Sept) (11.3 t/ha)	[101]	96	[95]	[97]	[99]	-	[[98]]	100	[100]	[102]	-	103	100	100	100	[[100]]	103	100	99	4.8
Late sown (after 1 Nov) (9.2 t/ha)	98	97	95	95	102	[[101]]	[99]	98	[95]	[102]	[[103]]	102	[102]	102	101	[104]	98	99	97	4.3
<b>Soil type (about 50% of trials are on medium soils)</b>																				
Light soils (10.8 t/ha)	97	96	94	94	102	[[101]]	99	99	97	101	[102]	102	99	101	100	100	101	99	98	3.3
Heavy soils (11.1 t/ha)	99	97	96	95	101	100	99	99	96	102	101	101	99	101	100	99	100	100	98	3.1
<b>Agronomic features</b>																				
Lodging % without PGR	1	1	2	3	4	[4]	3	9	9	3	[2]	4	2	9	1	2	3	2	7	-
Lodging % with PGR	1	3	3	1	3	4	3	9	8	5	1	3	7	9	1	2	4	0	4	-
Latest safe-sowing date <sup>□</sup>	End Jan	End Feb	End Jan	End Jan	End Jan	[[End Jan]]	[End Jan]	End Jan	[Mid Feb]	[End Jan]	[[End Jan]]	End Jan	[End Feb]	Mid Feb	End Feb	[End Jan]	Mid Feb	End Jan	Mid Feb	
<b>Speed of development to growth stage 31 (days +/- average)</b>																				
Early sown (Sept)	-4	-2	-2	0	-4	-	[-2]	-3	[-4]	[+2]	-	[-2]	[+2]	[0]	-3	[+2]	[-3]	[-8]	-2	7.8
Med sown (Oct)	-4	-4	-1	+2	-6	-	-	-5	-	-	-	[0]	-	[-5]	-2	-	[-2]	[0]	+3	8.8
Late sown (Nov)	-2	-3	-2	-1	-4	-	-	-2	-	[+1]	-	[+1]	-	[-1]	-1	-	[-2]	[+1]	+2	4.8
<b>Status in RL system</b>																				
Year first listed	17	14	12	16	19	23	22	16	22	22	23	21	22	21	19	22	21	21	18	
RL status	-	-	-	-	-	P1	P2	*	P2	P2	P1	-	P2	-	*	P2	-	-	*	

All yields in this table are taken from treated trials receiving a full fungicide and PGR programme. For breeder/UK contact information, see page 59.

UKFM = UK Flour Millers	C = Yield control. For this table, KWS Barrel was also a control variety but is no longer listed	PGR = Plant growth regulator	[[ ]] = Very limited data	LSD = Least significant difference
UK = Recommended for the UK	* = Variety no longer under test in RL trials	□ = Latest safe-sowing date is the advised latest sowing time to give a sufficient cold period for flowering	P1 = First year of recommendation	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
E = Recommended for the East region		[ ] = Limited data	P2 = Second year of recommendation	

# Winter wheat 2023/24

## Supplementary data



	LG Redwald	KWS Zealum	LG Skyscraper	RGT Bairstow	RGT Stokes	RGT Saki	Elation	KWS Jackal	Swallow	Champion	SY Insitor	KWS Dawson	Oxford	Gleam	Graham	KWS Cranium	LG Typhoon	RGT Wolverine	Costello	Theodore	Average LSD (5%)
End-use group	Soft Group 4									Hard Group 4											
Scope of recommendation	E&W	N	UK	UK	UK	UK	N	N	N	UK	UK	UK	E&W	UK	UK	UK	UK	Sp	UK	W	
Variety status	NEW	NEW	C				*	*					NEW	C						*	
<b>Breeder/UK contact</b>																					
Breeder	LimEur	KWS	LimEur	RAGT	RAGT	RAGT	ElsW	KWS	BA	DSV	SyP	KWS	DSV	SyP	SyP	KWS	LimEur	R2n	KWS	DSV	
UK contact	Lim	KWS	Lim	RAGT	RAGT	RAGT	Els	KWS	Sen	DSV	Syn	KWS	DSV	Syn	Syn	KWS	Lim	RAGT	Sen	DSV	
<b>Annual treated yield (% control)</b>																					
2018 (10.7 t/ha)	-	-	102	-	-	102	100	100	99	-	103	-	-	103	101	102	-	100	100	98	-
2019 (11.6 t/ha)	-	-	103	103	104	102	99	99	99	104	105	104	-	103	102	101	102	101	99	99	-
2020 (10.3 t/ha)	[105]	[103]	103	[104]	[102]	104	102	100	101	[105]	103	[105]	[104]	103	102	103	[101]	101	100	[97]	-
2021 (10.9 t/ha)	107	102	102	102	103	102	101	97	98	106	106	105	103	105	104	100	101	96	100	98	-
2022 (11.5 t/ha)	107	103	103	103	102	100	100	99	98	106	105	104	103	103	104	103	99	101	98	100	-
<b>Rotational position</b>																					
First cereal (11.2 t/ha)	107	103	103	103	102	102	100	99	99	106	104	104	103	103	102	102	100	100	99	99	2.3
Second and more (9.7 t/ha)	[109]	[104]	104	103	103	102	101	[101]	99	107	105	105	[104]	103	102	103	103	99	99	[100]	3.5
<b>Sowing date (most trials were sown in October)</b>																					
Early sown (before 25 Sept) (11.3 t/ha)	[106]	[106]	103	[[104]]	[[105]]	103	100	101	100	106	[[107]]	107	[103]	103	101	[[102]]	103	100	99	98	4.8
Late sown (after 1 Nov) (9.2 t/ha)	[[108]]	[[105]]	103	[105]	[101]	103	101	100	97	[107]	103	[104]	[[105]]	103	100	105	[101]	99	102	99	4.3
<b>Soil type (about 50% of trials are on medium soils)</b>																					
Light soils (10.8 t/ha)	[105]	[[102]]	103	105	104	103	101	99	101	106	106	105	[102]	103	102	103	102	98	99	[97]	3.3
Heavy soils (11.1 t/ha)	107	104	103	104	102	102	100	99	98	107	104	104	104	103	102	101	100	100	99	99	3.1
<b>Agronomic features</b>																					
Lodging % without PGR	[19]	[5]	7	11	25	6	3	5	1	11	8	4	[6]	4	5	2	3	4	2	6	-
Lodging % with PGR	33	3	13	14	9	4	2	10	0	13	5	5	8	5	3	2	5	5	2	2	-
Latest safe-sowing date <sup>□</sup>	[[Mid Feb]]	[[End Jan]]	End Jan	[End Feb]	[End Jan]	End Jan	Mid Feb	End Jan	End Feb	[Mid Feb]	End Jan	[End Jan]	[[Mid Feb]]	Mid Feb	End Jan	Mid Feb	[End Jan]	End Jan	End Jan	End Jan	
<b>Speed of development to growth stage 31 (days +/- average)</b>																					
Early sown (Sept)	-	-	-4	[+3]	[+2]	+7	0	+3	[+4]	[-2]	+2	[0]	-	+6	0	[-4]	[+5]	[-3]	-3	-1	7.8
Med sown (Oct)	-	-	0	-	-	[-1]	+1	+5	[+3]	-	[-1]	-	-	+4	+2	[-3]	-	[0]	0	[-2]	8.8
Late sown (Nov)	-	-	-3	-	-	0	-1	+1	[+3]	[-5]	+2	[+3]	-	+2	-2	[-4]	-	[0]	-1	-1	4.8
<b>Status in RL system</b>																					
Year first listed	23	23	19	22	22	20	18	18	21	22	20	22	23	18	16	21	22	21	15	20	
RL status	P1	P1	-	P2	P2	-	*	*	-	P2	-	P2	P1	-	-	-	P2	-	-	*	

All yields in this table are taken from treated trials receiving a full fungicide and PGR programme. For breeder/UK contact information, see page 59.

UK = Recommended for the UK	Sp = Specific recommendation. RGT Wolverine has a specific recommendation for resistance to Barley yellow dwarf virus (BYDV). Resistance to BYDV has not been verified in RL tests	C = Yield control. For this table, KWS Barrel was also a control variety but is no longer listed	PGR = Plant growth regulator	P1 = First year of recommendation
E = Recommended for the East region		*	□ = Latest safe-sowing date is the advised latest sowing time to give a sufficient cold period for flowering	P2 = Second year of recommendation
W = Recommended for the West region			[ ] = Limited data	LSD = Least significant difference
N = Recommended for the North region			[[ ]] = Very limited data	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level

# Winter wheat 2023/24

## Variety comments

### UKFM Group 1 varieties



#### Crusoe

Cordiale x Gulliver

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

**Agronomy:** This short and relatively stiff-strawed variety has high resistance to yellow rust, mildew, and fusarium ear blight. It is very susceptible to brown rust.

**UKFM comment:** This variety has consistently demonstrated good protein content and quality. The bread crumb structure is notably white and of good quality. The baking performance of this variety is good and consequently it remains popular with millers.

#### KWS Zyatt

Quartz x Hereford

**Quality:** A UKFM Group 1 variety, classified as a **ukp** bread wheat for export. It has high Hagbergs and has given good proteins under a regime to achieve milling specification.

**Agronomy:** This relatively short and stiff-strawed variety has given high treated yields throughout the UK, across rotational positions and sowing dates (based on limited data), and in trials on heavier soil. It is a relatively early maturing variety and has high resistance to mildew and brown rust, but it is very susceptible to yellow rust. KWS Zyatt carries the *Pch1* eyespot resistance gene.

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

#### RGT Illustrious

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

**Agronomy:** This medium-tall and relatively stiff-strawed variety has given UK treated yields comparable to Crusoe. RGT Illustrious has high resistance to yellow rust and mildew. It also carries the *Pch1* eyespot resistance gene.

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

#### Skyfall

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

**Agronomy:** It is an awned wheat with relatively short and relatively stiff straw. Skyfall is the only Group 1 variety with resistance to orange wheat blossom midge. It has high resistance to brown rust and fusarium ear blight and carries the *Pch1* eyespot resistance gene. It is very susceptible to yellow rust.

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

Please note that comments made on resistance to orange wheat blossom midge and *Barley yellow dwarf virus* (BYDV) are based on advice from plant breeders. These have not been verified in RL tests.

### Export specifications

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

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

For more information on export specifications, see page 6.

## Variety selection tool

A different perspective on the RL



Identify the most promising varieties for your unique situation.

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# Winter wheat 2023/24

## Variety comments

### UKFM Group 2 varieties



UK FLOUR  
MILLERS

#### KWS Extase

Boisseau x Solehio

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

**Agronomy:** This relatively early maturing variety has given high treated yields throughout the UK. It has performed well across a range of soil types, rotational positions and in a late sowing situation. It is a medium-tall variety with relatively stiff straw. KWS Extase has given very high yields in untreated UK trials. It has very high resistance to septoria tritici and high resistance to yellow rust and mildew.

**UKFM comment:** This variety has protein levels that are typical of a Group 2. It shows some variability in its baking performance.

#### KWS Palladium

KWS Zyatt x KWS Trinity

**Quality:** A UKFM Group 2 variety with high Hagbergs. It has given good proteins under a regime to achieve milling specification.

**Agronomy:** This relatively early maturing variety has given high treated yields in the East and West regions and across a range of rotational positions. It is a short and relatively stiff-strawed variety. It has high resistance to yellow rust, mildew and septoria tritici and has given very high yields in untreated UK trials.

**UKFM comment:** This variety has protein levels that are typical of a Group 2 and higher levels of water absorption (a good feature) than most Group 2 varieties. It shows some variability in its baking performance.

#### KWS Siskin

KWS Sterling x Timaru

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

**Agronomy:** This variety has given its best relative performance in an early sowing situation, where it is high yielding. It is a short-strawed variety and has moderate straw strength that requires careful management. KWS Siskin has high resistance to septoria tritici, yellow rust and mildew. It has a tendency to sprout, so it should be given priority at harvest. KWS Siskin is no longer under test in RL trials.

**UKFM comment:** This variety has protein levels that are typical of a Group 2. Some yellowness may be seen in the flour colour. It has shown a degree of variability in its baking performance, so may be more suited to use in blends.

#### KWS Ultimatum **NEW**

**Quality:** This new addition is a high-yielding UKFM Group 2 variety recommended for the UK. It is classified as a **ukp** bread wheat for export. KWS Ultimatum has high Hagbergs and specific weights.

**Agronomy:** This relatively short variety has given high treated yields throughout the UK and across rotational positions (based on some limited data). It has high resistance to yellow rust, mildew, and fusarium ear blight and has given high untreated yields in UK trials.

**UKFM comment:** Over the three years of testing, this variety showed a similar performance to KWS Extase. The gluten quality met the criteria for a Group 2 variety, with some variability in its baking performance.

#### Mayflower

Ascott x Armada

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

**Agronomy:** This medium-tall and relatively early maturing variety has given its best relative performance in an early sowing situation, where it is high yielding (based on limited data). It has moderate straw strength but responds well to plant growth regulators. It has no major weaknesses in disease resistance and has given high yields in untreated UK trials. Mayflower has high resistance to yellow rust and mildew and the highest rating for resistance to septoria tritici for a bread-making variety. It carries the *Pch1* eyespot resistance gene.

**UKFM comment:** This variety showed good protein levels and higher levels of water absorption (a good feature) than most Group 2 varieties. It shows some variability in its baking performance.

# Winter wheat 2023/24

## Variety comments

### UKFM Group 3 varieties



UK FLOUR  
MILLERS

#### Elicit

distilling: good

Cassius x Viscount

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

**Agronomy:** This variety has given its best relative performance in the North region and in an early sowing situation. It has moderate straw strength but responds well to plant growth regulators. Elicit has high resistance to yellow rust, combined with resistance to orange wheat blossom midge. It has a tendency to sprout, so should be given priority at harvest. Elicit is no longer under test in RL trials.

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

#### KWS Brium

distilling: medium

KWS Solo x KWS Basset

**Quality:** A UKFM Group 3 variety with high Hagbergs. It is rated as 'medium' for distilling.

**Agronomy:** This variety has given high treated yields in the East region. It has a high treated yield potential in a second-cereal position, and limited data suggest it has a very high treated yield potential in a late sowing situation. KWS Brium is medium-tall and relatively late maturing. It has high resistance to yellow rust and mildew.

**UKFM comment:** This variety meets the Group 3 criteria.

#### KWS Firefly

Cougar x KWS Rowan

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

**Agronomy:** This short, stiff-strawed variety has a high treated yield potential in a late sowing situation. KWS Firefly has resistance to orange wheat blossom midge. It is no longer under test in RL trials.

**UKFM comment:** This variety meets the Group 3 criteria.

#### KWS Guium

distilling: medium

KWS Rowan x KWS Tempo

**Quality:** A UKFM Group 3 variety. It has a high specific weight and is rated as 'medium' for distilling.

**Agronomy:** This variety has given very high treated yields in the East region and has a high treated yield potential in the North. It has performed well across a range of soil types and rotational positions. It has also given very high treated yields across a range of sowing dates (based on limited data) and on heavier soils. It is a medium-tall and late maturing variety. KWS Guium has high resistance to yellow rust and fusarium ear blight, combined with resistance to orange wheat blossom midge. It is very susceptible to brown rust.

**UKFM comment:** This variety meets the Group 3 criteria, although its water absorption is slightly lower than other Group 3 varieties.

#### LG Astronomer

distilling: medium

(Cougar x Leeds) x Britannia

**Quality:** A UKFM Group 3 wheat, rated as 'medium' for distilling.

**Agronomy:** This relatively stiff-strawed variety has given its best relative performance on heavier soils and in an early sowing situation. LG Astronomer has high resistance to yellow rust and brown rust, combined with resistance to orange wheat blossom midge. It is susceptible to mildew.

**UKFM comment:** This variety meets the Group 3 criteria, although it shows slight variability in gluten quality.

#### LG Illuminate

distilling: medium

(Cougar x Leeds) x Britannia

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

**Agronomy:** This short-strawed variety has given high treated yields on lighter soils and has a very high treated yield potential in an early sowing situation. LG Illuminate has high resistance to yellow rust, combined with resistance to orange wheat blossom midge.

**UKFM comment:** This variety meets the Group 3 criteria.

# Winter wheat 2023/24

## Variety comments

### UKFM Group 3 varieties



#### LG Prince

distilling: medium

(Cougar x KWS Kielder) x Revelation

**Quality:** A UKFM Group 3 wheat with a low specific weight. It is rated 'medium' for distilling.

**Agronomy:** This short and relatively stiff-strawed variety has given high treated yields in the East region and is very high yielding in a second-cereal position, on lighter soils, and in early and late sowing situations. It is a relatively late maturing variety. LG Prince has high resistance to yellow rust and brown rust, combined with resistance to orange wheat blossom midge. It is susceptible to mildew. Limited data suggest that this variety may have a tendency to sprout, so should be given priority at harvest.

**UKFM comment:** This variety meets the Group 3 criteria, although its protein level is slightly lower than other Group 3 varieties.

#### Merit

distilling: medium

Britannia x Cougar

**Quality:** A UKFM Group 3 wheat recommended for the East region. It is classified as a **uks** soft wheat for export and is rated 'medium' for distilling.

**Agronomy:** This variety has given high treated yields in the East region. It has performed well across a range of soil types, with a very high yield potential in a late sowing situation. This variety has moderate straw strength that requires careful management. Merit has high resistance to yellow rust and brown rust, combined with resistance to orange wheat blossom midge. It is susceptible to mildew.

**UKFM comment:** This variety meets the Group 3 criteria.

#### RGT Rashid

distilling: medium

**Quality:** A UKFM Group 3 variety recommended for the East region. It is rated as 'medium' for distilling.

**Agronomy:** This late maturing and stiff-strawed variety has given very high treated yields in the East region. Limited data suggest it has a very high yield potential in a late sowing situation. RGT Rashid has high resistance to yellow rust and fusarium ear blight, combined with resistance to orange wheat blossom midge. It is susceptible to mildew.

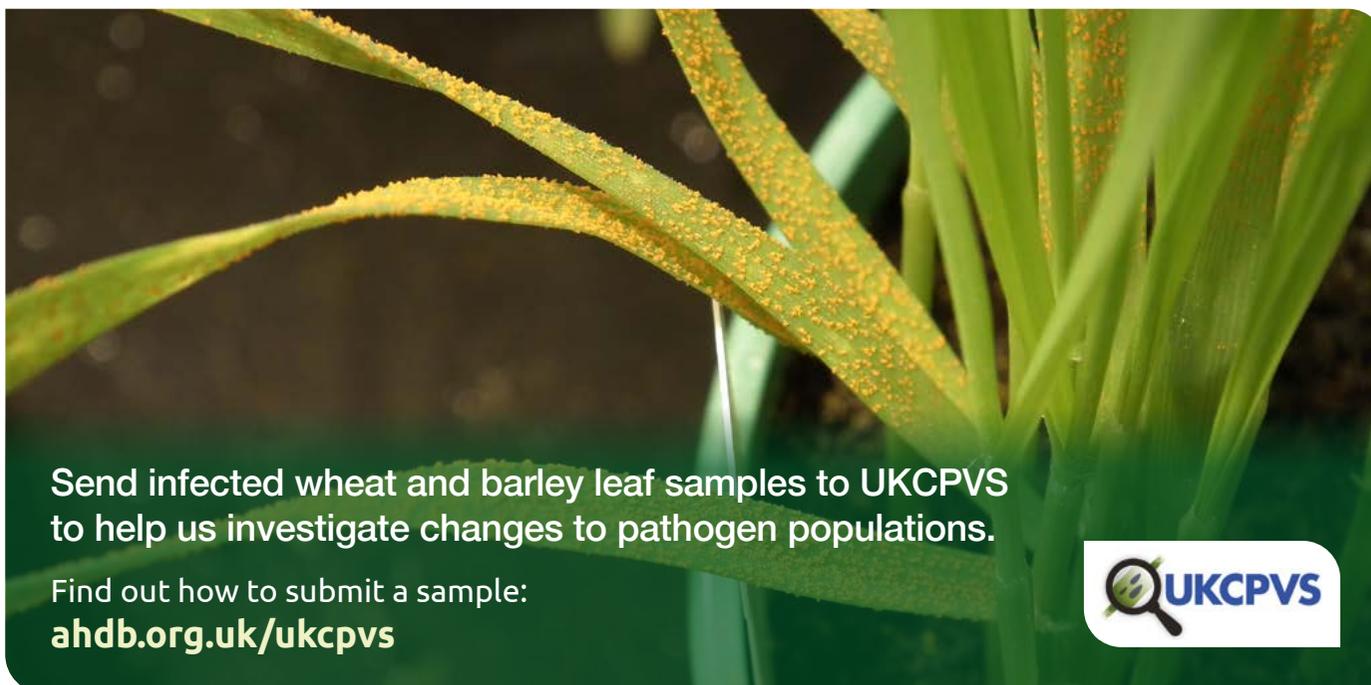
**UKFM comment:** This variety meets the Group 3 criteria.

#### RGT Wilkinson distilling: medium

**Quality:** This new addition is a high-yielding UKFM Group 3 variety recommended for the UK. It is classified as a **uks** soft wheat for export and is rated as 'medium' for distilling. It tends to give a lower specific weight.

**Agronomy:** This short and stiff-strawed variety is high yielding in the West region, across rotational positions and on heavier soils. It has a very high yield potential in the East region and on lighter soils (based on limited data). RGT Wilkinson is relatively late maturing and has high resistance to yellow rust and mildew. Limited data suggest that this variety may have a tendency to sprout, so should be given priority at harvest.

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



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[ahdb.org.uk/ukcpvs](http://ahdb.org.uk/ukcpvs)



# Winter wheat 2023/24

## Variety comments

### Soft Group 4 varieties

#### Elation

distilling: good

Cassius x Viscount

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

**Agronomy:** This short and relatively stiff-strawed variety has given its best relative performance in a second-cereal position, a late sowing situation and on lighter soils. Elation has high resistance to yellow rust and mildew, combined with resistance to orange wheat blossom midge. It is susceptible to septoria tritici. Elation is no longer under test in RL trials.

#### KWS Jackal

distilling: medium

KWS Santiago x KWS W177

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

**Agronomy:** This variety has given its best relative performance in an early sowing situation and a second-cereal position (based on limited data). KWS Jackal has high resistance to yellow rust and mildew, combined with resistance to orange wheat blossom midge. It is no longer under test in RL trials.

#### KWS Zealum

distilling: medium

**Quality:** This new addition is a high-yielding, soft-milling feed variety recommended for the North region. It is rated as 'medium' for distilling.

**Agronomy:** This relatively late maturing variety has given high treated yields in the North region (based on limited data). It has a very high treated yield potential on heavier soils, in a second-cereal position and in an early sowing situation (based on limited data). It has moderate straw strength but responds well to plant growth regulators. KWS Zealum has high resistance to yellow rust, mildew, and fusarium ear blight, combined with resistance to orange wheat blossom midge.

#### LG Redwald

distilling: medium

**Quality:** This new addition is a very high-yielding, soft-milling feed variety recommended for the East and West regions. It tends to give a lower specific weight and is rated as 'medium' for distilling.

**Agronomy:** LG Redwald is a relatively late maturing variety. It has a very high yield potential in the East and West regions across rotational positions, soil types and sowing dates (based on some limited data). This medium-tall variety is relatively weak-strawed and requires careful management. Over the three years of testing, it has shown no major weakness to disease and has given high yields in untreated UK trials. It has high resistance to septoria tritici, an improvement on current soft Group 4 varieties, and high resistance to yellow rust, combined with resistance to orange wheat blossom midge.

#### LG Skyscraper

distilling: medium

(Cassius x NAWW29) x KWS Santiago

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

**Agronomy:** LG Skyscraper has given high treated yields across the UK and across a range of soil types, sowing dates and rotational positions. It has a very high yield potential in a second-cereal position. This medium-tall variety has moderate straw strength that requires careful management. It has high resistance to yellow rust and mildew, combined with resistance to orange wheat blossom midge.

#### RGT Bairstow

distilling: good

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

**Agronomy:** This relatively late maturing variety has given high treated yields throughout the UK. It has performed well across a range of rotational positions. It has a very high yield potential across a range of soil types and in a late sowing situation (based on limited data). It is a medium-tall variety with moderate straw strength that requires careful management. RGT Bairstow has high resistance to yellow rust, combined with resistance to orange wheat blossom midge.

# Winter wheat 2023/24

## Variety comments

### Soft Group 4 varieties

#### RGT Saki

**Quality:** A soft-milling feed wheat recommended for the UK. It has a low specific weight and is rated as 'poor' for distilling due to low alcohol levels.

**Agronomy:** RGT Saki has given high treated yields in the East and North regions and across a range of rotational positions, soil types and sowing dates. This relatively late maturing variety has moderate straw strength but responds well to plant growth regulators. RGT Saki has high resistance to yellow rust, combined with resistance to orange wheat blossom midge.

#### RGT Stokes

distilling: good

**Quality:** A soft-milling feed variety recommended for the UK. It has a low specific weight and is rated as 'good' for distilling.

**Agronomy:** RGT Stokes has given very high treated yields in the West region and has a high yield potential in the North. It is a relatively late maturing variety and has shown a high yield potential across rotational positions and soil types. It has performed particularly well on lighter soils, where it is very high yielding. This medium-tall variety is relatively weak-strawed and requires careful management. RGT Stokes has high resistance to yellow rust.

#### Swallow

distilling: good

KWS Gator x Cougar

**Quality:** Recommended for the North region as a soft-milling feed variety. It is rated as 'good' for distilling.

**Agronomy:** This variety has given its best relative performance in the North region and on lighter soils. Swallow is stiff strawed and is the shortest variety on the recommended list for winter wheat 2023/24. It has resistance to orange wheat blossom midge. Limited data suggest that this variety may have a tendency to sprout, so should be given priority at harvest.

### Hard Group 4 varieties

#### Champion

DSV20122 x Reflection

**Quality:** A hard-milling feed variety recommended for the UK. It has a low specific weight.

**Agronomy:** Champion has given very high treated yields in the East and West regions, with a high yield potential in the North region. It has a very high yield potential across a range of rotational positions, soil types and sowing dates (based on some limited data). This variety has moderate straw strength that requires careful management. Champion has given high yields in untreated UK trials. It has high resistance to mildew and yellow rust and very high resistance to septoria tritici, combined with resistance to orange wheat blossom midge.

#### Costello

W151 x Timaru

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

**Agronomy:** This variety has a high yield potential in a late sown situation. Costello is a short and relatively stiff-strawed variety that is relatively late maturing. It has high resistance to yellow rust, mildew and fusarium ear blight.

#### Gleam

KWS Kielder x Hereford

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

**Agronomy:** This variety has given high treated yields across the UK and a range of rotational positions, soil types and sowing dates. It has a very high yield potential in the West region. Gleam has high resistance to mildew, combined with resistance to orange wheat blossom midge.

#### Graham

Premio x Expert

**Quality:** A hard-milling feed variety recommended for the UK. It has high Hagbergs.

**Agronomy:** This relatively stiff-strawed variety has given very high treated yields in the West region. Graham also has a high yield potential in the North region and across a range of rotational positions and soil types. This relatively early maturing variety has given high yields in untreated UK trials. It has high resistance to yellow rust, septoria tritici and fusarium ear blight.

# Winter wheat 2023/24

## Variety comments

### Hard Group 4 varieties

#### KWS Cranium

KWS Crispin x KWS Kielder

**Quality:** A hard-milling feed variety recommended for the UK. It has high Hagbergs but a low specific weight.

**Agronomy:** This late maturing variety has given high treated yields in the East and North regions. It has performed well across a range of rotational positions and on lighter soil, where it is high yielding. KWS Cranium has a very high yield potential in a late sowing situation. It is a medium-tall variety with stiff straw. It has high resistance to yellow rust and fusarium ear blight, combined with resistance to orange wheat blossom midge. It is susceptible to brown rust.

#### KWS Dawsum

KWS Kerrin x Costello

**Quality:** A hard-milling feed variety recommended for the UK. It has high Hagbergs and specific weights.

**Agronomy:** This short-strawed variety has performed well throughout the UK and has given very high treated yields in the West and North regions. It also has a very high yield potential across a range of rotational positions, soil types and sowing dates (based on limited data). KWS Dawsum has shown no major weaknesses to disease and has given very high yields in untreated UK trials. It has high resistance to mildew, yellow rust, brown rust and fusarium ear blight.

#### LG Typhoon

Garrus x LGW88

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

**Agronomy:** LG Typhoon has a high yield potential in a second-cereal position, an early sowing situation and on lighter soils. LG Typhoon has shown no major weaknesses to disease and has given high yields in untreated UK trials. It has high resistance to yellow rust and septoria tritici, combined with resistance to orange wheat blossom midge. Limited data suggest that this variety may have a tendency to sprout, so should be given priority at harvest.

#### Oxford **NEW**

DSV20122 x Reflection

**Quality:** This new addition is a very high-yielding, hard-milling feed variety recommended for the East and West regions. It tends to give a lower specific weight.

**Agronomy:** Oxford has given very high treated yields in the East and West region. It has performed well across rotational positions, soil types and sowing dates and has a very high yield potential on heavier soils and in a second-cereal position (based on limited data). This relatively late maturing variety has moderate straw strength but responds well to plant growth regulators. It has high resistance to yellow rust, combined with resistance to orange wheat blossom midge.

#### RGT Wolverine

**Quality:** A hard-milling feed variety with a specific recommendation for resistance to *Barley yellow dwarf virus* (BYDV). It has high Hagbergs but a low specific weight.

**Agronomy:** This relatively late maturing variety has given its best relative performance in the West and North regions. RGT Wolverine has high resistance to brown rust, but it is susceptible to yellow rust.

#### SY Insitor

(Hereford x Oakley) x Hereford

**Quality:** A hard-milling feed variety recommended for the UK. It has high Hagbergs and specific weights.

**Agronomy:** SY Insitor has given very high treated yields throughout the UK, as well as across a range of soil types and rotational positions. It has a high yield potential in a late sowing situation. This medium-tall variety has moderate straw strength but responds well to plant growth regulators. It has high resistance to mildew and fusarium ear blight, combined with resistance to orange wheat blossom midge. It has a tendency to sprout, so should be given priority at harvest.

#### Theodore

Stigg x Tuxedo

**Quality:** A hard-milling feed variety recommended for the West region. It has high Hagbergs but a low specific weight.

**Agronomy:** Theodore has given its best relative performance in the West region. It is a short variety with moderate straw strength but responds well to plant growth regulators. It has given high yields in untreated UK trials. It has high resistance to yellow rust, brown rust and mildew and the highest rating for resistance to septoria tritici on the recommended list for winter wheat 2023/24. Theodore is no longer under test in RL trials.

# Spring wheat 2023



	KWS Harsum	KWS Ladium	Mulika	Nissaba	KWS Alicium	KWS Lightum	KWS Cochise	KWS Giraffe	KWS Chilham	KWS Fixum	WPB Escape	Hexham	KWS Talisker	Average LSD (5%)
End-use group	UKFM Group 1				UKFM Group 2					Hard Group 4				
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Variety status	<b>NEW</b>		<b>C</b>		<b>NEW</b>	<b>NEW</b>	<b>C</b>	*	*			<b>*C</b>	*	
<b>UK yield as % control (spring sowing)</b>														
Fungicide-treated (6.8 t/ha)	102	102	95	94	105	102	102	102	99	107	104	104	103	3.6
<b>Grain quality (spring sowing)</b>														
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	12.8	13.4	13.8	13.6	13.3	13.4	13.4	13.5	13.0	12.9	12.8	12.8	12.6	0.2
Hagberg Falling Number	330	337	332	314	346	325	250	319	359	231	271	291	295	20.1
Specific weight (kg/hl)	78.3	78.0	77.0	76.4	80.3	78.4	78.6	79.7	78.1	77.6	76.4	77.1	79.0	0.6
<b>Agronomic features (spring sowing)</b>														
Resistance to lodging with PGR <sup>∞</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Straw length without PGR (cm)	78	75	79	77	85	79	78	75	74	79	73	78	80	2.0
Ripening (days +/- Mulika)	+1	0	0	+2	-1	0	+1	0	0	+1	+1	+2	+1	1.0
<b>Disease resistance</b>														
Mildew (1-9)	[7]	[7]	6	[5]	[8]	[8]	8	8	8	[8]	8	6	8	1.0
Yellow rust (1-9)	7	6	6	5	6	6	4	6	6	7	8	8	9	0.6
Brown rust (1-9)	5	7	9	[9]	6	7	8	7	6	7	6	9	5	1.4
Septoria tritici (1-9)	[7]	[7]	7	[6]	[7]	[6]	6	[6]	[7]	[6]	[6]	[7]	[6]	0.9
Orange wheat blossom midge	R	-	R	R	R	R	R	-	R	-	-	-	-	-
<b>Annual treated yield (% control, spring sowing)</b>														
2018 (5.5 t/ha)	-	-	[94]	-	-	-	[106]	[106]	[98]	-	[112]	[100]	[105]	6.1
2019 (7.0 t/ha)	-	103	93	92	-	-	105	100	96	108	104	103	103	4.1
2020 (6.4 t/ha)	[102]	[98]	[94]	[96]	[101]	[100]	[101]	[97]	[99]	[108]	[103]	[105]	[102]	4.4
2021 (7.6 t/ha)	105	103	96	96	106	106	100	102	103	106	[103]	105	105	4.1
2022 (7.3 t/ha)	99	102	98	93	106	100	98	104	97	105	102	105	103	3.7
<b>Breeder/UK contact</b>														
Breeder	KWS	KWS	BA	BA	KWSGmbH	KWS	KWS	KWS	KWS	KWS	WPB	KWS	KWS	
UK contact	KWS	KWS	Sen	BA	KWS	KWS	KWS	KWS	KWS	KWS	LSPB	Sen	KWS	
<b>Status in RL system</b>														
Year first listed	23	22	11	22	23	23	17	20	17	22	21	19	19	
RL status	P1	P2	-	P2	P1	P1	-	*	*	P2	-	*	*	

Varieties no longer listed: KWS Kilburn.

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

For breeder/UK contact information, see page 59.

UKFM = UK Flour Millers	PGR = Plant growth regulator	R = Believed to be resistant to orange wheat blossom midge (OWBM), but this has not been verified in RL tests	P1 = First year of recommendation	LSD = Least significant difference
UK = Recommended for the UK	∞ = No ratings available		P2 = Second year of recommendation	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
C = Yield control	[ ] = Limited data			
* = Variety no longer under test in RL trials				

# Spring wheat 2023

## Variety comments

### UKFM Group 1 varieties



#### KWS Harsum **NEW**

**Quality:** This new addition is a UKFM Group 1 variety for spring sowing. It has given high Hagbergs and good grain proteins.

**Agronomy:** This variety has given similar treated yields to KWS Ladum, a significant step up in its UKFM Group 1 segment. KWS Harsum has high resistance to yellow rust, and limited data suggest it has high resistance to mildew and septoria tritici. It has resistance to orange wheat blossom midge.

**UKFM comment:** Over the three years of testing, this variety showed lower protein than other Group 1 spring varieties, but the gluten strength was good and consistent. Good baking performance was seen, with only slight variability.

#### KWS Ladum

**Quality:** A UKFM Group 1 variety for spring sowing. It has given high Hagbergs and good grain proteins.

**Agronomy:** This variety has given treated yields that are a significant step up in its UKFM Group 1 segment. Limited data suggest that KWS Ladum has shown no major weakness to disease, with high resistance to mildew, brown rust and septoria tritici.

**UKFM comment:** This variety has good protein levels and gluten quality, although slight variation is seen in the baking quality.

#### Mulika

Paragon x (Tybalt x Robigus)

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

**Agronomy:** This variety has given similar treated yields in both spring and late-autumn sowings. Mulika has shown no major weakness to disease and has high resistance to brown rust and septoria tritici, combined with resistance to orange wheat blossom midge.

**UKFM comment:** This variety has good protein levels, but the gluten quality is weaker than the other Group 1 spring varieties and there is some variability in its baking performance.

#### Nissaba

Hathaway x BA W54

**Quality:** A UKFM Group 1 variety for spring sowing. It has given high Hagbergs and good grain proteins.

**Agronomy:** This variety has given treated yields from spring sowings that are similar to the current Group 1 control Mulika. It is a relatively late maturing variety. Limited data suggest that Nissaba has high resistance to brown rust, combined with resistance to orange wheat blossom midge.

**UKFM comment:** This variety has good protein levels and gluten quality, although slight variation is seen in the baking quality.

### UKFM Group 2 varieties



#### KWS Alicium **NEW**

**Quality:** This new addition is a high-yielding UKFM Group 2 variety for spring sowing. It has given high Hagbergs and specific weights and good grain proteins.

**Agronomy:** This relatively early maturing variety has given high treated yields in spring sowings. Limited data suggest that KWS Alicium has shown no major weakness to disease over the three years of testing, with high resistance to mildew and septoria tritici, combined with resistance to orange wheat blossom midge.

**UKFM comment:** Over the three years of testing, this variety showed good specific weights and gluten quality, although slight variability was seen in the baking performance.

#### KWS Chilham

Sparrow x Azurite

**Quality:** A UKFM Group 2 variety for spring sowing. It has given high Hagbergs and good grain proteins.

**Agronomy:** This variety has given similar treated yields in both spring and late-autumn sowings. KWS Chilham has high resistance to mildew and septoria tritici (based on limited data), combined with resistance to orange wheat blossom midge. KWS Chilham is no longer under test in RL trials.

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

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.

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 wheats.

# Spring wheat 2023

## Variety comments

### UKFM Group 2 varieties



#### KWS Cochise

Ashby x Lapis

**Quality:** A UKFM Group 2 variety for spring sowing. It has given high specific weights and good grain proteins.

**Agronomy:** This variety has given consistent treated yields in both spring and late-autumn sowings. KWS Cochise has high resistance to mildew and brown rust, combined with resistance to orange wheat blossom midge. It is susceptible to yellow rust.

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

#### KWS Giraffe

KWS Recoleta x KWS Kilburn

**Quality:** A UKFM Group 2 variety for spring sowing. It has given high Hagbergs and specific weights and good grain proteins.

**Agronomy:** This variety has given consistent treated yields in both spring and late-autumn sowings (based on limited data). It has high resistance to mildew and brown rust. KWS Giraffe is no longer under test in RL trials.

**UKFM comment:** This variety has shown similar quality to Mulika. The gluten quality is acceptable, although there is some variability in its baking performance.

#### KWS Lightum NEW

**Quality:** This new addition is a UKFM Group 2 variety for spring sowing. It has given high Hagbergs and good grain proteins.

**Agronomy:** This variety has given similar treated yields in spring sowings to KWS Cochise and KWS Giraffe. Limited data suggest that KWS Lightum has shown no major weakness in disease over the three years of testing, with high resistance to mildew and brown rust, combined with resistance to orange wheat blossom midge.

**UKFM comment:** Over the three years of testing, this variety showed good analytical qualities. The gluten quality was acceptable, but some yellowness was seen in the flour colour. Some variability was seen in the baking performance.



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[ahdb.org.uk/cpd](http://ahdb.org.uk/cpd)

**BASIS** **NRoSO**

### Group 4 feed varieties

#### Hexham

**Quality:** A hard feed variety for spring sowing.

**Agronomy:** Hexham has given high treated yields in both spring and late-autumn sowings. This is a relatively late maturing variety. Limited data suggest that Hexham has shown no major weakness in disease, with high resistance to yellow rust, brown rust and septoria tritici. Hexham is no longer under test in RL trials.

#### KWS Fixum

**Quality:** A hard feed variety for spring sowing. It has given good grain proteins.

**Agronomy:** KWS Fixum has given the highest treated yields on the 2023 recommended list. Limited data suggest that KWS Fixum has shown no major weakness in disease, with high resistance to yellow rust, mildew and brown rust.

#### KWS Talisker

KWS Westfield x KWS Pepito

**Quality:** A hard feed variety for spring sowing. It has given high Hagbergs and specific weights and gives good grain proteins.

**Agronomy:** It has high resistance to yellow rust and mildew. It is no longer under test in RL trials.

#### WPB Escape

**Quality:** A hard feed variety for spring sowing. It has given high Hagbergs and good grain proteins.

**Agronomy:** WPB Escape has given high treated yields from spring sowings. Limited data suggest that WPB Escape has shown no major weakness in disease and has high resistance to yellow rust and mildew.

# Candidate varieties – wheat trials harvest 2023

## Winter wheat



Previous/proposed name  
Variety ID  
UK contact

### Selected as potential bread-making varieties

LG Partridge	LGWU177	3120	Limagrain UK
SY Cheer	SY120623	3134	Syngenta UK Ltd
KWS Dragum	KWSW411	3147	KWS UK

### Selected as potential biscuit-making varieties

Bamford	EW8768	3099	Elsoms Seeds Ltd
Almara	SEWC148	3111	Senova
LG Grendel	LGWU186	3129	Limagrain UK
LG Arkle	LGWU188	3131	Limagrain UK
KWS Skateum	KWSW422	3158	KWS UK

### Selected as potential feed varieties

Blackstone	EW81055	3106	Elsoms Seeds Ltd
LG Redrum	LGWU180	3123	Limagrain UK
LG Beowulf	LGWU182	3125	Limagrain UK
Bolinder	EWQ0377	3142	Elsoms Seeds Ltd

Candidate varieties will be considered for the RL 2024/25.

## Spring wheat



Previous/proposed name  
Variety ID  
UK contact

### Selected as potential bread-making varieties

SEW19-3003SW	-	3164	Cope Seeds & Grain
WPB Mylo	WPB16SC156-06	3176	LS Plant Breeding

Candidate varieties will be considered for the RL 2024.

After a candidate variety achieves National Listing, the data is published online ([ahdb.org.uk/rl](https://ahdb.org.uk/rl)) and on the RL app ([ahdb.org.uk/rlapp](https://ahdb.org.uk/rlapp))

# MAGB overview



The Malting Barley Committee (MBC) of the Maltsters' Association of Great Britain (MAGB) evaluates and approves barley varieties for their suitability for brewing, malting and distilling use. There is a considerable UK market for MBC approved varieties, with approximately 1.9 million tonnes of UK malting barley purchased each year.

The local market requirements vary considerably across the UK, and this should guide growers' variety choice and management, particularly the management of nitrogen (Figure 4).

The assessment of varieties for suitability in different malting markets takes several years and varieties are added to the RL while still undergoing MBC evaluation.

Farmers should speak to merchants before committing to varieties that are still under evaluation, to ensure an end market is available.

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

MBC Approved List – Winter barley 	
<b>Brewing use</b>	<b>Full approval:</b> Craft, Electrum
<b>Malt distilling use</b>	None approved
<b>Grain distilling use</b>	None approved

## MBC Approved List – Spring barley

### Brewing use

**Full approval:** Laureate, RGT Planet, LG Diablo  
**Provisional approval:** Skyway

### Malt distilling use

**Full approval:** Laureate, KWS Sassy, LG Diablo, Firefoxx  
**Provisional approval:** None approved

### Grain distilling use

**Full approval:** Fairing  
**Provisional approval:** None approved

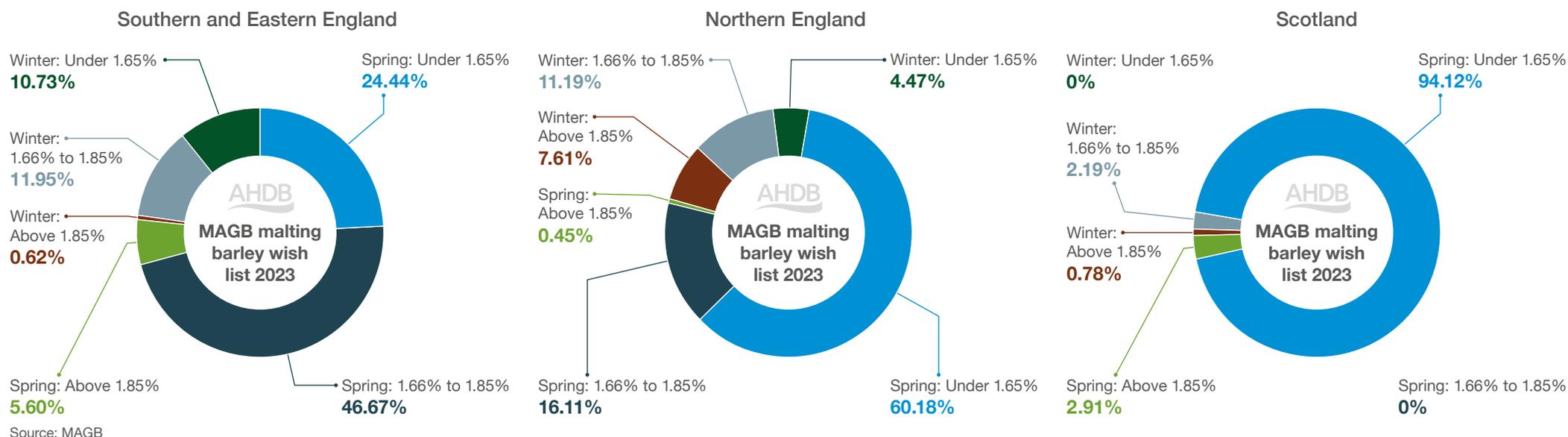


Figure 4. The charts above shows MAGB members' wish list for grain nitrogen levels in 2023 barley crop purchases from England and Scotland

# Winter barley 2023/24

## Market options, yield and grain quality



	Buccaneer	Electrum	Craft	LG Caravelle	Bolivia	KWS Tardis	Bolton	Lightning	Bordeaux	LG Mountain	LG Dazzle	Surge	KWS Hawking	KWS Orwell	Valerie	California	KWS Cassia	SY Thunderbolt #	SY Kingsbarn #	SY Kingston #	SY Canyon #	Belmont #	SY Nephin #	Belfry #	Bazooka #	KWS Feeris	Funky	Average LSD (5%)	
End-use group	Two-row malting			Two-row feed														Six-row feed											
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK		
Variety status	<b>NEW</b>	<b>C</b>	<b>C</b>	<b>NEW</b>	<b>NEW</b>					<b>C</b>	*				*	*	<b>C</b>				*	<b>NEW</b>				<b>*C</b>			
<b>Fungicide-treated grain yield (% treated control)</b>																													
United Kingdom (9.8 t/ha)	100	96	94	106	104	103	103	103	103	102	101	101	100	100	99	98	97	106	106	106	106	105	105	104	104	103	102	2.4	
East region (9.5 t/ha)	101	96	94	109	105	105	105	104	105	102	104	102	102	100	100	100	97	106	106	105	106	106	106	104	104	103	101	2.9	
West region (9.9 t/ha)	[97]	96	94	[105]	[104]	102	101	102	101	102	99	100	99	101	97	97	97	108	106	107	107	105	[103]	104	103	103	103	3.6	
North region (10.4 t/ha)	[102]	96	94	[104]	[102]	102	102	103	102	101	101	99	98	98	100	94	95	105	107	106	105	105	[105]	104	104	100	103	3.3	
<b>Untreated grain yield (% treated control)</b>																													
United Kingdom (9.8 t/ha)	87	79	79	89	89	85	86	90	83	83	88	88	83	82	78	80	82	89	85	88	91	78	90	88	84	85	88	4.7	
<b>Main market options</b>																													
MBC malting approval for brewing use	T	F	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Grain quality</b>																													
Specific weight (kg/hl)	70.3	70.5	70.7	71.8	70.2	70.6	69.9	69.4	71.1	71.1	69.5	70.6	69.8	69.3	71.2	69.1	72.4	70.9	70.9	70.7	71.7	69.9	71.4	69.7	70.5	69.8	70.0	0.7	
Screenings (% through 2.25 mm)	2.2	2.3	2.2	1.5	1.1	1.7	1.5	1.9	1.2	1.9	1.9	1.7	2.0	1.8	0.8	2.2	1.5	2.1	1.4	2.7	2.0	2.6	3.1	2.6	2.4	1.2	3.5	0.7	
Screenings (% through 2.5 mm)	6.7	6.6	6.7	4.3	2.6	5.2	4.7	5.5	3.5	5.8	5.8	4.9	5.9	5.5	1.9	7.1	4.1	7.5	5.4	9.0	6.4	9.0	10.9	9.2	8.1	5.3	13.4	1.7	
Nitrogen content (%)	1.73	1.76	1.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.76	-	0.14	
<b>Status in RL system</b>																													
Year first listed	23	18	16	23	23	21	21	22	21	19	22	16	20	16	19	13	10	21	19	21	22	18	23	16	16	22	17		

**Varieties no longer listed:** Jordan, KWS Creswell, KWS Gimlet and LG Flynn.  
 Comparisons of variety performance across regions are not valid. See page 3 for information on regional yields.

UK = Recommended for the UK	Sp = Specific recommendation. KWS Feeris has a specific recommendation for tolerance to <i>Barley yellow dwarf virus</i> (BYDV). Tolerance to BYDV has not been verified in RL tests	C = Yield control	[ ] = Limited data	LSD = Least significant difference
W = Recommended for the West region		* = Variety no longer under test in RL trials	T = Under test for MBC approval	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
		# = Hybrid variety	F = Full MBC approval	
		MBC = Malting Barley Committee		

# Winter barley 2023/24

## Yield, agronomy and disease resistance



	Buccaneer	Electrum	Craft	LG Caravelle	Bolivia	KWS Tardis	Bolton	Lightning	Bordeaux	LG Mountain	LG Dazzle	Surge	KWS Hawking	KWS Orwell	Valerie	California	KWS Cassia	SY Thunderbolt #	SY Kingsbarn #	SY Kingston #	SY Canyon #	Belmont #	SY Nephin #	Belfry #	Bazooka #	KWS Feeris	Funky	Average LSD (5%)
End-use group	Two-row malting			Two-row feed													Six-row feed											
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	
Variety status	<b>NEW</b>	<b>C</b>	<b>C</b>	<b>NEW</b>	<b>NEW</b>					<b>C</b>		*				*	*	<b>C</b>				*	<b>NEW</b>				<b>*C</b>	
<b>Fungicide-treated grain yield (% treated control)</b>																												
United Kingdom (9.8 t/ha)	100	96	94	106	104	103	103	103	103	102	101	101	100	100	99	98	97	106	106	106	106	105	105	104	104	103	102	2.4
East region (9.5 t/ha)	101	96	94	109	105	105	105	104	105	102	104	102	102	100	100	100	97	106	106	105	106	106	106	104	104	103	101	2.9
West region (9.9 t/ha)	[97]	96	94	[105]	[104]	102	101	102	101	102	99	100	99	101	97	97	97	108	106	107	107	105	[103]	104	103	103	103	3.6
North region (10.4 t/ha)	[102]	96	94	[104]	[102]	102	102	103	102	101	101	99	98	98	100	94	95	105	107	106	105	105	[105]	104	104	100	103	3.3
<b>Untreated grain yield (% treated control)</b>																												
United Kingdom (9.8 t/ha)	87	79	79	89	89	85	86	90	83	83	88	88	83	82	78	80	82	89	85	88	91	78	90	88	84	85	88	4.7
<b>Agronomic features</b>																												
Resistance to lodging without PGR (1–9)	-	7	7	-	-	8	7	[6]	7	6	[7]	7	7	7	7	7	7	5	6	6	[7]	6	-	7	6	[8]	8	1.7
Resistance to lodging with PGR (1–9)	7	7	8	7	8	8	8	6	8	7	7	7	8	8	8	7	7	5	7	5	5	6	6	7	6	7	7	1.4
Straw length without PGR (cm)	[99]	98	96	[93]	[91]	95	94	92	93	91	93	92	95	94	93	96	95	111	111	117	115	112	[110]	109	117	100	95	3.9
Straw length with PGR (cm)	90	90	89	85	89	85	83	88	84	84	85	85	86	86	87	91	90	104	104	107	107	106	102	102	108	95	91	2.4
Ripening (days +/- KWS Orwell)	+1	-1	0	0	0	0	0	0	0	-1	+1	0	+1	0	-1	0	0	-1	0	-1	0	0	0	0	0	0	-1	1.0
<b>Disease resistance</b>																												
Mildew (1–9)	6	6	6	7	7	5	6	7	6	5	6	5	6	3	7	6	5	7	7	8	7	6	6	6	5	4	5	1.2
Brown rust (1–9)	-	7	7	-	-	6	6	8	6	7	8	8	7	7	4	6	7	6	5	6	7	5	-	6	5	6	7	1.0
Rhynchosporium (1–9)	7	5	6	6	6	6	5	7	4	5	7	7	6	6	6	6	5	6	6	6	6	7	8	7	7	6	6	1.2
Net blotch (1–9)	[6]	5	5	[5]	[6]	5	5	5	5	5	5	5	5	5	5	5	5	6	5	6	5	5	[5]	5	5	6	5	0.9
BaYMV	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	-

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

UK = Recommended for the UK	Sp = Specific recommendation. KWS Feeris has a specific recommendation for tolerance to <i>Barley yellow dwarf virus</i> (BYDV). Tolerance to BYDV has not been verified in RL tests	* = Variety no longer under test in RL trials	R = Believed to be resistant to <i>Barley mild mosaic virus</i> (BaMMV) and to <i>Barley yellow mosaic virus</i> (BaYMV) strain 1, but this has not been verified in RL tests	LSD = Least significant difference
W = Recommended for the West region	C = Yield control	# = Hybrid variety		Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
		PGR = Plant growth regulator		
		[ ] = Limited data		

# Winter barley 2023/24

## Supplementary data



	Buccaneer	Electrum	Craft	LG Caravelle	Bolivia	KWS Tardis	Bolton	Lightning	Bordeaux	LG Mountain	LG Dazzle	Surge	KWS Hawking	KWS Orwell	Valerie	California	KWS Cassia	SY Thunderbolt #	SY Kingsbarn #	SY Kingston #	SY Canyon #	Belmont #	SY Nephin #	Belfry #	Bazooka #	KWS Feeris	Funky	Average LSD (5%)
End-use group	Two-row malting			Two-row feed														Six-row feed										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	W	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	
Variety status	NEW	C	C	NEW	NEW						C	*					*	*	C			*	NEW				*C	
Breeder/UK contact	Sej	SyP	SyP	LimEur	NS	KWS	Ack	Ack	NS	LimEur	Lim	SyP	KWS	KWS	Bre	Lim	KWS	SyP	SyP	SyP	SyP	SyP	SyP	SyP	SyP	SyP	KWS	KWSMR
UK contact	SU	Syn	Syn	Lim	Agr	KWS	ElsAck	ElsAck	Sen	Lim	Lim	Syn	KWS	KWS	Sen	Lim	KWS	Syn	Syn	Syn	Syn	Syn	Syn	Syn	Syn	Syn	KWS	KWS
Annual treated yield (% control)																												
2018 (10.4 t/ha)	-	96	96	-	-	104	102	-	103	102	-	99	102	100	100	97	96	105	106	105	-	105	-	103	102	-	101	-
2019 (10.5 t/ha)	-	96	94	-	-	103	103	103	103	102	101	101	100	99	-	96	96	107	106	105	105	104	-	104	104	102	102	-
2020 (9.3 t/ha)	102	95	94	107	105	103	104	104	101	104	102	100	99	101	98	96	97	105	105	107	105	105	104	104	104	102	103	-
2021 (9.7 t/ha)	99	96	95	105	103	104	102	102	101	99	101	101	98	100	99	97	97	107	107	106	107	105	106	104	105	103	103	-
2022 (9.9 t/ha)	99	96	92	105	105	101	103	103	103	102	100	101	99	99	99	98	96	107	108	107	107	106	104	105	104	103	103	-
Soil type (about 50% of trials are medium soils)																												
Light soils (9.7 t/ha)	99	96	95	103	104	102	103	102	102	102	102	100	99	99	99	96	95	104	105	106	105	104	104	103	103	101	102	3.4
Heavy soils (9.3 t/ha)	[99]	97	95	[106]	[104]	107	105	103	104	102	104	103	102	101	[100]	[99]	99	107	105	104	105	104	[104]	104	105	105	102	6.0
Agronomic characteristics																												
Lodging without PGR (%)	-	6	3	-	-	2	4	[11]	3	8	[5]	3	3	3	4	3	5	20	11	12	[6]	12	-	5	8	[2]	1	-
Lodging with PGR (%)	4	5	2	2	2	1	1	9	1	5	5	2	1	2	1	3	4	15	5	13	15	12	7	2	6	4	2	-
Brackling (%)	4	9	9	7	12	6	8	11	9	22	7	7	5	8	6	7	8	14	13	13	9	15	16	8	10	8	12	-
Malting quality																												
Hot water extract (l deg/kg)	306.9	304.6	307.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	295.8	-	3.9
Status in RL system																												
Year first listed	23	18	16	23	23	21	21	22	21	19	22	16	20	16	19	13	10	21	19	21	22	18	23	16	16	22	17	
RL status	P1	-	-	P1	P1	-	-	P2	-	-	P2	*	-	-	-	*	*	-	-	-	P2	*	P1	-	-	P2	*	

All yields on this table are taken from treated trials receiving a full fungicide and PGR programme. For breeder/UK contact information, see page 59.

UK = Recommended for the UK	Sp = Specific recommendation. KWS Feeris has a specific recommendation for tolerance to <i>Barley yellow dwarf virus</i> (BYDV). Tolerance to BYDV has not been verified in RL tests	C = Yield control	PGR = Plant growth regulator	LSD = Least significant difference
W = Recommended for the West region		* = Variety no longer under test in RL trials	[ ] = Limited data	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
		# = Hybrid variety	P1 = First year of recommendation	
			P2 = Second year of recommendation	

# Winter barley 2023/24

## Variety comments

### Winter barley two-row malting

#### Buccaneer **NEW**

**Quality:** This new addition is under test for potential malt brewing use. It has a high specific weight.

**Agronomy:** This relatively tall two-row variety has given its best relative performance in the East and North regions (based on limited data). Over the three years of testing, this variety has shown no major disease weakness. It has high resistance to rhynchosporium and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

**MAGB comment:** New variety currently under assessment by MBC for brewing. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### Craft **SY 208-56 x SY Venture**

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

**Agronomy:** Craft is a relatively stiff-strawed, two-row variety. It has high resistance to brown rust and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

**MAGB comment:** Fully approved by the MBC for brewing in 2018. Craft secured almost 44% of total winter malting barley purchased from 2021 crop and retains highest market share of 2022 crop.

Please note that comments made on resistance to *Barley yellow dwarf virus* (BYDV), *Barley mild mosaic virus* (BaMMV) and *Barley yellow mosaic virus* (BaYMV) strain 1 are based on advice from plant breeders. These have not been verified in RL tests.

UK winter malting barley market share is given as a percentage (%) of Malting Association of Great Britain (MAGB) member purchases (see page 25).

#### Electrum

**SY208-56 x SY208-59**

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

**Agronomy:** This two-row variety has given its best relative performance on heavier soils. It is a relatively early maturing variety. Electrum has high resistance to brown rust and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

**MAGB comment:** Fully approved by the MBC for brewing in 2020. Electrum continues to retain a modest market share.

### Winter barley two-row feed

#### Bolivia **NEW**

**NOS 9901-14 x Frigg**

This new addition is a high-yielding, two-row feed variety recommended for the UK. Over the three years of testing, this variety has given low screening levels. This stiff-strawed variety has performed well across a range of regions and soil types and has a very high treated yield potential in the East region. Bolivia has no major weaknesses in disease resistance and has given high yields in untreated UK trials. It has high resistance to mildew and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### Bolton

A high-yielding, two-row feed variety. This relatively stiff-strawed variety has a very high yield potential in the East region and on heavier soils. It has also performed well on lighter soils, where it is high yielding. Bolton is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### Bordeaux

**Padura x KWS Glacier**

A high-yielding, two-row feed variety with a high specific weight. This variety has given low screenings. It is a relatively stiff-strawed variety and has given high yields on heavier soils, and has a very high yield potential in the East region. Bordeaux is susceptible to rhynchosporium but is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### California

A two-row feed variety recommended for the West region. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1). California is no longer under test in RL trials.

#### KWS Cassia

**(Eden x Carat) x Saffron**

A two-row feed variety with a very high specific weight, recommended since 2010. Despite now yielding 9% lower than the top-yielding two-row feed variety on the recommended list for winter barley 2023/24, this variety is still valued for producing consistently good grain quality. It has high resistance to brown rust and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1). KWS Cassia is no longer under test in RL trials.

#### KWS Hawking

**(11-12 x LG California) x Tower**

A two-row feed variety. This relatively stiff-strawed variety has given its best relative performance in the East region and on heavier soils. KWS Hawking has high resistance to brown rust and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

# Winter barley 2023/24

## Variety comments

### Winter barley two-row feed

#### KWS Orwell

KWS Tower x Salsa

A relatively stiff-strawed, two-row feed variety. This variety has given its best relative performance in the West region and on heavier soils. KWS Orwell has high resistance to brown rust, but it is very susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### KWS Tardis

11-12 x KWS Orwell

A high-yielding, two-row feed variety with a high specific weight. This stiff-strawed variety has given very high treated yields in the East region and on heavier soils. KWS Tardis is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### LG Caravelle NEW

This new addition is a very high-yielding, two-row feed variety recommended for the UK. It has a very high specific weight. It has performed well across all regions and soil types. It has a very high treated yield potential in the East and West regions (based on limited data) and on heavier soils (based on limited data). LG Caravelle has high resistance to mildew and has given high yields in untreated UK trials. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### LG Dazzle

Surge x LGB13-6643-C

A two-row feed variety. It has given high treated yields in the East region and on heavier soils. LG Dazzle has high resistance to brown rust and rhynchosporium, and has given high yields in untreated UK trials. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### LG Mountain

A two-row feed variety with a high specific weight. It is relatively early maturing and has moderate straw strength. LG Mountain has high resistance to brown rust and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### Lightning

Kathmandu x Surge

A high-yielding, two-row feed variety. Lightning has given high treated yields in the East and North regions and on heavier soils. It has high resistance to mildew, brown rust and rhynchosporium, and has given high yields in untreated UK trials. This variety has moderate straw strength that requires careful management. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### Surge

SJ053088 x Flight

A two-row feed variety with a high specific weight. This variety has a high yield potential on heavier soils. Surge has high resistance to brown rust and rhynchosporium, and has given high yields in untreated UK trials. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1). Surge is no longer under test in RL trials.

#### Valerie

207-589 x Sandra

A two-row feed variety with a high specific weight. This variety has given its best relative performance in the East and North regions and on heavier soils (based on limited data). Valerie combines good grain quality characteristics with relatively stiff straw. It is a relatively early maturing variety with high resistance to mildew, but is susceptible to brown rust. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

### Winter barley six-row feed

#### Bazooka

A six-row hybrid feed variety with a high specific weight. It has produced consistent treated yields across the UK and soil types, and has a high treated yield potential on heavier soils. It is a tall variety with moderate straw strength that requires careful management. It has high resistance to rhynchosporium and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### Belfry

A six-row hybrid feed variety. It has produced consistent treated yields across the UK and soil types. It is tall and relatively stiff strawed for a six-row hybrid variety. Belfry has high resistance to rhynchosporium and has given high yields in untreated UK trials. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

# Winter barley 2023/24

## Variety comments

### Winter barley six-row feed

#### Belmont

A high-yielding six-row hybrid feed variety. Belmont has performed well across all regions and has a very high yield potential in the East region. It is a tall variety with moderate straw strength that requires careful management. It has high resistance to rhynchosporium and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1). Belmont is no longer under test in RL trials.

#### Funky

Gigga x Meridian

A relatively early maturing six-row (non-hybrid) feed variety. This variety gives higher screening levels. It is short and relatively stiff strawed and gives its best relative performance in the West and North regions. Funky has high resistance to brown rust and has given high yields in untreated UK trials. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1). Funky is no longer under test in RL trials.

#### KWS Feeris

Amistar x KWS Kosmos

A six-row (non-hybrid) feed variety with a specific recommendation for the UK for its tolerance to Barley yellow dwarf virus (BYDV). KWS Feeris is relatively short-strawed for a six-row variety and gives the lowest screening levels for a six-row variety on the recommended list for winter barley 2023/24. It is a relatively stiff-strawed variety and has a high yield potential on heavier soils. KWS Feeris is susceptible to mildew but is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### SY Canyon

A very high-yielding six-row hybrid feed variety with a very high specific weight, the highest for a six-row variety on the recommended list for winter barley 2023/24. It has performed well across all regions and soil types and has a very high yield potential in East and West regions. SY Canyon has high resistance to mildew and brown rust and has given the highest untreated yields in UK trials. It is a tall variety with relatively weak straw that requires careful management. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### SY Kingsbarn

A very high-yielding six-row hybrid feed variety with a high specific weight. This variety has given very high treated yields throughout the UK and has a high yield potential on both light and heavy soils. This tall variety has moderate straw strength but responds well to plant growth regulators. It has high resistance to mildew and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### SY Kingston

A very high-yielding six-row hybrid feed variety with a high specific weight. This relatively early maturing variety has given very high treated yields in the West and North regions and on lighter soils. It has also performed well in the East, where it is high yielding. It is a tall variety with relatively weak straw that requires careful management. SY Kingston has no major weaknesses in disease resistance and has given high yields in untreated UK trials. It has high resistance to mildew and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### SY Nephin **NEW**

This new addition is a high-yielding six-row hybrid feed variety recommended for the UK, with a very high specific weight. This variety has a very high treated yield potential in the East, and limited data suggests it is high yielding in the North region. It is a tall variety with moderate straw strength that requires careful management. SY Nephin has the highest resistance to rhynchosporium on the recommended list for winter barley 2023/24, and has given high yields in untreated UK trials. It is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

#### SY Thunderbolt

A very high-yielding six-row hybrid feed variety with a high specific weight. This tall and relatively early maturing variety has performed well throughout the UK, and has a very high treated yield potential in the East and West regions and on heavier soils. It has relatively weak straw and requires careful management. SY Thunderbolt has no major weaknesses in disease resistance, and has given high yields in untreated UK trials. It has high resistance to mildew and is resistant to the common strains of barley mosaic viruses (BaMMV and BaYMV strain 1).

# Spring barley 2023

## Market options, yield and grain quality



	Florence	SY Tennyson	Skyway	Sun King	Diviner	SY Signet	KWS Curtis	Firefoxx	Laureate	LG Diablo	RGT Planet	KWS Sassy	Fairing	Hurler	Cadiz	Malvern	Prospect	CB Score ~	Described variety	Average LSD (5%)
End-use group	Malting varieties													Feed varieties						
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	E&W	W	UK	UK Null-Lox		
Variety status	NEW	NEW		NEW	NEW	NEW	NEW		C	C	C			NEW	*	*	*			
<b>Fungicide-treated grain yield (% treated control)</b>																				
United Kingdom (7.5 t/ha)	105	105	105	104	104	104	104	103	103	101	98	97	93	107	103	103	102	101		2.3
East region (7.5 t/ha)	106	107	106	104	104	105	105	103	103	102	99	96	93	108	104	103	103	101		3.3
West region (7.3 t/ha)	[106]	[104]	106	[107]	[104]	[103]	[103]	104	104	101	98	98	94	[108]	106	105	102	101		3.8
North region (7.8 t/ha)	104	106	102	103	105	105	103	103	102	102	99	98	92	106	100	102	101	101		2.8
<b>Main market options</b>																				
MBC malting approval for brewing use	T	T	P	T	N	T	T	-	F	F	F	N	-	-	-	-	-	-	-	-
MBC malting approval for malt distilling use	-	T	-	-	T	-	T	F	F	F	N	F	-	-	-	-	-	-	-	-
MBC malting approval for grain distilling use	-	-	-	-	-	-	-	-	-	-	N	-	F	-	-	-	-	-	-	-
<b>Grain quality</b>																				
Specific weight (kg/hl)	68.2	66.6	69.4	67.7	67.7	67.4	67.5	67.1	67.2	67.8	68.8	69.1	68.9	66.2	68.3	66.9	68.5	67.8		0.6
Screenings (% through 2.25 mm)	1.0	1.3	0.9	1.1	1.6	1.4	1.9	1.4	1.2	1.3	1.2	0.9	1.0	1.5	0.8	1.3	1.7	1.3		0.3
Screenings (% through 2.5 mm)	2.7	2.6	2.4	2.5	4.0	3.1	5.2	3.6	3.0	3.2	3.2	2.2	2.6	4.4	1.7	4.2	4.1	3.5		0.9
Nitrogen content (%)	1.51	1.47	1.54	1.51	1.51	1.48	1.50	1.51	1.52	1.49	1.54	-	-	[1.51]	1.57	[1.52]	1.56	[1.53]		0.08
<b>Status in RL system</b>																				
Year first listed	23	23	21	23	23	23	23	20	16	18	15	16	16	23	21	22	20	22		

**Varieties no longer listed:** Fairway, Jensen, Spinner, SY Bronte, SY Tungsten and SY Splendor.

**Null-Lox spring barley varieties are described. Data is provided for information only and does not constitute a recommendation.**

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

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

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

UK = Recommended for the UK	C = Yield control. For this table, Propino and SY Tungsten were also control varieties but are no longer listed	~ = Variety lacking a gene for lipogenase production (a Null-Lox variety)	F = Full MBC approval in this segment	LSD = Least significant difference
E = Recommended for the East region	* = Variety no longer under test in RL trials	MBC = Malting Barley Committee	N = Not approved by MBC in this segment	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
W = Recommended for the West region		[ ] = Limited data	P = Provisional MBC approval in this segment	
Sp = Specific recommendation. Fairing is suitable for the production of malt for grain distilling			T = Under test for MBC approval in this segment	

# Spring barley 2023

## Yield, agronomy and disease resistance



	Florence	SY Tennyson	Skyway	Sun King	Diviner	SY Signet	KWS Curtis	Firefoxx	Laureate	LG Diablo	RGT Planet	KWS Sassy	Fairing	Hurler	Cadiz	Malvern	Prospect	CB Score ~	Described variety	Average LSD (5%)
End-use group	Malting varieties													Feed varieties						
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	E&W	W	UK	UK Null-Lox		
Variety status	<b>NEW</b>	<b>NEW</b>		<b>NEW</b>	<b>NEW</b>	<b>NEW</b>	<b>NEW</b>		<b>C</b>	<b>C</b>	<b>C</b>			<b>NEW</b>	*	*	*			
<b>Fungicide-treated grain yield (% treated control)</b>																				
United Kingdom (7.5 t/ha)	105	105	105	104	104	104	104	103	103	101	98	97	93	107	103	103	102	101		2.3
East region (7.5 t/ha)	106	107	106	104	104	105	105	103	103	102	99	96	93	108	104	103	103	101		3.3
West region (7.3 t/ha)	[106]	[104]	106	[107]	[104]	[103]	[103]	104	104	101	98	98	94	[108]	106	105	102	101		3.8
North region (7.8 t/ha)	104	106	102	103	105	105	103	103	102	102	99	98	92	106	100	102	101	101		2.8
<b>Untreated grain yield (% treated control)</b>																				
United Kingdom (7.5 t/ha)	95	92	94	96	92	95	93	92	94	92	89	89	84	94	92	94	92	92		2.9
<b>Agronomic features</b>																				
Resistance to lodging without PGR (1–9)	[8]	[7]	7	[8]	[8]	[8]	[8]	7	6	7	7	6	8	[9]	7	8	7	7		1.1
Straw length without PGR (cm)	[69]	[69]	75	[72]	[67]	[71]	[69]	69	70	71	73	78	70	[65]	75	71	70	71		2.0
Ripening (days +/- RGT Planet)	0	+1	+1	+1	+1	+1	+1	0	+1	+2	0	+1	-2	+1	0	+1	+1	+1		0.8
Resistance to brackling (1–9)	9	7	7	9	9	8	9	8	8	8	8	6	8	9	8	8	9	8		0.8
<b>Disease resistance</b>																				
Mildew (1–9)	8	9	9	9	9	9	9	9	9	9	8	9	8	8	9	9	9	9		0.7
Brown rust (1–9)	5	4	4	6	5	5	4	4	5	5	5	5	5	4	4	5	5	5		1.1
Rhynchosporium (1–9) – see page 5	[6]	[3]	7	[4]	[3]	[5]	[7]	5	7	6	6	6	8	[6]	[5]	3	7	7		2.6

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

UK = Recommended for the UK	Sp = Specific recommendation. Fairing is suitable for the production of malt for grain distilling	* = Variety no longer under test in RL trials	PGR = Plant growth regulator	LSD = Least significant difference
E = Recommended for the East region	C = Yield control. For this table, Propion and SY Tungsten were also control varieties but are no longer listed	~ = Variety lacking a gene for lipogenase production (a Null-Lox variety)	[ ] = Limited data	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
W = Recommended for the West region				

# Spring barley 2023

## Supplementary data



	Florence	SY Tennyson	Skyway	Sun King	Diviner	SY Signet	KWS Curtis	Firefoxx	Laureate	LG Diablo	RGT Planet	KWS Sassy	Fairing	Hurler	Cadiz	Malvern	Prospect	CB Score ~	Described variety	Average LSD (5%)
End-use group	Malting varieties													Feed varieties						
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	UK	E&W	W	UK	UK Null-Lox		
Variety status	<b>NEW</b>	<b>NEW</b>		<b>NEW</b>	<b>NEW</b>	<b>NEW</b>	<b>NEW</b>		<b>C</b>	<b>C</b>	<b>C</b>			<b>NEW</b>	*	*	*			
<b>Breeder/UK contact</b>																				
Breeder	Bre	SyP	NS	Sec	Sec	SyP	KWS	Ack	SyP	LimEur	RAGT	KWS	SyP	Sec	NS	NS	Sej	Cal		
UK contact	Sen	Syn	Agr	Agr	Agr	Syn	KWS	ElsAck	Syn	Lim	RAGT	KWS	Syn	Agr	Sen	AgV	Sen	ADM		
<b>Annual treated yield (% control)</b>																				
2018 (6.8 t/ha)	-	-	105	-	-	-	-	104	103	102	98	97	94	-	104	-	102	-	-	-
2019 (7.8 t/ha)	-	-	105	-	-	-	-	103	103	102	100	98	93	-	104	103	103	100	-	-
2020 (7.5 t/ha)	103	105	105	103	104	104	104	102	102	102	98	97	91	106	102	103	102	100	-	-
2021 (7.8 t/ha)	107	106	104	104	105	105	105	105	104	101	97	97	93	108	104	103	103	102	-	-
2022 (7.7 t/ha)	104	104	105	105	104	104	102	103	104	100	99	98	94	107	103	102	100	101	-	-
<b>Malting quality</b>																				
Hot water extract (l deg/kg)	313.8	315.9	314.0	312.4	314.6	314.9	312.0	313.3	313.8	313.9	313.2	-	-	311.9	312.5	308.1	312.2	312.1	2.3	
<b>Status in RL system</b>																				
Year first listed	23	23	21	23	23	23	23	20	16	18	15	16	16	23	21	22	20	22		
RL status	P1	P1	-	P1	P1	P1	P1	-	-	-	-	-	-	P1	*	*	*	P2		

All yields on this table are taken from treated trials receiving a full fungicide programme.  
For breeder/UK contact information, see page 59.

UK = Recommended for the UK  
E = Recommended for the East region  
W = Recommended for the West region

Sp = Specific recommendation. Fairing is suitable for the production of malt for grain distilling  
C = Yield control. For this table, Propino and SY Tungsten were also control varieties but are no longer listed

\* = Variety no longer under test in RL trials  
~ = Variety lacking a gene for lipogenase production (a Null-Lox variety)

[ ] = Limited data  
P1 = First year of recommendation  
P2 = Second year of recommendation

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 2023

## Variety comments

### Malting varieties

#### Diviner **NEW** LG Diablo x Player

**Quality:** This new addition is a high-yielding variety recommended for the UK, with potential for malt distilling use.

**Agronomy:** This variety has a very high treated yield potential in the North region and is high yielding in the East and West regions (based on limited data). It is a short, stiff-strawed variety (based on limited data) with high resistance to brackling. Diviner has very high resistance to mildew, but limited data suggest it is very susceptible to rhynchosporium.

**MAGB comment:** New variety currently under assessment by MBC for malt distilling. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### Fairing Titouan x 144-02-4

**Quality:** Fully approved by MBC for grain distilling use. Fairing has a specific recommendation for its suitability for the production of malt for grain distilling.

**Agronomy:** This variety is early maturing, with stiff straw and high resistance to brackling. It has high resistance to mildew and rhynchosporium.

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

#### Firefoxx Chanson x Acorn

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

**Agronomy:** This variety has given high treated yields throughout the UK. It is a relatively stiff, short-strawed variety with high resistance to brackling. Firefoxx has very high resistance to mildew, but it is susceptible to brown rust.

**MAGB comment:** Fully approved by MBC for malt distilling use in autumn 2022, for 2023 crop. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### Florence **NEW** KWS Cashmere x RGT Planet

**Quality:** This new addition is a very high-yielding variety recommended for the UK, with potential for brewing use.

**Agronomy:** This variety has given very high treated yields in the East and West regions (based on limited data) and has a high yield potential for the North region. It is a short, stiff-strawed variety (based on limited data) with high resistance to brackling. Florence has high resistance to mildew and has given high untreated yields in UK trials.

**MAGB comment:** New variety currently under assessment by MBC for brewing. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### KWS Curtis **NEW** KWS 13-5141 x Embrace

**Quality:** This new addition is a high-yielding variety recommended for the UK, with potential for both brewing and malt distilling use.

**Agronomy:** This variety has given very high treated yields in the East region and high treated yields in both the North and West regions (based on limited data). It is a short, stiff-strawed variety (based on limited data) with high resistance to brackling. KWS Curtis has very high resistance to mildew and high resistance to rhynchosporium (based on limited data), but it is susceptible to brown rust.

**MAGB comment:** New variety currently under assessment by MBC for brewing and malt distilling. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### KWS Sassy Concerto x Publican

**Quality:** Fully approved by MBC for malt distilling use.

**Agronomy:** This variety has given its best relative performance in the North and West regions. It has moderate resistance to brackling. KWS Sassy has very high resistance to mildew.

**MAGB comment:** Fully approved for malt distilling use since 2017. KWS Sassy continues to hold its share of the UK spring barley market at around 9%. Growers are advised to speak to their merchants about end markets.

### Mildew resistance

The *mlo* resistance gene in barley confers almost complete resistance to barley powdery mildew. All spring barley varieties on the current recommended list carry this gene and can, therefore, be assumed to be resistant to powdery mildew.

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

# Spring barley 2023

## Variety comments

### Malting varieties

#### Laureate

Sanette x Concerto

**Quality:** Fully approved by MBC for both brewing and malt distilling use. It tends to give a lower specific weight.

**Agronomy:** This variety has given high treated yields throughout the UK. It is a short-strawed variety with high resistance to brackling. It has very high resistance to mildew, high resistance to rhynchosporium, and has given high yields in untreated UK trials.

**MAGB comment:** Fully approved by the MBC for brewing and malt distilling since 2017. Laureate continues to dominate the UK spring barley market, with 58–60% market share.

#### LG Diablo

**Quality:** Fully approved by MBC for both brewing and malt distilling use.

**Agronomy:** This variety has given high treated yields in both the North and East regions. It is a late maturing variety with relatively stiff straw and high resistance to brackling. LG Diablo has very high resistance to mildew.

**MAGB comment:** Fully approved by MBC for malt distilling use in 2019 and for brewing use in 2020. LG Diablo continues to grow its share of the UK spring barley market at around 14%.

#### RGT Planet

**Quality:** Fully approved by MBC for brewing.

**Agronomy:** It has relatively stiff straw with high resistance to brackling. RGT Planet has high resistance to mildew.

**MAGB comment:** Fully approved by MBC for brewing since 2016, RGT Planet continues to hold its share of the spring barley market at around 11%.

#### Skyway

RGT Planet x NOS 2105-11

**Quality:** A very high-yielding variety with potential for brewing use.

**Agronomy:** This variety has a very high treated yield potential in the West and East regions. It is a relatively stiff-strawed variety. Skyway has very high resistance to mildew, high resistance to rhynchosporium, and has given high yields in untreated UK trials. It is susceptible to brown rust.

**MAGB comment:** Under test by MBC for brewing, with completion expected spring 2023. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### Sun King NEW

Ellinor x Flyer

**Quality:** This new addition is a high-yielding variety recommended for the UK, with potential for brewing use.

**Agronomy:** This variety has given high treated yields in both the East and North regions. Limited data suggest it has a very high yield potential in the West region. It is a stiff-strawed variety (based on limited data) with high resistance to brackling. Sun King has very high resistance to mildew and has given high untreated yields in UK trials. Limited data suggest it is susceptible to rhynchosporium.

**MAGB comment:** New variety currently under assessment by MBC for brewing. Growers are advised to speak to merchants before committing to this or other varieties in this position.

#### SY Signet NEW

**Quality:** This new addition is a high-yielding variety recommended for the UK, with potential for brewing use.

**Agronomy:** This variety has given very high treated yields in both the East and North regions, and limited data suggest it has a high yield potential in the West region. It is a stiff-strawed variety (based on limited data) with high resistance to brackling. SY Signet has very high resistance to mildew and has given high untreated yields in UK trials.

**MAGB comment:** New variety currently under assessment by MBC for brewing. Growers are advised to speak to merchants before committing to this or other varieties in this position.

# Spring barley 2023

## Variety comments

### Malting varieties

**SY Tennyson** **NEW** SY Splendor x LG Diablo

**Quality:** This new addition is a very high-yielding variety recommended for the UK, with potential for both brewing and malt distilling use. It tends to give a low specific weight.

**Agronomy:** This variety has given very high treated yields in both the East and North regions, and limited data suggest it has a high yield potential in the West region. It is a short and relatively stiff-strawed variety (based on limited data). SY Tennyson has very high resistance to mildew. It is susceptible to brown rust, and limited data suggest it is very susceptible to rhynchosporium.

**MAGB comment:** New variety currently under assessment by MBC for brewing and malt distilling. Growers are advised to speak to merchants before committing to this or other varieties in this position.

### Feed varieties

**Cadiz** Cresendo x NOS2104-11

A high-yielding feed variety recommended for the East and West regions. It has given very high yields in the West region. It is a relatively stiff-strawed variety with high resistance to brackling. Cadiz has very high resistance to mildew, but it is susceptible to brown rust. It is no longer under test in RL trials.

**Hurler** **NEW** (RGT Planet x KWS Beckie) x Laureate

This new addition is a very high-yielding feed variety recommended for the UK. It tends to give a lower specific weight. This variety has given very high yields across all regions. It is a short, stiff-strawed variety (based on limited data) with high resistance to brackling. Hurler has high resistance to mildew and has given high yields in untreated UK trials. It is susceptible to brown rust.

**Malvern** Dragoon x NOS 2113-11

A high-yielding feed variety recommended for the West region. It gives a low specific weight. It has a very high yield potential in the West region. It is a stiff-strawed variety with high resistance to brackling. Malvern has very high resistance to mildew and has given high yields in untreated UK trials but is very susceptible to rhynchosporium. It is no longer under test in RL trials.

### Prospect

KWS Irina x Overture

A high-yielding feed variety. This variety has given high treated yields in the East and West regions. It is a relatively stiff and relatively short-strawed variety with high resistance to brackling. Prospect has very high resistance to mildew and high resistance to rhynchosporium. It is no longer under test in RL trials.

### Described varieties

#### CB Score

(CB China x RGT Planet)  
x (Lauxana x Laureate)

**Quality:** A Null-Lox 4G variety, which lacks the genes for production of lipoxgenase and dimethyl sulphate, both of which can affect beer quality. Described for the UK.

**Agronomy:** It has produced consistent treated yields across the UK. It is a relatively stiff-strawed variety with high resistance to brackling. CB Score has very high resistance to mildew and high resistance to rhynchosporium.

# Candidate varieties – barley trials harvest 2023

## Winter barley



Previous/proposed name  
Variety ID  
UK contact

### Selected as potential malting varieties

Demoisel	SC22693TH	3391	Agrii
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### Selected as potential feed varieties

LG Capitol	LGBU18-6905-D	3394	Limagrain UK
Valiant	AC14/361/28	3397	Elsoms Ackermann Barley
Valvira	AC14/066/83	3398	Elsoms Ackermann Barley
SY Loona	SY219823B	3413	Syngenta UK Ltd
SY Harrier	SY220060	3416	Syngenta UK Ltd
SY Buzzard	SY220061	3417	Syngenta UK Ltd
Aleksandra	BOLB17.4211	3419	Agrovista UK Ltd
Resolute	NOS916.008-52	3420	Agrovista UK Ltd

Candidate varieties will be considered for the RL 2024/25.

After a candidate variety achieves National Listing, the data is published online ([ahdb.org.uk/rl](https://ahdb.org.uk/rl)) and on the RL app ([ahdb.org.uk/rlapp](https://ahdb.org.uk/rlapp))

## Spring barley



Previous/proposed name  
Variety ID  
UK contact

### Selected as potential malting varieties

NOS115.165-07	NOS Munro	3427	Senova
NOS114.299-14	NOS Gambit	3428	Senova
RP19033	RGT Celest	3430	RAGT Seeds
RGT Eclipse	RP20025	3432	RAGT Seeds
LG Aquarius	LGBU19-4296-DA	3441	Limagrain UK
Olsen	SJ203517	3444	Limagrain UK
Rocker	SC70494X	3447	Agrii
Belter	SC70555X	3451	Agrii
NOS115.043-06	Nectar	3453	Agrovista UK Ltd
KWS Premis	KWS18/3518	3458	KWS UK
KWS Nelis	KWS203748	3466	KWS UK

Candidate varieties will be considered for the RL 2024.

# Winter oats 2023/24



	RGT Southwark	Cromwell	Dalguise	Gerald	Mascani	Peloton	Fusion #	Grafton	Average LSD (5%)
Variety type	Husked varieties					Naked varieties			
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	
Variety status	C	NEW	C		C				
<b>UK yield (% treated control)</b>									
Fungicide-treated (9.1 t/ha)	104	102	101	96	95	76	74	72	3.2
Untreated (% of treated control, 9.1 t/ha)	96	86	84	81	84	70	59	62	5.2
<b>Grain quality</b>									
Kernel content (%)	72.6	74.9	72.8	70.9	75.7	-	-	-	1.0
Specific weight (kg/hl)	53.9	55.3	54.7	53.2	53.5	61.6	60.5	62.9	1.1
Screenings (% through 2.0 mm)	6.0	5.2	3.6	4.6	2.0	-	-	-	1.3
Screenings (% through 1.8 mm)	-	-	-	-	-	18.3	27.9	11.2	3.1
<b>Agronomic features</b>									
Resistance to lodging without PGR (1–9)	5	[8]	4	6	6	7	9	7	1.9
Straw length without PGR (cm)	128	103	127	122	122	120	81	126	4.3
Ripening (days +/- Mascani)	-1	+1	-1	+1	0	+1	+2	-1	0.9
<b>Disease resistance</b>									
Mildew (1–9)	4	3	4	4	6	8	4	4	1.0
Crown rust (1–9)	8	5	4	4	5	6	3	4	1.1
<b>Treated yields with and without PGR (% treated control)</b>									
With PGR (9.2 t/ha)	104	101	101	96	95	76	72	72	3.1
Without PGR (9.0 t/ha)	104	104	100	96	96	77	77	74	6.5
<b>Annual treated yield (% control)</b>									
2018 (9.3 t/ha)	101	[104]	102	99	97	76	76	74	3.4
2019 (9.3 t/ha)	105	[109]	99	98	96	78	76	77	6.1
2020 (8.3 t/ha)	105	101	101	94	95	75	73	70	5.5
2021 (9.1 t/ha)	105	-	100	93	95	75	70	69	6.0
2022 (9.7 t/ha)	105	98	102	94	93	77	71	70	4.4
<b>Breeder/UK contact</b>									
Breeder	R2n	IBERS	Sen	IBERS	IBERS	IBERS	IBERS	IBERS	
UK contact	RAGT	Sen	Sen	Sen	Sen	Sen	Sen	Sen	
<b>Status in RL system</b>									
Year first listed	18	23	03	93	04	17	10	00	
RL status	-	P1	-	-	-	-	-	-	

Varieties no longer listed: RGT Lineout.

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). For breeder/UK contact information, see page 59.

C	= Yield control	[ ]	= Limited data	LSD	= Least significant difference
#	= Dwarf variety	P1	= First year of recommendation	Average LSD (5%):	Varieties that are more than one LSD apart are significantly different at the 95% confidence level
PGR	= Plant growth regulator				

# Winter oats 2023/24

## Variety comments

### Husked varieties

#### **Cromwell** NEW **Mascani x 2009-215**

This new addition is a high-yielding, husked variety recommended for the UK. This variety has a high kernel content and high specific weight. Cromwell is a short, stiff-strawed variety (based on limited data) and is susceptible to mildew.

#### **Dalguise** **Mirabel x Solva**

A husked variety with a high specific weight. Dalguise is a tall variety with weak straw strength. It is an early maturing variety, and it is susceptible to both mildew and crown rust.

#### **Gerald** **Bulwark x 76/17Cn26**

A husked variety with a low kernel content and moderate straw strength. It is susceptible to both mildew and crown rust.

#### **Mascani** **F5 CW0112/15A/05 x Stampede**

A husked variety with a very high kernel content and moderate straw strength. Mascani remains, by far, the most popular variety with oat millers and growers, valued for its grain quality characteristics. It is less susceptible to mildew than most varieties.

#### **RGT Southwark**

A very high-yielding husked variety with tall straw. It is relatively early maturing. RGT Southwark has very high resistance to the common strains of crown rust, which contributes to a high untreated yield, but it is susceptible to mildew.

### Naked varieties

#### **Fusion**

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

#### **Grafton** **(79.77CN5 x 81-110CN9) x Pendragon**

A huskless (naked) variety with tall straw and moderate straw strength. Grafton is an early-maturing variety. It is susceptible to both crown rust and mildew.

#### **Peloton**

**96-41Cn3 x 98-97Cn8**

A huskless (naked) oat variety with a higher yield potential than older varieties. It has moderate straw strength. Peloton has no major weaknesses in disease resistance and has high resistance to mildew.

## Keep control of your grain quality

Follow best sampling practice to capture quality and condition before grain leaves the farm.

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[ahdb.org.uk/grainsampling](http://ahdb.org.uk/grainsampling)

Photograph © Tim Scrivener



# Spring oats 2023



	Delfin	Merlin	WPB Isabel	Canyon	Aspen	Lion	Conway	RGT Vaughan	Described varieties			Average LSD (5%)
									Oliver	Lennon	Kamil	
Variety type	Husked varieties								Naked varieties			
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Variety status	*		C	C	*C			NEW				
<b>UK yield (% treated control)</b>												
Fungicide-treated (7.1 t/ha)	104	103	101	101	98	98	98	97	73	69	67	4.5
Untreated (% of treated control, 7.1 t/ha)	100	98	88	96	85	83	88	93	62	64	59	5.6
<b>Grain quality</b>												
Kernel content (%)	71.0	71.3	73.0	71.3	71.7	75.0	71.8	72.7	-	-	-	1.2
Specific weight (kg/hl)	50.5	51.2	53.5	51.4	51.1	52.0	49.6	52.2	59.8	58.9	62.5	1.3
Screenings (% through 2.0 mm)	3.3	1.8	2.2	3.0	2.7	2.3	2.4	2.4	-	-	-	0.8
Screenings (% through 1.8 mm)	-	-	-	-	-	-	-	-	8.2	14.0	5.3	2.5
<b>Agronomic features</b>												
Resistance to lodging without PGR (1-9)	7	[7]	7	7	6	[7]	7	[7]	7	[7]	7	0.6
Straw length without PGR (cm)	112	107	109	110	100	105	104	[109]	105	98	107	2.6
Ripening (days +/- WPB Isabel)	-1	-1	0	-1	-1	-2	-1	-1	-1	-1	+1	1.2
<b>Disease resistance</b>												
Mildew (1-9)	8	8	5	8	4	3	6	8	3	5	4	0.9
Crown rust (1-9)	4	[3]	5	4	5	[5]	4	[4]	4	[5]	4	0.9
<b>Annual treated yield (% control)</b>												
2018 (6.0 t/ha)	[107]	[105]	[101]	[96]	[102]	[102]	[97]	-	[71]	[77]	[65]	8.4
2019 (7.3 t/ha)	[100]	[106]	[102]	[101]	[97]	[98]	[94]	[95]	[75]	[66]	[67]	11.0
2020 (6.2 t/ha)	[105]	[100]	[102]	[103]	[95]	[94]	[101]	[103]	[75]	[76]	[65]	7.8
2021 (7.8 t/ha)	[102]	[103]	[102]	[101]	[97]	[97]	[99]	[95]	[73]	[66]	[73]	4.8
2022 (7.9 t/ha)	[105]	[103]	[100]	[101]	[99]	[99]	[96]	[97]	[73]	[70]	[65]	4.4
<b>Breeder/UK contact</b>												
Breeder	Nord	Selg	Wier	Nord	Bau	Nord	IBERS	R2n	Selg	IBERS	Selg	
UK contact	SU	Cope	KWS	SU	Sen	SU	Sen	RAGT	Cope	Sen	Cope	
<b>Status in RL system</b>												
Year first listed	18	22	20	11	15	22	14	23	18	22	18	
RL status	*	P2	-	-	*	P2	-	P1	-	P2	-	

Varieties no longer listed: WPB Elyann and Yukon.

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

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

For breeder/UK contact information, see page 59.

C	= Yield control	[ ]	= Limited data	LSD	= Least significant difference
*	= Variety no longer under test in RL trials	P1	= First year of recommendation	Average LSD (5%)	: Varieties that are more than one LSD
PGR	= Plant growth regulator	P2	= Second year of recommendation	apart are significantly different at the 95% confidence level	

# Spring oats 2023

## Variety comments

### Husked varieties

#### Aspen

A short, husked variety. Aspen is early maturing with a moderate straw strength. It is susceptible to mildew. Aspen is no longer under test in RL trials.

#### Canyon

A high-yielding and early maturing husked variety. Canyon has high resistance to mildew and has given high yields in untreated UK trials. It is susceptible to crown rust and has moderate straw strength.

#### Conway

An early maturing husked variety with a moderate straw strength. Conway is susceptible to crown rust.

#### Delfin

07/107 x Canyon

A very high-yielding husked variety. This variety is early maturing with a moderate straw strength. Delfin has high resistance to mildew and has given high yields in untreated UK trials. It is susceptible to crown rust. Delfin is no longer under test in RL trials.

#### Merlin

Neklan x Canyon

A very high-yielding husked variety. It is an early maturing variety with moderate straw strength (based on limited data). Merlin has high resistance to mildew and has given high yields in untreated UK trials. Limited data suggest it is very susceptible to crown rust.

#### Lion

Poseidon x Max

An early maturing, husked variety with moderate straw strength (based on limited data). Lion has a high kernel content. It is very susceptible to mildew.

#### RGT Vaughan **NEW**

This new addition is a husked variety recommended for the UK. It is an early maturing variety with moderate straw strength (based on limited data). RGT Vaughan has high resistance to mildew, but limited data suggest it is susceptible to crown rust.

#### WPB Isabel

LW 03W0383-06 x Husky

A high-yielding husked variety with moderate straw strength.

### Described naked varieties

#### Kamil

A huskless (naked) oat variety with a high specific weight. It has a moderate straw strength and is susceptible to both mildew and crown rust.

#### Lennon

MF9018-11801 x 13174Cn3/6n

A huskless (naked) oat variety with a high specific weight. Lennon is an early maturing, short variety with moderate straw strength (based on limited data).

#### Oliver

A huskless (naked) oat variety with a high specific weight. Oliver is an early maturing variety with moderate straw strength. It is susceptible to crown rust and very susceptible to mildew.

## Latest market information

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Commentary and analysis on global and domestic grain and oilseed markets (Tuesday–Friday).

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# Candidate varieties – oat trials harvest 2023

## Winter oats



Previous/proposed name  
Variety ID  
Candidate stage  
UK contact

### Husked variety

Valentine	AUW001	471	Year 3	Senova
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Year 3 candidate varieties will be considered for the RL 2025/26.

For oats, varieties will be grown in RL trials for two years (Year 3 and Year 4) before being considered for recommendation.

After a candidate variety achieves National Listing, the data is published online ([ahdb.org.uk/rl](http://ahdb.org.uk/rl)) and on the RL app ([ahdb.org.uk/rlapp](http://ahdb.org.uk/rlapp))

## Spring oats



Previous/proposed name  
Variety ID  
Candidate stage  
UK contact

### Husked varieties

Asterion	NORD18/221	460	Year 4	Saaten Union UK
Zenith	BAUP17.3010	463	Year 4	Senova
Caledon	NORD20/134	478	Year 3	Saaten Union UK

Year 4 candidate varieties will be considered for the RL 2024.  
Year 3 candidate varieties will be considered for the RL 2025.

### Naked variety

Ovation	114-SO2013AU4		Year 4	Senova
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Year 4 candidate varieties will be considered for the DL 2024.



# Winter oilseed rape 2023/24

## Yield, agronomy and disease resistance

Recommended for the UK (both East/West and North regions)

Recommended for use on clubroot-infected land only



	Turing	Attica	LG Auckland	Vegas	Ambassador	Aurelia	LG Aviron	PT303	Tom	Acacia	Annika	Matrix CL &	Aspire	LG Constructor CL &	DK Imprint CL &	Crome #	Crocodile #	Crossfit #	Average LSD (5%)
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Conv	Conv	Hybrid	Conv	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK Sp	UK	UK Sp	UK Sp	UK Sp	E/W Sp	E/W Sp	
Variety status	<b>NEW</b>	<b>NEW</b>		<b>NEW</b>		<b>C</b>			<b>NEW</b>				<b>C</b>		*				
<b>Gross output, yield adjusted for oil content (% treated control)</b>																			
United Kingdom (5.2 t/ha)	107	107	106	105	105	105	105	104	102	101	101	98	98	95	92	97	100	96	4.6
East/West region (5.1 t/ha)	107	107	106	106	105	105	105	104	102	101	101	99	98	96	92	97	101	97	5.1
North region (5.8 t/ha)	107	107	102	103	103	104	103	102	[102]	101	101	95	99	92	91	99	96	[91]	5.3
<b>Seed yield (% treated control)</b>																			
United Kingdom (4.8 t/ha)	109	106	106	105	106	105	106	103	102	102	101	97	98	96	94	97	101	95	4.3
East/West region (4.8 t/ha)	109	107	106	105	106	105	106	103	102	102	101	98	98	97	94	96	102	96	4.8
North region (5.4 t/ha)	108	106	102	103	104	105	105	102	[102]	101	102	95	99	93	94	98	97	[90]	5.0
<b>Untreated gross output, yield adjusted for oil content (% untreated control) <sup>□</sup></b>																			
United Kingdom (5.2 t/ha)	-	-	107	-	105	105	107	102	-	101	99	96	98	90	93	97	98	[92]	7.6
<b>Untreated seed yield (% untreated control) <sup>□</sup></b>																			
United Kingdom (4.9 t/ha)	-	-	107	-	105	105	108	101	-	101	99	95	99	91	95	96	99	[91]	7.3
<b>Agonomic features</b>																			
Resistance to lodging (1–9)	[8]	[8]	[8]	[8]	8	8	[8]	[8]	[8]	8	[8]	[8]	8	[8]	[8]	8	[8]	[8]	0.3
Stem stiffness (1–9)	8	8	7	8	9	8	7	8	9	9	9	8	9	8	7	8	8	7	0.6
Shortness of stem (1–9)	6	6	6	6	6	6	6	5	6	7	6	6	7	6	5	6	6	6	0.3
Plant height (cm)	144	149	150	144	148	145	150	159	143	141	143	152	136	143	153	142	143	143	3.5
Earliness of flowering (1–9)	8	7	7	7	7	7	8	5	6	6	6	7	7	6	6	7	6	7	0.4
Earliness of maturity (1–9)	5	5	5	5	6	5	6	5	5	5	4	6	5	6	6	5	6	6	0.4
Pod shatter resistance	-	R	R	-	R	R	R	-	-	-	-	R	-	R	R	-	-	R	
<b>Disease resistance</b>																			
Light leaf spot (1–9)	7	7	7	8	7	7	8	7	7	6	7	6	7	6	6	6	6	5	0.5
Stem canker (1–9)	5	7	7	9	7	6	[7]	6	6	6	6	8	6	6	[7]	4	4	9	0.9
TuYV	-	R	R	-	R	R	R	-	-	-	R	R	R	R	-	-	-	R	

Varieties no longer listed in the UK (both East/West and North regions): Aardvark and Artemis.

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). The target (spring) plant population is 40 plants/m<sup>2</sup> for RL trials. Maximum seed rate is 70 seeds/m<sup>2</sup> and may be lower if conditions permit. Yield figures for regions where the variety is not recommended are provided for information only and are indicated in italics. See page 3 for information on regional yields.

UK	= Recommended for both the East/West and North regions	*	= Variety no longer under test in RL trials in region	□	= Untreated trials are treated for sclerotinia at flowering	LSD	= Least significant difference
E/W	= Recommended for the East/West region	&	= Herbicide-tolerant variety. This variety has a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)	TuYV	= Turnip yellows virus	Average LSD (5%)	= Varieties that are more than one LSD apart are significantly different at the 95% confidence level
Sp	= Specific recommendation	#	= Specific recommendation for growing on land infected with common strains of clubroot. Believed to be resistant to common strains of clubroot, but this has not been verified in RL tests. These varieties should only be used in line with AHDB clubroot management guidelines, to reduce the risk of resistance breakdown	[ ]	= Limited data		
Conv	= Conventional open-pollinated variety			R	= Believed to be resistant to the trait (TuYV or pod shatter), but this has not been verified in RL tests		
C	= Yield control. For this table, Campus, DK Expansion and Temptation were also control varieties but are no longer listed						

# Winter oilseed rape 2023/24

## Yield, agronomy and disease resistance

	Recommended for the East/West region only									Recommended for the North region only			Described varieties			Average LSD (5%)
	Murray	LG Adonis	Dart	Respect	Flemming	LG Antigua	Tennyson	DK Expectation	PT279CL &	LG Wagner	Amarone	Beatrix CL &	PX131	Resort	V 316 OL	
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Hybrid	Hybrid	Hybrid	Hybrid	
Scope of recommendation	E/W	E/W	E/W	E/W	E/W	E/W	E/W	E/W	E/W Sp	N	N	N Sp	UK SD	UK HEAR	UK HOLL	
Variety status	<b>NEW</b>			*	*	*		*	*	<b>NEW</b>		<b>NEW</b>				
<b>Gross output, yield adjusted for oil content (% treated control)</b>																
United Kingdom (5.2 t/ha)	106	104	102	101	101	101	99	99	92	104	99	97	88	89	96	4.6
East/West region (5.1 t/ha)	<b>106</b>	<b>104</b>	<b>103</b>	<b>102</b>	<b>101</b>	<b>101</b>	<b>100</b>	<b>100</b>	<b>92</b>	104	98	97	88	89	96	5.1
North region (5.8 t/ha)	103	102	95	97	[96]	101	95	95	92	<b>108</b>	<b>102</b>	<b>[94]</b>	94	89	96	5.3
<b>Seed yield (% treated control)</b>																
United Kingdom (4.8 t/ha)	107	103	102	102	102	101	100	99	93	104	99	96	87	89	96	4.3
East/West region (4.8 t/ha)	<b>107</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>101</b>	<b>100</b>	<b>100</b>	<b>93</b>	104	99	96	87	89	96	4.8
North region (5.4 t/ha)	104	101	95	98	[97]	101	96	95	93	<b>108</b>	<b>103</b>	<b>[94]</b>	93	88	96	5.0
<b>Untreated gross output, yield adjusted for oil content (% untreated control) <sup>□</sup></b>																
United Kingdom (5.2 t/ha)	-	102	98	102	[99]	103	97	95	92	-	101	-	88	89	96	7.6
<b>Untreated seed yield (% untreated control) <sup>□</sup></b>																
United Kingdom (4.9 t/ha)	-	102	98	103	[99]	103	98	96	93	-	102	-	87	89	96	7.3
<b>Agonomic features</b>																
Resistance to lodging (1–9)	[8]	[8]	[8]	[8]	[8]	[8]	[8]	[8]	8	[8]	[8]	[8]	8	8	8	0.3
Stem stiffness (1–9)	8	8	8	8	9	8	7	7	8	8	8	8	9	8	8	0.6
Shortness of stem (1–9)	6	6	6	6	6	6	6	6	6	6	7	6	9	6	6	0.3
Plant height (cm)	150	142	145	152	151	151	144	145	147	143	138	146	111	145	149	3.5
Earliness of flowering (1–9)	7	7	7	7	6	7	6	8	6	7	7	7	6	7	6	0.4
Earliness of maturity (1–9)	5	5	5	5	4	6	5	6	6	5	5	5	4	5	5	0.4
Pod shatter resistance	-	-	-	-	-	R	-	R	-	R	-	R	R	-	-	
<b>Disease resistance</b>																
Light leaf spot (1–9)	7	7	7	6	7	7	7	7	5	7	7	6	7	5	6	0.5
Stem canker (1–9)	8	7	6	[7]	8	[7]	9	[7]	5	6	6	7	6	5	5	0.9
TuYV	-	R	R	-	R	R	R	R	-	R	R	R	-	-	-	

Varieties no longer listed in the East/West region: Croozer, Darling, Dazzler, Nizza CL and PX138. Varieties no longer listed in the North region: Blazen. HEAR (High Erucic Acid), HOLL (High Oleic, Low Linolenic) and semi-dwarf varieties are described. Data is provided for information only and does not constitute a recommendation. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (e.g. high resistance). The target (spring) plant population is 40 plants/m<sup>2</sup> for RL trials. Maximum seed rate is 70 seeds/m<sup>2</sup> and may be lower if conditions permit. Yield figures for regions where the variety is not recommended are provided for information only and are indicated in italics. See page 3 for information on regional yields.

UK	= Recommended for both the East/West and North regions	HOLL	= High Oleic, Low Linolenic variety	□	= Untreated trials are treated for sclerotinia at flowering	LSD	= Least significant difference
E/W	= Recommended for the East/West region	C	= Yield control. For this table, Campus, DK Expansion and Temptation were also control varieties but are no longer listed	TuYV	= Turnip yellows virus	Average LSD (5%)	= Varieties that are more than one LSD apart are significantly different at the 95% confidence level
N	= Recommended for the North region	*	= Variety no longer under test in RL trials in region	[ ]	= Limited data		
Sp	= Specific recommendation	&	= Herbicide-tolerant variety. This variety has a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)	R	= Believed to be resistant to the trait (TuYV or pod shatter), but this has not been verified in RL tests		
Conv	= Conventional open-pollinated variety						
SD	= Semi-dwarf variety						
HEAR	= High Erucic Acid variety						

# Winter oilseed rape 2023/24

## Supplementary data



**Recommended for the UK (both East/West and North regions)** **Recommended for use on clubroot-infected land only**

	Turing	Attica	LG Auckland	Vegas	Ambassador	Aurelia	LG Aviron	PT303	Tom	Acacia	Annika	Matrix CL &	Aspire	LG Constructor CL &	DK Imprint CL &	Crome #	Crocodile #	Crossfit #	Average LSD (5%)
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Conv	Conv	Hybrid	Conv	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK Sp	UK	UK Sp	UK Sp	UK Sp	E/W Sp	E/W Sp	
Variety status	<b>NEW</b>	<b>NEW</b>		<b>NEW</b>		<b>C</b>			<b>NEW</b>				<b>C</b>		*				
<b>Breeder/UK contact</b>																			
Breeder	NPZ	LimEur	LimEur	NPZ	LimEur	LimEur	LimEur	PionOS	CBI	LimEur	LimEur	DSV	LimEur	LimEur	MonTec	NPZ	DSV	DSV	
UK contact	LSPB	Lim	Lim	LSPB	Lim	Lim	Lim	Cor	FrontAg	Lim	Lim	DSV	Lim	Lim	Bay	LSPB	DSV	DSV	
<b>Annual treated gross output, yield adjusted for oil content (% control) – UK</b>																			
2019 (5.5 t/ha)	-	-	[103]	-	104	104	104	[104]	-	103	[102]	[96]	100	[93]	90	99	97	[92]	-
2020 (5.6 t/ha)	106	108	104	103	105	105	106	103	[102]	100	99	98	96	95	94	97	98	95	-
2021 (5.1 t/ha)	108	106	104	105	104	104	102	104	102	101	102	95	98	91	91	99	99	94	-
2022 (5.7 t/ha)	107	105	104	105	104	105	104	101	102	100	102	97	98	94	93	97	101	-	-
<b>Treatment benefit at co-located sites (% treated control) §</b>																			
Treated gross output – UK (5.4 t/ha)	-	-	107	-	105	105	107	102	-	101	103	99	98	92	94	98	99	[93]	7.2
Untreated gross output – UK (5.4 t/ha) □	-	-	103	-	101	101	103	98	-	97	95	92	95	87	89	93	94	[88]	7.3
<b>Seed quality (at 9% moisture)</b>																			
Oil content, fungicide-treated (%)	44.3	45.3	45.3	45.3	44.8	44.9	44.4	45.7	45.1	45.0	45.0	45.6	45.2	44.2	43.6	45.7	44.7	46.1	0.3
Glucosinolate (µmoles/g)	10.4	12.0	12.2	11.0	10.9	10.2	11.2	8.0	11.6	8.1	11.6	14.2	9.9	15.8	14.3	10.8	12.8	11.7	-
<b>Status in RL system</b>																			
Year first listed	23	23	22	23	20	20	21	22	23	20	22	22	19	22	21	19	20	22	
RL status	P1	P1	P2	P1	-	-	-	P2	P1	-	P2	P2	-	P2	*	-	-	P2	

Glucosinolate contents are taken from the National List trials data. For breeder/UK contact information, see page 59.

UK = Recommended for both the East/West and North regions	& = Herbicide-tolerant variety. This variety has a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)	§ = Co-located sites are a subset of trial locations where both treated and untreated trials are present. Data is presented as a percentage of the treated control varieties at these sites only	LSD = Least significant difference
E/W = Recommended for the East/West region	# = Specific recommendation for growing on land infected with common strains of clubroot. Believed to be resistant to common strains of clubroot, but this has not been verified in RL tests. These varieties should only be used in line with AHDB clubroot management guidelines, to reduce the risk of resistance breakdown	□ = Untreated trials are treated for sclerotinia at flowering	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
Sp = Specific recommendation		[ ] = Limited data	
Conv = Conventional open-pollinated variety		P1 = First year of recommendation	
C = Yield control. For this table, Campus, DK Expansion and Temptation were also control varieties but are no longer listed		P2 = Second year of recommendation	
* = Variety no longer under test in RL trials in region			

# Winter oilseed rape 2023/24

## Supplementary data



	Recommended for the East/West region only									Recommended for the North region only			Described varieties			Average LSD (5%)
	Murray	LG Adonis	Dart	Respect	Flemming	LG Antigua	Tennyson	DK Expectation	PT279CL &	LG Wagner	Amarone	Beatrix CL &	PX131	Resort	V 316 OL	
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Hybrid	Hybrid	Hybrid	Hybrid	
Scope of recommendation	E/W	E/W	E/W	E/W	E/W	E/W	E/W	E/W	E/W Sp	N	N	N Sp	UK SD	UK HEAR	UK HOLL	
Variety status	<b>NEW</b>			*	*	*		*	*	<b>NEW</b>		<b>NEW</b>				
<b>Breeder/UK contact</b>																
Breeder	NPZ	LimEur	DSV	NPZ	NPZ	LimEur	SyP	MonTec	PionOS	LimEur	LimEur	DSV	PionOS	Lemb	MonTec	
UK contact	LSPB	Lim	DSV	LSPB	LSPB	Lim	Els	Bay	Cor	Lim	Lim	DSV	Cor	LSPB	Bay	
<b>Annual treated gross output, yield adjusted for oil content (% control) – UK</b>																
2019 (5.5 t/ha)	-	[104]	[99]	100	[99]	102	[98]	98	90	-	[103]	-	90	89	93	-
2020 (5.6 t/ha)	102	102	99	100	98	102	99	98	92	107	99	[95]	91	87	97	-
2021 (5.1 t/ha)	106	103	98	99	99	101	96	95	93	104	100	93	92	91	95	-
2022 (5.7 t/ha)	104	103	99	98	-	99	97	98	91	107	100	97	90	89	98	-
<b>Treatment benefit at co-located sites (% treated control) §</b>																
Treated gross output – UK (5.4 t/ha)	-	103	98	101	[100]	101	97	97	92	-	102	-	89	89	96	7.2
Untreated gross output – UK (5.4 t/ha) □	-	99	95	98	[95]	99	94	92	89	-	97	-	85	86	92	7.3
<b>Seed quality (at 9% moisture)</b>																
Oil content, fungicide-treated (%)	44.5	46.0	45.2	44.5	44.5	45.2	44.8	45.1	44.5	45.0	44.8	45.9	46.1	45.4	45.0	0.3
Glucosinolate (µmoles/g)	11.1	9.7	10.0	11.8	12.0	11.5	11.1	12.2	10.9	11.7	11.9	15.3	9.4	14.0	12.3	-
<b>Status in RL system</b>																
Year first listed	23	22	22	21	22	21	22	21	19	23	22	23	20	20	15	
RL status	P1	P2	P2	*	*	*	P2	*	*	P1	P2	P1	-	-	-	

Glucosinolate contents are taken from the National List trials data.  
For breeder/UK contact information, see page 59.

UK = Recommended for both the East/West and North regions	C = Yield control. For this table, Campus, DK Expansion and Temptation were also control varieties but are no longer listed	§ = Co-located sites are a subset of trial locations where both treated and untreated trials are present. Data is presented as a percentage of the treated control varieties at these sites only	LSD = Least significant difference
E/W = Recommended for the East/West region	* = Variety no longer under test in RL trials in region	□ = Untreated trials are treated for sclerotinia at flowering	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
N = Recommended for the North region	& = Herbicide-tolerant variety. This variety has a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)	[ ] = Limited data	
Sp = Specific recommendation		P1 = First year of recommendation	
Conv = Conventional open-pollinated variety		P2 = Second year of recommendation	
SD = Semi-dwarf variety			
HEAR = High Erucic Acid variety			
HOLL = High Oleic, Low Linolenic variety			

# Winter oilseed rape 2023/24 – regional rankings (East/West and North)

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

	AHDB RECOMMENDED		East/West region	
	Scope of recommendation		Gross output (%C) (5.1 t/ha)	Seed yield (%C) (4.8 t/ha)
Turing	NEW	UK	107	109
Attica	NEW	UK	107	107
LG Auckland		UK	106	106
Murray	NEW	E/W	106	107
Vegas	NEW	UK	106	105
Ambassador		UK	105	106
LG Aviron		UK	105	106
Aurelia	C	UK	105	105
LG Adonis		E/W	104	103
PT303		UK	104	103
Dart		E/W	103	103
Respect	*	E/W	102	103
Tom	NEW	UK	102	102
Flemming	*	E/W	101	103
Acacia		UK	101	102
LG Antigua	*	E/W	101	101
Crocodile #		E/W Sp	101	102
Annika		UK	101	101
Tennyson		E/W	100	100
DK Expectation	*	E/W	100	100
Matrix CL &		UK Sp	99	98
Aspire	C	UK	98	98
Crome #		UK Sp	97	96
Crossfit #		E/W Sp	97	96
LG Constructor CL &		UK Sp	96	97
DK Imprint CL &	*	UK Sp	92	94
PT279CL &	*	E/W Sp	92	93
Average LSD (5%)			5.1	4.8

	AHDB RECOMMENDED		North region	
	Scope of recommendation		Gross output (%C) (5.8 t/ha)	Seed yield (%C) (5.4 t/ha)
LG Wagner	NEW	N	108	108
Turing	NEW	UK	107	108
Attica	NEW	UK	107	106
Aurelia	C	UK	104	105
LG Aviron		UK	103	105
Vegas	NEW	UK	103	103
Ambassador		UK	103	104
PT303		UK	102	102
LG Auckland		UK	102	102
Tom	NEW	UK	[102]	[102]
Amarone		N	102	103
Annika		UK	101	102
Acacia		UK	101	101
Aspire	C	UK	99	99
Crome #		UK Sp	99	98
Matrix CL &		UK Sp	95	95
Beatrix CL &	NEW	N Sp	[94]	[94]
LG Constructor CL &		UK Sp	92	93
DK Imprint CL &	*	UK Sp	91	94
Average LSD (5%)			5.3	5.0

Dark blue: UK recommendation (recommended for both the East/West and North regions)

Light blue: Regional recommendation (recommended for the East/West or North region)

This table should be read in conjunction with the winter oilseed rape RL 2023/24.

UK = Recommended for both the East/West and North regions	Sp = Specific recommendation	& = Herbicide-tolerant variety. This variety has a specific recommendation for tolerance to specific imidazolinone herbicides (a Clearfield® variety)	LSD = Least significant difference
E/W = Recommended for the East/West region	# = Specific recommendation for growing on land infected with common strains of clubroot. Believed to be resistant to common strains of clubroot, but this has not been verified in RL tests.	C = Yield control. For this table, Campus, DK Expansion and Temptation were also control varieties but are no longer listed	Average LSD (5%): Varieties that are more than one LSD apart are significantly different at the 95% confidence level
N = Recommended for the North region	These varieties should only be used in line with AHDB clubroot management guidelines, to reduce the risk of resistance breakdown	* = Variety no longer under test in RL trials in region	

# Winter oilseed rape 2023/24

## Variety comments

### Varieties

#### Acacia

A conventional, open-pollinated variety recommended for the UK. Acacia has high resistance to lodging and is very stiff-stemmed at maturity.

#### Amarone

A conventional, open-pollinated variety recommended for the North region. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Amarone has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### Ambassador

A hybrid variety recommended for the UK. This variety has given a high treated gross output in both the East/West and North regions. It has a high resistance to lodging and is very stiff-stemmed at maturity. It is a relatively early maturing variety with resistance to pod shatter. Ambassador has high resistance to both light leaf spot and stem canker and is resistant to *Turnip yellows virus* (TuYV).

#### Annika

A conventional, open-pollinated variety recommended for the UK. It has high resistance to lodging (based on limited data) and is very stiff-stemmed at maturity. Annika is a relatively late maturing variety. This variety has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### Aspire

A conventional, open-pollinated variety recommended for the UK. It has high resistance to lodging and is very stiff-stemmed at maturity. Aspire has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### Attica NEW

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

#### Aurelia

A hybrid variety recommended for the UK. This variety has given a high treated gross output in both the East/West and North regions. It has high resistance to lodging with good stem stiffness at maturity and resistance to pod shatter. Aurelia has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### Beatrix CL NEW

This new addition is a Clearfield® hybrid variety for the North, with a specific recommendation for its tolerance to specific imidazolinone herbicides. It has a high resistance to lodging (based on limited data) with good stem stiffness at maturity. This variety has resistance to pod shatter. Beatrix CL has high resistance to stem canker and is resistant to *Turnip yellows virus* (TuYV). Growers are advised to see the BASF website ([agricentre.basf.co.uk](http://agricentre.basf.co.uk)) for more information about Clearfield® management and husbandry.

#### Crocodile

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

#### Crome

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

Please note that comments made on resistance to *Turnip yellows virus* (TuYV), clubroot and pod shatter resistance are based on advice from plant breeders. These have not been verified in RL tests.

# Winter oilseed rape 2023/24

## Variety comments

### Varieties

#### Crossfit

A hybrid variety with a specific recommendation for the East/West region for its resistance to the common strains of clubroot, though it may be susceptible to strains found in some fields. It has high resistance to lodging (based on limited data). Crossfit is relatively early maturing, with resistance to pod shatter. It has very high resistance to stem canker and is resistant to *Turnip yellows virus* (TuYV).

#### Dart

A hybrid variety recommended for the East/West region. It has given a high treated gross output in the East/West. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Dart has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### DK Expectation

A hybrid variety recommended for the East/West region. It is an early flowering variety and has high resistance to lodging (based on limited data). It is relatively early maturing, with resistance to pod shatter. DK Expectation has high resistance to both light leaf spot and stem canker (based on limited data) and is resistant to *Turnip yellows virus* (TuYV). It is no longer under test in RL trials.

#### DK Imprint CL

A Clearfield® hybrid variety for the UK, with a specific recommendation for its tolerance to specific imidazolinone herbicides. This is a relatively tall variety with high resistance to lodging (based on limited data). It is relatively early maturing, with resistance to pod shatter. It has high resistance to stem canker (based on limited data). Growers are advised to see the BASF website ([agricentre.basf.co.uk](http://agricentre.basf.co.uk)) for more information about Clearfield® management and husbandry. It is no longer under test in RL trials.

#### Flemming

A hybrid variety recommended for the East/West region. It has high resistance to lodging (based on limited data) and is very stiff-stemmed at maturity. It is a relatively late maturing variety. Flemming has high resistance to both light leaf spot and stem canker and is resistant to *Turnip yellows virus* (TuYV). It is no longer under test in RL trials.

#### LG Adonis

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

#### LG Antigua

A hybrid variety recommended for the East/West region. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. It is a relatively early maturing variety with resistance to pod shatter. LG Antigua has high resistance to both light leaf spot and stem canker (based on limited data) and is resistant to *Turnip yellows virus* (TuYV). It is no longer under test in RL trials.

#### LG Aviron

A hybrid variety recommended for the UK. This variety has given a high treated gross output in both the East/West and North regions. LG Aviron is an early flowering variety. It is relatively early maturing, with resistance to pod shatter. It has high resistance to both light leaf spot and stem canker (based on limited data) and is resistant to *Turnip yellows virus* (TuYV).

#### LG Auckland

A hybrid variety recommended for the UK. This variety has given a very high treated gross output in the East/West region. It has high resistance to lodging (based on limited data) and resistance to pod shatter. LG Auckland has high resistance to both light leaf spot and stem canker and is resistant to *Turnip yellows virus* (TuYV).

# Winter oilseed rape 2023/24

## Variety comments

### Varieties

#### LG Constructor CL

A Clearfield® hybrid variety for the UK, with a specific recommendation for its tolerance to specific imidazolinone herbicides. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. It is a relatively early maturing variety with resistance to pod shatter. LG Constructor CL is resistant to *Turnip yellows virus* (TuYV). Growers are advised to see the BASF website ([agricentre.basf.co.uk](http://agricentre.basf.co.uk)) for more information about Clearfield® management and husbandry.

#### LG Wagner NEW

This new addition is a hybrid variety recommended for the North region. It has given a very high treated gross output in the North region. This variety has high resistance to lodging (based on limited data), with good stem stiffness at maturity and resistance to pod shatter. LG Wagner has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### Matrix CL

A Clearfield® hybrid variety for the UK, with a specific recommendation for its tolerance to specific imidazolinone herbicides. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Matrix CL is a relatively early maturing variety with resistance to pod shatter. It has high resistance to stem canker and is resistant to *Turnip yellows virus* (TuYV). Growers are advised to see the BASF website ([agricentre.basf.co.uk](http://agricentre.basf.co.uk)) for more information about Clearfield® management and husbandry.

#### Murray NEW

This new addition is a hybrid variety recommended for the East/West. It has given a very high treated gross output for the East/West region. This variety has high resistance to lodging (based on limited data), with good stem stiffness at maturity. Murray has a high resistance to both light leaf spot and stem canker.

#### PT279CL

A Clearfield® hybrid variety for the East/West region, with a specific recommendation for its tolerance to specific imidazolinone herbicides. It has high resistance to lodging, with good stem stiffness at maturity. This variety is relatively early maturing. Growers are advised to see the BASF website ([agricentre.basf.co.uk](http://agricentre.basf.co.uk)) for more information about Clearfield® management and husbandry. PT279CL is no longer under test in RL trials.

#### PT303

A hybrid variety recommended for the UK. It has given a high treated gross output in the East/West region. PT303 is a relatively tall variety with high resistance to lodging (based on limited data) and good stem stiffness at maturity. This variety has high resistance to light leaf spot and is resistant to *Turnip yellows virus* (TuYV).

#### Respect

A hybrid variety recommended for the East/West region. It has high resistance to lodging (based on limited data), with good stem stiffness at maturity. It has high resistance to stem canker (based on limited data). Respect is no longer under test in RL trials.

#### Tennyson

A hybrid variety recommended for the East/West region. It has high resistance to lodging (based on limited data). Tennyson has very high resistance to stem canker, high resistance to light leaf spot, and is resistant to *Turnip yellows virus* (TuYV).

#### Tom NEW

This new addition is a conventional, open-pollinated variety recommended for the UK. Tom has the given the highest treated gross output in the East/West region for a conventional variety on the recommended list for winter oilseed rape 2023/24. It has a high resistance to lodging (based on limited data) and is very stiff-stemmed at maturity. It has high resistance to light leaf spot.

#### Turing NEW

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

#### Vegas NEW

This new addition is a hybrid variety recommended for the UK. It has given a very high treated gross output in the East/West region and a high treated gross output in the North region. This variety has a high resistance to lodging (based on limited data), with good stem stiffness at maturity. Vegas has high resistance to light leaf spot and very high resistance to stem canker.

# Winter oilseed rape 2023/24

## Variety comments

### Described varieties

#### PX131

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

#### Resort

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

#### V 316 OL

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

## Erucic acid risks

For rapeseed oil to be used in food products, erucic acid levels must, by law, not exceed 5%. The current maximum level is set to 2% in most contracts. AHDB has worked with industry to issue a set of guidelines to help farmers maintain low levels of the acid in their crops. The guidance is centred on five 'risk points':

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

[ahdb.org.uk/erucic-acid](https://ahdb.org.uk/erucic-acid)



Image credit: Gary Naylor Photography

# Candidate varieties – winter oilseed rape trials harvest 2023



Previous/proposed name	Variety ID	UK contact	
<b>Candidate varieties – UK</b>			
Pi Pinnacle	Pi41.7	3374	Grainseed
Miraculix CL	WRH 617	3389	DSV UK Ltd
LE20/433	LG Academic	3407	Limagrain UK
LE20/434	LG Adeline	3409	Limagrain UK
LE20/435	LG Armada	3410	Limagrain UK

Candidate varieties will be considered for the RL 2024/25.



Previous/proposed name	Variety ID	UK contact	
<b>Candidate varieties – East/West</b>			
RGT Kanzzas	BNG2489	3362	RAGT Seeds
LSF20256W11	-	3367	LS Plant Breeding
Dolphin	WRH 633	3391	DSV UK Ltd
LE20/445	LG Aphrodite	3408	Limagrain UK

Candidate varieties will be considered for the RL 2024/25.

After a candidate variety achieves National Listing, the data is published online ([ahdb.org.uk/rl](https://ahdb.org.uk/rl)) and on the RL app ([ahdb.org.uk/rlapp](https://ahdb.org.uk/rlapp))

# Spring oilseed rape descriptive list 2023



	Lakritz	Performer	Lavina	Lagonda	Lumen	Builder	Fergus	Menthal #	Contra CL &	Caramino CL &	Average LSD (5%)
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Conv	Hybrid	Hybrid	Hybrid	
Variety status				C	C						
<b>Gross output, yield adjusted for oil content (% control)</b>											
UK without fungicide (3.3 t/ha)	[103]	[103]	[101]	[101]	[99]	[99]	[96]	[95]	[93]	[92]	7.6
Number of trials	7	7	6	7	7	7	6	7	7	6	
<b>Seed yield (% control)</b>											
UK without fungicide (3.0 t/ha)	[104]	[101]	[101]	[101]	[99]	[98]	[95]	[96]	[94]	[90]	7.4
<b>Seed quality (at 9% moisture)</b>											
Oil content (%)	[44.0]	[45.6]	[44.8]	[44.3]	[44.7]	[45.1]	[45.7]	[44.0]	[43.9]	[45.5]	0.7
Glucosinolate content (µmoles/g)	10.6	13.6	12.5	11.0	11.0	14.4	12.3	10.5	12.4	11.3	-
<b>Agronomic features</b>											
Shortness of stem (1–9)	7	6	[7]	7	6	7	[7]	6	6	[6]	0.4
Earliness of flowering (1–9)	[7]	7	[7]	7	7	7	[7]	[7]	[7]	[6]	0.5
Earliness of maturity (1–9)	[5]	5	[5]	5	6	5	[5]	[5]	[5]	[5]	0.7
<b>Annual gross output, yield adjusted for oil content (% control)</b>											
2018 (3.6 t/ha)	[[97]]	[[107]]	-	[[103]]	[[97]]	[[97]]	-	[[96]]	[[88]]	-	-
2019 (3.8 t/ha)	[[102]]	[[96]]	[[96]]	[[98]]	[[102]]	[[99]]	[[91]]	[[96]]	[[97]]	[[97]]	-
2020 (3.0 t/ha)	[104]	[105]	[104]	[98]	[102]	[99]	[101]	[99]	[91]	[87]	14.8
2021 (2.3 t/ha)	[112]	[103]	[104]	[103]	[97]	[99]	[104]	[96]	[98]	[88]	12.8
2022 (4.7 t/ha)	[[101]]	[[102]]	[[101]]	[[102]]	[[98]]	[[102]]	[[88]]	[[89]]	[[90]]	[[98]]	-
<b>Breeder/UK contact</b>											
Breeder	NPZ	BASF	NPZ	NPZ	NPZ	BASF	Lant	NPZ	NPZ	NPZ	
UK contact	DSV	BASF	DSV	DSV	DSV	BASF	Sen	DSV	DSV	DSV	
<b>Status in DL system</b>											
Year first listed	21	20	22	19	18	15	22	21	21	22	
DL status	-	-	P2	-	-	-	P2	-	-	P2	

The data in this table is provided for information only and does not constitute a recommendation. On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (e.g. early maturity). Glucosinolate contents are taken from the National List trials data. For breeder/UK contact information, see page 59.

Conv	= Conventional open-pollinated variety	#	= Believed to be resistant to common strains of clubroot, but this has not been verified in RL tests. These varieties should only be used in line with AHDB clubroot management guidelines, to reduce the risk of resistance breakdown	&	= Herbicide-tolerant variety. This variety has a tolerance to specific imidazolinone herbicides (a Clearfield® variety)	[ ]	= Limited data	LSD	= Least significant difference
C	= Yield control					[[ ]]	= 1 trial only	Average LSD (5%):	Varieties that are more than one LSD apart are significantly different at the 95% confidence level
						P2	= Second year of listing		

# Spring linseed descriptive list 2023



	Juliet	Bingo	Bliss	Ineke	Octal	Buffalo	Batsman	Bowler	Daniel	Lion	Gilbert	Abacus	Sarah	Aquarius	Olympe	Average LSD (5%)
Seed colour	<b>B</b>	<b>B</b>		<b>B</b>	<b>B</b>		<b>B</b>	<b>B</b>		<b>B</b>	<b>Y</b>	<b>B</b>	<b>B</b>	<b>B</b>		
Variety status		<b>C</b>					<b>C</b>				<b>NEW</b>	<b>C</b>			<b>NEW</b>	
<b>Seed yield as % control</b>																
UK without fungicide (2.3 t/ha)	110	108	104	102	101	101	99	99	97	96	95	93	93	93	[84]	10.7
Number of trials	15	15	15	15	15	15	15	15	15	11	10	15	13	15	9	
<b>Seed quality (at 9% moisture)</b>																
Oil content (%)	41.4	40.0	40.4	39.9	40.9	42.3	40.5	41.0	39.9	42.8	41.2	39.9	40.7	42.7	41.4	0.6
ALA content (%)	54.5	54.1	58.3	52.9	52.3	55.3	57.8	57.7	54.4	59.2	65.4	57.9	56.5	57.7	58.9	-
<b>Agronomic features</b>																
Plant height (cm)	55	51	49	57	50	51	53	51	52	48	50	49	54	51	53	2.2
Earliness of flowering (1–9)	4	5	6	2	4	4	6	4	6	4	6	5	3	6	6	0.7
Earliness of maturity (1–9)	5	6	6	4	6	6	7	6	5	6	7	7	5	7	7	0.7
<b>Annual seed yield (% control)</b>																
2018 (2.6 t/ha)	[119]	[111]	[96]	[94]	[96]	[97]	[99]	[94]	[97]	[88]	-	[89]	-	[93]	-	13.2
2019 (2.2 t/ha)	[103]	[105]	[113]	[108]	[107]	[106]	[103]	[107]	[93]	[99]	-	[92]	[95]	[93]	-	10.1
2020 (2.7 t/ha)	[118]	[105]	[106]	[109]	[98]	[108]	[101]	[106]	[93]	-	[97]	[95]	[104]	[98]	[100]	10.2
2021 (2.1 t/ha)	[95]	[109]	[102]	[92]	[102]	[97]	[93]	[95]	[98]	[95]	[92]	[98]	[84]	[93]	[96]	9.1
2022 (2.0 t/ha)	[110]	[112]	[103]	[103]	[101]	[92]	[98]	[90]	[105]	[96]	[96]	[90]	[86]	[83]	-	13.7
<b>Breeder/UK contact</b>																
Breeder	GKI	Bilt	Bilt	JTSD	LaS	Bilt	Bilt	Bilt	Med	LimEur	CDC	JTSD	JTSD	LimEur	-	
UK contact	Agr	Els	Els	Bost	Dalt	Els	Els	Els	Agr	Sat	JTSD	Sen	DSV	Bost	Lim	
<b>Status in DL system</b>																
Year first listed	01	17	20	18	17	21	12	13	18	18	23	06	22	17	23	
DL status	-	-	-	-	-	-	-	-	-	-	P1	-	P2	-	P1	

The data in this table is provided for information only and does not constitute a recommendation.  
 On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (e.g. early maturity).  
 For breeder/UK contact information, see page 59.

**B** = Brown  
**Y** = Yellow  
**C** = Yield control  
 ALA = Alpha-linolenic acid  
**[ ]** = Limited data  
**P1** = First year of listing  
**P2** = Second year of listing  
 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 2023/24



	Lumaco	Kasyno	Temuco	KWS Fido	SU Liborious	Belcanto	Tender PZO	Cyrkon	Tribeca	Average LSD (5%)
Variety status	<b>NEW</b>	<b>C</b>		<b>C</b>						
<b>Grain yield (as % treated control)</b>										
Fungicide-treated (10.7 t/ha)	104	100	100	100	99	96	95	95	93	8.1
Number of trials	8	14	14	14	14	14	14	14	12	
<b>Agronomic features</b>										
Lodging (%) <sup>∞</sup>	-	-	-	-	-	-	-	-	-	
Straw length (cm)	[118]	101	108	112	108	110	128	96	119	6.6
Ripening (days +/- KWS Fido)	[-1]	+2	+2	0	+1	+4	0	0	+1	2.5
<b>Grain quality</b>										
Specific weight (kg/hl)	74.9	73.6	71.6	75.3	72.1	77.9	74.0	73.2	72.0	1.2
Protein content (%)	11.3	11.4	10.8	10.8	11.3	11.8	11.6	11.2	11.2	0.5
<b>Disease resistance</b>										
Yellow rust (1–9)	9	8	7	6	7	6	5	4	7	0.9
<b>Breeder/UK contact</b>										
Breeder	Lant	Dank	Lant	Lant	Nord	Dank	IGP	Hod	Desp	
UK contact	Sen	Sen	Sen	Sen	SU	Sen	Sen	Dalt	Els	
<b>Status in DL system</b>										
Year first listed	23	18	21	14	21	21	20	16	12	
DL status	P1	-	-	-	-	-	-	-	-	

Varieties no longer listed: Toro.

The data in this table is provided for information only and does not constitute a recommendation.

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

For breeder/UK contact information, see page 59.

C = Yield control  
 ∞ = Data not available  
 [ ] = Limited data  
 P1 = First year of listing

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 2023/24



	KWS Tayo	KWS Igor	SU Baresi	KWS Serafino	SU Performer	SU Elrond	SU Avid	SU Pluralis	Poseidon	SU Bendix	Average LSD (5%)
Variety type	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	
Variety status		<b>NEW</b>			<b>C</b>						
<b>Grain yield (as % treated control)</b>											
Fungicide-treated (10.3 t/ha)	104	103	103	101	100	99	99	98	97	97	6.9
Number of trials	15	10	15	17	17	15	17	14	16	14	
<b>Agronomic features</b>											
Lodging (%)	[2]	[5]	[5]	[2]	[8]	[5]	[7]	[7]	[3]	[9]	2.4
Straw length (cm)	129	126	129	131	130	134	135	129	130	132	7.8
Ripening (days +/- SU Mephisto)	+1	+1	+1	+1	0	+1	+1	0	0	+1	1.8
<b>Grain quality</b>											
Protein content (%)	9.1	8.9	8.7	9.1	9.2	9.1	9.0	8.9	9.8	9.5	0.6
Hagberg Falling Number	267	252	245	269	245	238	208	219	190	223	33.3
Specific weight (kg/hl)	77.0	76.5	78.2	77.3	77.9	79.2	77.3	77.8	76.3	77.8	1.4
<b>Disease resistance</b>											
Brown rust (1–9)	7	[4]	5	7	4	5	4	4	3	4	1.5
<b>Breeder/UK contact</b>											
Breeder	KWSGmbh	KWSGmbh	Hybro	KWSGmbh	Hybro	Hybro	Hybro	Hybro	NS	Hybro	
UK contact	KWS	KWS	SU	KWS	SU	SU	SU	SU	Dalt	SU	
<b>Status in DL system</b>											
Year first listed	22	23	22	21	17	22	21	22	21	22	
DL status	P2	P1	P2	-	-	P2	-	P2	-	P2	

**Varieties no longer listed:** Dukato, Inspector, SU Cossani, SU Mephisto and SU Nasri.  
**The data in this table is provided for information only and does not constitute a recommendation.**  
 On the 1–9 scale, high figures indicate that a variety shows the character to a high degree (e.g. high resistance).  
 For breeder/UK contact information, see page 59.

C	= Yield control	LSD	= Least significant difference
[ ]	= Limited data	Average LSD (5%):	Varieties that are more than one
P1	= First year of listing	LSD apart	are significantly different at the 95%
P2	= Second year of listing	confidence level	

# Descriptive list candidate varieties – trials harvest 2023



	Previous/proposed name	Variety ID	UK contact
<b>Spring oilseed rape</b>			
DLE21828S11	-	3415	DSV UK Ltd
<b>Spring linseed</b>			
Skylark	1406-36/A	262	JTSD Ltd
GOP24	-	263	Premium Crops

Candidate varieties will be considered for the DL 2024.

After a candidate variety achieves National Listing, the data is published online ([ahdb.org.uk/rl](https://ahdb.org.uk/rl)) and on the RL app ([ahdb.org.uk/rlapp](https://ahdb.org.uk/rlapp))



	Previous/proposed name	Variety ID	UK contact
<b>Winter triticale</b>			
SU Askadus	NORD17/7621	125	Saaten Union UK
RGT Eleac	RT11069	15413	RAGT Seeds
FDT11053	Brehat	25001	Senova
<b>Winter rye</b>			
SU Karlsson	HYH331	63	Saaten Union UK
SU Perspectiv	HYH312	64	Saaten Union UK
SU Isaksson	HYH334	65	Saaten Union UK
KWSH214	KWS Inspirator	66	KWS UK
KWSH209	KWS Gilmor	67	KWS UK
Astranos	DH381	25000	Senova

Candidate varieties will be considered for the DL 2024/25.

## Breeder and UK contact information

Abbreviation	Name	Web address
Ack	Ackermann Saatzucht GmbH	sz-ackermann.de
ADM	ADM Agriculture Ltd	adm-agri.co.uk
Agr	Agrii	agrii.co.uk
AgV	Agrovista UK Ltd	agrovista.co.uk
BA	Blackman Agriculture	
BASF	BASF Agricultural Solutions Seed US LLC	agricentre.basf.co.uk
Bau	Bauer, Germany	
Bay	Bayer CropScience	cropscience.bayer.co.uk
Bilt	van de Bilt, Netherlands	
Bost	Boston Seeds Ltd	bostonseeds.com
Bre	Saatzucht Josef Breun, Germany	breun.de
Cal	Carlsberg Research Laboratory	
CBI	Cluser Breeding International GmbH	
CDC	CDC Saskatchewan	agbio.usask.ca/cdcflax
Cope	Cope Seeds & Grain	copeseeds.co.uk
Cor	Corteva Agriscience™	corteva.co.uk/pioneer
Dalt	Dalton Seeds	daltonseeds.co.uk
Dank	Danko Hodowla Roslin, Poland	danko.pl
Desp	Maison Florimond Desprez, France	florimond-desprez.com
DSV	DSV UK Ltd	dsv-uk.co.uk
Els	Elsoms Seeds Ltd	elsoms.com
ElsAck	Elsoms Ackermann Barley	elsoms.com
ElsW	Elsoms Wheat Ltd	elsoms.com
FrontAg	Frontier Agriculture Ltd	frontierag.co.uk
GKI	GK Kht, Hungary	
GSd	Grainseed	grainseed.co.uk
Hod	Hodowla Roslin Strzelce, Poland	hr-strzelce.pl
Hybro	Hybro, Germany	saaten-union.co.uk
IBERS	Institute of Biological, Environ. & Rural Sciences	aber.ac.uk/en/ibers
IGP	I.G. Pflanzenzucht, Germany	ig-pflanzenzucht.de/en

Abbreviation	Name	Web address
JTSD	JTSD Ltd	jtsd.co.uk
KWS	KWS UK	kws-uk.com
KWSGmbH	KWS Lochow GmbH	kws-uk.com
KWSMR	KWS Momont Recherche	kws-uk.com
Lant	Lantmannen SW Seed BV	lantmannen.com
LaS	Laboulet Semences, France	
Lemb	Lembke, Germany	
Lim	Limagrain UK	lgseeds.co.uk
LimEur	Limagrain Europe SA	lgseeds.co.uk
LSPB	LS Plant Breeding	lspb.eu
Med	Medovarsky	
Mom	Momont, France	kws-uk.com
MonTec	Monsanto Technology LLC	cropscience.bayer.co.uk
Nord	Nordsaat, Germany	nordsaat.de
NPZ	NPZ-Lembke, Germany	npz.de
NS	Nordic Seed, Denmark	nordicseed.com
PC	Premium Crops	premiumcrops.com
PionOS	Pioneer Overseas Corporation	corteva.co.uk/pioneer
R2n	RAGT, France	ragt.co.uk
RAGT	RAGT Seeds	ragt.co.uk
Sat	Saturn Seeds	saturnseeds.com
Sec	Secobra, France	secobra.fr/en/accueil
Sej	Sejet, Denmark	sejet.com
Selg	Selgen, Czech Republic	selgen.eu
Sen	Senova	senova.uk.com
SU	Saaten Union UK	saaten-union.co.uk
Syn	Syngenta UK Ltd	syngenta.co.uk
SyP	Syngenta Participations AG	syngenta.co.uk
Wier	Wiersum BV, Netherlands	
WPB	Wiersum Plant Breeding	



### Preliminary data

The selection of new varieties to promote into AHDB RL 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 RL tables. Acknowledgement is made to Defra and the devolved governments as well as BSPB for the use of these data.



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### Processors

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



### Test and trials contractors

AHDB is grateful to the following organisations who, as well as undertaking contract work for the RL, provide much valuable advice: ADAS, Agri-Food and Biosciences Institute, Biomathematics & Statistics Scotland, BSPB, Campden BRI, Envirofield, Frontier Agriculture Ltd, Gold Crop, Harper Adams University, John Innes Centre, NIAB TAG, Scottish Agronomy, SRUC, Stockbridge Technology Centre and Trials Force Ltd.



### Committee members and growers

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



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