HGCA Recommended Lists 2014/15 for cereals and oilseeds



Produced in partnership by:







Maltsters Association of Great Britain National Association of British and Irish Millers

For more information, see www.hgca.com/varieties

Using the HGCA Recommended Lists

Pages colour-coded by crop type

1. Select a variety for your intended market using the **Quality Tables**

These tables provide full details of quality data and information on acceptable markets for each variety.

Spring wheat, winter oats, spring oats and winter oilseed rape do not have separate tables for quality, these data are incorporated into a single table with the agronomy information.

For more information on markets, see pages 4-6.

2. Use the **Agronomy Tables** to assess the likely management inputs

These tables provide information on the susceptibility of varieties to major diseases, pests and lodging. Scores are given on a 1–9 scale, where a higher number indicates that the variety shows higher levels of resistance. Caution is required since susceptibility can change within a season. New information on any breakdown of resistance will be available on the HGCA website (www.hgca.com). For more information on regional disease risks, see page 7.



Changes for 2014/15 – nabim will now give any new Group 1 breadmaking wheat varieties a provisional nabim rating (P) when each year's Lists are published in December. This will be followed by more in-depth testing by nabim, which will either confirm its Group 1 status or reclassify the variety as another nabim Grouping. Final Group 1 classifications will be published on the HGCA website in late March each year. The HGCA RL Pocketbooks will be available from June 2014 to allow the final **nabim** status of varieties to be included.

The Institute of Brewing and Distilling approved list of malting varieties is updated each year in June. Varieties which are no longer approved by the IBD, but which are long established varieties for brewing or distilling will remain on the HGCA Recommended List labelled O "no longer approved by the IBD".

3. Get more detail from the Supplementary Tables

Supplementary tables include annual yield data, which can indicate a variety's consistency of performance in different seasons. There are yields for different sowing dates, soil types and rotations. Speed of development and latest safe sowing date information are also listed.

4. Use the Variety Comments as a summary

A summary of the key features of each variety can help you decide if the variety is appropriate for your region and end markets.

Contents	Page
Glossary	3
Markets for wheat	4
Markets for barley, oats and oilseed rape	5
Regional information	6
Winter wheat	
Quality	8
Agronomy	9
Supplementary data	10
Candidate varieties	11
Varieties not added	12
Variety comments	13
Spring wheat (for late autumn sowing)	18
Spring wheat (for spring sowing)	19
Variety comments	20
nabim overview	21
Winter barley	
Quality	22
Agronomy	23
Supplementary data	24
Candidate varieties	25
Variety comments	26
Spring barley	
Quality	28
Agronomy	29
Supplementary data	30
Candidate varieties	31

	Page
Varieties not added	32
Variety comments	33
Winter oats	35
Variety comments	36
Spring oats	37
Winter oilseed rape	
East/West yield data	38
East/West supplementary data	39
North yield data	40
North supplementary data	41
East/West candidate varieties	42
North candidate varieties	43
East/West varieties not added	44
North varieties not added	45
Variety comments	46
Descriptive Lists	
Spring oilseed rape	48
Spring linseed	49
Winter triticale	50
Winter rye varieties	51
Acknowledgements	52

Glossary

Scope of recommendation

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

Varieties no longer listed

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

Candidate varieties

Candidate varieties are usually in their first or second year of Recommended List trials and have completed two years of National List trials. They are considered for recommendation in the autumn if there are sufficient data.

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

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

Descriptive Lists

Descriptive lists show trial data for spring oilseed rape, spring linseed, winter rye and winter triticale. The varieties generally meet a basic yield target, but they have not been through the selection processes required to gain a recommendation.

Regional Lists for winter oilseed rape

Recommended Lists for winter oilseed rape are split into two regions. The East/West region and the North region are identified on the map. In the North List, greater emphasis has been placed on resistance to light leaf spot.

Yields

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

Regional yields

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

Disease resistance scores

Scores for disease resistance are based on natural infection and inoculated trials. Information is only used where relatively high levels of disease are present to prevent low disease pressure being mistaken for resistance. Varieties with ratings of less than 4 can be interpreted as susceptible. Varieties with ratings of 8 or 9 can be said to be resistant; however, the ratings cannot determine the durability of the resistance. If a variety relies on a single major resistance gene, a breakdown in resistance can see a variety with a score of 9 become very susceptible. Disease resistance scores can be read alongside the untreated yield, which provides an indication of the potential yield reduction as a consequence of disease.

Lodging

Lodging scores are calculated for varieties grown with and without plant growth regulator (PGR) application. The varieties receive full fungicide treatment.

Ripening

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

Sprouting

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

Annual yields

Annual yields provide a breakdown of variety performance in different seasons. Consistent high yields over a number of years may indicate that a variety offers a level of yield stability and the importance of this is being considered.

Winter hardiness

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

Brackling

Brackling is folding or breaking of the stem higher up the plant, as opposed to stem lodging where the damage occurs close to, or below, the ground. Assessments are carried out on spring barley at harvest. Ratings are on a 1–9 scale, where a high number indicates high resistance to brackling.

Oat quality

Grain quality characteristics presented for oats include kernel content, specific weight and per cent screenings through a 2.0 mm sieve. A high kernel content, high specific weight and low per cent screenings are preferred for milling.

Oilseed rape gross output

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

Oilseed rape "Clearfield" varieties

"Clearfield" varieties can be identified by the initials CL after the name. These varieties are tolerant to specific imidazolinone herbicides.

Markets for wheat

Wheat

Flour milling

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

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

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

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

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



Cereal foods

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

Distilling

Varieties for distilling are defined with assistance from the Scotch Whisky Association and the Scotch Whisky Research Institute which tests new varieties and rates them as either good or moderately good for distilling. The potable ethanol industry's needs are well defined: soft wheat of low protein (high starch) content with easy processing characteristics.

Biofuels

Wheat is becoming a major UK biofuel crop. Processors require grain giving good alcohol yields and high processing efficiency. The industry does not currently specify preferred varieties.

Starch production

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

Typical specifications

nabim nabim nabim ukp🏴 uks Group 1 Group 2 Group 3 Specific weight 76 kg/hl (min) 76 kg/hl (min) 74 kg/hl (min) 76 kg/hl (min) 75 kg/hl (min) Moisture content 15% (max) 15% (max) 15% (max) 15% (max) 15% (max) Admix 2% (max) 2% (max) 2% (max) 2% (max) 2% (max) Hagberg Falling Number (HFN) 250 s (min) 250 s (min) 220 s (min) 250 s (min) 220 s (min) 13% 12.5% 11.5% 10.5-11.5% Protein 11-13% W N/A N/A N/A >170 80-120 P/L N/A N/A N/A ≤0.9 ≤0.55

The W and P/L values are determined by the Chopin Alveograph test, commonly used by overseas buyers.

Export

Over the past three years, the UK has exported on average 2.5 million tonnes of wheat per annum to key markets, such as Spain, Morocco, Portugal and Algeria. Exporting surplus wheat upholds wheat prices, through preventing oversupply in the domestic market.

Every year, more than 1,000 samples of wheat are tested on behalf of HGCA using the Chopin Alveograph test. The results from the test are used to classify whether varieties are suitable for exports and are given **ukp** or **uks** ratings. This provides growers with information on quality performance to assist with variety selection for exports.

ukp varieties are typically used for breadmaking in overseas markets and **uks** varieties are soft biscuit types used for blending into bread grists, or for biscuits and patisserie. These varieties should be managed to achieve the specifications shown in the table below.

The **ukp** and **uks** classifications, which have been established for 10 years, are used to trade internationally and form the basis of cereal promotion to overseas buyers. Growing for exports is another marketing opportunity for growers, particularly those living near to port facilities.

For further information on supplying the export market, please visit www.hgca.com/exports

Markets for barley, oats and oilseed rape

The UK produces around 5.8Mt of barley a year (based on a typical five-year average). The main markets are for human and industrial uses such as malting, brewing and distilling, which account for around a third of the UK barley crop, and animal feed, which accounts for around a half. The 2013

barley harvest was the largest in 15 years, as growers planted spring crops on land that had not been sown in the autumn due to bad weather.

Barlev



The Maltsters' Association of Great Britain

(MAGB) is the trade association of the UK malting industry and represents over 98% of UK malt production. MAGB anticipates barley crop purchases at 1.9 million tonnes from England and Scotland from the 2014 crop.

The graph below shows MAGB members' wish list for 2014 barley crop purchases from England and Scotland



Grain nitrogen band



Oilseed rape

Over recent years, oilseed rape production in the UK has taken greater prominence with increases in both area and total production. Oilseed rape area planted in the UK has increased over the last decade, although poor weather meant the area was lower in 2013.



The markets for oilseed rape include:

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

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

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



The main markets for oats are milling and feed, with the human and industrial market increasing in recent years. All varieties should be acceptable for both uses. Varieties may be either husked or huskless (naked). The 2013 oat harvest was the largest in 40 years due to increased planting of spring varieties, following a challenging autumn.



Market Intelligence from HGCA Newsletters (email or fax)

Market Report – a weekly overview of the main stories, prices and exchange rates

MI Prospects – market analysis as it happens, available at **www.hgca.com/markets** and fortnightly by email

Email subscriptions@hgca.ahdb.org.uk or phone 024 7647 8730 to sign up

Twitter

Follow HGCA on Twitter for the latest market developments Twitter.com/HGCA_tweet



Website

Keep up to date with the latest prices and news at www.hgca.com/markets



Regional information

Wheat and barley

Regional variety choice

Market selection

Information on the main markets within each region is provided by the Agriculture and Horticulture **Development Board Variety** Survey. This information can be used to show the relative importance of end-use markets in each region. Breadmaking quality wheat varieties are likely to be more popular in the East, while distilling varieties will be of greater importance further north. In barley, spring malt varieties for brewing will be in greater demand in the South, while further north, malt distilling varieties will be more appropriate. Use the quality tables (pages 8, 22 and 28) to find varieties with strengths for your specific market.

Wheat key Group 1 Group 2 Group 3 Group 4 Other Barley key Total feed Total malting

Yield

In the Recommended List tables, yields are shown both for the UK and for different regions. The regional yields are based on a smaller number of trials but will indicate how well a variety performs in a specific region.



Regional information

Disease risk

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

Some diseases are economically important in all regions, for example, septoria tritici in wheat. Others, however, may be more common in specific regions. Yellow rust in wheat, for example, is of greater importance in the East and rhynchosporium in barley is of greater importance in the West and North. Recommended List disease ratings are based on a 1–9 scale, where high numbers indicate high resistance.

Oilseed rape risk levels High Moderate Low

Oilseed rape varieties are presented in the HGCA Recommended List on a regional basis. Use the East/West List (pages 38-39) when choosing varieties up to Teesside where the main disease threat is phoma stem canker. The North List (pages 40-41) is more appropriate when selecting a variety for the north of the UK where the main disease threat is light leaf spot. Varieties that are suitable for both regions are presented on both lists: the yields will differ because the information is based on regional trials.



Light leaf spot risk levels

Phoma risk levels



Emerging disease threats

The disease ratings on the Recommended Lists are an indicator of variety performance in previous years. The fungi that cause disease are continually changing and varieties with a high rating may change within a season if new fungal races occur. CropMonitor (www.cropmonitor.co.uk) can help to give an early warning of such changes. HGCA's website will also provide information on disease levels in untreated varieties in 2014.

New races of yellow and brown rust are identified in the UK Cereal Pathogen Virulence Survey. The survey also identifies the susceptibility of varieties to yellow rust at seedling stages of development. This information is reported on the HGCA website (www.hgca.com/diseasecontrol).

Winter wheat 2014/15 Market options, yield and grain quality

RECOMMENDED	NEW	с	С	NEW		N	EW	*	NEW		NEW			*	с	*			NEW	0	NEW								NEW (2				с	and the second	*	
HGCA	Skyfall	Gallant	Solstice	Cubanita	Chilton	Panorama	KWS Cashel Cordiale	Cocoon	Zulu	KWS Croft	lcon	Delphi	Monterey	Tuxedo	Invicta	KWS Target	Claire	Scout	Panacea	Leeds	Twister	Myriad	Cougar	Viscount	Horatio	Beluga	Alchemy	KWS Kielder	Evolution	אשוווומט כאאס	Dickens Conqueror	MARC Gator	Relay	JB Diego	Grafton	Duxford	Average LSD (5%)
End-use group	nabim	Group	o1	nab	im Gro	oup 2		na	bim G	ìroup	3								Soft	Group	o4							Hard	l Group	4							
Scope of recommendation	UK L	JK UI	K UK	UK	UK	UK	Sp Ul	< E&\	N UK	UK	UK	Е	UK	UK	UK	UK	UK	UK	N&E	UK	Ν	UK L	IK U	κυ	K UK	Ν	Ν	UK	UK E8	έW ι	UK U	ΚU	JK E&\	N UK	UK	UK	
Fungicide-treated grain yield (% treated	ed contro	ol)																																			
United Kingdom (9.9 t/ha)	102 9	98 96	5 96	102	100	99	97 97	7 103	3 102	102	102	102	101	100	100	99	97	97	106	105	105	104 1	03 10	3 10	3 102	102	98	107	107 1	J6 1	106 10	15 10	03 10:	2 102	99	99	3.8
East region (10.1 t/ha)	101 9	98 98	3 94	101	99	99	96 98	3 103	3 102	102	102	102	101	99	100	99	98	96	106	105	105	104 1	03 10	1 10	2 103	102	97	105	107 1	1 7C	104 10	15 10	02 10 [.]	1 102	99	100	2.1
West region (9.9 t/ha)	103 9	99 99	9 96	105	100	100	96 98	3 102	2 100	98	98	100	100	99	98	97	96	96	102	103	101	99 9	9 9	9 10	1 101	103	98	102	104 1	J5 1	104 10	14 10	02 10 [.]	1 102	2 100	98	3.0
North region (9.5 t/ha)	[104] 9	94 94	1 97	[100]	104	99 [1	00] 96	5 10 ⁻	I [104]	102	[104]	103	105	102	102	102	-	99	[106]	108 [109]	105 1	05 10	5 10	5 104	103	98	108 [[105] 1	J6 1	108 10	18 10	07 103	3 101	102	100	3.2
Main market options (The specific attri	butes of	varieti	es are	differe	ent, so,	, wher	never po	ossible	e, varie	eties s	hould	l not b	e mix	ked in	store																						
UK breadmaking	Р	ΥY	Ý	Y	Y	Y	Y Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-				-	-	-	
UK biscuit, cake-making	-		-	-	-	-		Y	Y	Y	Y	Υ	Υ	Υ	Υ	Υ	Υ	Υ	-	-	-	-		-	-	-	-	-	-	-				-	-	-	
UK distilling	-		-	-	-	-		-	[Y]	-	Υ	[Y]	-	[Y]	[Y]	-	[Y]	-	Y	Υ	[Y]	[Y]	Y -	Y	′ [Y]	Y	[Y]	-	-	-				-	-	-	
ukp ^{##} bread wheat for export		ΥY	Ý	[Y]	[Y]	[Y]	[Y] Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-				-	-	-	
uks ^{##} soft wheat for export	-		-	-	-	-		[Y]	[Y]	[Y]	[B]	[Y]	[Y]	Y	В	Υ	Υ	Y	[B]	[B]	[B]	[Y] [3] [E	5] E	[B]	Y	В	-	-	-				-	-	-	
Grain quality																																					
Endosperm texture	Hard H	ard Ha	rd Har	d <mark>Hard</mark>	Hard H	Hard H	lard Ha	rd Sot	't Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft S	Soft S	oft Sc	oft Sc	ft Sof	t Soft	Soft	Hard I	Hard Ha	ard H	lard Ha	rd Ha	ard Har	d Har	d Harc	Hard	
Protein content (%)	11.8 12	2.4 12	.1 12.0	0 11.3	11.7	11.7 1	1.6 12.	<mark>3</mark> 11.	1 11.2	11.2	10.8	11.4	11.4	11.1	11.2	11.4	11.4	11.6	10.8	11.0	11.0	11.0 1	1.0 10	.9 10	.9 11.1	11.0	11.3	10.8	10.7 1 [°]	1.0 1	1.0 10	.9 10).9 11.	3 11.1	11.7	11.0	0.4
Hagberg Falling Number	271 2	43 29	1 246	6 278	266	232 2	247 30	5 228	3 208	200	209	260	222	271	229	207	226	218	139	192	164	217 2	14 17	5 15	9 222	157	230	185	171 1	41 2	218 18	38 18	89 25	6 298	3 270	248	27
Specific weight (kg/hl)	78.1 7	7.5 77.	0 77.9	9 79.8	78.7	77.2 7	6.8 79	<mark>0</mark> 76.	2 75.7	76.3	75.6	75.7	78.8	74.6	75.1	76.4	76.3	78.0	76.9	77.9	76.7	76.5 7	5.9 73	.9 75	.9 75.9	9 75.1	77.3	74.0	74.1 7	5.0 7	6.3 75	.3 75	5.4 76.	5 77.6	5 77.9	76.4	1.0
1000 grain weight (g)	[44.7]	- [49	.0] [46.8	8] [50.3]	- [45.5] [3	86.6] [41.	5] -	[43.8]	-	[42.1]	-	-	-	[41.8]	-	[43.4]	[43.3]	[46.1]	- [42.7]	-		[45	.3] -	-	[44.4]	- [[44.2]	-	- [44	.5]		[45.7	7] [45.8]] [42.9]	3.3
Chopin Alveograph W	277 2	27 22	6 204	221	215 [235] 2	269 [24	0] 104	1 85	93	59	104	91	111	76	103	-	86	[75]	76	65	95 7	8 74	1 [89	9] 81	109	-	-	201	- [1	41] -			-	-	-	31
Chopin Alveograph P/L	1.4 0).6 0.	9 0.6	0.7	0.7	- (0.7 [0.9	9] 0.3	3 0.3	0.3	0.2	0.4	0.3	0.4	0.3	0.3	-	0.3	[0.3]	0.3	0.2	0.3 0	.3 0.	2 [0.	3] 0.3	[0.4]	-	-	1.4	- [(0.4] -			-	-	-	0.2
Status in RL system																																					
Year first listed	14 1	12 09	9 02	14	13	09	14 04	11	14	13	14	13	13	11	10	11	99	09	14	13	14	13 1	3 13	3 09	9 12	10	06	13	14 1	1	13 10	D 1	2 12	08	09	08	
RL status	P1		-	P1	P2	-	P1 -	*	P1	P2	P1	P2	P2	*	-	*	-	-	P1	P2	P1	P2 F	2 P	2 -	-	-	-	P2	P1	- F	P2 -			-	-	*	

Varieties no longer listed: Denman, Einstein, Gravitas, KWS Podium and KWS Sterling Comparisons across regions are not valid.

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

P1 = first year of

- UK = recommended for the UK
- E = recommended for the East region
- E&W = recommended for the East and West regions
- N = recommended for the North region
- N&E = recommended for the North and East regions
- = variety no longer in trials C = yield control
- [] = limited data
- Sp = KWS Cashel is a specific recommendation for Y = suited to that market
 - end use as a corrective wheat with high gluten strength
 - [Y] = may be suited to that market

 - P = to be verified by milling and baking of commercial P2 = second year of qualities by April 2014 recommendation
 - B = suitable for blending into export cargoes
 - [B] = may be suitable for blending into export cargoes
- Average LSD (least significant difference) 5%: recommendation varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter wheat 2014/15 Yield, agronomy and disease resistance

RECOMMENDED	NEW		С	С	NE\	v		NEW		*	NEW	N	IEW			*	C	*		I	NEW	N	IEW								l	NEW	С					С		*	
HGCA	Skyfall	Crusoe	Gallant	Solstice	Cubanita	Chilton	Panorama	KWS Cashel	Cordiale	Cocoon	Zulu	KWS Croft	lcon	Delphi	wonterey	Tuxedo	Invicta	KWS Target	Claire	Scout	Panacea	Leeds	Twister	Myriad	Revelation	Cougar	Viscount	Horatio	Beluga	Alchemy	KWS Kielder	Evolution	KWS Santiago	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	Average LSD (5%)
End-use group	nab	im G	roup	1	na	bim G	Group	2		nab	im Gr	oup 3									Soft	Grou	р4								Harc	d Grou	up4								
Scope of recommendation	UK	UK	UK	U k	< Uk	K UK	(UK	Sp	UK	E&W	UK	UK L	JK	ΕL	ικι	JK L	ΙΚ Ι	JK l	UK	UK	N&E	UK	Ν	UK I	UK	υκ ι	JK	UK	Ν	Ν	UK	UK E	W&	UK	UK	UK E	8W	UK	UK	UK	
Fungicide-treated grain yield (% treated	ed co	ntrol)																																							
United Kingdom (9.9 t/ha)	102	98	96	96	5 10	2 100) 99	97	97	103	102	102 10	02 1	02 10	D1 1	00 1	00 9	99 9	97	97	106	105 1	05 ´	104 1	103 ′	103 1	03	102 1	102	98	107	107	106	106	105	103	102 ′	102	99	99	3.8
East region (10.1 t/ha)	101	98	98	94	10	1 99	99	96	98	103	102	102 10	02 1	02 10	D1 9	99 1	00 9	99 9	98	96	106	105 1	05 ´	104 1	103	101 1	02	103 ´	102	97	105	107	107	104	105	102	101 ′	102	99	100	2.1
West region (9.9 t/ha)	103	99	99	96	5 10	5 100	D 100	96	98	102	100	98 9	98 1	00 10	00 9	99 9	8 9	97 9	96	96	102	103 1	01	99	99	99 1	101	101 1	103	98	102	104	105	104	104	102	101 ′	102 1	100	98	3.0
North region (9.5 t/ha)	[104] 94	94	97	7 [10	0] 104	4 99	[100]	96	101 [104]	102 [1	04] 1	03 10)5 1	02 1	02 1	02	-	99 I	[106]	108 [1	09] ´	105 1	105 ′	105 1	05	104 1	103	98	108	[105]	106	108	108	107	103	101 1	102	100	3.2
Untreated grain yield (% treated control	ol in c	omp	arable	e trial	s)																																				
United Kingdom (9.9 t/ha)	95	91	82	79	89	85	89	81	84	89	90	91 9	95 9	91 9	1 9	91 9	0 8	84 8	83	88	91	88	86	91	95	98 8	89	91	86	88	87	98	87	93	87	90	92	92	89	82	4.7
Agronomic features																																									
Resistance to lodging without PGR	8	7	8	8	8	7	8	8	8	6	6	5	7	8 (6	7	7	7	7	8	5	7	7	7	8	7	6	7	7	7	7	7	7	6	5	8	8	7	8	8	1.4
Resistance to lodging with PGR	8	8	8	8	8	8	8	8	8	7	8	6	8	8	7	8	3	8	7	8	7	7	8	7	8	8	6	8	8	7	8	8	7	7	7	8	7	7	9	9	0.9
Height without PGR (cm)	82	81	81	91	86	86	88	85	78	93	88	87 8	35 8	35 8	9 8	32 E	9 8	83 8	87	85	91	86	87	89	85	84 8	81	88	78	89	82	89	87	85	83	85	81	87	76	87	2.0
Ripening (days +/- Solstice, -ve = earlier)	0	+1	-1	0	0	+2	2 +2	+1	-1	+5	+2	+1 +	+2 +	+2 +	2 -	+1 +	-3 -	+1 -	+1	+2	+2	+2 ·	+2	+2	+4	+3 ·	+1	+1	0	+2	+3	+3	+2	+1	+2	+2	+1	0	-1	+1	0.8
Resistance to sprouting	-	-	[6]	[7]] -	-	[6]	-	[6]	[6]	-	-	-	-	- [[6] [7] [[6]	[5]	[6]	-	-	-	-	-	- 1	[4]	-	[4]	[6]	-	-	[5]	-	[6]	-	-	[7]	[5]	[6]	0.9
Disease resistance																																									
Mildew	6	8	5	4	6	6	7	9	6	7	7	7	8	5 (6	7	5	4	[4]	6	6	3	4	6	7	7	7	7	4	8	4	6	4	7	3	6	6	6	7	6	1.9
Yellow rust	6	9	5	4	6	6	8	9	6	8	9	9	9	9	7	9	3	8	5	9	4	7	6	8	9	8	5	6	5	7	4	9	4	8	6	9	9	8	6	5	1.2
Brown rust	8	6	5	4	4	4	6	9	3	9	5	5	5	8 4	1	8	6	3	5	7	5	4	4	4	9	9	7	6	3	4	8	9	6	8	7	3	8	5	4	4	1.2
Septoria nodorum	[5]	[6]	[5]	[6]] [5]] [5]	[5]	[4]	[5]	[5]	[6]	[5] [5] [6] [(6] [6] [5] [[6]	[6]	6	[5]	[6]	[6]	[5]	[6]	[6]	[6]	[5]	[5]	5	[6]	[6]	[6]	[5]	[6]	[6]	[5]	[6]	[5]	[5]	1.1
Septoria tritici	6	6	4	5	5	5	5	5	5	5	5	5	6	5 !	5	6	5	5	5	5	6	5	5	5	6	7	5	5	5	6	5	6	5	5	5	5	6	5	5	5	0.8
Eyespot	[6]@	5	5	4	[6]] 5	4	[4]	4	5	[7]	[6] [4	4]	5 !	5	6	4	6	5	7	[4]	[5]	[6]	[6] [8	8]@	[3]	6	5	5	6	[6]	[6]	5	[4]	3	4	4	4 (6@	5	2.1
Fusarium ear blight	[6]	6	5	6	[6]] 6	6	[7]	5	7	[6]	6 [6]	6 (6	6	6	5	6	6	[6]	7	[6]	7	7	6	6	6	6	7	6	[6]	6	6	6	6	6	6	5	6	0.6
Orange wheat blossom midge	R	-	-	-	-	-	-	-	-	-	R	R	-	R I	۲	-	-	R	-	R	R	R	R	R	-	R	R	R	-	-	R	-	R	-	R	R	-	-	-	-	

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

- UK = recommended for the UK
- E = recommended for the East region
- E&W = recommended for the East and West regions
- N = recommended for the North region
- N&E = recommended for the North and East regions
- Sp = KWS Cashel is a specific recommendation for end use as a corrective wheat with high gluten strength
- * = variety no longer in trials
- C = yield control
- [] = limited data

- Skyfall, Revelation and Grafton are believed to carry the Pch1 Rendezvous resistance gene to eyespot but this has not been verified in Recommended List tests
- ${\sf R}~$ = believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in Recommended List tests

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter wheat 2014/15 – Supplementary data

RECOMMENDED	NEW		С	С	NEW		I	NEW		*	NEW	I	NEW			*	с	*		I	NEW	ſ	NEW								ľ	NEW	c					с		*	
HGCA	Skyfall	Crusoe	Gallant	Solstice	Cubanita	Chilton	Panorama	KWS Cashel	Cordiale	Cocoon	Zulu	KWS Croft	lcon	Delphi	Monterey	Tuxedo	Invicta	KWS Target	Claire	Scout	Panacea	Leeds	Twister	Myriad	Revelation	Cougar	Viscount	Horatio	Beluga	Alchemy	KWS Kielder	Evolution	KWS Santiago	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	Average LSD (5%)
End-use group	nabin	n Gro	up 1		nabi	im Gı	roup2	2		nabi	m Gr	oup3	3								Soft (Group	p4							ŀ	Hard	Grou	р4								
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	Sp	UK	E&W	UK	UK	UK	Е	UK	UK	UK	UK	UK	UK	N&E	UK	Ν	UK	UK	UK	UK	UK	Ν	ΝU	JK	UK E8	δW	UK	UK	UK E	&W	UK	UK	UK	
Breeder/UK contact																																									
Breeder	RAGT	Lim	SCP	Lim	SCP	DSV	Lim	KWS	KWS	Sec	Lim	KWSF	RAGT	BA	ΒA	RAGT	Lim	KWS	Lim	Sen	Lim N	∕lom ľ	Mom	Lim	Lim F	RAGTK	WS	Lim	KWS L	im K	WS	Sej K\	NS	Sec K	.WS K	.WS F	RAGT	Bre H	KWS S	SCP	
UK contact	RAGT	Lim	Syn	Lim	Syn	DSV	Lim	KWS	KWS	Agr	Lim	KWSF	RAGT	Sen	Sen	RAGT	Lim	KWS	Lim	Sen	Lim k	KWS I	KWS	Lim	Lim F	RAGTK	WS	Lim	Sen L	.im K	WS I	Lim K\	NS	Agr K	.WS K	.WS F	RAGT	Sen I	<ws s<="" td=""><td>Syn</td><td></td></ws>	Syn	
Annual treated yield (% control)																																									
2009 (10.7 t/ha)	-	97	92	95	-	102	100	-	94	105	-	-	-	102	102	105	103	103	[98]	98	-	-	-	-	-	- 1	102	104	103] 1	00	-	- 1	09	- 1	105 1	104	106	101	100	101	3.3
2010 (9.9 t/ha)	-	98	98	96	-	101	100	-	[96]	102	-	105	-	103	102	100	101	99	[94]	97	- 1	105	-	106	107	106	101	103	103 9	98 1	10	- 1	04	106 1	106 1	106	104	102	100 ′	100	2.7
2011 (10.1 t/ha)	97	98	95	93	99	99	[96]	98	95	105	104	107	105	100	101	102	104	99	[96]	96	108	106	107	109	106	109	102	102	100 9	99 1	10	111 1	06	108 1	108 1	103	102	101	96 ´	100	2.7
2012 (8.9 t/ha)	104	96	102	97	104	97	98	94	100	96	100	97	98	102	102	94	93	97	[99]	94	104	107	104	100	99	94	108	102	102 9	94 9	98 .	104 1	06	103	99	101	97	102	102	95	3.1
2013 (9.7 t/ha)	104	99	94	99	102	103	[100]	97	98	105	101	99	100	103	100	-	98	-	-	-	105	103	104	100	101	103	101	100	101 [9	99] 1	08	105 1	06	107	- 1	103	102	103	[99] [99]	3.1
Rotational position																																									
First cereal (10.4 t/ha)	102	98	96	96	102	100	99	97	96	102	102	102	102	102	102	100	101	100	97	97	106	106	105	104	104	104	103	103	102 9	98 1	06	106 1	06	105 1	105 1	103	102	102	99	99	4.0
Second and more (8.5 t/ha)	103	97	96	96	103	100	99	96	98	103	102	100	101	101	101	101	99	97	-	97	106	104	105	101	102	101	101	102	102 9	97 1	08	108 1	07	106 1	104 1	106	103	102	100	99	4.3
Sowing date (most trials were sown in	Octobe	er)																																							
Early sown (before 14 Sep) (10.2 t/ha)	-	-	97	94	-	-	-	-	-	105	-	-	-	103	102	103	-	-	100	97	-	-	-	-	-	- 1	106	107	106 1	02	-	-	-	-	-	-	-	-	103	-	4.9
Late-sown (mid-Nov to end-Jan) (8.8 t/ha)	-	[100]	[99]	94	-	-	[101]	-	97	[99]	-	[103]	-	-	-	[97]	100	[100]	-	[98]	- [107]	- [106]	- [100][103] [102]	103 [9	98] [1	04]	- [1	08] [107][1	104][′	103] [[98] [100]	[94] [101]	7.1
Soil type (about 50% of trials are on me	edium s	oils)																																							
Light soils (9.2 t/ha)	[107]	99	94	96	[104]	102	99	[98]	96	103 [102]	101	[101]	103	104	102	101	99	97	98	[106]	107	[106]	103	103	103	105	105	103 9	98 1	06 [106] 1	07	106 1	106 1	105	104	103	100	99	5.2
Heavy soils (10.5 t/ha)	101	98	97	95	102	99	99	96	97	103	102	103	101	102	100	99	101	100	-	96	105	104	103	103	103	103	101	102	101 9	97 1	06	106 1	06	104 1	106 1	102	101	101	98	99	4.4
Agronomic features																																									
Lodging % without PGR	1	2	2	2	1	4	2	1	1	9	7	14	4	2	5	3	4	3	5	1	17	4	5	4	2	4	7	4	2	4	3	4	4	5	12	2	2	5	1	2	
Lodging % with PGR	2	2	1	1	1	2	1	2	1	6	2	7	3	2	4	1	2	2	3	1	6	3	3	4	2	2	7	2	1	4	2	2	5	5	4	2	3	3	1	1	
Latest safe sowing date #	[End Feb]	End Jan	Mid Feb	End Jan	[Mid Feb]	End Jan	Mid Feb	[End Jan]	Mid Feb	End Jan	[End Feb]	[Mid Feb]	[End Feb]	Mid Feb	[Mid [Feb] F	Mid Feb]	[End [Feb] I	Mid Feb]	[End [Jan]	[Mid Feb]	Vid Feb	Mid Feb	End N Jan F	/id [E	End [an] F	Mid E Feb] J	ind [an 、	End M Jan] [Vid N Feb (Vid I Feb	Mid Feb	End Jan	Mid I Feb I	Vid ⁻eb							
Speed of development to growth stag	g e 31 (c	days -	-/- ave	erage																																					
Early Sep sown	-11	+1	-2	-2	-4	-2	-4	[+4]	-3	+5	[-2]	[-7]	+1	+2	-1	+1	-1	-1	+4	+1	[+4]	-1	[+2]	+3	+5	-1	+2	-2	+1 -	+1 -	+4	[-1] +	+6	-2	-3	+2	-4	-1	+2	-6	6.5
Early Oct sown	[-2]	+3	-4	-2	[-1]	+3	-3	[-1]	-4	+6	[+2]	-2	[0]	-1	-2	+2	+1	-3	+2	+1	[+3]	-3	[-2]	+4	+3	-1	+2	-4	+2 -	+4 -	+2	[0] +	+1	-5	-5	+4	+3	-1	+2	+2	6.4
Early Nov sown	[-2]	-3	-3	-1	[+2]	-1	0	[-3]	-4	+4	[+3]	+2	[-3]	-2	-4	+2	+1	-2	+3	+1	[+2]	0	[-4]	+4	+2	0	+1	0	+1 -	+3 -	+3	[0] +	+1	-1	-4	0	+1	-1	-1	+2	4.6

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

UK = recommended for the UK

- E = recommended for the East region
- E&W = recommended for the East and West regions
- N = recommended for the North region
- N&E = recommended for the North and East regions
- [] = limited data

C = yield control

* = variety no longer in trials

= Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for flowering

end use as a corrective wheat with high gluten strength

Sp = KWS Cashel is a specific recommendation for

- Agr = Agrii (www.agrii.co.uk) BA = Blackman Agriculture
- Bre = Saatzucht Josef Breun, Germany
- DSV = DSV United Kingdom (www.dsv-uk.co.uk) Sec = Secobra, France
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.limagrain.co.uk)
- Mom = Momont, France

- RAGT = RAGT Seeds (www.ragt.co.uk) SCP = Syngenta Crop Protection
 - (www.syngenta.co.uk)
- Sej = Sejet, Denmark
- Sen = Senova (www.senova.uk.com)
- Syn = Syngenta Seeds (www.syngenta.co.uk) confidence level.
- significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5%

Average LSD (least

Winter wheat trials harvest 2014 – Candidate varieties

CANDIDATE	Variety ID	Yield treated (T)	Yield untreated (UT) (as % treated controls)	Lodging % (UT)	Lodging % (T)	Height (cm) (UT)	Maturity (+/- Solstice)	Mildew (1–9)	Yellow rust (1–9)	Brown rust (1–9)	Septoria tritici (1–9)	Eyespot (1–9)	Other claim	Endosperm texture	Protein content %	Hagberg Falling Number	Specific wt (kg/hl)	UK contact
Control varieties																		
Solstice	1282	98	66	0	0	91	0	4	5	4	5	4	-	Hard	12.3	251	78.3	
JB Diego	1737	102	79	0	1	89	+1	6	8	5	5	4	-	Hard	11.6	280	78.3	
Gallant	1766	101	69	1	0	82	-2	5	5	5	4	5	-	Hard	12.6	270	77.0	
Invicta	1853	95	71	0	0	89	+2	5	8	6	5	4	-	Soft	12.3	264	74.2	
KWS Santiago	1916	105	69	2	2	87	0	4	5	7	5	5	-	Hard	11.2	161	73.8	
Selected as potential breadmaking	varieties																	
KWS Lili (KWS W227)	2245	104	75	2	0	80	+1	9	7	6	7	(8)	-	Hard	11.7	291	77.0	KWS UK
KWS Trinity (KWS-W217)	2235	102	71	3	0	83	-2	9	9	9	6	(8)	-	Hard	12.1	351	76.9	KWS UK
Ruskin (SEWC112)	2249	97	72	0	0	76	0	8	9	9	6	(8)	-	Hard	12.2	324	78.3	Senova
Selected as potential biscuit-makir	ng varietie	es																
LGW65	2199	103	63	1	0	80	0	5	8	4	6	(8)	OWBM	Soft	11.6	186	75.5	Limagrain UK
Britannia (LGW66)	2200	103	76	5	5	88	0	6	9	4	7	(4)	-	Soft	12.1	212	77.4	Limagrain UK
RW41163	2188	103	78	1	0	85	-2	9	7	6	6	(8)	-	Soft	12.0	225	76.5	RAGT Seeds UK
RW41186	2191		Data c	annot be	published	d as variet	y has not	complete	ed Nationa	al List tes	ting			Soft				RAGT Seeds UK
Selected as potential feed varieties	3																	
Reflection (SY-111978)	2229	109	87	0	0	79	0	7	5	9	6	(8)	OWBM	Hard	11.2	240	77.9	Syngenta Seeds
Jorvik (LGW68)	2202	104	70	1	2	93	+2	3	9	5	7	(5)	OWBM	Soft	10.9	187	77.2	Limagrain UK
SEWC118	2363		Data c	annot be	published	d as variet	y has not	complete	ed Nationa	al List tes	ting			Hard				Senova
KWS Tempo (KWS W223)	2241	103	79	1	0	84	0	9	9	8	6	(8)	-	Hard	11.8	326	80.1	KWS UK
Mean of controls (t/ha)		9.3	9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LSD 5%		2.9	6.8	-	-	2.1	2.7	-	-	-	-	-	-	-	0.5	39.6	1.4	-
No. of trials		23	8	5	9	11	5	-	-	-	-	-	-	-	7	7	7	-

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

T = data from trials treated with fungicide and PGR OV UT = data from trials without fungicide or PGR

OWBM = believed to be resistant to orange wheat blossom midge Candidate varieties will be considered for the 2015/16 HGCA

Candidate varieties will be considered for the 2015/16 HGCA Recommended List To allow direct comparisons, the data presented for control varieties are taken from trials in which the candidates were grown

See the HGCA Recommended List for full data on control varieties

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

Winter wheat varieties grown in RL trials in 2013 but not added to the HGCA Recommended List

	Control va	rieties				Other variety	
HGCA	Gallant	Solstice	Invicta	KWS Santiago	JB Diego	KWS Bonham	Average LSD (5%)
Fungicide-treated grain yield (% treated control)							
United Kingdom (9.9 t/ha)	96	96	100	106	102	99	3.8
East region (10.1 t/ha)	98	94	100	107	102	99	2.1
West region (9.9 t/ha)	99	96	98	105	102	98	3.0
North region (9.5 t/ha)	94	97	102	106	101	[98]	3.2
Untreated grain yield (% treated control)							
United Kingdom (9.9 t/ha)	82	79	90	87	92	85	4.7
Grain quality							
Endosperm texture	Hard	Hard	Soft	Hard	Hard	Hard	
Protein content (%)	12.1	12.0	11.2	11.0	11.1	11.6	0.4
Hagberg Falling Number	291	246	229	141	298	281	27
Specific weight (kg/hl)	77.0	77.9	75.1	75.0	77.6	78.3	1.0
1000 grain weight (g)	[49.0]	[46.8]	[41.8]	-	[45.7]	[44.6]	3.3
Chopin Alveograph W	226	204	76	-	-	[278]	31
Chopin Alveograph P/L	0.9	0.6	0.3	-	-	[1.4]	0.2
Agronomic features							
Resistance to lodging without PGR	8	8	7	7	7	8	1.4
Resistance to lodging with PGR	8	8	8	7	7	8	0.9
Height without PGR (cm)	81	91	89	87	87	80	2.0
Ripening (days +/- Solstice, -ve = earlier)	-1	0	+3	+2	0	-1	0.8
Disease resistance							
Mildew	5	4	5	4	6	3	1.9
Yellow rust	5	4	8	4	8	9	3.0
Brown rust	5	4	6	6	5	3	3.3
Septoria nodorum	[5]	[6]	[5]	[6]	[6]	[5]	1.1
Septoria tritici	4	5	5	5	5	6	0.8
Eyespot	5	4	4	5	4	[4]	2.1
Fusarium ear blight	5	6	6	6	6	[6]	1.5
Orange wheat blossom midge	-	-	-	R	-	-	

This table should be read in conjunction with the HGCA Recommended List of Winter Wheat for 2014/15.

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter wheat 2014/15 – Variety comments Please note that comments made on resistance to orange wheat blossom midge are based on advice from plant breeders. It has not been verified in HGCA tests.



Crusoe ukp

Quality: Crusoe is a nabim Group 1 variety that has a high specific weight and grain protein. The variety is also classified as a ukp bread wheat for export. Agronomy: It is 2% higher yielding than Gallant and with a better spectrum of disease resistance, especially to mildew and yellow rust. It has short straw. nabim comment: It has consistently demonstrated good protein content and quality. The breadcrumb structure has been equal to that of Solstice. In the past two years, millers have seen increasing volumes of this variety. Its baking performance remains good.

Gallant ukp

Quality: A **nabim** Group 1 variety which is also classified as a **ukp** bread wheat for export. It gives high Hagbergs and specific weights and protein levels similar to Solstice. **Agronomy:** An early maturing variety with short, stiff straw and a yield potential around 2% below Crusoe's. It is susceptible to septoria tritici and rather susceptible to mildew.

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

ukp = classified as a ukp bread wheat for export

uks²²³ = classified as a uks soft wheat for export

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

NEW Skyfall

Quality: Added to the HGCA Recommended List for 2014/15 as a potential **nabim** Group 1 bread wheat with very high yields. It gives high specific weights. **nabim** is conducting commercial-scale testing and is due to confirm its status for UK milling in March 2014. See the HGCA RL Pocketbook and **www.nabim.org.uk**

Agronomy: Its treated yield is 4% higher than Crusoe's and equal to the highest yielding Group 2 variety. It has also given high yields in untreated trials due to generally good disease resistance, especially to brown rust, and it also has *Pch1* eyespot resistance. Skyfall is an awned wheat with short, stiff straw and is the first Group 1 winter wheat with resistance to orange wheat blossom midge. It has a tendency to rapid growth and development in the spring but this characteristic is less marked when it is sown after the end of September. It is also relatively early ripening and should be given priority at harvest.

nabim comment: During the three years of testing, it has produced good baking results. If the 'provisional' status is confirmed by the milling and baking of commercial quantities, it will achieve full status in March 2014.

Solstice ukp

Quality: A popular **nabim** Group 1 variety giving high specific weights. It is classified as a **ukp** bread wheat for export and has support from end users. **Agronomy:** Has medium–long but stiff straw and is susceptible to mildew, yellow rust, brown rust and eyespot. Solstice's yield potential is 2% below Crusoe's. **nabim comment:** Solstice remains the most widely used Group 1 variety. It is popular with both farmers and millers because it has a good balance of protein content, milling characteristics, gluten properties and baking performance.



Chilton ukp²²⁴

Quality: A nabim Group 2 wheat and classifies as a ukp bread wheat for export. It has a high specific weight. Agronomy: Chilton has a yield potential slightly higher than Panorama's but is susceptible to brown rust. nabim comment: This variety joined the RL in 2013. It has high specific weights but in the three years of testing, it appeared to have lower protein content and flour extraction rates. It produced bread of moderate quality. Good agronomic management may be required to attract higher premiums.

Cordiale ukp

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

Agronomy: Early maturing with short, stiff straw. It is susceptible to eyespot and very susceptible to brown rust. It has a treated yield potential similar to the Group 1 varieties Crusoe, Gallant and Solstice.

nabim comment: This remains the Group 2 variety of choice for most millers and growers. It has higher than average HFNs, with good protein levels and specific weights also key features. Consistent milling and baking performance continue to be seen by millers.

UK Cereal Pathogen Virulence Survey

Cereal rusts and mildews are highly variable pathogens and new races are constantly evolving to overcome the resistance genes deployed in new varieties. The UKCPVS aims to monitor changes in the virulences of rusts and mildew and provide new information on changes to varietal resistance. See www.hgca.com/ukcpvs for more information.

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 HGCA tests.

NEW Cubanita ukp

Quality: Added to the HGCA Recommended List for 2014/15 as a high-yielding **nabim** Group 2 variety and classified as a **ukp** bread wheat for export. It has a high specific weight but has a tendency to give low grain proteins.

Agronomy: Cubanita's yield is 2% higher than Chilton's, with stiff straw. It is susceptible to brown rust. It is believed that Cubanita has resistance to soil-borne cereal mosaic virus but this has not been verified in HGCA tests.

nabim comment: There has been some variability with its performance over the three years of testing. There may be a tendency for yellowness in the flour colour, with lower water absorption and some coarseness in the breadcrumb.

NEW KWS Cashel ukp

Quality: Added to the HGCA Recommended List for 2014/15 as a specific recommendation for end use as a corrective wheat with high gluten strength. It is classified as a **ukp** bread wheat for export.

Agronomy: KWS Cashel has a similar yield to Cordiale, with stiff straw and high resistance to mildew, yellow rust, brown rust and, based on limited data, fusarium head blight. Limited data suggest it is susceptible to eyespot. nabim comment: Over the three years of testing, the variety exhibited strong gluten, similar to that of Soissons, giving rise to some evidence of coarseness in the breadcrumb structure. There is a tendency towards yellowness in the breadcrumb colour.

Panorama ukp²²

Quality: A **nabim** Group 2 variety and classified as a **ukp** bread wheat for export. Panorama tends to give high specific weights.

Agronomy: It has stiff straw and high resistance to mildew and yellow rust but is susceptible to eyespot.

nabim comment: This variety shows good grain and milling characteristics. However, it is likely to be more suited to uses in blends due to the variable baking quality.

nabim Group 3 varieties

Claire uks

Distilling: Medium

Quality: A **nabim** Group 3 variety and classified as a **uks** soft wheat for export. Rated 'medium' for distilling. **Agronomy:** It has a treated yield potential some 6% lower than the highest yielding Group 3 variety but it is a slow-developing variety that has proved useful for very early drilling. It is susceptible to mildew.

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

Cocoon uks

Quality: A **nabim** Group 3 variety recommended for the East and West regions. Classified as a **uks** soft wheat for export but rated 'poor' for distilling.

Agronomy: A high-yielding variety with high resistance to mildew, yellow rust, brown rust and fusarium head blight. Cocoon is late maturing and has long straw. It is no longer in RL trials.

nabim comment: Only small volumes of this variety have been seen commercially and in the three years of trials showed variability across the years for both grain hardness and rheological analysis. It is unlikely to be a preferred Group 3 variety for all millers.

Delphi uks

Distilling: Medium

Quality: A **nabim** Group 3 variety recommended for the East region. Classified as a **uks** soft wheat for export and rated 'medium' for distilling.

Agronomy: Delphi is high yielding and has high resistance to yellow rust and brown rust but is rather susceptible to mildew. It has orange wheat blossom midge resistance. **nabim comment:** In the three years of trials it has shown some variability in specific weight; however, it has consistently met the rheological requirements of a Group 3 wheat.

NEW ICON

Distilling: Good

Quality: Added to the HGCA Recommended List for 2014/15 as a high-yielding **nabim** Group 3 variety and rated as 'good' for distilling and 'blending' for export.

Agronomy: It has high resistance to mildew and yellow rust and has given a high untreated yield. Limited data suggest that it is susceptible to eyespot.

nabim comment: In the three years of testing there was a trend for it to produce lower protein levels than the Scout and Invicta controls. However, it consistently met the requirements of a Group 3 wheat.

Invicta

Distilling: Medium

Quality: A **nabim** Group 3 variety rated 'medium' for distilling and 'blending' for export. It tends to give a low specific weight.

Agronomy: Invicta has high resistance to yellow rust but is susceptible to eyespot and rather susceptible to mildew. It is late maturing.

nabim comment: This variety has a similar performance to Scout and is used by most millers for biscuit- and cakemaking grists.

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 HGCA tests.

KWS Croft uks

Quality: A **nabim** Group 3 variety and classified as a **uks** soft wheat for export. It is rated as 'poor' for distilling. **Agronomy:** KWS Croft is high yielding but with only moderate lodging resistance. It has high resistance to mildew and yellow rust and is resistant to orange wheat blossom midge.

nabim comment: Quality results have been consistently similar to Scout throughout the three-year testing process. It therefore fully meets the requirements of a Group 3 wheat.

KWS Target uks

Quality: A nabim Group 3 variety classified as a uks soft wheat for export but rated as 'poor' for distilling. Agronomy: Has high resistance to yellow rust and is resistant to orange wheat blossom midge but is susceptible to mildew and brown rust. It is no longer in RL trials.

nabim comment: It has given consistent test results and its performance is similar to Scout.

Monterey uks

Quality: A **nabim** Group 3 variety with a good specific weight. Classified as a **uks** soft wheat for export but rated as 'poor' for distilling.

Agronomy: A high-yielding variety with high resistance to yellow rust and resistance to orange wheat blossom midge. It has moderate resistance to lodging and is susceptible to brown rust.

nabim comment: Rheological results have been consistently similar to Scout throughout the three-year testing process. Therefore, this variety meets the requirements of a Group 3 wheat.

Scout uks

Quality: A **nabim** Group 3 wheat classified as a **uks** soft wheat for export but rated as 'poor' for distilling. It gives a high specific weight.

Agronomy: It is stiff strawed and has high resistance to yellow rust, brown rust and eyespot; it is also resistant to orange wheat blossom midge. Like Claire and Grafton, Scout has slow primordial development and a range of other characteristics that can make it a useful candidate for early drilling.

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

Tuxedo uks

Distilling: Medium

Quality: A **nabim** Group 3 variety rated as 'medium' for distilling and classified as a **uks** soft wheat for export. It gives relatively high Hagbergs but low specific weights. **Agronomy:** It has high resistance to mildew, yellow rust and brown rust and no serious disease weaknesses. It is no longer in RL trials.

nabim comment: Relatively small amounts of this variety have been seen commercially since it joined the RL. Over the three years of testing there was evidence of variability between years for dough extensibility. It is unlikely to be a preferred Group 3 variety for all millers.

NEW Zulu uks

Distilling: Medium

Quality: Added to the HGCA Recommended List for 2014/15 as a high-yielding **nabim** Group 3 variety, classified as a **uks** soft wheat for export and rated as 'medium' for distilling.

Agronomy: It has moderate resistance to lodging but responds well to plant growth regulators. It has orange wheat blossom midge resistance and high resistance to mildew, yellow rust and, based on limited data, fusarium head blight. It is believed that Zulu has resistance to soilborne cereal mosaic virus but this has not been verified in HGCA tests.

nabim comment: In the three years of testing there was a trend for it to be softer milling than the Scout and Invicta controls. However, it consistently met the requirements of a Group 3 wheat.

'Blending' for export

Varieties may be listed in the Recommended List as "B" for blending if their characteristics suggest that they could contribute to an export cargo but would be unsuitable for export on their own, for example, because the variety has been found in commercial experience only to be suitable for inclusion in small quantities to export cargoes.

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 HGCA tests.

Group 4 varieties

Alchemy

Distilling: Medium

Quality: A soft-milling feed wheat rated as 'medium' for distilling and 'blending' for export. It is now recommended for the North region.

Agronomy: It has a moderate treated yield potential and is rather susceptible to brown rust. It has above average resistance to mildew, yellow rust and fusarium head blight.

Beluga uks²²

Distilling: Good

Quality: A soft-milling feed variety now recommended for the North region. Rated as 'good' for distilling and classified as a **uks** soft wheat for export. It tends to give low Hagbergs and specific weights.

Agronomy: Has short straw and has performed well from early sowings. It is susceptible to mildew and brown rust and is rather susceptible to sprouting.

Conqueror

Quality: A hard-milling feed variety.

Agronomy: High-yielding, it has performed well on a range of soil types, sowing dates and as a second wheat. It has high resistance to brown rust but moderate resistance to lodging and is very susceptible to mildew and eyespot. It is resistant to orange wheat blossom midge.

Cougar

Quality: A soft-milling feed wheat. It tends to give low Hagbergs and specific weights and is rated as 'poor' for distilling and 'blending' for export.

Agronomy: It has high resistance to mildew, yellow rust and brown rust and has the best septoria tritici resistance rating on the List. It is also resistant to orange wheat blossom midge but limited data suggest that it is very susceptible to eyespot. It has given high yields in untreated trials but is late maturing.

Dickens

Quality: A hard-milling feed wheat.

Agronomy: A high-yielding variety which has done well in first and second wheat trials and has high resistance to mildew, yellow rust and brown rust. Limited data suggest it is susceptible to eyespot.

Duxford

Quality: A hard-milling feed wheat.

Agronomy: Its treated yield is 8% below the highest yielding hard feed variety. It has high lodging resistance but is susceptible to brown rust. It is no longer in RL trials. nabim comment: This variety has a stronger gluten quality than other Group 4 varieties and is worthy of being kept separate so that it can be marketed in an identifiable manner.

NEW Evolution

Quality: Added to the HGCA Recommended List for 2014/15 as a very high-yielding hard-milling feed variety. It has a low specific weight.

Agronomy: It has good resistance to yellow rust and brown rust and no serious disease weaknesses. It has given a high yield in untreated trials and treated second wheat trials. It is late maturing.

Grafton

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

Agronomy: Its treated yield is 8% below the highest yielding hard feed variety. It has short, stiff straw, high resistance to mildew and *Pch1* eyespot resistance but is very susceptible to brown rust. Like Claire and Scout, Grafton has slow primordial development and a range of other characteristics that can make it a useful candidate for early drilling.

Horatio

Quality: Horatio is a soft-milling feed variety rated as 'medium' for distilling and 'blending' for export. **Agronomy:** It has resistance to orange wheat blossom midge.

Distilling: Medium

JB Diego

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

Agronomy: It has high resistance to yellow rust but is susceptible to eyespot. Although now 5% lower yielding than the highest yielding feed variety, growers value its consistency and it retained a large market share in 2013.

KWS Gator

Quality: A hard-milling feed variety.

Agronomy: It has stiff straw and has given high yields, especially in second wheat situations. It is resistant to orange wheat blossom midge and has high resistance to yellow rust but is susceptible to eyespot and very susceptible to brown rust.

KWS Kielder

Quality: A very high-yielding hard-milling feed wheat. It has a low specific weight.

Agronomy: It is a short-strawed variety which has given very high yields in both first and second wheat situations. It is resistant to orange wheat blossom midge and has high resistance to brown rust. It is susceptible to mildew and yellow rust and is late maturing.

KWS Santiago

Quality: Recommended for the East and West regions as a hard-milling feed variety. It tends to give low Hagbergs and specific weights.

Agronomy: A high-yielding variety that has performed well in both first and second wheat trials. It is resistant to orange wheat blossom midge but is susceptible to mildew and yellow rust.

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

Leeds

Distilling: Good

Quality: A soft-milling feed wheat rated as 'good' for distilling and 'blending' for export. It has a good specific weight.

Agronomy: Leeds is high yielding with resistance to orange wheat blossom midge and above average resistance to fusarium head blight. It has high resistance to yellow rust but is susceptible to brown rust and very susceptible to mildew.

Myriad uks

Distilling: Medium

Quality: A soft-milling feed wheat rated as 'medium' for distilling and classified as a **uks** soft wheat for export. **Agronomy:** Myriad is high yielding, with resistance to orange wheat blossom midge. It has high resistance to yellow rust and above average resistance to fusarium head blight but is susceptible to brown rust.

NEW Panacea

Distilling: Good

Quality: Added to the HGCA Recommended List for 2014/15 for the North and East regions. A high-yielding soft-milling feed variety rated as 'good' for distilling and 'blending' for export. It tends to give low Hagbergs. **Agronomy:** It is high yielding, especially in the North and East regions and in second wheat situations. It is resistant to orange wheat blossom midge but has moderate resistance to lodging and is susceptible to yellow rust and eyespot.

Relay

Quality: A hard-milling feed variety for the East and West regions.

Agronomy: Has short straw and good lodging resistance. It has high resistance to yellow rust and brown rust but is susceptible to eyespot.

Revelation

Distilling: Good

Quality: A soft-milling feed wheat rated as 'good' for distilling and 'blending' for export.

Agronomy: Has good resistance to lodging and high resistance to mildew, yellow rust, brown rust and eyespot and above average resistance to fusarium head blight. With no major foliar disease weaknesses, it has given high yields in untreated trials. Revelation has slow primordial development and a range of other characteristics that could make it a useful candidate for early drilling but it is late maturing.

NEW Twister

Distilling: Medium

Quality: Added to the HGCA Recommended List for 2014/15 for the North region. A high-yielding soft-milling feed variety rated as 'medium' for distilling and 'blending' for export.

Agronomy: The highest yielding variety in the North region, it has also performed well as a second wheat. It has resistance to orange wheat blossom midge but is susceptible to mildew and brown rust.

Viscount

Distilling: Good

Quality: A high-yielding soft-milling feed variety rated as 'good' for distilling and 'blending' for export. It tends to give low Hagbergs.

Agronomy: It is high yielding in the North region. It has high resistance to mildew and brown rust and has resistance to orange wheat blossom midge but is susceptible to sprouting in the ear. Varieties no longer on the Recommended List Hereward – nabim comment: This is the oldest breadmaking variety but is now outclassed in terms of yield and is no longer on the Recommended List. It can still perform well and some millers may offer contract growing schemes.

Soissons – nabim comment: This variety was removed from the 2010 Recommended List because it has been overtaken in yield by more recently developed varieties. However, it continues to offer unique quality characteristics in specialist bread grists and some millers may offer specific contracts.

Wholegrain Goodness

HGCA's Wholegrain Goodness consumer marketing campaign promotes the nutritional and culinary benefits of wholegrains and aims to inspire people to eat them.

For more information, visit WholegrainGoodness.com

Spring wheat (for late autumn sowing) 2014/15

RECOMMENDED HGCA	Gallant	Mulika +	Solstice	Paragon + O	KWS Willow +	Panorama	Tybalt + O	Cordiale	Ashby +	Invicta	Scout	Viscount	Beluga	Alchemy	KWS Alderon +	Conqueror	Belvoir +	JB Diego	Grafton	Zircon +	Average LSD (5%)	Lennox +	KWS Kilburn +
End-use group	nabim	Group 1			nabim	Group 2				nabim	Group 3	Soft G	roup 4		Hard (Group 4				Other			
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp		Cano	didates
UK yield (% treated control)																							
Fungicide-treated (8.5 t/ha)	105	103	98	95	110	106	105	102	101	105	102	109	108	104	110	109	108	105	100	100	6.6	102	[107]
Grain quality																							
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard		Hard	Hard
Protein content (%)	-	12.5	-	12.6	11.8	-	12.0	-	12.6	-	-	-	-	-	12.2	-	11.2	-	-	12.7	0.4	12.9	[12.2]
Hagberg Falling Number	-	327	-	303	258	-	297	-	265	-	-	-	-	-	319	-	213	-	-	188	41	314	268
Specific weight (kg/hl)	-	77.9	-	78.6	79.1	-	76.1	-	78.6	-	-	-	-	-	77.3	-	76.4	-	-	79.4	0.8	79.1	[77.6]
Agronomic features																							
Lodging %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Straw height with PGR (cm)	70	87	73	92	83	[74]	80	66	81	79	71	67	68	74	[75]	69	75	[74]	[62]	80	3.4	[80]	[89]
Ripening (+/- Paragon, -ve = earlier)	[-1]	[0]	[-1]	[0]	[0]	[0]	[0]	[-1]	[0]	[+1]	[+1]	[0]	[0]	[+1]	[-1]	[0]	[-1]	[0]	[-2]	[0]	2.1	-	-
Latest safe sowing date #	Mid Feb	-	End Jan	-	-	Mid Feb	-	Mid Feb	-	Mid Feb	Mid Feb	Mid Feb	End Jan	Mid Feb	-	Mid Feb	-	End Jan	Mid Feb	-	-	-	-
Disease resistance																							
Mildew	5	[7]	4	8	[8]	7	8	6	6	5	6	7	4	8	6	3	[6]	6	7	[7]	1.3	[7]	[7]
Yellow rust	5	8	4	7	8	8	7	6	7	8	9	5	5	7	8	6	7	8	6	8	0.9	9	6
Brown rust	5	7	4	8	7	6	7	3	6	6	7	7	3	4	7	7	8	5	4	7	1.6	8	9
Septoria tritici	4	5	5	6	6	5	6	5	5	5	5	5	5	6	6	5	5	5	5	6	1.1	6	6
Fusarium ear blight	5	[6]	6	[6]	[6]	6	[5]	5	[6]	6	6	6	6	7	[6]	6	6	6	5	[6]	0.3	[6]	-
Orange wheat blossom midge	-	R	-	-	-	-	-	-	-	-	R	R	-	-	-	R	R	-	-	-		-	-
Status in RL system																							
Year first listed	09	11	02	99	11	-	03	04	03	10	09	09	10	06	12	10	03	-	-	07		-	-
RL status	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Breeder/ UK contact																							
Breeder	SCP	BA	Lim	RAGT	KWS	Lim	Wier	KWS	KWS	KWS	Sen	KWS	Sen	Lim	KWS	KWS	KWS	Bre	KWS	KWS		Str	KWS
UK contact	Syn	Sen	Lim	RAGT	KWS	Lim	Lim	KWS	KWS	KWS	Sen	KWS	Sen	Lim	KWS	KWS	KWS	Sen	KWS	KWS		SU	KWS

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

The data for the spring wheat varieties constitute a Recommended List. The winter wheat data presented do not constitute a Recommended List and are shown to allow direct comparisons with data for the spring wheat varieties. Yields are expressed as % of the spring wheat controls. For full information on the late-sown yield performance of winter wheat varieties, please see the winter wheat Recommended List Supplementary data table (page 10).

- UK = recommended for the UK
- Sp = Zircon is specifically recommended as a white-grained wheat; nabim does not class it as a breadmaking variety
- + = spring wheat
- C = yield control
- [] = limited data

- advised latest date to give sufficient cold for flowering; spring wheats have no vernalisation requirement. R = believed to be resistant to orange wheat

= latest safe sowing date is the

- blossom midge (OWBM), but this has not been verified in Recommended List tests
- BA = Blackman Agriculture
- Bre = Saatzucht Josef Breun, Germany
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.limagrain.co.uk)
- RAGT = RAGT Seeds, UK (www.ragt.co.uk)
- SCP = Syngenta Crop Protection (www.syngenta.co.uk)
- Sen = Senova (www.senova.uk.com)

- Str = Strube, Germany
- = Saaten Union UK (www.saaten-union.co.uk) SU
- Syn = Syngenta Seeds (www.syngenta.co.uk)
- Wier = Wiersum, Netherlands

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring wheat (for spring sowing) 2014

RECOMMENDED		С		С		С	NEW				
HGCA	Mulika	Paragon	Granary	Tybalt	KWS Willow	Ashby	KWS Kilburn	KWS Alderon	Belvoir	Zircon	Average LSD (5%)
End-use group	nabim	Group 1	nabim G	roup 2			Group 4			Other	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	Sp	
UK yield (% control)											
Fungicide-treated (7.0 t/ha)	102	95	106	105	105	100	[108]	106	104	99	5.0
Grain quality											
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	13.8	13.7	13.6	13.0	13.1	13.8	[13.2]	13.4	12.7	13.6	0.5
Hagberg Falling Number	305	316	223	293	250	296	[229]	310	237	209	35
Specific weight (kg/hl)	77.1	77.8	78.4	75.5	78.1	77.9	[75.7]	76.2	76.3	78.6	1.1
Agronomic features											
Resistance to lodging with PGR ∞	-	-	-	-	-	-	-	-	-	-	-
Straw height without PGR (cm)	84	89	84	81	85	83	90	77	80	81	2.0
Ripening (+/- Paragon, -ve = earlier)	[-2]	[0]	[0]	[-1]	[0]	[-1]	[+1]	[0]	[0]	[0]	1.6
Resistance to sprouting ∞	-	-	-	-	-	-	-	-	-	-	-
Disease resistance											
Mildew	[7]	8	[7]	8	[8]	6	[7]	6	[6]	[7]	1.3
Yellow rust	8	7	6	7	8	7	6	8	7	8	0.9
Brown rust	7	8	5	7	7	6	9	7	8	7	1.6
Septoria tritici	5	6	7	6	6	5	6	6	5	6	1.1
Fusarium ear blight	[6]	[6]	[6]	[5]	[6]	[6]	-	[6]	6	[6]	0.3
Orange wheat blossom midge	R	-	-	-	-	-	-	-	R	-	
Breeder/UK contact											
Breeder	BA	RAGT	KWS	Wier	KWS	KWS	KWS	KWS	KWS	KWS	
UK contact	Sen	RAGT	KWS	Lim	KWS	KWS	KWS	KWS	KWS	KWS	
Status in RL system											
Year first listed	11	99	09	03	11	03	14	12	03	07	
RL status	-	-	-	-	-	-	P1	-	-	-	

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

UK = recommended for the UK

- Sp = Zircon is specifically recommended as a whitegrained wheat; **nabim** does not class it as a breadmaking variety
- C = yield control
- [] = limited data

- ∞ = no data available
- R = believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in Recommended List tests
- P1 = first year of recommendation

BA = Blackman Agriculture

- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain (www.limagrain.co.uk) RAGT = RAGT Seeds (www.ragt.co.uk)
- Sen = Senova (www.senova.uk.com)
- Wier = Wiersum BV, Netherlands

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring wheat 2014 – Variety comments

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

nabim Group 1 varieties

Mulika

Quality: A **nabim** Group 1 variety recommended for both late autumn and spring sowing; it gives good Hagbergs and grain proteins and is now a very popular choice with growers. **Agronomy:** Mulika's yields are 7–8% higher than Paragon. It has high resistance to mildew, yellow rust and brown rust and is the only spring wheat breadmaking variety with resistance to orange wheat blossom midge. **nabim comment:** This variety has rheological and baking

qualities that are very good and similar to those of Paragon.

Paragon

Quality: A **nabim** Group 1 variety recommended for both late autumn and spring sowing. It has remained popular with millers due to its high quality and good Hagbergs, specific weights and grain proteins.

Agronomy: Paragon is significantly lower yielding than Mulika from both late autumn and spring sowings and has long straw with moderate lodging resistance. It has high resistance to mildew, yellow rust and brown rust. nabim comment: This is a variety whose performance in breadmaking has been excellent and it is still liked by most millers.

Specific recommendation (white-grained wheat)

Zircon

A lower-yielding white-grained variety specifically recommended for the production of white grain for specialist markets: it is not classified by **nabim**. Zircon has high resistance to mildew, yellow rust and brown rust and gives high proteins and specific weights but low Hagbergs. White-grained wheats are prone to sprouting in the ear with a resulting loss of Hagbergs, so it is important that the variety is given priority at harvest to reduce the sprouting risk. It is no longer in RL trials.



Ashby

Quality: A **nabim** Group 2 variety with good grain protein and specific weights.

Agronomy: Its yield is well below newer Group 2 varieties from both late autumn and spring sowings. It has high resistance to yellow rust.

nabim comment: This variety is seldom seen by millers. The quality has been variable, resulting in this variety being used at low levels within breadmaking grists.

Granary

Quality: A **nabim** Group 2 variety recommended for spring sowing only. It has good grain proteins and specific weights but tends to give lower Hagbergs than other Group 2 spring wheats.

Agronomy: When spring-sown, Granary is the highest yielding Group 2 variety. Limited data suggest it has moderate straw strength.

nabim comment: This is a variety with a tendency to produce low Hagberg Falling Numbers (HFN) and relatively small quantities of this variety have been seen by millers.

KWS Willow

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

Agronomy: Has given very high yields from late autumn sowings. Its yields from spring sowings are similar to Tybalt's. It has high resistance to yellow rust and brown rust and limited data suggest it also has high resistance to mildew.

nabim comment: This variety has HFNs which tend to be low and, overall, it has shown variability across the years of testing, especially with baking performance. As a result, it is more likely to be suited to uses in blends.

Tybalt

Quality: A **nabim** Group 2 spring wheat. It tends to give low specific weights and proteins, particularly when late autumn-sown.

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

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

Group 4 feed varieties

Belvoir

Quality: A hard feed variety.

Agronomy: High yielding when late autumn-sown. Belvoir has high resistance to yellow rust and brown rust and is resistant to orange wheat blossom midge. It has moderate straw strength.

KWS Alderon

Quality: A hard feed variety. **Agronomy:** Very high yielding when late autumn-sown, with high resistance to yellow rust and brown rust.

NEW KWS Kilburn

Quality: Added to the HGCA Recommended List for 2014 for spring sowing only. A hard feed variety. **Agronomy:** A very high-yielding variety with high resistance to brown rust. There are insufficient data to give an assessment of lodging resistance.

New varieties

The UK is overwhelmingly the main source of wheat for UK flour millers. Because of this, along with the HGCA, they invest much time, energy and money to assist breeders in identifying the end-use potential of new varieties at the earliest possible stage. Each year, members of **nabim**'s Varieties Working Group test candidate varieties from the National and Recommended List (RL) trials using a range of milling and baking systems. The information obtained is then conveyed to the British Society of Plant Breeders and by the **nabim** members of the HGCA RLWheat Committee as part of the selection process.

New varieties are the life blood of UK farming. Flour millers need varieties which have consistent milling and baking performance along with improved yields, and good agronomic characteristics. Unfortunately, most new wheat varieties tend to have a relatively short life-cycle in agronomic terms. Therefore, it is essential that there is a constant supply of new varieties that show all the benefits that are required along the supply chain.

This year, we are pleased to see Skyfall from RAGT, a new Group 1 winter wheat variety, together with the Group 2 varieties, Cubanita from Syngenta, and KWS Cashel. There are two very promising new Group 3 winter varieties – Icon from RAGT and Zulu from Limagrain.

Several quality varieties joined the RL in 2013 (Chilton, Delphi, KWS-Croft and Monterey) but none have yet been seen in sufficient commercial quantities for us to be able to confirm our initial comments from the 3-year test programme; nevertheless all remain promising.

The big change!

A major problem with marketing new wheat varieties is that in the past some promising varieties failed to gain a market share before becoming outclassed. In order to encourage earlier adoption, **nabim** has worked with members of the British Society of Plant Breeders (BSPB) to develop a new system which is similar to that already used for malting barley. In December 2013, **nabim** announced an initiative to increase confidence in new breadmaking wheat varieties. During February 2014, two flour milling companies will mill commercial quantities of the new Group 1 variety Skyfall. The resulting flour will be made available to other millers and the results of this testing will be reviewed in late March. If the variety continues to perform as it has done in smaller scale tests it will receive 'Full' approved status on the RL in early April, before planting decisions for 2014 are made.

Milling Wheat Challenge

Variety is an important factor in determining wheat quality, but others also play their part such as the standard of crop husbandry, effective use of nitrogen and good storage. For the past four years, **nabim**, together with HGCA, has run a competition – the 'Milling Wheat Challenge' – to find the best grower of consistently highquality milling wheat. The 2013 competition was won by

Stephen Craggs of Sedgefield, County Durham, who achieves amazing results despite challenging climatic conditions. He joins previous winners Andrew Ponder from Essex (2010), James Price from Oxfordshire (2011) and Andrew Robinson from Bedfordshire (2012) who have all demonstrated vision and a clear understanding of both growing the crop and marketing it.

The competition is being run again in 2014. Flyers have been sent to agronomists, merchants and farming organisations.

Entries can be made on paper and online. Full entry details are on both the **nabim** and **HGCA** websites (www.nabim.org.uk/challenge or www.hgca.com). Entries close in early May.

Wheat quality in 2012/13

Wheat quality from the 2012 harvest proved to be a massive challenge to UK flour millers, mainly because of the low specific weights. Specific weight is a measure of how well the wheat grain has filled with starchy endosperm. In 2012, the levels were the lowest since records began and this resulted in severe issues for UK millers, due to a range of impacts including: slowing wheat intake, increased cleaning requirements, reduced mill capacity, reduced extraction rates, poorer flour colour and reduced baking quality.

The ability to cope with low specific weight wheat varies by mill depending on the individual intake and cleaning equipment. Therefore, millers will differ in their capacity to accept low specific weight loads. Irrespective of local differences, the collective experience from the 2012 harvest underlines the importance of specific weight as a measure of wheat quality.

Further information on the methods used for wheat testing can be found in the **nabim** booklet 'Wheat and Flour testing' (available on the **nabim** website **www.nabim.co.uk**).

Ergot in wheat

The intention by the EU Commission to introduce maximum levels for ergot sclerotia (fruiting bodies) in cereals has re-focused attention on this important cereal disease. Currently, UK flour millers reject wheat at intake if any sclerotia are found. The Regulation will make no difference to this although there may be greater impacts on rye for milling.

UK millers will now be more aware of the situation especially as the EU Commission will probably wish to set maximum levels based on the presence of ergot alkaloids once rapid tests become available. UK farmers will also now have a greater awareness of the issue with a focus on better agronomic practices and varieties that may limit the problem.

nab1m



Winter barley 2014/15 Market options, yield and grain quality

RECOMMENDED				*	С	С		NEW		NEW		NEW	С					С	Ē		C*			
HGCA	Talisman	SY Venture	Archer	Winsome	Flagon	Cassata	Pearl	KWS Tower	KWS Glacier	Tetris	Retriever	Cavalier	KWS Cassia	Matros	California	Florentine	Saffron	Volume \$	KWS Meridia	Escadre	Sequel	Average LSD (5%)	Harlequin	Cadillac
End-use group	Two	-row m	alting					Two-	row fee	ed								Six-ro	w feed				Two-row feed	b
Scope of recommendation	UK	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	Ν	UK	E	W	UK	UK	UK	UK	Ν	UK		Not added to Re	commended List
Fungicide-treated grain yield (% treat	ted con	trol)																						
United Kingdom (8.7 t/ha)	101	100	98	95	95	95	91	106	106	106	105	105	103	103	102	101	98	108	104	101	99	3.0	105	104
East region (8.7 t/ha)	102	101	99	96	96	95	92	107	108	108	105	106	103	104	103	101	98	108	103	100	98	3.7	106	105
West region (9.0 t/ha)	98	100	98	94	95	95	92	105	104	[103]	103	[102]	103	100	102	102	100	108	105	101	99	3.9	[103]	[103]
North region (8.4 t/ha)	100	97	98	95	94	95	90	106	105	104	106	107	104	102	101	99	95	108	106	102	100	4.1	106	105
Untreated grain yield (% treated cont	trol)																							
United Kingdom (8.7 t/ha)	87	82	83	82	84	81	79	88	89	89	84	84	88	92	90	85	83	90	90	84	82	4.0	84	88
Main market options																								
IBD malting approval for brewing use	Р	F	Р	0	F	F	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Grain quality																								
Specific weight (kg/hl)	68.1	70.3	69.3	69.9	70.3	69.0	71.0	68.2	70.2	66.5	67.4	70.6	71.3	68.0	69.5	68.9	70.7	68.8	66.2	70.6	69.8	0.9	70.9	71.3
Screenings % through 2.25 mm	2.7	2.2	1.5	1.9	2.0	1.6	1.5	1.0	1.6	2.4	-	2.4	1.3	2.4	[1.3]	2.0	1.7	5.3	2.2	2.0	3.5	1.0	2.1	1.4
Screenings % through 2.50 mm	6.9	5.0	3.4	4.9	4.8	3.7	3.4	2.6	4.1	5.6	-	5.9	3.0	5.4	[2.9]	5.4	4.3	14.4	5.2	6.7	10.1	2.3	4.7	3.2
Nitrogen content (%)	1.64	1.67	1.78	1.61	1.66	1.69	1.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-
Status in RL system																								
Year first listed	13	12	12	10	05	07	99	14	13	14	07	14	10	13	13	11	05	09	12	11	03		-	-
RL status	P2	-	-	*	-	-	-	P1	P2	P1	-	P1	-	P2	P2	-	-	-	-	-	*		-	-

Varieties no longer listed: KWS Joy, Mezmaar, Soloman and Suzuka

UK = recommended for the UK

- E = recommended for the East region
- W = recommended for the West region
- N = recommended for the North region
- Sp = Cassata has a specific recommendation for growers wanting a BaYMV-resistant variety for malting
- \$ = Volume is a hybrid variety
- * = variety no longer in trials

- C = yield control
- [] = limited data P1 = first year of recommendation
- P2 = second year of recommendation
- F = full IBD approval
- P = provisional IBD approval O = no longer approved by IBD

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter barley 2014/15 Yield, agronomy and disease resistance

RECOMMENDED				*	С	С		NEW		NEW		NEW	С					С	E		C*			
HGCA	Talisman	SY Venture	Archer	Winsome	Flagon	Cassata	Pearl	KWS Tower	KWS Glacier	Tetris	Retriever	Cavalier	KWS Cassia	Matros	Califomia	Florentine	Saffron	Volume \$	KWS Meridia	Escadre	Sequel	Average LSD (5%)	Harlequin	Cadillac
End-use group	Two	-row m	alting					Two-i	row fee									Six-rc	w feed				Two-row feed	l
Scope of recommendation	UK	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	Ν	UK	Е	W	UK	UK	UK	UK	Ν	UK		Not added to Rec	commended List
Fungicide-treated grain yield (% treat	ed cont	trol)																						
United Kingdom (8.7 t/ha)	101	100	98	95	95	95	91	106	106	106	105	105	103	103	102	101	98	108	104	101	99	3.0	105	104
East region (8.7 t/ha)	102	101	99	96	96	95	92	107	108	108	105	106	103	104	103	101	98	108	103	100	98	3.7	106	105
West region (9.0 t/ha)	98	100	98	94	95	95	92	105	104	[103]	103	[102]	103	100	102	102	100	108	105	101	99	3.9	[103]	[103]
North region (8.4 t/ha)	100	97	98	95	94	95	90	106	105	104	106	107	104	102	101	99	95	108	106	102	100	4.1	106	105
Untreated grain yield (% treated contr	rol in co	mparabl	le trials)																					
United Kingdom (8.7 t/ha)	87	82	83	82	84	81	79	88	89	89	84	84	88	92	90	85	83	90	90	84	82	4.0	84	88
Agronomic features																								
Resistance to lodging	6	7	7	6	5	8	7	7	7	6	6	6	7	7	8	8	8	6	7	7	6	-	6	6
Straw height (cm)	91	84	86	92	96	88	96	88	81	92	84	82	87	94	89	87	85	98	101	95	98	2.7	87	90
Ripening (+/-Cassata, -ve = earlier)	-2	-1	-1	-2	-2	0	0	-1	-2	-1	-2	-2	-1	0	-1	-2	-1	-2	-2	-2	-3	1.0	-2	-1
Winter hardiness #	[6]	6	6	5	5	6	5	[6]	[6]	-	6	-	5	6	6	6	5	6	6	6	6	0.8	-	-
Disease resistance																								
Mildew	6	6	7	6	6	4	6	5	4	5	6	5	4	7	6	6	3	5	7	3	4	1.5	6	5
Yellow rust	[7]	[7]	[5]	7	8	2	7	[7]	[7]	[4]	9	[9]	5	[5]	[6]	8	7	6	[7]	8	6	2.7	[9]	[8]
Brown rust	6	5	5	6	7	7	6	6	6	7	5	6	7	7	5	6	7	5	6	5	5	1.1	6	6
Rhynchosporium	6	5	6	6	6	7	5	6	6	8	5	5	4	7	5	6	4	7	6	7	7	1.1	5	5
Net blotch	5	5	6	6	4	4	4	4	6	[4]	5	[5]	7	5	7	6	7	6	7	7	5	1.7	[5]	[5]
BaYMV	R	R	R	-	-	R	-	R	R	R	R	R	R	-	R	R	-	R	R	R	R	-	R	R

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

UK =	recommended for the UK	
------	------------------------	--

- E = recommended for the East region
- W = recommended for the West region
- N = recommended for the North region
- wanting a BaYMV-resistant variety for malting

Sp = Cassata has a specific recommendation for growers

- \$ = Volume is a hybrid variety
- * = variety no longer in trials
- C = yield control

- [] = limited data
- # = the winter hardiness scores are taken from extreme tests in the Jura mountains of France
- R = resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter barley 2014/15 – Supplementary data

RECOMMENDED				*	С	С		NEW		NEW		NEW	С					с	_		C*			
HGCA	Talisman	SY Venture	Archer	Winsome	Flagon	Cassata	Pearl	KWS Tower	KWS Glacier	Tetris	Retriever	Cavalier	KWS Cassia	Matros	California	Florentine	Saffron	Volume \$	KWS Meridia	Escadre	Sequel	Average LSD (5%)	Harlequin	Cadillac
End-use group	Two-	row ma	alting					Two-	row fee									Six-ro	ow feed				Two-row feed	
Scope of recommendation	UK	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	Ν	UK	Е	W	UK	UK	UK	UK	Ν	UK		Not added to Recor	nmended List
Breeder/UK contact																								
Breeder	Sen	SCP	Lim	SCP	SCP	Lim	Lim	KWS	KWS	SCP	Sej	Lim	KWS	Sej	Lim	Sen	KWS	SCP	KWS	KWS	SCP		Lim	Lim
UK contact	Sen	Syn	Lim	Syn	Syn	Lim	Lim	KWS	KWS	Syn	Lim	Lim	KWS	Lim	Lim	Sen	KWS	Syn	KWS	KWS	Syn		Lim	Lim
Annual treated yield (% control)																								
2009 (8.8 t/ha)	-	105	100	98	97	96	93	-	-	-	108	-	105	106	103	104	101	-	107	107	102	3.4	-	-
2010 (9.2 t/ha)	103	99	96	94	97	95	90	108	106	-	104	-	101	103	102	99	98	107	102	102	100	3.6	-	-
2011 (8.3 t/ha)	106	99	99	96	94	94	90	107	106	111	107	112	104	106	104	103	98	110	110	100	97	4.5	110	110
2012 (8.4 t/ha)	96	98	98	96	95	95	94	105	105	102	100	99	104	101	104	100	99	109	102	100	98	4.5	99	101
2013 (8.4 t/ha)	101	102	100	[94]	95	97	[91]	106	107	106	108	105	104	100	102	101	98	106	105	101	98	3.5	107	104
Soil type (about 50% of trials are mediu	m soils																							
Light soils (8.3 t/ha)	101	100	98	96	96	95	92	108	105	105	106	105	103	103	102	101	97	108	103	101	99	3.3	104	103
Heavy soils (8.7 t/ha)	103	104	100	95	95	95	92	108	110	110	106	106	103	104	104	102	99	109	106	101	99	5.8	107	107
Agronomic characteristics																								
Lodging % without PGR	9	3	5	15	21	2	4	5	3	20	12	6	4	4	1	1	2	8	6	6	10	-	8	9
Lodging % with PGR	6	2	2	8	13	1	2	1	4	6	5	8	1	3	1	0	1	6	1	4	3	-	6	3
Malting quality																								
Hot water extract (I deg/kg)	308.9	308.4	306.5	311.9	306.2	307.8	305.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	-

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

UK = recommended for the UK

- E = recommended for the East region
- W = recommended for the West region
- N = recommended for the North region
- Sp = Cassata has a specific recommendation for growers wanting a BaYMV-resistant variety for malting
- \$ = Volume is a hybrid variety
- * = variety no longer in trials
- C = yield control [] = limited data

- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.limagrain.co.uk)
- SCP = Syngenta Crop Protection (www.syngenta.co.uk)
- Sej = Sejet, Denmark
- Sen = Senova (www.senova.uk.com)
- Syn = Syngenta Seeds (www.syngenta.co.uk)

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter barley trials harvest 2014 – Candidate varieties

CANDIDATE	Variety ID	Vield treated (T)	Yield untreated (UT) (% treated controls)	Lodging % (UT)	Lodging % (T)	Height (cm)	Maturity (+/- Cassata)	Mildew (1–9)	Yellow rust (1–9)	Brown rust (1–9)	Rhynchosporium (1–9)	Net blotch (1–9)	BaYMV	Variety type	Specific weight (kg/hl)	UK contact
Control varieties																
Sequel	1717	98	81	[2]	1	100	-2	4	6	5	7	5	R	6-row	69.3	
Flagon	1910	95	80	[4]	13	96	-1	6	8	7	6	4	-	2-row	69.4	
Cassata	2058	96	78	[1]	0	91	0	4	2	7	7	4	R	2-row	68.5	
Volume	2244	108	86	[2]	3	99	-2	5	6	5	7	6	R	6-row hybrid	68.0	
KWS Cassia	2309	104	86	[2]	0	87	-1	4	5	7	4	7	R	2-row	70.8	
Selected as potential malting va	rieties															
Crescent (SY211-101)	2660			Data cann	ot be publi	shed as vari	ety has not	t complete	d National L	ist testing			R	2-row		Syngenta Seeds
Selected as potential feed variet	ties															
KWS B104	2650	107	[85]	[2]	[0]	[86]	0	5	-	6	(8.2)	3	R	2-row	68.1	KWS UK
Perseus (NSL09-6440-C)	2651	105	[83]	[3]	[8]	[85]	-3	7	-	7	(3.4)	6	R	2-row	70.0	Limagrain UK
Daxor (MH05DX06)	2654	106	[89]	[0]	[0]	[93]	-2	6	-	5	(7.3)	4	R	6-row	65.3	KWS UK
SJ075097	2676	101	[84]	[2]	[0]	[79]	-1	5	-	4	(5.2)	7	R	2-row	67.1	Saaten Union UK
Mean of controls (t/ha)		8.4	8.4	-	-	-	-	-	-	-	-	-	-	-	-	
LSD 5%		4.4	7.7	2.6	2.2	5.9	1.5	-	-	-	-	-	-	-	1.0	
No. of trials		16	5	4	4	4	7	-	-	-	-	-	-	-	11	

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

[] = limited data

R = resistant to BaMMV and to BaYMV strain 1

T = data from trials treated with fungicide and PGR

UT = data from trials without fungicide or PGR

Candidate varieties will be considered for the 2015/16 HGCA Recommended List

See the HGCA Recommended List for full data on control varieties

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

Winter barley 2014/15 - Variety comments

Two-row malting varieties

Archer

Quality: Provisionally approved by IBD for the production of malt for brewing, with a high specific weight. **Agronomy:** Higher yielding than Flagon and Cassata, with relatively short straw for a malting variety. Resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It has high resistance to mildew. **MAGB comment:** Under test by IBD for brewing and

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

Cassata

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

Quality: Fully approved by IBD for the production of malt for brewing with a high specific weight and producing malt of a similar quality to Pearl.

Agronomy: Cassata has a yield some 5% lower than SY Venture. It is stiff-strawed with high resistance to brown rust and rhynchosporium but is susceptible to mildew and net blotch and very susceptible to yellow rust. Cassata is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: Fully approved for brewing. It continued to increase its share of the market in 2011 and 2012.

Flagon

Quality: A malting variety with a high specific weight. Agronomy: Flagon has a yield some 5% lower than SY Venture. It has high resistance to yellow rust and brown rust but is susceptible to net blotch and has moderate straw strength, requiring careful management. MAGB comment: Fully approved for brewing, it offers the maltster higher extracts than Pearl with good processing characteristics.

Pearl

Quality: Fully approved for brewing, with a high specific weight.

Agronomy: Pearl's yield is now 9% below the highest yielding variety with full IBD approval. It has high resistance to yellow rust but is susceptible to net blotch. MAGB comment: Its share of the UK winter malting barley market continues to decrease.

SYVenture

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

Agronomy: The highest yielding variety with full IBD approval. It has relatively short straw for a malting variety and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Limited data suggest it has high resistance to yellow rust.

MAGB comment: Granted full approval for brewing in 2013.

Talisman

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

Agronomy: The highest yielding malting winter barley variety. It is early maturing and resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Limited data suggest it has high resistance to yellow rust.

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

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

Winsome

Quality: A malting variety for brewing with a high specific weight.

Agronomy: Winsome's yield is some 5% below the highest yielding fully approved malting variety. It has early ripening characteristics and high resistance to yellow rust. It is no longer in RL trials.

MAGB comment: Removed from the IBD Approved List in 2013.

Additions to the IBD approved malting barley list

SY Venture has been promoted to Full Approval for brewing. Archer has been moved to Provisional Approval 2 for brewing. Talisman has been granted



Provisional Approval 1 for brewing. Institute of Brewing & Distilling See www.ukmalt.com for more information.

Two-row feed varieties

California

Quality: A regional recommendation for the West. It is a two-row feed variety with a high specific weight. **Agronomy:** California has good lodging resistance, with high resistance to net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

NEW Cavalier

Quality: Added to the Recommended List for 2014/15 as a regional recommendation for the North. It is a two-row feed variety with a high specific weight.

Agronomy: Cavalier has given the highest treated yield in the North region with early maturity. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) and limited data suggest high resistance to yellow rust.

Winter barley 2014/15 – Variety comments

KWS Cassia

Quality: A high-yielding two-row feed variety. **Agronomy:** High-yielding, KWS Cassia is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It has high resistance to brown rust and net blotch but is susceptible to rhynchosporium and mildew.

Florentine

Quality: A two-row feed variety. **Agronomy:** Florentine has stiff straw and is early maturing. It has high resistance to yellow rust and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

KWS Glacier

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

Agronomy: One of the highest yielding two-row feed varieties. It has short straw and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) and limited data suggest it has high resistance to yellow rust. It is susceptible to mildew.

Matros

Quality: A high-yielding two-row feed variety with a specific recommendation for the East. **Agronomy:** High yielding, giving its best relative performance in the East. It has a very good untreated yield and high resistance to mildew, brown rust and rhynchosporium. It has relatively long straw.

Retriever

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

Agronomy: It is high yielding with high resistance to yellow rust and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

Saffron

Quality: A two-row feed variety with a high specific weight. **Agronomy:** It has short, stiff straw and has high resistance to yellow rust, brown rust and net blotch but is susceptible to rhynchosporium and very susceptible to mildew. Its yields are some 8% lower than the highest yielding feed variety.

NEW Tetris

Quality: Added to the Recommended List for 2014/15 as a very high-yielding two-row feed variety. It has a moderate specific weight.

Agronomy: One of the highest yielding two-row feed varieties. It has high resistance to brown rust and rhynchosporium and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Limited data suggest it is susceptible to net blotch.

NEW KWS Tower

Quality: Added to the Recommended List for 2014/15 as a very high-yielding two-row feed variety. **Agronomy:** One of the highest yielding two-row feed

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

Six-row feed varieties

Escadre

Quality: Recommended for the North region. A conventional six-row feed variety with a good specific weight.

Agronomy: Early maturing, Escadre has given its best relative yield performance in the North region. It has high resistance to yellow rust, rhynchosporium and net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) but is very susceptible to mildew. It is 7% lower yielding than the best (hybrid) six-row variety and 5% lower yielding than the best two-row feeds.

KWS Meridian

Quality: A conventional six-row feed variety with lower specific weight than the other recommended six-rows. Agronomy: KWS Meridian is early maturing, has long straw and a good disease package including high resistance to mildew, yellow rust and net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is the highest yielding non-hybrid six-row variety and has given good untreated yields but it is some 2% lower yielding than the best two-row feeds.

Sequel

Quality: A conventional six-row feed variety which produces relatively high specific weights. **Agronomy:** Has a yield potential 9% lower than the highest yielding (hybrid) six-row variety and 7% below the best two-row feeds. It has high resistance to rhynchosporium and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) but is susceptible to mildew. Sequel has long straw and is very early maturing. It is no longer in RL trials.

Volume

Quality: A very high-yielding, early maturing hybrid six-row feed variety that has performed very well in all regions. **Agronomy:** It has very high UK treated and untreated yields. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) and has high resistance to rhynchosporium.

Spring barley 2014 Market options, yield and grain quality

RECOMMENDED	NEW		NEW	NEW	NEW		с	C*				с	с		C*	NEW										1.1	
HGCA	KWS Irina	Sanette	Shaloo	KWS Aurelia	Hacker	Odyssey	Propino	Quench	Overture	Glassel	Moonshine	Concerto	NFC Tipple	Belgravia	Optic	Shada	Tesla	Rhyncostar	KWS Orphelia	Crooner	Natasia	Montoya	Kelim	Gamer	Waggon	Westminster	Average LSD (5%)
End-use group	Maltir	ng varie	eties													Feed	varieties	S									
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	North	UK	UK	North	North	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Fungicide-treated grain yield (% treated	ed contr	rol)																									
United Kingdom (7.0 t/ha)	109	109	108	107	105	105	104	103	103	103	100	99	99	98	94	110	106	105	105	105	105	104	104	103	102	95	2.5
East region (6.9 t/ha)	[107]	[109]	[105]	[106]	[104]	106	103	104	104	101	[101]	102	99	[101]	93	[108]	106	104	106	101	104	106	104	104	99	95	3.2
West region (7.4 t/ha)	109	[109]	108	107	107	104	105	104	104	103	99	99	99	100	94	111	106	103	105	104	105	105	104	104	102	96	2.9
North region (6.8 t/ha)	109	108	109	109	104	105	105	103	102	103	100	98	100	97	95	110	106	107	105	107	105	104	105	103	103	94	2.2
Main market options																											
IBD malting approval for brewing use	Т	Р	Т	Т	Т	Р	F	0	Ρ	Ν	Ν	F	F	Ν	0	-	-	-	-	-	-	-	-	-	-	-	
IBD malting approval for distilling use	Ν	Ν	Ν	Ν	Ν	F	Ν	Ν	Р	Ρ	F	F	Ν	F	F	-	-	-	-	-	-	-	-	-	-	-	
IBD malting approval for grain distilling use	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	F	Ν	-	-	-	-	-	-	-	-	-	-	-	
Overseas malting	[Y]	[Y]	-	-	-	[Y]	Y	Y	[Y]	-	-	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	
Grain quality																											
Specific weight (kg/hl)	66.3	67.0	68.4	66.3	69.7	68.1	67.7	68.3	68.3	67.0	67.6	68.6	68.4	68.3	70.1	65.8	66.2	66.8	66.4	67.8	66.8	67.7	67.9	66.7	67.6	70.0	0.9
Screenings % through 2.25 mm	[1.9]	[2.6]	[2.2]	[2.3]	[1.9]	1.4	1.2	2.0	1.8	2.3	1.4	1.4	1.8	1.7	1.7	[3.7]	[2.4]	[3.0]	[1.9]	[4.1]	[1.9]	[1.1]	[2.7]	[1.5]	-	1.5	0.5
Screenings % through 2.50 mm	[4.9]	[5.3]	[6.5]	[5.7]	[3.9]	3.5	2.4	4.7	3.7	5.0	3.4	2.8	4.1	3.8	4.8	[10.3]	[4.9]	[6.8]	[4.7]	[9.1]	[3.7]	[2.4]	[7.1]	[4.2]	-	3.3	1.4
Nitrogen content (%)	1.43	1.44	1.49	1.42	1.49	1.42	1.51	1.49	1.48	1.49	1.44	1.46	1.47	1.53	1.50	1.40	1.47	[1.46]	1.44	[1.42]	1.48	1.45	[1.51]	-	-	-	0.05
Status in RL system																											
Year first listed	14	13	14	14	14	12	10	07	12	13	11	09	05	08	95	14	13	13	13	13	13	13	13	10	05	05	
RL status	P1	P1	P1	P1	P1	-	-	*	-	P2	-	-	-	-	*	P1	P2	P2	P2	P2	P2	P2	P2	-	-	-	

Varieties no longer listed: Chronicle and Shuffle

Comparisons of variety performance across regions are not valid.

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

UK = recommended for the UK North = recommended for the North reg	F = full IBD approval N = not approved by IBD for this segment O = no longer approved by IBD P = provisional IBD approval T = under test for IBD approval in this segment	Y = suited to that market [Y] = may be suited to that market [] = limited data C = yield control * = variety no longer in trials	P1 = first year of recommendation P2 = second year of recommendation	Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring barley 2014 Yield, agronomy and disease resistance

RECOMMENDED	NEW		NEW	NEW	NEW		С	C*				С	С		C*	NEW			-								June
HGCA	KWS Irina	Sanette	Shaloo	KWS Aurelia	Hacker	Odyssey	Propino	Quench	Overture	Glassel	Moonshine	Concerto	NFC Tipple	Belgravia	Optic	Shada	Tesla	Rhyncostar	KWS Orphelia	Crooner	Natasia	Montoya	Kelim	Gamer	Waggon	Westminster	Average LSD (5%)
End-use group	Maltir	ng varie	eties													Feed v	varieties										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	North	UK	UK	North	North	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Fungicide-treated grain yield (% treated	ed contr	ol)																									
United Kingdom (7.0 t/ha)	109	109	108	107	105	105	104	103	103	103	100	99	99	98	94	110	106	105	105	105	105	104	104	103	102	95	2.5
East region (6.9 t/ha)	[107]	[109]	[105]	[106]	[104]	106	103	104	104	101	[101]	102	99	[101]	93	[108]	106	104	106	101	104	106	104	104	99	95	3.2
West region (7.4 t/ha)	109	[109]	108	107	107	104	105	104	104	103	99	99	99	100	94	111	106	103	105	104	105	105	104	104	102	96	2.9
North region (6.8 t/ha)	109	108	109	109	104	105	105	103	102	103	100	98	100	97	95	110	106	107	105	107	105	104	105	103	103	94	2.2
Untreated grain yield as % treated cor	ntrol in	compar	able tri	ials																							
United Kingdom (7.0 t/ha)	96	97	98	92	96	93	94	92	96	93	89	90	88	89	80	100	97	93	96	96	95	92	95	93	92	88	3.1
Agronomic features																											
Resistance to lodging	[7]	-	[8]	[7]	[7]	[5]	8	8	[7]	[7]	[8]	6	7	[7]	7	[8]	[6]	[6]	[7]	[7]	[7]	[6]	[8]	8	8	7	1.2
Straw height (cm)	68	71	75	70	74	73	76	72	75	72	72	77	68	77	74	68	75	70	70	66	71	69	78	74	74	81	1.5
Ripening (+/- Optic, -ve = earlier)	+1	+2	+1	+1	0	+2	+1	+1	+1	+2	0	+2	0	+1	0	+2	+1	0	0	+1	0	+1	+2	0	0	+1	0.7
Resistance to brackling	9	8	8	7	8	8	8	8	8	9	8	8	8	8	5	8	6	8	8	9	6	7	9	7	8	7	1.0
Disease resistance																											
Mildew	8	9	8	8	8	9	8	9	8	9	[8]	8	7	[9]	5	8	9	9	8	8	9	9	9	9	9	9	1.0
Yellow rust	[5]	[7]	[7]	[3]	[3]	[7]	4	5	[6]	[7]	[7]	7	5	7	7	[4]	[6]	[5]	[7]	[7]	[4]	[4]	[4]	6	6	7	1.4
Brown rust	5	4	4	6	6	5	6	4	6	5	4	6	6	6	7	7	5	5	4	6	5	4	5	4	5	6	0.9
Rhynchosporium	4	6	8	3	6	7	7	7	7	4	4	4	4	7	3	5	7	7	6	6	6	6	5	7	3	7	1.7
Ramularia	[7]	[8]	[3]	[8]	[5]	6	6	5	7	6	5	6	5	7	5	[8]	6	4	5	5	6	6	8	4	7	7	2.0

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

UK = recommended for the UK

[]

C = yield control

North = recommended for the North region * = variety no longer in trials

limited data

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring barley 2014 – Supplementary data

RECOMMENDED	NEW		NEW	NEW	NEW		С	C*				С	С		C*	NEW											
HGCA	KWS Irina	Sanette	Shaloo	KWS Aurelia	Hacker	Odyssey	Propino	Quench	Overture	Glassel	Moonshine	Concerto	NFC Tipple	Belgravia	Optic	Shada	Tesla	Rhyncostar	KWS Orphelia	Crooner	Natasia	Montoya	Kelim	Garner	Waggon	Westminster	Average LSD (5%)
End-use group	Malti	ng varie	eties													Feed											
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	North	UK	UK	North	North	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Breeder/UK contact																											
Breeder	KWS	SCP	SCP	KWS	Sec	Lim	SCP	SCP	Lim	SCP	RAGT	Lim	SCP	Lim	SCP	SCP	Lim	Sec	KWS	Sec	Sej	SU	SCP	SCP	SCP	Lim	
UK contact	KWS	Syn	Syn	KWS	Agr	Lim	Syn	Syn	Lim	Syn	RAGT	Lim	Syn	Lim	Syn	Syn	Lim	Agr	KWS	Agr	KWS	SU	Syn	Syn	Syn	Lim	
Annual treated yield (% control)																											
2009 (7.7 t/ha)	-	-	-	-	-	103	106	103	103	-	99	99	99	97	94	-	-	-	-	-	-	-	-	104	102	95	3.1
2010 (7.1 t/ha)	-	107	-	-	-	103	103	103	102	104	100	100	99	101	95	-	106	105	105	107	102	105	105	102	102	93	3.3
2011 (7.1 t/ha)	109	109	108	111	105	110	103	105	103	103	99	99	99	98	95	109	107	106	106	105	106	104	107	105	102	98	3.2
2012 (6.3 t/ha)	112	111	111	106	109	104	104	101	104	103	101	102	99	[95]	94	110	107	103	106	107	106	104	103	103	103	[97]	3.2
2013 (7.0 t/ha)	107	-	106	107	104	101	107	104	103	101	100	97	100	98	93	110	105	107	104	102	104	105	103	102	102	93	2.7
Malting quality																											
Hot water extract (I deg/kg)	315.8	314.5	315.2	314.2	315.1	314.3	314.8	314.3	316.5	312.9	313.8	317.0	312.5	312.4	313.1	312.5	314.6	313.8	313.3	311.6	312.1	314.8	311.6	-	-	-	1.6

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

UK = recommended for the UK

- North = recommended for the North region
- [] = limited data
- C = yield control

*

= variety no longer in trials

- Agr = Agrii (www.agrii.co.uk) KWS = KWS UK (www.kws-uk.com) Lim = Limagrain UK (www.limagrain.co.uk) RAGT = RAGT Seeds (www.ragt.co.uk)
- SCP = Syngenta Crop Protection
- (www.syngenta.co.uk)
- Sec = Secobra, France
- Sej = Sejet, Denmark
- SU = Saaten Union UK (www.saaten-union.co.uk)
- Syn = Syngenta Seeds (www.syngenta.co.uk)
- Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring barley trials harvest 2014 – Candidate varieties

CANDIDATE	Variety ID	Yield treated (T)	Yield untreated (UT) (% treated controls)	Lodging %	Height (cm) (UT)	Maturity (+/- Optic) (T)	Brackling % (T)	Mildew (1–9)	Yellow rust (1–9)	Brown rust (1–9)	Rhynchosporium (1–9)	Specific weight (kg/hl)	UK contact
Control varieties													
Optic	1188	94	77	-	75	0	39	5	7	7	3	68.9	
NFCTipple	1966	99	83	-	71	+1	20	7	5	6	4	67.0	
Quench	2121	102	86	-	73	+2	15	9	5	4	7	66.9	
Concerto	2288	99	82	-	78	+2	22	8	7	6	4	67.6	
Propino	2336	106	90	-	77	+1	19	8	4	6	7	66.6	
Selected as potential malting varie	ties												
RGT Planet (LSB0769-3306)	2691			Data cann	ot be publis	hed as vari	iety has not	completed	l National L	ist testing			RAGT Seeds, UK
Piper (SY411-287)	2715	107	90	-	73	+2	[14]	(9)	(5)	5	8	[66.4]	Syngenta Seeds
Deveron (LGB11-8345)	2702	107	90	-	71	+3	[25]	(9)	(4)	7	8	[66.6]	Limagrain UK
Vault (SY411-289)	2717	106	88	-	76	+2	[25]	(9)	(6)	5	5	[66.2]	Syngenta Seeds
RGT Conquest (LSB0769-3093)	2688	106	91	-	79	+2	[20]	(9)	(9)	6	8	[68.4]	RAGT Seeds, UK
Sienna (NSL10-4294-A)	2697	106	91	-	77	+2	[21]	(9)	(9)	7	7	[69.6]	Limagrain UK
Octavia (LGB11-8234)	2699	106	88	-	73	+2	[24]	(9)	(9)	5	9	[65.5]	Limagrain UK
Olympus (LGB11-8339)	2701	105	89	-	75	+2	[34]	(9)	(9)	4	8	[66.1]	Limagrain UK
Selected as potential feed varieties													
Dragoon (SY411-291)	2719	110	94	-	74	+1	[17]	(9)	(9)	7	8	[63.6]	Syngenta Seeds
Scholar (SY411-285)	2713	109	91	-	70	+2	[14]	(9)	(9)	6	7	[67.3]	Syngenta Seeds
Pathfinder (SC95119B)	2694	107	90	-	73	+1	[17]	(9)	(9)	5	9	[67.7]	Agrii
NOS15258-55	2703	107	88	-	71	0	[24]	(9)	(9)	5	4	[63.6]	Limagrain UK
Milford (BR10099B2)	2677	106	90	-	71	+2	[10]	(9)	(3)	7	8	[66.5]	Senova
Invictus (SJ111998)	2681	105	87	-	77	+1	[35]	(9)	(9)	7	9	[66.6]	Senova
Mean of controls (t/ha)		6.6	6.6	-	74	152	22	-	-	-	-	66.4	
LSD 5%		4.8	6.1	-	1.8	1.1	10.7	-	-	-	-	1.0	
No. of trials		22	12	-	19	6	9	-	-	-	-	10	

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

[] = limited data

.

Candidate varieties will be considered for the 2015/16 HGCA Recommended List

T = data from trials treated with fungicide UT = data from trials without fungicide or PGR

See the HGCA Recommended List for full data on control varieties

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

Spring barley varieties grown in RL trials in 2013 but not added to the HGCA Recommended List

	Control v	arieties				Other var	ieties		
HGCA	Propino	Quench	Concerto	NFCTipple	Optic	Kerstin	Mary	Artisan	Average LSD (5%)
Fungicide treated grain yield (% treated control)									
United Kingdom (7.0 t/ha)	104	103	99	99	94	104	104	104	2.5
East region (6.9 t/ha)	103	104	102	99	93	[102]	[103]	[103]	3.2
West region (7.4 t/ha)	105	104	99	99	94	102	104	103	2.9
North region (6.8 t/ha)	105	103	98	100	95	106	105	105	2.2
Untreated grain yield (% treated control)									
United Kingdom (7.0 t/ha)	94	92	90	88	80	95	93	92	3.1
Grain quality									
Specific weight (kg/hl)	67.7	68.3	68.6	68.4	70.1	68.1	67.9	65.4	0.9
Sieving % through 2.25 mm	1.2	2.0	1.4	1.8	1.7	[1.8]	[2.1]	[2.7]	0.5
Sieving % through 2.50 mm	2.4	4.7	2.8	4.1	4.8	[4.9]	[6.2]	[5.6]	1.4
Nitrogen content (%)	1.51	1.49	1.46	1.47	1.50	1.48	1.46	1.47	0.05
Agronomic features									
Resistance to lodging	8	8	6	7	7	[7]	[7]	[5]	1.2
Straw height (cm)	76	72	77	68	74	72	72	72	1.5
Ripening (+/- Optic, -ve = earlier)	+1	+1	+2	0	0	0	+1	0	0.7
Resistance to brackling	8	8	8	8	5	7	8	5	1.0
Disease resistance									
Mildew	8	9	8	7	5	8	8	8	1.0
Yellow rust	4	5	7	5	7	[3]	[4]	[6]	1.4
Brown rust	6	4	6	6	7	6	5	5	0.9
Rhynchosporium	7	7	4	4	3	6	3	6	1.7
Ramularia	6	5	6	5	5	[6]	[5]	[5]	2.0

This table should be read in conjunction with the HGCA Recommended List of Spring Barley for 2014.

[] = limited data

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring barley 2014 – Variety comments

Malting varieties

NEW KWS Aurelia

Quality: Added to the Recommended List for 2014 as a very high-yielding variety with malting potential for brewing.

Agronomy: Has given very high treated yields. It has shown high resistance to mildew and ramularia but is very susceptible to rhynchosporium and yellow rust. MAGB comment: Variety under test for brewing.

Belgravia

Quality: Recommended for the North region. Malt and grain distilling.

Agronomy: Has high resistance to mildew, yellow rust, rhynchosporium and ramularia.

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

Concerto

Quality: Full IBD Approval for brewing and malt distilling. **Agronomy:** Has high resistance to mildew and yellow rust but is susceptible to rhynchosporium.

MAGB comment: The only variety fully approved for both brewing and malt distilling, it continues to increase its share of the UK market.

Glassel

Quality: Provisionally approved by IBD for malt distilling. **Agronomy:** High resistance to mildew and yellow rust but susceptible to rhynchosporium.

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

NEW Hacker

Quality: Added to the Recommended List for 2014 as a high-yielding variety with malting potential for brewing. It has a high specific weight.

Agronomy: Has given a high treated yield and high resistance to mildew but is susceptible to yellow rust. It tends to ripen relatively early.

MAGB comment: Variety under test for brewing.

NEW KWS Irina

Quality: Added to the Recommended List for 2014 as a very high-yielding variety with malting potential for brewing.

Agronomy: Has given very high treated yield with high resistance to mildew and ramularia but is susceptible to rhynchosporium. Has relatively short straw. MAGB comment: Variety under test for brewing.

Moonshine

Quality: Recommended for the North region. Malt distilling.

Agronomy: Has high resistance to mildew and yellow rust but is susceptible to brown rust and rhynchosporium. It has shown earlier ripening characteristics than other malt distilling varieties.

MAGB comment: Fully approved for malt distilling in 2013.

NFC Tipple

Quality: A malting variety for brewing.

Agronomy: Has short straw and high resistance to mildew but is susceptible to rhynchosporium. Relatively early maturing.

MAGB comment: Fully approved for brewing, its share of the UK market continues to decline.

Odyssey

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

Agronomy: High-yielding with high resistance to mildew and rhynchosporium. Limited data suggest Odyssey has medium lodging resistance.

MAGB comment: Under test by IBD for brewing, fully approved for malt distilling in 2013.

Overture

Quality: Provisional IBD Approval for brewing and malt distilling.

Agronomy: Has high resistance to mildew,

rhynchosporium and ramularia.

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

Optic

Quality: Recommended for the North region. Fully IBD approved for malt distilling, it is no longer approved for brewing. Optic has a high specific weight and remains an important malt distilling variety in Scotland. Agronomy: Its yield potential is now 11% below the highest malt distilling variety Odyssey. It has high resistance to yellow rust and brown rust but is susceptible to mildew and very susceptible to rhynchosporium. It also has a tendency to brackle. Most varieties are later maturing than Optic. It is no longer in trials.

MAGB comment: Fully approved for malt distilling, it continues to lose support, particularly from England.

Spring barley 2014 – Variety comments

Propino

Quality: Fully IBD approved for brewing.

Agronomy: A stiff-strawed, high-yielding variety with high resistance to mildew and rhynchosporium but susceptible to yellow rust.

MAGB comment: Fully approved for brewing, it held 11% of the UK market in 2012.

Quench

Quality: A malting variety for brewing but no longer supported by the IBD.

Agronomy: Has short, stiff straw and high resistance to mildew and rhynchosporium but is susceptible to brown rust. It is no longer in trials.

MAGB comment: Removed from the IBD approved list in 2013.

Sanette

Quality: Provisionally approved by IBD for brewing use. **Agronomy:** Has given very high yields, both treated and untreated. It has shown high resistance to mildew, yellow rust and ramularia but is susceptible to brown rust. **MAGB comment:** Under test by IBD and growers are advised to speak to merchants before committing to this or other varieties in this position.

NEW Shaloo

Quality: Added to the Recommended List for 2014 as a very high-yielding variety with malting potential for brewing.

Agronomy: Has given very high yields both treated and untreated. It has shown high resistance to mildew, yellow rust and rhynchosporium. It is susceptible to brown rust and limited data suggest it is very susceptible to ramularia. MAGB comment: Variety under test for brewing.

Two-row feed varieties

Crooner

A high-yielding feed variety with short straw and high resistance to mildew and yellow rust.

Garner

Earlier than most varieties, it has stiff straw and high resistance to mildew and rhynchosporium. It is susceptible to brown rust and ramularia.

Kelim

A later maturing feed variety with stiff straw. It has high resistance to mildew and ramularia but is susceptible to yellow rust.

KWS Orphelia

A high-yielding feed variety which is earlier maturing than most varieties. It has high resistance to mildew and yellow rust but is susceptible to brown rust.

Montoya

A feed variety which has high resistance to mildew but is susceptible to yellow rust and brown rust. It has short straw but only moderate lodging resistance.

Natasia

A relatively early maturing, high-yielding feed variety with high resistance to mildew. It is susceptible to yellow rust.

Rhyncostar

A high-yielding feed variety which is earlier maturing than most varieties. It has high resistance to mildew and rhynchosporium but low resistance to ramularia. UK spring malting barley market share is given as % of MAGB member purchases (see page 5).

NEW Shada

Added to the Recommended List for 2014, Shada is a short-strawed, later maturing feed variety, which has given very high yields in both fungicide-treated and untreated trials. It has high resistance to mildew and brown rust and limited data suggest it also has good resistance to ramularia but is susceptible to yellow rust.

Tesla

A feed variety that has given high yields in both fungicidetreated and untreated trials. It has high resistance to mildew and rhynchosporium.

Waggon

A feed variety with stiff straw and high resistance to mildew and ramularia but which is very susceptible to rhynchosporium. Relatively early maturing.

Westminster

Westminster is now 15% lower yielding than the highest yielding feed variety but it remains popular with mixed arable/livestock farmers due to its combination of longer than average straw and good disease characteristics; it has high resistance to mildew, yellow rust, rhynchosporium and ramularia.

Additions to the IBD approved malting barley list Moonshine and Odyssey have

been promoted to Full Approval



Institute of Brewing & Distilling

for malt distilling. Odyssey and Overture have been moved to Provisional Approval 2 for brewing and Overture also has Provisional Approval 2 for malt distilling.

Sanette has been granted Provisional Approval 1 for brewing.

Glassel has been granted Provisional Approval 1 for malt distilling.

See www.ukmalt.com for more information.

RECOMMENDED

и

	NEW		С	С	С		NEW					
HGCA	Rhapsody	Balado \$	Dalguise	Gerald	Mascani ~	Fusion \$	Beacon	Grafton	Average LSD (5%)	Selwyn	Average LSD (5%)	
Variety type	Convent	ional husked	varieties			Naked varie				Husked vari		
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK		Candidate		Car
UK yield (% treated control)												
Fungicide-treated (8.2 t/ha)	109	105	101	101	98	76	74	73	5.0	108	5.0	
Grain quality												
Kernel content (%)	72.3	72.8	75.7	73.5	78.1	-	-	-	0.9	73.6	0.9	
Specific weight (kg/hl)	50.0	49.3	54.1	53.1	54.2	63.7	65.5	64.7	1.1	50.0	1.1	
Screenings % through 2.0 mm	2.6	3.3	3.5	3.1	1.7	39.0	15.8	15.7	4.2	5.0	4.2	
Agronomic features												
Resistance to lodging	[5]	8	4	6	6	9	[6]	6	1.8	-	1.8	
Straw length (cm)	104	86	114	110	109	84	108	111	3.0	104	3.0	
Ripening (days +/- Gerald, -ve = earlier)	0	+1	-1	0	-1	+1	-1	-1	1.3	-1	1.3	
Disease resistance												
Mildew	[8]	4	4	3	6	3	[9]	4	1.6	[8]	1.6	
Crown rust	[6]	[3]	[3]	[5]	[8]	[3]	[6]	[5]	3.2	[6]	3.2	
Treated yields with and without PGR	as % treat	ed control										
With PGR (8.4 t/ha)	109	106	101	101	98	76	74	72	5.1	108	5.1	
Without PGR (7.5 t/ha)	[105]	102	100	104	96	78	[78]	74	19.7	[108]	19.7	l
Breeder/ UK contact												
Breeder	IBERS	IBERS	Sen	IBERS	IBERS	IBERS	IBERS	IBERS		IBERS		I f
UK contact	Sen	Sen	Sen	Sen	Sen	Sen	Sen	Sen		Sen		
Status in RL system												
Year first listed	14	10	03	93	04	10	14	00		-		
RL status	P1	-	-	-	-	-	P1	-		-		

Husked varietie	es
Candidate	Candidate
108	104
73.6	76.0
50.0	49.4
5.0	5.8
-	-
104	101
-1	-1
[8]	[8]
[6]	[6]
108	104
[108]	[104]
IBERS	IBERS
Sen	Sen

Varieties no longer listed: Tardis

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

- UK = recommended for the UK
- \$ = Balado and Fusion are dwarf varieties

~ = a race of crown rust has been identified which may affect Mascani but infection levels in trials have been low so far

- [] = limited data
 - C = yield control
 - P1 = first year of recommendation

IBERS = Institute of Biological, Environmental & Rural Sciences Sen = Senova (www.senova.uk.com)

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Husked varieties

Balado

A short, stiff-strawed husked variety with a high treated yield, around 4% higher than Dalguise. It is later than other husked varieties and has a low specific weight and kernel content. It is very susceptible to mildew and (based on limited data) to crown rust.

Dalguise

An early-maturing, husked variety with a good kernel content and high specific weight. It has low lodging resistance, is susceptible to mildew and (based on limited data) very susceptible to crown rust.

Gerald

A husked variety. Gerald has been a very successful and popular variety but it is now declining as Mascani's market share grows. It is very susceptible to mildew.

Mascani

A husked variety that has overtaken Gerald as the most popular winter oat variety with both millers and growers. Although it has a fungicide-treated yield 3% below Gerald, it has a higher kernel content and specific weight. Mascani has the best available winter oat resistance to crown rust, though a race exists to which it could be susceptible. It is less susceptible to mildew than Gerald, with similar straw stiffness.

NEW Rhapsody

A husked variety with very high yields, added to the HGCA Recommended List for 2014/15. It has high resistance to mildew (based on limited data) but low specific weight and kernel content.

Naked varieties

NEW Beacon

A huskless (naked) oat variety added to the HGCA Recommended List for 2014/15. It yields similar to Grafton but has a higher specific weight and (based on limited data) very high resistance to mildew. It is relatively early maturing.

Fusion

A huskless (naked) oat variety with short, very stiff straw. Fusion has given yields 3% above Grafton with similar specific weights. It is very susceptible to mildew and (based on limited data) to crown rust.

Grafton

A huskless (naked) variety with a yield potential 3% below Fusion and a similar specific weight. It is relatively early maturing but is susceptible to mildew.

Spring oats 2014 – Variety comments

Husked varieties

Atego

A husked variety that is very early to mature but very susceptible to mildew.

Canyon

A high-yielding husked variety. It has high resistance to mildew and a high specific weight.

NEW Conway

A husked variety with high yields, added to the HGCA Recommended List for 2014/15. It has a high specific weight and kernel content, above average mildew resistance and has given high yields in untreated trials.

Firth

A husked variety that remains popular and widely used by millers. It has a high specific weight and kernel content. Firth has above-average resistance to mildew and has given high yields in untreated trials.

Husky

A husked variety that is very early to mature. It has a high specific weight and kernel content and above-average resistance to mildew.

NEW Monaco

A husked variety with very high treated yields, added to the HGCA Recommended List for 2014/15. It has a low specific weight and is susceptible to mildew.

Rozmar

A husked variety with a similar mean yield to Firth and which has performed consistently over the years.

SWArgyle

A husked variety that is relatively late to mature. It is no longer in RL trials.

Naked varieties

Lennon

A variety for the relatively small huskless (naked) spring oat market. As with the winter naked varieties, it has a yield potential that is substantially lower than the husked types; in this case, its yield is 30–32% below that of the highest yielding husked varieties. It has a high specific weight.

Spring oats 2014

RECOMMENDED															
	NEW		NEW	С		<u>ه</u>		C*		*		Ð		Earl	
HGCA	Monaco	Canyon	Conway	Firth	Rozmar	SW Argy	Atego	Husky	Average LSD (5%)	Lennon t	Aspen	Montros	Glamis	Gabby	
Variety type	Huske	d varieties	\$							Naked variety	Husked va	rieties		Husked variety	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK		Described	Candidate	Candidate	Candidate	Not added to the RL	
UK yield (% treated control)															
Fungicide-treated (7.9 t/ha)	104	102	101	99	99	98	98	98	4.0	[72]	[110]	[106]	[102]	102	
Untreated as % of treated control	85	93	90	89	85	86	82	86	4.6	[64]	[94]	[91]	[90]	84	
Grain quality															
Kernel content (%)	74.8	76.3	77.7	78.6	75.2	76.4	76.2	78.2	1.0	-	[77.1]	[76.6]	[75.6]	76.9	
Specific weight (kg/hl)	51.3	54.8	54.3	54.2	53.4	53.3	53.2	55.4	0.8	64.2	[55.0]	[55.4]	[55.4]	53.5	
Screenings % through 2.0 mm	[2.3]	0.8	[0.9]	1.3	1.6	0.8	1.8	1.1	1.9	[19.4]	[0.6]	[0.2]	[0.9]	[1.7]	
Agronomic features															
Resistance to lodging	[7]	[7]	[7]	7	[6]	[7]	[7]	7	1.1	[6]	[7]	[8]	[7]	[7]	
Straw length (cm)	102	115	106	104	112	109	101	107	2.3	101	[104]	[107]	[104]	108	
Ripening (days +/- Firth, -ve = earlier)	-2	-2	0	0	-2	+2	-3	-4	1.4	-2	-2	-1	-2	-1	
Disease resistance															
Mildew	4	8	7	7	6	6	3	7	0.7	7	6	4	7	3	
Crown rust ¥	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Breeder/UK contact															
Breeder	SF	Nord	IBERS	KWS-L	Selg	LSW	Selg	Nord		IBERS	Bau	LSW	IBERS	Bor	
UK contact	Sen	SU	Sen	KWS	Cope	Sen	Cope	SU		Sen	Sen	Sen	Sen	Sen	
Status in RL system															
Year first listed	14	11	14	00	11	03	07	08		-	-	-	-	-	
RL status	P1	-	P1	-	-	*	-	*		*	-	-	-	-	

Varieties no longer listed: Ascot

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

- UK = recommended for the UK
- [] = limited data
- C = yield control (includes Ascot which is no longer listed)
- * = variety no longer in trials
- t = Lennon is a naked variety that is not eligible for recommendation
- ¥ = insufficient data
- P1 = first year of recommendation

- Bau = Bauer, Germany
- Cope = Trevor Cope Seeds (www.trevorcopeseeds.co.uk)
- IBERS = Institute of Biological, Environmental & Rural Sciences
- KWS = KWS UK (www.kws-uk.com)
- KWS-L = KWS Lochow, Germany
- LSW = Lantmannen SW Seed, Sweden

- Nord = Nordsaat, Germany
- Selg = Selgen, Czech Republic
- Sen = Senova (www.senova.uk.com)
- SF = Saatzucht Firlbeck, Germany
- SU = Saaten Union UK (www.saaten-union.co.uk)

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

SPRING OATS HGCA RECOMMENDED LIST®

UK

Winter oilseed rape 2014/15 – East/West region Yield, quality, agronomy and disease resistance

RECOMMENDED	NEW	NEW	NEW		NEW	С				c	*		*	*				*	*	C*	*			CL #&
HGCA	Incentive	Charger	Trinity	PT211	Harper	PR46W21	Marathon	Avatar	Quartz	DK Caberne	Sesame	Rivalda	Rhino	Compass	Troy #	DK Camelot	DK Expower	Fashion	PR45D05 #	Vision	Cash	Cracker \$	Average LSD (5%)	DK Imagine
																								Other varietie
Variety type	RH	Conv	Conv	RH	RH	RH	RH	RH	Conv	Conv	Conv	Conv	RH	RH	RH	Conv	RH	Conv	RH	Conv	Conv	RH		RH
Scope of recommendation	UK	EW	EW	UK	EW	EW	EW	EW	EW	EW	EW	EW	EW	UK	Sp	EW	UK	EW	Sp	EW	EW	Sp		Described
Gross output (yield adjusted for oil co	ontent) <mark>as</mark>	% contr	ol																					
Fungicide-treated (5.4 t/ha)	105	105	104	103	103	103	103	102	101	101	101	100	100	100	100	100	99	99	98	98	95	94	4.3	95
Seed yield as % control																								
Fungicide-treated (5.0 t/ha)	103	106	103	102	103	101	104	101	100	101	101	101	100	98	100	98	99	99	98	99	95	94	3.9	96
Agronomic features																								
Resistance to lodging	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	8	8	8	8	8	0.3	8
Stem stiffness	8	9	8	8	8	8	8	8	7	9	8	7	8	9	9	7	6	8	9	8	8	8	0.6	9
Shortness of stem	6	7	7	6	6	6	7	6	7	7	6	7	7	6	8	8	6	6	9	7	7	6	0.3	9
Earliness of flowering	7	8	6	6	7	7	8	8	5	5	6	7	7	6	6	7	7	6	6	6	7	7	0.4	4
Earliness of maturity	5	5	5	5	6	5	5	6	5	5	4	4	6	5	5	6	6	5	5	5	6	5	0.5	6
Seed quality (at 9% moisture)																								
Oil content, fungicide-treated (%)	45.8	44.0	45.5	45.5	45.1	46.0	44.0	45.5	45.2	44.9	44.1	44.4	44.9	46.0	44.5	45.6	44.7	44.6	44.1	43.9	45.2	44.4	0.3	44.0
Glucosinolate (µmoles/g of seed)	10.1	10.3	10.0	10.6	10.0	12.6	10.9	10.1	10.4	10.1	12.8	12.2	10.0	9.7	12.0	10.5	11.8	11.9	10.1	13.8	13.1	10.4		10.6
Disease resistance																								
Light leaf spot	6	4	5	6	5	5	5	5	5	6	6	5	6	6	6	5	6	5	6	5	5	8	1.2	6
Stem canker	[4]	[4]	[6]	[5]	[9]	[4]	[3]	[4]	[8]	6	[4]	5	[4]	[4]	[4]	6	8	[5]	4	5	[7]	[4]	1.3	[5]
Status in RL system																								
Year first listed	14	14	14	13	14	09	13	13	13	10	11	13	11	11	13	12	12	10	11	09	11	12		-
RL status	P1	P1	P1	P2	P1	-	P2	P2	P2	-	*	P2	*	*	P2	-	-	*	*	*	*	-		-

Varieties no longer listed in the East/West region: Dimension, DK Sequoia, Excalibur, Flash and Thorin

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

There is a target plant population of 40 plants per square metre for RL trials. Maximum seed rates are 70 seeds/sqm for hybrids and 100 seeds/sqm for conventional varieties and may be below these levels if conditions permit. Glucosinolate contents are taken from the National List trials data.

- UK = recommended for both the East/West and North regions
- EW = recommended for the East/West region
- Sp = specific recommendation
- RH = restored hybrid
- Conv = conventional open-pollinated variety
 - = variety no longer in trial in region

- C = yield control (Excalibur was a control but is no longer listed)
- [] = limited data
- \$ = Cracker is recommended for growing on land infected with common strains of clubroot; it may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf varieties that are believed to carry the *Bzh* dwarfing gene in the heterozygous state but this has not been verified in RL tests
- & = DK Imagine CL is an example of a Clearfield® variety, with tolerance to specific imidazolinone herbicides
- P1 = first year of recommendation
- P2 = second year of recommendation
- Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter oilseed rape 2014/15 – East/West region Supplementary data

																							· · · · · · · · · · · · · · · · · · ·	V
RECOMMENDED	NEW	NEW	NEW		NEW	С				С	*		*	*				*	*	C*	*			1, #8
HGCA	Incentive	Charger	Trinity	PT211	Harper	PR46W21	Marathon	Avatar	Quartz	DK Cabernet	Sesame	Rivalda	Rhino	Compass	Troy #	DK Camelot	DK Expower	Fashion	PR45D05 #	Vision	Cash	Cracker \$	Average LSD (5%)	DK Imagine C
																								Other varietie
Variety type	RH	Conv	Conv	RH	RH	RH	RH	RH	Conv	Conv	Conv	Conv	RH	RH	RH	Conv	RH	Conv	RH	Conv	Conv	RH		RH
Scope of recommendation	UK	EW	EW	UK	EW	EW	EW	EW	EW	EW	EW	EW	EVV	UK	Sp	EW	UK	EW	Sp	EW	EW	Sp		Described
Breeder/UK contact																								
Breeder	LSPB	Mom	LSW	DP	BayR	DP	DSV	LSPB	KWS	DK	LSPB	KWS	LSPB	DSV	LSPB	DK	DK	LSW	DP	LSW	KWS	LSPB		DK
UK contact	DSV	KWS	Els	DP	Bay	DP	DSV	LSPB	KWS	DK	LSPB	KWS	KWS	DSV	DSV	DK	DK	Sen	DP	Sen	KWS	LSPB		DK
Annual treated gross output (yield ad	justed fo	or oil cont	tent) <mark>as %</mark>	% contro	bl																			
2010 (5.4 t/ha)	-	-	-	103	-	105	101	105	104	100	99	99	100	100	98	101	101	98	98	96	94	92	4.3	94
2011 (6.1 t/ha)	101	100	104	102	105	102	105	104	100	102	97	100	98	98	103	99	100	97	94	95	93	93	5.3	98
2012 (4.4 t/ha)	[112]	[118]	[100]	104	[100]	102	103	99	98	100	101	102	101	98	100	98	95	100	100	103	96	93	6.4	95
2013 (5.4 t/ha)	107	104	109	106	104	101	103	102	104	101	105	101	100	102	98	101	99	99	-	99	-	97	4.0	95
Agronomy																								
Plant height (cm)	156	141	148	156	153	157	148	153	143	150	155	146	146	159	136	137	152	154	123	149	151	157	3.3	128
Harvest method - gross output (yield	adjuste	d for oil c	ontent) a	ıs%con	ntrol																			
Swathed (5.8 t/ha)	[109]	[105]	[102]	102	[103]	104	101	101	102	100	98	101	101	99	99	100	100	97	91	97	95	94	7.1	91
Desiccated (5.3 t/ha)	104	104	105	103	104	103	103	102	101	101	102	101	100	100	100	100	99	99	101	98	96	94	3.4	96

- UK = recommended for both the East/West and North regions
- EW = recommended for the East/West region
- Sp = specific recommendation
- RH = restored hybrid
- Conv = conventional open-pollinated variety
- = variety no longer in trial in region
- C = yield control (Excalibur was a control but is no longer listed)
- [] = limited data

- \$ = Cracker is recommended for growing on land infected with common strains of clubroot; it may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf varieties that are believed to carry the *Bzh* dwarfing
- gene in the heterozygous state but this has not been verified in RL tests
- & = DK Imagine CL is an example of a Clearfield® variety, with tolerance to specific imidazolinone herbicides
- Bay = Bayer CropScience (www.bayercropscience.co.uk)
- BayR = Bayer CropScience Raps (www.bayercropscience.co.uk)
- DK = DEKALB (www.dekalb.co.uk)
- DP = DuPont Pioneer (www.pioneer.com/uk)
- DSV = DSV United Kingdom (www.dsv-uk.co.uk)
- Els = Elsoms Seeds (www.elsoms.com)
- KWS = KWS UK (www.kws-uk.com)
- LSPB = LS Plant Breeding (www.lspb.eu)
- LSW = Lantmannen SW Seed, Sweden
- Mom = Momont, France
- Sen = Senova (www.senova.uk.com)

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter oilseed rape 2014/15 – North region Yield, quality, agronomy and disease resistance

RECOMMENDED	NEW				*			2		*	*	*	*			ст # 8
HGCA	Incentive	Anastasia	PT211	Boheme	Compass	Troy #	Pendulum	DK Expowe	Artoga	Temple	Catana	PR45D05#	Cuillin	Cracker \$	Average LSD (5%)	DK Imagine
																Other varieties
Variety type	RH	Conv	RH	Conv	RH	RH	Conv	RH	RH	Conv	Conv	RH	RH	RH		RH
Scope of recommendation	UK	N	UK	Ν	UK	Sp	Ν	UK	Ν	Ν	Ν	Sp	Ν	Sp		Described
Gross output (yield adjusted for oil co	ontent) as %	control														
Fungicide-treated (5.2 t/ha)	[107]	106	103	103	103	103	102	101	101	100	100	99	98	97	5.7	96
Seed yield as % control																
Fungicide-treated (4.9 t/ha)	[106]	106	102	102	101	102	101	101	101	99	98	100	98	97	5.3	98
Agronomic features																
Resistance to lodging	8	8	8	[7]	8	8	[8]	7	[7]	[8]	[8]	8	[8]	8	0.3	8
Stem stiffness	8	8	8	7	9	9	8	6	7	8	8	9	8	8	0.6	9
Shortness of stem	6	7	6	6	6	8	7	7	6	7	6	9	6	6	0.3	9
Earliness of flowering	7	6	6	8	6	6	6	8	6	6	6	6	8	7	0.5	4
Earliness of maturity	5	5	5	6	5	5	5	6	6	6	5	5	5	5	0.5	6
Seed quality (at 9% moisture)																
Oil content, fungicide-treated (%)	44.9	44.1	45.0	45.3	45.6	44.4	45.0	44.2	43.9	45.4	45.4	43.6	44.7	44.1	0.6	43.1
Glucosinolate (µmoles/g of seed)	10.1	11.1	10.6	11.2	9.7	12.0	11.1	11.8	11.6	15.5	14.3	10.1	11.4	10.4	-	10.6
Disease resistance																
Light leaf spot	6	6	6	7	6	6	6	6	7	7	7	6	8	8	1.2	6
Stem canker	[4]	[5]	[5]	5	[4]	[4]	3	8	[4]	5	3	4	[4]	[4]	1.3	[5]
Status in RL system																
Year first listed	14	13	13	13	11	13	13	13	12	08	08	11	09	11		-
RL status	P1	P2	P2	P2	*	P2	P2	P2	-	*	*	*	*	-		-

Varieties no longer Listed for the North region: Excalibur, Fashion, Flash, PT208, Raptor and Shot

There is a target plant population of 40 plants per square metre for RL trials.

Maximum seed rates are 70 seeds/sqm for hybrids and 100 seeds/sqm for conventional varieties and may be below these levels if conditions permit.

Glucosinolate contents are taken from National List trials data.

On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance). There may be races of light leaf spot present in Scotland to which varieties with high resistance are susceptible.

- UK = recommended for both the East/West and North regions
- N = recommended for the North Region
- Sp = specific recommendation
- RH = restored hybrid
- Conv = conventional open-pollinated variety * = variety no longer in trial in region
- C = yield control (DK Cabernet, Excalibur, PR46W21 and Vision were the yield controls, but are not recommended for the North region)
- [] = limited data \$ - Cracker is recommended for grow
- \$ = Cracker is recommended for growing on land infected with common strains of clubroot; it may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf varieties that are believed to carry the *Bzh* dwarfing gene in the heterozygous state but this has not been verified in RL tests
- & = DK Imagine is an example of a Clearfield® variety, with tolerance to specific imidazolinone herbicides
- P1 = first year of recommendation
- P2 = second year of recommendation

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter oilseed rape 2014/15 – North region Supplementary data

RECOMMENDED	NEW				*					*	*	*	*			88
HGCA	Incentive	Anastasia	PT211	Boheme	Compass	Troy #	Pendulum	DK Expower	Artoga	Temple	Catana	PR45D05 #	Cuillin	Cracker \$	Average LSD (5%)	DK Imagine C
																Other varieties
Variety type	RH	Conv	RH	Conv	RH	RH	Conv	RH	RH	Conv	Conv	RH	RH	RH		RH
Scope of recommendation	UK	Ν	UK	Ν	UK	Sp	Ν	UK	Ν	Ν	Ν	Sp	Ν	Sp		Described
Breeder/UK contact																
Breeder	LSPB	Lim	DP	SCP	DSV	LSPB	Lim	DK	Lim	Els	DK	DP	KWS	LSPB		DK
UK contact	DSV	Lim	DP	Syn	DSV	DSV	Lim	DK	Lim	Els	DK	DP	KWS	LSPB		DK
Annual treated gross output (yield a	djusted for	oil content) a	as % control													
2010 (5.8 t/ha)	-	[98]	[103]	[101]	[107]	[99]	[98]	[92]	[102]	[100]	[99]	[97]	[102]	[96]	6.9	[90]
2011 (5.5 t/ha)	[104]	[105]	[102]	[102]	[101]	[107]	[100]	[109]	[98]	[98]	[101]	[100]	[102]	[102]	8.3	[103]
2012 (4.2 t/ha)	[108]	[108]	[103]	[104]	[100]	[103]	[106]	[97]	[97]	[104]	[101]	[100]	[93]	[96]	10.8	[97]
2013 (5.3 t/ha)	[110]	[111]	[105]	[105]	[103]	[97]	[101]	[101]	[108]	-	[95]	-	[93]	[94]	9.3	[89]
Agronomy																
Plant height (cm)	156	148	157	153	159	136	152	152	159	149	155	123	156	157	3.3	129
Harvest method - gross output (yield	d adjusted f	or oil conten	t) as % contr	ol												
Swathed (5.2 t/ha)	-	[105]	[103]	[104]	[105]	[104]	[104]	[109]	[104]	[99]	[102]	[101]	[103]	[99]	9.7	[94]
Desiccated (5.2 t/ha)	107	107	104	104	103	103	102	100	100	102	100	99	97	98	5.3	98

- UK = recommended for both the East/West and North regions
- N = recommended for the North region
- Sp = specific recommendation
- RH = restored hybrid
- Conv = conventional open-pollinated variety
- * = variety no longer in trial in region
- C = yield control (DK Cabernet, Excalibur, PR46W21 and Vision were the yield controls, but are not recommended for the North region)
- [] = limited data

- \$ = Cracker is recommended for growing on land infected with common strains of clubroot; it may, however, be infected by some strains and infections have been reported in some fields
- # = semi-dwarf varieties that are believed to carry the Bzh dwarfing gene in the heterozygous state but this has not been verified in RL tests
- & = DK Imagine is an example of a Clearfield® variety, with tolerance to specific imidazolinone herbicides
- DK = DEKALB (www.dekalb.co.uk)
- DP = DuPont Pioneer (www.pioneer.com/uk)
- DSV = DSV United Kingdom (www.dsv-uk.co.uk)
- Els = Elsoms Seeds (www.elsoms.com)
- KWS = KWS UK (www.kws-uk.com)
- Lim = Limagrain UK (www.limagrain.co.uk)
- LSPB = LS Plant Breeding (www.lspb.eu)
- SCP = Syngenta Crop Protection (www.syngenta.co.uk)
- Syn = Syngenta Seeds (www.syngenta.co.uk)

Average LSD (least

significant difference) 5%:

varieties that are more

than one LSD apart are

significantly different at

the 5% confidence level.

Winter oilseed rape trials harvest 2014 – East/West region Candidate varieties

CANDIDATE	Variety ID	Variety type	Gross output (%)	Treated seed yield (%)	Oil content (%)	Resistance to lodging (1–9)	Stem stiffness (1-9)	Height (cm)	Earliness of flowering (1–9)	Earliness of maturity (1–9)	Resistance to light leaf spot (1–9)	Resistance to stem canker (1–9)	Breeder's claims	UK contact
Control varieties														
Excalibur	1684	RH	95	96	44.5	8	7	138	7	6	6	6		
Vision	1953	Conv	102	103	44.1	9	8	140	5	6	6	6		
PR46W21	1970	RH	101	100	45.7	8	7	144	5	6	5	5		
DK Cabernet	2019	Conv	101	101	45.2	9	8	141	4	5	6	7		
Candidate varieties														
Picto (MH 06 CP 067)	2536	Conv		Data	cannot be p	oublished a	s variety ha	as not comp	leted Natic	onal List tes	ting			KWS UK
Advance (CSL4/11)	2490	Conv	106	103	46.7	8	7	132	7	6	6	6		DLF
SY Harnas (RNX3140)	2506	RH	106	107	44.3	8	7	139	6	6	7	7		Syngenta Seeds
Popular (WRH 410)	2517	RH	106	104	46.3	9	8	143	5	6	6	7		DSV UK
Campus (MH 06 CP 057)	2535	Conv		Data	cannot be p	published a	s variety ha	as not comp	leted Natic	onal List tes	ting			KWS UK
Attletick (HR 158.32)	2480	RH	106	106	44.8	8	7	144	5	6	4	7		LS Plant Breeding
Arazzo (LSF 1029)	2478	RH	105	107	43.8	8	7	142	6	6	6	6		RAGT UK
Rinker (RG2120)	2485	Conv		Data	cannot be p	published a	s variety ha	as not comp	leted Natic	onal List tes	ting			Bayer CropScience
Dragster (MH-06-DV-049)	2537	Conv	105	105	45.1	8	7	137	7	6	7	7		KWS UK
Fencer (RG21115)	2487	RH		Data	cannot be p	published a	s variety ha	as not comp	leted Natic	onal List tes	ting			Bayer CropScience
V316 OL	2523	RH	105	104	45.8	9	8	152	5	6	7	7	HOLL	Monsanto UK
Combiner (WRH 411)	2518	RH	105	103	46.6	8	8	143	6	6	6	6		DSV UK
Dozzen (HR 158.105)	2476	RH	104	103	45.6	8	8	143	6	6	5	7		RAGT UK
Mentor (RAP 1122)	2473	RH	104	102	46.0	9	8	143	5	5	6	5	Clubroot-resistant	LS Plant Breeding
Marble (NPZ 1103 Z)	2468	SD RH	104	103	45.9	9	9	130	5	6	7	6		LS Plant Breeding
Mean of controls (t/ha)			4.9	4.6	45.1	8.3	7.3	141	5.3	5.9	-	-		
LSD 5%			6.4	6.0	0.5	0.6	0.8	4.9	0.5	0.5	-	-		
No. of trials			11	11	11	7	9	12	11	10	-	-		

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

HOLL = High oleic low linolenic variety

Candidate varieties will be considered for the 2015/16 HGCA Recommended List

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

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

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



Winter oilseed rape trials harvest 2014 – North region Candidate varieties

CANDIDATE	Variety ID	Variety type	Gross output (%)	Treated seed yield (%)	Oil content (%)	Resistance to lodging (1–9)	Stem stiffness (1–9)	Height (cm)	Earliness of flowering (1–9)	Earliness of maturity (1–9)	Resistance to light leaf spot (1–9)	Resistance to stem canker (1–9)	Breeder's claims	UK contact
Control varieties														
Excalibur	1684	RH	99	100	43.3	8	7	138	7	6	6	6		
Vision	1953	Conv	98	99	43.2	9	8	140	5	6	6	6		
PR46W21	1907	RH	104	103	44.8	8	7	144	5	6	5	5		
DK Cabernet	1608	Conv	99	99	44.1	9	8	141	4	5	6	7		
Candidate varieties														
SY Harnas (RNX3140)	2506	RH	112	111	44.1	8	7	139	6	6	7	7		Syngenta Seeds
DK Exentiel (DGC234)	2462	RH	111	110	44.5	8	7	146	5	7	6	8		DEKALB
Marble (NPZ 1103 Z)	2468	SD RH	110	108	44.7	9	9	130	5	6	7	6		LS Plant Breeding
PT234	2494	RH	110	107	45.4	8	7	143	6	6	6	8		DuPont Pioneer
DK Explicit (DMH145)	2538	RH	109	106	45.6	7	6	156	5	6	6	8		DEKALB
SY Medal (RNX3138)	2508	RH		Data	cannot be p	published a	s variety ha	is not comp	leted Natio	onal List tes	ting			Syngenta Seeds
Popular (WRH 410)	2517	RH	109	106	45.4	9	8	143	5	6	6	7		DSV UK
WRHCL 404 (DK Imagis CL)	2522	RH	109	107	44.7	8	6	150	5	6	6	7	IIMI-tolerant	DEKALB
Picto (MH 06 CP 067)	2536	Conv		Data	cannot be p	oublished a	s variety ha	is not comp	leted Natio	onal List tes	ting			KWS UK
V316 OL	2523	RH	107	105	45.5	9	8	152	5	6	7	7	HOLL	DSV UK
Sundance (CSL3/11)	2489	Conv		Data	cannot be p	published a	s variety ha	is not comp	leted Natio	onal List tes	ting			DLF
Mantara (RNX3137)	2504	RH	107	107	44.1	8	7	138	6	6	7	7		Syngenta Seeds
Combiner (WRH 411)	2518	RH	107	103	46.5	8	8	143	6	6	6	6		DSV UK
Campus (MH 06 CP 057)	2535	Conv		Data	cannot be p	published a	s variety ha	is not comp	leted Natio	onal List tes	ting			KWS UK
Mentor (RAP 1122)	2473	RH	104	101	45.9	9	8	143	5	5	6	5	Clubroot-resistant	LS Plant Breeding
Mean of controls (t/ha)			4.5	4.2	44.4	8.3	7.3	141	5.3	5.9	-	-		
LSD 5%			8.2	7.6	1.0	0.6	0.8	4.9	0.5	0.5	-	-		
No. of trials			4	4	4	7	9	12	11	10	-	-		

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

HOLL = High oleic low linolenic variety IMI-tolerant = an example of a Clearfield® variety, with tolerance to specific imidazolinone herbicides All data except disease ratings are taken from fungicide-treated trials Candidate varieties will be considered for the 2015/16 HGCA Recommended List

To allow direct comparisons the data presented for control varieties are taken only from trials in which the candidate varieties have also been grown See the HGCA Recommended List for full data on control varieties These summaries are derived from National List and BSPB trials. Acknowledgement is made to Fera and BSPB for the use of the data.

Winter oilseed rape varieties grown in RL trials in 2013 but not added to the HGCA Recommended List – East/West region

	Control	varieties			Other v	varieties											
HGCA	PR46W21	DK Cabernet	Excalibur	Vision	Ginfizz	Patron	DK Excellium	DK Exstorm	Bubble	PX109 #	PX105 #	PX104 #	PT229CL &	PX110 #	DK Sentinel #	PX111CL #&	Average LSD (5%)
Variety type	RH	Conv	RH	Conv	RH	Conv	RH	RH	Conv	RH	RH	RH	RH	RH	RH	RH	
Gross output (yield adjusted for oil content) as % control																	
Fungicide-treated (5.4 t/ha)	103	101	99	98	102	102	101	101	100	99	97	97	97	96	95	95	4.3
Seed yield (% control)																	
Fungicide-treated (5.0 t/ha)	101	101	99	99	103	100	100	101	99	100	97	96	96	97	96	97	3.9
Agronomic features																	
Resistance to lodging	8	8	7	8	8	8	7	7	8	8	8	8	8	8	8	8	0.3
Stem stiffness	8	9	7	8	8	8	6	7	8	9	9	9	8	9	8	9	0.6
Shortness of stem	6	7	7	7	7	7	6	6	7	9	9	9	6	8	8	9	0.3
Earliness of flowering	7	5	8	6	7	6	6	7	5	6	6	5	7	6	5	6	0.4
Earliness of maturity	5	5	7	5	6	4	5	5	7	5	5	5	6	5	7	6	0.5
Seed quality (at 9% moisture)																	
Oil content, fungicide treated (%)	46.0	44.9	44.4	43.9	44.5	46.3	45.3	44.7	45.4	44.3	44.3	45.1	45.2	44.1	43.9	43.6	0.34
Glucosinolate (µmoles/g of seed)	12.6	10.1	17.4	13.8	11.6	7.8	11.2	11.5	11.7	10.8	8.5	8.9	11.8	10.4	14.4	10.4	
Disease resistance																	
Light leaf spot	5	6	6	5	5	4	5	5	6	6	5	5	5	6	5	6	1.2
Stem canker	[4]	6	4	5	[6]	[4]	[9]	[8]	[5]	[6]	[7]	[4]	[4]	[5]	[9]	[4]	1.3
Harvest method – gross output (yield adjusted for oil content) as % c	ontrol																
Swathed (5.8 t/ha)	104	100	99	97	[105]	102	102	98	[97]	[98]	96	95	[98]	[95]	[87]	[93]	7.1
Desiccated (5.3 t/ha)	103	101	99	98	102	101	101	102	100	99	98	97	97	96	96	95	3.4

This table should be read in conjunction with the HGCA Recommended List of Winter Oilseed Rape for 2014/15. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance).

Conv = conventional open-pollinated variety

RH = restored hybrid

= Semi-dwarf varieties that are believed to carry the *Bzh* dwarfing gene in the beterozygous state but this has not been verified in RL tests

[] = limited data

- the heterozygous state but this has not been verified in RL tests
- & = Clearfield® variety, with tolerance to specific imidazolinone herbicides

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter oilseed rape varieties grown in RL trials in 2013 but not added to the HGCA Recommended List – North region

	Control var	rieties			Other varietie	es	
HGCA	PR46W21	Excalibur	Vision	DK Cabernet	PX109#	PX110 #	Average LSD (5%)
Variety type	RH	RH	Conv	Conv	RH	RH	
Gross output (yield adjusted for oil content) as % control							
Fungicide-treated (5.2 t/ha)	[104]	99	99	98	[102]	[98]	5.7
Seed yield (% control)							
Fungicide-treated (4.9 t/ha)	[102]	100	100	98	[102]	[98]	5.3
Agronomic features							
Resistance to lodging	8	7	8	8	8	8	0.3
Stem stiffness	8	7	8	9	9	9	0.6
Shortness of stem	6	7	7	7	9	8	0.3
Earliness of flowering	7	8	6	5	6	6	0.5
Earliness of maturity	5	6	5	5	5	5	0.5
Seed quality (at 9% moisture)							
Oil content, fungicide treated (%)	[45.6]	43.7	43.4	44.3	44.2	44.1	0.55
Glucosinolate (µmoles/g of seed)	12.6	17.4	13.8	10.1	10.8	10.4	-
Disease resistance							
Light leaf spot	5	6	5	6	6	6	1.2
Stem canker	[4]	4	5	6	[6]	[5]	1.3
Harvest method - gross output (yield adjusted for oil content) as % co	ontrol						
Swathed (5.2 t/ha)	-	104	[97]	[99]	-	-	9.7
Desiccated (5.2 t/ha)	[104]	99	99	98	102	98	5.3

This table should be read in conjunction with the HGCA Recommended List of Winter Oilseed Rape for 2014/15. On the 1–9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance).

Conv = conventional open-pollinated variety

RH = restored hybrid

[] = limited data

= Semi-dwarf varieties that are believed to carry the *Bzh* dwarfing gene in

the heterozygous state but this has not been verified in RL tests

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Winter oilseed rape 2014/15 – Variety comments

Conventional varieties

Anastasia

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

Boheme

A conventional, open-pollinated variety recommended for the North region. It is a relatively early flowering and early maturing variety. It has a high treated gross output and good resistance to light leaf spot.

Cash

A conventional, open-pollinated variety recommended for the East/West region. It is around 10% lower yielding than the best conventional variety but is relatively early maturing and has high stem canker resistance. Cash is stiff stemmed and has high resistance to lodging. It is no longer in RL trials.

Catana

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

NEW Charger

A conventional, open-pollinated variety recommended for the East/West region. It has a very high treated gross output, is very stiff stemmed and has high resistance to lodging. It is early flowering but is susceptible to stem canker and light leaf spot.

DK Cabernet

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

DK Camelot

A conventional, open-pollinated variety recommended for the East/West region. It is relatively early maturing and short stemmed.

Fashion

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

Pendulum

A conventional, open-pollinated variety recommended for the North region. It is stiff stemmed and has high resistance to lodging but is very susceptible to stem canker.

Quartz

A conventional, open-pollinated variety recommended for the East/West region. It has high resistance to lodging and high resistance to stem canker. It is relatively late flowering.

Rivalda

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

Sesame

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

Temple

A conventional, open-pollinated variety recommended for the North region. It is relatively early maturing, stiff stemmed and has high lodging and light leaf spot resistance. It is no longer in RL trials.

NEW Trinity

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

Vision

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



HGCA's Rapeseed Oil Benefits consumer marketing campaign promotes the nutritional and culinary benefits of rapeseed oil and aims to inspire people to use this cooking oil.

For more information, visit RapeseedOilBenefits.com

HGCA Oilseed rape guide

For information on oilseed rape pests, diseases, weeds and nutrition, please see HGCA's oilseed rape guide. www.hgca.com/publications



Winter oilseed rape 2014/15 – Variety comments

Restored hybrid varieties

Avatar

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

Artoga

A restored hybrid variety recommended for the North region. It is relatively early maturing and has high light leaf spot resistance but is susceptible to stem canker.

Compass

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

Cracker

This restored hybrid variety has a specific recommendation for both the North and East/West regions for its resistance to the common strains of clubroot, though it may be susceptible to strains found in some fields. It is stiff stemmed with high lodging resistance and has high light leaf spot resistance but is susceptible to stem canker.

Cuillin

A restored hybrid variety recommended for the North region. It is stiff stemmed and has high resistance to lodging when sown at the hybrid seed rate. It has high resistance to light leaf spot but is susceptible to stem canker. Cuillin tends to be early flowering. It is no longer in RL trials.

DK Expower

A restored hybrid variety recommended for both the North and the East/West regions. It has high stem canker resistance but only medium stem stiffness. It is relatively early maturing.

NEW Harper

A restored hybrid variety recommended for the East/West region. It has a high treated gross output, is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is relatively early maturing and (based on limited data) appears to have very high stem canker resistance.

NEW Incentive

A restored hybrid variety recommended for both the East/West and North regions. It has a very high treated gross output in both regions, is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is susceptible to stem canker.

Marathon

A restored hybrid variety recommended for the East/West region. It has a high treated gross output, is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate. Early flowering, it is very susceptible to stem canker.

PR45D05

A specific recommendation as a restored hybrid, semidwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) for the East/West and North regions. It is very short and stiff stemmed and has very high resistance to lodging but is susceptible to stem canker. It is no longer in RL trials.

PR46W21

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

PT211

A restored hybrid variety recommended for both the East/West and North regions. It has a high treated gross output, is stiff stemmed and has high resistance to lodging when grown at the hybrid seed rate.

Rhino

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

Troy

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

Other varieties

The following variety is an example of a Clearfield[®] type. It is not on the Recommended List but has been included in RL trials to allow information to be presented here.

DK Imagine CL

This is one of a number of available restored hybrid Clearfield® varieties which have tolerance to specific imidazolinone (IMI) herbicides. Growers are advised to see the BASF website for more information on the management and husbandry of this type of variety. www.agricentre.basf.co.uk/agroportal/uk/en/crops/osr /clearfield_osr/clearfield.html

Spring oilseed rape Descriptive List 2014

DESCRIBED	NEW	NEW		NEW			NEW	С				C*	C*	*	*	*	*	
HGCA	Dodger	Doktrin	Makro	Dylan	Amulet	Shelley	Orwell	Delight	Tamarin	Carnival	Belinda	Kumily	Heros	Ability	Larissa	Colossus	James	Average LSD (5%)
			DU				-	Dill				-			-	-		
Variety type	RH	RH	KH	KH	Conv	Conv	Conv	KH	Conv	Conv	KH	Conv	Conv	Conv	Conv	Conv	Conv	
Gross output (yield adjusted for oil co	ntent) as %	control																
UK without fungicide (2.7 t/ha)	[115]	[115]	110	[109]	106	105	[105]	105	104	103	102	101	99	99	98	98	96	6.5
Number of trials	7	7	14	7	18	11	7	19	18	18	18	18	18	19	18	19	16	
Seed yield as % control																		
UK without fungicide (2.6 t/ha)	[112]	[113]	108	[110]	104	102	[103]	104	104	102	102	102	98	98	99	97	94	6.3
Seed quality (at 9% moisture)																		
Oil content (%)	[45.2]	[44.7]	45.2	[43.3]	44.5	45.6	[44.7]	44.4	43.7	44.7	43.6	42.4	44.8	44.5	43.5	43.9	44.7	0.7
Glucosinolate content (µmoles/g)	15.2	9.7	14.7	15.1	12.1	14.9	14.2	14.7	16.1	13.7	14.5	12.8	14.2	12.4	13.4	12.8	14.8	-
Agronomic features																		
Standing ability	-	-	[8]	-	9	[9]	-	8	8	8	8	9	8	7	8	9	9	0.9
Shortness of stem	[6]	[7]	6	[6]	6	7	[7]	7	7	7	7	7	7	7	7	6	7	0.3
Earliness of flowering	[7]	[8]	5	[6]	6	5	[6]	8	7	6	8	7	6	7	6	5	6	0.9
Earliness of maturity	[5]	[6]	2	[4]	5	3	[4]	6	7	5	6	7	5	6	7	3	6	2.0
Annual gross output (yield adjusted f	or oil conte	ent) as % cor	ntrol															
2008 (2.7 t/ha)	-	-	-	-	[101]	-	-	[101]	[102]	[101]	[104]	[99]	[101]	[99]	[96]	[99]	[95]	9.4
2009 (2.6 t/ha)	-	-	[118]	-	[106]	-	-	[105]	[96]	[100]	[95]	[96]	[104]	[93]	[98]	[94]	[86]	10.3
2010 (2.7 t/ha)	-	-	[106]	-	[99]	[104]	-	[98]	[104]	[97]	[96]	[100]	[100]	[95]	[95]	[96]	[95]	13.3
2011 (2.6 t/ha)	[114]	[114]	[106]	[107]	[102]	[101]	[105]	[104]	[102]	[107]	[104]	[103]	[97]	[101]	[101]	[93]	[97]	11.0
2012 (3.1 t/ha)	[108]	[114]	[111]	[108]	[106]	[105]	[103]	[106]	[108]	[101]	[105]	[98]	[102]	[101]	[105]	[94]	[95]	15.8
2013 (2.6 t/ha)	[123]	[121]	[115]	[117]	[120]	[112]	[112]	[114]	[112]	[112]	[107]	[107]	[94]	[106]	[99]	[107]	[103]	11.1
Breeder/UK contact																		
Breeder	Bay	LSPB	DSV	Sen	LSW	Sen	Sen	BayR	LSW	LSW	BayR	LSW	BayR	DSV	BayR	UG	UG	
UK contact	Bay	DSV	DSV	Sen	Sen	Sen	Sen	Bay	Sen	Sen	Bay	Sen	Bay	DSV	Bay	JTSD	JTSD	
Status in RL system	,																	
Year first listed	14	14	12	14	11	13	14	09	10	11	10	07	02	09	07	10	11	
DL status	P1	P1	-	P1	-	P2	P1	-	-	-	-	*	*	*	*	*	*	

Variety no longer listed: PR45H73

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

- RH = restored hybrid
- Conv = conventional
- open-pollinated

variety

- P1 = first year on list P2 = second year on list * = variety no longer in trials
- C = yield control
- [] = limited data

- Bay = Bayer CropScience (www.bayercropscience.co.uk)
- BayR = Bayer CropScience Raps. (www.bayercropscience.co.uk)
- DSV = DSV United Kingdom (www.dsv-uk.co.uk)
- JTSD = John Turner Seed Developments (www.jtsd.co.uk)
- LSPB = LS Plant Breeding (www.lspb.eu)
- LSW = Lantmannen SW Seed, Sweden
- Sen = Senova (www.senova.uk.com)
- UG = University of Guelph, Canada

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

Spring linseed Descriptive List 2014

DESCRIBED																						
		С				NEW	NEW		С			NEW		_	*	NEW	С		NEW	*	*	
		ton	nan	val	ter	ε	ulus	ess		5	er	luise	s	mma	in li	÷	sn	ent	galin	-	eye \$	age 5%)
HGCA	Julie	Brigh	Batsı	Festi	Roos	Pilgri	Cum	Duch	Aries	Kaoli	Bowl	Maro	Altes	GK E	Balac	Zenit	Abac	Serp	Ome	Valoa	Birds	Avera LSD (
Variety type	Seed of	colour bro	own																			
Seed yield as % control																						
UK without fungicide (1.9 t/ha)	109	106	105	101	100	100	100	99	99	99	99	98	98	97	96	96	96	95	95	95	90	8.3
Number of trials	18	21	19	19	19	11	11	19	21	21	16	13	21	21	16	11	19	16	11	16	21	
Seed quality (at 9% moisture)																						
Oil content of seed (%)	42.6	41.2	41.3	43.4	41.3	41.2	41.3	40.7	41.7	42.3	41.4	41.2	39.8	40.3	42.5	42.2	40.9	41.6	44.2	43.0	38.9	0.5
Agronomic features																						
Plant height (cm)	56	56	56	54	59	60	61	48	54	51	52	46	45	48	56	53	53	54	52	50	55	2.4
Earliness of flowering	4	3	6	4	3	3	3	7	4	4	4	8	8	7	4	5	5	3	6	6	3	1.0
Earliness of maturity	4	5	7	6	4	4	5	7	5	6	6	7	8	7	5	7	7	5	5	7	4	1.1
Annual seed yield (% control)																						
2008 (2.0 t/ha)	-	[110]	-	-	-	-	-	-	[99]	[83]	-	-	[90]	[93]	[94]	-	[92]	-	-	[90]	[83]	20.2
2009 (2.2 t/ha)	[111]	[106]	[108]	[100]	[111]	-	-	[101]	[100]	[102]	-	-	[98]	[95]	[101]	-	[93]	-	-	[96]	[92]	11.3
2010 (1.6 t/ha)	[120]	[100]	[107]	[101]	[102]	-	-	[104]	[98]	[102]	[101]	[104]	[101]	[107]	[96]	-	[102]	[94]	-	[100]	[84]	10.1
2011 (1.9 t/ha)	[122]	[104]	[105]	[101]	[96]	[98]	[97]	[85]	[103]	[91]	[95]	[92]	[99]	[91]	[87]	[89]	[93]	[95]	[91]	[104]	[92]	12.4
2012 (1.9 t/ha)	[86]	[109]	[99]	[101]	[89]	[94]	[97]	[105]	[97]	[107]	[102]	-	[103]	[90]	[98]	[102]	[95]	[97]	[93]	[81]	[97]	10.7
2013 (1.8 t/ha)	[119]	[104]	[111]	[109]	[106]	[109]	[107]	[105]	[98]	[105]	[101]	[105]	[98]	[107]	-	[97]	[98]	[98]	[102]	-	[88]	7.8
Breeder/ UK contact																						
Breeder	GKI	Bilt	Bilt	LaS	JTSD	JTSD	JTSD	GIE	Lim	LaS	Bilt	GIE	GIE	GKI	LaS	JTSD	JTSD	JTSD	TdL	LaS	JTSD	
UK contact	Agr	Els RApp	Els	PC	JTSD PC	JTSD	JTSD	PC	Lim	Dalt	Els	PC	PC	Agr	Dalt	JTSD	JTSD Sen	JTSD	PC	PC	JTSD RApp	
Status in RL system																						
Year first listed	01	11	12	12	12	14	14	12	09	09	13	14	09	09	11	14	06	13	14	11	11	
DL status	-	-	-	-	-	P1	P1	-	-	-	P2	P1	-	-	*	P1	-	P2	P1	*	*	

Varieties no longer listed: Bilton, Lagoon, Meteor and Sunrise

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

[] = limited data P1 = first year on list

- P2 = second year on list
- * = variety no longer in trials
- C = yield control
- \$ = Birdseye is believed to be a low ALA (alpha-linolenic acid) variety but this has not been verified in HGCA tests
- Agr = Agrii (www.agrii.co.uk) Bilt = van de Bilt, Netherlands
- Dalt = Dalton Seeds (www.dalmark.co.uk)
- Els = Elsoms Seeds (www.elsoms.com)
- GIE = GIE Linea, France
- GKI = GK Kht, Hungary
- JTSD = John Turner Seed Developments (www.jtsd.co.uk)
- LaS = Laboulet Semences, France
- Lim = Limagrain UK (www.limagrain.co.uk)
- PC = Premium Crops (www.premiumcrops.com)
- RApp = Robin Appel (www.robin-appel.com)
- Sen = Senova (www.senova.uk.com)
- TdL = Terre de Lin, France

Average LSD (least significant difference) 5%: varieties that are more than one LSD apart are significantly different at the 5% confidence level.

SPRING LINSEED DESCRIPTIVE LIST HGCA RECOMMENDED LIST®

Winter triticale Descriptive List 2014/15

DESCRIBED	NEW	С	NEW	NEW				*	*	с	*	
HGCA	KWS Fido	Benetto	Ragtac	Toledo	Tribeca	Agostino	Tulus	Constant	Agrano	Grenado	Amarillo	Average LSD (5%)
Grain yield as % treated control												
Fungicide-treated (8.5 t/ha)	[110]	103	[103]	[103]	101	101	100	100	99	97	95	7.5
Number of trials	5	11	5	5	9	11	9	7	7	11	11	
Agronomic features												
Lodging (%)	[5]	[4]	[0]	[0]	[29]	[0]	[0]	[9]	[5]	[0]	[32]	8.8
Straw length (cm)	[109]	113	[96]	[96]	114	98	102	[103]	[116]	96	110	5.6
Ripening (days +/- Benetto, -ve = earlier)	-1	0	+2	+1	0	0	0	0	-1	+2	0	2.3
Grain quality												
Specific weight (kg/hl)	[74.7]	72.2	[71.9]	[70.5]	70.9	74.5	70.6	74.8	73.4	71.2	72.5	1.7
Protein content (%)	[10.5]	11.0	[10.8]	[10.9]	10.8	11.3	11.0	10.8	11.8	10.4	11.5	0.6
Breeder/ UK contact												
Breeder	Lant	Dank	R2n	Dank	Desp	Lant	Nord	Lem	Saka	Dank	Hege	
UK contact	Sen	Sen	RAGT	Sen	Els	Sen	SU	Pick	Lim	Sen	Soya	
Status in RL system												
Year first listed	14	05	14	14	12	11	12	09	09	08	10	
DL status	P1	-	P1	P1	-	-	-	*	*	-	*	

Variety no longer listed: Twingo

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

[] = limited data Dank = Danko, Poland Pick = Mike Pickford (mpickford1@btinternet.com) Average LSD (least significant difference) 5%: Desp = Maison Florimund Desprez, France R2n = RAGT. France varieties that are more than one LSD apart are P1 = first year on list significantly different at the 5% confidence level. * = variety no longer in trials Els = Elsoms Seeds (www.elsoms.com) RAGT = RAGT Seeds, UK (www.ragt.co.uk) C = yield control Hege = Hege, Germany Saka = Saka, Germany Lant = Lantmannen SW Seed BV Sen = Senova (www.senova.uk.com) Lem = Lemaire, France Soya = Soya UK (www.soya-uk.com) Lim = Limagrain UK (www.limagrain.co.uk) SU = Saaten Union UK (www.saaten-union.co.uk) Nord = Nordsaat, Germany

Winter rye varieties

The agent of the only hybrid winter rye variety on the 2013/14 Descriptive List, **Askari** has advised that this variety will not be available for sowing in autumn 2014. Limited quantities of seed of the conventional variety **Capitan** will be available from Daltons Seeds http://www.dalmark.co.uk/seed.html

There is currently one hybrid variety in trials, for which data from two years of HGCA trials are available: **SU Mephisto**, from Saaten Union has given a yield around 2% above **Askari** with similar quality characteristics. It is susceptible to brown rust and some lodging was recorded in trials in 2012.

Also likely to be available in autumn 2014 is a second hybrid variety from the same source; **SU Phoenix**. This variety was in two HGCA trials in 2013, giving yields slightly above those of **SU Mephisto**. http://www.saaten-union.co.uk/

Acknowledgements

The HGCA Recommended Lists 2014/15 are managed by a project consortium consisting of BSPB, HGCA, MAGB and **nabim**.



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

For specific Recommended Lists enquiries call **024 7647 8746** or email **rl@hgca.ahdb.org.uk**

HGCA is grateful to the following organisations who, as well as undertaking contract work for the Recommended Lists, provide much valuable advice: ADAS, Agri-Food and Biosciences

Institute, Biomathematics & Statistics Scotland, Breeding Services, BSPB, Campden BRI,

Cropworks, Envirofield, Harper Adams University, NIAB TAG, Oxford Agricultural Trials Ltd,

SACCS, Scottish Agronomy, SGS, SRUC, The James Hutton Institute and Trials Force Ltd.

BREEDING

BioSS

oat

HGCA

Cronworks Lto

Stoneleigh Park Warwickshire CV8 2TL

Publication orders T 0845 245 0009 E hgca@cambertown.com

Hutton

Harper Adams

University

Trials

Force

Preliminary data

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



Processors

HGCA is grateful for the valuable contributions made by member companies of BBPA, BOBMA, MAGB, **nabim**, SWA and SWRI who conduct milling, baking, malting, brewing and distilling tests both at the preliminary and Recommended List stages.



Committee members and growers

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



Disclaimer

NIABTAG

Test and trials contractors

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

Reference herein to trade names and proprietary products without stating that they are protected does not imply that they may be regarded as unprotected and thus free for general use. No endorsement of named products is intended, nor is any criticism implied of other alternative, but unnamed products.

HGCA is the cereals and oilseeds division of the Agriculture and Horticulture Development Board.

SACCS



© Agriculture and Horticulture Development Board 2014. No part of this publication may be reproduced in any material form (including by photocopy or storage in any medium by electronic means) or any copy or adaptation stored, published or distributed (by physical, electronic or other means) without the prior permission in writing of the Agriculture and Horticulture Development Board, other than by reproduction in an unmodified form for the sole purpose of use as an information resource when the Agriculture and Horticulture Development Board or HGCA is clearly acknowledged as the source, or in accordance with the provisions of the Copyright, Designs and Patents Act 1988. All rights reserved.

(B) = "HGCA RECOMMENDED LIST" is a registered trademark of the Agriculture and Horticulture Development Board