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Using the HGCA Recommended Lists

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.

information on regional disease risks, see page 7. Pages colour-coded by crop type Varieties ranked by Winter wheat 2013/14 UK treated yield within end-use Yield data Yield data Agronomic Market features options Disease _ resistance Key to symbols used in the table

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.

Further information is available from the RL *Plus* tool at www.hgca.com/varieties/rl-plus. This web-based tool enables you to interrogate the Recommended Lists to suit your specific cropping requirements.



4. Use the **Variety Comments** as a summary

2. Use the Agronomy Tables to assess the likely

These tables provide information on the susceptibility of varieties to major diseases, pests and lodging. Scores are

since susceptibility can change within a season. New

on the HGCA website (www.hgca.com). For more

given on a 1-9 scale, where a higher number indicates that the

variety shows higher levels of resistance. Caution is required

information on any breakdown of resistance will be available

management inputs

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

The HGCA Recommended Lists data is also available in a pocketbook format. Email publications@hgca.ahdb.org.uk for more information.



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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Varieties no longer listed include varieties that are no longer recommended or are being withdrawn from the Recommended List by the breeder.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 Recommended List trials sown 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 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 percent screenings through a 2.0 mm sieve. A high kernel content, high specific weight and low percent 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.

Markets for 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.

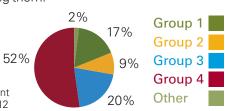
Group 2 varieties are also mainly used for breadmaking, but, because of either their inherent inconsistency or specific characteristics, are not suited to all grists. These varieties are likely to attract varying market prices. Lower protein Group 2 wheats are also widely used by millers but will attract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

2012 GB wheat crop by end-use category

Source: Agriculture and Horticulture Development Board Variety Survey 2012



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 who test new varieties and rate 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.

Export

The extreme weather of 2012 meant that the UK was a net importer of wheat. The UK usually exports around 2.5 million tonnes of wheat per year (based on 5-year average) accounting for approximately 17% of the UK wheat crop. Exports help to prevent oversupply of the domestic market which in turn helps to prevent depression of UK prices relative to world prices. Growers located within 50 miles of a port may want to consider export as an additional market option for quality milling wheat.

HGCA funds tests on new wheat varieties to determine their suitability for overseas customers. Suitable varieties are classified as **ukp** or **uks** and this information is included in the Recommended Lists to enable the right varieties to be selected for this market.

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.

Some overseas markets, particularly in North Africa, prefer lower moisture and growers should consider aiming for a moisture content, through careful drying and storage, of 14% or less if intending to market their grain for export.

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

Typical specifications

	Group 1	nabim Group 2	Group 3	ukp	uks
Specific weight	76 kg/hl (min)	76 kg/hl (min)	74 kg/hl (min)	76 kg/hl (min)	75 kg/hl (min)
Moisture content	15% (max)				
Ad mix	2% (max)				
Hagberg Falling Number (HFN)	250 s (min)	250 s (min)	220 s (min)	250 s (min)	220 s (min)
Protein	13%	12.5%	11.5%	11-13%	10.5-11.5%
W	N/A	N/A	N/A	≥170	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.

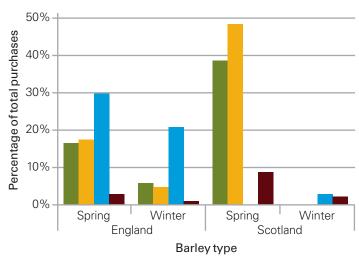
Markets for barley, oats and oilseed rape



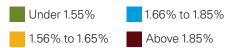
The UK produces around 5.8Mt of barley a year (based on a five-year average). The main markets are for human and industrial uses such as malting, brewing and distilling, which account for 38% of the UK barley crop, and animal feed, which accounts for 54%.

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 2013 crop.



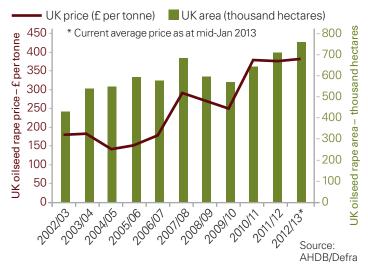


Grain nitrogen band



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 to reach a new record of 756 thousand hectares for harvest 2012.



The markets for oilseed rape include:

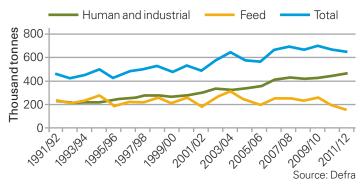
- Edible oil
- High oleic, low linolenic (HOLL) oilseed rape
- High erucic acid rapeseed (HEAR)
- Biodiesel

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.

Oats

The main markets for oats are milling and feed, with the human and industrial market increasing in recent years. All varieties should be acceptable for both uses. Varieties may be either husked or huskless (naked). Naked oats vield approximately 30% less than husked varieties but are grown for their nutritional benefits.



More market information from HGCA

Newsletters (email or fax)

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

MI Prospects – a fortnightly newsletter with a more in-depth look at the latest market analysis and outlooks

Email subscriptions@hqca.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

Mobile website

Access market information on your mobile phone at www.hgca.com/mobile





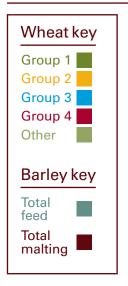
Regional information

Wheat and barley

Market selection

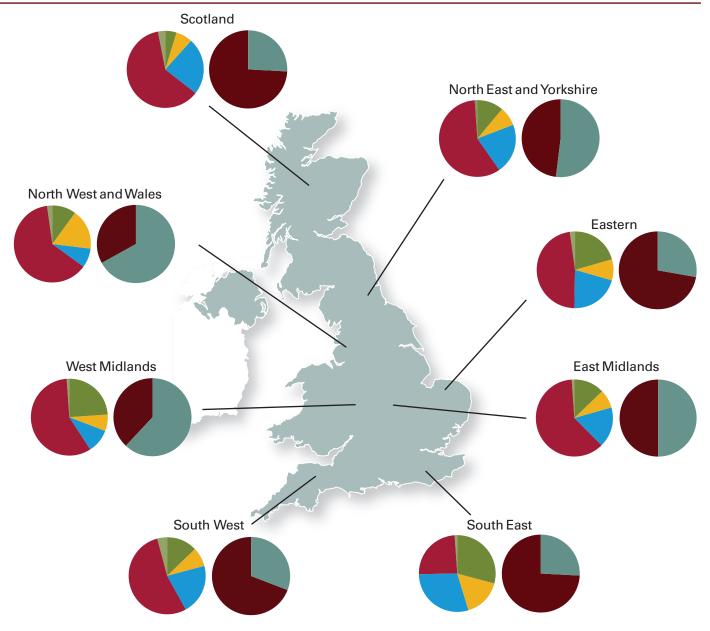
Information on the main markets within each region is provided by the Agriculture and Horticulture Development Board Variety Survey. This information can be used to show the relative importance of end-use markets in each region. Breadmaking quality wheat varieties are likely to be more popular in the 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.

Regional variety choice



RL Plus

HGCA



Yield

Feed varieties will be appropriate in all regions. On pages 9, 23 and 29, 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.

More regional information

For more information on selecting varieties on a regional basis, use RL *Plus* at www.hgca.com/varieties/rl-plus. This is the most flexible way to obtain regional information that takes account of the specific agronomic features relevant in that region.

Regional information

Disease risk

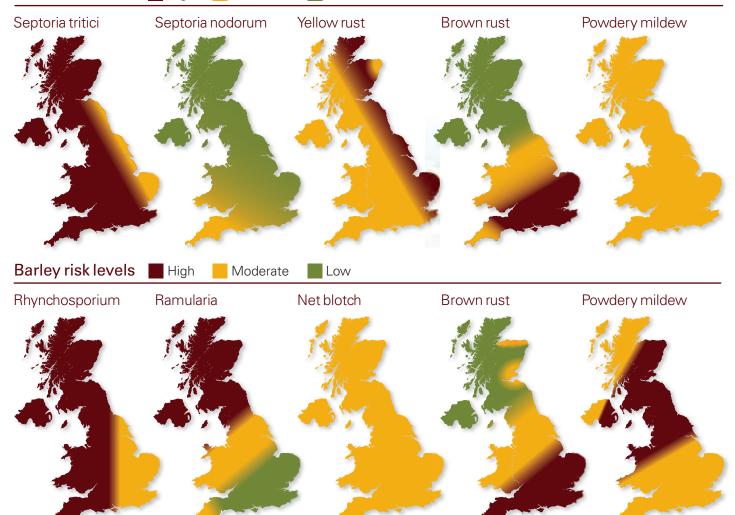
Wheat risk levels High

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.

Moderate

Low

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.



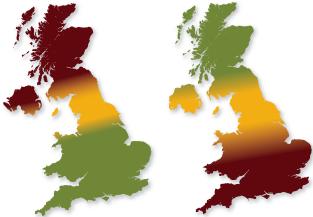
Oilseed rape risk levels High Moderate Low



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 List 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. In 2011, for example, new fungal races of yellow rust and brown rust were identified by the UK Cereal Pathogen Virulence Survey. These new races may attack varieties which

currently have a high disease

resistance rating.

Crop/Monitor

Winter wheat 2013/14 Market options, yield and grain quality



RECOMMENDED		С	С	NEW			_		*	NEW	NEW	NEW		С				С	NEW	VEW I	NEW	NEW							<u>o</u>	NEW	NEW				С			
HGCA	Crusoe	Gallant	Solstice	Chilton	KWS Sterling	Panorama	KWS Podium	Cordiale	Einstein	KWS Croft	Monterey	Delphi	Cocoon	Invicta	Tuxedo	KWS Target	Claire	Scout	Leeds	Myriad	Revelation	Cougar	Horatio	Viscount	Beluga	Gravitas	Denman	Alchemy	KWS Santiago	KWS Kielder	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	Average LSD (5%)
End-use group	nabir	n Gro	up 1	nab		roup	2			nab	im Gr	oup 3	3						Soft (Group	o 4								Hard	d Grou	лр 4							
Scope of recommendation	UK	UK	UK	UK	UK	Uk	(UK	Uk	(UK	UK	UK	Е	EW	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	EW	UK	UK	UK	UK	EW	UK	UK	UK	
Fungicide-treated grain yield (% treate	ed con	trol)	•																																			
United Kingdom (10.2 t/ha)	98	98	96	100	100	100	99	98	95	104	102	102	102	101	101	101	97	97	106	105	104	104	104	103	103	103	103	98	107	106	106	105	104	103	103	100	100	3.7
East region (10.5 t/ha)	99	99	95	99	100	101	1 100	99	95	103	103	103	103	101	100	100	98	97	106	104	103	101	104	103	103	103	103	98	107	105	104	106	104	102	103	100	101	1.8
West region (10.3 t/ha)	100	99	96	100	100	100	98	99	94	99	101	101	101	101	100	99	96	97	104	100	100	99	103	101	104	101	102	99	106	100	104	104	103	102	103	101	99	2.9
North region (10.1 t/ha)	93	96	96	104	99	99	101	97	98	[103]	105	103	100	102	102	102	96	98	[109]	107]	[105]	[105]	105	105	103	103	103	98	106	[105]	[107]	108	106	103	101	102	100	3.4
Main market options (The specific attrib	outes	of var	ieties	are di	ifferer	nt, so	, whe	never	possib	le, var	ieties:	shoul	d not l	be mix	ed in:	store)																						
UK breadmaking	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	-	[Y]	-	[Y]	[Y]	-	[Y]	-	Υ	[Y]	Υ	-	[Y]	Υ	Υ	[Y]	Υ	[Y]	-	-	-	-	-	-	-	-	-	
ukp bread wheat for export	[Y]	Υ	Υ	[Y]	[Y]	[Y]	[Y]	Υ	Υ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
uks soft wheat for export	-	-	-	-	-	-	-	-	-	[Y]	[Y]	[Y]	[Y]	[B]	[Y]	Υ	Υ	Υ	[B]	[Y]	[B]	[B]	[B]	[B]	[Y]	[Y]	[B]	В	-	-	-	-	-	-	-	-	-	
Grain quality																																						
Endosperm texture	Hard	Hard	Hard	Hard	Hard	d Har	d Har	d Har	d Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard I	Hard	
Protein content (%)	12.3	11.9	11.8	11.4	11.3	11.4	4 12.) 12.	1 11.9	10.9	11.2	11.2	10.9	10.9	10.9	11.1	11.2	11.5	10.8	10.8	10.8	10.7	10.9	10.7	10.7	10.6	10.7	11.1	10.8	10.7	10.9	10.7	10.7	11.1	11.0	11.5	10.8	0.3
Hagberg Falling Number	242	284	252	271	259	235	5 269	306	6 272	199	228	266	234	236	274	203	223	217	204	225	218	181	226	162	150	209	215	230	144	198	220	192	191	265	294	266	257	14
Specific weight (kg/hl)	77.2	76.9	77.3	78.2	75.1	76.	7 78.	3 78.	7 77.1	75.9	78.6	75.6	76.0	74.9	74.5	76.0	76.2	77.7	77.8	76.3	75.6	73.5	75.8	75.6	74.8	76.4	75.4	76.9	74.6	73.8	76.0	74.8	74.8	76.3	77.1	77.8	75.8	1.0
1000 grain weight (g)	-	[56.1]	52.5	-	[51.5]] [51.3	3] -	[48.	3] 53.2	-	-	-	-	[48.8]	-	-	[49.6]	[48.2]	-	-	-	-	- [[51.5]	[57.5]	-	- !	50.8	-	-	-	[49.6]	-	-	[51.9]	[51.6]	48.9]	2.3
Chopin alveograph W	219	218	204	211	215	[213	3] 256	[238	3] 174	88	85	98	106	75	109	102	-	91	71	92	71	70	76	[87]	92	92	70	-	-	-	[139]	-	-	-	-	-	-	29
Chopin alveograph P/L	0.6	0.8	0.6	0.7	0.7	[0.7	7] 0.6	[0.9	0.5	0.3	0.3	0.4	0.3	0.3	0.4	0.3	-	0.3	0.3	0.3	0.3	0.2	0.3	[0.3]	0.3	0.3	0.2	-	-	-	[0.4]	-	-	-	-	-	-	0.1
Status in RL system																																						
Year first listed	12	09	02	13	10	09	11	04	03	13	13	13	11	10	11	11	99	09	13	13	13	13	12	09	10	11	11	06	11	13	13	10	12	12	08	09	08	
RL status	P2		_	P1						P1	P1	D1							P1	P1	P1	P1	P2							P1	P1	-	P2	D2		_	_	

Varieties no longer listed: Battalion, Humber, Ketchum, Stigg, Torch and Warrior.

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

UK = recommended for the UK

= recommended for the East region

EW = recommended for the East and West regions

Y = suited to that market

[Y] = may be suited to that market

B = suitable for blending into export cargoes

[B] = may be suitable for blending into export cargoes

* = variety no longer in trials

C = yield control (Oakley was also a control but is no longer on the Recommended List)

[] = limited data

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 wheat 2013/14

Yield, agronomy and disease resistance



RECOMMENDED		С	С	NEW	_		_		*	NEW	NEW	NEW		С				С	NEW	NEW	NEW	NEW							<u>o</u>	NEW	NEW				c	Second Control		
HGCA	Crusoe	Gallant	Solstice	Chilton	KWS Sterling	Panorama	KWS Podium	Cordiale	Einstein	KWS Croft	Monterey	Delphi	Cocoon	Invicta	Tuxedo	KWS Target	Claire	Scout	Feeds	Myriad	Revelation	Cougar	Horatio	Viscount	Beluga	Gravitas	Denman	Alchemy	KWS Santiago	KWS Kielder	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	Average LSD (5%)
End-use group	nabii	n Gro	oup 1	nab	im Gı	roup 2				nab	im Gr	oup3							Soft	Grou	p4								Hard	d Grou	ıр4							
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Е	EW	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	EW	UK	UK	UK	UK	EW	UK	UK	UK	
Fungicide-treated grain yield (% treate	ed cor	ntrol)	>																																			
United Kingdom (10.2 t/ha)	98	98	96	100	100	100	99	98	95	104	102	102	102	101	101	101	97	97	106	105	104	104	104	103	103	103	103	98	107	106	106	105	104	103	103	100	100	3.7
East region (10.5 t/ha)	99	99	95	99	100	101	100	99	95	103	103	103	103	101	100	100	98	97	106	104	103	101	104	103	103	103	103	98	107	105	104	106	104	102	103	100	101	1.8
West region (10.3 t/ha)	100	99	96	100	100	100	98	99	94	99	101	101	101	101	100	99	96	97	104	100	100	99	103	101	104	101	102	99	106	100	104	104	103	102	103	101	99	2.9
North region (10.1 t/ha)	93	96	96	104	99	99	101	97	98	[103]	105	103	100	102	102	102	96	98	[109]	[107]	[105]	[105]	105	105	103	103	103	98	106	[105]	[107]	108	106	103	101	102	100	3.4
Untreated grain yield (% treated contre	ol in co	ompai	rable t	trials)	\																																	
United Kingdom	89	82	78	84	82	88	82	83	82	90	90	88	85	88	89	84	81	87	87	91	96	97	89	87	84	88	88	87	85	86	91	84	88	90	90	89	82	6.0
Agronomic features																																						
Resistance to lodging without PGR	7	7	8	7	8	8	8	7	6	5	6	7	6	7	7	7	7	8	7	7	8	7	6	6	8	6	6	7	7	7	6	5	7	8	7	9	8	1.5
Resistance to lodging with PGR	8	8	8	8	8	8	8	8	7	6	7	8	6	8	8	8	7	8	7	7	8	8	8	7	8	7	7	7	7	8	7	7	8	7	7	9	9	1.0
Height without PGR (cm)	82	83	92	88	79	89	81	79	85	89	90	86	94	90	83	84	88	86	88	90	86	86	89	82	79	89	82	91	87	83	87	85	86	82	88	76	89	1.8
Ripening (days +/- Solstice, -ve = early)	+2	-2	0	+2	0	+2	0	-2	-1	+1	+2	+2	+4	+3	+2	+1	0	+2	+2	+2	+4	+3	+2	+1	0	+2	+1	+2	+2	+3	0	+2	+2	+1	0	-1	+1	0.8
Resistance to sprouting	-	[6]	[7]	-	[5]	[7]	-	[6]	[6]	-	-	-	-	[7]	-	-	[5]	[6]	-	-	-	-	-	[4]	[4]	-	-	[6]	-	-	-	[6]	-	-	[7]	[5]	[7]	1.1
Disease resistance																																						
Mildew	9	5	4	6	7	7	6	6	6	7	6	5	7	5	7	4	4	5	3	5	7	6	7	7	4	6	5	7	5	4	7	3	6	6	5	7	6	1.1
Yellow rust	9	5	4	7	8	8	7	6	6	8	6	9	8	8	9	8	6	9	7	8	9	8	6	4	5	5	4	6	5	4	8	6	9	9	8	6	5	0.9
Brown rust	6	4	4	4	8	5	7	3	5	6	5	7	9	6	8	4	5	8	5	5	9	9	6	7	4	5	5	4	6	7	9	6	3	7	4	3	4	1.4
Septoria nodorum	[6]	[5]	6	[5]	[5]	[5]	[5]	[5]	6	[5]	[5]	[6]	[5]	[6]	[6]	[6]	[5]	6	[6]	[5]	[6]	[6]	[5]	[7]	[5]	[5]	[6]	6	[6]	[6]	[5]	[6]	[6]	[5]	[5]	[5]	[5]	2.9
Septoria tritici	7	5	5	5	5	6	5	5	5	5	5	5	5	5	6	5	6	5	5	5	6	7	6	5	5	6	5	6	5	5	5	4	5	6	5	5	5	0.7
Eyespot	[5]	6	4	[4]	6	4	4	4	5	[6]	[5]	[4]	6	5	6	6	5	8	[5]	[7]	[8]@	[4]	[6]	6	7	5	5	6	3	[7]	[4]	3	[4]	[4]	5	8@	5	1.8
Fusarium ear blight	6	5	6	6	6	7	6	6	6	6	6	7	7	6	6	6	6	6	7	6	7	6	6	6	6	6	6	7	6	6	6	6	6	6	6	5	6	1.8
Orange wheat blossom midge	-	-	-	-	-	-	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 across regions are not valid.

UK = recommended for the UK

E = recommended for the East region

EW = recommended for the East and West regions

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

@ = Revelation and Grafton are believed to carry the Pch1 Rendezvous resistance gene to eyespot but this has not been verified in RL tests C = yield control (Oakley was also a control but is no longer on the Recommended List)

* = 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.

Winter wheat 2013/14 – Supplementary data

RECOMMENDED		С	С	NEW					*	NEW	NEW	NEW		С				С	NEW	NEW	NEW	NEW							0	NEW	NEW				С			
HGCA	Crusoe	Gallant	Solstice	Chilton	KWS Sterling	Panorama	KWS Podium	Cordiale	Einstein	KWS Croft	Monterey	Delphi	Cocoon	Invicta	Tuxedo	KWS Target	Claire	Scout	Leeds	Myriad	Revelation	Cougar	Horatio	Viscount	Beluga	Gravitas	Denman	Alchemy	KWS Santiago	KWS Kielder	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	Average LSD (5%)
End-use group	nabii	n Gro	up 1	nab	im Gr	oup 2				nab	im Gr	oup3	;						Soft	Grou	p4								Hard	d Gro	up4							
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	Е	EW	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	EW	UK	UK	UK	UK	EW	UK	UK	UK	
Breeder/UK contact																																						
Breeder	Lim	SCP	Lim	DSV	KWS	Lim	KWS	KWS	Lim	KWS	ВА	ВА	Sec	Lim	RAGT	KWS	Lim	Sen	Mom	Lim	Lim	RAGT	Lim	KWS	Sen	Lim	SCP	Lim	KWS	KWS	Sec	KWS	KWS	RAGT	Bre	KWS	SCP	
UK contact	Lim	SS	Lim	DSV	KWS	Lim	KWS	KWS	Lim	KWS	Sen	Sen	Agr	Lim	RAGT	KWS	Lim	Sen	KWS	Lim	Lim	RAGT	Lim	KWS	Sen	Lim	SS	Lim	KWS	KWS	Agr	KWS	KWS	RAGT	Sen	KWS	SS	
Annual yield (% control)																																						
2008 (11.8 t/ha)	-	100	96	-	101	100	98	100	97	-	-	-	98	101	100	102	97	96	-	-	-	-	-	101	103	102	104	98	106	-	-	104	-	-	103	101	101	2.8
2009 (10.7 t/ha)	97	93	95	102	101	101	100	95	96	-	102	102	105	104	105	104	[99]	99	-	-	-	-	105	103	[104]	106	103	100	109	-	-	106	104	106	102	100	102	3.3
2010 (9.9 t/ha)	98	98	96	101	101	100	98	[96]	96	106	102	103	102	101	100	100	[94]	98	105	106	107	106	103	101	104	102	102	98	105	110	106	106	106	104	103	100	100	2.8
2011 (9.9 t/ha)	98	96	94	100	103	[97]	95	96	93	107	102	100	105	105	103	100	[97]	96	107	109	107	110	103	103	101	105	101	100	107	111	109	108	104	102	102	97	101	2.7
2012 (8.6 t/ha)	98	103	99	98	92	100	105	102	-	99	104	104	98	96	95	98	[100]	96	109	102	101	96	104	110	104	99	103	96	108	100	105	101	103	98	103	104	96	3.0
Rotational position																																						
First cereal (10.7 t/ha)	98	98	95	100	100	100	99	97	94	104	102	102	102	102	101	101	98	97	107	106	105	104	104	103	103	103	103	99	107	106	106	106	103	103	102	100	100	3.9
Second and more (8.9 t/ha)	98	98	98	101	101	101	98	99	97	102	102	102	102	99	101	99	[93]	97	105	102	102	101	103	102	104	101	102	97	107	107	105	105	107	103	103	102	101	4.1
Sowing date (most trials were sown	durina O	ctobe	7)																																			
Before 14 Sept (10.2 t/ha)		98	94	-	104	-	-	-	94	-	102	103	105	-	104	_	100	97	-	-	-	-	108	106	106	-	108	103	-	-	-	-	-	-	-	103	-	4.9
Late autumn (9.3 t/ha)	-	99	95	-	99	[99]	[98]	97	-	-	-	-	[102]	100	[97]	[100]	-	97	-	-	-					[99]	[104]	97	[108]	-	-	105	-	-	[103]	[94]	[101]	6.3
Soil type (about 50% of trials are on n	nedium :	soils)	<u> </u>																																			
Light soils (9.7 t/ha)	99	96	96	102	98	100	101	97	97	[102]	104	103	102	101	101	101	96	98	[110]	[105]	[103]	[101]	107	105	103	102	102	98	106	[102]	[104]	107	105	103	104	101	99	4.7
Heavy soils (10.8 t/ha)	99	98	95	-	100			99									98		106										107								100	
Agronomic features																																						
Lodging % without PGR	2	3	2	4	1	2	2	3	8	13	7	2	8	3	2	3	4	1	4	4	1	4	5	5	2	7	9	4	4	4	5	11	3	2	4	1	1	
Lodging % with PGR	3	2	2	3	2	1	3	2	6	10	7	2	9	3	2	2	6	2	5	5	3	3	4	7	2	7	5	4	6	3	7	5	2	4	4	0	1	
Latest safe sowing date #		End	End	-	Mid	End	Mid	End	Mid		(End	[Mid	Fnd	End	Mid	Mid	End		-	-	-		[Mid	Mid	End	End	Mid	Mid	End		-	Mid	[Mid	[Mid	End	End	End	
							Feb										Feb										Feb									Jan		
Speed of development to growth st	tage 31 (days +	-/- ave	rage)																																		
Early Sep sown	+2	-3	0	-1	+1	-3	+1	-4	-5	[-6]	-2	+2	+6	+1	+2	-1	+7	+3	[-6]	[+6]	[+5]	[-6]	-2	+2	0	-2	+2	0	+9	[+9]	[+1]	-3	+2	-1	+1	+4	-2	7.2
Early Oct sown	+5	-5	-1	+4	-2	-2	-5	-7	-4	[-5]	-2	-1	+8	+1	+3	-4	+4	+1	[-4]	[+4]	[+5]	[-2]	-6	+3	+3	-4	+2	+4	+3	[+3]	[-7]	-5	+5	+3	-1	+3	+1	7.6
Early Nov sown	-4	-4	-1	-2	-3	+1	0	-5	-2	[+1]	-5	-4	+4	+2	+2	-2	+3	+2	[-3]	[+4]	[+3]	[-1]	+1	+3	+1	+4	+1	+3	+1	[+7]	[+1]	-3	-1	+2	-1	+0	+1	4.9

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

= Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for flowering. A dash indicates that there are insufficient data to give a comment and NOT that the variety does not have a vernalisation requirement UK = recommended for the UK

E = recommended for the East region

EW = recommended for the East and West regions

C = yield control (Oakley was also a control but is no longer on the Recommended List)

* = variety no longer in trials

[] = limited data

Agr = Agrii (www.agrii.co.uk)

BA = Blackman Agriculture

Bre = Saatzucht Josef Breun, Germany

DSV = DSV United Kingdom (www.dsv-uk.co.uk)

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

Lim = Limagrain UK (www.limagrain.co.uk) Mom = Momont, France RAGT = RAGT Seeds (www.ragt.co.uk)

Sec = Secobra, France

Sen = Senova (www.senova.uk.com)

SCP = Syngenta Crop Protection (www.syngenta.co.uk)

SS = 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 wheat trials harvest 2013 – Candidate varieties

CANDIDATE	Variety ID	Yield treated (T)	Yield untreated (as % treated controls) (UT)	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	96	70	0	1	88	0	4	5	4	5	4	-	Hard	12.4	247	77.6	
Oakley	1658	106	52	1	1	79	+2	5	2	6	6	3	-	Hard	11.2	142	75.0	
JB Diego	1737	103	82	0	1	86	0	5	8	5	5	5	OWBM	Hard	11.7	282	77.3	
Gallant	1766	100	74	0	0	82	-2	5	5	5	5	6	-	Hard	12.1	275	78.1	
Scout	1787	96	79	0	1	84	-2	5	9	7	5	8	OWBM	Soft	12.2	233	77.6	
Invicta	1853	99	79	1	1	89	+3	5	7	6	5	5	-	Soft	12.2	260	73.5	
Selected as potential breadmak	king varieties	>																
Cubanita (SY110110)	2101	102	81	0	0	84	0	7	6	5	5	[7]	SBCMV	Hard	12.0	284	79.8	Syngenta Seeds
Skyfall (S.J3326)	2138	101	87	0	1	82	0	7	6	8	6	[8]@	OWBM	Hard	12.4	262	77.9	RAGT
KWS Bonham (KWS W199)	2115	100	74	0	0	79	0	4	8	3	6	[4]	SBCMV	Hard	12.3	268	79.0	KWS UK
KWS Evoke (KWS W204)	2120	98	82	1	0	81	0	9	8	8	5	[4]	-	Hard	12.6	294	78.4	KWS UK
KWS Cashel (KWS W206)	2122		Da	ata unavail	able as va	ariety has	not comp	leted Na	tional List	ing			-	Hard				KWS UK
Selected as potential biscuit-ma	aking varietie	es																
Zulu (LGW54)	2155	103	81	1	1	86	+2	8	9	4	6	[5]	OWBM/SBCMV	Soft	11.9	215	76.0	Limagrain UK
Icon (RW41057)	2129	103	83	1	2	83	+2	8	9	5	6	[4]	-	Soft	11.2	210	75.3	RAGT
Selected as potential feed varie	eties																	
Evolution (SJ08-46)	2162	108	91	2	1	86	+4	7	8	8	6	[6]	-	Hard	11.2	184	74.1	Limagrain UK
Panacea (LGW56)	2157	107	81	5	3	89	+3	7	4	5	6	[4]	OWBM	Soft	11.4	154	77.1	Limagrain UK
Twister (MH10-33)	2125	106	75	1	1	85	+2	4	6	4	5	[8]	OWBM	Soft	11.3	164	76.8	KWS UK
Goldengun (RW41088)	2134	106	77	4	5	89	+2	7	3	5	6	[6]	OWBM	Hard	11.3	201	78.3	RAGT
Icebreaker (RW41097)	2136	105	83	0	1	82	+5	5	8	5	6	[7]@	OWBM	Hard	11.3	121	75.9	RAGT
Lancaster (MH09-27)	2113	105	73	1	1	83	+2	4	6	4	6	[6]	OWBM	Soft	11.6	160	76.8	KWS UK
KWS Dali (KWS W196)	2114	104	69	0	1	88	+2	7	3	6	5	[8]	-	Soft	11.5	183	78.4	KWS UK
Fugue (SY110173)	2107	102	73	1	1	74	+1	7	5	4	5	[8]	OWBM	Soft	12.1	222	73.1	Syngenta Seeds
Solace (RW41079)	2132	100	88	2	2	79	0	8	8	8	7	[8]	SBCMV	Hard	12.0	252	77.0	RAGT
Mean of controls (t/ha)		9.6	7.0	_		_		_			_	_		_	_	_	_	
LSD 5%		8.2	18.8			2.1	1.6								0.4	31.7	1.4	-
No. of trials		30	18.8	10	7	16	9		-				-	-	9	10	9	-
INO. OF ENDIS		30	11	10	/	10	9						-	-	9	10	9	

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

@ = believed to carry the Rendezvous Pch1 resistance gene to eyespot but this has not been verified in RL tests

T = data from trials treated with fungicide and PGR

UT = data from trials without fungicide or PGR

OWBM = believed to be resistant to orange wheat blossom midge but this has not been verified in RL tests

SBCMV = believed to be resistant to soil-borne cereal mosaic virus but this has not been verified in RL tests

Candidate varieties will be considered for the 2014/15 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 2012 but not added to the HGCA Recommended List

	Control	varieties					Other \	varieties										
HGCA	Oakley	JB Diego	Invicta	Gallant	Scout	Solstice	KWS Cleveland	KWS Solo	Havana	Weaver	ō	KWS Rowan	KWSYaris	Chronicle	Coronation	SY Epson	Torphins	Average LSD (5%)
Fungicide treated grain yield (% treated control)																		
United Kingdom (10.2 t/ha)	106	103	101	98	97	96	105	105	104	104	104	104	103	102	101	101	95	3.7
East region (10.5 t/ha)	106	103	101	99	97	95	104	104	103	104	104	103	101	101	99	103	93	1.8
West region (10.3 t/ha)	103	103	101	99	97	96	100	104	102	100	102	103	98	99	99	100	95	2.9
North region (10.1 t/ha)	107	101	102	96	98	96	[105]	106	[102]	[106]	[101]	[105]	[104]	[98]	[99]	[97]	-	3.4
Untreated grain yield (% treated control in comparable trials)																		
United Kingdom	72	90	88	82	87	78	87	86	90	90	83	88	87	90	88	88	84	6.0
Grain quality																		
Endosperm texture	Hard	Hard	Soft	Hard	Soft	Hard	Hard	Soft	Hard	Soft	Soft	Soft	Hard	Hard	Hard	Soft	Hard	
Protein content (%)	10.4	11.0	10.9	11.9	11.5	11.8	10.9	10.6	11.1	10.7	10.9	10.7	10.8	11.3	11.0	11.4	11.9	0.3
Hagberg Falling Number	156	294	236	284	217	252	222	207	242	274	224	187	216	193	243	266	317	14
Specific weight (kg/hl)	75.1	77.1	74.9	76.9	77.7	77.3	73.7	76.6	73.8	76.8	74.0	77.0	76.1	75.1	76.0	76.5	77.5	1.0
Agronomic features																		
Resistance to lodging without PGR	7	7	7	7	8	8	4	8	7	5	7	8	8	8	8	8	9	1.5
Resistance to lodging with PGR	7	7	8	8	8	8	4	7	7	5	8	8	8	8	9	9	9	1.0
Height without PGR (cm)	84	88	90	83	86	92	91	86	85	92	91	88	90	87	85	86	81	1.8
Ripening (days +/- Solstice, -ve = early)	+1	0	+3	-2	+2	0	+1	+3	+1	+1	+1	+2	+3	0	+2	+1	+3	0.8
Resistance to sprouting	[6]	[7]	[7]	[6]	[6]	[7]	-	-	-	-	-	-	-	-	-	-	-	1.1
Disease resistance																		
Mildew	5	5	5	5	5	4	7	7	8	4	6	5	6	5	4	5	9	1.1
Yellow rust	1	8	8	5	9	4	6	9	7	6	3	4	7	8	5	8	8	0.9
Brown rust	6	4	6	4	8	4	9	3	7	3	6	6	5	9	4	5	6	1.4
Septoria nodorum	[6]	[5]	[6]	[5]	6	6	[5]	[6]	[5]	[6]	[8]	[5]	[5]	[5]	[5]	[5]	[5]	2.9
Septoria tritici	6	5	5	5	5	5	5	5	5	5	6	5	6	5	5	6	6	0.7
Eyespot	3	5	5	6	8	4	[6]	[7]	[5]	[7]	[4]	[8]	[5]	[7]	[8]	[6]	[6]	1.8
Fusarium ear blight	5	6	6	5	6	6	5	7	6	6	5	6	6	6	6	7	7	1.8
Orange wheat blossom midge	-	-	-	-	R	-	R	-	R	R	-	R	R	-	-	R	-	

This table should be read in conjunction with the HGCA Recommended List of Winter Wheat for 2013/14.

^{[] =} limited data

R = believed to be resistant to orange wheat blossom midge but this has not been verified in RL tests

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 good specific weight and tends to give slightly higher proteins than Solstice. The variety is also classified for the **ukp** export category.

Agronomy: Has a similar yield to Gallant but with better resistance to septoria tritici, mildew, yellow rust and brown rust. Crusoe is one of only two varieties with a rating of 7 for septoria tritici.

nabim comment: This variety has consistently demonstrated good protein content and quality. The bread crumb structure has been equal to that of Solstice.

Although limited commercial quantities have been seen by millers, over the three years of trials the baking performance was good.

Gallant ukp#

Quality: A **nabim** Group 1 variety which is classified as a **ukp** bread wheat for export. It gives good Hagbergs and specific weights and tends to give protein contents similar to Solstice.

Agronomy: An early-maturing variety which is 2% higher yielding than Solstice but susceptible to brown rust. **nabim comment:** This variety has milling and baking qualities which have been consistently good and this is a popular variety with millers.

Solstice ukp

Quality: A popular **nabim** Group 1 variety giving good specific weights. It is classified as a **ukp** bread wheat for export and has support from end users. It has the strong support of UK millers and remains popular with growers. **Agronomy:** Has medium-long but stiff straw; is susceptible to mildew, yellow rust, brown rust and eyespot. Solstice's yield potential is 2% below Gallant and Crusoe.

nabim comment: This variety is the most widely used Group 1 variety. It is popular with both farmers and millers. It is favoured by millers because it has a good balance of protein content, milling characteristics, gluten properties and baking performance.

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nabim Group 2 varieties

NEW Chilton ukp

Quality: Added to the HGCA Recommended List for 2013/14 as a **nabim** Group 2 variety. It is classified as a **ukp** bread wheat for export and has high specific weights but has a tendency to give low grain proteins.

Agronomy: Chilton has a similar yield potential to KWS Sterling and Panorama but is susceptible to brown rust and (based on limited data) to eyespot.

nabim comment: In the three years of testing, this variety appeared to have a 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 good grain protein, Hagbergs and specific weights.

Agronomy: Early maturing with short 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 and Gallant.

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



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

Wheat ear sterility

HGCA is one of the funders of a study into the control of wheat infertility through field-based screening. Its aim is to improve breeding efficiency and protect against crop loss. New information has been discovered about ear sterility physiology and a new and improved field scoring protocol has been developed, providing breeders with more information on wheat ear sterility.

HGCA Project: RD-2007-3438

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.

Einstein ukp

Quality: A **nabim** Group 2 variety and classified as a **ukp** bread wheat for export, with good specific weights.

Agronomy: Has moderate resistance to stem lodging but is prone to the less common root lodging. It is early, about three days earlier than Panorama. Einstein is low yielding and no longer in RL trials.

nabim comment: Einstein continues to be used by most millers. However, it has a tendency to produce lower protein levels with lower water absorption. For this reason, the variety requires careful agronomic management. Most millers will only be able to use restricted proportions of this variety in breadmaking grists.

KWS Podium ukp 22

Quality: A nabim Group 2 variety and classified as a ukp bread wheat for export. It gives good grain protein levels and good specific weights.

Agronomy: KWS Podium is the only available winter wheat breadmaking variety with resistance to orange wheat blossom midge. It is short-strawed and has good lodging resistance but is susceptible to eyespot.

nabim comment: So far, limited commercial quantities have been available. Over the three years of testing, this variety performed better than Einstein and meets the intake criteria. However, flour extraction rates may sometimes be lower than expected.

KWS Sterling ukp 2014

Quality: A **nabim** Group 2 variety and classified as a **ukp** bread wheat for export. It tends to give low grain proteins and moderate specific weights.

Agronomy: KWS Sterling has short, stiff straw and high resistance to the rust diseases.

nabim comment: Although high yielding, it has a tendency to produce a lower level of protein. So far, only limited commercial quantities have been available. Over the three years of testing, the variety exhibited some variability but baking performance was acceptable. Good agronomic management may be required to attract higher premiums.

Panorama ukp 22

Quality: A **nabim** Group 2 variety and classified as a **ukp** bread wheat for export. Panorama tends to give moderate Hagbergs and proteins.

Agronomy: Has stiff straw, high resistance to yellow rust and above average resistance to fusarium ear blight but is susceptible to eyespot.

nabim comment: This variety has a tendency to produce a lower level of protein. Its flour milling characteristics are good but it has variable baking quality and is likely to be more suited for use in blends.

Yellow and brown rust in wheat

Yellow rust

A new yellow rust race first detected in 2011 is now widespread. This has had an impact on the resistance ratings of varieties. An HGCATopic Sheet is regularly updated with new information. Crusoe, Delphi, Tuxedo, Scout, Revelation, KWS Gator and Relay all have a rating of 9 on exposure to the new race.



Brown rust

A new race of brown rust first detected in 2011 is now widespread. A new HGCA Topic sheet has been produced which includes a new diversification scheme to understand the risk of spread from one variety to another, based on information from the UKCPVS. Cocoon, Revelation, Cougar and Dickens all have a rating of 9 on exposure to the new race.

All varieties should be monitored closely in the 2013 season, particularly in regions with a high risk of infection (see page 7).

This information is from the UK Cereal Pathogen Virulence Survey (UKCPVS).

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

nabim comment: This early-sowing biscuit wheat continues to be the benchmark for Group 3 varieties. 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 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 yellow rust and brown rust and above average resistance to fusarium. Cocoon is late maturing and has long straw of moderate resistance to lodging.

nabim comment: Only small volumes of this variety have been seen commercially. In the three years of trials, it has shown variability across the years for both grain hardness and rheological analysis. It is unlikely to be a preferred Group 3 variety for all 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. HGCA co-funds the UKCPVS, which aims to monitor changes in the virulences of rusts and mildew and determine their significance on the current varietal resistances.

HGCA Project: RD-2011-3751

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 Delphi uks

Distilling: Medium

Quality: Added to the HGCA Recommended List for 2013/14 as a nabim Group 3 variety for the East region. Classified as a uks soft wheat for export and rated 'medium' for distilling, it tends to give relatively high Hagbergs but moderate specific weights.

Agronomy: Delphi is high yielding and has good resistance to yellow rust and above average resistance to fusarium head blight but is (based on limited data) susceptible to eyespot. Has orange wheat blossom midge resistance.

nabim comment: In the three years of trials, this variety has shown some variability in specific weight; however, it has consistently met the rheology requirements of a Group 3 wheat.

Invicta uks

Distilling: Medium

Quality: A **nabim** Group 3 variety, classified as **uks** for blending and rated 'medium' for distilling. It gives a low specific weight.

Agronomy: Invicta has high resistance to yellow rust. It is late maturing.

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

NEW KWS Croft uks

Quality: Added to the HGCA Recommended List for 2013/14 as a **nabim** Group 3 variety and classified as **uks** for export. It is rated as 'poor' for distilling and tends to give low Hagbergs.

Agronomy: KWS Croft is very high yielding but has relatively weak straw which will need careful management. It has high resistance to yellow rust and is resistant to orange wheat blossom midge.

nabim comment: Quality results have been consistently similar to Scout throughout the 3-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.

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

NEW Monterey uks

Quality: Added to the HGCA Recommended List for 2013/14 as a nabim Group 3 variety. Classified as a uks soft wheat for export but rated as 'poor' for distilling.

Agronomy: A high-yielding variety with moderate resistance to lodging. It gives good specific weights and is resistant to orange wheat blossom midge.

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

Scout uks

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

Agronomy: 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. Gives relatively high Hagbergs but low specific weights. **Agronomy:** Has high resistance to yellow rust and brown rust and no major disease weaknesses.

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

Environmental and nutritional benefits of bioethanol co-products (ENBBIO)

This HGCA co-funded project is identifying opportunities to enhance the value of wheat distillers grains and solubles (W-DDGS). W-DDGS will prove to be a valuable source of protein for the livestock industry. Inclusion of W-DDGS in livestock rations can displace other feed ingredients, particularly soya and other cereal products. Use of W-DDGS in this way also reduces the net land required for biofuel production.

HGCA Project: RD-2009-3638

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 uks#

Distilling: Medium

Quality: A soft-milling feed wheat classified as **uks** for export blending, however, depending on the **uks** export market, it is recommended that inclusion of Alchemy in **uks** cargoes should be restricted to a maximum of 25%. Rated as 'medium' for distilling.

Agronomy: Has a moderate treated yield potential and is rather susceptible to brown rust. Above average resistance to fusarium head blight.

Beluga uks 24

Distilling: Good

Quality: A soft-milling feed variety 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 very stiff straw and has perform

Agronomy: Has short, very stiff straw and has performed well from early sowings and as a second wheat. It is susceptible to mildew and brown rust and it is rather susceptible to sprouting.

Conqueror

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

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

NEW Cougar uks 200

Quality: Added to the HGCA Recommended List for 2013/14 as a soft-milling feed wheat and classified as a uks soft wheat for blending. It tends to give low Hagbergs and specific weights and is rated as 'poor' for distilling.

Agronomy: Cougar has given high yields in both fungicide-treated and untreated trials. It has high resistance to yellow rust, brown rust, septoria tritici (one of only two varieties with a rating of 7 for the disease. It is late maturing and limited data suggest that it is susceptible to eyespot.

Denman uks

Distilling: Good

Quality: A soft-milling Group 4 variety rated as 'good' for distilling and classified as a **uks** export wheat for blending. It tends to give moderate specific weights.

Agronomy: Has resistance to orange wheat blossom midge but is susceptible to yellow rust. It has given high yields from early-sown trials (before 14 September) but has only moderate resistance to lodging despite short straw.

NEW Dickens

Quality: Added to the HGCA Recommended List for 2013/14 as a hard-milling feed wheat.

Agronomy: A very high-yielding variety which has done well in first and second wheat trials and has high resistance to yellow rust and brown rust. It has only moderate resistance to lodging and limited data suggest it is susceptible to eyespot.

Duxford

Quality: A hard-milling **nabim** Group 4 feed variety. **Agronomy:** Its treated yield is 7% below the highest-yielding hard feed variety. It has good lodging resistance but is very susceptible to brown rust.

nabim comment: This variety has a stronger gluten quality than other Group 4 varieties and is worthy of being kept separate.

Grafton

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

Agronomy: Its treated yield is 7% below the highest-yielding hard feed variety. It has short, stiff straw and good resistance to eyespot but is very susceptible to brown rust. Like Claire and Scout, Grafton has slow primordial development, useful for early drilling.

Gravitas uks

Distilling: Medium

Quality: A soft-milling Group 4 variety rated as 'medium' for distilling and classified as a **uks** wheat for export. **Agronomy:** It is resistant to orange wheat blossom midge. It has moderate straw strength.

Horatio uks

Distilling: Medium

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

Agronomy: It is high yielding and has resistance to orange wheat blossom midge but has only moderate straw strength.

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 brown rust. Although now 4% lower yielding than the highest-yielding feed variety, JB Diego has performed consistently and remains very popular with feed growers, retaining a market share of around 12%, based on 2012 certified seed production estimates.

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 Gator

Quality: A hard-milling feed variety which tends to give low specific weights.

Agronomy: KWS Gator has given high yields in both first and second wheat situations. It is resistant to orange wheat blossom midge and has high resistance to yellow rust but is very susceptible to brown rust and appears (on limited data) to be susceptible to eyespot.

NEW KWS Kielder

Quality: Added to the HGCA Recommended List for 2013/14 as a high-yielding hard-milling feed wheat. It has a low specific weight.

Agronomy: 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 but is susceptible to mildew and yellow rust. It is rather late maturing.

KWS Santiago

Quality: Recommended for the East and West regions as a hard-milling feed variety. It remains a popular choice for feed growers maintaining market share around 12%, based on 2012 certified seed production estimates. It tends to give low Hagbergs and specific weights.

Agronomy: A very high-yielding variety that has performed well in both first and second wheat trials and on a range of soil types. It is resistant to orange wheat blossom midge but is susceptible to eyespot.

NEW Leeds uks

Distilling: Good

Quality: Added to the HGCA Recommended List for 2013/14 as a soft-milling feed wheat. Rated as 'good' for distilling and classified as a **uks** wheat for export blending. It has a good specific weight.

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

NEW Myriad uks

Distilling: Medium

Quality: Added to the HGCA Recommended List for 2013/14 as a soft-milling feed wheat rated as 'medium' for distilling and classified as a uks wheat for export.

Agronomy: Myriad is high yielding with resistance to orange wheat blossom midge and high resistance to yellow rust.

Relay

Quality: Is 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 but limited data suggest it is susceptible to eyespot.

NEW Revelation uks

Distilling: Good

Quality: Added to the HGCA Recommended List for 2013/14 as a soft-milling feed wheat rated as 'good' for distilling and classified as a **uks** wheat for export blending. It has a moderate specific weight.

Agronomy: Is high yielding and has good resistance to lodging. It has high resistance to yellow rust, brown rust and eyespot and above average resistance to fusarium head blight. It has no major foliar disease weaknesses. It is late maturing.

Viscount uks

Distilling: Good

Quality: A high-yielding soft-milling feed variety rated as 'good' for distilling and is the market-leading variety in Scotland. Classified as a **uks** soft wheat for export blending. It tends to give low Hagbergs and moderate specific weights.

Agronomy: Has resistance to orange wheat blossom midge but is susceptible to yellow rust and is susceptible to sprouting.

Varieties no longer on the Recommended List

Hereward – nabim comment: This is the oldest UK breadmaking variety but is now outclassed in terms of yield and no longer on the Recommended List. Hereward can still perform well although it has a higher degree of variability than in the past. The variety remains popular with some millers who may offer contract growing schemes.

Soissons – nabim comment: This variety was removed from the 2010 Recommended List because it was 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.

Modern triticale crops

Recent HGCA research has shown that triticale regularly out-yields wheat by up to 2 t/ha, especially in the second wheat position and is likely to require less nitrogen fertiliser and pesticides.

An HGCA-funded project aims to add value to an associated Technology Strategy Board project by determining the underlying agronomic differences between wheat and triticale, in their ability to utilise available nitrogen.

Early results suggest that the yield benefit of triticale relative to wheat is larger when it is grown as a second cereal than as a first cereal, probably due to its greater resistance/tolerance to take-all.

HGCA Project: RD-2009-3699

Late autumn-sown wheat 2013/14

RECOMMENDED	*			С	+	С	*	*		С	*	*	*	*	*	*	*	*	*	*	*	*	+			
HGCA	Gallant	Mulika +	Solstice	Paragon +	KWS Willow	Tybalt +	KWS Sterling	KWS Podium	Cordiale	Ashby +	Cocoon	Invicta	KWS Target	Scout	Tuxedo	Viscount	Beluga	Denman	Alchemy	Gravitas	Conqueror	KWS Santiago	KWS Alderon	Belvoir +	Zircon + \$	Average LSD (5%)
End-use group	nabin	n Group	o 1		nabim	Group	2				nabir	n Grou	р 3			Soft G	Group 4				Hard (Group 4	1		Other	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	EW	UK	EW	UK	UK	Sp										
UK yield (% treated control)																										
UK yield with fungicide (8.7 t/ha)	106	103	101	95	112	104	104	[103]	103	101	[107]	106	[105]	104	[102]	108	108	[108]	104	[104]	113	[112]	[111]	110	100	7.0
Grain quality																										
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Hard	Hard	Hard	Hard	Hard										
Protein content (%)	[11.4]	[12.2]	[11.9]	12.2	[11.4]	11.5	-	-	-	12.3	-	-	-	[12.0]	-	[11.4]	-	-	[11.4]	-	[11.1]	-	[11.9]	10.8	12.4	0.9
Hagberg Falling Number	[281]	[321]	[247]	297	[257]	288	-	-	-	266	-	-	-	[201]	-	[123]	-	-	[239]	-	[180]	-	[312]	214	163	83
Specific weight (kg/hl)	[78.0]	[78.3]	[76.8]	79.1	[79.5]	76.5	-	-	-	78.8	-	-	-	[78.1]	-	[75.4]	-	-	[76.9]	-	[74.3]	-	[77.5]	76.8	79.3	1.5
Agronomic features																										
Lodging % with PGR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Straw height with PGR (cm)	72	[90]	76	96	[87]	83	[71]	[72]	[68]	84	[88]	[82]	[75]	74	[70]	70	[71]	[71]	77	[78]	71	[79]	[78]	78	82	4.3
Ripening (+/- Paragon, -ve = earlier)	[0]	-	[-1]	[0]	-	[0]	-	-	-	[0]	-	-	-	[+2]	-	[0]	-	-	[+1]	-	[0]	-	-	[-1]	[+1]	1.8
Latest safe sowing date #	End Jan	-	End Jan	-	-	-	Mid Feb	Mid Feb	End Jan	-	End Jan	End Feb	Mid Feb	End Jan	Mid Feb	Mid Feb	End Jan	Mid Feb	Mid Feb	End Feb	Mid Feb	End Jan	-	-	-	
Disease resistance																										
Mildew	5	[7]	4	8	[8]	8	7	6	6	6	7	5	4	5	7	7	4	5	7	6	3	5	[6]	[6]	[7]	-
Yellow rust	5	8	4	8	8	7	8	7	6	8	8	8	8	9	9	4	5	4	6	5	6	5	8	7	9	-
Brown rust	4	7	4	7	7	8	8	7	3	5	9	6	4	8	8	7	4	5	4	5	6	6	7	8	7	-
Septoria tritici	5	5	5	6	6	6	5	5	5	5	5	5	5	5	6	5	5	5	6	6	4	5	6	5	6	-
Fusarium ear blight	5	[6]	6	[6]	[6]	[5]	6	6	6	[6]	7	6	5	6	6	6	6	6	7	6	6	6	[6]	6	[6]	-
Orange wheat blossom midge	-	R	-	-	-	-	-	R	-	-	-	-	R	R	-	R	-	R	-	R	R	R	-	R	-	
Status in RL system																										
Year first listed	09	11	02	99	11	03	10	11	04	03	11	10	11	09	11	09	10	11	06	11	10	11	12	03	07	
RL status	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	

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

Data for winter wheat varieties are given for comparison only and do not constitute a Recommended List but the data are directly comparable with those for spring wheat.

There are insufficient data to list all winter wheat varieties, especially newer ones and their absence from the table does not imply that they are unsuitable for late-autumn sowing.

Late autumn wheat trials are sown between 15 November and 31 December.

UK = recommended for the UK

EW = recommended for the East and West regions

Sp = specific recommendation

C = yield control

= variety no longer in late autumn-sown trials

+ = spring wheat

\$ = Zircon is specifically recommended as a whitegrained wheat, nabim does not class it as a breadmaking variety # = latest safe sowing date is
the advised latest date to
give sufficient cold for
flowering; spring wheats have
no vernalisation requirement

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

P2 = second year of recommendation

[] = 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 wheat 2013



RECOMMENDED		С		С		С				
HGCA	Mulika	Paragon	Granary	Tybalt	KWSWillow	Ashby	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	Sp	
UK yield (% control)										
UK yield with fungicide (6.9 t/ha)	103	95	107	105	105	100	[106]	106	100	4.5
Grain quality										
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	13.7	13.8	13.5	12.8	12.9	13.5	13.3	12.5	13.5	0.5
Hagberg Falling Number	291	294	207	280	233	272	297	215	184	35
Specific weight (kg/hl)	77.0	77.2	78.1	75.5	77.9	77.7	75.8	76.0	78.3	1.1
Agronomic features										
Resistance to lodging with PGR	-	{6}	-	{[3]}	-	{7}	-	{[7]}	{[6]}	-
Straw height without PGR (cm)	80	85	80	76	81	80	74	76	78	2.2
Ripening (+/- Paragon, -ve = earlier) ∞	-	-	-	-	-	-	-	-	-	-
Resistance to sprouting	[7]	[6]	[7]	[7]	[7]	[7]	-	[7]	[3]	1.2
Disease resistance										
Mildew	[7]	8	[7]	8	[8]	6	[6]	[6]	[7]	1.2
Yellow rust	8	8	6	7	8	8	8	7	9	1.7
Brown rust	7	7	6	8	7	5	7	8	7	2.8
Septoria tritici	5	6	7	6	6	5	6	5	6	0.9
Fusarium ear blight	[6]	[6]	-	[5]	[6]	[6]	[6]	6	[6]	0.3
Orange wheat blossom midge	R	-	-	-	-	-	-	R	-	
Breeder/UK Contact										
Breeder	ВА	RAGT	KWS	Wier	KWS	KWS	KWS	KWS	KWS	
UK contact	Sen	RAGT	KWS	Lim	KWS	KWS	KWS	KWS	KWS	
Status in RL system										
Year first listed	11	99	09	03	11	03	12	03	07	
RL status	-	-	-	-	-	-	P2	-	-	

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

\$ = Zircon is specifically recommended as a whitegrained wheat, nabim does not classify it as a breadmaking variety

{} = historical data

∞ = no data available

[] = limited data

UK = recommended for the UK

Sp = specific recommendation

P2 = second year of recommendation

C = yield control

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 2013 – 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 arieties. Quality information is based on spring-sown spring wheats.



Mulika

Quality: A nabim Group 1 variety recommended for both late autumn and spring sowing; it gives good Hagbergs and grain proteins and has the largest share of the spring wheat market, based on 2012 seed certification figures.

Agronomy: From both late autumn and spring sowings, Mulika has given yields around 8% higher than Paragon. It has high resistance to yellow rust and resistance to orange wheat blossom midge. Little lodging was recorded in trials treated with plant growth regulator.

nabim comment: This variety will be seen in commercial quantities from the 2012 harvest. It appears to be similar to Paragon in most aspects of performance.

Paragon

Quality: A nabim Group 1 variety recommended for both late autumn and sowing. Paragon's market share is declining but it remains popular with millers due to its high quality and good Hagbergs and grain proteins.

Agronomy: Paragon is 8% 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 and yellow rust.

nabim comment: This is a spring variety whose performance in breadmaking has been excellent. It remains the choice of most millers when buying spring wheats.



Ashby

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

Agronomy: Its yield is now well below newer Group 2 varieties. It has high resistance to yellow rust. Little lodging was recorded in trials treated with plant growth regulator.

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. Little lodging recorded in trials treated with plant growth regulator.

nabim comment: 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. It has high resistance to mildew and yellow rust. Little lodging recorded in trials treated with plant growth regulator.

nabim comment: This variety has Hagbergs 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 with a lower specific weight. It also tends to give low proteins, particularly when late autumn-sown.

Agronomy: It is 8% lower-yielding than KWS Willow when late autumn-sown and around 2% below Granary when spring-sown. It has high resistance to mildew 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

KWS Alderon

Quality: A hard feed variety.

Agronomy: Yields are similar to Belvoir, with high resistance to yellow rust. Little lodging was recorded in trials treated with plant growth regulator.

Belvoir

Quality: A hard feed variety.

Agronomy: High yielding when late-autumn sown but the advantage is less marked when spring sown. Belvoir has high resistance to brown rust and is resistant to orange wheat blossom midge. Little lodging was recorded in trials treated with plant growth regulator.

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 yellow 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 Hagberg, so it is important that the variety is given priority at harvest to reduce the sprouting risk.

nabim overview

Flour millers work closely with plant breeders to ensure that new varieties reaching the market meet important performance criteria. Millers also work to understand basic genetic developments, the plant breeding process and the constraints imposed on varieties by husbandry and growing conditions.

Home-grown wheat is increasingly important to UK flour millers. Because of this, along with 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 List 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 RL Wheat Committee as part of the selection process.

Flour is almost the universal food and is used for making bread, biscuits, cakes, batters, coatings, and as a versatile food ingredient. Many flours are milled to meet the specific requirement of customers, often in the large-scale food manufacturing sector. Specifications are exact and flours must consistently perform to the stated level. This performance depends on the quality and characteristics of the wheat being used to make the flour. One of the skills of the flour miller is the mixing or 'gristing' of several wheat varieties to produce specific flour types. Major food producers also show an interest in wheat variety development, and some require that flours should be made from specific varieties.

Wheat quality

Wheat from the 2012 UK harvest generally exhibited low quality and was very poor compared to the previous year. The lack of warmth and sunlight, coupled with high disease pressure resulted in low specific weights with consequently lower flour extraction rates. Protein quality also suffered and the high levels of head blight in many crops had an effect on dough performance. These shortcomings produced a strong dialogue within the grain supply chain about terms of contracts and the assessment of quality parameters with

the result that there is now a better understanding of sampling variation and the limitations of some tests.

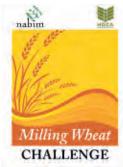
Millers carry out a range of tests to assess the characteristics and quality of individual wheat parcels being offered to them. These tests are used throughout the grain industry and act as comparative performance standards. The laboratories of all **nabim** members take part in a monthly ring-test of samples to ensure the highest level of testing is achieved.

nabim has produced a booklet 'Wheat and Flour testing' which explains these tests. It is available free on request from nabim or can be found on the nabim website (www.nabim.org.uk).

New varieties

For flour millers, consistency of milling and baking performance is an essential criterion for any wheat variety. The supply chain requirement for yield improvements and the constant threat of new strains of disease, mean that 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 benefits in agronomic and yield terms but which also have 'improved' quality and consistency in milling and flour performance.

This year, we are pleased to see another Group 2 winter wheat variety, Chilton, join the RL. There are three very promising new Group 3 winter varieties – Delphi, KWS Croft and Monterey. Of those varieties which joined the RL in 2012, none have been seen in sufficient commercial quantities for us to be able to confirm our initial comments from the three-year test programme, but all remain promising.



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 three years **nabim**, together with HGCA (and previously Crops magazine), has run a competition – the 'Milling Wheat Challenge' – to find the best grower of

consistently high-quality milling wheat. Winners Andrew Ponder from Essex (2010), James Price from Oxfordshire (2011) and Andrew Robinson from Bedfordshire (2012) demonstrated to the judges a clear understanding of both growing the crop and marketing it. The competition will be run again in 2013. Full details of how to enter will appear on both the nabim and HGCA websites. Entries will close in mid-April.

Mycotoxins

The adverse weather conditions of the 2011/12 growing season not only resulted in poor quality of wheat but also many crops became infected with head blight. Although many of the infective fungi did not produce mycotoxins overall levels of DON were much higher than those seen in the previous three years.

All parts of the grain supply chain have a duty to ensure that their products comply with maximum levels set by the EU Regulations.

Working with the NFU, AIC and others in the supply chain, millers have developed a robust strategy to limit problems associated with mycotoxins in grain. As a result of the higher levels of mycotoxins (especially DON) in the 2012 crop, virtually all milling companies (and some other primary processors) will require DON (and in some cases ZON) values also to be supplied at grain intake. The completion of a risk assessment remains part of the assurance requirements and the resulting score can be a useful indicator of potential DON risk at farm level. Milling wheat should only be marketed when a reliable risk assessment has been made.

As part of the general overall strategy, as in previous years all wheat from the 2013 harvest will have to be accompanied by both the DON risk assessment score and a statement of the actual level of DON present in a representative sample of grain for at least the first six weeks of the new harvest. This requirement may be relaxed once the overall mycotoxin threat for the year has been determined.

nabim

Winter barley 2013/14 Market options, yield and grain quality



RECOMMENDED	NEW		NEW	NEW	NEW				С	С	NEW		NEW	С	NEW			*	С	an		C*		₩.
HGCA	Talisman	SY Venture	KWS Joy	Mezmaar	Soloman	Archer	Winsome	Cassata ∼	Flagon	Pearl	KWS Glacier	Retriever	Matros	KWS Cassia	California	Florentine	Saffron	Suzuka	Volume \$	KWS Meridian	Escadre	Sequel	Average LSD (5%)	SY Bamboo
End-use group	Two-	row m	alting								Two-	row fe	ed						Six-re	ow feed	i			Six-row
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	Sp	UK	UK	UK	UK	East	UK	West	UK	UK	UK	UK	UK	UK	UK		Not added to Reco
Fungicide treated grain yield (% treat	ed cont	rol)																						
UK with fungicide (8.8 t/ha)	102	101	100	100	100	99	96	96	96	93	107	105	104	104	103	102	99	99	109	105	102	99	2.8	105
East region with fungicide (8.7 t/ha)	103	102	102	102	103	100	97	96	97	93	109	105	106	103	104	102	100	100	109	103	101	99	3.2	105
West region with fungicide (9.1 t/ha)	[99]	100	[100]	[99]	[96]	98	95	96	95	93	[104]	102	102	104	104	102	100	96	109	106	102	100	3.8	104
North region with fungicide (8.6 t/ha)	101	97	97	95	96	98	95	94	94	92	105	106	102	105	[101]	100	96	99	110	107	103	100	4.2	107
Main market options																								
IBD malting approval for brewing use	Т	Р	Т	Т	Т	Р	F	F	F	F	-	-	-	-	-	-	-	-	-	-	-	-		-
Overseas malting	-	-	-	-	-	-	-	Υ	[Y]	Υ	-	-	-	-	-	-	-	-	-	-	-	-		-
Grain quality																								
Specific weight (kg/hl)	67.9	69.7	68.8	67.6	67.6	69.1	69.7	68.6	70.1	70.8	69.9	66.9	68.1	71.1	69.2	68.6	70.5	69.5	68.9	66.0	70.1	69.5	0.7	69.0
Screenings % through 2.25 mm	[2.7]	1.5	[1.4]	[5.0]	[1.6]	1.2	1.3	1.0	1.4	1.0	[1.7]	-	2.0	1.1	[0.7]	1.4	1.2	-	3.4	1.8	1.5	2.8	1.0	1.9
Screenings % through 2.50 mm	[7.3]	4.8	[4.0]	[12.7]	[4.6]	3.6	4.4	2.8	4.0	2.8	[5.7]	-	5.3	3.1	[2.7]	5.0	4.2	-	14.2	5.2	6.4	11.4	2.9	7.0
Nitrogen content (%)	1.63	1.65	1.70	1.58	1.69	1.76	1.61	-	1.63	1.65	-	-	-	-	-	-	-	-	-	-	-	-	0.17	-
Status in RL system																								
Year first listed	13	12	13	13	13	12	10	07	05	99	13	07	13	10	13	11	05	07	09	12	11	03		-
RL status	P1	P2	P1	P1	P1	P2	-	-	-	-	P1	-	P1	-	P1	-	-	-	-	P2	-	-		-

SY Bamboo (Sinatra
Six-row	Two-row
Not added to Red	commended List
105	103
105	105
104	102
107	101
-	-
-	-
69.0	70.5
1.9	1.2
7.0	4.0
-	-
-	-
-	-

Varieties no longer listed: Element, Pelican and Purdey.

~ = Cassata has a specific recommendation for growers wanting a BaYMV-resistant variety for malting

\$ = Volume and SY Bamboo are hybrid six-row varieties

[] = limited data

UK = recommended for the UK

East = recommended for the East region

West = recommended for the West region

Sp = specific recommendation

F = full IBD approval

P = provisional IBD approval

T = under test

Y = suited to that market

[Y] = may be suited to that market

P1 = first year of recommendation

P2 = second year of recommendation

C = yield control

* = variety no longer in trials

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

Winter barley 2013/14

Yield, agronomy and disease resistance



																								A 8	
RECOMMENDED	NEW		NEW	NEW	NEW				С	С	NEW		NEW	С	NEW			*	С	<u>=</u>		C*		€	
HGCA	Talisman	SY Venture	KWS Joy	Mezmaar	Soloman	Archer	Winsome	Cassata ∼	Flagon	Pearl	KWS Glacier	Retriever	Matros	KWS Cassia	California	Florentine	Saffron	Suzuka	Volume \$	KWS Meridia	Escadre	Sequel	Average LSD (5%)	SY Bamboo (Sinatra
End-use group	Two	-row m	alting								Two-	row fee	ed						Six-ro	ow feed				Six-row	Two-row
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	Sp	UK	UK	UK	UK	East	UK	West	UK	UK	UK	UK	UK	UK	UK		Not added to Red	commended List
Fungicide treated grain yield (% treat	ted cont	trol)																							
UK with fungicide (8.8 t/ha)	102	101	100	100	100	99	96	96	96	93	107	105	104	104	103	102	99	99	109	105	102	99	2.8	105	103
East region with fungicide (8.7 t/ha)	103	102	102	102	103	100	97	96	97	93	109	105	106	103	104	102	100	100	109	103	101	99	3.2	105	105
West region with fungicide (9.1 t/ha)	[99]	100	[100]	[99]	[96]	98	95	96	95	93	[104]	102	102	104	104	102	100	96	109	106	102	100	3.8	104	102
North region with fungicide (8.6 t/ha)	101	97	97	95	96	98	95	94	94	92	105	106	102	105	[101]	100	96	99	110	107	103	100	4.2	107	101
Untreated grain yield (% treated cont	rol in co	mparab	le trials)																						
UK without fungicide	86	80	78	79	84	82	81	79	82	78	87	82	91	86	90	84	82	82	91	89	84	81	4.2	87	85
Agronomic features																									
Resistance to lodging	6	8	6	5	7	7	6	8	5	7	7	6	7	8	8	8	8	7	6	7	7	6	-	7	6
Straw height (cm)	90	85	87	89	81	86	92	87	96	96	81	84	93	87	88	87	86	90	99	102	96	99	2.6	98	84
Ripening (+/- Pearl, -ve = earlier)	-2	0	0	-1	-2	-1	-2	+1	-1	0	-1	-1	0	0	-1	-1	0	-2	-2	-2	-2	-2	1.0	-1	0
Winter hardiness #	-	[5]	-	-	-	[7]	5	6	5	5	-	6	[6]	5	[6]	6	5	6	6	[6]	6	6	0.9	[6]	[6]
Disease resistance																									
Mildew	7	6	5	5	6	6	6	4	6	6	4	6	7	4	6	6	3	5	6	8	5	5	1.2	6	7
Yellow rust	[7]	[7]	[4]	[4]	[7]	[5]	7	2	8	7	[7]	9	[5]	5	[6]	8	7	9	6	[7]	8	6	2.2	[6]	[8]
Brown rust	6	5	6	6	7	5	6	7	7	6	6	5	7	7	5	6	7	[6]	5	6	5	5	0.9	5	5
Rhynchosporium	7	6	5	7	6	7	7	8	7	5	6	6	7	4	6	7	4	6	8	6	8	7	1.4	7	6
Net blotch	5	5	6	6	5	6	6	4	4	5	6	6	5	7	7	7	8	7	6	7	8	6	5.5	6	5
BaYMV	R	R	R	R	R	R	-	R	-	-	R	R	-	R	R	R	-	R	R	R	R	R	-	R	R

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

- Cassata has a specific recommendation for growers wanting a BaYMV-resistant variety for malting
- \$ = Volume and SY Bamboo are hybrid six-row varieties
- # = the winter hardiness scores are taken from extreme tests in the Jura mountains of France
- UK = recommended for the UK
- East = recommended for the East region
- West = recommended for the West region
- Sp = specific recommendation
- [] = limited data
- R = resistant to barley mild mosaic virus (BaMMV) and to barley yellow mosaic virus (BaYMV) strain 1
- C = yield control
- * = variety no longer in trials

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

Winter barley 2013/14 - Supplementary data

RECOMMENDED	NEW		NEW	NEW	NEW				С	С	NEW		NEW	С	NEW			*	С	Ę		C*		49	
HGCA	Talisman	SY Venture	KWS Joy	Mezmaar	Soloman	Archer	Winsome	Cassata ∼	riagon	Pearl	KWS Glacier	Retriever	Matros	KWS Cassia	California	Florentine	Saffron	Suzuka	Volume \$	KWS Meridian	Escadre	Sequel	Average LSD (5%)	SY Bamboo	Sinatra
End-use group	Two-	row m	alting								Two-	row fee							Six-ro	ow feed				Six-row	Two-row
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	Sp l	JK	UK	UK	UK	East	UK	West	UK	UK	UK	UK	UK	UK	UK		Not added to	Recommended List
Breeder/UK contact																									
Breeder	Sen	SCP	KWS	SCP	SCP	Lim	SCP	Lim S	CP	Lim	KWS	Sej	Sej	KWS	Lim	Sen	KWS	SCP	SCP	KWS	KWS	SCP		SCP	Sen
UK contact	Sen	SS	KWS	SS	SS	Lim	SS	Lim S	SS	Lim	KWS	Lim	Lim	KWS	Lim	Sen	KWS	SS	SS	KWS	KWS	SS		SS	Sen
Annual yield (as % treated control)																									
2008 treated yield (9.1 t/ha)	-	-	-	-	-	-	97	96 9	94	95	-	104	-	103	-	102	99	98	109	-	103	100	4.4	-	-
2009 treated yield (8.8 t/ha)	-	106	-	-	-	101	99	97 9	97	94	-	108	106	106	104	105	101	100	-	108	107	103	3.4	111	104
2010 treated yield (9.2 t/ha)	104	100	101	101	101	97	95	96 9	98	91	107	106	104	102	103	100	99	97	108	103	103	101	3.7	108	106
2011 treated yield (8.3 t/ha)	107	100	103	102	98	100	97	95 9	94	92	107	108	106	105	104	104	99	102	111	110	100	98	4.3	104	104
2012 treated yield (8.4 t/ha)	96	99	96	95	98	99	96	95 9	96	95	106	100	101	105	104	100	100	[96]	108	102	100	97	4.4	104	102
Soil type (about 50% of trials are media	um soils																								
Light soils (8.4 t/ha)	102	101	99	100	100	99	97	96 9	96	93	105	107	104	103	104	102	98	100	108	104	103	100	3.7	105	103
Heavy soils (8.5 t/ha)	104	105	104	102	105	99	97	96 9	97	94	111	105	106	102	102	102	101	101	109	106	100	98	5.3	104	105
Agronomic characteristics																									
Lodging % without PGR	18	3	11	21	3	7	21	3 2	25	5	4	14	5	4	1	1	3	4	13	6	8	15	-	9	16
Lodging % with PGR	10	1	7	19	3	3	9	2	15	2	4	8	4	2	1	1	2	2	11	2	5	5	-	3	5
Malting quality																									
Hot water extract (I deg/kg)	309.4	309.2	308.2	310.1	309.0	307.3	311.7 {	(304.5) 30	6.6	305.9	-	-	-	-	-	-	-	-	-	-	-	-	1.6	-	-

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

[] = limited data

{} = historical data

C = yield control

* = variety no longer in trials

UK = recommended for the UK

East = recommended for the East region

West = recommended for the West region

Sp = specific recommendation

= Volume and SY Bamboo are hybrid six-row varieties

= Cassata has a specific recommendation for growers wanting a BaYMV-resistant variety for malting

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

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

Sej = Sejet, Denmark

Sen = Senova (www.senova.uk.com)

SCP = Syngenta Crop Protection (www.syngenta.co.uk)

SS = 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 2013 – Candidate varieties

CANDIDATE	Variety ID	Yield treated (T)	Yield untreated (UT) (% treated controls)	Lodging % (UT)	Lodging % (T)	Height (cm)	Maturity (+/- Pearl)	Mildew (1-9)	Yellow rust (1-9)	Brown rust (1-9)	Rhynchosporium (1-9)	Net blotch (1-9)	ВаУМV	Variety type	Specific weight (kg/hl)	UK contact
Control varieties	4040		70	[0]		0.7									70.4	
Pearl	1318	93	76	[2]	2	97	0	6	7	6	5	5	-	2-row	70.4	
Sequel	1717	98	75	[8]	1	99	-2	5	6	5	/	6	R	6-row	68.8	
Flagon	1910	95	78	[17]	13	94	-1	6	8	7	7	4		2-row	69.5	
Volume	2244	110	85	[7]	3	98	-2	6	6	5	8	6	R	hybrid 6-row	68.0	
KWS Cassia	2309	105	85	[3]	0	85	0	4	5	7	4	7	R	2-row	70.6	
Selected as potential malting va	rieties															
Acute (AC05/004/12)	2586	103	[81]	[9]	[4]	[88]	0	7	[7]	7	7	[8]	R	2-row	67.7	Saaten Union UK
Fentara (SY210-86)	2596	103	[79]	[8]	[4]	[89]	-1	4	[7]	5	7	[7]	-	2-row	67.1	Syngenta Seeds
Selected as potential feed variet	ties															
Tetris (SJ087196)	2602	107	[83]	[8]	[10]	[88]	1	6	[6]	6	9	[7]	R	2-row	66.0	Syngenta Seeds
Cavalier (NSL08-6728-C)	2582	106	[77]	[12]	[8]	[72]	-1	7	[9]	6	7	[5]	R	2-row	69.7	Limagrain UK
Cadillac (NSL08-6725-D)	2581	106	[80]	[6]	[6]	[83]	-1	5	[9]	6	6	[7]	R	2-row	70.6	Limagrain UK
Harlequin (NSL08-6728-D)	2583	104	[76]	[17]	[7]	[78]	-2	7	[9]	6	6	[6]	R	2-row	70.0	Limagrain UK
Mean of controls (t/ha)		8.3	6.7	-	-	-	-	-	-	-	-	-	-	-	-	
LSD 5%		5.4	8.9	1.4	0.7	7.3	1.2	-	-	-	-	-	-	-	1.1	
No. of trials		16	5	2	5	2	8	-	-	-	-	-	-	-	11	

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

[] = 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 2014/15 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 barley 2013/14 – Variety comments

Two-row malting varieties

Archer

Provisional Brewing

Quality: A malting variety with a high specific weight. **Agronomy:** Higher yielding than Winsome and Cassata with shorter straw and good resistance to rhynchosporium. Resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). **MAGB comment:** Provisional IBD Approval for brewing.

Cassata

Brewing

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, producing malt of a similar quality to Pearl. Cassata is now a popular variety with a 15% provisional market share, based on 2012 certified seed production estimates.

Agronomy: Stiff-strawed with high resistance to 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) with a treated yield some 3% higher than Pearl.

MAGB comment: Full IBD Approval for brewing. UK winter malting barley market share: 28% (2011), 37% (2012).

Flagon

Brewing

Quality: A malting variety with a high specific weight.

Agronomy: Flagon is higher yielding than Pearl, similar to
Cassata. It has high resistance to yellow rust, brown rust
and rhynchosporium but is susceptible to net blotch and
has moderate straw strength, requiring careful
management.

MAGB comment: Full IBD Approval for brewing. UK winter malting barley market share: 21% (2011), 16% (2012).

NEW KWS Joy

Quality: Added to the Recommended List for 2013/14 as a high-yielding variety with brewing potential and a high specific weight.

Agronomy: Similar yield level to SY Venture. Good resistance to net blotch and brown rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: Variety under test.

NEW Mezmaar

Quality: Added to the Recommended List for 2013/14 as a high-yielding variety with brewing potential.

Agronomy: Similar yield level to SY Venture. High resistance to rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Lodging resistance is low but similar to Flagon.

MAGB comment: Variety under test.

Pearl

Brewing

Quality: A malting variety that remains popular with maltsters. It has a high specific weight.

Agronomy: No major disease weaknesses, but has comparatively moderate yields.

MAGB comment: Full IBD Approval for brewing. UK winter malting barley market share: 40% (2011), 30% (2012).

NEW Soloman

Quality: Added to the Recommended List for 2013/14 as a high-yielding variety with brewing potential.

Agronomy: Similar yield to SY Venture with no major disease weaknesses, it is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Lodging resistance is similar to Pearl.

MAGB comment: Variety under test.

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

NEW Talisman

Quality: Added to the Recommended List for 2013/14 as a very high-yielding variety with brewing potential.

Agronomy: Treated yield 1% higher than SY Venture and very high untreated yield. It is early maturing with high resistance to mildew and rhynchosporium. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: Variety under test.

SYVenture

Provisional Brewing

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

Agronomy: Higher yielding than Winsome and Cassata with shorter, stiffer straw and a high specific weight. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MAGB comment: Provisional IBD Approval for brewing.

Winsome

Brewing

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

Agronomy: High yielding with early ripening characteristics and high resistance to rhynchosporium and yellow rust.

MAGB comment: Full IBD Approval for brewing. UK winter malting barley market share: 1% (2011), 4% (2012).

Additions to the IBD approved malting barley list

Archer and SY Venture have been granted Provisional Approval 1 for brewing.



Winter barley 2013/14 – Variety comments

Two-row feed varieties

NEW California

Quality: Added to the Recommended List for 2013/14 as a specific recommendation for the West. It is a two-row feed variety with a high specific weight.

Agronomy: Treated yield in the West is similar to KWS Cassia but it is earlier maturing. It has a high untreated yield. It has good resistance to net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). California has good resistance to lodging.

KWS Cassia

Quality: A two-row feed variety with a good specific weight. It has become very popular, accounting for around 31% of the provisional certified seed production weights in 2012.

Agronomy: High yielding, it is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV) but susceptible to rhynchosporium and mildew. Good resistance to lodging.

NEW KWS Glacier

Quality: Added to the Recommended List for 2013/14 as a very high-yielding two-row feed variety with a high specific weight.

Agronomy: Very high yielding with short stiff straw. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is susceptible to mildew.

Florentine

Quality: A high-yielding two-row feed variety.

Agronomy: Has very stiff straw, good resistance to rhynchosporium and net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

NEW Matros

Quality: Added to the Recommended List for 2013/14 as a two-row feed with a specific recommendation for the East.

Agronomy: Higher yielding than Retriever and KWS Cassia in the East, it is susceptible to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Good resistance to mildew, brown rust and rhynchosporium, with a moderate susceptibilty to net blotch. It has tall, moderately stiff straw.

Retriever

Quality: A two-row feed variety that has performed particularly well in the North region, Retriever tends to give moderate specific weights.

Agronomy: It is very 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 stiff straw and high resistance to net blotch but is susceptible to rhynchosporium and very susceptible to mildew. Good resistance to lodging.

Suzuka

Quality: An early-maturing two-row feed variety with a high specific weight.

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

Six-row feed varieties

Escadre

Quality: A conventional six-row feed variety with a similar specific weight to KWS Cassia.

Agronomy: High resistance to yellow rust, rhynchosporium and net blotch and resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Escadre has long straw with moderate lodging resistance. It is 7% lower yielding than the best hybrid six-rows. It is also lower yielding than the best two-row feeds.

KWS Meridian

Quality: A conventional six-row feed variety with lower specific weights than the other recommended six-rows. Agronomy: KWS Meridian has long straw with mediumhigh lodging resistance. It has a good disease package with high resistance to mildew and rhynchosporium and it 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 is early maturing.

Sequel

Quality: A conventional six-row feed variety which produces relatively high specific weights.

Agronomy: Has a yield potential 6% lower than the highest-yielding conventional six-row variety but has high resistance to rhynchosporium and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Sequel has long straw with moderate lodging resistance and is early maturing.

Volume

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

Spring barley 2013 Market options, yield and grain quality



RECOMMENDED	NEW			С		NEW	С		С		С		С	NEW	NEW	NEW	NEW	NEW	NEW	NEW			200	
RECONVINENDED	IVLVV			C		IVLVV	C		C		C		C	IVLVV	INLAA	<u>'@</u>	IVLVV	IVLVV	IVEVV	IVLVV			-	
HGCA	Sanette	Odyssey	Chronicle	Propino	Overture	Glassel	Quench	Shuffle	Concerto	Moonshine	NFC Tipple	Belgravia	Optic	Tesla	Crooner	KWS Orphel	Kelim	Natasia	Montoya	Rhyncostar	Gamer	Waggon	Westminste	Average LSD (5%)
End-use group	Maltir	ng variet	ties											Feed v										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	NE	UK	NE	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Fungicide treated grain yield (% treate	ed contr	ol)																						
United Kingdom (7.2 t/ha)	109	106	104	104	103	103	103	102	100	100	99	98	94	106	106	106	105	105	104	104	103	103	96	2.5
East region (7.2 t/ha)	[109]	107	101	103	104	[102]	104	102	102	[101]	98	100	93	[106]	[102]	[107]	[106]	[104]	[106]	[103]	104	100	96	3.2
West region (7.4 t/ha)	[109]	106	105	104	104	[103]	103	102	100	100	99	100	94	[108]	[107]	[106]	[106]	[105]	[104]	[101]	104	103	98	3.2
North region (7.1 t/ha)	108	106	105	104	103	103	102	102	99	100	100	97	95	106	107	105	103	106	103	106	103	104	96	2.3
Main market options																								
IBD malting approval for brewing use	Т	Р	Р	F	Р	Ν	F	Р	F	Ν	F	Ν	F	-	-	-	-	-	-	-	-	-	-	
IBD malting approval for malt distilling use	Ν	Р	Р	Ν	Р	Т	Ν	F	F	Р	Ν	F	F	-	-	-	-	-	-	-	-	-	-	
IBD malting approval for grain distilling use	N	Ν	Ν	N	Ν	Ν	Ν	Ν	N	Ν	Ν	F	Ν	-	-	-	-	-	-	-	-	-	-	
Overseas malting	-	-	-	Υ	-	-	Υ	-	[Y]	-	Υ	-	Υ	-	-	-	-	-	-	-	-	-	-	
Grain quality																								
Specific weight (kg/hl)	66.7	67.7	67.4	67.3	67.9	66.7	67.7	66.8	68.4	67.2	68.3	68.3	70.1	66.1	67.3	66.1	67.7	66.6	67.3	66.2	66.6	67.6	70.0	0.9
Sieving % through 2.25 mm	[2.7]	1.3	1.9	1.2	1.9	[2.7]	1.9	1.4	1.4	1.3	1.8	1.6	1.6	[2.4]	[4.2]	[1.9]	[2.8]	[1.9]	[1.1]	[3.0]	[1.5]	-	1.4	0.5
Sieving % through 2.50 mm	[5.2]	3.4	3.9	2.4	3.7	[5.8]	4.5	2.9	2.7	3.2	3.8	3.7	4.5	[4.8]	[9.0]	[4.6]	[7.0]	[3.6]	[2.3]	[6.7]	4.1	-	3.0	1.1
Nitrogen content (%)	1.44	1.44	1.44	1.52	1.50	1.51	1.55	1.53	1.50	1.46	1.48	1.55	1.52	1.49	[1.45]	1.46	[1.53]	1.50	1.46	[1.39]	-	-	-	0.06
Status in RL system																								
Year first listed	13	12	12	10	12	13	07	11	09	11	05	08	95	13	13	13	13	13	13	13	10	05	05	
RL status	P1	P2	P2	-	P2	P1	-	-	-	-	-	-	-	P1	P1	P1	P1	P1	P1	P1	-	-	-	

Varieties no longer listed: Oxbridge and Summit.

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

UK = recommended for the UK

NE = recommended for the North East region (includes Northern Ireland, North Wales, North West England and West Scotland) F = full IBD approval

P = provisional IBD approval

T = under test

Y = suited to that market

[Y] = may be suited to that market

N = not suited to that market

[] = limited data

P1 = first year of recommendation

P2 = second year of recommendation

C = yield control

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

Spring barley 2013 Yield, agronomy and disease resistance

																							-	
RECOMMENDED	NEW			С		NEW	С		С		С		С	NEW	NEW	NEW	NEW	NEW	NEW	NEW			1	- Lacery
HGCA	Sanette	Odyssey	Chronicle	Propino	Overture	Glassel	Quench	Shuffle	Concerto	Moonshine	NFCTipple	Belgravia	Optic	Tesla	Crooner	KWS Orphelia	Kelim	Natasia	Montoya	Rhyncostar	Garner	Waggon	Westminster	Average LSD (5%)
End-use group	Maltir	ng varie	ties											Feed v										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	NE	UK	NE	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Fungicide treated grain yield (% trea	ated contr	ol)																						
United Kingdom (7.2 t/ha)	109	106	104	104	103	103	103	102	100	100	99	98	94	106	106	106	105	105	104	104	103	103	96	2.5
East region (7.2 t/ha)	[109]	107	101	103	104	[102]	104	102	102	[101]	98	100	93	[106]	[102]	[107]	[106]	[104]	[106]	[103]	104	100	96	3.2
West region (7.4 t/ha)	[109]	106	105	104	104	[103]	103	102	100	100	99	100	94	[108]	[107]	[106]	[106]	[105]	[104]	[101]	104	103	98	3.2
North region (7.1 t/ha)	108	106	105	104	103	103	102	102	99	100	100	97	95	106	107	105	103	106	103	106	103	104	96	2.3
Untreated grain yield as % treated c	ontrol in	compara	able trial:	s																				
UK without fungicide	95	92	91	92	94	92	90	90	89	87	86	88	78	95	95	94	93	95	90	91	92	91	87	3.2
Agronomic features																								
Resistance to lodging	[7]	[5]	[7]	8	[7]	[7]	7	8	6	7	7	7	7	[6]	[7]	[7]	[8]	[7]	[6]	[6]	8	8	6	1.5
Straw height (cm)	71	72	73	75	74	71	71	76	77	71	68	76	74	74	65	70	77	71	69	69	73	73	81	1.6
Ripening (+/- Optic, -ve = earlier)	+2	+2	+1	+1	+2	+1	+1	+1	+1	0	0	+1	0	+1	+1	0	+2	0	+1	0	0	-1	+1	0.7
Resistance to brackling	8	8	8	8	7	9	8	8	7	7	8	8	5	6	9	8	9	6	7	9	8	8	7	1.2
Disease resistance																								
Mildew	9	9	8	8	8	9	9	9	8	8	7	9	5	9	8	8	9	9	9	9	9	9	9	0.9
Yellow rust	7	7	7	4	7	8	5	6	7	7	5	7	8	6	8	8	4	4	4	5	7	6	7	1.7
Brown rust	4	4	5	5	6	5	4	4	6	4	6	6	7	5	5	5	5	5	4	5	5	5	6	2.6
Rhynchosporium	6	7	6	7	6	4	7	6	4	4	4	7	3	7	5	7	6	6	6	7	7	3	7	1.5
Ramularia	8	6	7	6	6	5	5	6	6	5	6	7	5	7	6	5	7	7	6	3	5	7	7	1.7

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

NE = specific recommendation for the North East region (includes Northern Ireland, North Wales, North West England and West Scotland)

[] = 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 2013 - Supplementary data

RECOMMENDED	NEW			С		NEW	С		С		С		С	NEW	NEW	NEW	NEW	NEW	NEW	NEW				
HGCA	Sanette	Odyssey	Chronicle	Propino	Overture	Glassel	Quench	Shuffle	Concerto	Moonshine	NFCTipple	Belgravia	Optic	Tesla	Crooner	KWS Orpheli	Kelim	Natasia	Montoya	Rhyncostar	Garner	Waggon	Westminster	Average LSD (5%)
End-use group	Malti	ng varie	ties											Feed										
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	NE	UK	NE	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Breeder/ UK contact																								
Breeder	SCP	Lim	Lim	SCP	Lim	SCP	SCP	SCP	Lim	RAGT	SCP	Lim	SCP	Lim	Sec	KWS	SCP	Sej	SU	Sec	SCP	SCP	Lim	
UK contact	SS	Lim	Lim	SS	Lim	SS	SS	SS	Lim	RAGT	SS	Lim	SS	Lim	Agr	KWS	SS	KWS	SU	Agr	SS	SS	Lim	
Grain yield as % treated control																								
2008 treated (7.6 t/ha)	-	-	-	103	-	-	102	102	103	98	99	101	94	-	-	-	-	-	-	-	102	106	100	3.2
2009 treated (7.7 t/ha)	-	103	103	106	103	-	103	104	99	99	99	97	94	-	-	-	-	-	-	-	104	102	95	3.2
2010 treated (7.1 t/ha)	107	104	102	103	102	103	103	101	100	100	100	100	94	105	106	106	103	101	104	104	102	102	93	3.4
2011 treated (7.0 t/ha)	109	110	106	103	103	103	104	105	99	99	99	[98]	96	107	105	105	107	106	104	106	105	102	98	3.1
2012 treated (6.4 t/ha)	111	104	103	105	104	103	102	98	101	101	98	95	94	107	107	106	103	106	104	103	103	103	97	2.9
Malting quality																								
Hot water extract (I deg/kg)	314.7	313.9	315.0	314.0	316.1	313.1	313.0	312.9	315.8	313.3	312.3	312.1	312.4	314.2	311.4	313.0	311.4	311.8	314.5	313.6	-	-	-	1.5

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

UK = recommended for the UK

NE = recommended for the North East region (includes Northern Ireland, North Wales, North West England and West Scotland)

[] = limited data

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)

Sec = Secobra, France

Sej = Sejet, Denmark

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

SCP = Syngenta Crop Protection (www.syngenta.co.uk)

SS = 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 2013 – 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)	Brown rust (1-9)	Rhynchosporium (1-9)	Specific weight (kg/hl)	UK contact
Control varieties												
Propino	2336	103	86	-	77	+1	11	8	5	7	66.5	
Quench	2121	103	83	-	73	+2	14	9	4	7	66.3	
Concerto	2288	100	81	-	78	+2	18	8	6	4	67.6	
NFCTipple	1966	99	80	-	70	+1	17	7	6	4	67.2	
Optic	1188	95	72	-	76	+0	44	5	7	3	69.3	
Selected as potential malting va	rieties											
KWS Irina (KWS 09/320)	2613	111	86	-	70	[+1]	[13]	9	5	6	64.9	KWS UK
Shada (SY 410-235)	2642	109	91	-	69	[+2]	[18]	9	7	4	64.2	Syngenta Seeds
Shaloo (SY 410-256)	2646	109	89	-	75	[+1]	[19]	9	4	9	66.8	Syngenta Seeds
KWS Aurelia (KWS 09/330)	2614	108	83	-	70	[+1]	[24]	9	6	5	64.3	KWS UK
Hacker (SC 85677)	2627	107	88	-	76	[+1]	[14]	9	7	7	68.3	Agrii
Kerstin (NORD 09/2421)	2620		Da	ta unavaila	ble as varie	ty has not	completed N	National Lis	ting			Saaten Union UK
Artisan (SJ107856)	2631	105	84	-	73	[0]	[37]	9	5	8	64.1	Senova
Melius (SY 409-228)	2641	105	88	-	75	[0]	[19]	8	6	7	66.5	Syngenta Seeds
Mary (AC 07/611/49)	2622	105	86	-	73	[+1]	[16]	9	6	6	65.8	Saaten Union UK
Alveston (SY 410-254)	2644		Da	ta unavaila	ble as varie	ty has not o	completed N	National Lis	ting			Syngenta Seeds
Renaissance (NSL10-8320-A)	2608	104	84	-	76	[0]	[17]	9	5	6	66.8	Limagrain UK
Malt Jagger (SC 85068)	2626	102	82	-	70	[+1]	[12]	9	6	8	66.5	Agrii
Mean of controls (t/ha)		6.7	5.4	_	-	-	-	_	-	_		
LSD 5%		4.5	6.3	_	1.7	1.1	9.6	-	-		0.9	
No. of trials		22	12	-	18	18	10	-	-	-	10	

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

[] = limited data

T = data from trials treated with fungicide

UT = data from trials without fungicide or PGR

Candidate varieties will be considered for the 2014/15 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.

Spring barley varieties grown in RL trials in 2012 but not added to the HGCA Recommended List

	Control v	arieties				Other var	rieties				
HGCA	Propino	Quench	Concerto	NFCTipple	Optic	Sparkle	Pinocchio	Acclaim	Magellan	Momentum	Average LSD (5%)
Fungicide treated grain yield (% treated control)											
United Kingdom (7.2 t/ha)	104	103	100	99	94	105	104	104	103	103	2.5
East region (7.2 t/ha)	103	104	102	98	93	[105]	[103]	[103]	[101]	[101]	3.2
West region (7.4 t/ha)	104	103	100	99	94	[104]	[105]	[103]	[104]	[101]	3.2
North region (7.1 t/ha)	104	102	99	100	95	105	104	104	103	104	2.3
Untreated grain yield (% treated control in comparable trials)											
United Kingdom	92	90	89	86	78	94	92	89	90	89	3.2
Grain quality											
Specific weight (kg/hl)	67.3	67.7	68.4	68.3	70.1	65.8	68.6	67.4	69.1	66.8	0.9
Sieving % through 2.25 mm	1.2	1.9	1.4	1.8	1.6	[1.7]	[2.2]	[3.3]	[2.2]	[3.1]	0.5
Sieving % through 2.50 mm	2.4	4.5	2.7	3.8	4.5	[3.1]	[4.8]	[6.8]	[4.6]	[6.6]	1.1
Nitrogen content (%)	1.52	1.55	1.50	1.48	1.52	1.46	1.52	1.39	1.47	1.44	0.06
Agronomic features											
Resistance to lodging	8	7	6	7	7	[7]	[6]	[6]	[6]	[6]	1.5
Straw height (cm)	75	71	77	68	74	73	76	69	71	71	1.6
Ripening (+/- Optic, -ve = earlier)	+1	+1	+1	0	0	+1	0	0	0	+1	0.7
Resistance to brackling	8	8	7	8	5	7	7	6	6	8	1.2
Disease resistance											
Mildew	8	9	8	7	5	9	8	9	9	9	0.9
Yellowrust	4	5	7	5	8	6	6	6	6	7	1.7
Brown rust	5	4	6	6	7	5	5	5	5	5	2.6
Rhynchosporium	7	7	4	4	3	6	6	6	6	5	1.5
Ramularia	6	5	6	6	5	7	4	4	6	5	1.7

This table should be read in conjunction with the HGCA Recommended List of Spring Barley for 2013.

[] = limited data

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

Malting varieties

Belgravia

Malt distilling Grain distilling

Quality: Malt and grain distilling and recommended for the North East region.

Agronomy: Has high resistance to mildew and rhynchosporium.

MAGB comment: Full IBD Approval for malt and grain distilling.

UK spring malting barley market share: 4% (2011), 8% (2012).

Chronicle

Quality: Brewing and

Provisional

Brewing

Malt distilling

malt distilling potential.

Agronomy: A high-yielding variety with high resistance to mildew. Limited data suggest the variety has high resistance to lodging.

MAGB comment: Provisional IBD Approval for brewing and malt distilling.

Concerto

Brewing

Malt distilling

Quality: Brewing and malt distilling.

Agronomy: Has high resistance to mildew but is susceptible to rhynchosporium.

MAGB comment: Full IBD Approval for brewing and malt distilling.

UK spring malting barley market share: 28% (2011), 43% (2012).

NEW Glassel

Quality: Added to the Recommended List for 2013/14 as a variety with malt distilling potential.

Agronomy: It has given high treated yields in fungicide treated and untreated trials. It has shown high resistance to mildew and yellow rust but is susceptible to rhynchosporium. On limited data, it appears to have good resistance to lodging and brackling.

MAGB comment: Variety under test.

Moonshine

Quality: Malt distilling potential.

Provisional Malt distilling

Agronomy: Has short straw of moderate strength and high resistance to mildew but is susceptible to brown rust and rhynchosporium. It has shown earlier ripening characteristics than other malt distilling varieties. MAGB comment: Provisional IBD Approval for malt distilling.

NFC Tipple

Brewing

Quality: A malting variety for brewing and suitable for export malting markets.

Agronomy: Has short straw and good lodging resistance but is susceptible to rhynchosporium.

MAGB comment: Full IBD Approval for brewing. UK spring malting barley market share: 26% (2011), 21% (2012).

Ramularia leaf spot in barley

Varietal resistance ratings for ramularia leaf spot have been produced for the first time for spring barley varieties. No variety shows excellent resistance to the disease. The disease is endemic in all major barley growing areas of Europe. In the UK, it is more common in the north. Risk factors include leaf wetness in May followed by environmental



For more information on Ramularia, see HGCATopic Sheet 109 (www.hgca.com/publications).

Odvssev

Quality: Potential

Brewing

Provisional Malt distilling

brewing and malt distilling

Agronomy: High yielding with high resistance to mildew and rhynchosporium but susceptible to brown rust. Limited data suggest Odyssey has medium lodging resistance. MAGB comment: Provisional IBD Approval for brewing and malt distilling.

Overture

Quality: Potential

Provisional

Brewing

Malt distilling

brewing and malt distilling

Agronomy: Has high resistance to mildew and has given relatively high yields in untreated trials. Limited data suggest Overture has good lodging resistance.

MAGB comment: Provisional IBD Approval for brewing and malt distilling.

Optic

Brewing

Malt distilling

Quality: Brewing and malt distilling and also suitable for export as a malting variety. Optic has a high specific weight and remains an important malting variety, especially in Scotland. Agronomy: Its yield potential is now significantly lower than newer varieties. It has high resistance to yellow rust but is susceptible to mildew and very susceptible to rhynchosporium. It also has a tendency to brackle. MAGB comment: Full IBD Approval for brewing and malt distillina.

UK spring malting barley market share: 21% (2011), 12% (2012).

Additions to the IBD approved malting barley list

Institute of Brewing & Distilling

Shuffle has been granted Full Approval for malt distilling and Provisional Approval 2 for brewing.

Moonshine has been granted Provisional Approval 2 for malt distilling.

Chronicle, Odyssey and Overture have been granted Provisional Approval 1 for brewing and malt distilling.

Spring barley 2013 – Variety comments

Propino

Quality: A malting variety for brewing, suitable for UK and export malting markets.

Agronomy: High yielding with high resistance to mildew and rhynchosporium but is susceptible to yellow rust. MAGB comment: Full IBD Approval for brewing UK spring malting barley market share: 4% (2011), 8% (2012).

Ouench

Brewing

Quality: A malting variety for brewing, suitable for UK and export malting markets.

Agronomy: Has short, stiff straw and high resistance to mildew and rhynchosporium but is susceptible to brown rust.

MAGB comment: Full IBD Approval for brewing. UK spring malting barley market share: 6% (2011), 1% (2012).

NEW Sanette

Quality: Added to the Recommended List for 2013/14 as a very high-yielding variety with brewing potential.

Agronomy: Has given very high treated yield, 2% higher than the next best quality or feed variety and a relatively high untreated yield. It has shown high resistance to mildew and ramularia but is susceptible to brown rust. MAGB comment: Variety under test.

Shuffle

Provisional Brewing

Approved

Malt distilling

Quality: A variety with malting potential for

brewing and malt distilling.

Agronomy: Has high resistance to mildew but is susceptible to brown rust. Limited data suggest the variety has high resistance to lodging.

MAGB comment: Provisional IBD Approval for brewing. Full IBD Approval for malt distilling.

Two-row feed varieties

NEW Crooner

Quality: Added to the Recommended List for 2013/14 as a feed variety.

Agronomy: A high-yielding variety which has also given relatively high yields in untreated trials. It has short straw and good resistance to brackling. It has high resistance to mildew and yellow rust but is susceptible to rhynchosporium.

Garner

Quality: Earlier than most varieties, it has stiff straw and high resistance to mildew and rhynchosporium.

NEW Kelim

Quality: Added to the Recommended List for 2013/14 as a feed variety.

Agronomy: A high-yielding but later-maturing variety with stiff straw and good resistance to brackling. It has high resistance to mildew but is susceptible to yellow rust.

NEW KWS Orphelia

Quality: Added to the Recommended List for 2013/14 as a feed variety.

Agronomy: A high-yielding variety which is earlier maturing than most varieties. It has high resistance to mildew, rhynchosporium and yellow rust and has given relatively high yields in untreated trials.

NEW Montova

Quality: Added to the Recommended List for 2013/14 as a feed variety.

Agronomy: A high-yielding variety, it has high resistance to mildew but is susceptible to yellow rust and brown rust.

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

NEW Natasia

Quality: Added to the Recommended List for 2013/14 as a feed variety.

Agronomy: A high-yielding variety. It has high resistance to mildew but is susceptible to yellow rust. It has given relatively high yields in untreated trials.

NEW Rhyncostar

Quality: Added to the Recommended List for 2013/14 as a feed variety. It has a moderate specific weight.

Agronomy: It has a high yield and is earlier maturing than most varieties. It has high resistance to mildew and rhynchosporium but low resistance to ramularia.

NEW Tesla

Quality: Added to the Recommended List for 2013/14 as a feed variety. It has a moderate specific weight.

Agronomy: It has a high yield and high resistance to mildew and has given relatively high yields in untreated trials.

Waggon

Quality: A feed variety.

Agronomy: Has stiff straw and high resistance to mildew but is very susceptible to rhynchosporium.

Westminster

Quality: A medium-tall feed variety with a high specific weight.

Agronomy: It remains popular with feed growers due to its combination of longer than average straw and good disease characteristics but is lower yielding compared with other feed varieties and its treated yield potential is around 13% below the highest-yielding varieties. It has high resistance to mildew and rhynchosporium.

Control of ramularia leaf spot in a changing climate (CORACLE)

HGCA is co-funding a four-year project investigating ramularia. It includes developing forecasts to optimise fungicide application timings, an investigation of seed infection and monitoring the sensitivity of the fungus to major fungicides. Ramularia has become more prevalent in recent years, possibly due to a longer growing season allowing the disease to reach further up the plant. Results from 2012 have shown that ramularia is still sensitive to prothioconazole and SDHIs. HGCA Project: RD-2008-3441

Winter oats 2013/14



RECOMMENDED		С	С	*	С			
HGCA	Balado \$	Dalguise	Gerald	Tardis	Mascani ~	Fusion \$	Grafton	Average LSD (5%)
Variety type	Husked v	varieties				Naked varie	eties	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	
UK yield (% treated control)								
Fungicide treated (8.1t/ha)	106	102	101	99	97	76	73	4.8
Grain quality								
Kernel content (%)	72.9	75.6	73.2	72.4	78.0	-	-	1.0
Specific weight (kg/hl)	49.3	53.9	52.6	50.5	53.8	63.0	63.8	1.3
Screenings % through 2.0 mm	3.8	4.6	3.4	[4.7]	2.0	40.3	15.8	5.6
Agronomic features								
Resistance to lodging	9	4	6	7	6	9	6	0.9
Straw length (cm)	87	116	113	106	112	85	114	2.8
Ripening (days +/- Gerald, -ve = earlier)	+1	-2	0	-2	-1	+1	-2	1.2
Disease resistance								
Mildew	4	4	3	8	6	3	4	1.3
Crown rust	[3]	[3]	[6]	[7]	[8]	[3]	[5]	4.0
Breeder/UK contact								
Breeder	IBERS	Sen	IBERS	IBERS	IBERS	IBERS	IBERS	
UK contact	Sen	Sen	Sen	Sen	Sen	Sen	Sen	
Status in RL system								
Year first listed	10	03	93	07	04	10	00	
RL status	-	-	-	-	-	-	-	

Beacon
Naked
Candidate
72
-
65.5
15.4
[6]
110
[-1]
9
[5]
IBERS
Sen
-
-

Varieties no longer listed: Hendon and Brochan.

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

* = variety no longer in trial

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

Dalguise

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

Gerald

A husked variety. Its treated yield is 5% below the highestyielding variety but it remains one of the most popular winter oat varieties, taking a provisional 23% share of certified seed production in 2012. It remains popular with millers due to its consistent grain quality. Gerald is susceptible to mildew.

Mascani

A husked variety which, with a provisional 52% share of 2012 certified seed production, has overtaken Gerald as the most popular winter oat variety both with millers and growers. It has a fungicide-treated yield 4% below Gerald but has better quality characteristics: high kernel content and good specific weight. Mascani has the best available winter oat resistance to crown rust, though a race exists to which it could be susceptible. Its straw stiffness is similar to Gerald and it is less susceptible to mildew.

Tardis

A husked variety with yields between Gerald and Mascani. It is early maturing and has short straw with above average resistance to lodging. Tardis has high resistance to mildew but tends to give low specific weights and kernel contents. It is no longer in RL trials.

Naked varieties

Fusion

A huskless (naked) oat variety with short, very stiff straw. Naked oats yield 27-30% below the highest-yielding husked varieties. Fusion has given yields 3% above Grafton with similar specific weights. It is susceptible to mildew and (on limited data) 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.

HGCA's All About Oats consumer marketing campaign aims to raise awareness of the



benefits of oats as part of a healthy balanced diet. For more information, visit www.allaboutoats.com

Spring oats 2013 – Variety comments

Husked varieties

Ascot

A high-yielding husked variety. It has a treated yield 4% higher than Firth but with a lower specific weight. It has the highest lodging resistance on the Recommended List despite relatively long straw. It is relatively late maturing.

Atego

A husked variety that is early maturing but very susceptible to mildew and with a moderate specific weight.

Canyon

A high-yielding husked variety. It is relatively long-strawed but has good lodging resistance and is early ripening, has high resistance to mildew and good kernel content.

Firth

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

Husky

A husked variety. It is early maturing and has a good specific weight and kernel content. It has above average resistance to mildew. Crown rust infections have been low in recent years and there are now insufficient data to give a rating but it was previously rated as susceptible.

Rozmar

A husked variety with early ripening. It is early maturing, has a treated yield 1% higher than Firth but with a lower kernel content and specific weight.

SW Argyle

A husked variety. Crown rust infections have been low in recent years and there are now insufficient data to give a rating but it was previously rated as having high resistance. It is relatively late maturing.

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 28% below that of the conventional husked varieties Ascot and Canyon. It is early maturing and has a high specific weight.

Spring oats 2013

RECOMMENDED



	C*			С	ø.		С					
HGCA	Ascot	Canyon	Rozmar	Ŧ <u>i</u>	SW Argyle	Atego	Husky	Average LSD (5%)	Lennon	Monaco	Conway	Gabby
Variety type	Huske	d varieties							Naked variety	Husked var		
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK		-	Candidate	Candidate	Candidate
UK yield (% treated control)												
Fungicide treated (7.6 t/ha)	103	103	100	99	99	98	98	4.4	[73]	[105]	[103]	[102]
Untreated as % of treated	88	94	86	88	87	81	86	5.6	[66]	[85]	[91]	[85]
Grain quality												
Kernel content (%)	77.0	76.0	74.9	78.4	76.1	75.8	77.7	1.1	-	[74]	[77]	[77]
Specific weight (kg/hl)	52.3	54.0	52.8	53.3	52.7	52.6	54.5	0.9	63.7	[50.1]	[53.9]	[53.0]
Screenings % through 2.0 mm	0.5	0.4	0.9	0.8	0.4	1.1	0.8	1.3	14.9	[2.0]	[0.7]	[1.4]
Agronomic features												
Resistance to lodging	8	7	6	6	7	7	7	1.3	7	[7]	[7]	[8]
Straw length (cm)	110	113	109	103	107	101	105	2.6	100	100	104	107
Ripening (days +/- Firth, -ve = earlier)	+1	-2	-2	0	+1	-3	-4	1.9	-3	[-2]	[0]	[-1]
Disease resistance												
Mildew	6	8	5	7	6	3	7	0.8	7	4	7	3
Crown rust @	-	-	-	-	-	-	-	-	-	-	-	-
Breeder/UK contact												
Breeder	Wier	Nord	Selg	KWS-L	LSW	Selg	Nord		IBERS	SF	IBERS	Bor
UK contact	Lim	SU	Cope	KWS	Sen	Cope	SU		Sen	Sen	Sen	Sen
Status in RL system												
Year first listed	07	11	11	00	03	07	08		-	-	-	-
RL status	-	-	-	-	-	-	-		-	-	-	-
									Lennon is a naked			

Varieties no longer listed: none.

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

Lennon is a naked variety that is not eligible for recommendation.

UK = recommended for the UK

[] = limited data

@ = no data available

C = yield control

e = yicia control

* = variety no longer in trial

Bor = Boreal Plant Breeding, Finland

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

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

Wier = Wiersum, Netherlands

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

Winter oilseed rape 2013/14 – East/West region Yield, quality and agronomic data



RECOMMENDED		NEW	NEW	NEW	NEW	С			NEW	NEW						C*	*	C*	*	*	C*	*			⊗ #	*	*
HGCA	PR46W21	Marathon	PT211	Avatar	Rivalda	DK Cabernet	Sesame	DK Camelot	Troy #	Quartz	Compass	Rhino	DK Expower	Fashion	Thorin #	Excalibur	Dimension	Vision	PR45D05#	DK Sequoia #	Flash	Cash	Cracker \$	Average LSD (5%)	DK Imagine CL	Eraton @	V1410L ~
	D11	D		D							-	D11			-				-		D					/arieties	
Variety type	RH	RH	RH	RH	Conv	Conv	Conv	Conv	RH	Conv	RH	RH	RH	Conv	RH	RH	RH	Conv	RH	RH	RH	Conv	RH		RH	RH	Conv
Scope of recommendation	EW	EW	UK	EW	EW	EW	EW	EW	Sp	EW	UK	EW	EW	UK	Sp	UK	EW	EW	Sp	Sp	UK	EW	Sp		CLEAR	HEAR	HOLL
Gross output (yield adjusted for oil cor								100	100	100		100					100										
Fungicide treated (5.4 t/ha)	106	105	104	104	103	103	103	102	102	102	102	102	101	101	100	100	100	99	98	98	98	97	95	4.0	97	96	87
Seed yield as % control																											
Fungicide treated (5.0 t/ha)	103	105	103	102	103	102	103	101	102	101	100	101	100	101	100	100	97	100	99	98	98	96	95	3.6	98	93	87
Agronomic features																											
Resistance to lodging	8	8	8	8	8	8	8	7	8	8	8	8	7	8	8	7	[8]	8	8	8	8	8	8	0.3	8	[8]	[8]
Stem stiffness	8	8	8	8	7	9	8	7	9	7	8	8	6	8	9	7	8	8	9	9	7	8	8	0.5	9	7	6
Shortness of stem	6	7	6	6	7	7	6	8	8	7	6	7	7	6	9	7	6	7	9	8	6	7	6	0.3	9	6	7
Earliness of flowering	7	8	6	8	7	5	6	7	6	5	6	7	7	7	6	8	7	6	6	4	6	6	7	0.4	4	8	6
Earliness of maturity	5	5	5	6	4	4	4	6	5	5	5	6	6	5	5	7	5	5	5	6	4	6	5	0.5	6	6	6
Seed quality (at 9% moisture)																											
Oil content, fungicide treated (%)	46.3	44.4	45.6	45.8	44.7	45.3	44.3	45.8	44.8	45.5	46.3	45.2	45.0	44.8	44.9	44.8	46.3	44.1	44.3	44.2	44.5	45.4	44.6	0.34	44.4	47.2	45.2
Glucosinolate (µmoles/g of seed)	12.6	10.9	10.6	10.1	12.2	10.1	12.8	10.5	12.0	10.4	9.7	10.0	11.8	11.9	11.2	17.4	12.1	13.8	10.1	11.5	13.0	13.1	10.4		10.6	11.0	17.7
Disease resistance																											
Light leaf spot	5	5	6	5	5	6	6	5	6	5	6	6	6	6	6	6	5	6	6	6	5	5	8	0.9	6	5	7
Stem canker	4	[3]	[5]	[4]	[5]	5	4	[5]	[4]	[9]	4	4	[8]	4	[4]	4	[5]	5	4	4	4	7	4	1.5	[5]	[5]	[6]
Status in RL system																											
Year first listed	09	13	13	13	13	10	11	12	13	13	11	11	12	10	12	06	09	09	11	11	08	11	12		-	-	-
RL status	-	P1	P1	P1	P1	-	-	P2	P1	P1	-	-	P2	-	P2	-	-	-	-	-	-	-	P2		-	-	-

Varieties no longer listed in the East/West region: Palace, Expert, Lioness, ES Astrid, Hammer, PR45D03, Castille and Mendel.

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.

RH = restored hybrid

Conv = conventional open-pollinated

- = Eraton is a high erucic acid (HEAR) variety
- = V141OL is a high oleic, low linolenic (HOLL) variety
- # = Troy, Thorin, PR45D05, DK Sequoia and DK Imagine CL are 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
- \$ = 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
- & = DK Imagine CL is a Clearfield® variety with tolerance to specific imidazolinone
- UK = recommended for both the East/West and North regions
- EW = recommended for the East/West region Sp = specific recommendation

[] = limited data

P1 = first year of recommendation P2 = second year of recommendation

* = variety no longer in trial in region

C = yield control

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

Winter oilseed rape 2013/14 - East/West region Supplementary data



									NEW						C*		C*		-	C*				**	-	
HGCV PR46W2	Marathon	PT211	Avatar	Rivalda	DK Cabernet	Sesame	DK Camelot	Troy #	Quartz	Compass	Rhino	DK Expower	Fashion	Thorin #	Excalibur	Dimension	Vision	PR45D05#	DK Sequoia #	Flash	Cash	Cracker	Average LSD (5%)	DK Imagine CL	Eraton	V1410L
	N. I	DU	DII	0	0		0	DII	0	DIL	DIII	DIL	0	DIII	DU	DII	0	DU	DIII	DII	0	DII			varieties	
7 71		RH	RH	Conv	Conv	Conv	Conv	RH	Conv	RH	RH	RH	Conv	RH	RH	RH	Conv	RH	RH	RH	Conv	RH		RH	RH	Conv
	W	UK	EW	EW	EW	EW	EW	Sp	EW	UK	EW	EW	UK	Sp	UK	EW	EW	Sp	Sp	UK	EW	Sp		CLEAR	HEAR	HOLL
Breeder/ UK contact																										=
1111			LSPB	KWS	DK	LSPB	DK	LSPB	KWS	DSV	KWS	DK	LSW	LSPB	DK	DSV	LSW	DP	DK	DSV	KWS	LSPB		DK	LSPB	DK
	-		LSPB	KWS	DK	LSPB	DK	DSV	KWS	DSV	KWS	DK	Sen	LSPB	DK	DSV	Sen	DP	DK	DSV	KWS	LSPB		DK	KWS	DK
Annual treated gross output (yield adjusted for oil	conte	ent) as 🤈	% contr	ol																						
2009 (5.6 t/ha) 104	-	-	-	105	102	109	105	-	-	103	101	99	101	102	97	99	101	94	97	100	98	95	6.0	-	100	88
2010 (5.5 t/ha) 107 10	04	106	108	102	102	101	104	101	107	103	103	105	100	100	102	100	98	101	98	97	96	94	6.3	97	100	88
2011 (6.0 t/ha) 105 10	07	104	106	102	105	99	101	105	102	100	100	103	99	102	103	98	96	96	99	96	95	95	5.0	99	92	-
2012 (4.4 t/ha) 104 10	04	105	100	104	101	102	100	101	99	100	103	96	101	97	97	-	104	102	95	98	98	94	5.6	96	-	-
Agronomy																										
Plant height (cm) 163 15	52	160	156	150	153	160	142	139	146	163	149	156	156	130	154	163	153	126	135	163	155	161	3.2	131	158	154
Harvest method – gross output (yield adjusted for	r oil coi	ntent) a	as % co	ntrol																						
Swathed (5.6 t/ha) 106 10	03	103	[104]	104	104	104	104	102	104	101	101	102	99	100	100	101	98	94	97	98	98	94	5.6	93	99	88
Desiccated (5.3 t/ha) 106 10	05	104	104	104	104	103	102	103	101	102	103	101	102	102	100	100	99	101	99	97	98	96	3.6	99	96	88

RH = restored hybrid Conv = conventional open-pollinated variety # = Troy, Thorin, PR45D05, DK Sequoia and DK Imagine CL are 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 a Clearfield® variety with tolerance to specific imidazolinone herbicides [] = limited data

UK = recommended for both the East/West and North regions

EW = recommended for the East/West region Sp = specific recommendation

= variety no longer in trial in region

C = yield control

DK = DEKALB (www.dekalb.co.uk)

DP = DuPont Pioneer (www.pioneer.com/uk)

DSV = DSV United Kingdom (www.dsv-uk.co.uk)

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

LSPB = LS Plant Breeding (www.lspb.eu) LSW = Lantmännen SW Seed AB, Sweden

Sen = Senova (www.senova.uk.com)

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

Winter oilseed rape 2013/14 – North region Yield, quality and agronomic data



																			*	on grant	-X
RECOMMENDED	NEW	NEW		NEW	NEW	NEW	NEW	NEW	NEW	NEW			C*			*	C*		*		CL #&
HGCA	Anastasia	Troy#	Compass	PT208	Boheme	Raptor	Pendulum	Shot	PT211	DK Expower	Fashion	Catana	Excalibur	Artoga	Cuillin	Temple	Flash	Cracker \$	PR45D05#	Average LSD (5%)	DK Imagine (
																					Other
Variety type	Conv	RH	RH	RH	Conv	RH	Conv	RH	RH	RH	Conv	Conv	RH	RH	RH	Conv	RH	RH	RH		RH
Scope of recommendation	North	Sp	UK	North	North	North	North	North	UK	UK	UK	North	UK	North	North	North	UK	Sp	Sp		CLEAR
Gross output (yield adjusted for oil co	ntent) as '	% control																			
Fungicide treated (5.2 t/ha)	[106]	[105]	105	[105]	104	104	104	[104]	[104]	103	102	102	101	101	101	101	100	99	99	6.2	[100]
Seed yield as % control																					
Fungicide treated (4.9 t/ha)	[106]	[105]	103	[103]	102	100	102	[101]	[102]	103	101	100	101	101	99	99	99	99	99	5.9	[101]
Agronomic features																					
Resistance to lodging	8	8	8	8	[7]	[8]	[8]	8	8	7	8	[8]	7	[7]	[8]	[8]	8	8	8	0.3	8
Stem stiffness	8	9	8	7	7	8	7	8	8	6	8	8	7	7	[8]	8	7	8	9	0.5	9
Shortness of stem	7	8	6	6	6	6	7	6	6	7	6	6	7	6	6	7	6	6	9	0.3	9
Earliness of flowering	6	6	6	6	7	6	6	6	6	7	7	6	8	6	8	6	6	7	6	0.4	4
Earliness of maturity	5	5	5	6	6	5	5	6	5	6	5	5	7	6	5	6	4	5	5	0.5	6
Seed quality (at 9% moisture)																					
Oil content, fungicide treated (%)	44.1	44.3	45.7	45.4	45.3	46.5	45.1	46.1	45.0	44.2	44.5	45.4	43.8	43.8	44.9	45.2	44.1	44.2	43.7	0.53	43.1
Glucosinolate (µmoles/g of seed)	11.1	12.0	9.7	10.1	11.2	9.2	11.1	8.6	10.6	11.8	11.9	14.3	17.4	11.6	11.4	15.5	13.0	10.4	10.1	-	10.6
Disease resistance																					
Light leaf spot	6	6	6	6	7	6	6	6	6	6	6	7	6	7	9	7	5	8	6	0.9	6
Stem canker	[5]	[4]	4	[6]	[5]	[6]	[4]	[5]	[5]	[8]	4	4	4	5	4	5	4	4	4	1.5	[5]
Status in RL system																					
Year first listed	13	13	11	13	13	13	13	13	13	13	11	08	06	12	09	08	08	12	11		-
RL status	P1	P1	-	P1	P1	P1	P1	P1	P1	P1	-	-	-	P2	-	-	-	P2	-		-

Varieties no longer Listed for the North region: Lioness, Mendel and Palace.

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 National List trials data.

RH = restored hybrid Conv = conventional openpollinated

- # = Troy, DK Imagine CL and PR45D05 are 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
- \$ = 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.
- & = DK Imagine CL is a Clearfield® variety with tolerance to specific imidazolinone herbicides

UK = recommended for both the East/West and North regions

North = recommended for the North Region

Sp = specific recommendation

- P1 = first year of recommendation P2 = second year of recommendation
- [] = limited data
- C = yield control (DK Cabernet and Vision were also yield controls, but are not recommended for the North region)
- * = variety no longer in trial in region

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

Winter oilseed rape 2013/14 – North region Supplementary data



RECOMMENDED	NEW	NEW		NEW	NEW	NEW	NEW	NEW	NEW	NEW			C*			*	C*		*		L#8
HGCA	Anastasia	Troy#	Compass	PT208	Boheme	Raptor	Pendulum	Shot	PT211	DK Expower	Fashion	Catana	Excalibur	Artoga	Cuillin	Temple	Flash	Cracker \$	PR45D05#	Average LSD (5%)	DK Imagine C
		DII	DII	DII		DII		DII	DII	DII			DII	DII	DII	0	DLI	DII	DU		Other
Variety type	Conv	RH	RH	RH	Conv	RH	Conv	RH	RH	RH	Conv	Conv	RH	RH	RH	Conv	RH	RH	RH		RH
Scope of recommendation	North	Sp	UK	North	North	North	North	North	UK	UK	UK	North	UK	North	North	North	UK	Sp	Sp		CLEAR
Breeder/ UK contact	Line	LCDD	DCV	DD	CCD	DCV	Line	DCV	DD	DK	1.0\4/	DK	DK	Line	KINC	- FI-	DCV	I CDD	DD		DK
Breeder	Lim	LSPB	DSV	DP	SCP	DSV	Lim	DSV	DP	DK	LSW	DK	DK	Lim	KWS	Els	DSV	LSPB	DP		DK
UK contact	Lim	DSV	DSV	DP	SS	DSV	Lim	DSV	DP	DK	Sen	DK	DK	Lim	KWS	Els	DSV	LSPB	DP		DK
Annual treated gross output (yield		r on conter		ontrol	[407]	[444]	[440]			[440]	[00]	[07]	[400]		[07]	1001	[400]		1001	44.5	
2009 (5.1 t/ha)	-	-	[105]	-	[107]	[111]	[110]	-	-	[113]	[99]	[97]	[102]	-	[97]	[92]	[106]	-	[88]	14.5	-
2010 (5.7 t/ha)	[105]	[105]	[109]	[100]	[103]	[98]	[100]	[102]	[107]	[94]	[102]	[102]	97	[105]	[104]	[102]	99	[98]	[100]	9.2	[97]
2011 (5.6 t/ha)	[107]	[108]	[103]	[106]	[103]	[104]	[102]	[105]	[104]	[111]	[101]	[103]	106	[100]	[103]	[100]	95	[104]	[102]	8.4	[104]
2012 (4.3 t/ha)	[108]	[104]	[101]	[108]	[105]	[107]	[107]	[104]	[103]	[98]	[102]	[102]	[100]	[98]	[93]	[105]	[101]	[96]	[101]	9.9	[98]
Agronomy																					
Plant height (cm)	150	139	163	161	157	162	155	163	160	156	156	156	154	163	160	152	163	161	126	3.4	131
Harvest method - gross output (yie	eld adjusted	for oil con	tent) as %	control	>																
Swathed (5.3 t/ha)	[108]	[103]	[101]	[101]	[102]	[101]	[102]	[96]	[96]	[107]	[99]	[101]	104	[102]	[101]	[97]	102	[98]	[99]	13.1	[97]
Desiccated (5.2 t/ha)	107	106	106	106	105	106	105	106	105	102	103	103	101	99	101	102	98	101	100	5.9	101

Conv = conventional open-pollinated

RH = restored hybrid

= limited data

= Troy, DK Imagine CL and PR45D05 are 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

- \$ = 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
- & = DK Imagine CL is a Clearfield® variety with tolerance to specific imidazolinone herbicides

UK = recommended for both the East/West and North regions

North = recommended for the North Region

- Sp = specific recommendation
 - = yield control (DK Cabernet and Vision were also yield controls, but are not recommended for the North region)
 - = variety no longer in trial in region

DK = DEKALB (www.dekalb.co.uk)

= DuPont Pioneer (www.pioneer.com/uk)

DSV = DSV United Kingdom (www.dsv-uk.co.uk)

Els = Elsoms Seeds (www.elsoms.com)

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

Lim = Limagrain UK (www.limagrain.co.uk) LSPB = LS Plant Breeding (www.lspb.eu)

LSW = Lantmännen SW Seed AB, Sweden

SCP = Syngenta Crop Protection (www.syngenta.co.uk)

Sen = Senova (www.senova.uk.com)

SS = Syngenta Seeds (www.syngenta.co.uk)

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

Winter oilseed rape trials harvest 2013 – 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)	UK contact
Control varieties													
Vision	1953	Conv	102	103	43.9	7	7	146	5	6	5	6	
DK Cabernet	2019	Conv	102	102	44.7	8	8	148	4	6	6	7	
Excalibur	1684	RH	99	99	44.1	6	5	147	7	7	6	6	
Flash	1907	RH	96	96	44.3	7	5	157	5	6	5	5	
Candidate varieties													
Charger (MH 05 HA 005)	2402	Conv	110	110	44.0	8	8	139	7	6	4	5	KWS UK
Incentive (RAP 1024)	2368	RH			Data unav	ailable as v	ariety has	not complet	ted Nationa	l Listing			DSV UK
RG2014	2438	Conv			Data unav	ailable as v	ariety has	not complet	ted Nationa	l Listing			Bayer CropScience
Harper (RG27015)	2439	RH	106	104	45.3	7	6	154	7	7	6	8	Bayer CropScience
Trinity (SWO3085)	2440	Conv			Data unav	ailable as v	ariety has	not complet	ted Nationa	l Listing			Elsoms
Ginfizz (HR-38.105)	2371	RH	105	105	44.3	8	7	149	7	7	5	7	RAGT
PX109 (X10W378C)	2381	SD RH	104	104	44.2	8	8	122	6	6	6	7	DuPont Pioneer
MH-05-BU-153	2398	Conv			Data unav	ailable as v	ariety has	not complet	ted Nationa	l Listing			KWS UK
Ventura (NSL10/215)	2386	Conv	102	102	44.5	7	6	148	5	6	7	7	Limagrain UK
PX110 (X10W385C)	2379	SD RH	101	101	44.1	8	8	128	6	6	6	6	DuPont Pioneer
PX111CL (X10W643I)	2380	SD RH	100	101	43.6	9	8	127	5	7	5	6	DuPont Pioneer
PT229CL (X10W642I)	2382	RH	99	98	45.1	7	7	154	6	7	4	6	DuPont Pioneer
DK Sentinel (CWH202D)	2412	SD RH	98	99	44.0	8	7	134	4	7	4	8	DEKALB
Mendelson (RAP 0929)	2366	RH	98	97	44.6	8	8	149	5	7	5	5	LS Plant Breeding
Mean of controls (t/ha)			5.2	4.9	-	-	-	-	-	-	-	-	
LSD 5%			7.5	7.0	0.5	0.9	0.8	4.0	0.5	0.6	-	-	
No. of trials			13	13	13	9	11	14	13	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 in the Recommended List

Candidate varieties will be considered for the 2014/15 HGCA Recommended List

Candidate varieties will be considered for the 2014/15 FIGCA Necontine

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 2013 – 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 Ieaf spot (1-9)	Resistance to stem canker (1-9)	UK contact
Control varieties													
Excalibur	1684	RH	102	103	43.9	6	5	147	7	7	6	6	
Flash	1907	RH	100	99	44.7	7	5	157	5	6	5	5	
Vision	1953	Conv	100	100	44.0	7	7	146	5	6	5	6	
DK Cabernet	2019	Conv	99	97	45.7	8	8	148	4	6	6	7	
Candidate varieties													
Incentive (RAP 1024)	2368	RH			Data una	vailable as	variety has	not comple	ted Nationa	al Listing			DSV UK
SY Regata (RNX3933)	2394	RH	108	109	44.1	6	6	146	6	6	6	7	Syngenta Seeds
PX109 (X10W378C)	2381	SD RH	107	107	44.4	8	8	122	6	6	6	7	DuPont Pioneer
RG2014	2438	Conv			Data una	vailable as	variety has	not comple	ted Nationa	al Listing			Bayer CropScience
PX110 (X10W385C)	2379	SD RH	101	102	44.3	8	8	128	6	6	6	6	DuPont Pioneer
SY Sensia (RNX3041)	2392	RH	101	101	44.6	6	6	158	6	6	8	7	Syngenta Seeds
Mean of controls (t/ha)			4.4	4.1	-	-	-	-	-	-	-	-	
LSD 5%			9.9	9.4	0.9	0.9	0.8	4.0	0.5	0.6	-	-	
No. of trials			4	4	4	9	11	14	13	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 in the Recommended List

Candidate varieties will be considered for the 2014/15 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 varieties grown in RL trials in 2012 but not added to the HGCA Recommended List – East/West region

	Control	/arieties			Other \	varieties											
HGCA	DK Cabemet	Excalibur	Vision	Flash	Patron	SY Fighter	PT206	DK Excellium	DK Exstorm	PT213	Rascal	PX104#	PX106#	PX105#	Bronze	Cruze	Average LSD (5%)
Variety type	Conv	RH	Conv	RH	Conv	RH	RH	RH	RH	RH	Conv	RH	RH	RH	Conv	RH	
Gross output (yield adjusted for oil content) as % control																	
Fungicide treated (5.4 t/ha)	103	100	99	98	103	102	102	102	101	101	100	100	99	99	98	95	4.0
Seed yield (% control)																	
Fungicide treated (5.0 t/ha)	102	100	100	98	100	103	100	101	101	100	101	99	97	99	96	95	3.6
Agronomic features																	
Resistance to lodging	8	7	8	8	8	8	8	7	7	8	[8]	8	8	8	7	8	0.3
Stem stiffness	9	7	8	7	8	7	8	7	7	8	8	9	9	9	6	8	0.5
Shortness of stem	7	7	7	6	7	7	6	6	6	6	8	9	9	9	7	6	0.3
Earliness of flowering	5	8	6	6	6	7	5	6	6	6	6	5	6	6	7	6	0.4
Earliness of maturity	4	7	5	4	4	5	5	5	5	6	6	5	5	5	5	6	0.5
Seed quality (at 9% moisture)																	
Oil content, fungicide treated (%)	45.3	44.8	44.1	44.5	46.6	44.2	45.9	45.5	44.8	45.1	43.6	45.5	45.5	44.5	45.9	44.0	0.34
Glucosinolate (µmoles/g of seed)	10.1	17.4	13.8	13.0	7.8	11.3	10.5	11.2	11.5	11.0	10.5	8.9	8.9	8.5	8.3	10.1	-
Disease resistance																	
Light leaf spot	6	6	6	5	4	5	6	6	5	6	4	6	5	5	7	5	0.9
Stem canker	5	4	5	4	[4]	[6]	[5]	[9]	[8]	[6]	[6]	[4]	[5]	[7]	[5]	[4]	1.5
Harvest method – gross output (yield adjusted for oil content) as % of	control																
Swathed (5.6 t/ha)	104	100	98	98	103	104	100	101	100	101	100	98	97	97	100	95	5.6
Desiccated (5.3 t/ha)	104	100	99	97	102	102	103	102	102	101	101	101	101	100	96	95	3.6

This table should be read in conjunction with the HGCA Recommended List of Winter Oilseed Rape for 2013/14.

Conv = conventional open-pollinated variety

RH = restored hybrid

1 = limited data

= PX104, PX106 and PX105 are 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 varieties grown in RL trials in 2012 but not added to the HGCA Recommended List – North region

	Control	varietie	s		Other	varietie	es														
HGCA	Excalibur	Flash	DK Cabernet	Vision	DK Cayenne	PT206	DK Excellium	Thorin #	SY Motive	Rhino	PX106#	Abaco	DK Exstorm	Sesame	Cruze	DK Camelot	DK Sequoia #	PX104#	SY Alister	Bronze	Average LSD (5%)
Variety type	RH	RH	Conv	Conv	Conv	RH	RH	RH	RH	RH	RH	Conv	RH	Conv	RH	Conv	RH	RH	RH	Conv	
Gross output (yield adjusted for oil content) as % control																					
Fungicide treated (5.2 t/ha)	101	100	[100]	99	104	103	[103]	102	[101]	101	[101]	101	[100]	100	[99]	98	98	[98]	[96]	[94]	6.2
Seed yield (% control)																					
Fungicide treated (4.9 t/ha)	101	99	[99]	100	104	101	[101]	102	[101]	100	[100]	101	[100]	100	[99]	97	99	[97]	[98]	[92]	5.9
Agronomic features																					
Resistance to lodging	7	8	8	8	[8]	8	7	8	8	8	8	[7]	7	8	8	7	8	8	8	7	0.3
Stem stiffness	7	7	9	8	8	8	7	9	7	8	9	7	7	8	8	7	9	9	8	6	0.5
Shortness of stem	7	6	7	7	7	6	6	9	7	7	9	7	6	6	6	8	8	9	7	7	0.3
Earliness of flowering	8	6	5	6	6	5	6	6	7	7	6	8	7	6	6	7	4	5	7	7	0.4
Earliness of maturity	7	4	4	5	6	5	5	5	5	6	5	6	5	4	6	6	6	5	5	5	0.5
Seed quality (at 9% moisture)																					
Oil content of seed, fungicide treated (%)	43.8	44.1	44.5	43.3	43.8	45.3	45.1	44.1	43.8	44.7	44.6	43.7	44.4	43.8	43.6	44.7	42.8	44.1	42.3	45.3	0.53
Glucosinolate (µmoles/g of seed)	17.4	13.0	10.1	13.8	12.8	10.5	11.2	11.2	11.0	10.0	8.9	10.9	11.5	12.8	10.1	10.5	11.5	8.9	11.4	8.3	-
Disease resistance																					
Light leaf spot	6	5	6	6	6	6	6	6	6	6	5	6	5	6	5	5	6	6	5	7	0.9
Stem canker	4	4	5	5	[7]	[5]	[9]	[4]	[4]	4	[5]	[4]	[8]	4	[4]	[5]	4	[4]	[4]	[5]	1.5
Harvest method – gross output (yield adjusted for oil content) as % co	ontrol																				
Swathed (5.3 t/ha)	104	102	[98]	[96]	[100]	[103]	[104]	[103]	[99]	[99]	[99]	[98]	[101]	[97]	[101]	[96]	[93]	[101]	[93]	[96]	13.1
Desiccated (5.2 t/ha)	101	98	101	100	106	103	102	102	102	103	101	102	101	101	98	98	100	97	96	94	5.9

This table should be read in conjunction with the HGCA Recommended List of Winter Oilseed Rape for 2013/14.

Conv = conventional open-pollinated variety RH = restored hybrid

[] = limited data

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

^{# =} Thorin, PX106, DK Sequoia and PX104 are 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

Winter oilseed rape 2013/14 – Variety comments

Conventional varieties

NEW Anastasia

A conventional, open-pollinated variety that was added to the HGCA Recommended List for 2013/14 for the North region. It has a very high treated gross output, is stiffstemmed and has high resistance to lodging.

NEW Boheme

A conventional, open-pollinated variety that was added to the HGCA Recommended List for 2013/14 for the North region. It is relatively early maturing, has a high treated gross output and good resistance to light leaf spot.

Cash

A conventional, open-pollinated variety for the East/West region. It is around 6% lower yielding than the best conventional variety but is relatively early maturing and has excellent 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 susceptible to stem canker.

DK Cabernet

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

DK Camelot

A conventional, open-pollinated variety recommended for the East/West region. It is relatively early maturing, shortstemmed and has a high gross output in the East/West region.

Fashion

The only conventional, open-pollinated variety recommended for both the East/West and North regions. It is stiff-stemmed and has high resistance to lodging but has low resistance to stem canker.

NEW Pendulum

A conventional, open-pollinated variety that was added to the HGCA Recommended List for 2013/14 for the North region. It has a high treated gross output and has good resistance to lodging but is susceptible to stem canker.

NEW Quartz

A conventional, open-pollinated variety that was added to the HGCA Recommended List for 2013/14 for the East/West region. It has good resistance to lodging and excellent resistance to stem canker.

NEW Rivalda

A conventional, open-pollinated variety that was added to the HGCA Recommended List for 2013/14 for the East/West region. It has a high treated gross output, is stiff-stemmed and has high resistance to lodging. It is late maturing.

Sesame

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

Temple

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

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.

Restored hybrid varieties

NEW Avatar

A restored hybrid variety that was added to the HGCA Recommended List for 2013/14 for the East/West region. It has a very high treated gross output, is very stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is relatively early maturing.

Artoga

A restored hybrid recommended for the North region. It is relatively early maturing and has high light leaf spot resistance.

Compass

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

Cracker

A specific recommendation for both the North and East/West regions. It is a restored hybrid with resistance to the common strains of clubroot but may be susceptible to the strains found in some fields. It has high light leaf spot resistance but is susceptible to stem canker.

Cuillin

A restored hybrid 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.

Dimension

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 no longer in RL trials.

Winter oilseed rape 2013/14 – Variety comments

DK Expower

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

DK Sequoia

A restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) recommended for the East/West region. It is very short, stiff-stemmed and has very high resistance to lodging but is susceptible to stem canker. It is relatively early maturing.

Excalibur

A restored hybrid variety recommended for both the East/West and North regions. It is early flowering and relatively early maturing but is susceptible to stem canker. It is no longer in RL trials.

Flash

A restored hybrid variety recommended for both the East/West and North regions. It is relatively late maturing and susceptible to stem canker. It is no longer in RL trials.

NEW Marathon

A restored hybrid variety that was added to the HGCA Recommended List for 2013/14 for the East/West region. It has a very high treated gross output, is very stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is susceptible to stem canker.

PR45D05

A restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) recommended 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 very high treated gross output, is very stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is susceptible to stem canker.

NEW PT208

A restored hybrid variety that was added to the HGCA Recommended List for 2013/14 for the North region. It is relatively early maturing, has a very high treated gross output and high resistance to lodging when grown at the hybrid seed rate.

NEW PT211

A restored hybrid variety that was added to the HGCA Recommended List for 2013/14 for the East/West region. It has a high treated gross output, is very stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate.

NEW Raptor

A restored hybrid variety that was added to the HGCA Recommended List for 2013/14 for the North region. 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.

NEW Shot

A restored hybrid variety that was added to the HGCA Recommended List for 2013/14 for the North 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.

Thorin

A restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) that is recommended for the East/West region. It is very short and stiff-stemmed and has very high lodging resistance but is susceptible to stem canker.

NEW Troy

A restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) that was added to the HGCA Recommended List for 2013/14 for both the East/West and North regions. It has given a very high gross output in the North (comparable to the best non-dwarf hybrids). It is very short and stiff-stemmed and has very high lodging resistance but is susceptible to stem canker.



HGCA is helping raise awareness of the nutritional and culinary benefits of rapeseed oil through its consumer marketing campaign. For more information, visit www.rapeseedoilbenefits.com

Winter oilseed rape 2013/14 – Variety comments

Other varieties

The following varieties are examples of Clearfield®, HOLL and HEAR types. They are not on the Recommended List but have been included in RL trials to allow information to be presented here.

DK Imagine CL

Is a restored hybrid Clearfield® variety which has 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

Eraton

Is a high erucic acid rape (HEAR) variety; data on this variety are given for information only and it is not on the HGCA Recommended List. HEAR varieties are used in industrial processes, such as inks, lubrication and as a slip agent in the production of polythene. Eraton is a restored hybrid variety. Care should be taken not to mix HEAR varieties with other varieties.

V1410L

Is a high oleic, low linolenic (HOLL) variety; data on this variety are given for information only and it is not on the HGCA Recommended List. HOLL varieties are suited to some food uses, notably frying oil, and also possibly for biolubricants. V141OL is a conventional, open-pollinated variety.

Market outlook for UK biofuel crops improves

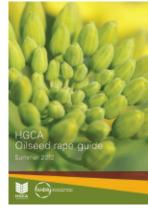
HGCA has led a revision of regional greenhouse gas emissions figures from a 2010 report that detailed the ability of UK regions to meet emissions criteria under the Renewable Energy Directive(RED). Revised figures have been produced that show that 97% of UK oilseed rape and 84% of UK wheat production does meet the criteria.

The report is currently being reviewed by the European Commission. If accepted, the new figures will immediately override those of 2010 and will be able to be used by the supply chain.

HGCA Oilseed rape guide

For information on oilseed rape pests, diseases, weeds and nutrition, please see HGCA's new guide.

www.hgca.com/publications



Spring oilseed rape descriptive list 2013

DESCRIBED		NEW			С			С	С		*			NEW	
HGCA	Makro	Shelley	Tamarin	Amulet	Delight	Belinda	Carnival	Kumily	Heros	Larissa	Ability	Colossus	James	PR45H73	Average LSD (5%)
Variety type	RH	Conv	Conv	Conv	RH	RH	Conv	Conv	Conv	Conv	Conv	Conv	Conv	RH	
Gross output (yield adjusted for oil co															
UK without fungicide	[109]	[103]	102	102	101	101	100	100	99	98	97	94	93	[88]	7.2
Number of trials	10	7	16	14	18	16	14	17	17	17	18	17	13	7	
Seed yield as % control (2.6 t/ha)															
UK without fungicide	[107]	[100]	102	101	101	101	99	101	98	98	96	94	92	[88]	7.0
Seed quality (at 9% moisture)															
Oil content (%)	[44.7]	[45.3]	43.4	44.2	44.0	43.3	44.3	42.3	44.5	43.2	44.2	43.6	44.4	[43.8]	0.8
Glucosinolate content (µmoles/g)	14.7	14.9	11.9	12.1	14.2	14.5	13.7	12.5	13.3	14.0	12.4	12.8	14.8	11.0	-
Agronomic features															
Standing ability	[8]	[9]	8	9	8	8	8	9	8	8	7	9	9	[7]	0.7
Shortness of stem	6	[7]	7	7	7	7	7	7	7	7	7	6	7	[7]	0.5
Earliness of flowering	5	[5]	7	6	8	8	6	7	6	6	7	5	6	[6]	1.0
Earliness of maturity	[3]	[2]	8	5	6	6	5	7	5	7	6	4	6	[7]	2.1
Breeder/ UK contact															
Breeder	DSV	Sen	LSW	LSW	BayR	BayR	LSW	LSW	BayR	BayR	DSV	UG	UG	DP	
UK contact	DSV	Sen	Sen	Sen	Bay	Bay	Sen	Sen	Bay	Bay	DSV	JTSD	JTSD	DP	
Status in RL system															
Year first listed	12	13	10	11	09	10	11	07	02	09	07	10	11	13	
RL status	P2	P1	-	-	-	-	-	-	-	-	-	-	-	P1	

Varieties no longer listed: Earlybird.

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

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

RH = restored hybrid

Conv = conventional open-pollinated variety

[] = limited data

P1 = first year on list

P2 = second year on list

i z = second year on list

* = variety no longer in trials

C = yield control

Bay = Bayer CropScience (www.bayercropscience.co.uk)

BayR = Bayer CropScience Raps, (www.bayercropscience.co.uk)

DP = DuPont Pioneer (www.Pioneer.com/uk)

DSV = DSV United Kingdom (www.dsv-uk.co.uk)

JTSD = John Turner Seed Developments (www.jtsd.co.uk)

LSW = Lantmännen 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 2013

DESCRIBED	ton		nan	С	'al	ster	NEW	(0	sse	_	c	C	.⊑	ent MEW	Emma	*	*	э у е \$	*	* u	ge 5%)
HGCA	Brighton	Juliet	Batsman	Aries	Festiv	Roost	Bowler	Altess	Duchess	Kaolin	Bilton	Abacı	Balad	Serpe	GK Er	Valoal	Sunris	Birdsey	Meteo	Lagoon	Average LSD (5%)
Variety type	Seed c	olour bro	wn																		
Seed yield as % control																					
UK without fungicide (1.8 t/ha)	109	108	106	103	102	101	101	101	100	100	99	98	98	97	97	96	[93]	92	[90]	[87]	9.7
Number of trials	16	14	14	17	14	14	11	17	14	17	17	15	16	11	17	16	7	16	9	6	
Seed quality (at 9% moisture)																					
Oil content of seed (%)	41.0	42.6	41.2	41.7	43.3	41.1	41.4	39.8	40.8	42.4	41.6	40.9	42.5	41.7	40.4	43.0	[41.5]	38.9	[40.5]	[41.7]	0.5
Agronomic features																					
Plant height (cm)	55	56	55	54	54	59	[52]	45	48	51	57	53	56	[53]	48	49	[53]	54	48	[47]	3.3
Earliness of flowering	4	4	6	4	5	3	4	8	7	5	4	5	4	3	8	7	[6]	4	[5]	[8]	1.1
Earliness of maturity	5	4	7	5	6	4	5	8	7	6	5	7	6	5	8	7	[7]	4	5	[8]	1.2
Breeder/ UK contact																					
Breeder	Bilt	GKI	Bilt	Lim	LaS	JTSD	Bilt	GIE	GIE	LaS	Bilt	JTSD	LaS	JTSD	GKI	LaS	Sask	JTSD	JTSD	Agrf	
UK contact	Els RApp	Agr	Els	Lim	PC	JTSD PC	Els	PC	PC	Dalt	Els RApp	JTSD Sen	Dalt	JTSD	Agr	PC	JTSD Sax	JTSD RApp	JTSD RApp	Bost	
Status in RL system																					
Year first listed	11	01	12	09	12	12	13	09	12	09	03	06	11	13	09	11	02	11	08	01	
RL status	-	-	P2	-	P2	P2	P1	-	P2	-	-	-	-	P1	-	-	-	-	-	-	

Varieties no longer listed: Dragon, Gemini, Libra, Talon and Taurus.

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)

Agrf = Agrifusion

Bilt = van de Bilt, Netherlands

Bost = Boston Seeds (www.bostonseeds.co.uk)

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) Sask = University of Saskatchewan, Canada

Sax = Saxon Agriculture (www.saxon-agriculture.co.uk)

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 triticale descriptive list 2013/14

Winter rye descriptive list 2013/14

DESCRIBED				С	*	NEW		С		
HGCA	Tribeca	Agostino	Tulus	Benetto	Constant	Twingo	Agrano	Grenado	Amarillo	Average LSD (5%)
UK yield as % untreated control										
Untreated (8.1 t/ha)	105	104	102	101	100	[100]	99	99	98	7.9
Number of trials	7	9	7	11	9	5	9	11	11	
Agronomic features										
Lodging (%)	[34]	[0]	[0]	[2]	[13]	[0]	[8]	[0]	[32]	5.0
Straw length (cm)	[120]	105	[109]	118	108	[97]	122	102	116	5.8
Earliness of ripening (days +/- Benetto, -ve = earlier)	[0]	[0]	[0]	[0]	[0]	[0]	[-1]	[2]	[0]	3.2
Grain quality										
Specific weight (kg/hl)	69.2	72.9	69.2	69.8	72.7	[64.1]	71.7	70.0	70.4	1.8
Protein content (%)	10.9	11.2	11.2	11.2	11.1	[11.1]	11.8	10.5	11.5	0.6
Breeder/ UK contact										
Breeder	Desp	LSW	Nord	Dank	Lem	Dank	Saka	Dank	Hege	
UK contact	Els	Sen	SU	Sen	Pick	Sen	Lim	Sen	Soya	
Status in RL system										
Year first listed	12	11	12	05	09	13	09	08	10	
RL status	P2	-	P2	-	-	P1	-	-	-	

Varieties no longer listed: Bellac, Borwo and Tremplin.

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

[] = limited data P1 = first year on list

Dank = Danko, Poland

Desp = Maison Florimond Desprez, France

P2 = second year on list * = variety no longer in trials C = yield control

Els = Elsoms Seeds (www.elsoms.com)

Hege = Hege, Germany Lem = Lemaire, France

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

LSW = Lantmännen SW Seed, Sweden

Nord = Nordsaat, Germany

Pick = Mike Pickford (mpickford1@btinternet.com)

Saka = Saka, Germany

Sen = Senova (www.senova.uk.com) Soya = Soya UK (www.soya-uk.com)

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.

DESCRIBED			
HGCA	Askari O	Capitan	Average LSD (5%)
Variety type	Hybrid	Conventional	7 1
UK yield as % treated control			
Fungicide treated (8.6 t/ha)	101	[99]	4.7
Number of trials	11	8	
Agronomic features			
Lodging (%)	[8]	[4]	5.4
Straw length (cm)	133	135	4.0
Earliness of ripening (days +/- Askari, -ve = earlier)	[0]	[-2]	3.6
Grain quality			
Protein content (%)	9.8	10.0	0.5
Hagberg Falling Number	132	153	26
Specific weight (kg/hl)	75.1	75.6	0.9
Breeder/ UK contact			
Breeder	Hybro	Dieck	
UK contact	SU	Dalt	
Status in RL system			
Year first listed	11	12	
RL status	-	P2	

Variety no longer listed: Agronom.

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

[] = limited data

DE0001050

P2 = second year on list

C = yield control (Picasso was also a yield control but it is no longer on the Descriptive List)

Dalt = Dalton Seeds (www.dalmark.co.uk)

Dieck = Dieckmann, Germany Hybro = Hybro, 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.

Acknowledgements

The HGCA Recommended Lists 2013/14 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

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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.













Test and trials contractors

HGCA is grateful to the following organisations who, as well as undertaking contract work for the Recommended Lists, provide much valuable advice: 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.



















HGCA is grateful for the valuable contributions made by member companies of BBPA, BOBMA, MAGB, **nabim** and SWA 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.













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