# HGCA Recommended Lists 2011/12 for cereals and oilseeds



Agriculture & Horticulture DEVELOPMENT BOARD

For more information, see www.hgca.com/varieties/rl-plus

Incorporating data from:





British Society of Plant Breeders



Millers Association

The Food and Environment Research Agency





National Association of British and Irish Millers





# About the HGCA Recommended Lists



### **Using HGCA Recommended Lists**

### Growing for the market

- Research your local markets talk to merchants and users.
- Establish which varieties are required and the quality standards.

### Growing for your farm

- Establish if you can meet the quality criteria required.
- Consider past history on your farm and HGCA Recommended List data.
- Seek fall-back markets should your crop fail to meet the standards of your primary market.
- Identify which varieties of each crop to grow and in what proportion.
- Scrutinise variety details in the HGCA Recommended List tables and notes before drilling.
- Identify which varieties suit specific conditions, eg second cereals or lighter soils. Look at the supplementary tables and RL *Plus* (*www.hgca.com/varieties/ rl-plus*).
- Consider specific disease issues, eg Septoria or rusts.
- Varieties that are less resistant to lodging may be less risky if sown towards the end of the sowing period.
   For more information, see Avoiding lodging in winter wheat – practical guidelines.

### In the growing season

- Plan likely input programmes using disease resistance and lodging resistance ratings but be prepared to modify these during the season.
- Give priority to spraying the more susceptible varieties as these are less likely to cope with delayed applications.

### At harvest

- Give priority to quality varieties especially those rated less good for sprouting, brackling or Hagberg falling number.
- Segregate varieties in store.
- Separate out any areas of lodged and/or weed-infested crop.
- Sample each load as it arrives at store and produce a composite sample. For details see HGCA's *Grain sampling* – *a farmer's guide*.
- Have samples analysed so that you know what you have to sell.
- Remember to complete an HGCA mycotoxin risk assessment (*www.hgca.com/mycotoxins*).

### Planning the next year

 Build a database of your management inputs, yield and quality data to help you to plan your actions for the following year(s).

### Wheat for distilling, starch and bioethanol

Each year the UK industry uses about 700,000 tonnes of wheat for **potable ethanol production**. HGCA works with the Scotch Whisky Association and the Scotch Whisky Research Institute to test new varieties for their distilling potential. The results are shown on the RL table. Varieties marked "Y" are rated good or moderate-good for distilling and "[Y]" are rated moderate for distilling.

The potable ethanol industry's needs are well defined: soft wheat of low nitrogen (high starch) content with easy processing characteristics (low viscosity and low gum compounds, eg arabinoxylans).

UK industry uses about 700,000 tonnes of grain annually for **starch production**. Varieties best suited to potable distilling are also likely to be the best for this purpose but the UK starch industry currently uses any variety.

Wheat is becoming a major UK **biofuel crop**. Production processes differ between potable and fuel alcohols but similar principles apply.

### HGCA Recommended Lists add over £3/tonne to cereals industry

In 2010 HGCA commissioned DTZ to conduct an independent economic impact assessment of its 2007-2010 R&D strategy and knowledge transfer activities across six key areas, including the HGCA Recommended Lists. Processors require grain giving high alcohol yields and high processing efficiency. Several characteristics affect these parameters, eg starch content, moisture content and viscosity.

The best varieties are likely to be soft-milling wheats that combine high yield with good disease resistance and agronomic features. Starch contents in wheat are very closely related to the inverse of grain protein content so growers seeking high starch varieties should select those with the lowest average protein levels on the HGCA Recommended List.

Further information about growing wheat for biofuel can be found in the recent HGCA Information Sheet 11 – *Growing wheat for alcohol/bioethanol production*.

All HGCA publications are available to download from www.hgca.com/publications

DTZ assessed the impacts of the HGCA Recommended Lists in terms of timeand cost-savings through avoiding testing and selection and the production benefits and price premia received by growers by growing the optimum varieties.

The gross potential economic value estimated by DTZ was £44.7m, equivalent to £3.27/tonne.



# HGCA Recommended List®

### **UKWheat Exports**

Each year the UK exports wheat to over 40 countries providing a great market opportunity to growers in areas with easy access to ports. Demand for UK wheat remains strong, in particular **uks**<sup>#</sup> varieties which are for many customers the preferred choice for soft wheats.

### **UK Wheat Export Brands**

The **ukp**<sup>#</sup> and **uks**<sup>#</sup> wheat export brands help establish and maintain export markets for UK milling wheat. They give overseas customers a clear and simple understanding of what they are buying and make it easier for them to purchase value-added wheat from the UK.

Developed by HGCA in conjunction with industry:

- They are only used in export markets
- They complement existing nabim groups
- Wheat in each category meets the specifications
- Varieties in the brands are shown in the HGCA Recommended List



**ukp** - a blend of semi-hard varieties to suit both EU and non-EU bread making.

 $W \geq 170^* \ P/L \leq 0.9 \ Protein \ 11\% \text{ - } 13\%$  \*W requirements vary by market



**uks** - a blend of soft extensible varieties, well known throughout the EU for their biscuit making and bread blending characteristics. Useful for blending with hard high protein wheats.

 $W \le 120 P/L \le 0.55$  Protein 10.5% - 11.5%

### Export brands working for UK farms

"Choosing *ukp* and *uks* export branded varieties means that, with very little effort, I can increase my marketing opportunities and ensure more people are on the phone trying to buy my wheat, maximising potential prices. There is always a demand for UK wheat overseas and the more wheat we grow of export quality, the more opportunity we have to boost prices overall."

Andrew Barr, Grower, Kent

iypical Export Spe	ecification	
	ukp#	uks
Specific Weight	76kg/hl (min)	75kg/hl (min)
Moisture	15% (max)*	15% (max)*
Ad mix	2% (max)	2% (max)
HFN	250 (min)	220 (min)
Protein	11-13%	10.5-11.5%
W	≥170*	80-120
P/L	≤0.9	≤0.55

\*requirements vary by market

### **Customer feedback**

"We know your brands very well and will continue to buy."

Buyer from Morocco

"Creating the brands *ukp* and *uks* has been a good idea as it has strengthened the UK's position."

Carlos Miralbes, Spanish Miller

For more information visit www.hgca.com/export

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# HGCA Recommended List<sup>®</sup> winter wheat 2011/12

MARKET OPTIONS AND C	GRAI	N Q	UAL	ITY																																
RECOMMENDED		С	P2	*		P2	P1		*	C	<b>P</b> 1	<b>P2</b>	P1	P1	C*	P2			P2	P1	P1		*		*	С	<b>P</b> 1	P2	<b>C</b> *			<b>P1</b>		*	*	
HGCA	Gallant	Solstice	KWS-Sterling	Ketchum	Panorama	Kingdom	KWS-Podium	Cordiale	Battalion	Einstein	Cocoon	Invicta	KWS-Target	Tuxedo	Robigus #	Warrior €	Scout	Claire	Beluga	Gravitas	Denman	Viscount	Glasgow	Cassius	lstabraq	Alchemy	KWS-Santiago	Conqueror	Oakley #	JB-Diego	Duxford	Stigg	Grafton	Humber	Gladiator	Average LSD (5%)
End-use group	nabim G	iroup 1	nabir	n Gro	up 2						nabi	m Gro	up 3			_			Soft	Group	o 4						Hard	Grou	p 4							
Scope of recommendation	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	E&W	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	UK	UK	North	North	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	
UK treated yield (% control, 10.6 t/ha)	100	97	102	102	102	100	99	98	98	98	103	103	102	102	101	100	99	97	104	104	104	103	102	102	100	99	108	106	106	104	102	102	101	100	99	2.7
Main market options (The specific at	tribute	es of v	arietie	es are	differ	ent so	o, whe	enever	possi	ble, v	arietie	es sho	uld no	ot be I	mixed	in sto	ore)																			
UK bread-making	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK distilling	-	-	-	-	-	-	-	-	-	-	-	[Y]	-	[Y]	[Y]	-	-	[Y]	Y	[Y]	Y	Y	Y	-	Υ	[Y]	-	-	-	-	-	-	-	-	-	
ukp≓bread wheat for export	Y	Υ	[Y]	[Y]	[Y]	[Y]	[Y]	Y	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
uks#soft wheat for export	-	-	-	-	-	-	-	-	-	-	[Y]	[B]	[Y]	[Y]	Υ	-	Υ	Y	[Y]	[Y]	[B]	[Y]	[Y]	[Y]	В	В	-	-	-	-	-	-	-	-	-	
Grain quality																																				
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	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 (%)	12.0	12.0	11.3	11.3	11.6	12.1	12.2	12.2	12.1	11.9	11.1	10.9	11.2	11.1	11.2	11.3	11.6	11.4	10.8	10.5	10.8	10.8	11.0	11.1	10.8	11.3	11.0	10.9	10.5	11.0	10.9	11.4	11.6	11.6	11.7	0.4
Hagberg falling number	295	256	270	247	248	275	273	301	223	263	217	235	207	267	200	199	224	235	152	211	203	173	186	167	204	236	138	193	155	288	261	298	278	291	256	21
Specific weight (kg/hl)	77.6	77.9	76.1	77.6	77.6	78.6	78.7	79.3	75.7	77.5	76.1	75.3	76.4	74.7	76.7	75.1	78.4	76.8	75.4	76.5	75.4	75.9	77.2	74.9	78.2	77.2	74.5	75.1	75.7	77.6	76.4	73.9	78.5	76.9	77.1	0.6
1000 grain weight (g)	53.2	49.3	[48.8]	52.2	48.3	[46.4]	-	45.8	[47.5]	50.3	-	[46.2]	-	-	42.7	[44.5]	45.7	45.6	[55.1]	-	-	48.7	43.8	50.6	47.1	48.3	-	45.7	47.4	49.9	46.8	-	49.6	46.4	44.2	2.3
Chopin alveograph W	237	201	223	212	213	209	242	247	172	173	103	75	100	98	90	132	90	97	88	91	70	93	88	98	[70]	65	[101]	-	[116]	-	[176]	[92]	[151]	[99]	-	25
Chopin alveograph P/L	0.8	0.6	0.8	0.7	0.6	0.6	0.6	0.7	0.8	0.5	0.4	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.2	0.4	[0.3]	0.5	[0.6]	-	[0.5]	-	[0.8]	[0.6]	[0.7]	[0.9]	-	0.1
Year first listed	09	02	10	09	09	10	11	04	07	03	11	10	11	11	03	10	09	99	10	11	11	09	05	09	04	06	11	10	07	08	08	11	09	07	04	

P1, P2 = first and second year of recommendation

\* = variety no longer in trials

**C** = yield control

[] = limited data

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

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

UK = recommended for the UK

Sp = specific recommendation

North = recommended for the North region

E&W = recommended for the East and West regions

 $\in$  = Warrior is a specific recommendation for growers wanting a variety with good disease resistance

# = Oakley and Robigus are no longer in trial as they are now very susceptible to yellow rust

Varieties no longer listed: Hereward, Marksman, Oplus, Xi19 and Zebedee

# HGCA Recommended List® winter wheat 2011/12

YIELD, AGRONOMY AND I	DISE	ASE	RE	SIST	ANC	)E																														
RECOMMENDED		С	P2	*		P2	P1		*	С	P1	P2	P1	P1	C*	P2			P2	P1	P1		*		*	С	P1	P2	<b>C</b> *		I	<b>P1</b>		*	*	
HGCA	Gallant	Solstice	KWS-Sterling	Ketchum	Panorama	Kingdom	KWS-Podium	Cordiale	Battalion	Einstein	Cocoon	Invicta	KWS-Target	Tuxedo	Robigus #	Warrior €	Scout	Claire	Beluga	Gravitas	Denman	Viscount	Glasgow	Cassius	lstabraq	Alchemy	KWS-Santiago	Conqueror	Oakley #	JB-Diego	Duxford	Stigg	Grafton	Humber	Gladiator	Average LSD (5%)
End-use group	nabim G	iroup 1	nab	im Gr	oup 2						nabi	m Gr	oup 3						Soft	Grou	р4						Hard	Grou	ıp 4							
Scope of recommendation	UK	UK	UK	UK	UK	E&W	/ UK	UK	UK	UK	E&W	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	UK	UK	North	North	n UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	
Fungicide treated grain yield (% tre	ated o	ontro	ol)																																	
United Kingdom (10.6 t/ha)	100	97	102	102	102	100	99	98	98	98	103	103	102	102	101	100	99	97	104	104	104	103	102	102	100	99	108	106	106	104	102	102	101	100	99	2.7
East region (10.5 t/ha)	99	96	102	102	102	99	100	99	98	98	103	102	103	102	101	101	99	98	104	104	103	104	102	103	100	99	108	106	106	104	102	102	101	101	99	3.2
West region (10.6 t/ha)	101	98	102	102	102	102	97	97	98	97	103	104	103	103	100	99	100	97	105	104	105	101	102	100	100	100	108	104	104	105	101	103	102	100	98	3.6
North region (10.6 t/ha)	96	95	101	99	99	96	[100]	96	96	99	[97]	100	[101]	[101]	101	97	98	98	104	[103]	[103]	104	100	102	102	99	[106]	107	106	100	101	[97]	102	98	100	4.1
Untreated grain yield (% treated co	ntrol i	in cor	npara	able ti	ials)																															
United Kingdom	81	79	82	86	88	81	82	81	86	83	83	87	86	88	74	92	87	80	84	90	90	88	81	86	82	86	85	84	80	88	82	97	88	81	83	4.2
Agronomic features																																				
Resistance to lodging without PGR	7	8	7	6	8	7	8	8	7	6	5	7	8	7	7	7	8	7	9	5	5	7	6	7	6	7	6	6	7	7	8	7	9	8	6	1.4
Resistance to lodging with PGR	8	8	9	7	9	8	8	8	8	7	7	8	8	8	7	8	9	7	8	7	7	7	8	8	7	7	7	7	7	8	9	9	9	9	7	1.0
Height without PGR (cm)	86	96	80	95	92	91	85	82	87	88	97	93	86	86	90	86	90	91	82	92	86	84	85	88	96	95	91	88	87	91	93	84	79	83	84	1.7
Ripening (days +/- Solstice, -ve = early)	-2	0	0	+1	+2	-1	0	-3	0	0	+4	+3	+1	+2	+2	+1	+2	0	0	+2	0	+1	0	+1	+3	+2	+3	+2	+1	0	+2	+1	-2	0	-1	0.9
Resistance to sprouting	6	7	[5]	7	7	[6]	-	6	5	6	-	[6]	-	-	5	[5]	6	5	[4]	-	-	4	5	4	5	6	-	6	6	7	7	-	5	6	6	1.4
Disease resistance																																				
Mildew	5	4	7	8	7	6	6	6	8	6	7	6	6	6	6	8	6	4	5	6	6	7	5	7	5	7	5	4	6	6	6	7	7	5	7	0.8
Yellow rust	5	4	9	4	9	6	6	6	6	6	8	8	8	9	2	9	9	9	9	7	7	5	5	9	9	9	6	5	2	6	5	9	8	8	9	1.0
Brown rust	4	4	7	5	4	4	7	3	8	5	8	8	6	7	6	9	9	5	4	9	5	9	4	8	4	5	4	5	6	4	4	9	3	5	5	1.3
Septoria nodorum	5	5	6	6	6	7	[5]	5	7	6	[7]	7	[8]	[9]	7	7	8	7	5	[7]	[7]	[9]	4	8	7	7	-	[9]	7	7	6	[7]	6	5	6	2.9
Septoria tritici	5	5	5	6	6	6	5	5	5	5	6	6	6	7	6	7	6	6	5	7	6	5	5	5	5	7	5	4	5	6	5	8	6	5	5	0.7
Eyespot	6	5	6	5	5	5	5	5	7@	6	7	5	7	6	5	6	8	6	7	6	6	6	5	7	7	6	4	5	4	5	6	7	7@	7	5	1.8
Fusarium ear blight	5	6	6	6	7	6	7	6	6	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	6	6	5	6	6	6	5	6	5	-
Orange wheat blossom midge	-	-	-	-	-	-	R	-	-	-	-	-	R	-	R	R	R	-	-	R	R	R	R	-	-	-	R	R	R	-	-	-	-	-	-	

**P1, P2** = first and second year of recommendation

\* = variety no longer in trials

C = yield control

[] = limited data

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

UK = recommended for the UK

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North = recommended for the North region

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 $\in$  = Warrior is a specific recommendation for growers wanting a variety with good disease resistance

# = Oakley and Robigus are no longer in trial as they are now very susceptible to yellow rust

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

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

@ = Battalion and Grafton are believed to carry the Rendezvous resistance gene to eyespot but this has not been verified in RL tests

(B) = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB

# HGCA Recommended List® winter wheat 2011/12

RECOMMENDED		С	P2	*		P2	P1	I	*	C	P1	P2	P1	P1	C*	P2			P2	P1	P1		*		*	С	P1	P2	C*			P1		*	*	
HGCA	Gallant	Solstice	KWS-Sterling	Ketchum	Panorama	Kingdom	KWS-Podium	Cordiale	Battalion	Einstein	Cocoon	Invicta	KWS-Target	Tuxedo	Robigus	Warrior	Scout	Claire	Beluga	Gravitas	Denman	Viscount	Glasgow	Cassius	lstabraq	Alchemy	KWS-Santiago	Conqueror	Oakley	JB-Diego	Duxford	Stigg	Grafton	Humber	Gladiator	Average LSD (5%)
End-use group	nabim (	Group 1	nabi	m Gro	oup 2						nabi	m Gro	oup 3						Soft	Grou	p 4						Hard	Grou	р4							
Scope of recommendation	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	E&W	UK	UK	UK	UK	Sp	UK	UK	UK	UK	UK	UK	UK I	North	North	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	
Breeder/UK contact																																				
Breeder	Syn	Lim	KWS	Syn	Lim	Syn	KWS	KWS	RAGT	Lim	Sec	Lim	KWS	RAGT	KWS	RAGT	Sen	Lim	Sen	Lim	Syn	KWS	SU	Lim	Lim	Lim	KWS	KWS	KWS	Breun	Syn	Lim	KWS	KWS	RAGT	
UK contact	Syn	Lim	KWS	Syn	Lim	Syn	KWS	KWS	RAGT	Lim	Mas	Lim	KWS	RAGT	KWS	RAGT	Sen	Lim	Sen	Lim	Syn	KWS	SU	Lim	Lim	Lim	KWS	KWS	KWS	Sen	Syn	Lim	KWS	KWS	RAGT	
Annual yield (% control)																																				
2006 (10.6 t/ha)	103	99	-	106	105	-	-	100	101	102	-	-	-	-	98	-	103	98	-	-	-	105	104	103	103	100	-	107	102	105	105	-	103	104	104	2.4
2007 (9.8 t/ha)	102	95	101	98	100	99	-	97	[91]	97	-	101	-	-	100	97	98	97	104	-	-	104	97	104	101	99	-	104	108	103	99	-	102	96	95	3.5
2008 (11.7 t/ha)	101	97	102	100	101	101	99	101	97	98	99	101	103	101	101	100	97	98	104	103	105	102	104	101	99	99	107	105	105	104	102	102	102	98	99	2.8
2009 (10.6 t/ha)	93	95	101	101	101	96	100	95	98	96	105	103	104	105	102	100	99	[99]	[104]	106	103	102	101	101	-	100	109	105	107	101	101	102	100	100	98	3.0
2010 (10.0 t/ha)	98	97	102	103	101	100	99	[97]	[99]	97	103	101	100	101	103	102	98	[95]	104	102	102	102	-	101	-	99	105	106	105	103	101	100	100	[102]	-	2.4
Rotational position																																				
First cereal (11.0 t/ha)	99	96	102	101	101	99	99	98	97	97	102	103	103	102	102	100	99	97	104	104	103	103	101	101	100	99	107	106	106	103	101	101	101	100	98	2.7
Second cereal (9.4 t/ha)	100	98	102	105	102	101	99	100	102	100	102	101	101	102	98	101	100	96	[106]	103	103	103	103	103	104	99	106	104	105	105	104	102	104	101	101	4.0
Sowing date (most trials were sow	vn du	ring (	Octob	er)																																
Before 6 Oct (10.7 t/ha)	98	96	102	101	101	98	100	99	98	98	101	103	102	102	101	101	99	98	104	104	104	103	102	101	100	100	107	107	106	103	102	102	101	100	100	2.0
Late autumn (8.7 t/ha)	[100]	97	[102]	[105]	[101]	[101]	-	[96]	100	-	-	[104]	-	-	-	[101]	[99]	-	[104]	-	-	[104]	[106]	[101]	-	99	-	[108]	107	105	101	-	[95]	104	-	6.8
Soil type (about 50% of trials are o	on me	dium	soils	)																																
Light soils (10.4 t/ha)	97	96	102	100	100	97	[99]	98	97	99	[99]	102	[100]	[101]	100	100	99	96	104	[102]	[101]	103	101	101	100	99	[104]	107	106	104	100	[100]	101	100	101	3.6
Heavy soils (10.9 t/ha)	100	97	101	101	102	101	99	100	99	98	103	103	103	102	101	101	100	98	105	103	103	103	102	101	100	99	108	106	106	104	102	103	102	100	99	3.0
Agronomic features																																				
Lodging % without PGR	3.1	1.5	2.3	11.4	1.7	4.7	1.8	2.1	2.9	9.1	17.7	2.8	2.1	2.3	2.4	3.3	1.5	3.8	0.0	20.3	21.2	3.1	6.0	4.5	6.0	2.7	7.4	10.8	3.1	4.4	0.5	2.6	0.3	0.6	10.1	
Lodging % with PGR	4.0	2.4	1.9	11.8	1.6	5.0	3.7	3.3	2.2	8.4	11.1	5.4	2.6	2.6	6.8	4.0	1.9	5.7	2.4	6.0	6.2	8.2	5.2	5.4	7.0	5.8	6.1	6.4	6.0	5.5	1.6	1.8	0.7	1.3	9.2	
Latest safe sowing date #	End	End	[End	End	End	[Mid	-	End	End	End	-	[Mid	-	-	End	[Mid	End	End	[End	-	-	End	End	End	End	End	-	[End	Mid	End	End	-	[End	End	End	
	Jan	Jan	Jan]	Feb	Feb	Feb]		Jan	Jan	Jan		Feb]			Feb	Feb]	Jan	Feb	Jan]			Jan	Feb	Jan	Feb	Jan		Jan]	Feb	Jan	Feb		Jan]	Jan	Jan	
Speed of development to growth a	stage	31 (d	lays +	/- ave	rage)																															
Early Sep sown	-4	+2	+2	-4	-2	+4	-	-3	-1	-6	-	0	-	-	-3	-1	+6	+5	-1	-	-	0	-2	+4	-5	0	-	-3	+3	0	-2	-	+4	-1	+1	7.7
Early Oct sown	-5	-1	-1	+1	+1	-2	-	-9	-1	-6	-	+3	-	-	+1	+4	+1	+6	0	-	-	+4	-4	+2	+1	+4	-	-2	+3	+1	+1	-	+1	+1	-1	6.6
Early Nov sown	-5	-1	-2	+1	-1	0	-	-4	-2	-3	-	+1	-	-	0	+2	0	+3	+3	-	-	+2	-2	+1	+1	+2	-	-2	+1	-1	+1	-	+1	-1	-2	3.5

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

[] = limited data

# = 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.

### Key to breeder/UK contact codes:

CLIDDI EMENITA DV DATA

Breun = Saatzucht Josef Breun, Germany KWS = KWS UK (www.kws-uk.com) Lim = Limagrain UK (www.limagrain.co.uk) Mas = Masstock Arable (www.masstock.co.uk) RAGT = RAGT Seeds (www.ragt.co.uk) Sec = Secobra, UK Sen = Senova (www.senova.uk.com)

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

Syn = Syngenta Seeds (www.newfarmcrops.co.uk)

**Gallant** is an early-maturing nabim Group 1 variety that is 3% higher yielding than the only other listed Group 1 variety, Solstice. nabim reports that results from the 2010 harvest reinforce those seen in the three years of trials. Its milling and baking qualities are consistently as good as other current varieties. Commercial quantities have been available to millers since it joined the HGCA Recommended List and these have performed well. It is classified as a ukp<sup>#</sup> bread wheat for export, gives good Hagbergs and specific weights

and tends to give protein contents similar to Solstice. Gallant is susceptible to brown rust.

**Solstice** is a popular nabim Group 1 variety. nabim confirms that Solstice remains the most widely used Group 1 variety and 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. It is classified as a **ukp** bread wheat for

export and has support from end users. Solstice's yield potential is 3% below Gallant but it has the strong support of UK millers and remains very popular with growers, maintaining around a 9% share of 2010 certified seed production weights. It has long but stiff straw, gives good specific weights but is susceptible to mildew, yellow rust and brown rust.

### nabim Group 2 varieties

**Battalion** is a nabim Group 2 variety. nabim reports that only limited commercial quantities have been available and it is unlikely to be a preferred variety among those in Group 2 due to it sometimes producing loaves that have a weak crumb structure. It is classified as a **ukp**<sup>#</sup> bread wheat for export but little has been seen commercially. It has a similar treated yield potential to Cordiale and Einstein; some 4% lower yielding than KWS-Sterling. Battalion has above average resistance to eyespot, carrying the 'Rendezvous' *Pch1* resistance gene and tends to give its best relative performance as a second wheat. It has high resistance to mildew and brown rust but tends to give low Hagbergs. It is no longer in RL trials.

**Cordiale** is a nabim Group 2 wheat. nabim reports that Cordiale remains the group 2 variety of choice for most millers and growers. Higher than average HFNs, good protein levels and specific weights are key features. Consistent milling and baking performance continue to be seen by millers. It is classified as a **ukp** bread wheat for export and has support from end users. Cordiale has a treated yield potential around 4% lower than KWS-Sterling and 2% below the Group 1 variety Gallant. Cordiale is early maturing with short, stiff straw and has good grain characteristics: high Hagberg falling number and specific weights. It is very susceptible to brown rust.

**Einstein** is a nabim Group 2 variety. nabim advises that this variety is used by most millers but that it has a tendency to produce lower protein levels with lower water absorption. For this reason, the variety requires careful agronomic management and most millers will only be able to use restricted proportions of this variety in bread-making grists. It is classified as a **ukp**<sup>#</sup> bread wheat for export. Einstein has

good specific weights and no major disease weaknesses; resistance to stem lodging is adequate but it can be prone to the less common root lodging.

**Ketchum** is a high-yielding Group 2 variety. nabim advises that this variety has a tendency to produce a lower level of protein and it sometimes has a tendency to produce bread that is less resilient and with a greater variability in crumb structure than some other varieties. It has not been widely available and it is unlikely to be a preferred Group 2 variety. Ketchum is classified as a **ukp** bread wheat for export. It has performed well in a range of conditions, such as late sowing and as a second wheat. It has high resistance to mildew but is susceptible to yellow rust and has moderate straw strength. Specific weights have been good but proteins and Hagbergs have been moderate. It is no longer in RL trials.

**Kingdom** is recommended in the East and West regions as a nabim Group 2 variety. nabim advises that only limited commercial quantities have been available to them so far. It achieves protein levels similar to those of Cordiale but over three years of testing the overall baking performance varied between seasons; this may mean that good agronomic management is required to maintain premiums. Kingdom has been classified as a **ukp**<sup>#</sup> bread wheat for export and has a treated yield potential similar to the Group 1 variety Gallant and a good specific weight. Kingdom has above average resistance to *Septoria nodorum* but it is susceptible to brown rust.

**NEW KWS-Podium** was added to the HGCA Recommended List 2011/12 as a nabim Group 2 variety. nabim reports that over the three years of testing, this variety has performed better than Einstein and meets the intake criteria, however, flour extraction rates may sometimes be lower than expected. It has been classified as a **ukp** bread wheat for export. KWS-Podium has a treated yield 3% below KWS-Sterling but is the only available winter wheat bread-making variety with resistance to orange wheat blossom midge. KWS-Podium has stiff straw and above average resistance to Fusarium ear blight.

**KWS-Sterling** is a high-yielding nabim Group 2 variety. nabim reports that so far only limited commercial quantities have been available. Over three years of testing, the variety exhibited some variability in protein levels but baking performance was acceptable. Good agronomic management may be required to attract higher premiums. KWS-Sterling has been classified as a **ukp**<sup>#</sup> bread wheat for export, has a similar yield potential to Panorama and has high resistance to yellow rust. It tends to give low proteins.

**Panorama** is a high-yielding nabim Group 2 variety. nabim reports that this variety shows good grain and milling characteristics. Although only limited quantities of this variety have been commercially available, baking quality has been variable and overall it produces bread of variable quality, which is likely to make it more suited to uses in blends. It is classified as a **ukp**<sup>#</sup> bread wheat for export. Panorama is stiffstrawed and has good resistance to yellow rust and above average resistance to Fusarium ear blight but is susceptible to brown rust. Panorama gives high specific weights but moderate proteins.

### nabim Group 3 varieties

**Claire** is a nabim Group 3 variety and nabim advises that this variety continues to be the benchmark for this Group. It is preferred by millers because of its milling qualities, bright white flour colour and its gluten characteristics which result in high dough extensibility. It is classified as a **uks** soft wheat for export, meeting the specifications of the export brand and is rated as medium for distilling. Claire has a moderate treated yield potential but is a slow-developing variety which has proved useful for very early drilling.

**NEW Cocoon** was added to the HGCA Recommended List 2011/12 for the East and West regions as a high-yielding nabim Group 3 variety. nabim reports that in three years of trials it has shown variability across the years for both grain hardness and rheological analysis and is unlikely to be a preferred Group 3 variety for all millers. It is classified as a **uks**<sup>#</sup> soft wheat for export. It has high resistance to yellow rust, brown rust and eyespot and has above average resistance to *Fusarium*. It has moderate resistance to lodging but responds well to plant growth regulator.

**Invicta** is a high-yielding nabim Group 3 variety. nabim advises that over three years of testing it gave a similar biscuit performance to the Robigus control. It is classified as **uks**<sup>#</sup> for blending and is rated 'medium' for distilling. Invicta has high resistance to yellow rust and brown rust and above average resistance to *Septoria nodorum*. It tends to be late maturing and gives a low specific weight. **NEW KWS-Target** was added to the HGCA Recommended List 2011/12 as a high-yielding nabim Group 3 variety. nabim reports that over three years of testing it appears to produce consistent results and is similar in biscuit performance to Robigus. It is classified as a **uks** soft wheat for export but is rated as 'poor' for distilling. KWS-Target has stiff straw, high resistance to yellow rust and eyespot and is resistant to orange wheat blossom midge.

**Robigus** is a nabim Group 3 wheat and nabim confirm that this variety remains widely used by the milling industry. It is ideal for biscuits but is not as versatile as Claire due to the yellowish flour colour. It is rated 'medium' for distilling and is classified as a **uks** soft wheat for export, meeting the specifications of the export brand and with support from endusers. It is resistant to orange wheat blossom midge and has above average resistance to *Septoria nodorum* but is very susceptible to yellow rust. Robigus performs poorly as a second wheat. It is no longer in RL trials.

**Scout** is a soft-milling nabim Group 3 wheat which nabim reports as having quality attributes similar to those of Claire. It appears to be consistently good in its processing qualities. It is classified as a **uks** soft wheat for export but rated as 'poor' for distilling. Scout has a moderate treated yield potential but is stiff-strawed, gives a good specific weight and has high resistance to yellow rust, brown rust, *Septoria nodorum* and eyespot, with no major disease weaknesses; it is also resistant to orange wheat blossom midge. Like Claire

and Grafton, Scout has slow primordial development and a range of other characters that can make it a useful candidate for early drilling.

**NEW Tuxedo** was added to the HGCA Recommended List 2011/12 as a high yielding nabim Group 3 variety. nabim reports that over three years of testing there was evidence of variability between years for dough extensibility and it is unlikely to be a preferred Group 3 variety for all millers. It is rated as 'medium' for distilling and as a **uks** soft wheat for export. It has high resistance to yellow rust and *Septoria tritici* but has a low specific weight.

**Warrior** is a specific recommendation for growers wanting a Group 3 variety with high disease resistance. From the three years of testing it routinely met the nabim biscuit wheat criteria and has shown consistency in its rheology but they advise that 2011 will be the first year when commercial quantities of this variety will be available. It does not meet the specification for export and is rated as 'poor' for distilling; its inclusion in loads delivered to distillers could lead to processing problems and low distillery efficiency. Warrior has a high untreated yield with an excellent spectrum of disease resistance: high resistance to mildew, yellow rust, brown rust, *Septoria nodorum* and *Septoria tritici* and no major weakness to the other main diseases. It is also resistant to orange wheat blossom midge but has a low specific weight.

Alchemy is a soft-milling feed wheat. nabim advises that this variety may be used by some millers, but not where they require good gluten extensibility characteristics, which differentiates the soft Group 3 from the soft Group 4 varieties. Classified as uks<sup>20</sup> for blending but, depending on the uks<sup>20</sup> export market, it is recommended that inclusion of Alchemy in uks<sup>20</sup> cargoes should be restricted to a maximum of 25%. Rated as 'medium' for distilling, it has a high specific weight and has high resistance to yellow rust, *Septoria nodorum, Septoria tritici* and eyespot.

**Beluga** is a high-yielding, soft-milling feed variety. It is rated as 'good' for distilling and is classified as a **uks** soft wheat for export. Beluga has short, very stiff straw and has performed well on a range of soil types, sowing dates and as a second wheat. It has high resistance to yellow rust and eyespot but it is very susceptible to brown rust and limited data suggest the variety has below average resistance to sprouting.

**Cassius** is a high-yielding, soft-milling feed variety recommended for the North region. It is classified as a **uks** soft wheat for export but may not consistently meet export specifications for Hagberg falling number and it is rated as 'poor' for distilling. Cassius has high resistance to yellow rust, brown rust, *Septoria nodorum* and eyespot but tends to give low Hagbergs and specific weights and is rather susceptible to sprouting.

**Conqueror** is a very high-yielding, hard-milling feed variety. It has performed well on a range of soil types, sowing dates and as a second wheat and has high resistance to *Septoria nodorum*. It has moderate straw strength, is susceptible to mildew and *Septoria tritici* and tends to give low specific weights.

**NEW Denman** was added to the HGCA Recommended List 2011/12 as a high-yielding, soft-milling Group 4 variety. It is rated as 'good' for distilling and as a **uks** wheat for blending for export. It has moderate straw strength and tends to give low specific weights. Denman is resistant to orange wheat blossom midge.

**Duxford** is a hard-milling feed variety. nabim advises that this variety has a stronger gluten quality than other group 4 varieties and is worthy of being kept separate. Duxford

performs well as a second wheat and has very stiff straw but is susceptible to brown rust.

**Gladiator** is a hard-milling feed wheat with a high specific weight and high resistance to yellow rust. It is no longer in RL trials.

**Glasgow** is a high-yielding, soft-milling feed variety with a good specific weight. It is rated as 'good' for distilling and is classified as a uks<sup>#</sup> soft wheat for export but may not consistently meet export specifications for Hagberg falling number. It is resistant to orange wheat blossom midge but it is susceptible to brown rust and *Septoria nodorum*. Glasgow is no longer in RL trials.

**Grafton** is an early-maturing, hard-milling feed variety. It has short, very stiff straw and gives good specific weights. Grafton is susceptible to brown rust but has good resistance to eyespot; it is believed to carry the 'Rendezvous' *Pch1* resistance gene and has performed well in second wheat trials. Like Claire and Scout, Grafton appears to have slow primordial development and so may be useful for early drilling.

**NEW Gravitas** was added to the HGCA Recommended List 2011/12 as a high-yielding, soft-milling Group 4 variety. It is rated as 'medium' for distilling and as a **uks**<sup>#</sup> wheat for export. It has moderate straw strength but has high resistance to brown rust and *Septoria tritici*. It is resistant to orange wheat blossom midge.

**Humber** is a hard-milling feed variety, which is high-yielding when late sown. It has short, very stiff straw and has high resistance to yellow rust and eyespot. It is no longer in RL trials.

**Istabraq** is a soft-milling feed wheat recommended for the North region. Classified as **uks**<sup>#</sup> soft wheat for blending and rated 'good' for distilling, it has good specific weights. It gives high second wheat yields, has high resistance to yellow rust and above average resistance to *Septoria nodorum*, eyespot and Fusarium ear blight. Istabraq is a long-strawed variety with moderate lodging resistance and is rather late ripening. It is no longer in RL trials. **JB-Diego** is a hard-milling feed variety with high treated yields and which has performed well on a range of soil types, sowing dates and as a second wheat. It has a good specific weight and has above average resistance to *Septoria nodorum* but is susceptible to brown rust.

**NEW KWS-Santiago** was added to the HGCA Recommended List 2011/12 as a very high-yielding, hardmilling feed variety. It has performed well as both a first and second wheat and on a range of soil types. It is rather late ripening, is susceptible to brown rust and eyespot and tends to give low Hagbergs and specific weights.

**Oakley** is a very high-yielding, hard-milling feed variety that continues to be popular with feed growers, taking around 13% of the certified seed production weights in 2010. It has performed very well in a wide range of situations, including as a second wheat and when late sown. It is resistant to orange wheat blossom midge, has high resistance to *Septoria nodorum* but is susceptible to eyespot and is particularly susceptible to yellow rust. It is below the minimum standard for yellow rust and is no longer in RL trials.

**NEW Stigg** was added to the HGCA Recommended List 2011/12 as a hard-milling feed variety. Stigg has a treated yield potential that is somewhat lower than the best feed types but it has a range of characters that compensate for this. It has an untreated yield that is similar to the treated yield of Claire due to excellent disease resistance especially to yellow rust, brown rust, *Septoria tritici* and eyespot. It is the only variety on the list with a rating of '8' for *S. tritici* and should be a good choice for growers in wetter areas, where *S. tritici* is a perennial problem and spraying opportunities are limited. Stigg tends to give low specific weights.

Viscount is a high-yielding, soft-milling feed variety. nabim advises that this variety may be used by some millers but not where they require good gluten extensibility characteristics, which differentiates the soft Group 3 from the soft Group 4 varieties. It is rated as 'good' for distilling and is classified as a **uks** soft wheat for export but may not consistently meet export specifications for Hagberg falling number. It has a high treated yield potential and has high resistance to brown rust and *Septoria nodorum*. Viscount is resistant to orange wheat blossom midge but is rather susceptible to sprouting.

### HGCA Recommended List<sup>®</sup> harvest 2011 Summary of candidate winter wheat varieties

CANDIDATE							_									e		
HGCA	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 numb	Specific wt (kg/hl)	UK contact
Control varieties																		
Solstice	1282	95	91	3	1	87	0	4	4	4	5	5		hard	12.2	263	77.9	
Robigus	1330	103	91	3	4	85	+3	6	2	5	6	5		soft	11.2	201	76.8	
Einstein	1376	96	94	11	4	81	-1	6	5	5	5	6		hard	12.0	266	77.5	
Alchemy	1564	99	97	13	5	85	+4	7	9	5	7	6		soft	11.3	231	76.9	
Oakley	1658	107	94	2	1	82	+3	6	2	7	5	4		hard	10.6	158	76.0	
Selected as potential bread-making	varieties																	
Chilton (DSV-80113)	1980	Data ur	available as	variety ha	as not co	mpleted I	Vational L	isting						hard				DSV
KWS-Saxtead (KWS-W174)	1971	101	98	2	0	81	-1	9	9	8	7	4	-	hard	11.9	283	78.5	KWS
Crusoe (NAWW25)	2009	98	98	6	2	80	+2	9	9	7	7	5	-	hard	12.2	245	77.8	Limagrain
Selected as potential biscuit-makin	g varietie																	
Torch (RW40834)	1986	104	102	2	2	86	+1	3	6	9	6	6	OWBM	soft	10.8	234	76.0	RAGT
Delphi (BA W10)	2023	103	100	2	3	82	+3	6	9	6	6	5	OWBM	soft	11.2	248	75.1	Senova
Monterey (BA W9)	2022	102	104	11	8	88	+2	6	9	8	6	5	OWBM	soft	11.5	225	78.7	Senova
SY-Epson (SYN 10858)	2001	100	100	0	1	83	+1	6	8	8	7	6	OWBM	soft	11.6	263	76.5	Syngenta
Selected as feed varieties																		
KWS-Mammoth (KWS-W178)	1975	106	99	1	9	84	+4	8	9	3	4	7	-	soft	10.7	176	76.4	KWS
Relay (RW40847)	1988	105	102	3	3	78	+1	6	9	4	6	5	-	hard	11.1	245	76.3	RAGT
KWS-W180	1977	Data ur	available as	variety ha	as not co	mpleted I	Vational L	isting						hard				KWS
Trident (RW40837)	1987	Data ur	available as	variety ha	as not co	mpleted I	Vational L	isting						soft				RAGT
Horatio (NAWW34)	2018	104	104	5	4	85	+1	8	8	9	7	6	OWBM	soft	11.2	225	75.7	Limagrain
Mean of controls (t/ha)		10.3	9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LSD 5%		2.2	5.4	-	-	1.9	2	-	-	-	-	-	-	-	0.4	25.6	0.7	
No. of trials		27	12	6	6	15	7	9	19	6	10	-	-	-	10	10	10	

Candidate varieties will be considered for the 2012/13 HGCA Recommended List

Disease ratings on 1-9 scale with 9 = good resistance T = data from trials treated with fungicide and PGR

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

See the HGCA Recommended List for full data on control varieties

OWBM = believed to be resistant to orange wheat blossom midge

UT = data from trials without fungicide or PGR

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

### Varieties grown in RL trials in 2010 but not added to the HGCA Recommended List

WINTER WHEAT													
	Control	varieties				Other v	arieties						
HGCA	Oakley	Robigus	Alchemy	Einstein	Solstice	Shire	KWS-Gymnast	Edmunds	Orbit	KWS-Curlew	KWS-Horizon	KWS-Quartz	Average LSD (5%)
Fungicide treated grain yield (% treated control)													
United Kingdom (10.6 t/ha)	106	101	99	98	97	104	103	103	100	100	99	99	2.7
East region (10.5 t/ha)	106	101	99	98	96	104	103	103	101	100	98	98	3.2
West region (10.6 t/ha)	104	100	100	97	98	103	104	103	99	101	99	99	3.6
North region (10.6 t/ha)	106	101	99	99	95	[103]	[102]	101	[100]	97	98	100	4.1
Untreated grain yield (% treated control in compa	rable trials)												
United Kingdom	80	74	86	83	79	84	82	86	84	86	85	88	4.2
Grain quality													
Endosperm texture	Hard	Soft	Soft	Hard	Hard	Hard	Soft	Soft	Soft	Hard	Hard	Hard	
Protein content (%)	10.5	11.2	11.3	11.9	12.0	11.1	11.2	11.1	11.3	11.4	12.0	12.0	0.4
Hagberg falling number	155	200	236	263	256	253	277	247	239	258	264	316	21
Specific weight (kg/hl)	75.7	76.7	77.2	77.5	77.9	78.1	76.0	76.6	77.1	77.9	80.6	77.3	0.6
Agronomic features													
Resistance to lodging without PGR	7	7	7	6	8	6	8	5	8	8	7	9	1.4
Resistance to lodging with PGR	7	7	7	7	8	7	8	7	8	9	7	9	1.0
Height without PGR (cm)	87	90	95	88	96	82	85	85	90	87	86	75	1.7
Ripening (days +/- Solstice, -ve = early)	+1	+2	+2	0	0	+2	+1	0	+3	-1	0	-1	0.9
Resistance to sprouting	6	5	6	6	7	-	-	[6]	-	[6]	[6]	[6]	1.4
Disease resistance													
Mildew	6	6	7	6	4	5	6	6	6	8	8	7	0.8
Yellow rust	2	2	9	6	4	5	9	9	9	9	6	9	1.0
Brown rust	6	6	5	5	4	5	7	5	8	4	5	8	1.3
Septoria nodorum	7	7	7	6	5	-	[8]	7	[7]	5	6	6	2.9
Septoria tritici	5	6	7	5	5	6	5	5	6	5	6	5	0.7
Eyespot	4	5	6	6	5	5	5	5	7	5	6	8@	1.8
Fusarium ear blight	5	6	7	6	6	6	6	5	6	6	7	6	-
Orange wheat blossom midge	R	R	-	-	-	-	-	-	-	-	-	-	

[] = limited data

@ = KWS-Quartz is believed to carry the Rendezvous resistance gene to eyespot but this has not been verified in RL tests

This table should be read in conjunction with the HGCA Recommended List of Winter Wheat for 2011/12

# HGCA Recommended List® late autumn sown wheat 2011/12

RECOMMENDED		P1	I	С		P1		P2	P2	С			С		P2	P2			*	P2	*		P2	*			*				
HGCA	Gallant	Mulika +	Solstice	Paragon +	Ketchum	KWS-Willow +	Panorama	Kingdom	KWS-Sterling	Tybalt +	Battalion	Einstein	Ashby +	Cordiale	Invicta	Warrior	Scout	Viscount	Glasgow	Beluga	Cassius	Alchemy	Conqueror	Oakley	JB-Diego	Belvoir +	Humber	Duxford	Grafton	Zircon + \$	Average LSD (5%)
End-use group	nabi	m Gro	up 1		nabii	m Gro	up 2								nabin	n <mark>Gr</mark> o	up 3	Soft	Group	o 4			Hard	Group	o 4					Other	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	Sp	UK	UK	UK	UK	North	UK	UK	UK	UK	UK	UK	UK	UK	Sp	
UK yield as % treated control																															
UK yield with fungicide (8.7 t/ha)	104	[101]	100	95	109	[108]	105	[104]	[104]	104	102	[102]	101	[101]	[108]	[105]	103	[107]	107	[107]	[105]	101	112	109	107	106	106	103	[99]	100	7.5
Grain quality																															
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	-
Protein content (%)	[11.5]	[12.2]	[12.1]	12.5	[11.5]	[11.7]	[11.7]	-	-	11.9	[12.2]	[12.3]	12.4	[11.9]	-	-	[12.1]	[11.5]	[11.1]	-	[11.1]	11.5	[11.2]	[10.8]	[11.2]	11.3	[11.4]	[11.3]	[11.7]	12.4	0.9
Hagberg falling number	[285]	[300]	[260]	279	[199]	[262]	[210]	-	-	292	[192]	[261]	273	[285]	-	-	[204]	[126]	[180]	-	[155]	230	[184]	[166]	[294]	222	[287]	[241]	[230]	179	84
Specific weight (kg/hl)	[76.8]	[77.0]	[76.2]	77.6	[76.1]	[78.8]	[75.8]	-	-	75.9	[73.2]	[75.9]	78.1	[77.5]	-	-	[76.8]	[74.2]	[75.5]	-	[73.2]	75.0	[73.1]	[73.7]	[75.3]	76.7	[75.3]	[73.0]	[76.5]	77.7	2.4
Agronomic features																															
Lodging %	-	-	3.3	8.8	-	-	-	-	-	12.8	2.2	-	9.4	-	-	-	-	-	6.8	-	-	6.2	-	4.1	3.7	6.6	1.2	2.3	-	3.2	-
Straw height with PGR (cm)	[77]	[96]	82	102	[83]	[96]	[82]	[82]	[77]	91	79	[79]	90	[74]	[86]	[79]	[80]	[75]	[74]	[76]	[78]	83	[77]	76	82	84	77	83	[70]	88	6.3
Ripening (days +/- Paragon, -ve = earlier)	[0]	-	[-1]	[0]	[-1]	-	[0]	-	-	[0]	[0]	-	[0]	[-2]	-	-	[+2]	[0]	[+1]	-	[+1]	[+2]	[+1]	[0]	[0]	[-1]	[0]	[0]	[-1]	[0]	2.8
Latest safe sowing date #	End	-	End	-	End	-	[End	[Mid	[End	-	End	End	-	End	[Mid	[Mid	End	End	End	[End	End	End	[End	Mid	End	-	End	End	[End	-	
	Jan		Jan		Feb		Feb]	Feb]	Jan]		Jan	Jan		Jan	Feb]	Feb]	Jan	Jan	Feb	Jan]	Jan	Jan	Jan]	Feb	Jan		Jan	Feb	Jan]		
Disease resistance																															
Mildew	5	7	4	8	8	8	7	6	7	8	8	6	6	6	6	8	6	7	5	5	7	7	4	6	6	7	5	6	7	7	-
Yellow rust	5	9	4	9	4	9	9	6	9	6	6	6	9	6	8	9	9	5	5	9	9	9	5	2	6	9	8	5	8	8	-
Brown rust	4	9	4	8	5	7	4	4	7	9	8	5	7	3	8	9	9	9	4	4	8	5	5	6	4	8	5	4	3	7	-
Septoria tritici	5	[7]	5	6	6	[6]	6	6	5	6	5	5	5	5	6	7	6	5	5	5	5	7	4	5	6	5	5	5	6	5	-
Orange wheat blossom midge	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	R	R	-	-	-	R	R	-	R	-	-	-	-	
Year first listed	09	11	02	99	09	11	09	10	10	03	07	03	01	04	10	10	09	09	05	10	09	06	10	07	80	03	07	08	09	07	

**P1, P2** = first and second year of listing

**\*** = variety no longer sown in late autumn sown trials

**C** = yield control

[] = limited data

+ = spring wheat

Sp = Specific recommendation

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

On the 1-9 scales high figures indicate that a variety shows the character to a high degree (e.g. 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 provide late autumn listings for newer winter wheat varieties and their absence from the table does not imply that they are unsuitable for late-autumn sowing

\$ = Zircon is specifically recommended as a white-grained wheat. nabim do not class it as a bread-making 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

# HGCA Recommended List® spring wheat 2011

RECOMMENDED	P1	С	С	P1		С			
HGCA	Mulika	Paragon	Tybalt	KWS-Willow	Granary	Ashby	Belvoir	Zircon \$	Average LSD (5%)
End-use group	nabim (	Group 1	nabim	Group 2			Group 4	Other	
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	Sp	
UK yield as % control									
UK yield with fungicide (7.1 t/ha)	[104]	95	106	[106]	104	99	107	100	4.3
Grain quality									
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	
Protein content (%)	[13.3]	13.9	12.6	[12.7]	13.6	13.4	12.4	13.5	0.5
Hagberg falling number	[299]	271	277	[236]	235	289	216	182	44
Specific weight (kg/hl)	[76.6]	76.0	74.5	[77.8]	77.0	76.8	75.3	76.9	1.1
Agronomic features									
Resistance to lodging with PGR	-	6	[3]	-	-	7	[7]	[6]	3.7
Straw height without PGR (cm)	[84]	91	81	[84]	85	84	81	84	2.7
Ripening (days +/- Paragon, -ve = earlier)	-	[0]	[1]	-	[2]	[2]	[1]	[1]	1.7
Resistance to sprouting	-	6	7	-	7	7	7	3	0.9
Disease resistance									
Mildew	7	8	8	8	7	6	7	7	1.1
Yellow rust	9	9	6	9	6	9	9	8	[0.9]
Brown rust	9	8	9	7	6	7	8	7	[1.4]
Septoria tritici	[7]	6	6	[6]	7	5	5	5	1.2
Orange wheat blossom midge	R	-	-	-	-	-	R	-	
Year first listed	11	99	03	11	09	03	03	07	
Breeder/UK contact									
Breeder	BA	RAGT	Wier	KWS	KWS	KWS	KWS	KWS	
UK contact	Sen	RAGT	Lim	KWS	KWS	KWS	KWS	KWS	

C = yield control

P1 = first 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

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

\$ = Zircon is specifically recommended as a white-grained wheat. nabim do not classify it as a bread-making variety

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

### Key to breeder/agent codes

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

 $\textcircled{B} = ``HGCA \ RECOMMENDED \ LIST'' is a registered trademark of AHDB$ 

# HGCA Recommended List® spring wheat 2011

### nabim Group 1 varieties

New Mulika was added to the HGCA Recommended List 2011/12 as a nabim Group 1 variety for both late autumn and spring sowing. nabim reports that over three years of trials it appears to be similar to the other spring wheat Group 1 variety Paragon in most aspects of performance. When late autumn sown it has given yields around 6% higher than Paragon and from spring sowing its advantage is around 9%. From limited data it would appear to be capable of delivering good proteins, Hagbergs and specific weights. Mulika has high resistance to yellow rust and brown rust and limited data suggest above average resistance to *Septoria tritici*. The breeder also claims resistance to orange wheat blossom midge (although this has not yet been verified); the only Group 1 variety to have this resistance.

**Paragon** remains a very popular variety because of its high quality and suitability for milling and baking. nabim reports that its performance in bread-making has been excellent and

that it remains the choice of most millers when buying spring wheat. In late autumn sown trials it has given yields around 9% below the winter wheat Group 1 variety Gallant but with a protein content 1.0% higher. In spring-sown trials it has given yields around 11% below Tybalt but with 1.3% higher protein content and a specific weight 1.5 kg/hl higher. Paragon has long straw and moderate lodging resistance. It has high resistance to mildew, yellow rust and brown rust.

### nabim Group 2 varieties

**Ashby** is a nabim Group 2 variety. In late autumn sown trials it has given yields 8% below the highest winter wheat Group 2 variety but with higher proteins and Hagbergs and a good specific weight. In spring-sown trials it has given yields around 7% below Tybalt but with higher protein content and specific weight. Ashby has high resistance to yellow rust.

**Granary** is a group 2 variety recommended for spring sowing. nabim reports that, so far, relatively small quantities have been seen by millers but that the evidence available suggests that it is better suited to spring planting. In springsown trials it has given yields around 2% below Tybalt but with higher protein content and specific weight: it tends to give low Hagbergs. Granary has high disease resistance with above average resistance to mildew, yellow rust and *Septoria tritici*. In late autumn sown trials, Granary has given similar yields to Ashby but with low Hagbergs.

**INEXT KWS-Willow** was added to the HGCA Recommended List 2011/12 as a nabim Group 2 variety which has given very high yields from both late autumn and spring sowings with good specific weights and with proteins from late autumn sowings comparable with other high yielding Group 2 varieties. nabim notes that it has shown variability across the years of testing, in particular with baking performance. As a result it is more likely to be suited to uses in blends. It has high resistance to mildew and yellow rust.

**Tybalt** is a nabim Group 2 spring wheat variety. nabim reports that it has a tendency to low protein content and softer grain and that it shows fair baking performance; it will be used at low grist inclusion levels by most millers. In late autumn sown trials it is around 6% lower yielding than the highest yielding winter Group 2 variety. In spring sown trials it has been around 6% higher yielding than Ashby but with lower specific weight and protein content. Tybalt has generally high disease resistance, especially to mildew and brown rust and with above average resistance to yellow rust. It has weak straw.

### Group 4 feed variety

**Belvoir** is a hard Group 4 feed wheat. From late autumn sowings it has given very high yields and is competitive with the high-yielding winter wheat feed varieties. When spring sown it is also the highest yielding spring wheat but its advantage is less marked: it out-yields Tybalt by 2% and with a better specific weight. It has high resistance to yellow rust and brown rust and little lodging has been recorded in trials treated with PGR. It is resistant to orange wheat blossom midge.

### Specific recommendation (white-grained wheat)

**Zircon** is a white-grained variety specifically recommended for the production of white grain for specialist markets: it is not classified by nabim. In late autumn sown trials its yields are around 2% below Tybalt and with little lodging recorded in trials treated with PGR. In spring sown trials its yields have been around 5% lower than Tybalt. Zircon has high resistance to yellow rust and above average resistance to mildew. It gives high protein content but low Hagberg falling number. 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.

### Malting varieties

**Cassata** is a specific recommendation for growers wanting a malting variety with resistance to barley mosaic virus. Its popularity has increased and it took 14% of certified seed weights in 2010. It is fully approved by IBD for the production of malt for brewing and compared to Pearl, Cassata produces malt of a similar quality with a treated yield some 3% higher. It has stiff straw and high resistance to *Rhynchosporium* and moderately high resistance to brown rust but it is susceptible to mildew and very susceptible to yellow rust. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

**Flagon** is a malting variety that is fully approved by IBD for brewing use. Flagon is higher yielding than Pearl, has a good spectrum of foliar disease resistance with high resistance to yellow rust and brown rust. It has long straw of moderate strength and requires careful management.

**Pearl** is a malting variety fully approved by IBD for brewing use and remains popular with both growers and maltsters. It has long straw, comparatively moderate yields but a high specific weight and no major disease weaknesses.

Purdey is recommended for the East region and for growers

wanting a malting variety with BaYMV resistance; it is provisionally approved by IBD for brewing use. Purdey has good lodging resistance and a high specific weight; it also has high resistance to *Rhynchosporium* and net blotch but it is susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

**Winsome** is a variety that is provisionally approved by IBD for brewing use. Winsome is high yielding with early ripening characteristics and a good specific weight. It has high resistance to *Rhynchosporium*.

### **Two-row feed varieties**

**Florentine** was added to the HGCA Recommended List 2011/12 as a high-yielding two-row feed variety. It has very stiff straw and high resistance to yellow rust and *Rhynchosporium*. Florentine is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

**KWS-Cassia** is a very high-yielding two-row feed variety. It has become very popular, accounting for around 27% of the total certified seed production weights in 2010. It has high resistance to net blotch but is susceptible to

*Rhynchosporium*. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

**Retriever** is a two-row feed variety. It is very high-yielding and has performed particularly well in the North region. It has high resistance to yellow rust and *Rhynchosporium* and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Despite short straw, Retriever has medium lodging resistance and tends to give moderate specific weights. **Saffron** is a two-row feed variety which remains popular, accounting for around 17% of the total certified seed production weights in 2010. It has stiff straw, a high specific weight and high resistance to net blotch but it is susceptible to *Rhynchosporium* and very susceptible to mildew.

**Suzuka** is an early-maturing two-row feed variety. It 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**

**Boost** is an early-maturing hybrid six-row feed variety with a relatively good specific weight. It is susceptible to brown rust but has high resistance to yellow rust and no other major disease weaknesses. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). It is no longer in RL trials.

**VEVY Element** was added to the HGCA Recommended List 2011/12 as a very high-yielding hybrid six-row feed variety for the North region. It is particularly high yielding in the North region and is early ripening, has a relatively good specific weight and high resistance to yellow rust. Element has long straw with moderate lodging resistance and is susceptible to brown rust. As is the case with all currently recommended six-row varieties, it is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

**NEW Escadre** was added to the HGCA Recommended List 2011/12 as a very high- yielding non-hybrid six-row feed variety. It is 4-5% lower yielding than the best hybrid six-rows but gives a similar yield and specific weight to KWS-Cassia with earlier ripening characteristics. It has high resistance to yellow rust, *Rhynchosporium* and net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Escadre has long straw with moderate lodging resistance.

**Pelican** is a non-hybrid six-row feed variety with a very high treated yield. It has long straw with moderate lodging resistance and tends to give a very low specific weight but it has high resistance to brown rust and *Rhynchosporium* and it is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

**Sequel** is a non-hybrid six-row feed variety which produces relatively high specific weights. It has high resistance to *Rhynchosporium* and net blotch and is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV). Sequel has long straw with moderate lodging resistance.

**Volume** is a very high-yielding hybrid six-row feed variety. It has a very high UK treated yield and has performed very well in all regions; it also has a high untreated yield, relatively good specific weight and good resistance to *Rhynchosporium*. Volume is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

MARKET OPTIONS AND G	RAIN		.I I Y														
RECOMMENDED		P2	С	P2	С		P2	P1	С		P2 C	P1	P1	*	*	С	
HGCA	Cassata ~	Winsome	Flagon	Purdey ~	Pearl	Retriever	KWS-Cassia	Florentine	Saffron	Suzuka	Volume \$	Element \$	Escadre	Pelican	Boost \$	Sequel	Average LSD (5%)
Variety type	Two-	row malt	ing			Two-r	ow feed				Six-ro	w feed					
Scope of recommendation	Sp	UK	UK	E+Sp	UK	UK	UK	UK	UK	UK	UK	North	UK	UK	UK	UK	
UK treated yield as % controls (8.9 t/ha)	97	97	97	95	94	105	104	102	100	99	109	108	104	104	102	100	2.6
Main market options																	
IBD malting approval for brewing use	F	Р	F	Р	F	-	-	-	-	-	-	-	-	-	-	-	
Overseas malting	Y	-	[Y]	-	Y	-	-	-	-	-	-	-	-	-	-	-	
Year first listed	07	10	05	10	99	07	10	11	05	07	09	11	11	07	06	03	
Grain quality																	
Specific weight (kg/hl)	68.5	69.5	69.8	70.3	70.3	66.5	70.6	68.4	70.2	69.3	68.7	68.2	69.7	63.5	68.5	69.3	0.9
Screenings % through 2.25 mm	1.2	1.5	1.6	1.5	1.2	4.7	1.5	1.6	1.4	1.3	3.0	1.5	1.7	4.8	-	2.9	1.4
Screenings % through 2.5 mm	4.6	5.9	5.4	5.5	4.1	14.7	4.8	6.5	5.6	4.1	13.6	5.8	7.9	12.8	-	13.0	3.7
Nitrogen content (%)	1.64	1.65	1.66	1.68	1.71	-	-	-	-	-	-	-	-	-	-	-	0.04

Blazing	Trick	Vanquish	Hercule	Malabar
-	-	-	-	-
95	101	100	106	104
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
69.3	69.0	68.6	63.5	64.1
1.3	1.5	1.5	1.4	3.0
4.5	5.8	5.1	6.7	18.3
1.64	1.70	1.71	-	-

Varieties not added to RL

P1, P2 = first and second year of recommendation

\* = variety no longer in trials

**C** = yield control

Y = suited to that market

[Y] = may be suited to that market

F = Full IBD approval

P = Provisional IBD approval

UK = recommended for the UK

E = recommended for the East region

North = recommended for the North region

Sp = specific recommendation

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

 $\sim$  = Cassata and Purdey have specific recommendations for growers wanting BaYMV resistant varieties for malting

\$ = Boost, Element and Volume are hybrid varieties

Varieties no longer listed: Carat and Colibri.

HELD, AGHONOMIT AND DR																	
RECOMMENDED		P2	С	P2	С		P2	P1	С		P2 C	P1	P1	*	*	С	
HGCA	Cassata ∼	Winsome	Flagon	Purdey ~	Pearl	Retriever	KWS-Cassia	Florentine	Saffron	Suzuka	Volume \$	Element \$	Escadre	Pelican	Boost \$	Sequel	Average LSD (5%)
Variety type	Two-re	ow maltir	ng			Two-re	ow feed				Six-rov	v feed					
Scope of recommendation	Sp	UK	UK	E+Sp	UK	UK	UK	UK	UK	UK	UK	North	UK	UK	UK	UK	
Fungicide treated grain yield as % treated	ated co	ontrol															
UK with fungicide (8.9 t/ha)	97	97	97	95	94	105	104	102	100	99	109	108	104	104	102	100	2.6
East region with fungicide (8.8 t/ha)	97	98	97	98	95	105	104	102	101	99	108	106	103	103	101	100	3.4
North region with fungicide (9.0 t/ha)	95	96	96	93	94	108	103	103	97	99	112	112	106	107	105	102	4.0
West region with fungicide (9.0 t/ha)	96	95	97	93	93	103	103	[102]	100	97	109	[108]	[106]	105	101	100	4.2
Untreated grain yield as % treated cor	ntrol in	compara	ble tri	als													
UK without fungicide	79	80	82	76	77	81	85	83	81	83	91	87	87	88	82	81	3.3
Agronomic features																	
Resistance to lodging	8	6	6	8	7	6	8	9	8	7	6	6	6	6	7	6	-
Straw height (cm)	87	93	97	88	97	83	88	87	88	90	101	103	98	102	100	102	3.2
Ripening (days +/- Pearl, -ve = earlier)	0	-2	-1	+1	0	-1	0	-1	0	-2	-2	-3	-2	-1	-2	-2	0.9
Winter hardiness #	6	[4]	6	[6]	5	6	[6]	-	5	6	6	-	-	5	4	6	1.1
Disease resistance																	
Mildew	4	7	7	4	6	6	5	6	3	6	7	6	5	7	7	6	1.0
Yellow rust	2	7	9	6	7	9	6	8	7	9	7	8	8	6	8	7	1.7
Brown rust	7	6	8	4	6	5	7	6	7	7	6	4	5	8	4	5	1.3
Rhynchosporium	8	8	7	8	6	7	4	8	4	7	8	7	8	8	7	8	1.1
Net blotch	5	7	5	8	5	5	8	7	8	7	7	7	8	6	7	7	-
BaYMV	R	-	-	R	-	R	R	R	-	R	R	R	R	R	R	R	

### Varieties not added to RL

Blazing	Trick	Vanquish	Hercule	Malabar	
-	-	-	-	-	
95	101	100	106	104	
96	102	101	106	104	
97	100	101	105	105	
[95]	[101]	[97]	[107]	104	
					J
76	80	81	89	82	
					J
7	6	7	6	6	
84	84	89	97	92	
-1	-2	+1	-2	-2	
-	-	-	-	[7]	
7	6	6	7	7	
5	9	9	9	6	
5	6	7	6	6	
9	8	8	8	8	
6	6	7	7	7	
-	-	R	R	R	

**P1, P2** = first and second year of recommendation

\* = variety no longer in trials

**C** = yield control

UK = recommended for the UK

E = recommended for the East region

North = recommended for the North region

Sp = specific recommendation

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

 $\sim$  = Cassata and Purdey have specific recommendations for growers wanting BaYMV resistant varieties for malting

\$ = Boost, Element and Volume are hybrid varieties

# = the winter hardiness scores are taken from extreme tests in the Jura mountains of France

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

Comparisons of variety performance across regions are not valid

SUPPLEMENTARY DATA																	
RECOMMENDED		P2	С	P2	С	I	P2	P1	С		P2 C	P1	P1	*	*	С	
HGCA	Cassata ~	Winsome	Flagon	Purdey	Pearl	Retriever	KWS-Cassia	Florentine	Saffron	Suzuka	Volume	Element	Escadre	Pelican	Boost	Sequel	Average LSD (5%)
Variety type	Two-ro	w malti	ng			Two-re	ow feed				Six-rov	v feed					
Scope of recommendation	Sp	UK	UK	E+Sp	UK	UK	UK	UK	UK	UK	UK	North	UK	UK	UK	UK	
Breeder/UK contact																	
Breeder	Lim	Syn	Syn	Syn	Lim	Sej	KWS	Sen	KWS	Syn	Syn	Syn	KWS	SU	Syn	Syn	
UK contact	Lim	Syn	Syn	Syn	Lim	Lim	KWS	Sen	KWS	Syn	Syn	Syn	KWS	SU	Syn	Syn	
Annual yields as % treated control																	
2006 treated yield (9.0 t/ha)	98	-	97	-	94	104	-	-	100	99	109	-	-	105	101	100	2.6
2007 treated yield (8.4 t/ha)	95	[98]	98	[100]	95	103	[106]	-	101	99	[109]	-	-	105	99	98	4.2
2008 treated yield (9.0 t/ha)	97	98	94	98	96	104	104	103	100	98	110	112	104	103	107	100	4.7
2009 treated yield (8.7 t/ha)	98	100	99	96	95	110	107	106	102	101	-	109	108	108	105	104	3.6
2010 treated yield (9.4 t/ha)	97	95	98	93	92	106	103	101	99	97	108	106	103	107	102	102	3.4
Soil type (about 50% of trials are m	nedium	soils)															
Light soils (8.4 t/ha)	98	98	96	97	94	107	104	103	100	101	109	109	106	101	102	101	3.6
Heavy soils (8.7 t/ha)	97	97	98	98	96	105	103	100	101	99	106	103	101	106	99	99	4.4
Agronomic characteristics																	
Lodging % without PGR	2	11	12	3	5	8	2	1	2	3	10	6	7	9	6	11	-
Lodging % with PGR	1	7	8	1	1	4	2	0	1	2	8	5	8	3	2	5	-
Malting quality																	
Hot water extract (I deg/kg)	304.6	312.2	307.8	309.1	307.1	-	-	-	-	-	-	-	-	-	-	-	1.6

Blazing	Trick	Vanquish	Hercule	Malabar
-	-	-	-	-
Syn	Syn	Lim	Mas	Mas
Syn	Syn	Lim	Mas	Mas
-	-	-	-	-
-	-	-	-	[108]
97	101	101	108	101
97	104	102	108	110
95	100	99	104	101
97	103	102	103	104
95	100	98	107	102
2	7	5	8	14
3	4	2	4	5
309.1	306.9	306.0	-	-

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

#### Key to breeder/UK contact codes:

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

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

Mas = Masstock Arable (www.masstock.co.uk)

Sej = Sejet, Denmark

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

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

Syn = Syngenta Seeds (www.newfarmcrops.co.uk)

### Varieties not added to RL

### HGCA Recommended List<sup>®</sup> harvest 2011 Summary of candidate winter barley varieties

CANDIDATE HGCA	Variety ID	Yield treated (T)	Yield untreated (UT) (% treated controls)	Lodging % (UT)	Lodging % (T)	Height (cm) (UT)	Maturity (+/- Pearl)	Mildew (1-9)	Yellow rust (1-9)	Brown rust (1-9)	Rhynchosporium (1-9)	Net blotch (1-9)	BaYMV	Variety type	Specific weight (kg/hl)	UK contact
Control varieties	4040	0.0	00	-	-	00	0	<u>_</u>	-	0	0	_			74.0	
Pearl	1318	92	82	/	/	98	0	6	/	6	6	5	-	2-row	71.6	
Flagon	1910	98	88	6	6	96	-	/	9	8	/	5	-	2-row	71.3	
Samron	1880	100	85	8	/	86	0	3	/	/	4	8	-	2-row	71.0	
Sequei	1/1/	102	80	/	/	99	-3	0	/	5	8	/	<u>п</u>	W01-0	70.8	
Volume	2244	109	97	0	0	102	-3	/	/	6	8	/	R	hybrid 6-row	69.9	
Selected as potential maltir	ng varietie	es .					111.1									
SY-Venture (SYN 208-57)	2443	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing							2-row		Syngenta
Archer (NSL06-7248-C)	2447	99	88	-	-	[92]	0	6	[6]	6	8	7	R	2-row	70.2	Limagrain
Selected as potential feed v	varieties															
SY-Bamboo (SYN 208-52)	2444	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing							hybrid 6-row		Syngenta
KWS-Meridian (LP-6-728)	2436	105	92	-	-	[99]	-3	9	[7]	8	7	8	R	6-row	67.5	KWS
Sinatra (SJ053103)	2454	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing							2-row		Senova
Matros (SJ048330)	2452	105	96	-	-	[95]	0	7	[5]	8	8	6	-	2-row	68.9	Limagrain
Canyon (NIC06-5100-D)	2448	103	94	-	-	[90]	-1	5	[8]	6	7	7	R	2-row	70.4	Limagrain
Trial mean		9.0	7.9	-	-	-	-	-	-	-	-	-	-	-	-	
LSD 5%		2.6	5.6	-	-	-	-	-	-	-	-	-	-	-	0.9	
No. of trials		16	7	-	-	5	7	28	3	14	20	7	-	-	8	

Candidate varieties will be considered for the 2012/13 HGCA Recommended List

[] = limited data

Disease ratings on 1-9 scale with 9 = good resistance

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

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.

**®** = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB

# HGCA Recommended List® spring barley 2011

MARKET OPTIONS AND GRAII	N QUA	LITY																
RECOMMENDED	P2	P1	С	P1		P1	С				С	<b>C</b> *	С	P1	P2		*	
HGCA	Propino	Panther	Quench	Shuffle	Concerto	Moonshine	NFC-Tipple	Publican	Forensic	Belgravia	Westminster	Oxbridge	Optic	Summit	Garner	Waggon	Scout	Average LSD (5%)
End-use group	Maltir	ng varieti	ies											Feed v	varieties			
Scope of recommendation	UK	East	UK	UK	UK	NE	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	NE	
UK treated yield as % control (7.2 t/ha)	107	107	106	105	104	103	103	102	102	102	99	97	96	107	107	106	104	2.7
Main market options																		
IBD malting approval for brewing use	Р	Т	F	Т	F	Т	F	-	-	-	F	-	F	-	-	-	-	
IBD malting approval for distilling use	-	-	-	Т	F	Т	-	F	-	F	-	F	F	-	-	-	-	
IBD malting approval for grain distilling use	-	-	-	-	-	-	-	-	F	F	-	-	-	-	-	-	-	
Overseas malting	[Y]	-	Y	-	[Y]	-	Y	-	-	-	-	-	Y	-	-	-	-	
Year first listed	10	11	07	11	09	11	05	07	09	08	05	05	95	11	10	05	08	
Grain quality																		
Specific weight (kg/hl)	66.9	68.2	67.7	66.9	68.0	67.1	68.2	68.5	66.9	68.3	69.8	69.4	69.7	67.1	66.1	67.4	68.3	0.7
Sieving % through 2.25 mm	1.1	[1.3]	1.5	[1.1]	1.1	[1.0]	1.4	1.1	1.3	1.3	1.2	1.1	1.5	[1.7]	1.3	-	[1.3]	0.4
Sieving % through 2.5 mm	3.3	[4.7]	4.9	[3.6]	3.4	[3.5]	4.1	3.3	4.1	4.3	3.6	3.2	5.3	[5.2]	4.8	-	[4.2]	1.1
Nitrogen content (%)	1.55	1.47	1.55	1.55	1.53	1.50	1.50	1.57	1.52	1.58	-	1.61	1.56	-	-	-	-	0.05

P1, P2 = first and second year of recommendation

\* = variety no longer in trials

**C** = yield control

[] = limited data

Y = suited to that market

[Y] = may be suited to that market

T = under test for IBD approval in this segment

F = Full IBD approval

P = Provisional IBD approval

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

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

 $\mathsf{UK}=\mathsf{recommended}$  for the whole of the  $\mathsf{UK}$ 

East = recommended for the East region

NE = recommended for the North East region

Varieties no longer listed: Decanter, Doyen, Jolika and Sweeney

### Varieties not added to RL

	SY-Taberna	Marionette	Checkmate	Cromwell
_	-	-	-	-
	106	105	100	104
_	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	67.9	67.0	68.6	67.5
	[1.3]	[1.2]	[1.1]	[1.4]

[4.0]

1.53

[3.9]

1.49

[3.8]

1.56

[4.6]

1.51

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# HGCA Recommended List® spring barley 2011

YIELD, AGRONOMY AND DISE	ASE R	ESIST	ANCE															
RECOMMENDED	P2	P1	С	P1		P1	С				С	<b>C</b> *	С	P1	P2		*	
HGCA	Propino	Panther	Quench	Shuffle	Concerto	Moonshine	NFC-Tipple	Publican	Forensic	Belgravia	Westminster	Oxbridge	Optic	Summit	Garner	Waggon	Scout	Average LSD (5%)
End-use group	Maltir	ng varieti	es											Feed v	arieties			
Scope of recommendation	UK	East	UK	UK	UK	NE	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	NE	
Fungicide treated grain yield as % treated	d contro	l																
UK with fungicide (7.2 t/ha)	107	107	106	105	104	103	103	102	102	102	99	97	96	107	107	106	104	2.7
North East region with fungicide (7.2 t/ha)	107	108	105	106	103	102	103	102	103	101	99	96	97	105	106	107	106	3.3
East region with fungicide (7.1 t/ha)	108	[106]	107	[106]	107	[105]	103	102	101	104	100	96	94	[109]	107	104	[103]	4.4
West region with fungicide (7.8 t/ha)	[107]	[105]	106	[104]	101	[102]	102	101	103	102	98	99	96	[107]	[106]	104	-	4.4
North West region with fungicide (6.5 t/ha)	[108]	-	105	-	[107]	-	102	104	[101]	102	102	95	97	-	[109]	107	[98]	6.5
Untreated grain yield as % treated contro	ol in con	nparable	trials															
UK without fungicide	97	98	94	95	94	91	92	94	86	94	92	87	81	99	96	94	93	3.5
Agronomic features																		
Resistance to lodging	8	[5]	8	[9]	6	[6]	7	7	6	7	6	8	7	[8]	8	8	6	1.2
Straw height (cm)	76	69	70	77	77	71	68	74	71	76	82	73	75	69	73	73	72	2.3
Ripening (days +/- Optic, -ve = earlier)	0	0	0	+1	+1	-1	0	+1	0	+1	+1	0	0	+1	0	-1	0	0.9
Resistance to brackling	8	8	8	9	7	7	8	7	8	7	6	8	5	9	8	8	7	1.2
Disease resistance																		
Mildew	8	8	9	8	8	8	8	9	4	9	9	7	5	8	9	9	8	0.8
Yellow rust	3	5	5	6	7	7	4	4	5	8	7	5	8	6	7	7	2	2.4
Brown rust	[5]	[9]	4	[3]	7	[5]	7	5	6	7	6	6	7	[4]	[6]	6	6	-
Rhynchosporium	7	4	8	6	4	4	4	8	5	7	8	7	4	7	7	3	4	1.6

Varieties not added to RL

SY-Taberna	Marionette	Checkmate	Cromwell
-	-	-	-
106	105	100	104
104	102	102	105
[107]	[105]	-	[102]
[106]	[105]	-	[103]
-	-	-	-
98	93	92	93
[8]	[6]	[9]	[8]
77	75	75	72
+2	[0]	+2	-1
9	9	9	9
8	8	8	6
6	7	5	6
[4]	[3]	[6]	[8]
6	3	7	4

P1, P2 = first and second year of recommendation

\* = variety no longer in trials

C = yield control

[] = limited data

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

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

Comparisons of variety performance across regions are not valid

 $\mathsf{UK}$  = recommended for the whole of the  $\mathsf{UK}$ 

East = recommended for the East region

NE = recommended for the North East region

# HGCA Recommended List<sup>®</sup> spring barley 2011

SUPPLEMENTARY DATA	A																	
RECOMMENDED	P2	P1	С	P1		P1	С				С	C*	С	P1	P2		*	
HGCA	Propino	Panther	Quench	Shuffle	Concerto	Moonshine	NFC-Tipple	Publican	Forensic	Belgravia	Westminster	Oxbridge	Optic	Summit	Gamer	Waggon	Scout	Average LSD (5%)
End-use group	Malting	y varietie	s											Feed v	arieties			
Scope of recommendation	UK	East	UK	UK	UK	NE	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	NE	
Breeder/UK contact																		
Breeder	Syn	Lim	Syn	Syn	Lim	RAGT	Syn	Syn	Syn	Lim	Lim	Lim	Syn	Syn	Syn	Syn	Lim	
UK contact	Syn	Lim	Syn	Syn	Lim	RAGT	Syn	Syn	Syn	Lim	Lim	Lim	Syn	Syn	Syn	Syn	Lim	
Grain yield as % treated contro	I																	
2006 treated (6.9 t/ha)	-	-	105	-	105	-	102	103	99	99	98	98	97	-	-	103	106	3.6
2007 treated (7.0 t/ha)	106	-	105	-	105	-	103	104	102	102	104	94	95	-	108	108	103	3.1
2008 treated (7.4 t/ha)	106	105	103	105	105	101	102	101	104	103	102	98	96	108	105	108	106	3.5
2009 treated (7.4 t/ha)	109	[109]	107	[107]	102	[103]	102	102	103	100	98	97	97	[107]	108	106	[104]	4.0
2010 treated (7.0 t/ha)	106	107	107	105	104	104	104	102	103	104	95	96	98	106	106	105	-	3.7
Malting quality																		
Hot water extract (I deg/kg)	313.5	314.8	313.1	312.6	315.9	312.8	311.5	312.3	312.8	311.7	-	313.2	311.9	-	-	-	-	1.6

SY-Taberna	Marionette	Checkmate	Cromwell
-	-	-	-
Syn	Syn	Syn	RAGT
Syn	Syn	Syn	RAGT
-	-	-	-
-	-	-	-
103	105	101	104
[107]	[103]	[101]	[105]
107	[104]	100	104
312.5	312.5	312.0	312.4

Varieties not added to RL

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

Key to breeder/UK contact codes:

Lim = Limagrain UK (www.limagrain.co.uk) RAGT = RAGT Seeds (www.ragt.co.uk)

Syn = Syngenta Seeds (www.newfarmcrops.co.uk)

# HGCA Recommended List<sup>®</sup> spring barley 2011

### Malting varieties

**Belgravia** is a malting variety fully approved for both malt and grain distilling. It has high disease resistance, especially to mildew and *Rhynchosporium*.

**Concerto** is a high-yielding malting variety fully approved for both brewing and malt distilling. It has a high treated yield and high resistance to mildew but is susceptible to *Rhynchosporium*.

**Forensic** is a malting variety fully approved by IBD for grain distilling. It is high yielding in the North region with a low brackling risk. It is susceptible to mildew and moderately susceptible to yellow rust and *Rhynchosporium*. It has a medium specific weight.

**New Moonshine** was added to the HGCA Recommended List 2011/12 for the North East region as a high-yielding variety with malting potential. It is under malting test for brewing and distilling with IBD and growers are advised to speak to merchants before committing to this or other varieties in this position. It has short straw of moderate strength and high resistance to mildew but is susceptible to *Rhynchosporium*.

**NFC-Tipple** is a malting variety fully approved by IBD for brewing and suitable for export malting markets. It is high yielding and has high resistance to mildew but is susceptible to yellow rust and *Rhynchosporium*. **Optic** is fully approved for both brewing and malt distilling and is also suitable for export as a malting variety. It has a good specific weight and high resistance to yellow rust but is susceptible to *Rhynchosporium* and moderately susceptible to mildew and has a low untreated yield. It has a tendency to brackle.

**Oxbridge** is fully approved by IBD for malt distilling. It has a good specific weight, high resistance to *Rhynchosporium* and moderately high resistance to mildew with a low brackling risk. It is no longer in RL trials.

**New Panther** was added to the HGCA Recommended List 2011/12 for the East region as a very high-yielding variety with malting potential for brewing. The variety is under malting (brewing) tests with IBD and growers are advised to speak to merchants before committing to this or other varieties in this position. Panther has given very high yields from both treated and untreated trials; it has short straw but limited data suggest moderate straw strength. It has high resistance to mildew but is susceptible to *Rhynchosporium* and moderately susceptible to yellow rust.

**Propino** is a very high-yielding variety provisionally approved by IBD for brewing. It has given very high yields from both treated and untreated trials with high resistance to mildew and *Rhynchosporium* and a low brackling risk but it is very susceptible to yellow rust and moderately susceptible to brown rust. **Publican** is a malting variety, fully approved by IBD for malt distilling. It has high resistance to mildew and *Rhynchosporium* but is susceptible to yellow rust and moderately susceptible to brown rust.

**Quench** is fully approved by IBD for brewing and is suitable for export malting markets. It has a high treated yield with short, stiff straw; high resistance to mildew and *Rhynchosporium* and a low brackling risk. It is susceptible to brown rust and moderately susceptible to yellow rust.

**New Shuffle** was added to the HGCA Recommended List 2011/12 as a high-yielding variety with malting potential for brewing and malt distilling. The variety is under malting test for brewing and distilling with IBD and growers are advised to speak to merchants before committing to this or other varieties in this position. It has high resistance to mildew but it is susceptible to brown rust and has a moderate specific weight. Limited data suggest the variety has high resistance to lodging.

**Westminster** is a malting variety fully approved by IBD for brewing and is also widely grown as a feed variety. It has a treated yield potential around 8% below the highest yielding varieties but remains popular with feed growers due to its combination of longer than average straw, good specific weight and good disease characteristics. It is a medium-tall variety with high resistance to mildew and *Rhynchosporium*.

### **Two-row feed varieties**

**Garner** is a feed variety that has given very high yields in both fungicide treated and untreated trials. It has short, stiff straw, high resistance to mildew and *Rhynchosporium* and with a low brackling risk but gives moderate specific weights.

**Scout** is a high-yielding, short-strawed feed variety that is recommended for the North East region. It has given very high yields in the North region, competitive with the highest yielding varieties there and with a low brackling risk. It has

high resistance to mildew but is susceptible to *Rhynchosporium* and very susceptible to yellow rust. It is no longer in RL trials.

**Summit** was added to the HGCA Recommended List 2011/12 as a feed variety that has given very high yields in both fungicide treated and untreated trials. It has short straw and little lodging has been seen in trials. It has high resistance to mildew and *Rhynchosporium* but limited data suggest it is susceptible to brown rust.

**Waggon** is a high-yielding feed variety that has high resistance to mildew but is very susceptible to *Rhynchosporium*. It has short, stiff straw and high resistance to brackling.

### HGCA Recommended List<sup>®</sup> harvest 2011 Summary of candidate spring barley varieties

CANDIDATE	Variety ID	Vield treated (T)	Yield untreated (UT) (% treated controls)	Lodging % (UT)	Lodging % (T)	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									-				
Quench	2121	107	100	[2]	2	71	+1	18	9	4	8	69.5	
NFC-Tipple	1966	103	95	[7]	2	67	0	23	8	7	4	69.5	
Optic	1188	97	87	[6]	3	74	0	45	5	7	4	70.8	
Westminster	1939	97	93	[6]	8	82	+2	26	9	6	8	71.0	
Oxbridge	1940	96	88	[7]	1	73	+1	23	7	6	7	70.8	
Selected as potential malting varie	ties												
Odyssey (NSL08-4556-A)	2470	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing						Limagrain
Overture (NSL07-8120-A)	2465	107	104	-	-	76	[+2]	[22]	8	[6]	[8]	[69.1]	Limagrain
Chronicle (NSL07-8124-B)	2466	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing						Limagrain
Bogart (SJ083081)	2482	105	96	-	-	73	[0]	[46]	8	[8]	[6]	67.9	Senova
SY-Universal (SYN-408-192)	2498	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing						Syngenta
SY-Aboyne (SYN-408-190)	2496	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing						Syngenta
SY-Barrell (SYN-408-191)	2497	Data una	vailable as va	riety has n	ot comple	ted Nationa	al Listing						Syngenta
Mean of controls (t/ha)		7.2	6.7	-	-	-	-	-	-	-	-	-	
LSD 5%		2.9	5.1	-	-	2.0	1.3	13	-	-	-	0.7	
No. of trials		18	9	-	-	15	7	7	19	6	10	10	

Candidate varieties will be considered for the 2012 HGCA Recommended List

[] = limited data

Disease ratings on 1-9 scale with 9 = good resistance

T = data from trials treated with fungicide

UT = data from trials without fungicide or PGR

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

# HGCA Recommended List® winter and spring oats

### Conventional husked varieties – winter

**Balado** is a short, very stiff-strawed conventional husked variety with a very high treated yield, around 6% higher than Tardis, and a good untreated yield. It has a rather low specific weight and kernel content and is susceptible to mildew and very susceptible to crown rust.

**Brochan** is a conventional husked variety. It has a similar treated yield to Dalguise; a good untreated yield and relatively short straw with above average lodging resistance. It has high kernel content but a low specific weight.

**Dalguise** is a conventional husked variety. It is early maturing and has treated yields slightly higher than Gerald with good specific weight and kernel contents. It is very susceptible to mildew and crown rust and has low lodging resistance.

**Gerald** is a conventional husked variety. Its treated yield is now 9% below the highest yielding variety but remains popular, taking around 40% of provisional certified seed production in 2010. It remains popular with millers, despite a low kernel content. Gerald is susceptible to crown rust and very susceptible to mildew.

**Mascani** is a conventional husked variety popular with millers. It has a fungicide treated yield 10% below the highest yielding variety but has very good quality characteristics: low screenings, high kernel content and good specific weight and is now as popular with growers as Gerald, taking around 36% of provisional certified seed production in 2010. Its straw stiffness is similar to Gerald. Mascani has shown good resistance to the common crown rust races but a race exists that can infect Mascani, although levels have so far been low. **Tardis** is a conventional husked variety. It has a high treated yield, around 2% above Dalguise, and with a good untreated yield. It is early maturing and has short straw with above average resistance to lodging. Tardis has high resistance to mildew and above average resistance to crown rust but tends to give low specific weights and kernel contents.

### Huskless (naked) varieties – winter

**Hendon** is a dwarf huskless (naked) oat variety. It has very short, very stiff straw which may not require PGR. Naked oats tend to yield around 30% below conventional husked varieties. Hendon has given yields around 2% higher than the naked oat Grafton but is susceptible to crown rust. It is no longer in RL trials.

**Fusion** is a huskless (naked) oat variety with short, very stiff straw which may not require PGR. Naked oats tend to yield around 30% below conventional husked varieties. Fusion has given yields similar to Hendon with good specific weights. It is very susceptible to mildew and crown rust. **Grafton** is a naked variety with a yield potential 2% below Hendon and 24% below the conventional husked variety Gerald. It has a relatively good specific weight and lower screenings than other naked varieties. It is relatively early maturing but is very susceptible to mildew.

### Conventional husked varieties – spring

**Ascot** is a high-yielding conventional husked variety. It has a treated yield some 6% higher than Firth but with a lower kernel content and specific weight.

**Atego** is a conventional husked variety which is shortstrawed and early maturing but very susceptible to mildew.

**Canyon** was added to the HGCA Recommended List 2011/12 as a high-yielding conventional husked variety. It is a long-strawed variety but little lodging has been seen in trials. It is early ripening and has high resistance to mildew.

**Drummer** is a conventional husked variety with a yield around 4% lower than Firth with a lower kernel content. It has long straw with only moderate lodging resistance and is susceptible to crown rust. It is no longer in RL trials. **Firth** is a conventional husked variety which remains a popular variety and widely used by millers. It has a high kernel content and above average resistance to mildew.

**Husky** is a conventional husked variety. It is early maturing, around 2% higher yielding than Firth and with above average straw stiffness. Husky has good specific weight and kernel content. It has above average resistance to mildew but it is susceptible to crown rust.

**Leven** is a conventional husked variety. It has a treated yield some 2% lower than Firth but has a number of compensating characters: it is early maturing, has stiff straw, a high kernel content and above average resistance to mildew. **NEW Rozmar** was added to the HGCA Recommended List 2011/12 as a high-yielding conventional husked variety with early ripening.

**SW-Argyle** is a conventional husked variety. It has high resistance to crown rust.

<b>RECOMMENDED VARIETIES</b>										
RECOMMENDED	P2		С		С		*	P2		
			0			_				LSD (5%)
HGCA	Balado	Tardis	Dalguise	Brochan	Gerald	Mascani	Hendon	Fusion	Grafton	Average
Variety type	Conventio	onal husked v	arieties				Naked varie	eties		
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	
UK yield as % treated control (8.3 t/ha)										
Fungicide treated	109	103	101	100	100	99	78	78	76	4.1
Untreated as % of treated	101	100	90	98	95	98	70	68	66	14.8
Grain quality										
Kernel content (%)	73.3	72.8	75.8	77.9	72.8	78.3	-	-	-	0.8
Specific weight (kg/hl)	49.9	49.1	53.9	50.2	52.6	53.8	61.7	63.6	65.1	1.3
Screenings % through 2.0mm	0.5	0.3	0.2	0.3	0.3	0.1	47.7	37.9	17.7	4.4
Agronomic features										
Resistance to lodging	9	7	4	7	5	6	8	9	6	1.3
Straw length (cm)	91	110	122	108	119	117	84	91	120	5.7
Ripening (days +/- Gerald, -ve = earlier)	0	-2	-2	0	0	-1	+1	+1	-2	1.5
Disease resistance										
Mildew	4	8	3	5	3	6	5	3	3	-
Crown rust	3	7	3	5	4	8 ~	4	3	6	-
Year first listed	10	07	03	07	93	04	03	10	00	
Breeder/UK contact										
Breeder	IBERS	IBERS	Sen	Sen	IBERS	IBERS	IBERS	IBERS	IBERS	
UK contact	Sen	Sen	Sen	Sen	Sen	Sen	Sen	Sen	Sen	

P2 = second year of recommendation

**C** = yield control

\* = variety no longer in trials

[] = limited data

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

Average LSD (least significant difference) 5%. Varieties that are more than one LSD apart are significantly different at the 5% confidence level ~ A race of crown rust has been identified which may affect Mascani but infection levels in trials have been low so far

### Key to breeder/UK contact codes:

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

#### Variety no longer listed: Kinross

Bastion is a candidate for the 2012/13 HGCA Recommended List

Candidate

Bastion

-

[76] [66]

-[61.9] [27.2]

> [4] 118 -1

3 [5]

IBERS Sen

# HGCA Recommended List<sup>®</sup> spring oats 2011

RECOMMENDED VARIETIES										
	D4	•					•			
RECOMMENDED	P1	С	P1		С		С		*	
	_					jyle			er	e LSD (5%)
HUCA	Canyon	Ascot	Rozmaı	Atego	Husky	SW-Arg	Firth	Leven	Drumm	Average
Variety type	Conventio	nal huske	ed varieties							
Scope of recommendation	UK	UK	UK	UK	UK	UK	UK	UK	UK	
UK yield as % treated control (7.4 t/ha)										
Fungicide treated	[106]	103	[101]	99	99	99	98	96	94	5.9
Untreated as % of treated	95	86	89	79	86	86	87	87	79	4.7
Grain quality										
Kernel content (%)	75.1	75.7	74.3	74.4	76.5	74.9	77.0	78.9	74.5	1.1
Specific weight (kg/hl)	53.4	51.8	52.3	52.0	54.0	52.3	52.6	53.2	53.3	1.2
Screenings % through 2.0mm	[0.5]	0.3	[0.2]	0.2	0.2	0.4	0.6	0.1	0.2	1.8
Agronomic features										
Resistance to lodging	[8]	7	[6]	6	7	7	7	8	5	1.2
Straw length (cm)	117	113	111	102	109	107	104	107	113	2.8
Ripening (days +/- Firth, -ve = earlier)	-2	+1	-2	-3	-3	+1	0	-3	0	1.5
Disease resistance										
Mildew	8	6	6	3	7	6	7	7	5	0.9
Crown rust	-	5	-	6	4	8	5	5	4	2.2
Year first listed	11	07	11	07	08	03	00	07	97	
Breeder/UK contact										
Breeder	Nord	Wier	Selg	Selg	Nord	LSW	KWS-L	KWS-L	KWS-L	
UK contact	SU	Lim	Cope	Cope	SU	Sen	KWS	KWS	Lim	

**P1** = first year of recommendation **C** = yield control \* = variety no longer in trials [] = limited data Average LSD 5%. Varieties that are more than one LSD apart are significantly different at the 5% confidence level On the 1-9 scales high figures indicate that a variety shows the character to a high degree (e.g. high resistance)

### Key to breeder/agent codes:

Bauer = Bauer, Germany Cope = Trevor Cope Seeds Ltd (www.trevorcopeseeds.co.uk) IBERS = Institute of Biological, Environmental & Rural Sciences Nord = Nordsaat, Germany KWS = KWS UK Ltd (www.kws-uk.com) KWS-L = KWS Lochow, Germany

Lim = Limagrain UK (www.limagrain.co.uk) LSW = Lantmännen SW Seed, Sweden Satn = Saturn Seeds (www.saturnseeds.co.uk) Selg = Selgen, Czech Republic

Sen = Senova Ltd (www.senova.uk.com) SU = Saaten Union UK Ltd (www.saaten-union.co.uk) Wier = Wiersum, Netherlands

Valene	Olympic	Dominik	Gandalf	Circle	Zuton	Lennon
Conventio	nal				Naked	
-	-	-	-	-	-	-
[106]	[106]	[105]	[104]	[102]	69	[76]
[94]	[92]	[84]	[93]	[84]	60	67
[76]	[76]	[74]	[75]	[77]	-	-
[51.2]	[51.3]	[52.0]	[52.0]	[53.8]	67.2	63.3
[0.2]	[0.2]	[0.2]	[0.1]	[0.1]	[11.8]	[15.6]
[7]	[7]	[8]	[6]	[7]	8	7
103	108	102	110	109	101	102
[0]	[-2]	[-3]	[-2]	[-2]	-2	-3
7	7	4	6	4	6	6
-	-	-	-	-	4	-
-	-	-	-	-	-	-
Wier	Wier	Bauer	Wier	LSW	IBERS	IBERS
Lim	Lim	Cope/Satn	KWS	Sen	Sen	Sen

Circle, Dominik, Gandalf, Olympic and Valene are candidates for the 2012 HGCA Recommended List

Candidates

Lennon and Zuton are naked varieties that are not eligible for recommendation

Other varieties

**®** = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB

### HGCA Recommended List<sup>®</sup> winter oilseed rape 2011/12 East/West region

YIELD, AGRONOMY AND DISE	EASE I	RESI	STAN	NCE																							Other variety
RECOMMENDED	P1		P2	P1	P1	P1	P2			С	С	P1	P1	*	*	*	*	C*	*	P1	С	P1	*	*	*		*
HGCA	Sesame	PR46W21	DK-Cabernet	Compass	Rhino	Palace	Fashion	Dimension	Vision	Flash	Excalibur	Cash	DK-Sequoia #	Expert	Es-Astrid	Lioness	Hammer	NKBravour	Excel	PR45D05 #	Castille	Cracker \$	DK-Secure #	PR45D03 #	Mendel \$	Average LSD (5%)	V1410L ~
Variety type	Conv	BH	Conv	RH	RH	BH	Conv	BH	Conv	RH	ВН	Conv	RH	Conv	Conv	Conv	BH	Conv	BH	RH	Conv	RH	RH	RH	RH		Conv
Scope of recommendation	EVV/	EVV/	EVV/	1.IK	EVV/	EVV/		FAN/	FVV/	1.IK		EVV/	Sn	EVV/	EVV/	LIK	F//		EVV/	Sn	FVV/	Sn	Sn	Sn	Sn		HOLL
Gross output (vield adjusted for oil cont	ent) as	% con	trol	OR	2,00	<u></u> ,,,,	UI	2/ * *	<u> </u>	UI	OIX	2/00	op	2/00	2,00	UI	<u> </u>	OR	2,00	op	<u> </u>	op	op	op	qo		HOLL
Fungicide treated (5.1 t/ha)	110	109	107	106	106	104	104	104	103	102	102	101	101	100	100	100	99	99	99	99	97	97	97	97	92	4.7	90
Untreated as % of treated	-	[89]	[93]	[89]	-	-	[88]	[87]	[88]	84	84	-	-	81	81	85	[85]	84	80	[88]	80	-	[84]	82	78	11.9	[74]
Seed yield as % control																											
Fungicide treated (4.7 t/ha)	110	106	106	103	104	103	104	101	104	102	101	100	101	101	102	97	97	98	100	99	99	97	98	97	93	4.3	89
Untreated as % of treated	-	88	[93]	[90]	-	-	[88]	87	90	86	85	-	-	84	85	84	85	84	83	[89]	83	-	87	83	80	9.8	[75]
Agronomic features																											
Resistance to lodging	[8]	8	8	8	8	7	8	8	8	7	7	8	9	8	8	8	8	8	7	8	8	8	9	9	8	0.5	[8]
Stem stiffness	8	9	9	8	8	8	8	8	8	7	7	8	9	7	8	8	8	8	5	9	7	8	9	9	9	0.7	6
Shortness of stem	6	6	7	6	7	6	6	6	7	6	7	6	9	6	8	7	6	7	6	9	8	6	8	9	6	0.3	7
Earliness of flowering	6	7	5	6	8	8	7	7	6	6	8	7	4	6	5	6	6	7	6	6	8	7	4	6	6	0.4	7
Earliness of maturity	4	5	4	5	6	5	5	5	5	4	6	6	5	4	6	5	5	5	5	5	6	5	6	5	6	0.6	6
Seed quality (at 9% moisture)																											
Oil content, fungicide treated (%)	44.6	46.6	45.5	46.6	45.7	45.6	45.2	46.5	44.4	45.0	44.9	45.7	44.6	44.5	43.3	46.5	46.2	45.6	44.2	44.4	43.6	44.7	43.8	44.4	44.0	0.4	45.5
Glucosinolate (µmoles/g of seed)	12.8	11.2	10.1	9.7	10.0	11.4	11.9	12.1	13.8	13.0	17.4	13.1	11.5	11.5	14.0	8.5	12.1	9.8	19.0	10.1	13.6	10.4	13.8	11.2	12.3		17.6
Disease resistance																											
Light leaf spot	6	5	6	6	6	7	6	5	6	5	6	5	6	5	5	5	5	5	5	6	5	9	6	5	5	0.9	7
Stem canker	5	4	6	4	5	5	5	5	6	4	5	8	5	6	7	5	6	5	9	5	6	4	5	4	5	1.0	6
Clubroot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	R		-
Year first listed	11	09	10	11	11	11	10	09	09	08	06	11	11	04	05	05	09	05	07	11	05	11	09	09	02		-

**P1**, **P2** = first and second year of recommendation

\* = variety no longer in trial in region **C** = vield control [] = limited data

Conv = conventional open-pollinated variety

RH = restored hybrid

Sp = specific recommendation

E/W = recommended for the East/West region

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

Hybrids are sown in trials at 70 seeds/sgm, conventional varieties at 120 seeds/sgm

\$ = Cracker and Mendel are specific recommendations for use on land infected with common strains of clubroot but may be infected by some strains and infections have been reported in some fields

# = DK-Sequoia, PR45D05, PR45D03 and DK-Secure 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

~ = V1410L is a high oleic, low linolenic (HOLL) variety

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

Glucosinolate contents are taken from the National List trials data



### HGCA Recommended List<sup>®</sup> winter oilseed rape 2011/12 East/West region

SUPPLEMENTARY DATA																										
RECOMMENDED	P1		P2	P1	P1	P1	P2			С	С	P1	P1	*	*	*	*	<b>C</b> *	*	P1	С	P1	*	*	*	
HGCA	Sesame	PR46W21	DK-Cabernet	Compass	Rhino	Palace	Fashion	Dimension	Vision	Flash	Excalibur	Cash	DK-Sequoia #	Expert	Es-Astrid	Lioness	Hammer	NKBravour	Excel	PR45D05 #	Castille	Cracker \$	DK-Secure #	PR45D03 #	Mendel \$	Average LSD (5%)
Variety type	Conv	RH	Conv	RH	RH	RH	Conv	RH	Conv	RH	RH	Conv	RH	Conv	Conv	Conv	RH	Conv	RH	RH	Conv	RH	RH	RH	RH	
Scope of recommendation	E/W	E/W	E/W	UK	E/W	E/W	UK	E/W	E/W	UK	UK	E/W	Sp	E/W	E/W	UK	E/W	UK	E/W	Sp	E/W	Sp	Sp	Sp	Sp	
Breeder/UK contact																				,						
Breeder	LSPB	Pion	DK	DSV	KWS	LSPB	LSW	DSV	LSW	DSV	DK	KWS	DK	Mom	Eur	DSV	DSV	SSG	DK	Pion	DK	LSPB	DK	Pion	NPZ	
UK contact	LSPB	Pion	DK	DSV	KWS	LSPB	Sen	DSV	Sen	DSV	DK	KWS	DK	Lim	GSd	DSV	DSV	NK	DK	Pion	DK	LSPB	DK	Pion	KWS	
Annual treated gross output (yield adjus	ted for	oil co	ntent)	as % c	ontro																					
2007 (4.7 t/ha)	-	110	108	103	-	-	103	106	105	102	100	-	-	99	101	96	104	96	102	99	103	-	95	95	[88]	5.9
2008 (4.7 t/ha)	[117]	109	[116]	[113]	[110]	[107]	[111]	104	106	102	100	[109]	[105]	99	98	104	99	100	96	[99]	99	[99]	98	94	[93]	8.7
2009 (5.5 t/ha)	112	107	105	106	104	104	104	102	103	103	100	100	100	102	98	98	98	102	97	96	96	98	96	96	[94]	7.1
2010 (5.2 t/ha)	105	111	106	106	106	105	104	104	101	100	105	100	101	99	100	98	98	101	100	104	93	98	100	101	[94]	8.0
Annual untreated gross output (yield adj	usted f	or oil	conter	nt) as 🤅	% cont	rol																				
2007 (3.6 t/ha)	-	-	-	-	-	-	-	-	-	[102]	[98]	-	-	[100]	[104]	[87]	-	[95]	[114]	-	[104]	-	-	[91]	[89]	13.4
2008 (4.1 t/ha)	-	[112]	-	-	-	-	-	[112]	[107]	[104]	[96]	-	-	[97]	[92]	[121]	[116]	[109]	[86]	-	[92]	-	[106]	[103]	[93]	16.9
2009 (4.8 t/ha)	-	[101]	[110]	[109]	-	-	[103]	[100]	[107]	[103]	[103]	-	-	[98]	[100]	[103]	[101]	[100]	[95]	[103]	[95]	-	[100]	[101]	[97]	7.7
2010 (4.1 t/ha)	[108]	[110]	[112]	[102]	[105]	[105]	[107]	[103]	[106]	[97]	[106]	[103]	[93]	[97]	[93]	[96]	[91]	[100]	[95]	[107]	[97]	[97]	[97]	[97]	[95]	17.2
Agronomy																										
Plant height (cm)	159	165	157	164	154	165	159	164	156	166	156	158	130	160	142	150	161	153	167	123	142	162	135	122	158	3.2
Harvest method - gross output (yield adj	usted f	or oil	conten	it) as 🤅	∕₀ cont	rol											_		_				_			_
Swathed (4.8 t/ha)	111	109	106	104	105	105	103	105	102	101	100	105	99	102	103	98	101	102	99	98	97	97	94	94	[90]	6.3
Desiccated (5.1 t/ha)	110	108	107	107	107	105	105	103	104	102	101	99	101	99	98	100	98	98	98	100	99	97	97	97	93	5.1

P1, P2 = first and second year of recommendation

\* = variety no longer in trial in region

**C** = yield control

[] = limited data

Key to Breeder and UK contact codes

DK = DEKALB (www.dekalb.co.uk) DSV = DSV United Kingdom (www.dsv-uk.co.uk) Eur = Euralis, France GSd = Grainseed (www.grainseed.co.uk) KWS = KWS UK (www.kws-uk.com) Lim = Limagrain UK (www.limagrain.co.uk) LSW = Lantmännen SW Seed, Sweden LSPB = LS Plant Breeding (www.lspb.eu) Mom = Momont, France NK = NK - Syngenta Seeds (www.oilseedrape.com) NPZ = NPZ Lembke, Germany Pion = Pioneer Hi-Bred (www.pioneer.com) Sen = Senova (www.senova.uk.com) SSG = Syngenta Seeds, Germany

Image: Book and Comparison of AMDB (Interpretation of AMDB)

Other variety

V1410L ~

Conv HOLL

> DK DK

-91 90

--[89] [89]

155

89 90

### HGCA Recommended List<sup>®</sup> winter oilseed rape 2011/12 North region

YIELD, AGRONOMY AND DISEASE I	IELD, AGRONOWY AND DISEASE RESISTANCE															
RECOMMENDED	P1	P1		С		*	С	*			P1	C*			*	
HGCA	Compass	Fashion	Cuillin	Flash	Catana	Lioness	Excalibur	Hornet	Temple	Emerson	PR45D05 #	NKBravour	DK-Secure #	NK-Grace	Mendel \$	Average LSD (5%)
Variety type	RH	Conv	RH	RH	Conv	Conv	RH	RH	Conv	RH	RH	Conv	RH	Conv	RH	
Scope of recommendation	UK	UK	North	UK	North	UK	UK	North	North	North	Sp	UK	Sp	North	Sp	
Gross output (yield adjusted for oil content) as	% control															
Fungicide treated (5.3 t/ha)	108	106	105	105	104	103	102	101	101	100	99	98	98	97	93	6.5
Untreated as % of treated	[103]	[96]	[101]	[95]	[100]	[98]	[91]	[95]	[96]	[91]	[81]	[88]	[85]	[89]	[82]	8.6
Seed yield as % control																
Fungicide treated (5.0 t/ha)	105	104	104	104	103	100	102	102	99	99	100	97	100	97	94	6.2
Untreated as % of treated	[101]	[96]	[101]	97	98	95	93	96	95	[93]	[82]	89	[88]	89	83	8.1
Agronomic features																
Resistance to lodging	8	8	8	7	7	8	7	[7]	[8]	8	8	8	9	[8]	8	0.5
Stem stiffness	8	8	8	7	7	8	7	6	8	8	9	8	9	8	9	0.7
Shortness of stem	6	6	6	6	7	7	7	6	7	6	9	7	8	7	6	0.3
Earliness of flowering	6	7	8	6	7	6	8	6	6	7	6	7	4	7	6	0.4
Earliness of maturity	5	5	5	4	5	5	6	5	6	5	5	5	6	6	6	0.6
Seed quality (at 9% moisture)																
Oil content, fungicide treated (%)	46.3	45.0	45.4	44.9	45.3	46.4	43.8	44.0	45.3	44.9	43.9	45.2	43.3	44.4	43.8	0.65
Glucosinolate (µmoles/g of seed)	9.7	11.9	9.8	13.0	14.3	8.5	17.4	14.1	15.5	13.5	10.1	9.8	13.8	12.7	12.3	
Disease resistance																
Light leaf spot	6	6	9	5	7	5	6	6	7	9	6	5	6	6	5	0.9
Stem canker	4	5	4	4	4	5	5	5	5	4	5	5	5	5	5	1.0
Year first listed	11	11	09	08	08	05	06	07	08	09	11	05	09	06	02	

P1 = first year of recommendation \* = variety no longer in trial in region C = yield control. Castille was also a control but is not recommended in this region.

[] = limited data

Conv = conventional open-pollinated variety

RH = restored hybrid

Sp = specific recommendation

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

North = recommended for the North region

Hybrids are sown in trials at 70 seeds/sqm, conventional varieties at 120 seeds/sqm

\$ = Mendel is recommended for use on land infected with common strains of clubroot but may be infected by some strains and infections have been reported in some fields. The candidate variety Cracker also has clubroot resistance.

# = DK-Secure, DK-Sequoia 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 Average LSD (least significant difference) 5%. Varieties that are more than one LSD apart are significantly different at the 5% confidence level Glucosinolate contents are taken from the National List trials data

Varieties no longer listed for the North region: Canti CS, ES Betty

Conv         Conv         RH         RH         RH         Conv         RH         RH         RH         Conv         RH         RH           Conv         T         T         T         T         T         T         T           T         T         T         T         T         T         T         T           107         106         105         105         103         102         101         98           T         T         T         T         T         T         T         T           107         106         105         105         103         102         101         98           T         T         T         T         T         T         T         T         T           107         106         105         104         101         102         101         100           T         T         T         T         T         T         T         T         T           107         106         105         104         101         1012         101         101           108         17         7         8         8         8		Oracle	Sesame	Artoga	Palace	Rhino	DK-Camella	Cracker \$	DK-Sequoia #
Conv         Conv         RH         RH         RH         Conv         RH         I           107         106         105         105         103         102         101         98           107         106         105         104         [101]         [102]         [101]         [100]           107         [106]         [105]         [104]         [101]         [102]         [101]         [100]           -         -         -         -         -         -         -         -         -           [107]         [106]         [105]         [104]         [101]         [102]         [101]         [100]           -         -         -         -         -									
Image: series of the	ļ	Conv	Conv	RH	RH	RH	Conv	RH	RH
107         106         105         103         102         101         98           -         -         -         -         -         -         -         -           [107]         [106]         [105]         [104]         [101]         [102]         [101]         [100]           -         -         -         -         -         -         -         -           [107]         [106]         [105]         [104]         [101]         [102]         [101]         [100]           -         -         -         -         -         -         -         -           8         [8]         [7]         7         8         8         8         9           9         8         7         8         8         8         9           9         8         7         8         8         8         9           10         6         6         7         7         6         9           5         6         7         8         8         5         5           44.0         7         5         6         4         43.0      13.3         12.8 <th>ļ</th> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>	ļ	-	-	-	-	-	-	-	-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$									
Image: series         Image: s	ļ	107	106	105	105	103	102	101	98
1007[106][105][104][101][102][101][100]138[8][7]78889987888976667769567885745475645544.044.044.344.645.244.644.143.013.312.811.611.410.09.510.411.5667766966555545	ļ	-	-	-	-	-	-	-	-
[107]       [106]       [105]       [104]       [101]       [102]       [101]       [100]         -       -       -       -       -       -       -       -       -         8       [8]       [7]       7       8       8       8       9         9       8       7       8       8       8       9         7       6       6       7       7       6       9         5       6       7       8       8       5       7       4         5       4       7       5       6       4       5       5         44.0       44.0       44.3       44.6       45.2       44.6       44.1       43.0         13.3       12.8       11.6       11.4       10.0       9.5       10.4       11.5         6       6       7       7       6       6       9       6         6       5       5       5       5       4       5									
-         -		[107]	[106]	[105]	[104]	[101]	[102]	[101]	[100]
8         [8]         [7]         7         8         8         8         9           9         8         7         8         8         8         9           7         6         6         6         7         7         6         9           5         6         7         8         8         5         7         4           5         4         7         5         6         4         5         5           44.0         44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5	ļ	-	-	-	-	-	-	-	-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$									
9         8         7         8         8         8         8         9           7         6         6         6         7         7         6         9           5         6         7         8         8         5         7         4           5         4         7         5         6         4         5         5           44.0         44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5         5		8	[8]	[7]	7	8	8	8	9
7         6         6         7         7         6         9           5         6         7         8         8         5         7         4           5         4         7         5         6         4         5         5           4         7         5         6         4         5         5           44.0         44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5		9	8	7	8	8	8	8	9
5         6         7         8         8         5         7         4           5         4         7         5         6         4         5         5           44.0         44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5		7	6	6	6	7	7	6	9
5         4         7         5         6         4         5         5           44.0         44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5		5	6	7	8	8	5	7	4
44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5	ļ	5	4	7	5	6	4	5	5
44.0         44.0         44.3         44.6         45.2         44.6         44.1         43.0           13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5									
13.3         12.8         11.6         11.4         10.0         9.5         10.4         11.5           6         6         7         7         6         6         9         6           6         5         5         5         5         4         5		44.0	44.0	44.3	44.6	45.2	44.6	44.1	43.0
6         6         7         7         6         6         9         6           6         5         5         5         5         4         5	ļ	13.3	12.8	11.6	11.4	10.0	9.5	10.4	11.5
6         6         7         7         6         6         9         6           6         5         5         5         5         5         4         5									
6 5 5 5 5 4 5		6	6	7	7	6	6	9	6
		6	5	5	5	5	5	4	5

Candidates

The above varieties are candidates for the 2012/13 HGCA Recommended List



### HGCA Recommended List<sup>®</sup> winter oilseed rape 2011/12 North region

SUPPLEMENTARY DATA																
RECOMMENDED	P1	P1		С		*	С	*			P1	C*			*	
HGCA	Compass	Fashion	Cuillin	Flash	Catana	Lioness	Excalibur	Hornet	Temple	Emerson	PR45D05 #	NKBravour	DK-Secure #	NK-Grace	Mendel \$	Average LSD (5%)
Variaty type	RH	Conv	RH	RH	Conv	Conv	RH	RH	Conv	RH	RH	Conv	RH	Conv	RH	
Scope of recommendation	LIK		North	1.1K	North		1.1K	North	North	North	Sn		Sn	North	Sn	<u> </u>
Breeder/LIK contact	UK	UK	NOITH	UK	North	UK	UK	North	North	North	op	UK	- Op	North	- Op	
Breeder	DSV	LSW	KWS	DSV	DK	DSV	DK	DSV	Els	Lim	Pion	SSG	DK	SSG	NPZ	
UK contact	DSV	Sen	KWS	DSV	DK	DSV	DK	DSV	Els	Lim	Pion	NK	DK	NK	KWS	<u> </u>
Annual treated gross output (vield adjusted for	oil conte	nt) as %	6 contro	ol												
2007 (5.4 t/ha)	[104]	[108]	[103]	[104]	[108]	[101]	[99]	[101]	[100]	[104]	[103]	[98]	[101]	[97]	[87]	13.7
2008 (5.0 t/ha)	[104]	[109]	[110]	[108]	[105]	[103]	[105]	[105]	[101]	[106]	[96]	99	[97]	[101]	[93]	12.7
2009 (4.9 t/ha)	[107]	[101]	[99]	[108]	[99]	[94]	[104]	[100]	[94]	[97]	[90]	[96]	[88]	[99]	[87]	7.4
2010 (5.6 t/ha)	[112]	[105]	[107]	[102]	[104]	[109]	[100]	[100]	[105]	[96]	[102]	[98]	[104]	[93]	[99]	7.7
Annual untreated gross output (yield adjusted	for oil con	itent) a	s % cor	ntrol												
2007 (5.2 t/ha)	-	-	-	[101]	[115]	[108]	[99]	[101]	[103]	-	-	[111]	[111]	[115]	[82]	6.0
2008 (4.3 t/ha)	-	-	[123]	[109]	[111]	[109]	[107]	[112]	[112]	[112]	-	[101]	[98]	[104]	[91]	12.5
2009 (4.9 t/ha)	[107]	[99]	[105]	[110]	[111]	[106]	[101]	[105]	[98]	[97]	[82]	[95]	[80]	[102]	[87]	11.4
2010 (4.8 t/ha)	[120]	[111]	[111]	[107]	[113]	[114]	[100]	[104]	[115]	[97]	[95]	[93]	[105]	[90]	[101]	10.5
Agronomy																
Plant height (cm)	164	159	160	166	154	150	156	163	154	161	123	153	135	151	158	3.2
Harvest method - gross output (yield adjusted	for oil con	tent) a	s % cor	ntrol												
Swathed (5.3 t/ha)	[106]	[105]	[103]	[106]	[99]	[101]	[100]	[101]	[96]	[101]	[100]	[95]	[98]	[93]	[89]	11.5
Desiccated (5.3 t/ha)	[107]	[104]	[103]	[108]	[108]	[100]	[101]	[104]	[100]	[100]	[94]	98	[94]	[99]	[89]	11.0

# DK-Sequoia DK-Camella Cracker \$ Sesame Artoga Oracle Palace Rhino RH RH RH RH RH Conv Conv Conv KWS LSPB Lim LSPB KWS DK LSPB DK KWS LSPB Lim LSPB KWS DK LSPB DK [106] [101] [103] [117] [102] [99] [107] [94] -\_ [108] [107] [102] [105] [105] [100] [101] [108] -----\_ \_ [119] [116] [110] [105] [111] [110] [101] [98] 154 159 166 165 154 150 162 130 [104] [103] [108] [100] [105] [98] [93] [96]

Candidates

P1 = first year of recommendation \* = variety no longer in trial in region C = yield control. Castille was also a control but is not recommended in this region [] = limited data

#### Key to Breeder and UK contact codes

DK = DEKALB (www.dekalb.co.uk) DSV = DSV United Kingdom (www.dsv-uk.co.uk) Els = Elsoms Seeds (www.elsoms.com) KWS = KWS UK (www.kws-uk.com)

Lim = Limagrain UK (www.limagrain.co.uk) LSPB = LS Plant Breeding (www.lspb.eu) LSW = Lantmännen SW Seed, Sweden NK = NK-Syngenta Seeds (www.oilseedrape.com) SSG = Syngenta Seeds, Germany

NPZ = NPZ Lembke, Germany Pion = Pioneer Hi-Bred (www.pioneer.com) Sen = Senova (www.senova.uk.com)

The above varieties are candidates for the 2012/13 HGCA Recommended List

**®** = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB

# HGCA Recommended List<sup>®</sup> winter oilseed rape 2011/12

### **Conventional varieties**

**Cash** is a conventional, open-pollinated variety that was added to the HGCA Recommended List 2011/12 in the East/West region. It is stiff-stemmed, has high resistance to lodging and is relatively early maturing. Cash has excellent resistance to stem canker.

**Castille** is a conventional, open-pollinated variety recommended for the East/West region. It is short-stemmed and has high lodging resistance. Castille is early flowering and relatively early maturing.

**Catana** is a conventional, open-pollinated variety recommended for the North region. It has a high treated gross output in that region and has high resistance to light leaf spot. It is susceptible to stem canker.

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

**Es Astrid** is a conventional, open-pollinated variety recommended for the East/West region. It is short, stiffstemmed and has high resistance to lodging. Es Astrid has good resistance to stem canker and is relatively early maturing. It is no longer in RL trials. **Expert** is a conventional, open-pollinated variety recommended for the East/West region. It has good lodging resistance and is rather late maturing. It is no longer in RL trials.

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

**Lioness** is a conventional, open-pollinated variety that is recommended for both the East/West and North regions, giving high yields in the North region. It is stiff-stemmed and has high resistance to lodging. It is no longer in RL trials.

**NKBravour** is a conventional, open-pollinated variety that is recommended for both the East/West and North regions. It is stiff-stemmed and has high resistance to lodging. It is no longer in RL trials.

**NK-Grace** is a conventional, open-pollinated variety recommended for the North region. It is stiff-stemmed, has high resistance to lodging and is relatively early maturing.

**NEW Sesame** is a conventional, open-pollinated variety that was added to the HGCA Recommended List 2011/12 for the East/West region. It has given very high treated gross output in that region, is stiff-stemmed and has high resistance to lodging. It is rather late maturing. Sesame is under test in the North and is a candidate for the 2012/13 HGCA Recommended List in that region.

**Temple** is a conventional, open-pollinated variety recommended for the North region. It has stiff stems, high resistance to lodging and is relatively early maturing. Temple has high light leaf spot resistance.

**V1410L** is a high oleic, low linolenic (HOLL) variety; data on this variety are given for information but it is not on the HGCA Recommended List. HOLL varieties are suited to some food uses, notably frying oil, and also possibly for biolubricants. V1410L has a treated gross output potential some 20% lower than the highest yielding varieties. It is no longer in RL trials.

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

### **Restored hybrid varieties**

**Compass** was added to the HGCA Recommended List 2011/12 for both the East/West and North regions. It has a very high treated gross output, is stiff-stemmed and has high resistance to lodging. It is rather late maturing.

**USW Cracker** was added to the HGCA Recommended List 2011/12 as a specific recommendation for the East/West region. It is a restored hybrid with resistance to the common strains of clubroot but, like Mendel, may be susceptible to the strains found in some fields. It has below average treated gross output in the absence of clubroot but is around 5% higher yielding than Mendel, which has similar clubroot resistance. Cracker is under test in the North and is a candidate for the 2012/13 HGCA Recommended List in that region.

**Cuillin** is a restored hybrid recommended for the North region. It has a high treated gross output in the North region, is stiff-stemmed and has high resistance to lodging when

sown at the hybrid seed rate. It has excellent resistance to light leaf spot but is susceptible to stem canker. Cuillin tends to be early flowering.

**Dimension** is a restored hybrid variety recommended for the East/West region. It has a high gross output in the East/West region, is stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate.

**DK-Secure** is a restored hybrid variety specifically recommended as a semi-dwarf (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) for both the East/West and North regions. It is short, very stiffstemmed and has very high resistance to lodging. It is late flowering but relatively early maturing.

**DK-Sequoia** was added to the HGCA Recommended List 2011/12 as a specific recommendation for the East/West region. It is a semi-dwarf (believed to carry the OGU/INRA dwarfing gene in the heterozygous state). It is very short and stiff-stemmed and has very high resistance to lodging. It is late flowering. DK-Sequoia is under test in the North and is a candidate for the 2012/13 HGCA Recommended List in that region.

**Emerson** is a restored hybrid recommended for the North region. It is stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate. It has excellent resistance to light leaf spot but is susceptible to stem canker.

**Excalibur** is a restored hybrid variety recommended for both the East/West and North regions. It is early flowering and relatively early maturing.

**Excel** is a restored hybrid variety recommended for the East/West region. It has very high resistance to stem canker but below average stem stiffness. It is no longer in RL trials.

**Flash** is a restored hybrid variety recommended for both the East/West and North regions. It has a high treated gross output in the North region but is relatively late maturing and susceptible to stem canker.

**Hammer** is 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.

**Hornet** is a restored hybrid recommended for the North region. It is no longer in RL trials.

**Mendel** is a restored hybrid, with a specific recommendation for use on land infected with common strains of clubroot but may be susceptible to the strains found in some fields. It has below average gross output in the absence of clubroot. Mendel is early maturing, stiff-stemmed and has high lodging resistance when sown at the hybrid seed rate. It has below average resistance to light leaf spot. It is no longer in RL trials. **NEW Palace** is a restored hybrid variety which was added to the HGCA Recommended List 2011/12 for the East/West region. It has a high treated gross output, is stiff-stemmed and has above average resistance to light leaf spot. It tends to be early flowering. Palace is under test in the North and is a candidate for the 2012/13 HGCA Recommended List in that region.

**PR45D03** is a specific recommendation as a restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) for the East/West region. It is very short and stiff-stemmed and has very high resistance to lodging. It is susceptible to stem canker. It is no longer in RL trials.

**PR45D05** was added to the HGCA Recommended List 2011/12 as a specific recommendation as a restored hybrid, semi-dwarf variety (believed to carry the OGU/INRA dwarfing gene in the heterozygous state) for the East/West and North regions. It is very short and stiff-stemmed and has very high resistance to lodging.

**PR46W21** is a restored hybrid variety recommended for the East/West region. It has a very high treated gross output in that region, is very stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is susceptible to stem canker.

**NEW Rhino** is a restored hybrid variety which was added to the HGCA Recommended List 2011/12 for the East/West region. It has a very high treated gross output in that region, is very stiff-stemmed and has high resistance to lodging when grown at the hybrid seed rate. It is early flowering and relatively early ripening. Rhino is under test in the North and is a candidate for the 2012/13 HGCA Recommended List in that region.

### **Oilseed rape markets**

### High oleic, low linolenic (HOLL) oilseed rape

This presents a significant new market opportunity for farmers and could well be the future for rapeseed.

HOLL 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.

The market for HOLL is expected to grow significantly as the industry continues to respond to customer demands.

### High erucic (HEAR) winter oilseed rape

There is a relatively small market for high erucic rape which does not justify a specific category of recommendation.

In 2007, the variety Palmedor was grown in RL trials. Its gross output is similar to Castille; it has good lodging resistance and no disease weakness. Other varieties will be tested as they complete National Lists trials and the results published on the HGCA website.

Full data can be found at www.hgca.com.

All HOLL rapeseed is grown under contract to ensure quality of supply and provide full traceability. Contracts are available from a number of merchants with a premium that is either fixed or a percentage of normal rapeseed. Contracts are based on the normal FOSSA 26A contract terms for rapeseed, so include all the normal bonuses for oil, moisture and admixture.

Successful growing of HOLL requires good agronomic practices to ensure volunteer levels and weeds are kept to a

### Growing rapeseed for biodiesel

The UK market for rapeseed for biodiesel is in its infancy, with no specific variety requirements established, so growers should select from normal RL varieties.

Where non-edible oil contracts do not pay an oil premium, growers should aim for the highest seed yield in the RL.

If any oil premium offered is not calculated in the same way as for edible oil, growers can use the seed yields and oil contents given in the RL tables for their own calculations. minimum. A gap of three years is recommended between standard and HOLL rapeseed crops. HOLL should not be grown on land previously used for high erucic (HEAR) rape. Isolation distances from HEAR crops are also important. Measures should be taken to minimise any possibility of contamination at harvest time and during storage and transport of HOLL.

A HOLL variety, V1410L, was grown in RL trials in 2010 and is described beside the East/West Recommended List.





Throughout harvest, yield data from HGCA Recommended List trials is made available through the Harvest Results service, delivered by fax or email.

To make sure you get the very latest information on how varieties old and new perform this summer, email rl@hgca.com or phone 024 7647 8746 to request an application form.

## HGCA Recommended List<sup>®</sup> trials harvest 2011 Summary of candidate winter oilseed rape varieties East/West region

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													
NKBravour	1592	conv	103	102	46.2	8	7	153	5	6	4	5	
Castille	1608	conv	96	99	43.6	8	8	143	8	6	6	7	
Excalibur	1684	RH	102	101	45.6	8	7	158	7	7	7	4	
Flash	1907	RH	98	98	45.3	8	7	168	4	5	6	5	
Candidate varieties													
DK-Camelot (MLCH175)	2210	conv	107	105	46.6	8	7	147	6	6	6	6	DEKALB
Rivalda (KW 03 GK 019)	2196	conv	106	106	45.3	8	7	153	6	5	6	5	KWS
PT206 (X08W667C)	2167	RH	Data	unavailable a	s variety ha	s not complete	d National I	Listing					Pioneer
DK-Expower (CWH119)	2203	RH	104	103	45.9	8	6	160	7	7	7	8	DEKALB
Thorin (NPZ 0829 Z)	2226	semi-dwarf RH	103	102	45.9	9	9	127	6	6	7	6	LS Plant Breeding
Eraton (SLM 0807) #	2232	HEAR RH	102	98	48.3	8	7	159	7	7	6	6	LS Plant Breeding
Mean of controls (t/ha)			5.3	4.9	45.4	8.0	7.3	157	5.4	5.8	-	-	
LSD 5%			4.2	4.0	0.4	0.7	0.6	3.8	0.6	0.6	-	-	
No. of trials			15	15	15	4	15	18	17	12	-	-	

### Summary of candidate winter oilseed rape variety Victoria

Control varieties													
NKBravour	1592	conv	102	101	46.2	7	7	158	5	6	4	5	
Castille	1608	conv	95	97	43.3	7	7	145	7	6	6	7	
Excalibur	1684	RH	105	104	45.6	8	7	163	7	7	7	4	
Flash	1907	RH	98	98	45.4	7	7	172	4	5	6	5	
Candidate variety													
Victoria (NSL-07/165) \$	2093	conv	104	106	44.2	8	8	150	4	6	5	8	Limagrain
Mean of controls (t/ha)			5.0	4.6	45.5	7.3	7.2	163	5.0	5.6	-	-	
LSD 5%			6.0	5.7	0.5	1.1	0.8	5.1	0.7	0.8	-	-	
No. of trials			12	12	12	7	14	16	16	11	-	-	

### Candidate varieties will be considered for the 2012/13 HGCA Recommended List

The 1-9 ratings are not comparable to those used in the Recommended List

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

# = Eraton is a high erucic acid (HEAR) variety so is not eligible for recommendation
 \$ = Victoria was grown in National List trials in 2008 and 2010 so the data are not directly comparable to that of other 2012/13 candidates
 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.

### HGCA Recommended List<sup>®</sup> trials harvest 2011 Summary of candidate winter oilseed rape varieties North region

CANDIDATE				%)			ê					c	
HGCA	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 sten canker (1-9)	UK contact
Control varieties													
NKBravour	1592	conv	97	96	45.7	8	7	153	5	6	4	5	
Castille	1608	conv	100	102	43.7	8	8	143	8	6	6	7	
Excalibur	1684	RH	100	100	44.5	8	7	158	7	7	7	4	
Flash	1907	RH	103	102	45.7	8	7	168	4	5	6	5	
Candidate varieties													
PT206 (X08W667C)	2167	RH	Data u	unavailable a	is variety ha	s not complete	ed National	Listing					Pioneer
DK-Cayenne (MLCH182)	2209	conv	108	108	45.1	8	8	148	5	6	6	7	DEKALB
Boheme (Fatty, RNX1721)	2240	conv	107	106	45.8	8	7	161	7	6	7	6	Syngenta
DK-Camelot (MLCH175)	2210	conv	107	105	46.3	8	7	147	6	6	6	6	DEKALB
Pendulum (NSL08/180)	2187	conv	106	104	46.3	8	7	158	5	5	7	4	Limagrain
WRH 347 (Raptor)	2194	RH	105	102	47.1	8	8	166	5	6	6	6	DSV
Thorin (NPZ 0829 Z)	2226 క	semi-dwarf RH	105	103	45.8	9	9	127	6	6	7	6	LS Plant Breeding
Eraton (SLM 0807) #	2232	HEAR RH	104	99	48.9	8	7	159	7	7	6	6	LS Plant Breeding
DK-Expower (CWH119)	2203	RH	102	103	44.8	8	6	160	7	7	7	8	DEKALB
FD808	2248	conv	102	103	44.6	8	7	154	7	6	7	5	Elsoms
Mean of controls (t/ha)			5.4	5.0	45.0	8.0	7.3	158	5.4	5.8	-	-	
LSD 5%			9.0	8.6	1.2	0.7	0.6	3.8	0.5	0.6	-	-	
No. of trials			3	3	3	4	15	18	17	12	-	-	

### Candidate varieties will be considered for the 2013/14 HGCA Recommended List

The 1-9 ratings are not comparable to those used in the Recommended List

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

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

# Eraton is not a candidate for recommendation

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.

### Varieties grown in RL trials in 2010 but not added to the HGCA Recommended List®

### WINTER OILSEED RAPE – EAST/WEST REGION

	Control	varieties			Other	varieties	•						
HGCA	Flash	Excalibur	NKBravour	Castille	DK-Camella	Primus	Eiffel	Oracle	Osprey	Amillia	Krypton	Valdor	Average LSD (5%)
	DU	DU	<u></u>	<u></u>	<u></u>	DU	<u></u>	Carr	6	<u></u>	<u></u>		
Variety type	KH	RH	Conv	Conv	Conv	KH	Conv	Conv	Conv	Conv	Conv	Conv	
Gross output (yield adjusted for	r oil conte	ent) as %	control	07	10.4	10.1	400	400	100	400	404	100	47
Fungicide treated (5.1 t/ha)	102	102	99	97	104	104	103	102	102	102	101	100	4.7
Untreated as % of treated	84	84	84	80	-	-	[90]	-	[83]	-	[87]	-	11.9
Seed yield as % control													
Fungicide treated (4.7 t/ha)	102	101	98	99	104	104	102	103	99	100	99	99	4.3
Untreated as % of treated	86	85	84	83	-	-	[89]	-	[84]	-	[85]	-	9.8
Agronomic features													
Resistance to lodging	7	7	8	8	8	8	8	8	8	[8]	8	8	0.5
Stem stiffness	7	7	8	7	8	8	8	9	8	7	9	8	0.7
Shortness of stem	6	7	7	8	7	7	7	7	7	6	7	7	0.3
Earliness of flowering	6	8	7	8	5	8	4	5	6	8	5	6	0.4
Earliness of maturity	4	6	5	6	4	6	5	5	5	5	4	5	0.6
Seed quality (at 9% moisture)													
Oil content, fungicide treated (%)	45.0	44.9	45.6	43.6	45.1	45.4	45.3	44.2	46.4	46.1	46.5	45.2	0.4
Glucosinolate (µmoles/g of seed)	13.0	17.4	9.8	13.6	9.5	10.3	9.9	12.1	8.5	9.3	10.5	13.6	
Disease resistance													
Light leaf spot	5	6	5	5	6	5	5	6	5	4	6	6	0.9
Stem canker	4	5	5	6	5	5	6	6	4	6	5	6	1.0
Harvest method - gross output	(yield adj	usted for	oil cont	ent) as 🤋	% contro								_
Swathed (4.8 t/ha)	101	100	102	97	102	105	100	102	102	103	100	100	6.3
Desiccated (5.1 t/ha)	102	101	98	99	106	106	103	102	104	102	103	102	5.1

This table should be read in conjunction with the HGCA Recommended List of Winter Oilseed Rape for 2011/12

HGCA Recommended List areas defined for winter oilseed rape



### Varieties grown in RL trials in 2010 but not added to the HGCA Recommended List®

### WINTER OILSEED RAPE – NORTH REGION

	Control	varieties	;		Other	varieties	6									
			4		oia		irry				=					.SD (5%)
HGCA	Flash	Excalibur	NKBravou	Castille	DK-Sequo	Gloria	DK-Carbe	Cash	Pamela	Primus	DK-Catsk	Valdor	Alzza	Ginger	Krypton	Average I
Variety type	BH	RH	Conv	Conv	BH	Conv	Conv	Conv	Conv	RH	Conv	Conv	BH	Conv	Conv	
Gross output (vield adjusted for oil cont	ent) as %	control	COIN	COIN	1111	00110	COIN	COIN	CONV	1111	0011	0011		0011	CONV	
Europicide treated (5.3 t/ba)	105	102	98	95	98	102	102	100	98	98	97	97	96	95	102	6.5
Untreated as % of treated	[95]	[91]	[88]	[82]	[85]	-	-	-	-	[87]	-	-	-	-	[95]	8.6
Seed yield as % control	[00]	[0.1]	[]	[0-]	[00]					[01]					[00]	
Fungicide treated (5.0 t/ha)	104	102	97	96	[100]	[100]	[101]	[99]	[99]	[98]	[96]	[97]	[97]	[93]	99	6.2
Untreated as % of treated	97	93	89	84	[88]	-	-	-	-	[88]	-	-	-	-	[93]	8.1
Agronomic features																
Resistance to lodging	7	7	8	8	9	[7]	[7]	8	[7]	8	[8]	8	[8]	[8]	8	0.5
Stem stiffness	7	7	8	7	9	7	7	8	6	8	8	8	8	9	9	0.7
Shortness of stem	6	7	7	8	9	7	7	6	6	7	7	7	6	7	7	0.3
Earliness of flowering	6	8	7	8	4	7	5	7	6	8	5	6	5	6	5	0.4
Earliness of maturity	4	6	5	6	5	5	4	6	4	6	4	5	6	4	4	0.6
Seed quality (at 9% moisture)																
Oil content, fungicide treated (%)	44.9	43.8	45.2	42.8	43.0	45.8	45.3	45.0	44.0	44.5	45.3	44.8	43.6	46.0	45.8	0.7
Glucosinolate (µmoles/g of seed)	13.0	17.4	9.8	16.3	11.5	9.0	9.8	13.1	10.1	10.3	9.4	13.6	15.1	10.6	10.5	
Disease resistance																
Light leaf spot	5	6	5	5	6	5	5	5	6	5	6	6	6	6	6	0.9
Stem canker	4	5	5	6	5	7	6	8	6	5	5	6	6	7	5	1.0
Harvest method - gross output (yield ad	justed for	oil cont	ent) as 🤉	% contro												
Swathed (5.3 t/ha)	[106]	[100]	[95]	[98]	[96]	[104]	[105]	[96]	[106]	[90]	[93]	[96]	[95]	[84]	[99]	11.5
Desiccated (5.3 t/ha)	[108]	[101]	98	[93]	-	-	-	-	-	-	-	-	-	-	[102]	11.0

This table should be read in conjunction with the HGCA Recommended List of Winter Oilseed Rape for 2011/12



B = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB

# HGCA Descriptive List spring oilseed rape 2011

DESCRIBED	P2	P1		P2	P1	С	С			P2	P1	*	*	*	*	*	*	SD (5%)
HGCA	Tamarin	Amulet	Delight	Belinda	Carnival	Kumily	Heros	Ability	Larissa	Colossus	James	Hunter	Quebec	Mozart	Haydn	Campino	Earlybird	Average LS
Variety type	Conv	Conv	RH	RH	Conv	Conv	Conv	Conv	Conv	Conv	Conv	Conv	Conv	Conv	Conv	Conv	Conv	
Gross output (yield adjusted for oil content) as % co	ntrol (2.	6 t/ha)																
UK without fungicide	104	[103]	102	[101]	[101]	101	99	99	98	97	[94]	93	[93]	[92]	92	[92]	86	6.5
Number of trials	11	8	16	10	8	17	19	17	16	11	7	14	9	9	11	9	13	
Seed yield as % control (2.4 t/ha)																		
UK without fungicide	103	[101]	102	102	[99]	102	98	97	98	97	[92]	93	[94]	[91]	92	[91]	86	6.0
Seed quality (at 9% moisture)																		
Oil content (%)	44.1	[44.8]	44.5	43.8	[44.7]	42.9	44.9	44.8	43.8	44.2	[45.0]	44.0	[43.4]	[44.5]	44.4	[44.4]	42.7	0.7
Glucosinolate content (µmoles/g)	[11.6]	[10.3]	[13.3]	[14.2]	[12.5]	[11.7]	12.2	[11.2]	[13.4]	[12.5]	[13.8]	[12.7]	[12.2]	[13.8]	[13.3]	[10.7]	[12.0]	2.3
Agronomic features																		
Standing ability	8	[9]	8	8	[8]	9	8	7	9	9	[9]	7	[7]	[9]	[9]	[8]	7	0.8
Shortness of stem	6	5	6	7	6	7	5	6	6	4	7	6	5	6	7	8	5	0.7
Earliness of flowering	7	6	8	8	6	7	6	7	6	5	6	6	5	5	5	8	6	0.9
Earliness of maturity	7	[5]	6	5	[5]	6	6	6	6	4	[6]	6	5	5	5	7	7	1.5
Year first listed	10	11	09	10	11	07	02	07	09	10	11	05	06	01	01	06	06	
Breeder/UK contact																		
Breeder	LSW	LSW	Raps	Raps	LSW	LSW	Raps	DSV	Raps	JTSD	JTSD	Raps	RT	LSPB	LSPB	NPZ	Pick	
UK Contact	Sen	Sen	SU	SU	Sen	Sen	SU	DSV	SU	JTSD	JTSD	SU	ATR	DLF	DLF	KWS	Pick	

RH = restored hybrid

Conv = conventional open-pollinated variety

[] = limited data

**P1, P2** = first and second year on list

\* = variety no longer in trial

**C** = yield control

On the 1-9 scales high figures indicate that a variety shows the character to a high degree (e.g. early maturity) Average LSD (least significant difference) 5%. Varieties that are more than one LSD apart are significantly different at the 5% confidence level Glucosinolate contents are taken from the National List trials data

### Key to Breeder and UK contact codes:

ATR = All Things Rural (sales@allthingsrural.co.uk) DLF = DLF Trifolium (www.dlf.co.uk) DSV = DSV United Kingdom Ltd (www.dsv-uk.co.uk) JTSD = John Turner Seed Developments (www.jtsd.co.uk) Pick = Mike Pickford (mpickford1@btinternet.com) SU = Saaten Union UK (www.saaten-union.co.uk)

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

Raps = Raps, Germany RT = Roger Thomas, UK Sen = Senova (www.senova.uk.com)

Varieties no longer listed: Oriole

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

# HGCA Descriptive List spring linseed 2011

DESCRIBED		P1	I		P1	I		С	*	P1	С	P2			С				P1		*	(%)
HGCA	Juliet	Brighton	Aries	GK-Emma	Baladin	Kaolin	Altess	Abacus	Biltstar	Valoal	Bilton	Dragon	Linoal	Talon	Gemini	Meteor	Sunrise	Taurus	Birdseye	Lagoon	Windermere	Average LSD (5
Seed colour	Brown																				Yellow	
Seed yield as % control (1.8 t/ha)																						
UK without fungicide	114	111	107	103	103	103	103	102	[102]	102	101	100	99	98	97	96	95	94	92	91	[93]	8.3
Number of trials	11	10	11	11	10	11	11	14	5	10	14	11	10	9	13	9	9	12	10	8	3	
Seed quality (at 9% moisture)																						
Oil content of seed (%)	42.8	41.3	41.8	40.6	42.8	42.3	40.0	41.0	[42.0]	42.9	41.7	44.3	42.3	40.1	40.8	40.6	41.7	41.7	39.0	42.0	[43.1]	0.5
Agronomic features																						
Standing ability	[4]	-	-	-	-	-	-	-	[6]	-	[9]	-	-	[8]	[9]	-	[8]	[8]	-	[8]	[7]	-
Plant height (cm)	57	[54]	54	49	[57]	50	46	53	[49]	[50]	56	54	53	52	52	48	53	56	[53]	47	[58]	2.8
Earliness of flowering	[4]	3	4	8	4	4	8	5	[8]	6	4	4	6	[5]	3	5	[6]	5	4	[8]	[3]	1.5
Earliness of maturity	3.7	5.3	5.4	7.9	5.5	5.5	7.9	6.7	[4.7]	7.2	5.2	6.5	6.0	[4.9]	4.9	5.4	[7.6]	6.5	4.2	7.1	[4.3]	1.4
Year first listed	01	11	09	09	11	09	09	06	00	11	03	10	08	02	04	08	02	00	11	01	96	
Breeder/UK contact																						
Breeder	GKI	Bilt	Lim	GKI	LaS	Dalt	GIE	JTSD	Bilt	LaS	Bilt	Lim	LaS	JTSD	Lim	JTSD	Sask	Lim	JTSD	Agrf	UGG	
UK contact	Mas	Els	Lim	Mas	Dalt	Dalt	PC	Sen	Els	PC	Els	Lim	PC	Bost	Lim	JTSD	Sax	Lim	JTSD	Bost	Lim	

 P1, P2 = first and second year on list
 \* = variety no longer in trial
 C = yield control
 [] = li

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

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

### Key to Breeder and UK contact codes:

Agrf = Agrifusion, UK 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) Mas = Masstock Arable UK (www.masstock.co.uk)

PC = Premium Crops (www.premiumcrops.com) Sask = University of Saskatchewan, Canada Sax = Saxon Agriculture (www.saxon-agriculture.co.uk) Sen = Senova (www.senova.uk.com) UGG = UGG, Canada

[] = limited data.

Varieties no longer listed: Eole

 $\textcircled{\sc eq}$  = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB

# HGCA Descriptive List winter triticale 2011/12

DESCRIBED	P1	P2		С							
HGCA	Agostino	Amarillo	Grenado	Benetto	Tremplin	Gringo	Constant	Borwo	Bellac	Agrano	Average LSD (5%)
UK yield as % untreated control											
Untreated (7.9 t/ha)	[105]	101	101	100	99	99	99	97	96	96	8.1
Number of trials	6	8	12	12	12	10	8	10	12	8	
Agronomic features											
Lodging (%)	[0]	[32]	[1]	[1]	[28]	[0]	[11]	[1]	[0]	[13]	2.5
Straw length (cm)	[108]	117	102	122	111	108	110	108	110	123	5.4
Earliness of ripening (days +/- Benetto, -ve = earlier)	[0]	[0]	+2	0	+1	+1	[0]	+4	+1	[-1]	2.7
Grain quality											
Specific weight (kg/hl)	[73.1]	71.6	70.9	70.4	73.6	70.5	73.3	72.1	68.5	71.9	1.7
Protein content (%)	[11.1]	11.4	10.3	11.2	11.1	11.5	11.0	11.8	11.0	11.7	0.6
Breeder/UK contact											
Breeder	LSW	Hege	Dank	Dank	Ser	Dank	Lem	Hodo	RAGT	Saka	
UK contact	Sen	Soya	Sen	Sen	Lim	Sen	Pick	Sen	Pick	Lim	

P1, P2 = first and second year of listing

**C** = yield control

[] = limited data

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

### Key to Breeder and UK contact codes:

Dank = Danko, Poland Hege = Hege, Germany Hodo = Hodowa Roslin Strzelce, Poland Lem = Lemaire, France Lim = Limagrain UK (www.limagrain.co.uk) LSW = Lantmännen SW Seed, Sweden Pick = Mike Pickford (mpickford1@btinternet.com) RAGT = RAGT Seeds ( www.ragt.co.uk) Saka = Saka, Germany Sen = Senova (www.senova.uk.com) Ser = Serasem, France Soya = Soya UK (www.soya-uk.com)

# HGCA Descriptive List winter rye 2011/12

DESCRIBED	P1	P1	С		С	
HGCA	olov:	Askari	icasso	arotop	Aatador	\verage LSD (5%)
Variety type	Hybrid	· ·	<u>.</u>	Conventio	onal	
UK vield as % treated control						
Fungicide treated (7.9 t/ha)	112	106	106	98	94	5.4
Number of trials	7	7	11	11	11	
Agronomic features						
Lodging (%)	[0]	[9]	[1]	[4]	[3]	
Straw length (cm)	133	139	128	141	140	3.9
Earliness of ripening (days +/- Picasso, -ve = earlier)	[0]	[-2]	0	0	0	1.9
Grain quality						
Protein content (%)	9.7	9.6	9.7	10.1	9.9	0.5
Hagberg falling number	176	132	177	174	142	18
Specific weight (kg/hl)	74.5	75.4	73.8	76.5	75.6	1.3
Breeder/UK contact						
Breeder	KWS-L	Hybro	KWS-L	Dieck	SU	
UK contact	KWS	SU	KWS	Dalt	SU	

**P1** = first year of listing

C = yield control

[] = limited data

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

### Key to Breeder and UK contact codes:

Dalt= Dalton Seeds (www.dalmark.co.uk) Dieck = Dieckmann, Germany Hybro = Hybro, Germany KWS = KWS UK (www.kws-uk.com) KWS-L = KWS Lochow, Germany SU = Saaten Union UK (www.saaten-union.co.uk)

### nabim Wheat Guide

The nabim Wheat Guide lists the flour milling industry's views on wheat varieties and gives marketing guidance on their likely relative values in the UK market.



### MAGB guide to barley varieties

It is anticipated that 1.9 million tonnes of barley will be bought for malting from 2011 harvest.



These two guides have been prepared independently by nabim and MAGB respectively

℗ = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB



### Introduction

UK millers remain committed to using home-grown wheat that conforms to ACCS or similar assurance standards and more than 80% of wheat used is grown in the UK. Currently, there are a number of examples of UK bakers and retailers using 100% UK wheat in their bread products. This strengthens the market for quality bread making wheat and further adds to the move towards 'provenance' as a key benefit within the wheat chain.

Because of our reliance on UK wheat, we devote much time, energy and finance to assisting breeders and the HGCA to identify baking potential of new varieties at the earliest possible stage. Each year members of our Varieties Working Group test candidate varieties from the National and Recommended List (RL) trials using a range of milling and baking systems. The information obtained is then conveyed to the British Society of Plant Breeders and by the **nabim** members of the RL Wheat Committee as part of the selection process.

### **New varieties**

For millers, consistency of milling and baking performance is an essential criteria for any wheat variety. This means that new varieties introduced

to the RL which fully meet the miller's requirements will continue to be used until they become agronomically outclassed, or less popular with growers for other commercial reasons. With yield improvements and the constant threat of new strains of disease, wheat varieties tend to have a relatively short life-cycle. Therefore, it is essential that there is a constant supply of new 'improved' varieties coming forward.

Gallant joined the RL in 2010. Like all new 'quality' varieties the big test is whether results from the three years of testing by **nabim** members will be confirmed once commercial quantities are milled. It is only when these quantities start being delivered to mills that proper assessments can be made of the milling and baking performance. Information gathered during 2010 indicates that Gallant is living up to expectations and it is now taking its place alongside Solstice as a reliable Group 1 variety.

This year, there is one new Group 1 spring wheat variety (Mulika). There is also a very promising new winter Group 2 variety (KWS-Podium) together with a spring-sown variety (KWS-Willow). There are three new 'biscuit' wheats in Group 3 (Cocoon, KWS-Target and Tuxedo).

### **Wheat and Flour testing**

In order to understand the characteristics of individual wheat varieties, flours or doughs, millers carry out a range of tests. These are used throughout the industry and act as comparative performance standards. An understanding of these tests and how they are performed is useful to both farmers and others in the wheat-supply chain. **nabim** has produced a booklet'Wheat and Flour testing'which is available free from **nabim** or can be seen on the website (www.nabim.org.uk).

### Economics

In the middle of 2010 we were again reminded that volatility in the wheat market is a fact of life. Drought in Eastern Europe led to a 30% reduction in output and subsequent political decisions in Russia and the Ukraine to ban wheat exports. Wet weather conditions leading to poor crop establishment in Canada led to both a reduced crop and a marked

decline in quality. Similar problems in Germany and Australia led to downgrades in quality there. Meanwhile currency conversion rates have fluctuated in response to the latest economic news. This affected many commodities and resulted in a rise in wheat prices on a par with 2007/8. At the close of 2010 the London Wheat Futures market rose to a record level, in excess of £200 per tonne, up nearly £100 per tonne in the last six months. Breadmaking wheat was also back at peak levels, with May 2011 physical prices in the North-West of England approaching £240 per tonne. This is a reminder that wheat is a 'world crop' with international events having a significant effect on the UK market and UK producers.

Whilst input prices increased, the aforementioned rise in wheat values continues to provide competitive gross margins for quality wheat growers. Early indications predict total winter wheat acreage to rise by circa 3% and with new crop November futures trading at circa £160 per tonne gross margins continue to look attractive.

Due to a 35% decrease in the forecasted exportable surplus and competitive pricing, the UK has attracted good demand from traditional, and sometimes unusual, importing nations. As a result the exportable surplus has been shipped and replacement materials will be required, leaving the 2010/11 supply and demand situation finely balanced.

One of the features of the food market is that demand is consistent even when raw material prices fluctuate. Bakers and food manufacturers still require wheat flour even when the grain market is firm. They may be more demanding in terms of quality, but this consistency of demand is of great value, allowing growers to capture the benefit of higher prices when they occur. Other wheat users are more price sensitive meaning that demand is reduced as they switch to alternative materials as prices rise.

### Milling Wheat Challenge

In 2010 UK flour millers, together with Crops Magazine, ran a competition - the 'Milling Wheat Challenge' - to find the best grower of consistently high-quality milling wheat. The three finalists demonstrated a clear understanding of both growing the crop and marketing it. A DVD of the finalists has been produced by the HGCA and is available to farmer discussion groups. The competition will be run again in 2011. Full details will appear in 'Crops' magazine and on the **nabim** website.

### **Mycotoxins**

UK farmers and processors have adjusted, over the past four years, to managing the threat of mycotoxins entering the food chain. Much has been learnt and the wheat sector has collaborated to produce a workable system that continues to protect food safety whilst minimising potential disruptions to grain supply. However, the risk of mycotoxin contamination remains a major food safety issue.

Without robust varietal resistance to fusarium head blight, growers are forced to rely on cultural methods to reduce the risk from mycotoxins formed by the fungi. However, with weather the main predisposing factor, this can be challenging. In two of the past four years conditions resulted in major challenges from levels of both deoxynivalenol (DON) and zearalenone (ZON). Growing conditions for the crop harvested in 2010 were relatively benign which led to a second year of low DON levels. Nevertheless, some flour customers and other secondary processors remain very concerned about mycotoxins. It may take time to regain their confidence. All wheat growers will now be aware that mycotoxins are a food safety issue for which they have a legal responsibility.

In 2010/11, most millers are content with suppliers stating the risk assessment value with each load of grain arriving at intake. Others, for commercial reasons, may still require DON (and in some cases ZON) values also to be supplied. Milling wheat should only be marketed when a reliable risk assessment has been made or where levels of mycotoxins present have been quantitatively determined prior to delivery.

The strategy for the 2011 harvest will the same as that used in 2010. From the start of harvest all wheat being sent to a flour mill (and some other primary processors) 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. This requirement may be relaxed once the overall mycotoxin threat for the year has been determined.



The **nabim** Wheat Guide lists the flour milling industry's views on wheat varieties and gives marketing guidance on their likely relative values in the UK market. It complements other information on wheat varieties provided in the HGCA Recommended List 2011/12. It should be noted that just as a variety can vary in agronomic performance from year to year, end-use performance might also vary due to climatic conditions throughout the growing season.

Increasingly, contracts specify single varieties of wheat, since the variety is the most important element in determining end-use performance. Wherever possible, different varieties should be separated within stores in order to maintain their full value. Even where varieties are of apparently similar value, mixing can reduce their marketability; a factor that is brought out in some of the comments below.

UK flour millers produce consistently high-quality products where the reliability and safety of the wheat is of paramount importance. All millers purchase wheat that has been grown to assured standards such as the Assured Combinable Crops Scheme, the Scottish Quality Crops Scheme or other schemes providing similar assurance standards.

Varieties are listed in alphabetical order within each of the **nabim** groups.

<b>Group 1:</b> These an 76kg/hl than oth	e the varieties that produce consistent milling and baking performance. Providing they achieve the specified quality requirements including 13% protein, 250s Hagberg Falling Number and a specific weight of 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 lers. Therefore, it is important to understand the end-use requirements of your customer.
Gallant	This variety is significantly higher yielding than other Group 1 varieties. Results from the 2010 harvest reinforce those seen in the three years of trials. Its milling and baking qualities are consistently as good, as other current varieties. Commercial quantities have been available to millers since it joined the HGCA Recommended List, and these have performed well.
Hereward	First added to the List in 1991, Hereward still performs well but it is now outclassed in terms of yield. The variety remains popular with some millers, and because of its decline in acreage, they may offer contract growing schemes some of which offer further premiums for higher protein content to compensate for lower yields.
Solstice	Solstice is now lower yielding than Gallant but remains the most widely used Group 1 variety and 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.
Xi 19	Now outclassed in terms of yield and no longer on the Recommended List. This variety tends to produce lower protein due to high yields. Correct agronomic management is therefore important. It has performed consistently in breadmaking tests. Low protein consignments are unlikely to be accepted by all millers.
Spring wheats	
Mulika (NEW)	This variety achieved RL status in 2011. Limited trial data indicates that it has yields from spring sowings that are 9% above those for Paragon. Over the three years of trials it appears to be similar to Paragon in most aspects of performance.
Paragon	A spring variety whose performance in breadmaking has been excellent. It remains the choice of most millers when buying spring wheats.

Group 2: This group varieties a	o comprises varieties that exhibit breadmaking potential, but are not suited to all grists. Some are consistent, but not as good as those in Group 1; some perform inconsistently whilst others are suited to specialist flours. Therefore these re likely to attract varying market prices. Lower protein Group 2 wheats are also widely used by millers, but will attract variable premiums.
	A moderate yielding variety that performs well as a second wheat. Only limited commercial quantities have been available in the last two years, but it is unlikely to be a preferred variety amongst those in Group 2 due to it sometimes producing loaves that have a weak crumb structure.
Cordiale	This remains the group 2 variety of choice for most millers and growers. Moderate yields are compensated by early maturity and good second wheat performance. Higher than average HFNs, good protein levels and specific weights are also key features. Consistent milling and baking performance continue to be seen by millers.
	Einstein is a moderate yielding variety that is 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 bread-making grists.
	This variety has a high yield but with a tendency to produce a lower level of protein. Sometimes it has a tendency to produce bread that is less resilient and with a greater variability in crumb structure than some other varieties. Not widely available and unlikely to be a preferred Group 2 variety.
	This variety achieved RL status last year but only limited commercial quantities have been available so far. It yields between Cordiale and Panorama. It achieves protein levels similar to those of Cordiale. Over the three years of testing the overall baking performance appeared to vary between seasons. This may mean that good agronomic management is required to maintain premiums.
KWS-Podium (NEW)	This variety achieved RL status in 2011. It has yields 1% above those of Cordiale. Over the three years of testing, this variety has performed better than Einstein and meets the intake criteria. However, flour extraction rates may sometimes be lower than expected. It is the only Group 2 variety with resistance to orange wheat blossom midge attack.
KWS-Sterling	This variety achieved RL status in 2010, and joined Panorama as the highest yielding wheat in Group 2. So far only limited commercial quantities have been available. Over the three years of testing, the variety exhibited some variability in protein levels but baking performance was acceptable. Good agronomic management may be required to attract higher premiums.
Panorama	This variety is a high yielding Group 2 variety which shows good grain and milling characteristics. Although only limited quantities of this variety have been commercially available, baking quality has been variable and overall it produces bread of variable quality. This is likely to make it more suited to uses in blends.
	This variety was removed from the 2010 RL because in yield terms it has been overtaken by more recently developed varieties. However, it continues to offer unique quality characteristics in specialist bread grists and some millers may offer specific contracts.
Spring wheats	
Ashby	This variety is seldom seen by millers.
Granary	Relatively small quantities of this variety have been seen by millers. Recent evidence suggested that it is better suited to spring planting.
KWS-Willow (NEW)	This variety joined the Recommended List in 2011. It has similar high yields to those of Tybalt. Overall, it has shown variability across the years of testing, in particular with baking performance. As a result it is more likely to be suited to uses in blends.
	This is a spring variety, which has a tendency to low protein content and softer grain. It shows fair baking performance and will be used at low grist inclusion levels by most millers.

Group 3: This Group	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.
Claire	An early-sowing biscuit wheat that continues to be the benchmark for Group 3. It is preferred by millers because of its milling qualities, bright white flour colour, and its gluten characteristics which result in high dough extensibility.
Cocoon (NEW)	This variety joined the Recommended List in 2011 with a recommendation for the east. It has similar yields to Invicta. 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.
Consort	This variety, which was especially recommended for the north, became agronomically outclassed by newer varieties and was removed from the RL in 2009. However, it remains a good biscuit wheat, which is still popular with millers for its dough extensibility.
Invicta	This variety joined the RL in 2010. Over the three years of testing it appears to be similar in biscuit performance to the Robigus control. The highest yielding Group 3 and a solid disease resistance package are also positive attributes.
KWS-Target (NEW)	This variety joined the RL in 2011. It is a high yielding variety, being marginally lower than Invicta. Over the three years of testing it appears to produce consistent results and is similar in biscuit performance to Robigus. It has resistance to orange wheat blossom midge attack.
Robigus	This is a moderate high yielding variety that is well-liked and widely used by the milling industry. It is ideal for biscuits but not as versatile as Claire due to the yellowish flour colour.
Scout	This variety has similar yields to Robigus and shows quality attributes similar to those of Claire. It appears to be consistently good in its processing qualities.
Tuxedo (NEW)	This variety joined the RL in 2011. It has similar yields to Invicta. Over the three years of testing there was evidence of variability between years for dough extensibility. It is unlikely to be a preferred Group 3 variety for all millers.
Warrior	2011 will be the first year when commercial quantities of this variety will be available. It has a very good disease resistance package and yields similar to Robigus. From the three years of trials it routinely met the biscuit wheat criteria and has shown consistency in its rheology.

Group 4:	hese varieties are grown mainly as feed wheats. However some (such as the examples listed below) may be used by millers in certain 'general purpose' grists if they achieve the contractual standards but are unlikely to attract a premium. Growers hould take care and avoid mixing hard and soft varieties.
Hard:	Belvoir (spring), Conqueror, Duxford, Gladiator, Grafton, Humber, JB Diego, KWS-Santiago (NEW), Oakley, Stigg (NEW). Of the varieties listed, Duxford has a stronger gluten quality and is worthy of keeping separate. With the other varieties, Gladiator, Humber and the spring variety Belvoir generally have higher protein contents, Hagberg Falling Numbers (HFN) and specific weights, whereas Oakley is a low protein, low HFN variety.
Soft:	Although soft, these varieties are not generally suitable for biscuit flour. Alchemy, Beluga, Cassius, Denman (NEW), Glasgow, Gravitas (NEW), Istabraq and Viscount. Alchemy, followed by Viscount, are the most popular varieties grown and may be used by some millers, but not where they require good gluten extensibility characteristics, which differentiates the soft Group 3 from the soft Group 4 varieties.



The best way to optimise the milling wheat offering is to understand the specific requirements of local millers. There are currently 30 companies operating 57 flour mills located throughout Great Britain and Ireland. Many smaller millers have developed niches ranging from retail flour mixes to flours for specific uses such as in speciality breads. During the milling process millers blend different wheats into a range of 'grists' that are then milled to produce up to 400 different types of flour. The result is that individual millers may require wheat varieties for specific purposes and are prepared to offer specific contracts for these. Millers are keen to explain their requirements to farmers, merchants and farmer-controlled businesses. Most millers welcome and regularly host visits from farmers groups, co-operatives and merchants.

#### ADM Milling Ltd

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#### Allied Mills

Central Office, Port of Tilbury, Tilbury, Essex RM18 7JR 01375 363100

### Andrews Flour

Belfast Mills, Percy Street, Belfast BT13 2HW 028 9032 2451

### Churchstoke, Montgomery, Powys, SY15 6TE

Jas Bowman & Sons Ltd Arlesey Road, Ickleford Mill, Hitchin, Herts SG5 3UN 01462 422722

### E B Bradshaw & Sons Ltd

**Bacheldre Watermill** 

01588 620489

Bell Mills, Skerne Road, Driffield, Fast Yorkshire Y025 6XI 01377 253163

### **Carr's Flour Mills Ltd**

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### **Doves Farm Foods Ltd** Salisbury Road, Hungerford, Berkshire RG17 ORF 01488 684880

Edme Ltd High Street, Mistley, Manningtree, Essex CO11 1HG

### 01206 393725

**European Oat Millers Ltd** Mile Road, Bedford MK42 9TB 01234 327922

#### **Heygates** Ltd

Bugbrooke Mills, Bugbrooke, Northampton NN7 3QH 01604 830381

#### Kerry Ingredients (UK) Ltd

The Gainsborough Mill, Carr Lane, Gainsborough, Lincs DN21 1LG 01427 613927

#### Laxey Glen Mills Ltd

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### W & H Marriage & Sons Ltd

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#### FWP Matthews Ltd

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01202 743090

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Muntons

R Mayall & Daughter

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Cedars Maltings, Stowmarket IP14 2AG

Albion Flour Mills, Stockport, Cheshire SK4 1TZ

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Chipping Norton, Oxon OX7 6BH

#### **Stoneground Flour Co**

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#### Whitworths Holdings Ltd

Victoria Mills, Wellingborough Northants NN8 2DT 01933 441000 **G R Wright & Sons Ltd** Ponders End Mill. Enfield, Middx EN3 4TG 020 8804 1166 Mills in the UK and Ireland

nabim wheat guide 2011



### Winter Variety Profiles

### Pearl

Nickerson.

Pearl's share of the Winter variety market dropped by a further 10% in harvest 2009. A moderately late variety with long, fairly stiff straw and moderately good resistance to *Rhynchosporium*.

### Flagon

**New Farm Crops, Syngenta Seeds Ltd.** Flagon showed a slight increase in its share of the Winter malting barley market to 30% in 2009. It gives higher yields than Pearl, with good overall disease resistance. It offers the maltster higher extracts than Pearl with good processing characteristics.

### Cassata

### Nickerson.

Cassata increased its share from 8% in 2008 to 15% in 2009. It produces malt of quality similar to Pearl and provides the grower with the benefit of resistance to the common strains of barley mosaic viruses, in addition to good lodging resistance and treated yield 2% higher than Pearl. It has good resistance to *Rhynchosporium* and moderately good resistance to brown rust but is susceptible to mildew and very susceptible to yellow rust.

### Purdey

**New Farm Crops, Syngenta Seeds Ltd.** Entering the Approved List at Provisional Approval 1 for brewing, Purdey has good resistance to *Rhynchosporium* and net blotch but is susceptible to mildew. It is resistant to the common strains of barley mosaic viruses (BaYMV strain 1 and BaMMV).

### Winsome

**New Farm Crops, Syngenta Seeds Ltd.** Awarded Provisional Approval 1 for brewing this year, Winsome is a high yielding variety with early maturity, good resistance to yellow rust, *Rhynchosporium* and net blotch.

### **Spring Variety Profiles**

### Optic

New Farm Crops, Syngenta Seeds Ltd. Purchases of Optic from 2009 crop remained fairly static. It has poor untreated yield and a tendency to brackle and is susceptible to *Rhynchosporium* and moderately susceptible to mildew but has good resistance to yellow rust. Very useful to maltsters as it makes malt suitable for UK brewing, export brewing and malt distilling.

### Decanter

Nickerson.

Purchases of Decanter, all in Scotland, dropped from 60,000t in 2008 to 24,000t in 2009. It is early maturing with good resistance to brackling, mildew and yellow rust. It is no longer of interest for malt distilling but is still required at higher nitrogen levels for grain whisky malt.

### Oxbridge

Nickerson.

Oxbridge's share of the Spring barley market dropped by 2% in 2009 to 18%, mostly purchased in Scotland where it continues to account for one third of the total tonnage purchased. It provides malt of good quality for malt distilling use. It is resistant to brackling, has good resistance to *Rhynchosporium* and moderately good resistance to mildew.

### Publican

New Farm Crops, Syngenta Seeds Ltd. Publican increased its share from 0.5% in 2008 to 1.8% in 2009. It has high treated and untreated yield. It has good resistance to mildew and *Rhynchosporium* but is very susceptible to yellow rust.

### **NFC-Tipple**

New Farm Crops, Syngenta Seeds Ltd. Tipple's share of the Spring market increased by 10% in 2009 to 36%. It provides malt of good all round quality suitable for brewing and for export. It has good resistance to mildew, but is susceptible to *Rhynchosporium* and yellow rust.

### Westminster

Nickerson.

Interest in Westminster fell from 4.1% in 2008 to 1.1% in 2009, all purchased in

England. It provides good quality malt for brewing use with high extract potential. It is a medium-tall variety with good resistance to *Rhynchosporium* and mildew.

### Quench

New Farm Crops, Syngenta Seeds Ltd. Having gained Full Approval for brewing in 2009, Quench accounted for 38,500t purchased in England. It provides malt of good all-round quality for brewing use. It has high untreated yield and very high treated yield. It has good resistance to brackling, mildew and *Rhynchosporium* but is susceptible to yellow rust and brown rust.

### Belgravia

Nickerson.

Promoted to Full Approval for malt and grain distilling in 2009, 8,000t of Belgravia was purchased in Scotland. It is around 6% higher yielding than Decanter in the North, with good disease resistance, especially to mildew and *Rhynchosporium*.

### Concerto

Nickerson.

Concerto gained Full Approval for brewing and malt distilling use following commercial trials on the 2009 crop. It has high treated yield and good resistance to mildew but is susceptible to *Rhynchosporium*.

### Forensic

New Farm Crops, Syngenta Seeds Ltd. With Full Approval for grain distilling use, Forensic has treated yield potential similar to Belgravia in the UK and 9% higher yielding than Decanter in the North region. It has good resistance to brackling but is susceptible to mildew.

### Propino

**New Farm Crops, Syngenta Seeds Ltd.** Very high treated and untreated yield. Good resistance to mildew and *Rhynchosporium*. Good resistance to brackling.



Barley crop purchases anticipated at 1.9 million tonnes from England and Scotland

	BREWING USE	MALT DISTILLING USE	GRAIN DISTILLING USE
	<b>Winter varieties:</b> Pearl, Flagon, Cassata	<b>Winter varieties:</b> None	Winter varieties: None
Full Approval	<b>Spring varieties:</b> Optic, NFC-Tipple, Quench, Westminster, Concerto	<b>Spring varieties:</b> Optic, Oxbridge, Publican, Belgravia, Concerto	<b>Spring varieties:</b> Decanter, Belgravia, Forensic
Provisional	Winter varieties: Purdey, Winsome		
Approval 1	<b>Spring varieties:</b> Propino		

### The IBD approved malting barley list for 2011 harvest

The Malting Barley Committee has completed the Spring 2010 round of meetings to evaluate the potential of new malting barley varieties. This guide helps growers of malting barley identify varieties most likely to meet the needs of the market in the year ahead.

### Additions to the IBD approved list

Purdey has been granted Provisional Approval 1 for brewing
 Winsome has been granted Provisional Approval 1 for brewing
 Propino has been granted Provisional Approval 1 for brewing
 Concerto has been granted Full Approval for brewing and malt distilling use
 Forensic has been granted Full Approval for grain distilling use

### Removals from the IBD approved list

There are no removals from the Approved List **Cocktail** already removed in November 2009

For full information on the agronomic characteristics and performance of varieties visit **www.hgca.com** 

### NITROGEN BANDS

The grain nitrogen requirements in England and Scotland as a percentage of their total requirement

Spring	England	Scotland
Under 1.55%	9.8%	49.7%
1.55% - 1.65%	21.7%	24.3%
1.65% - 1.85%	23.0%	6.6%
Above 1.85%	0%	9.0%
Winter		
Under 1.55%	7.3%	0%
1.55% - 1.65%	15.3%	0.3%
1.55% - 1.65% 1.65% - 1.85%	15.3% 22.2%	0.3% 10.1%



For full details of all malting barley purchases (Scotland and England) visit www.ukmalt.com



Visit our stand in the HGCA marquee at Cereals 2011 for an update on varieties for 2012

# Acknowledgements

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### Preliminary data

The selection of which 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 RL tables. Acknowledgement is made to Defra and the devolved governments as well as BSPB for the use of these data.



### Processors

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



#### Committee members and growers

Scottish Crop Research Institute and Trials Force Ltd.

Test and trials contractors

**NIAB TAG** 

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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FORD AGRICULTURAL TRIALS LIMITE

The RL Team is led by Dr Jim McVittie and includes Bill Handley, Claire Osborne, Peter Hanson, Joanne Soule and Denise Lawson.

For specific RL enquiries call 024 7647 8746 or email rl@hgca.com

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SACCS

**BSPB** 

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Trials



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