

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

## MARKET OPTIONS AND GRAIN QUALITY

	RECOMMENDED		C	P2	*	P2	P1	*	C	P1	P2	P1	P1	C*	P2		P2	P1	P1	*	*	C	P1	P2	C*		P1	*	*	Average LSD (5%)									
	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	Istabraq	Alchemy	KWS-Santiago	Conqueror	Oakley #	JB-Diego	Duxford	Stigg	Grafton	Humber	Gladiator	Average LSD (5%)			
End-use group	nabim Group 1					nabim Group 2					nabim Group 3					Soft Group 4					Hard Group 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	North	North	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	2.7		
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	104	102	102	101	100	99	2.7		
<b>Main market options (The specific attributes of varieties are different so, whenever possible, varieties should not be mixed in store)</b>																																							
UK bread-making	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UK distilling	-	-	-	-	-	-	-	-	-	-	-	[Y]	-	[Y]	[Y]	-	-	[Y]	Y	Y	Y	Y	-	Y	[Y]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ukp bread wheat for export	Y	Y	[Y]	[Y]	[Y]	[Y]	[Y]	Y	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
uks soft wheat for export	-	-	-	-	-	-	-	-	-	-	[Y]	[B]	[Y]	[Y]	Y	-	Y	Y	[Y]	[Y]	[B]	[Y]	[Y]	[Y]	B	B	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Grain quality</b>																																							
Endosperm texture	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	0.4	
Protein content (%)	12.0	12.0	11.3	11.3	11.6	12.1	12.2	12.1	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	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  
 € = 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, Qplus, Xi19 and Zebedee  
 ® = "HGCA RECOMMENDED LIST" is a registered trademark of AHDB-HGCA

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

## YIELD, AGRONOMY AND DISEASE RESISTANCE

	RECOMMENDED		C	P2	*	P2	P1	*	C	P1	P2	P1	P1	C*	P2	P2	P1	P1	*	*	C	P1	P2	C*	P1	*	*	Average LSD (5%)									
	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	Istabraq	Alchemy	KWS-Santiago	Conqueror	Oakley #	JB-Diego	Duxford	Stigg	Grafton	Humber	Gladiator	Average LSD (5%)	
<b>End-use group</b>	nabim Group 1		nabim Group 2		nabim Group 3		Soft Group 4		Hard Group 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	UK	UK	UK	E&W	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK
<b>Fungicide treated grain yield (% treated control)</b>																																					
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	101	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	
<b>Untreated grain yield (% treated control in comparable trials)</b>																																					
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	
<b>Agonomic features</b>																																					
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	8	8	7	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	
<b>Disease resistance</b>																																					
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	
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	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	6	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	0.0	
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

Sp = specific recommendation

North = recommended for the North region

E&W = recommended for the East and West regions

€ = 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

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## SUPPLEMENTARY DATA

	RECOMMENDED		C	P2	*	P2	P1	*	C	P1	P2	P1	P1	C*	P2	P2	P1	P1	*	*	C	P1	P2	C*	P1	*	*	Average LSD (5%)										
	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	Istabraq	Alchemy	KWS-Santiago	Conqueror	Oakley	JB-Diego	Duxford	Stigg	Grafton	Humber	Gladiator			
<b>End-use group</b>	nabim Group 1		nabim Group 2		nabim Group 3		Soft Group 4		Hard Group 4																													
<b>Scope of recommendation</b>	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		
<b>Breeder/ UK contact</b>																																						
<b>Breeder</b>	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			
<b>UK contact</b>	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			
<b>Annual yield (% control)</b>																																						
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		
<b>Rotational position</b>																																						
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 and more (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		
<b>Sowing date (most trials were sown during October)</b>																																						
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		
<b>Soil type (about 50% of trials are on medium soils)</b>																																						
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		
<b>Agonomic features</b>																																						
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 Jan	End Jan	[End Jan]	End Feb	End Feb	[Mid Feb]	-	End Jan	End Jan	End Jan	-	[Mid Feb]	-	-	End Feb	[Mid Feb]	End Jan	End Feb	[End Jan]	-	-	End Jan	End Feb	End Jan	End Feb	End Jan	-	[End Jan]	Mid Feb	End Jan	End Feb	-	[End Jan]	End Jan	End Jan	-		
<b>Speed of development to growth stage 31 (days +/- average)</b>																																						
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

### Key to breeder/UK contact codes:

Breun = Saatzucht Josef Breun, Germany  
 KWS = KWS UK (www.kws-uk.com)  
 Lim = Limagrain UK (www.limagrain.co.uk)

Mas = Maststock Arable (www.masstock.co.uk)  
 RAGT = RAGT Seeds (www.ragt.co.uk)  
 Sec = Secorbra, UK

Sen = Senova (www.senova.uk.com)  
 SU = Saaten Union UK (www.saaten-union.co.uk)  
 Syn = Syngenta Seeds (www.newfarmcrops.co.uk)

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

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