

HGCA Recommended List[®] Winter wheat 2014/15

MARKET OPTIONS AND GRAIN QUALITY

	New		C		C		New		New		New		New		C		New		New		New		C		C		C		*		Average LSD (5%)																							
	Skyfall	Crusee	Gallant	Solstice	Cubanita	Chilton	Panorama	KWS Cashel	Cordiale	Cocoon	Zulu	KWS Croft	Icon	Delphi	Monterey	Tuxedo	Invicta	KWS Target	Claire	Scout	Panacea	Leeds	Twister	Myriad	Revelation	Cougar	Viscount	Horatio	Beluga	Alchemy	KWS Kielder	Evolution	KWS Sanitago	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	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	UK	UK	Sp*	UK	EW	UK	UK	UK	East	UK	UK	UK	UK	UK	UK	N&E	UK	N	UK	UK	UK	UK	UK	North	North	UK	UK	EW	UK	UK	EW	UK	UK	UK	EW	UK	UK	UK											
UK treated yield (% control 9.9 t/ha)	102	98	96	96	102	100	99	97	97	103	102	102	102	102	102	101	100	100	99	97	97	106	105	105	104	103	103	103	102	102	98	107	107	106	106	105	105	103	102	102	99	99												3.8
Fungicide treated grain yield (% treated control)																																																						
United Kingdom (9.9 t/ha)	102	98	96	96	102	100	99	97	97	103	102	102	102	102	102	101	100	100	99	97	97	106	105	105	104	103	103	103	102	102	98	107	107	106	106	105	105	103	102	102	99	99												3.8
East region (10.1 t/ha)	101	98	98	94	101	99	99	96	98	103	102	102	102	102	102	101	99	100	99	98	96	106	105	105	104	103	101	102	103	102	97	105	107	107	104	105	102	101	102	99	100												2.1	
West region (9.9 t/ha)	103	99	99	96	105	100	100	96	98	102	100	98	98	100	99	100	99	98	97	96	96	102	103	101	99	99	101	101	103	98	102	104	105	104	104	102	101	102	100	98												3.0		
North region (9.5 t/ha)	[104]	94	94	97	[100]	104	99	[100]	96	101	[104]	102	[104]	103	105	102	102	102	-	99	[106]	108	[109]	105	105	105	105	105	104	103	98	108	[105]	106	108	108	107	103	101	102	100												3.2	
Main market options (The specific attributes of varieties are different so, whenever possible, varieties should not be mixed in store)																																																						
UK breadmaking	Y ¹	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
UK biscuit, cake-making	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
UK distilling	-	-	-	-	-	-	-	-	-	-	[Y]	-	Y	[Y]	-	[Y]	[Y]	-	[Y]	-	[Y]	-	Y	Y	[Y]	[Y]	Y	-	Y	[Y]	Y	[Y]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
ukp bread wheat for export	-	Y	Y	Y	[Y]	[Y]	[Y]	[Y]	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
uks soft wheat for export	-	-	-	-	-	-	-	-	-	[Y]	[Y]	[Y]	[B]	[Y]	[Y]	[Y]	[B]	[Y]	[B]	Y	Y	Y	[B]	[B]	[B]	[Y]	[B]	[B]	[B]	[B]	[Y]	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Grain quality																																																						
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	Soft	Soft	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard									
Protein content (%)	11.8	12.4	12.1	12.0	11.3	11.7	11.7	11.6	12.3	11.1	11.2	11.2	10.8	11.4	11.4	11.1	11.2	11.4	11.4	11.6	10.8	11.0	11.0	11.0	11.0	10.9	10.9	11.1	11.0	11.3	10.8	10.7	11.0	11.0	10.9	10.9	11.3	11.1	11.7	11.0												0.4		
Hagberg Falling Number	271	243	291	246	278	266	232	247	305	228	208	200	209	260	222	271	229	207	226	218	139	192	164	217	214	175	159	222	157	230	185	171	141	218	188	189	256	298	270	248												27		
Specific weight (kg/ha)	78.1	77.5	77.0	77.9	79.8	78.7	77.2	76.8	79.0	76.2	75.7	76.3	75.6	75.7	78.8	74.6	75.1	76.4	76.3	78.0	76.9	77.9	76.7	76.5	75.9	73.9	75.9	75.9	75.1	77.3	74.0	74.1	75.0	76.3	75.3	75.4	76.5	77.6	77.9	76.4												1.0		
1000 grain weight (g)	[44.7]	-	[49.0]	[46.8]	[50.3]	-	[45.5]	[36.6]	[41.5]	104	85	93	59	104	91	111	76	103	-	86	[46.1]	-	[42.7]	-	-	-	[45.3]	-	-	[44.4]	-	[44.2]	-	-	[44.5]	-	-	[45.7]	[45.8]	[42.9]												3.3		
Chopin alveograph W	277	227	226	204	221	215	[235]	269	[240]	104	85	93	59	104	91	111	76	103	-	86	[75]	76	65	95	78	74	[89]	81	109	-	201	-	[141]	-	-	-	-	-	-	-	-	-	-	-	-	-								
Chopin alveograph P/L	1.4	0.6	0.9	0.6	0.7	0.7	-	0.7	[0.9]	0.3	0.3	0.3	0.2	0.4	0.3	0.4	0.3	0.3	-	0.3	[0.3]	0.3	0.2	0.3	0.3	0.2	[0.3]	0.3	[0.4]	-	-	1.4	-	[0.4]	-	-	-	-	-	-	-	-	-	-	-	-								
Status in RL system																																																						
Year first listed	14	12	09	02	14	13	09	14	04	11	14	13	14	13	13	11	10	11	99	09	14	13	14	13	13	13	09	12	10	06	13	14	11	13	10	12	12	08	09	08														
RL status	P1	-	-	-	P1	P2	-	P1	-	*	P1	P2	P1	P2	P2	*	-	*	-	-	P1	P2	P1	P2	P2	P2	-	-	-	-	P2	P1	-	P2	-	-	-	-	-	-	-	-	-	-	*									

Varieties no longer listed: Denman, Einstein, Gravitas, KWS Podium, KWS Sterling

UK = recommended for the UK

East = recommended for the East region

EW = recommended for the East and West regions

North = recommended for the North region

N&E = recommended for the North and East regions

C = yield control

* = variety no longer in trials

[] = limited data

P1, P2 = first and second year of recommendation

Sp* = KWS Cashel is a specific recommendation for end-use as a corrective wheat with high gluten strength.

Y¹ = to be verified by milling and baking of commercial qualities by April 2014

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.

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

HGCA Recommended List® Winter wheat 2014/15

YIELD, AGRONOMY AND DISEASE RESISTANCE

	New		C	C	New	New		*	New	New	*	C	*	New		New	New		C	C	*	Average LSD (5%)																				
	Skyfall	Cruse	Gallant	Solstice	Cubanita	Chilton	Panorama	KWS Cashel	Cordiale	Cocoon	Zulu	KWS Croft	Icon	Delphi	Monterey	Tuxedo	Invicta	KWS Target	Claire	Scout	Panacea	Leeds	Twister	Myriad	Revelation	Cougar	Viscount	Horatio	Beluga	Alchemy	KWS Kleider	Evolution	KWS Santiago	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford	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	UK	UK	Sp*	UK	EW	UK	UK	UK	East	UK	UK	UK	UK	UK	UK	N&E	UK	N	UK	UK	UK	UK	North	North	UK	UK	EW	UK	UK	UK	EW	UK	UK	UK	UK	UK	UK
Fungicide treated grain yield (% treated control)																																										
United Kingdom (9.9 t/ha)	102	98	96	96	102	100	99	97	97	103	102	102	102	102	101	100	100	99	97	97	106	105	105	104	103	103	103	102	102	98	107	107	106	106	105	103	102	102	99	99	3.8	
East region (10.1 t/ha)	101	98	98	94	101	99	99	96	98	103	102	102	102	102	101	99	100	99	98	96	106	105	105	104	103	101	102	103	102	97	105	107	107	104	105	102	101	102	99	100	2.1	
West region (9.9 t/ha)	103	99	99	96	105	100	100	96	98	102	100	98	98	100	100	99	98	97	96	96	102	103	101	99	99	99	101	101	103	98	102	104	105	104	104	102	101	102	100	98	3.0	
North region (9.5 t/ha)	[104]	94	94	97	[100]	104	99	[100]	96	101	[104]	102	[104]	103	105	102	102	102	-	99	[106]	108	[109]	105	105	105	105	104	103	98	108	[105]	106	108	108	107	103	101	102	100	98	3.2
Untreated grain yield (% treated control)																																										
United Kingdom (9.9 t/ha)	95	91	82	79	89	85	89	81	84	89	90	91	95	91	91	91	90	84	83	88	91	88	86	91	95	98	89	91	86	88	87	98	87	93	87	90	92	92	89	82	4.7	
Agonomic features																																										
Resistance to lodging without PGR	8	7	8	8	8	7	8	8	8	6	6	5	7	8	6	7	7	7	7	8	5	7	7	8	7	6	7	7	7	7	7	7	6	5	8	8	7	8	8	1.4		
Resistance to lodging with PGR	8	8	8	8	8	8	8	8	8	7	8	6	8	8	7	8	8	8	7	8	7	7	8	7	8	8	6	8	7	8	8	7	7	7	7	8	7	7	9	9	0.9	
Height without PGR (cm)	82	81	81	91	86	86	88	85	78	93	88	87	85	85	89	82	89	83	87	85	91	86	87	89	85	84	81	88	78	89	82	89	87	85	83	85	81	87	76	87	2.0	
Ripening (days +/- Solstice, -ve = early)	0	+1	-1	0	0	+2	+2	+1	-1	+5	+2	+1	+2	+2	+2	+1	+3	+1	+1	+2	+2	+2	+2	+4	+3	+1	+1	0	+2	+3	+3	+2	+1	+2	+2	+1	0	-1	+1	0.8		
Resistance to sprouting	-	-	[6]	[7]	-	-	[6]	-	[6]	[6]	-	-	-	-	-	[6]	[7]	[6]	[5]	[6]	-	-	-	-	-	-	[4]	-	[4]	[6]	-	-	[5]	-	[6]	-	-	[7]	[5]	[6]	0.9	
Disease resistance																																										
Mildew	6	8	5	4	6	6	7	9	6	7	7	7	8	5	6	7	5	4	[4]	6	6	3	4	6	7	7	7	7	4	8	4	6	4	7	3	6	6	6	7	6	1.9	
Yellow rust	6	9	5	4	6	6	8	9	6	8	9	9	9	7	9	8	8	5	9	4	7	6	8	9	8	5	6	5	7	4	9	4	8	6	9	9	8	6	5	1.2		
Brown rust	8	6	5	4	4	4	6	9	3	9	5	5	5	8	4	8	6	3	5	7	5	4	4	9	9	7	6	3	4	8	9	6	8	7	3	8	5	4	4	1.2		
Septoria nodorum	[5]	[6]	[5]	[6]	[5]	[5]	[5]	[4]	[5]	[5]	[6]	[5]	[6]	[6]	[6]	[5]	[6]	[6]	6	[5]	[6]	[6]	[5]	[6]	[6]	[6]	[6]	[5]	[6]	[6]	[6]	[6]	[5]	[6]	[6]	[5]	[6]	[5]	[5]	1.1		
Septoria tritici	6	6	4	5	5	5	5	5	5	5	5	5	6	5	5	6	5	5	5	5	6	5	5	5	6	7	5	5	5	6	5	6	5	5	5	5	5	5	5	5	0.8	
Eyespot	[6]@	5	5	4	[6]	5	4	[4]	4	5	[7]	[6]	[4]	5	5	6	4	6	5	7	[4]	[5]	[6]	[6]	[8]@	[3]	6	5	5	6	[6]	[6]	5	[4]	3	4	4	4	6@	5	2.1	
Fusarium ear blight	[6]	6	5	6	[6]	6	6	[7]	5	7	[6]	6	[6]	6	6	6	6	5	6	6	[6]	7	[6]	7	7	6	6	6	6	7	6	[6]	6	6	6	6	6	6	6	5	6	0.6
Orange wheat blossom midge	R	-	-	-	-	-	-	-	-	-	R	R	-	R	R	-	-	R	-	R	R	R	R	-	R	R	R	-	-	R	-	R	-	R	-	R	-	-	-	-	-	-

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

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

R = believed to be resistant to orange wheat blossom midge (OWBM) but this has not been verified in RL tests
@ Skyfall, Revelation and Grafton are believed to carry the *Pch1* Rendezvous resistance gene to eyespot 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

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HGCA Recommended List® Winter wheat 2014/15

SUPPLEMENTARY DATA

	New		C	C	New	New		*	New	New	*	C	*	New		New	New		C	C	*	Average LSD (5%)																				
	Skyfall	Crusee	Gallant	Solstice	Cubanita	Chilton	Panorama	KWS Cashel	Cordiale	Cocoon	Zulu	KWS Croft	Icon	Delphi	Monterey	Tuxedo	Invicta	KWS Target	Claire	Scout	Panacea	Leeds	Twister	Myriad	Revelation	Cougar	Viscount	Horatio	Beluga	Alchemy	KWS Kleider	Evolution	KWS Santiago	Dickens	Conqueror	KWS Gator	Relay	JB Diego	Grafton	Duxford		
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	UK	UK	Sp ⁹	UK	EW	UK	UK	UK	East	UK	UK	UK	UK	UK	UK	N&E	UK	N	UK	UK	UK	UK	UK	North	North	UK	UK	EW	UK	UK	UK	EW	UK	UK	UK	UK	
Breeder/ UK contact	RAGT Lim SCP Lim				SCP DSV Lim KWS KWS				Sec Lim KWS RAGT BA BA RAGT Lim KWS Lim Sen				Lim Mom Mom Lim Lim RAGT KWS Lim KWS Lim Sen				Sej KWS Sec KWS KWS RAGT Bre KWS SCP																									
UK contact	RAGT	Lim	SCP	Lim	SCP	DSV	Lim	KWS	KWS	Sec	Lim	KWS	RAGT	BA	BA	RAGT	Lim	KWS	Lim	Sen	Lim	Mom	Mom	Lim	Lim	RAGT	KWS	Lim	KWS	Lim	KWS	Sej	KWS	Sec	KWS	KWS	RAGT	Bre	KWS	SCP		
Annual yield (% control)	2009 (10.7 t/ha)				2010 (9.9 t/ha)				2011 (10.1 t/ha)				2012 (8.9 t/ha)				2013 (9.7 t/ha)																									
Rotational position	102	97	92	95	-	102	100	-	94	105	-	-	-	102	102	105	103	103	[98]	98	-	-	-	-	-	-	102	104	[103]	100	-	-	109	-	105	104	106	101	100	101	3.3	
First cereal (10.4 t/ha)	102	98	96	96	102	100	99	97	96	102	102	102	102	102	101	101	101	101	97	97	106	106	105	104	104	104	103	103	102	98	106	106	106	105	105	103	102	102	99	99	4.0	
Second and more (8.5 t/ha)	103	97	96	96	103	100	99	96	98	103	102	100	101	101	101	101	99	97	-	97	106	104	105	101	102	101	101	102	102	97	108	108	107	106	104	106	103	102	100	99	4.3	
Sowing date (most trials were sown during October)	Early-sown (before 14th Sept) (10.2 t/ha)				Late sown (mid-Nov to end-Jan) (8.8 t/ha)																																					
Soil type (about 50% of trials are on medium soils)	-	-	97	94	-	-	-	-	-	105	-	-	-	103	102	103	-	-	100	97	-	-	-	-	-	-	106	107	106	102	-	-	-	-	-	-	-	-	103	-	4.9	
Light soils (9.2 t/ha)	[107]	99	94	96	[104]	102	99	[98]	96	103	[102]	101	[101]	103	104	102	101	99	97	98	[106]	107	[106]	103	103	103	103	105	105	103	98	106	[106]	107	106	106	105	104	103	100	99	5.2
Heavy soils (10.5 t/ha)	101	98	97	95	102	99	99	96	97	103	102	103	101	102	100	99	101	100	-	96	105	104	103	103	103	103	103	101	102	101	97	106	106	106	104	106	102	101	101	98	99	4.4
Agonomic features	Lodging % without PGR				Lodging % with PGR				Latest safe sowing date #																																	
Speed of development to growth stage 31 (days +/- average)	-11	+1	-2	-2	-4	-2	-4	[4]	-3	+5	[-2]	[-7]	+1	+2	-1	+1	-1	-1	+4	+1	[4]	-1	[2]	+3	5	-1	2	-2	+1	1	+4	[-1]	+6	-2	-3	+2	-4	-1	+2	-6	6.5	
Early Sep sown	[-2]	+3	-4	-2	[-1]	+3	-3	[-1]	-4	+6	[2]	-2	[0]	-1	-2	+2	+1	-3	+2	+1	[3]	-3	[-2]	+4	+3	-1	+2	-4	+2	+4	+2	[0]	+1	-5	-5	+4	+3	-1	+2	+2	6.4	
Early Oct sown	[-2]	-3	-3	-1	[2]	-1	0	[-3]	-4	+4	[3]	+2	[-3]	-2	-4	+2	+1	-2	+3	+1	[2]	+0	[-4]	+4	+2	-0	+1	+0	+1	+3	+3	[0]	+1	-1	-4	-0	+1	-1	-1	+2	4.6	

All yields on this table are taken from treated trials receiving a full fungicide and PGR programme
 UK = recommended for the UK C = yield control
 East = recommended for the East region * = variety no longer in trials
 EW = recommended for the East and West regions [] = limited data
 North = recommended for the North region Sp⁹ = KWS Cashel is a specific recommendation for end-use as a corrective wheat with high gluten strength.
 N&E = recommended for the North and East regions

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

Agr = Agrii (www.agrii.co.uk) Lim = Limagrain UK (www.limagrain.co.uk) Sec = Secobra, France
 BA = Blackman Agriculture Mom = Momont, France Sej = Sejet, Denmark
 Bre = Saatzucht Josef Breun, Germany RAGT = RAGT Seeds, UK (www.ragt.co.uk) Sen = Senova (www.senova.co.uk)
 DSV = DSV United Kingdom (www.dsv-uk.co.uk) SCP = Syngenta Crop Protection (www.syngenta.co.uk) Syn = Syngenta Seeds (www.syngenta.co.uk)
 KWS = KWS UK (www.kws-uk.com)

= Latest safe sowing date is the advised latest sowing time to give a sufficient cold period for flowering. Bracketed comments are based on limited data.

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