

A photograph of two men standing in a lush green wheat field. The man on the left is younger, wearing a brown vest over a blue and white striped shirt and a patterned tie. The man on the right is older, wearing a brown tweed jacket over a checkered shirt and a patterned tie. They are both looking down at a wheat plant that the younger man is holding. The background is a vast green field under a bright sky.

Winter Wheat

Growing for the market



Growing FOR THE MARKET

Wheat growers are likely to have to make many important decisions in the coming months regarding the growing and marketing of their crops; new opportunities are emerging and existing ones are demanding higher standards.

These decisions will have to be made in the context of significant price volatility, rising input costs and the usual challenges related to growing crops with the vagaries of the UK's maritime climate.



So, choosing which wheat varieties to sow for marketing in 2013/2014 is more important than ever. This Limagrain Winter Wheat Variety Guide focuses on the suitability of a selection of Limagrain varieties to meet the requirements of the various domestic and export markets.

This is the second edition with an updated summary of the relevant technical data from both HGCA trials and our own husbandry work. Further information

on the complete range of Limagrain varieties for all crops is available from our website at www.limagrain.co.uk Husbandry guidelines for our main wheat varieties can also be obtained from the website or hard copies ordered by e-mail from enquiries@limagrain.co.uk



MARKETS FOR UK WHEAT

The principal uses for UK wheat are domestic quality markets, export markets, and the animal feed markets. The traditional domestic uses for wheat are based on nabim groupings (The National Association of British and Irish Millers) and on the related export brands *ukp* and *uks*. The newly-developing markets such as starch extraction and biofuel production have less clearly defined parameters and need extra care in variety selection.

DOMESTIC MARKETS

Group 1 varieties currently account for about 17% of the UK certified seed market. This is the key premium-earning sector. Group 1 varieties are likely to gain a full bread-making premium from millers if they meet the specifications of 13% protein, 250 Hagberg and have a specific weight of 76 kg/hl. End-users are usually looking for a particular variety so it is important to choose your variety with a buyer in mind. For example, contracts are available for Crusoe and Solstice.

The area of Group 2s which has declined in recent years, is currently around 9% of the market and is for varieties that have bread-making potential but are not suited to all grists. For example, Panorama has a good market for bread-making with some millers but not all. Check with your merchant or end user when making a choice.

Group 3 has also seen a marked decline from 50% a few years ago to its present level of approximately 13%. Soft varieties for biscuit, cake and other flours are a key UK market and Invicta is well suited to these. Old favourite Claire continues to set the quality standard for this market sector.

Group 4 has grown significantly in the past few years on the back of higher grain prices and is now close to 60% of the UK total. It is important to stress that not all Group 4 varieties are the same and there are very clear divisions between the soft and the hard endosperm wheats in this category.

Soft Group 4 wheats are likely to be suitable for



distilling and have also found their place in the UK's important export market. Varieties such as Alchemy (and Istabraq) suit this market and are well established with the end users; Gravitas and Horatio are up and coming varieties in this sector with Myriad and Revelation being more recent additions.

Hard Group 4 wheats are seen as the 'barn fillers', with some 45% of the area sown and have a place primarily for animal feed. They are unlikely to attract any significant premium in other outlets for feed types and, particularly if they have the 1B/1R rye translocation, may not find favour with some end users.

The developing biofuels market is likely to look to Group 4 to meet its demand for wheat. Varieties capable of giving good alcohol yields with high processability will be favoured. Although the industry does not currently specify varieties, those suitable for distilling (soft wheats with low protein levels) are likely to be preferred. Alchemy, and Horatio along with the very high yielding Myraid and Revelation will meet the criteria.

EXPORT MARKETS

The export market accounts for typically one sixth of UK wheat production (17% in 2011) and BCE (British Cereal Exports) in conjunction with the wider industry have developed two wheat export brands - *ukp* and *uks* - as a way of promoting and marketing UK wheat overseas.

ukp bread wheat is 'a blend of semi-hard varieties to suit both EU and non-EU bread-making'. Specifications are protein 11-13%, Hagberg 250 secs, specific weight 76 kg/hl, Chopin alveograph W >170, Chopin alveograph P/L <0.9. The main markets are to the Mediterranean countries with Spain being the largest buyer followed by countries such as Portugal, Italy, Morocco, Egypt and Tunisia.

uks soft wheat is 'a blend of soft extensible varieties well-known throughout the EU for their biscuit making and bread blending characteristics and useful for blending with hard, high protein wheats.' Specifications are protein 10.5-11.5%, Hagberg 220 secs, specific weight 75 kg/hl, W < 120, P/L < 0.55.

<div>RECOMMENDED</div> <div></div>		nabim Group 1			nabim Group 2	nabim Group 3		nabim Group 4			
											
Yield	UK Treated	106	98	96	100	101	97	105	104	104	98
	HGCA East Treated		99	95	101	101	98	104	103	104	98
	HGCA West Treated		100	96	100	101	96	100	100	103	99
	HGCA North Treated		93	96	99	102	96	(107)	(105)	105	98
	Untreated	102	89	78	88	88	81	91	96	89	87
	Suitability as First Cereal	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
	Suitability as Second Cereal	✓✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓
Market Options	Yield Comment	High yielding wheat with bread-making potential bred by Limagrain in Germany	Highest yielding Group 1 and very high untreated yield	A reliable performer in all situations since its introduction in 2002	High yield potential with & without fungicide; good 2nd wheat	High yielding fully UK Recommended Group 3	A reliable variety suitable for sowing from early Sept onwards	New, very high yielding soft Group 4	New Group 4 with very high treated & untreated yield potential	Very high yields in all regions; performs well when early sown	A consistent performer over many sites & seasons
Yield & Market Comment	Endosperm Texture	Hard	Hard	Hard	Hard	Soft	Soft	Soft	Soft	Soft	Soft
	UK Bread-Making	Y	Y	Y	Y						
	UK Biscuit/Cake					Y	Y				
	UK Distilling; SRUC Rating					(Y); Medium	(Y)	(Y); Medium	Y	(Y); Medium	(Y); Medium
Grain Quality	UKP Bread for Export		(Y)	Y	(Y)						
	UKS Soft Wheat for Export					(B)	Y	(Y)	(B)	(B)	B
	Protein Content (%)	12.7	12.3	11.8	11.4	10.9	11.2	10.8	10.8	10.9	11.1
	Hagberg Falling Number (secs)	278	242	252	235	236	223	225	218	226	230
	Specific Weight (kg/hl)	79.4	77.2	77.3	76.7	74.9	76.2	76.3	75.6	75.8	76.9
	1000 Grain Weight (g)	-	-	52.5	(51.3)	(48.8)	(49.6)	-	-	-	50.8
Quality Comment	Market/Quality Comment	High specific weight, high Hagberg falling number and high protein	High protein % for Group 1 with very good specific weight	Market leading Group 1, liked by millers because of its reliable milling characteristics	Top end of Group 2 for quality producing white flour preferred by millers	Well suited to all Group 3 markets: biscuit flour, distilling, export & animal feed	A popular variety ideally suited to a range of domestic & export markets	High specific weight for its group; wide range of market options	Suitable for all the accepted soft wheat markets particularly distilling & export	Multiple market options: distilling, biofuel, export, animal feed	Accepted in all the major domestic & export markets for its type
	Optimum Sowing Date*†	Mid	Mid	Mid	Mid	Mid-Late	Early-Late	Mid-Late	Early-Mid	Early-Mid	Early-Mid
	Latest Safe Sowing Date*	(Mid-Feb)	(End Jan)	End Jan	Mid March	End Feb	Mid-March	(Mid Feb)	(End Jan)	Mid Feb	Mid Feb
Agronomic Features	Tillering Potential*	High	Moderate	Moderate	Moderate	Moderate	High	Moderate-High	Moderate	Moderate-High	High
	Speed of Spring Apical Development*	Fast	Medium-Fast	Medium-Fast	Medium	Medium-Fast	Slow	Medium	Slow-Medium	Medium	Slow-Medium
	Resistance to Lodging without PGR	7	7	8	8	7	7	7	8	6	7
	Resistance to Lodging with PGR	7	8	8	8	8	7	7	8	8	7
	Height without PGR (cm)	101	82	92	89	90	88	90	86	89	91
	Ripening (days +/- Solstice >0 = later)	+2	+2	0	+2	+3	0	+2	+4	+2	+2
	Resistance to Sprouting	(6)	-	(7)	(7)	(7)	(5)	-	-	-	(6)
Disease Features	CTU Tolerant/Susceptible **	Susceptible	Susceptible	Tolerant	Tolerant	Tolerant	Tolerant	(under test)	Susceptible	Tolerant	Tolerant
	Mildew	8	9	4	7	5	4	5	7	7	7
	Yellow Rust	6	9	4	8	8	6	8	9	6	6
	Brown Rust	7	6	4	5	6	5	5	9	6	4
	<i>Septoria nodorum</i>	-	(6)	6	(5)	(6)	(5)	(5)	(6)	(5)	6
	<i>Septoria tritici</i>	7	7	5	6	5	6	5	6	6	6
	Eyespot	7	(5)	4	4	5	5	(7)	(8)	(6)	6
	<i>Fusarium</i> Ear Blight	8	6	6	7	6	6	6	7	6	7
	Orange Wheat Blossom Midge	-	-	-	-	-	-	Resistant	-	Resistant	-
Agronomic/ Disease Comment	Agronomic/Disease Comment	Tall with good lodging resistance; very good resistance to mildew, <i>Septoria tritici</i> , <i>Fusarium</i> , ear blight and eyespot	Short with stiff straw and excellent all-round disease resistance	Relatively tall with good lodging resistance, responds well to fungicide use	Very good resistance to lodging, tall straw & very good resistance to yellow rust & <i>Fusarium</i>	Sound all-round agronomic package with no weaknesses	New yellow rust rating in 2012 but remains a straight-forward variety to manage	Good resistance to yellow rust and eyespot as well as OWBM	Very good resistance to all foliar diseases and eyespot	An excellent mix of characters; an easy variety to manage	No major disease or agronomic weaknesses
	Pedigree	Drifter x NIC 97-3061B	Cordiale x Gulliver	Vivant x Rialto	Solstice x Xi19	(Claire x Consort) x Robigus	Wasp x Flame	NSL00-0742 x Nijinsky	(Alchemy x Claire) x Shepherd	Alchemy x Oakley	Claire x (Consort x Woodstock)

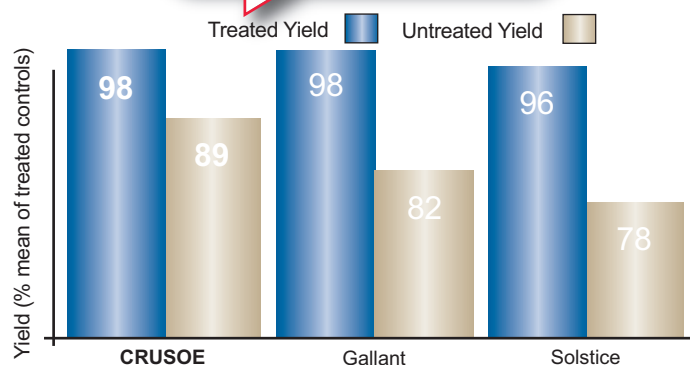
Data from the HGCA Recommended Lists database except * which is from Limagrain trials. See www.hgca.com for full dataset. On the 1-9 scales, high figures indicate that a variety shows the character to a high degree. () = limited data. †Early = before mid-September; Mid = mid-September to mid-October, Late = mid-October onwards. Y = suited to that market; (Y) = may be suited; B = suitable for blending; (B) = may be suitable for blending. **Check with manufacturers recommendations before applying CTU to any varieties. ♦ Bred by Limagrain Germany.



Crusoe is the highest yielding nabim Group 1 with very high treated and untreated yields.

“Crusoe is an exciting new winter wheat with nabim Group 1 bread-making potential. It has stiff straw and outstanding disease resistance.”

Breeder's Comment



A very good resistance profile for all the major foliar diseases - mildew, the rusts and *Septoria tritici* - making Crusoe an easy variety to manage.

	CRUSOE	Gallant	Solstice
Resistance to:			
Mildew	9	5	4
Yellow Rust	9	5	4
Brown Rust	6	4	4
<i>Septoria nodorum</i>	(6)	(5)	6
<i>Septoria tritici</i>	7	5	5
Eyespot	(5)	6	4
<i>Fusarium</i> Ear Blight	6	5	6

() = limited data

Good physical grain characteristics with an inherently high grain protein content.

	CRUSOE	Gallant	Solstice
Protein Content (%)	12.3	11.9	11.8
Hagberg Falling Number(s)	242	284	252
Specific Weight (kg/hl)	77.2	76.9	77.3
Chopin Alveograph W	219	218	204
Chopin Alveograph P/L	(0.6)	0.8	0.6

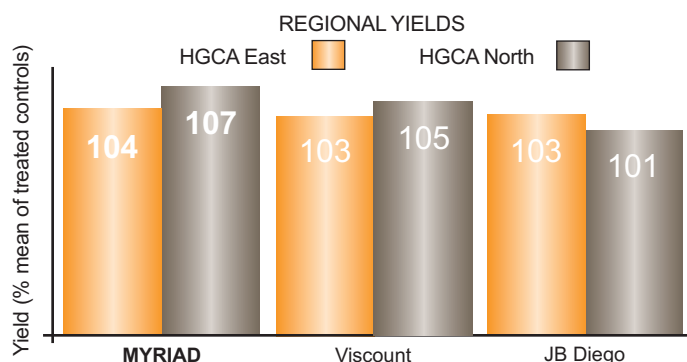
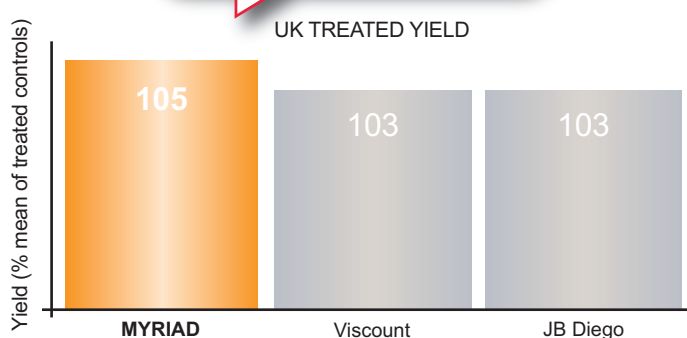
Crusoe has consistently demonstrated a good baking performance in trials, equal to that of Solstice. Crusoe has excellent milling characteristics producing high rates of flour extraction and appealing white flour. It can also meet the specifications of the export market, giving growers a choice of premium market outlets.



Myriad is a new soft feed wheat with a very high yield potential.

“Bred from Nijinsky and with Claire and Consort in its background, Myriad has a very strong pedigree. This is reflected in its very high yield potential, sound agronomics and appealing grain quality.”

Breeder's Comment



Myriad is capable of producing high yields in all rotational positions with a consistent performance across a range of soil types and having a wide sowing window from mid-September to late in the autumn.

	Rotational Position		Soil Type		Late Autumn Sown
	1st Cereal	2nd Cereal	Light	Heavy	
Yield (% Treated Controls)	106	102	(105)	105	112

Soft endosperm suitable for a wide range of markets.

	MYRIAD	Viscount	JB Diego
Animal Feed	Y	Y	Y
Distilling (SRCU Rating)	(Medium)	Y (medium)	N
Biofuel	Y	Y	Y
Export	(Y)	Y	N

Y = Suited to that market (Y) = May be suited to that market N = Not suited

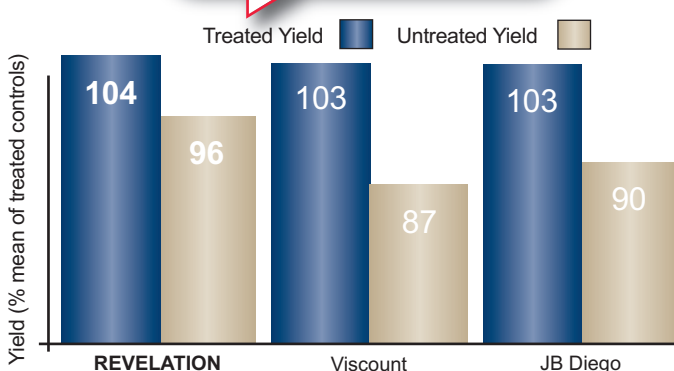
Resistant to orange wheat blossom midge with very good yellow rust resistance.



Soft feed wheat with very high treated & untreated yield potential; one of the highest yielding untreated varieties on the HGCA RL.

“Selected from a cross between two proven & popular varieties; Alchemy & Claire, Revelation sets new standards in the group 4 feed wheat sector with its excellent combination of yield, disease resistance & marketability.”

Limagrain Comment



Stiff straw, medium in height and later to ripen than some varieties (useful to spread harvest).

	REVELATION	Viscount	JB Diego
Lodging Resistance (with PGR)	8	7	7
Straw Length (cm)	86	82	88
Ripening (days +/- Solstice)	4	1	0

Outstanding foliar disease resistance; '9' for yellow rust, '7' for *Fusarium* as well as excellent eyespot resistance, based on the *Pch1* eyespot resistance gene.

	REVELATION	Viscount	JB Diego
Resistance to:			
Mildew	7	7	5
Yellow Rust	9	4	8
Brown Rust	9	7	4
<i>Septoria nodorum</i>	(6)	(7)	(5)
<i>Septoria tritici</i>	6	5	5
Eyespot	(8)	6	5
<i>Fusarium</i> Ear Blight	7	6	6

() = limited data

Very good physical grain characters with a soft endosperm, making Revelation potentially suitable for distilling, biofuel, export and animal feed markets.

Suitable for early September sowing with its combination of stiff straw, excellent disease resistance and slow spring apical development.

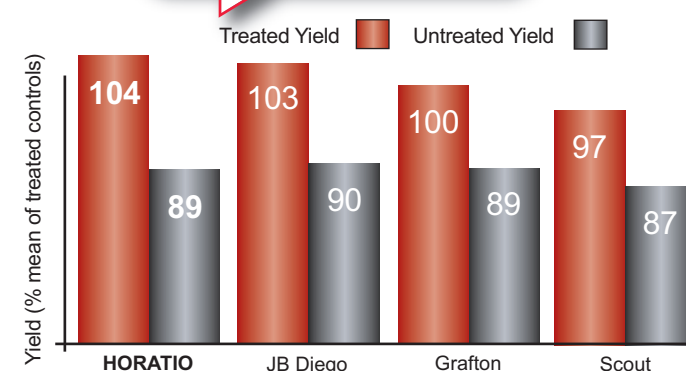
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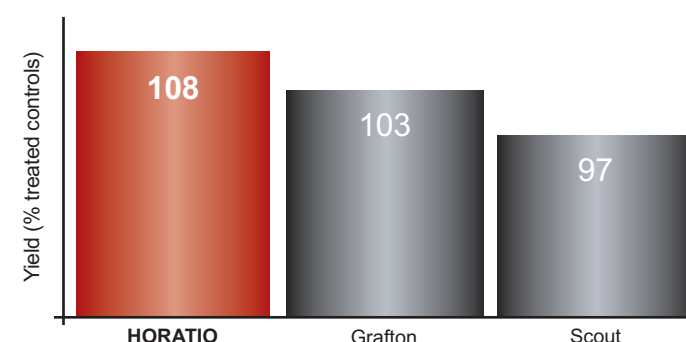
Horatio is one of the highest yielding nabim Group 4 soft wheats, 1% above the hard feed wheat JB Diego & 7% above the biscuit type Scout.

“Horatio is bred from Alchemy and has inherited many of its qualities with the additional benefit of midge resistance. Horatio is suitable for all the soft wheat outlets, including good potential for distilling.”

Breeder's Comment



Well suited to early September sowing, Horatio has produced very high yields in HGCA RL trials sown before mid-September.



Horatio has good physical grain quality with a high Hagberg falling number and specific weight.

	HORATIO	JB Diego	Grafton	Scout
Endosperm Texture	Soft	Hard	Hard	Soft
Protein Content (%)	10.9	11.0	11.5	11.5
Hagberg Falling Number	226	294	266	217
Specific Weight (kg/hl)	75.8	77.1	77.8	77.7





Horatio is resistant to orange wheat blossom midge.

Horatio is a low risk variety that is easy to manage.

Exciting New Candidates...

Limagrain UK is part of Group Limagrain, a fast growing international agricultural co-operative group, specialising in both agricultural and horticultural seeds, and in cereal products. As the largest plant breeder and seeds company in Europe and the fourth largest in the world, it employs over 7,500 people (more than 1,500 in research) and has sales of over €1.7 billion annually.

As a company owned by farmers, it has particular governance strongly linked to farming. As in agriculture, long-term vision has been the key to Limagrain's rapid growth over the recent past. Limagrain's drive to innovate and create varieties that meet the expectations of farmers and growers, agri-food industrialists and consumers has led to Limagrain's strong position in farming worldwide.

CANDIDATE		Candidates...			
					
Yield	UK Treated Yield	108	107	103	
	Untreated Yield	91	81	81	
	Suitability as First Cereal*	✓✓✓	✓✓✓	✓✓✓	
	Suitability as Second Cereal*	✓✓	✓✓	✓✓	
Market Options	Endosperm Texture	Hard	Soft	Soft	
	UK Biscuit/Cake			(Y)	
	UK Distilling		(Y)	(Y)	
Grain Quality	Protein Content (%)	11.2	11.4	11.9	
	Hagberg Falling Number (s)	184	154	215	
	Specific Weight (kg/hl)	74.1	77.1	76.0	
Agronomic Features	Optimum Sowing Date*†	Mid-Late	Mid-Late	Mid-Late	
	Latest Safe Sowing Date*	(End Jan)	(Mid-Feb)	(Mid-Feb)	
	Tillering Potential*	Moderate	Moderate	Moderate	
	Speed of Spring Apical Development*	Medium	Medium	Medium	
	Height without PGR (cm)	86	89	86	
	Ripening (days +/- Solstice, > 0 = later)	+4	+3	+2	
Disease Features	Mildew	7	7	8	
	Yellow Rust	8	4	9	
	Brown Rust	8	5	4	
	Septoria tritici	6	6	6	
	Eyespot	(6)	(4)	(5)	
	Orange Wheat Blossom Midge	-	R	R	
	Pedigree	Smuggler x (Robigus x SJ 5558)	Lear x (Robigus x Claire)	(CEBECO99080 x Claire x Robigus)	

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