

Could high protein be hampered by Hagberg and gluten levels?

GB wheat protein could be on track to be the highest on record, according to the first provisional results of AHDB Cereals & Oilseeds' Cereal Quality Survey 2017. However, wet weather during harvest has affected Hagberg Falling Numbers (HFN).

Meanwhile, the provisional results for barley show that while specific weights and grain sizes are broadly in line with last season, higher nitrogen levels could prove challenging.

Wheat

For the 2,858 wheat samples analysed by 31 August, the provisional average protein level was a record for the first release at 13.2 per cent. This compares to the three-year average at this stage of 12.1 per cent.

James Webster, AHDB Cereals & Oilseeds Analyst said: "We are seeing the highest ever average protein level for GB at this stage of the Cereal Quality Survey. However, protein content is a weak indicator of milling and baking quality. As such there will also be a number of questions asked about the functionality of the protein (gluten) this season"

Hagberg Falling Numbers for all of the wheat sampled to date averaged 259s, some way below last season when HFNs averaged 319s at the same point in the survey. The provisional result this season is also lower than the provisional result for the 2012 harvest (267s). However, it is worth noting that the averages of the **nabim** Group 1 samples is above the level required to meet the requirements for full specification bread wheat (250s), at 260s

Mr Webster added: "We have seen a great deal of variation in Hagberg levels across the wheat crop, with samples ranging from 79s to 432s. However, because the samples so far are biased to the earlier-harvested regions, we could well see the average Hagberg level falling further. Later harvested regions were hit harder by summer rainfall which led to a challenging stop-start harvest for many."

"The nature of the fractured 2017 harvest will also raise questions over the consistency of quality of the domestic wheat crop relative to imported supplies."

Specific weights this season are broadly in line with the same stage last year. At 76.8kg/hl they are the lowest since 2012, but not far off last year's first provisional average of 77.2kg/hl. Of the **nabim** Group 1 samples analysed to date, it looks like Crusoe has been most affected by the drop in HFNs, falling from 306s in last season's provisional results to 247s in the 2017 first provisional estimates.

The first provisional results have a regional bias towards the East and South East, representing 36 per cent and 38 per cent respectively of the total sample. Furthermore, **nabim** Group 1 varieties account for 62 per cent of the samples analysed to date. As we move toward the second provisional and final results, we will develop a much clearer picture of UK wheat quality, addressing the regional and varietal biases. This will give us further clarification as to the extent to which grain quality was affected by the rain during harvest.

GB wheat 2017	2013	2014	2015	2016	2017 ¹	2014-2016 average
Specific weight, kg/hl	77.0 (77.8)	77.2 (78.7)	78.6 (79.8)	76.7 (77.2)	76.8 (71.0 - 82.2)	77.5
Hagberg falling number, s	314 (334)	308 (331)	288 (312)	307 (319)	259 (79 - 432)	301
Protein content, %	12.2 (12.4)	11.2 (11.7)	11.9 (12.1)	12.4 (12.6)	13.2 (10.7 - 15.5)	11.8

- Results in brackets for previous years are the first provisional estimates for that year.
- Results in brackets for 2017 display the approximate range.

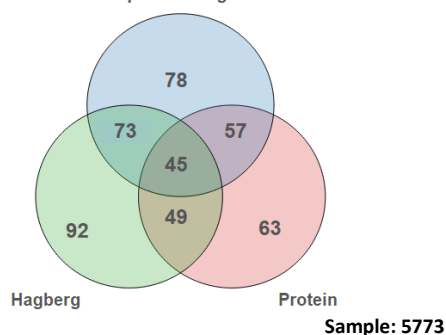
- 2017 provisional estimates are based on 2,858 wheat samples¹
- For historic data visit <http://cereals.ahdb.org.uk/markets/survey-results.aspx>

First provisional wheat quality diagrams

The Cereal Quality Diagrams below show the proportion of Group 1 and 2 samples meeting or exceeding the typical standards for high and medium quality bread wheat. [Use the Cereal Quality Calculator](#) to check your own specifications for this year's crop, where you can also [read an explanation of our Cereal Quality Diagrams](#).

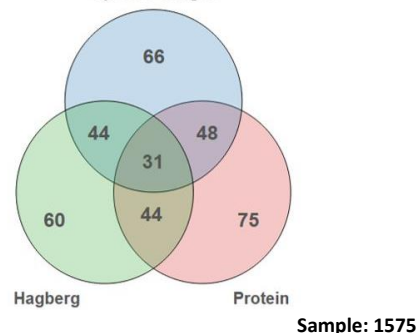
2016 Final results (GB)

High quality bread wheat
(Group 1, 76.0 kg/hl Spec Wgt/ 250 Hagberg/13.0% Protein)



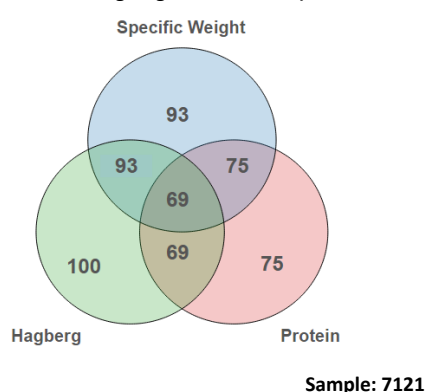
2017 First provisional results (GB)

High quality bread wheat
(Group 1, 76.0 kg/hl Spec Wgt/ 250 Hagberg/13.0% Protein)



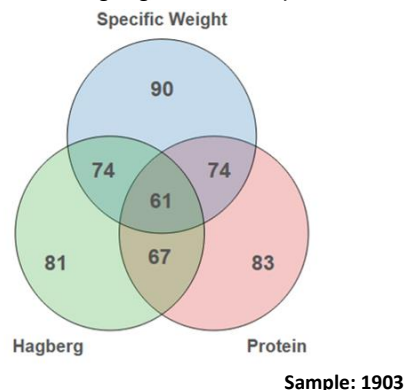
2016 Final results (GB)

Medium quality bread wheat
(Group 1&2, 74.0 kg/hl Spec Wgt/
180 Hagberg/12.5% Protein)



2017 First provisional results (GB)

Medium quality bread wheat
(Group 1&2, 74.0 kg/hl Spec Wgt/
180 Hagberg/12.5% Protein)



Barley

The first provisional results indicate increased average nitrogen levels, which could prove challenging for some markets. This year has seen nitrogen levels rise, averaging 1.69 per cent of dry matter for samples to date across GB.

Mr Webster commented: "In Scotland where a large proportion of the suitable grain goes into malting we have seen average nitrogen levels of 1.59 per cent. As a general rule of thumb Scottish maltsters are looking for nitrogen levels under 1.65 per cent, but with nitrogen creeping up again this season it could lead to some barley not meeting specification."

The results also indicate a higher specific weight and grain size than seen in last year's provisional results, although this is still behind the three year average of final results.

¹ In order to ensure a representative sample covering regions, varieties and data providers is given, some samples have been removed by random selection.

The 8,545 barley samples analysed from across GB had an average specific weight of 64.7kg/hl, 1.1kg/hl greater than at the same stage last year.

Screenings have also shown marked improvement on the year, although not when compared to their respective three year averages.

The provisional screening data shows 2.7 per cent of grains passing through a 2.25mm sieve, compared with 4.4 per cent at this point last year. Furthermore, the proportion of grain retained by a 2.5mm sieve is also improved on the year at 91.1 per cent, compared with 88.5 per cent at the same stage last year.

One characteristic seen across both wheat and barley is crops being sampled at higher moisture levels.

Mr Webster added: "The average moisture level of the barley sampled was 15.5 per cent, which will result in a greater volume requiring further drying before the crop can be processed. In Scotland the average moisture level is higher still at 16.8 per cent. According to the Maltsters' Association of Great Britain (MAGB) the current acceptable moisture level for barley contracts is 14.5 per cent. While allowances are made above this level it will result in deductions or possibly increased rejections of some samples."

Of the barley samples analysed so far, 59 per cent have come from Scotland and the East.

GB barley 2017	2013	2014	2015	2016	2017	2014-2016 average
Specific weight, kg/hl	67.5 (67.9)	66.3 (66.9)	66.3 (67.2)	64.1 (63.6)	64.7 (59.0 - 70.2)	65.6
Nitrogen content, %	1.68 (1.66)	1.53 (1.55)	1.52 (1.58)	1.57 (1.61)	1.69 (1.31 - 2.09)	1.54
Grain through 2.25mm sieve, %	1.7 (2.0)	1.4 (2.2)	1.5 (1.7)	2.9 (4.4)	2.7 (0.05 - 10.0)	1.9
Grain retained by 2.5mm sieve, %	94.4 (92.7)	96.1 (93.4)	95.4 (93.8)	92.1 (88.5)	91.1 (70.9 - 99.9)	94.5

- Results in brackets for previous years are the first provisional estimates for that year.
- Results in brackets for 2017 display the approximate range.
- 2017 provisional estimates are based on 8,545 barley samples
- For historic data visit <http://cereals.ahdb.org.uk/markets/survey-results.aspx>

These provisional results will be updated in early October and the final 2017 Cereal Quality Survey results will be published in late October/early November.

Further details on the AHDB Cereals and Oilseeds Cereal Quality Survey can be found at <http://cereals.ahdb.org.uk/markets/survey-results.aspx>

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AHDB Cereal Quality Survey 2017 Wheat Analysis by Variety

Provisional as at 31/08/2017

Mean Values

	nabim group	Number of samples	Moisture Content		Specific Weight		Hagberg F-Number		Protein Content	
			%	sd*	Kg/hl	sd*	Seconds	sd*	% d.m	sd*
Skyfall	1	840	15.3	1.33	77.6	2.13	264	82.33	13.4	0.92
Crusoe	1	719	15.2	1.21	76.3	2.26	247	82.01	13.8	0.76
All Grp 1	1	1,784	15.2	1.27	76.9	2.30	260	83.07	13.6	0.88
Cordiale	2	189	15.1	1.13	78.3	1.87	322	71.79	13.5	0.83
KWS-Siskin	2	118	15.1	1.16	75.9	2.23	237	77.33	12.2	0.93
All Grp 2	2	390	15.2	1.18	77.0	2.30	283	83.23	12.9	1.09
All Grp 3	3	177	15.1	1.14	75.8	2.20	211	74.91	12.0	0.74
All Grp 4	4	331	15.2	1.07	76.4	2.66	256	81.20	12.0	0.82
ukp		1,227	15.2	1.21	76.5	2.29	264	83.56	13.5	0.99
uks		293	15.1	1.11	76.0	2.26	214	68.18	12.0	0.75

* Standard Deviation

For more, contact cereals.mi@ahdb.org.uk

All averages are simple arithmetic means

Results shown for 100+ samples only

AHDB Cereal Quality Survey 2017 Wheat Analysis by Region

Provisional as at 31/08/2017

Mean Values

	Number of Samples	Moisture Content		Specific Weight		Hagberg F-Number		Protein Content	
		%	sd*	Kg/hl	sd*	Seconds	sd*	% d.m	sd*
Eastern	1,025	15.2	1.08	76.9	2.39	276	66.14	12.9	1.09
Midlands	321	15.2	1.15	77.3	2.06	309	58.74	13.3	1.04
Northern	0-100	-	-	-	-	-	-	-	-
S. East	1,096	15.3	1.35	76.5	2.41	236	93.43	13.3	1.04
S. West	333	15.1	1.34	76.7	2.11	223	78.65	13.3	1.05
Wales	0-100	-	-	-	-	-	-	-	-
Scotland	0-100	-	-	-	-	-	-	-	-
GB	2,858	15.2	1.23	76.8	2.35	259	82.73	13.2	1.08

* Standard Deviation

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AHDB Cereal Quality Survey 2017 Barley Analysis by Variety

Provisional as at: 31/08/17

Mean Values

	Number of Samples	Moisture Content		Specific Weight		Nitrogen Content		Screening Values % through 2.25mm		Screening Values % retained 2.5mm	
		%	*sd	Kg/hl	*sd	% d.m.	*sd	%	*sd	%	*sd
Winter	4,103	15.2	1.70	65.4	2.27	1.69	0.17	3.2	2.14	88.9	6.69
SY-Venture	1,180	14.8	1.50	65.4	2.21	1.67	0.14	4.4	2.23	85.5	6.60
Pearl	876	16.3	1.75	66.1	1.87	1.73	0.17	2.1	1.18	93.3	3.88
Cassata	464	15.7	1.65	64.4	2.27	1.71	0.17	1.6	1.26	94.6	3.87
Spring	4,442	15.8	1.88	64.1	2.12	1.69	0.18	2.1	1.85	93.1	5.31
Concerto	1,506	16.5	2.41	64.0	2.07	1.54	0.12	2.5	1.87	93.7	4.24
Propino	1,858	15.4	1.46	64.5	2.08	1.81	0.14	1.6	1.53	93.8	5.17

* Standard Deviation

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AHDB Cereal Quality Survey 2017 Barley Analysis by Region

Provisional as at: 31/08/17

Mean Values

	Number of Samples	Moisture Content		Specific Weight		Nitrogen Content		Screening Values % through 2.25mm		Screening Values % retained 2.5mm	
		%	sd*	Kg/hl	sd*	% d.m.	sd*	%	sd*	%	sd*
Eastern	2,809	14.9	1.13	64.6	2.43	1.71	0.17	3.0	2.17	89.0	6.94
Midlands	260	15.0	1.60	64.3	2.27	1.77	0.18	3.7	2.42	87.6	6.92
Northern	1,030	15.6	1.69	65.1	2.19	1.73	0.17	3.1	2.01	89.5	6.23
S. East	1,152	15.3	1.77	64.7	2.26	1.77	0.15	2.2	2.09	92.4	6.35
S. West	1,035	15.1	1.80	64.8	2.36	1.77	0.14	2.6	2.18	90.8	6.82
Scot	2,247	16.8	2.12	64.8	2.16	1.59	0.15	2.1	1.46	94.0	3.62
Wales	0-100	-	-	-	-	-	-	-	-	-	-
GB	8,545	15.5	1.81	64.7	2.30	1.69	0.18	2.7	2.09	91.1	6.36

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