

22/11/2016 **Highest proportion of wheat meeting high quality bread milling specifications for 13 years**

The proportion of nabim Group 1 varieties hitting a typical high quality bread wheat specification is the highest for 13 years, according to the final results of the AHDB Cereals & Oilseeds Cereal Quality Survey. A substantial 45% of the samples have hit the spec for this harvest.

### **Wheat**

With the final results in, there is a much clearer picture of what harvest 2016 looks like for the UK.

For the 17,689 wheat samples analysed in 2016, the results are broadly similar to the second provisional release and provide evidence to the anecdotal comments about smaller grain sizes this year. The average specific weight of wheat in 2016, at 76.7kg/hl, is the lowest result in the past four years.

James Webster, AHDB Cereals & Oilseeds Analyst, commented: "It is worth noting that despite specific weights being lower than the five year average of 77.6kg/hl, the average for Group 1 wheat samples, at 77.4kg/hl is still ahead of the minimum required for high quality bread wheat in the UK (76kg/hl)".

The average protein content is similar to that seen in the second provisional release, at 12.4%. This represents the highest average protein level in the UK since 2012 and is 0.6% higher than the three year average.

The average Hagberg Falling Number (HFN), has seen a slight fall on the previous results. The final HFN, at 307s, is higher than both last year and the three-year average.

The final results of the 2016 Cereal Quality Survey highlight the high proportion of samples meeting the minimum specifications for high and medium quality bread wheat. The proportion of nabim Group 1 varieties meeting or exceeding the minimum standard for high quality bread wheat (specific weight  $\geq$  76kg/hl, protein content  $\geq$  13.0%, HFN  $\geq$  250s) at 45%, is the highest since 2003.

Furthermore, the proportion of nabim Group 1 & 2 varieties meeting or exceeding the specification for medium quality bread wheat (specific weight  $\geq$  74kg/hl, protein content  $\geq$  12.5%, HFN  $\geq$  180s) this year, is 69%. This compares to 57% last year.

Mr Webster added: "The 2016 results highlight the high proportion of samples meeting milling requirements this year. For instance, the higher protein levels may encourage UK millers to use more domestic wheat. We have already begun to see UK wheat displacing imported wheat in the milling sector. This year the proportion of imported wheat used by the UK milling industry (including bioethanol and starch production) from July to September is the lowest since 2011. As we have previously mentioned, the lower specific weights means extraction rates are likely to be lower, which could also influence the amount of wheat required."

GB wheat 2016	2012	2013	2014	2015	2016 <sup>1</sup>	Three-year average
Specific weight, kg/hl	69.6	77.0	77.2	78.6	76.7 (71.5 - 81.6)	77.6
Hagberg falling number, s	237	314	308	288	307 (195 - 412)	303
Protein content, %	12.5	12.2	11.2	11.9	12.4 (10.0 - 14.9)	11.8

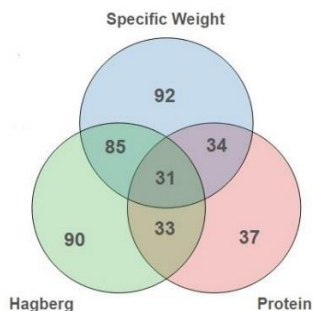
- The approximate range for 2016 is displayed in brackets
- 2016 final results are based on 17,689 wheat samples<sup>1</sup>
- For historic data visit <http://cereals.ahdb.org.uk/markets/survey-results.aspx>

## 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. [Click here](#) for the new Cereal Quality Calculator and check your own specifications for this year's crop. For an explanation of the diagrams [click here](#).

### 2015 Final results (GB)

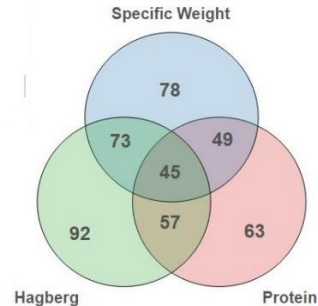
High quality bread wheat  
(Group 1, 76.0 kg/hl Spec Wgt/ 250 Hagberg/13.0% Protein)



Sample: 21966

### 2016 Final results (GB)

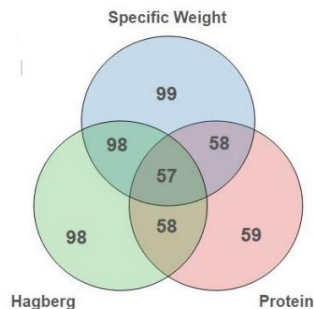
High quality bread wheat  
(Group 1, 76.0 kg/hl Spec Wgt/ 250 Hagberg/13.0% Protein)



Sample: 5773

### 2015 Final results (GB)

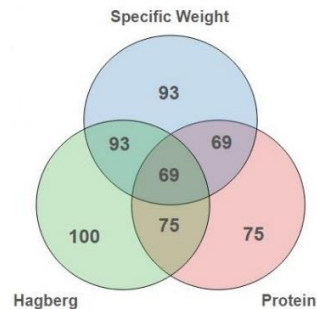
Medium quality bread wheat  
(Group 1 & 2, 74.0 kg/hl Spec Wgt/ 180 Hagberg/12.5% Protein)



Sample: 28061

### 2016 Final results (GB)

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



Sample: 7121

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

## Barley

For the 2016 barley harvest, the AHDB Cereal Quality Survey shows nitrogen levels in line with the three-year average but a smaller grain size than in each of the previous three years.

The percentage of grain retained by a 2.5mm sieve has increased marginally over the course of the survey to 92.1%, with the level passing through a 2.25mm sieve falling slightly to 2.9%. Both the retained and through levels remain worse than the three year average levels of 95.3% and 1.5% respectively. The final results reinforce the earlier indication of smaller than average grain size. As with wheat, the smaller grain size may result in higher volumes of grain being required by the malting industry. There also continues to be a difference in the screening values for spring and winter barley samples, with average retained levels of 89.4% for winter barley and 92.7% for spring barley.

Mr Webster noted: “Barley harvested earlier in the season generally exhibits a lower level of retention and as such, suggests a smaller grain. However, as the season progressed, the retained levels increased, although the national value still remained behind the three year average. This suggests that barley harvested later in the season and further to the North of England and Scotland generally had a relatively larger grain size.”

The average nitrogen level, at 1.57%, is below the three-year average but above the averages for the previous two years. Again, there is an apparent drop in nitrogen levels across the harvest period, falling from an average of 1.61% in the first release to 1.57% at the end of harvest. This is likely due to the increased proportion of samples from Scotland and the North of England, which are predominantly spring barley grown for distilling markets and require lower nitrogen levels. Scotland and the North of England account for 50% of the total barley sample.

Mr Webster commented: “The 2016 Cereal Quality Survey highlights the regional differences in nitrogen content. The average nitrogen content in Scottish barley samples, at 1.49%, is noticeably lower than the average level seen in the East of England at 1.61%. That said, both still remain above last year’s levels.”

GB barley 2016	2012	2013	2014	2015	2016 <sup>1</sup>	Three-year average
Specific weight, kg/hl	62.9	67.5	66.3	66.3	64.1 (58.6 - 69.2)	66.7
Nitrogen content, %	1.60	1.68	1.53	1.52	1.57 (1.24 - 1.94)	1.58
Grain through 2.25mm sieve, %	3.6	1.7	1.4	1.5	2.9 (0.1-8.7)	1.5
Grain retained by 2.5mm sieve, %	89.8	94.4	96.1	95.4	92.1 (76.0-100)	95.3

- The approximate range for 2016 is displayed in brackets
- 2016 final results are based on 24,705 barley samples<sup>1</sup>
- For historic data visit <http://cereals.ahdb.org.uk/markets/survey-results.aspx>

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

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

## CEREAL QUALITY SURVEY RESULTS 2016

### Wheat Analysis by Variety

*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	3,075	14.2	0.80	78.1	1.92	325	43.54	13.1	0.86
Crusoe	1	2,692	14.3	0.81	77.3	2.02	298	42.50	13.4	0.78
Gallant	1	708	14.2	0.86	76.8	2.00	341	43.61	13.0	0.98
All Grp 1	1	7,680	14.3	0.83	77.4	2.11	316	46.23	13.2	0.86
Cordiale	2	1,239	14.2	0.79	78.0	1.88	342	39.03	12.9	0.79
KWS-Lili	2	569	14.5	0.87	75.5	1.99	326	39.47	11.9	0.87
Panorama	2	195	14.3	0.77	75.0	1.70	282	45.31	12.4	0.97
All Grp 2	2	2,056	14.3	0.83	77.0	2.30	330	44.18	12.6	0.95
Claire	3	389	14.5	0.69	75.4	1.99	296	34.86	11.7	0.77
Zulu	3	326	14.3	0.81	75.4	1.65	279	33.68	11.7	0.99
Scout	3	210	14.5	0.70	76.2	2.00	283	38.70	12.0	0.88
All Grp 3	3	1,004	14.4	0.74	75.6	1.91	288	36.02	11.8	0.89
JB-Diego	4	1,401	14.4	0.78	76.5	1.89	321	42.70	11.4	0.76
All Grp 4	4	5,136	14.3	0.83	76.0	2.04	292	46.50	11.5	0.81
ukp	1 or 2	5,857	14.3	0.82	77.2	2.11	314	45.94	13.0	0.94
uks	3 or 4	2,480	14.4	0.81	75.6	1.95	280	37.34	11.6	0.87

\* Standard Deviation

*All averages are simple arithmetic means  
Results shown for 100+ samples only*

**Wheat Analysis by Region**

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*
South East	1	2,231	14.4	0.79	77.3	2.07	314	44.91	13.3	0.79
	2	511	14.5	0.80	76.4	2.31	329	42.29	12.6	0.90
	3	416	14.5	0.65	75.5	1.97	290	35.72	11.8	0.78
	4	606	14.3	0.78	75.9	1.95	298	47.91	11.5	0.76
	ukp	1,718	14.4	0.79	76.9	2.11	311	44.68	13.1	0.89
	uks	542	14.5	0.69	75.5	1.94	287	36.48	11.7	0.78
South West	1	1,161	14.5	0.81	77.3	2.27	304	47.07	13.1	0.88
	2	232	14.5	0.77	76.4	2.39	317	54.76	12.7	0.77
	3	0-100	-	-	-	-	-	-	-	-
	4	572	14.5	0.84	75.7	2.06	302	45.00	11.5	0.77
	ukp	882	14.5	0.80	76.8	2.27	302	49.23	13.2	0.83
	uks	170	14.5	0.77	74.6	2.03	282	38.17	11.6	0.77
Eastern	1	2,710	14.1	0.81	77.4	1.97	325	45.94	13.2	0.89
	2	981	14.1	0.83	77.2	2.17	330	41.75	12.6	0.95
	3	298	14.2	0.74	75.6	1.62	290	33.85	12.0	1.00
	4	2,513	14.3	0.83	75.9	1.92	287	45.49	11.5	0.84
	ukp	2,176	14.0	0.79	77.1	1.99	322	43.38	13.0	0.99
	uks	1,181	14.4	0.83	75.6	1.78	279	35.32	11.7	0.91
Midlands	1	1,014	14.3	0.81	77.8	2.17	319	46.27	13.2	0.84
	2	197	14.3	0.71	77.6	2.17	340	37.50	12.5	1.11
	3	0-100	-	-	-	-	-	-	-	-
	4	749	14.3	0.75	76.7	2.06	296	47.00	11.4	0.77
	ukp	714	14.3	0.73	77.8	1.93	318	45.37	13.0	0.95
	uks	215	14.4	0.78	76.2	2.12	282	37.75	11.5	0.78
North	1	526	14.7	0.92	77.7	2.30	316	44.12	12.9	0.92
	2	123	14.5	0.92	78.2	2.33	343	41.77	12.4	1.13
	3	0-100	-	-	-	-	-	-	-	-
	4	401	14.7	0.99	76.5	2.38	286	45.03	11.2	0.75
	ukp	337	14.6	0.94	77.9	2.36	319	46.13	12.9	1.03
	uks	225	14.6	1.03	76.2	2.12	268	36.89	11.1	0.66
GB	1	7,680	14.3	0.83	77.4	2.11	316	46.23	13.2	0.86
	2	2,056	14.3	0.83	77.0	2.30	330	44.18	12.6	0.95
	3	1,004	14.4	0.74	75.6	1.91	288	36.02	11.8	0.89
	4	5,136	14.3	0.83	76.0	2.04	292	46.50	11.5	0.81
	ukp	5,857	14.3	0.82	77.2	2.11	314	45.94	13.0	0.94
	uks	2,480	14.4	0.81	75.6	1.95	280	37.34	11.6	0.87

\* Standard Deviation

All averages are simple arithmetic means  
Results shown for 100+ samples only

**Analysis by Harvest Date**

Mean Values

Region	Harvest Date	Moisture Content		Specific Weight		Hagberg Falling Number		Protein Content	
		%	sd*	Kg/hl	s.d*	Seconds	s.d*	% d.m	s.d*
Eastern	Late July	14.3	0.44	78.6	2.22	325	47.41	11.9	1.13
	Early Aug	14.1	0.83	76.8	2.04	324	43.34	12.6	1.11
	Late Aug	14.1	0.78	76.7	2.07	310	47.40	12.4	1.18
	Early Sep	14.3	0.87	76.4	2.19	301	49.95	12.2	1.18
	Late Sep	14.5	0.85	76.3	2.25	298	49.40	12.0	1.11
	Early Oct	14.5	0.77	76.3	2.12	296	50.74	12.0	1.11
Northern	Late July	-	-	-	-	-	-	-	-
	Early Aug	14.4	0.61	79.7	1.04	311	47.41	12.3	0.92
	Late Aug	14.7	1.00	77.7	2.29	304	39.16	12.1	1.19
	Early Sep	14.6	0.95	76.4	2.23	287	46.32	11.9	1.18
	Late Sep	14.5	0.99	76.2	2.42	286	42.47	11.8	1.17
	Early Oct	14.4	0.93	76.2	2.14	285	31.60	11.9	1.33
South Eastern	Late July	15.2	1.26	76.7	2.73	353	47.25	12.7	0.66
	Early Aug	14.6	0.73	77.1	2.08	323	41.53	12.8	0.90
	Late Aug	14.3	0.74	76.9	2.10	309	44.43	12.7	1.07
	Early Sep	14.4	0.80	76.5	2.24	307	43.24	12.6	1.13
	Late Sep	14.5	0.85	76.3	2.40	299	49.23	12.6	1.11
	Early Oct	14.6	0.74	76.3	2.24	318	49.42	12.7	1.17
South Western	Late July	-	-	-	-	-	-	-	-
	Early Aug	14.6	0.77	77.6	2.28	332	40.95	12.6	0.94
	Late Aug	14.2	0.73	77.5	2.02	312	44.17	12.6	1.03
	Early Sep	14.5	0.79	76.4	2.28	307	42.32	12.5	1.14
	Late Sep	14.8	0.81	75.4	2.36	282	53.51	12.5	1.10
	Early Oct	14.6	0.83	76.0	2.40	291	47.35	12.7	1.16
Midlands	Late July	-	-	-	-	-	-	-	-
	Early Aug	14.4	0.69	77.9	2.01	328	37.72	12.7	0.96
	Late Aug	14.2	0.72	77.8	2.01	322	44.32	12.4	1.14
	Early Sep	14.4	0.80	76.8	2.36	305	48.29	12.3	1.17
	Late Sep	14.7	0.79	76.6	2.26	297	49.50	12.5	1.32
	Early Oct	14.7	0.76	77.1	2.06	290	44.37	12.4	1.22

\* Standard Deviation

All averages are simple arithmetic means  
Results shown for 100+ samples only

## Wheat Analysis by Region

	Number of Samples	Mean Values							
		Moisture Content		Specific Weight		Hagberg F-Number		Protein Content	
		%	sd*	Kg/hl	sd*	Seconds	sd*	% d.m	sd*
Eastern	7,398	14.2	0.83	76.6	2.12	306	49.01	12.4	1.17
Midlands	2,264	14.3	0.77	77.3	2.22	311	47.39	12.4	1.17
Northern	1,253	14.7	0.95	77.1	2.42	304	48.24	12.1	1.21
S. East	3,992	14.4	0.78	76.7	2.20	310	45.31	12.7	1.09
S. West	2,182	14.5	0.81	76.6	2.36	305	47.16	12.6	1.09
Scotland	564	14.2	0.80	74.9	2.19	270	52.63	11.1	1.04
Wales	0-100	-	-	-	-	-	-	-	-
GB	17,689	14.3	0.83	76.7	2.24	307	47.72	12.4	1.16

\* Standard Deviation

All averages are simple arithmetic means  
Results shown for 100+ samples only

## Analysis by Variety, by Region

Variety	Region	Number of Samples	Mean Values							
			Moisture Content		Specific Weight		Hagberg F-Number		Protein Content	
			%	sd*	Kg/hl	s.d*	Seconds	s.d*	%	s.d*
Skyfall	Eastern	1,000+	14.1	0.76	78.1	1.78	335	40.94	13.2	0.84
	Midlands	250-500	14.3	0.83	78.5	2.16	329	44.78	13.1	0.87
	Northern	250-500	14.7	0.88	78.2	2.02	322	43.67	12.7	0.90
	S. East	500-1000	14.3	0.77	78.0	1.86	319	42.87	13.1	0.77
	S. West	250-500	14.3	0.77	77.9	2.12	316	43.71	12.9	0.92
	Scot	0-100	-	-	-	-	-	-	-	-
	GB	1,000+	14.2	0.80	78.1	1.92	325	43.54	13.1	0.86
Crusoe	Eastern	500-1000	14.0	0.72	77.5	1.68	305	40.92	13.5	0.84
	Midlands	250-500	14.3	0.75	78.0	1.80	305	42.54	13.3	0.74
	Northern	100-250	14.8	0.96	77.7	2.46	297	38.62	13.1	0.88
	S. East	500-1000	14.4	0.78	77.1	1.94	298	41.90	13.4	0.73
	S. West	500-1000	14.5	0.78	76.9	2.27	292	44.72	13.3	0.79
	Scot	0-100	-	-	-	-	-	-	-	-
	GB	1,000+	14.3	0.81	77.3	2.02	298	42.50	13.4	0.78
Gallant	Eastern	250-500	14.0	0.85	76.5	1.83	338	47.63	13.1	1.01
	Midlands	0-100	-	-	-	-	-	-	-	-
	Northern	0-100	-	-	-	-	-	-	-	-
	S. East	100-250	14.2	0.84	77.0	2.23	345	37.72	13.0	1.00
	S. West	0-100	-	-	-	-	-	-	-	-
	Scot	0-100	-	-	-	-	-	-	-	-
	GB	500-1000	14.2	0.86	76.8	2.00	341	43.61	13.0	0.98
Cordiale	Eastern	500-1000	13.9	0.78	78.1	1.72	335	42.91	12.9	0.81
	Midlands	100-250	14.3	0.58	78.6	1.55	350	33.59	12.8	0.94
	Northern	0-100	-	-	-	-	-	-	-	-
	S. East	250-500	14.5	0.76	77.4	2.01	342	33.74	12.9	0.65
	S. West	100-250	14.4	0.71	78.1	1.99	335	45.00	13.1	0.65
	Scot	0-100	-	-	-	-	-	-	-	-
	GB	1,000+	14.2	0.79	78.0	1.88	342	39.03	12.9	0.79
Mulika	Eastern	100-250	14.8	0.93	75.4	2.21	304	56.55	13.5	0.93
	Midlands	0-100	-	-	-	-	-	-	-	-
	Northern	0-100	-	-	-	-	-	-	-	-
	S. East	100-250	14.8	0.90	75.0	1.84	341	36.69	13.7	0.85
	S. West	0-100	-	-	-	-	-	-	-	-
	Scot	0-100	-	-	-	-	-	-	-	-
	GB	500-1000	14.8	0.94	75.2	2.07	321	49.85	13.5	0.95

\* Standard Deviation

All averages are simple arithmetic means  
Results shown for 100+ samples only

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## CEREAL QUALITY SURVEY RESULTS 2016

### Barley Analysis by Variety

*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
<b>Winter</b>	5,266	14.7	1.69	63.9	2.67	1.57	0.15	3.7	1.99	89.4	5.69
SY-Venture	1,023	14.2	1.59	63.3	2.48	1.53	0.13	4.5	2.06	89.2	6.27
Pearl	839	16.0	1.22	66.0	1.75	1.62	0.15	2.4	1.20	92.8	3.53
Flagon	502	13.4	0.82	62.9	2.17	1.48	0.11	4.2	1.79	87.1	5.32
<b>Spring</b>	18,229	15.4	1.73	64.2	2.23	1.57	0.15	2.6	1.59	92.7	4.08
Concerto	7,743	16.6	1.56	63.8	2.17	1.48	0.11	2.6	1.55	93.3	3.88
Propino	6,627	14.4	1.16	64.7	2.16	1.68	0.13	2.2	1.35	93.3	3.48
KWS-Irina	1,109	14.8	1.52	62.9	2.13	1.67	0.13	4.3	1.78	88.0	4.15

\* Standard Deviation

*All averages are simple arithmetic means  
Results shown for 100+ samples only*

### Barley Analysis by Region

*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	5,717	14.0	1.12	63.7	2.46	1.61	0.17	3.4	1.98	90.3	5.42
Midlands	1,065	14.5	1.14	64.1	2.50	1.67	0.15	3.1	2.13	91.0	5.91
Northern	2,257	15.7	1.39	64.8	2.22	1.58	0.16	2.6	1.69	92.1	4.83
S. East	2,845	14.3	1.06	64.2	2.34	1.69	0.13	2.8	1.87	92.0	4.48
S. West	2,609	14.3	1.13	64.5	2.27	1.66	0.13	2.6	1.68	92.4	4.10
Scot	10,183	16.7	1.46	63.9	2.24	1.49	0.12	2.7	1.52	92.9	3.94
GB	24,705	15.3	1.76	64.1	2.35	1.57	0.16	2.9	1.76	92.1	4.65

\* Standard Deviation

*All averages are simple arithmetic means  
Results shown for 100+ samples only*

## Analysis by Harvest Date - Barley

Mean Values

Region	Harvest Date	Moisture Content		Specific Weight		Nitrogen Content		Screening Values % through 2.25mm		Screening Values % retained 2.5mm	
		%	sd*	Kg/hl	s.d*	%	s.d*	%	s.d*	%	s.d*
Eastern	Late July	13.2	0.95	62.3	2.36	1.54	0.16	4.9	2.08	90.7	6.31
	Early Aug	13.9	1.07	64.0	2.47	1.58	0.16	3.4	1.89	89.6	5.60
	Late Aug	14.2	1.00	64.2	2.29	1.64	0.16	3.2	1.93	90.3	5.25
	Early Sep	14.3	1.12	63.9	2.32	1.68	0.15	3.0	1.87	90.9	5.01
	Late Sep	14.5	1.12	63.8	2.45	1.66	0.16	3.1	1.75	91.2	4.53
	Early Oct	14.2	1.14	64.0	2.31	1.65	0.17	3.2	1.72	90.6	4.48
Northern	Late July	14.5	1.19	63.7	2.40	1.56	0.15	5.0	1.96	84.2	5.64
	Early Aug	15.7	1.23	64.5	2.42	1.59	0.15	3.0	1.62	90.5	4.52
	Late Aug	15.7	1.38	65.5	1.90	1.56	0.17	2.4	1.38	92.6	3.86
	Early Sep	15.9	1.43	64.5	2.13	1.59	0.18	2.3	1.67	92.9	4.74
	Late Sep	16.1	1.38	65.2	1.98	1.56	0.16	2.3	1.67	93.4	4.84
	Early Oct	15.3	1.39	64.6	2.22	1.70	0.16	2.5	1.54	92.5	3.73
Scotland	Late July	17.2	0.64	64.3	1.29	1.54	0.11	4.2	1.60	90.8	2.33
	Early Aug	16.2	1.22	65.4	1.94	1.56	0.13	2.3	1.16	93.1	3.44
	Late Aug	16.7	1.37	63.8	2.23	1.48	0.12	2.6	1.55	93.6	3.58
	Early Sep	16.8	1.44	63.0	1.97	1.48	0.11	2.9	1.63	92.5	4.38
	Late Sep	16.9	1.54	63.9	2.19	1.50	0.12	2.7	1.43	93.0	3.69
	Early Oct	16.5	1.56	63.7	2.44	1.49	0.10	2.8	1.37	92.4	3.39
South Eastern	Late July	13.8	1.03	63.0	2.53	1.66	0.17	4.8	1.82	87.0	5.96
	Early Aug	14.4	0.95	64.3	2.25	1.67	0.13	3.0	2.08	92.0	4.63
	Late Aug	14.2	1.00	64.6	2.23	1.67	0.12	2.5	1.72	92.6	3.81
	Early Sep	14.4	1.08	64.4	2.32	1.70	0.12	2.5	1.64	92.5	4.06
	Late Sep	14.5	1.12	63.6	2.31	1.71	0.12	2.7	1.71	91.8	4.60
	Early Oct	14.4	1.08	63.6	2.48	1.68	0.13	3.6	2.28	90.0	5.71
South Western	Late July	13.8	1.38	62.6	2.58	1.65	0.15	5.0	2.08	86.3	6.46
	Early Aug	14.6	1.15	64.2	2.46	1.65	0.13	2.9	1.94	91.7	5.12
	Late Aug	14.2	0.96	64.9	2.04	1.63	0.13	2.3	1.43	92.8	3.50
	Early Sep	14.4	1.21	64.4	2.21	1.66	0.12	2.6	1.62	92.4	4.16
	Late Sep	14.6	1.11	64.3	2.35	1.70	0.11	2.3	1.42	92.9	3.55
	Early Oct	14.5	1.15	64.6	2.28	1.68	0.13	2.9	1.61	92.1	3.81
Midlands	Late July	13.7	1.14	62.5	1.94	1.56	0.14	5.0	1.90	83.0	4.84
	Early Aug	14.4	1.22	64.3	2.80	1.63	0.16	3.9	2.72	90.5	6.82
	Late Aug	14.4	1.08	64.8	2.37	1.63	0.15	2.7	1.87	92.3	5.28
	Early Sep	14.7	1.04	63.8	2.48	1.70	0.14	3.0	2.02	91.3	5.60
	Late Sep	14.7	1.17	64.0	2.35	1.75	0.11	3.4	1.99	89.9	5.51
	Early Oct	14.9	1.17	64.5	2.41	1.74	0.14	2.8	2.18	92.1	6.19

\* Standard Deviation

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Results shown for 100+ samples only



## Analysis by Variety, by Region

Variety	Region	Number of Samples	Moisture Content		Specific Weight		Nitrogen Content		Screening Values % through 2.25mm		Screening Values % retained 2.5mm	
			%	sd*	Kg/hl	s.d*	%	s.d*	%	s.d*	%	s.d*
SY-Venture	Eastern Midlands	500-1000	13.3	1.02	62.3	2.25	1.51	0.13	5.4	1.93	89.2	6.70
		0-100	-	-	-	-	-	-	-	-	-	-
	Northern	100-250	14.8	1.27	64.2	2.41	1.52	0.14	4.4	1.79	85.2	4.81
	S. East	0-100	-	-	-	-	-	-	-	-	-	-
	S. West	0-100	-	-	-	-	-	-	-	-	-	-
	Scot	100-250	16.6	1.07	65.2	1.52	1.60	0.09	2.7	0.95	93.6	2.50
	GB	1,000+	14.2	1.59	63.3	2.48	1.53	0.13	4.5	2.06	89.2	6.27
Concerto	Eastern Midlands	250-500	14.2	0.97	64.7	2.08	1.52	0.13	3.2	1.68	91.3	4.30
		0-100	-	-	-	-	-	-	-	-	-	-
	Northern	500-1000	16.2	1.39	65.5	1.62	1.52	0.14	2.0	1.19	94.3	3.32
	S. East	0-100	-	-	-	-	-	-	-	-	-	-
	S. West	0-100	-	-	-	-	-	-	-	-	-	-
	Scot	1,000+	16.9	1.42	63.5	2.12	1.48	0.10	2.7	1.54	93.4	3.83
	GB	1,000+	16.6	1.56	63.8	2.17	1.48	0.11	2.6	1.55	93.3	3.88
Propino	Eastern Midlands	1,000+	14.2	1.07	64.6	2.14	1.69	0.14	2.4	1.41	92.5	3.81
		250-500	14.6	1.06	65.1	2.10	1.68	0.15	1.9	1.21	94.3	3.41
	Northern	250-500	15.2	1.38	65.0	2.28	1.71	0.14	1.6	1.14	94.6	3.45
	S. East	1,000+	14.3	1.02	64.7	2.19	1.69	0.12	2.0	1.34	93.7	3.32
	S. West	1,000+	14.3	1.06	64.9	2.09	1.66	0.12	2.1	1.22	93.6	2.98
	Scot	100-250	16.1	2.14	63.8	2.81	1.64	0.12	2.6	1.34	92.7	3.44
	GB	1,000+	14.4	1.16	64.7	2.16	1.68	0.13	2.2	1.35	93.3	3.48
KWS-Irina	Eastern Midlands	250-500	14.3	1.13	62.4	1.95	1.67	0.13	4.9	1.75	86.5	4.22
		0-100	-	-	-	-	-	-	-	-	-	-
	Northern	0-100	-	-	-	-	-	-	-	-	-	-
	S. East	250-500	14.5	1.17	63.1	2.14	1.68	0.12	3.5	1.65	89.2	3.67
	S. West	100-250	14.5	1.15	63.3	1.97	1.68	0.11	3.6	1.64	88.8	3.86
	Scot	100-250	17.0	1.91	63.3	2.96	1.60	0.11	4.6	1.45	87.0	3.60
	GB	1,000+	14.8	1.52	62.9	2.13	1.67	0.13	4.3	1.78	88.0	4.15

\* Standard Deviation

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## Analysis by Region, Winter/Spring

Region	Number of Samples	Moisture Content		Specific Weight		Nitrogen Content		Screening Values % through 2.25mm		Screening Values % retained 2.5mm	
		%	sd*	Kg/hl	s.d*	%	s.d*	%	s.d*	%	s.d*
Eastern	5,717	14.0	1.12	63.7	2.46	1.61	0.17	3.4	1.98	90.3	5.42
Winter	1,993	13.5	1.00	62.3	2.36	1.53	0.15	4.8	1.93	87.2	6.32
Spring	3,436	14.3	1.07	64.3	2.23	1.65	0.16	2.9	1.74	91.3	4.59
Midlands	1,065	14.5	1.14	64.1	2.50	1.67	0.15	3.1	2.13	91.0	5.91
Winter	220	14.1	1.24	62.8	2.58	1.63	0.17	5.2	2.02	83.5	4.70
Spring	729	14.6	1.08	64.6	2.24	1.66	0.15	2.6	1.81	92.4	4.86
Northern	2,257	15.7	1.39	64.8	2.22	1.58	0.16	2.6	1.69	92.1	4.83
Winter	873	15.6	1.35	64.6	2.35	1.58	0.15	3.2	1.75	89.7	4.92
Spring	1,335	15.9	1.40	65.0	2.06	1.58	0.17	2.2	1.47	93.6	4.02
S. East	2,845	14.3	1.06	64.2	2.34	1.69	0.13	2.8	1.87	92.0	4.48
Winter	344	14.0	0.98	62.9	2.36	1.68	0.15	5.1	1.97	85.2	5.45
Spring	2,365	14.4	1.06	64.4	2.25	1.68	0.12	2.4	1.57	92.6	3.88
S. West	2,609	14.3	1.13	64.5	2.27	1.66	0.13	2.6	1.68	92.4	4.10
Winter	260	14.1	1.14	63.0	2.81	1.67	0.14	4.6	2.10	86.4	6.25
Spring	2,173	14.4	1.10	64.7	2.11	1.65	0.12	2.3	1.41	92.8	3.56
Scot	10,183	16.7	1.46	63.9	2.24	1.49	0.12	2.7	1.52	92.9	3.94
Winter	1,576	16.2	1.28	65.7	1.82	1.55	0.14	2.8	1.46	91.7	4.31
Spring	8,170	16.8	1.46	63.6	2.13	1.48	0.11	2.7	1.53	93.2	3.82
GB	24,705	15.3	1.76	64.1	2.35	1.57	0.16	2.9	1.76	92.1	4.65
Winter	5,266	14.7	1.69	63.9	2.67	1.57	0.15	3.7	1.99	89.4	5.69
Spring	18,229	15.4	1.73	64.2	2.23	1.57	0.15	2.6	1.59	92.7	4.08

\* Standard Deviation

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