



## Final AHDB/HGCA quality survey results suggest 2011 wheat crops of good quality

### Summary Tables:

<b>GB Wheat 2010</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>3 Year Average</b>
Specific Weight (kg/hl)	76.9	77.0	<b>78.7</b>	76.5
Hagberg Falling Number (seconds)	263	270	<b>269</b>	254
Protein Content (%)	11.6	11.9	<b>12.0</b>	11.6

<b>GB Barley 2010</b>	<b>2009</b>	<b>2010</b>	<b>2010</b>	<b>3 Year Average</b>
Specific Weight (kg/hl)	66.3	67.0	<b>66.4</b>	66.4
Nitrogen Content (%)	1.61	1.64	<b>1.71</b>	1.61
Grain through 2.25mm sieve (%)	1.5	1.9	<b>1.4</b>	1.88
Grain retained in 2.5mm sieve (%)	95.0	94.1	<b>95.8</b>	94.3

AHDB/HGCA conducts the Cereal Quality Survey annually on behalf of the industry. The results are based on 69,000 samples of wheat and 30,000 samples of barley that are collected for the survey from laboratories around Great Britain. The figures published are averages and hence there is variation around these numbers. Regional and variety breakdowns are available in the full tables below along with the standard deviations which give an indication of the variability of the sample.

In the context of historical years GB wheat quality is good this year and comparable with 2010 but it still does not reach the heights of “vintage” cereal quality years such as 2003 and 2006 when protein content and hagberg falling number were higher.

For barley, nitrogen content has improved between provisional and final results indicating the better performance of the later harvested spring barley crop. A key feature of GB 2011 barley quality is the variability across regions with the Scottish crop achieving better results than the drought affected crops in the South and East.

### Wheat:

- For wheat, the final results show a higher specific weight and protein compared to 2010 but slightly lower Hagberg Falling Number.

- Average Hagberg Falling Number for GB wheat is 269 seconds, down 1 second on last season but 15 seconds above the three year average.
- Average specific weight shows an increase of 1.7kg/hl on last season, to 78.7kg/hl. This level is the highest since 1990.
- Average protein content for 2011 is 12.0%, a 0.1% increase on 2010 and higher than the three year average (11.6%).

**Barley:**

- For barley the final results show a lower specific weight but higher nitrogen content compared to a year ago. Screenings results were better than last year.
- Average specific weight of 66.4kg/hl, lower than last season's 67.0 kg/hl.
- Average nitrogen content is seen at 1.71%, higher than last year's 1.64%.
- Screening results are better than 2010 with 1.4% of grain passing through a 2.25mm sieve on average, which is lower than last year, and 95.8% of grain retained by a 2.5mm sieve which is higher than 2010.

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## CEREAL QUALITY SURVEY RESULTS 2011

### Wheat Analysis by Variety

		<i>Mean Values</i>									
	nabim group	Number of samples	Moisture Content		Specific Weight		Hagberg F-Number		Protein Content		
			%	sd*	Kg/hl	sd*	Seconds	sd*	% d.m	sd*	
Solstice	1	10,990	15.0	1.26	79.7	2.18	299	46.63	13.0	0.87	
Gallant	1	5,206	14.5	1.25	80.4	2.30	324	55.51	12.9	0.95	
Hereward	1	983	15.0	1.30	80.8	2.07	311	48.27	13.5	0.96	
<b>All Grp 1</b>	<b>1</b>	<b>18,409</b>	<b>14.9</b>	<b>1.28</b>	<b>79.8</b>	<b>2.28</b>	<b>308</b>	<b>50.75</b>	<b>13.0</b>	<b>0.93</b>	
Cordiale	2	7,529	14.8	1.35	80.2	2.27	320	47.27	12.9	0.95	
Einstein	2	3,005	15.1	1.24	78.5	2.15	285	52.26	12.2	0.99	
Panorama	2	1,120	15.2	1.30	78.4	2.09	287	49.37	12.2	0.96	
<b>All Grp 2</b>	<b>2</b>	<b>13,258</b>	<b>15.0</b>	<b>1.33</b>	<b>79.4</b>	<b>2.43</b>	<b>304</b>	<b>52.29</b>	<b>12.6</b>	<b>1.02</b>	
Scout	3	3,823	15.3	1.37	78.9	2.20	238	39.77	11.7	0.88	
Claire	3	3,727	14.8	1.42	79.0	2.10	270	44.57	11.5	0.85	
Invicta	3	1,980	15.3	1.31	76.8	1.78	250	42.14	11.4	0.87	
<b>All Grp 3</b>	<b>3</b>	<b>12,519</b>	<b>15.1</b>	<b>1.38</b>	<b>78.4</b>	<b>2.22</b>	<b>246</b>	<b>46.59</b>	<b>11.5</b>	<b>0.90</b>	
<b>All Grp 4</b>	<b>4</b>	<b>23,747</b>	<b>15.1</b>	<b>1.25</b>	<b>77.7</b>	<b>2.03</b>	<b>230</b>	<b>69.32</b>	<b>11.1</b>	<b>0.97</b>	
<b>ukp</b>	<b>1 or 2</b>	<b>28,558</b>	<b>14.9</b>	<b>1.30</b>	<b>79.7</b>	<b>2.32</b>	<b>306</b>	<b>51.57</b>	<b>12.8</b>	<b>0.97</b>	
<b>uks</b>	<b>3 or 4</b>	<b>19,199</b>	<b>15.1</b>	<b>1.36</b>	<b>78.0</b>	<b>2.23</b>	<b>234</b>	<b>51.89</b>	<b>11.4</b>	<b>0.92</b>	

\* Standard Deviation

All averages are simple arithmetic means

**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	3,712	14.9	1.28	79.9	2.18	312	45.53	12.9	0.89
	2	2,527	15.0	1.32	79.8	2.45	314	49.42	12.7	1.02
	3	2,551	15.1	1.41	79.0	2.14	258	44.74	11.6	0.83
	4	1,979	15.1	1.26	77.4	1.85	223	61.48	11.0	0.86
	ukp	5,674	14.9	1.29	79.9	2.27	312	46.96	12.8	0.91
	uks	3,351	15.1	1.39	78.6	2.21	247	48.94	11.5	0.84
South West	1	1,289	14.6	1.20	80.5	2.23	321	44.26	12.8	1.04
	2	706	14.7	1.27	80.0	2.50	313	46.36	12.4	0.95
	3	954	14.9	1.43	78.7	2.14	256	45.76	11.5	0.82
	4	985	14.8	1.30	78.0	2.13	252	70.93	11.2	0.88
	ukp	1,866	14.6	1.21	80.3	2.33	318	45.43	12.7	1.02
	uks	1,317	14.9	1.43	78.3	2.20	253	49.04	11.4	0.84
Eastern	1	7,286	15.0	1.27	79.6	2.19	309	44.97	13.2	0.89
	2	5,627	15.0	1.28	79.3	2.31	306	48.42	12.9	0.95
	3	4,906	15.2	1.36	78.2	2.14	243	41.51	11.8	0.91
	4	11,802	15.2	1.20	77.6	1.90	229	70.86	11.4	1.03
	ukp	11,367	14.9	1.27	79.5	2.21	308	46.51	13.0	0.92
	uks	7,051	15.3	1.30	77.9	2.11	231	47.97	11.7	0.94
Midlands	1	3,599	14.7	1.23	80.8	2.00	325	39.40	12.7	0.89
	2	2,165	14.8	1.22	80.1	2.07	319	42.10	12.3	0.95
	3	1,830	14.9	1.28	79.0	2.05	260	39.16	11.2	0.72
	4	3,897	15.0	1.19	78.4	2.07	245	64.55	10.8	0.81
	ukp	5,394	14.8	1.22	80.6	2.03	322	40.32	12.6	0.92
	uks	2,820	15.0	1.27	78.8	2.08	253	44.80	11.0	0.74
North	1	2,048	15.1	1.40	78.9	2.46	267	64.46	13.0	0.91
	2	1,969	15.2	1.59	78.5	2.64	273	60.41	12.3	1.13
	3	1,875	15.1	1.40	77.6	2.19	224	50.68	11.1	0.82
	4	4,438	15.2	1.38	77.5	2.15	218	68.07	10.9	0.87
	ukp	3,614	15.1	1.49	78.7	2.53	269	62.89	12.7	1.07
	uks	3,892	15.3	1.42	77.3	2.15	212	54.61	11.0	0.82
GB	1	18,409	14.9	1.28	79.8	2.28	308	50.75	13.0	0.93
	2	13,258	15.0	1.33	79.4	2.43	304	52.29	12.6	1.02
	3	12,519	15.1	1.38	78.4	2.22	246	46.59	11.5	0.90
	4	23,747	15.1	1.25	77.7	2.03	230	69.32	11.1	0.97
	ukp	28,558	14.9	1.30	79.7	2.32	306	51.57	12.8	0.97
	uks	19,199	15.1	1.36	78.0	2.23	234	51.89	11.4	0.92

\* Standard Deviation

All averages are simple arithmetic means

**Number of Samples Per Variety**

Variety	East	North	South East	South West	Midlands
Alchemy	702	590	197	153	626
Claire	1,227	446	1,168	336	504
Cordiale	3,095	1,107	1,631	328	1,180
Duxford	1,377	332	84	77	372
Einstein	1,178	547	442	266	534
Gallant	1,782	734	887	442	1,207
Grafton	1,011	536	66	49	326
Invicta	900	444	204	111	290
JB-Diego	1,037	228	96	139	213
Oakley	4,970	1,094	706	277	1,505
Panorama	435	74	227	84	287
Robigus	886	201	144	43	224
Scout	1,271	653	904	404	568
Solstice	4,434	1,073	2,399	733	2,101
Viscount	1,798	1,326	697	258	562
<b>Total</b>	<b>30,293</b>	<b>10,674</b>	<b>10,915</b>	<b>3,989</b>	<b>11,676</b>

Top 15 varieties

**Analysis by Harvest Date**

Mean Values

Region	Sample 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	15.60	0.84	80.34	2.31	294	65.53	12.77	1.07
	Early Aug	14.83	1.47	79.88	2.37	281	58.53	12.36	1.14
	Late Aug	15.16	1.24	78.50	2.18	270	67.38	12.23	1.27
	Early Sep	15.18	1.24	78.09	2.13	262	68.40	12.11	1.25
	Late Sep	15.13	1.19	77.90	2.09	253	69.34	11.87	1.24
	October	14.94	1.03	78.19	2.08	269	71.95	12.12	1.22
Northern	Late July	14.51	-	77.97	-	274	-	12.00	-
	Early Aug	14.57	1.39	80.84	2.31	287	54.49	12.08	1.24
	Late Aug	15.25	1.53	78.39	2.18	247	63.42	11.70	1.31
	Early Sep	15.17	1.39	77.58	2.33	237	66.15	11.54	1.20
	Late Sep	15.16	1.42	77.49	2.25	228	68.84	11.61	1.19
	October	15.07	1.20	77.66	2.31	243	70.38	11.72	1.34
South Eastern	Late July	15.12	1.08	81.15	1.81	299	37.27	12.98	0.95
	Early Aug	14.27	1.24	81.18	2.03	301	51.00	12.46	1.11
	Late Aug	15.05	1.39	79.55	2.08	287	58.46	12.26	1.19
	Early Sep	15.22	1.34	78.51	2.33	286	62.50	12.26	1.18
	Late Sep	15.07	1.25	78.59	2.34	274	62.97	12.07	1.19
	October	14.95	1.05	78.58	2.08	266	66.34	12.00	1.10
South Western	Late July	14.27	1.29	82.45	1.59	330	37.27	12.49	1.59
	Early Aug	14.29	1.17	81.47	1.73	313	55.12	12.29	1.13
	Late Aug	14.70	1.40	80.22	2.17	305	57.33	12.30	1.10
	Early Sep	14.82	1.32	78.60	2.29	278	62.40	11.91	1.16
	Late Sep	14.88	1.23	78.43	2.36	269	60.63	11.67	1.16
	October	14.94	1.11	78.18	2.01	269	58.55	11.84	0.88
Midlands	Late July	14.64	1.24	79.98	2.77	312	45.17	12.41	1.11
	Early Aug	14.30	1.42	80.83	2.27	298	64.32	12.16	1.32
	Late Aug	14.99	1.26	79.71	2.14	289	59.02	11.88	1.18
	Early Sep	15.00	1.14	79.32	2.30	285	62.90	11.69	1.18
	Late Sep	14.94	1.16	78.97	2.28	275	61.88	11.47	1.10
	October	14.69	1.00	79.35	2.22	285	64.32	11.63	1.13

\* Standard Deviation

All averages are simple arithmetic means

## Wheat Analysis by Region

	Number of Samples	Moisture Content		Specific Weight		Hagberg F-Number		Protein Content	
		%	sd*	Kg/hl	sd*	Seconds	sd*	% d.m	sd*
		Mean Values							
Eastern	30,293	15.1	1.26	78.5	2.27	267	67.59	12.2	1.25
Midlands	11,676	14.9	1.23	79.6	2.29	286	61.92	11.8	1.20
Northern	10,674	15.1	1.43	78.0	2.39	241	67.11	11.6	1.25
S. East	10,915	15.0	1.33	79.2	2.37	284	61.01	12.2	1.18
S. West	3,989	14.7	1.30	79.3	2.46	287	61.86	12.0	1.15
Scotland	1,419	14.3	1.36	76.5	2.39	192	58.64	11.2	1.31
Wales	188	14.8	1.31	79.6	2.33	304	46.37	12.2	1.16
<b>GB</b>	<b>69,354</b>	<b>15.0</b>	<b>1.30</b>	<b>78.7</b>	<b>2.40</b>	<b>269</b>	<b>67.47</b>	<b>12.0</b>	<b>1.25</b>

\* Standard Deviation

All averages are simple arithmetic means

## Analysis by Variety, by Region

Variety	Region	Number of Samples	Moisture Content		Specific Weight		Hagberg F-Number		Protein Content	
			%	sd*	Kg/hl	s.d*	Seconds	s.d*	%	s.d*
			Mean Values							
Cordiale	Eastern	3095	14.85	1.31	80.17	2.15	325	40.56	13.04	0.86
	Midlands	1180	14.72	1.33	80.54	2.00	333	38.74	12.62	0.85
	Northern	1107	15.16	1.66	79.34	2.49	288	55.74	12.61	1.09
	S. East	1631	14.85	1.27	80.53	2.23	329	43.45	12.95	0.95
	S. West	328	14.39	1.09	81.41	1.85	334	38.70	12.79	0.97
	Scot	160	14.42	1.49	78.14	3.07	252	55.09	12.26	0.87
	<b>GB</b>	<b>7529</b>	<b>14.84</b>	<b>1.35</b>	<b>80.21</b>	<b>2.27</b>	<b>320</b>	<b>47.27</b>	<b>12.86</b>	<b>0.95</b>
Einstein	Eastern	1178	15.16	1.15	78.47	1.83	291	47.76	12.47	1.04
	Midlands	534	14.99	1.02	79.60	1.91	304	36.60	11.91	0.85
	Northern	547	15.17	1.51	77.15	2.34	247	59.32	11.76	0.95
	S. East	442	15.17	1.34	78.38	1.88	289	48.08	12.22	0.85
	S. West	266	14.96	1.40	79.08	2.45	299	41.18	12.14	0.82
	Scot	36	14.49	1.01	77.12	2.56	200	59.51	12.12	1.17
	<b>GB</b>	<b>3005</b>	<b>15.10</b>	<b>1.24</b>	<b>78.48</b>	<b>2.15</b>	<b>285</b>	<b>52.26</b>	<b>12.17</b>	<b>0.99</b>
Panorama	Eastern	435	15.53	1.35	77.86	1.74	282	43.34	12.46	0.91
	Midlands	287	14.86	1.08	79.57	2.08	303	42.07	11.70	0.87
	Northern	74	15.11	1.28	77.71	2.26	248	73.00	12.29	1.13
	S. East	227	15.17	1.36	78.28	2.16	287	52.31	12.08	0.90
	S. West	84	14.91	1.25	78.22	1.74	287	48.89	12.02	0.89
	Scot	-	-	-	-	-	-	-	-	-
	<b>GB</b>	<b>1120</b>	<b>15.20</b>	<b>1.30</b>	<b>78.42</b>	<b>2.09</b>	<b>287</b>	<b>49.37</b>	<b>12.15</b>	<b>0.96</b>
Solstice	Eastern	4434	15.01	1.25	79.38	2.07	302	42.53	13.23	0.83
	Midlands	2101	14.91	1.19	80.75	1.95	315	35.55	12.73	0.83
	Northern	1073	15.13	1.38	78.73	2.22	259	56.84	12.95	0.90
	S. East	2399	15.02	1.28	79.65	2.13	301	42.84	12.98	0.80
	S. West	733	14.79	1.23	79.99	2.24	307	41.68	12.86	1.00
	Scot	108	14.24	1.15	77.09	2.54	172	42.94	12.48	0.80
	<b>GB</b>	<b>10990</b>	<b>14.98</b>	<b>1.26</b>	<b>79.66</b>	<b>2.18</b>	<b>299</b>	<b>46.63</b>	<b>13.01</b>	<b>0.87</b>
Gallant	Eastern	1782	14.62	1.25	80.14	2.21	325	44.77	13.02	0.89
	Midlands	1207	14.39	1.21	81.05	2.00	343	39.24	12.73	0.94
	Northern	734	15.02	1.38	79.07	2.67	274	74.66	13.06	0.90
	S. East	887	14.39	1.18	80.77	2.02	337	41.22	12.88	0.92
	S. West	442	14.25	1.01	81.36	1.88	345	39.18	12.80	1.07
	Scot	97	14.83	1.60	78.00	2.03	182	42.67	13.07	1.20
	<b>GB</b>	<b>5206</b>	<b>14.55</b>	<b>1.25</b>	<b>80.39</b>	<b>2.30</b>	<b>324</b>	<b>55.51</b>	<b>12.91</b>	<b>0.95</b>
Hereward	Eastern	518	15.08	1.24	80.73	2.00	300	49.97	13.78	0.80
	Midlands	190	14.94	1.29	81.20	1.91	326	40.16	13.26	0.86
	Northern	34	16.01	1.57	80.33	2.68	289	58.09	13.87	0.70
	S. East	169	15.02	1.25	80.36	2.22	321	44.08	13.52	1.03
	S. West	56	14.12	1.26	81.88	1.83	320	35.22	12.42	1.20
	Scot	-	-	-	-	-	-	-	-	-
	<b>GB</b>	<b>983</b>	<b>15.01</b>	<b>1.30</b>	<b>80.81</b>	<b>2.07</b>	<b>311</b>	<b>48.27</b>	<b>13.55</b>	<b>0.96</b>
Xi19	Eastern	332	15.28	1.17	77.98	1.70	318	43.91	12.60	1.06
	Midlands	58	14.63	1.12	78.95	2.18	334	41.96	12.22	1.07
	Northern	59	14.63	1.21	81.27	2.69	301	52.55	12.90	0.47
	S. East	194	14.71	1.25	79.07	2.01	319	45.17	12.47	0.93
	S. West	43	14.44	1.27	79.30	1.67	334	35.31	12.19	0.52
	Scot	-	-	-	-	-	-	-	-	-
	<b>GB</b>	<b>687</b>	<b>14.95</b>	<b>1.24</b>	<b>78.72</b>	<b>2.14</b>	<b>319</b>	<b>45.11</b>	<b>12.53</b>	<b>0.98</b>

Top nabim group 1 and 2

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## CEREAL QUALITY SURVEY RESULTS 2011

### Barley Analysis by Variety

	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
		<i>Mean Values</i>									
<b>Winter</b>	<b>7,698</b>	<b>15.1</b>	<b>1.51</b>	<b>66.5</b>	<b>2.38</b>	<b>1.89</b>	<b>0.18</b>	<b>1.2</b>	<b>0.72</b>	<b>96.4</b>	<b>2.17</b>
Cassata	2,752	14.7	1.39	65.7	2.26	1.90	0.17	1.0	0.61	96.7	1.80
Pearl	1,975	15.5	1.62	66.8	2.10	1.89	0.18	1.2	0.76	96.4	2.14
Flagon	1,584	15.2	1.40	66.6	2.12	1.88	0.18	1.3	0.72	96.2	2.31
<b>Spring</b>	<b>22,131</b>	<b>16.3</b>	<b>2.18</b>	<b>66.3</b>	<b>2.47</b>	<b>1.66</b>	<b>0.22</b>	<b>1.5</b>	<b>0.92</b>	<b>95.6</b>	<b>2.32</b>
NFC-Tipple	9,054	15.3	1.52	67.2	2.09	1.76	0.19	1.4	0.82	96.0	2.09
Concerto	5,354	17.9	2.15	64.5	2.30	1.52	0.19	1.5	0.98	95.9	2.27
Quench	2,410	15.1	1.45	66.3	2.25	1.72	0.20	1.7	0.89	94.9	2.40

\* Standard Deviation

All averages are simple arithmetic means

### Barley Analysis by Region

	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*
		<i>Mean Values</i>									
Eastern	8,656	15.2	1.38	66.4	2.21	1.9	0.19	1.4	0.84	96.1	2.23
Midlands	2,058	14.8	1.27	67.7	2.20	1.75	0.20	1.5	0.87	95.7	2.45
Northern	3,800	15.9	1.79	65.9	2.39	1.78	0.20	1.3	0.81	95.8	2.25
S. East	3,420	15.0	1.39	67.3	1.91	1.75	0.16	1.2	0.70	96.2	1.99
S. West	3,640	15.1	1.53	67.4	2.20	1.71	0.16	1.3	0.77	96.0	2.09
Scot	8,101	18.3	2.02	64.2	2.25	1.48	0.13	1.7	1.03	95.2	2.48
<b>GB</b>	<b>29,829</b>	<b>15.9</b>	<b>2.09</b>	<b>66.4</b>	<b>2.45</b>	<b>1.71</b>	<b>0.23</b>	<b>1.4</b>	<b>0.88</b>	<b>95.8</b>	<b>2.31</b>

\* Standard Deviation

All averages are simple arithmetic means

### Number of Samples Per Variety

Variety	East	Midlands	North	South East	South West	Scotland
Cassata	1,080	167	695	338	461	0
Concerto	478	64	179	126	105	4,385
NFC-Tipple	3,210	710	832	2,075	2,030	172
Optic	22	0	65	4	5	1,652
Pearl	897	166	789	22	30	70
Quench	648	430	331	428	524	2

Top 6 varieties

All averages are simple arithmetic means

Analysis by Harvest Date - Barley

Mean Values

Region	Sample 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	15.43	1.42	66.56	2.47	1.89	0.17	1.14	0.73	96.40	2.36
	Early Aug	15.04	1.50	66.55	2.21	1.90	0.18	1.34	0.84	96.25	2.23
	Late Aug	15.18	1.29	66.35	1.98	1.90	0.19	1.47	0.86	95.93	2.17
	Early Sep	15.31	1.30	66.12	2.28	1.89	0.20	1.54	0.85	95.90	2.17
	Late Sep	15.16	1.28	66.28	2.25	1.88	0.19	1.52	0.83	95.97	2.17
	October	14.98	1.20	66.60	2.03	1.93	0.17	1.52	0.86	96.12	2.22
Midlands	Late July	14.52	1.25	67.88	2.20	1.80	0.19	1.22	0.73	96.16	2.30
	Early Aug	14.22	1.13	68.08	2.27	1.79	0.21	1.29	0.74	96.24	2.19
	Late Aug	14.79	1.11	67.68	2.16	1.72	0.20	1.49	0.92	95.60	2.39
	Early Sep	15.07	1.41	67.77	1.94	1.76	0.18	1.60	0.90	95.45	2.62
	Late Sep	15.30	1.33	67.23	2.48	1.73	0.19	1.44	0.80	95.65	2.64
	October	14.71	0.80	67.71	2.40	1.78	0.16	1.69	1.02	95.53	2.57
Northern	Late July	16.15	1.57	66.60	2.23	1.84	0.18	1.01	0.59	96.96	1.78
	Early Aug	15.36	1.68	66.32	2.23	1.87	0.18	1.32	0.84	95.90	2.26
	Late Aug	16.00	1.68	65.90	2.26	1.76	0.20	1.25	0.70	95.84	2.00
	Early Sep	16.40	2.01	65.15	2.36	1.69	0.18	1.43	0.83	95.43	2.26
	Late Sep	16.29	2.00	64.53	2.53	1.70	0.19	1.90	0.97	94.49	2.55
	October	15.59	1.67	65.98	2.81	1.77	0.19	1.71	0.87	95.02	2.62
South Eastern	Late July	14.49	1.27	66.73	2.11	1.84	0.17	1.20	0.85	95.87	2.47
	Early Aug	14.77	1.49	67.46	2.06	1.75	0.19	1.13	0.62	96.28	1.84
	Late Aug	15.02	1.43	67.70	1.74	1.73	0.16	1.06	0.59	96.46	1.69
	Early Sep	15.35	1.34	66.98	1.93	1.74	0.15	1.17	0.71	96.11	2.09
	Late Sep	15.09	1.30	67.25	1.91	1.75	0.16	1.29	0.82	96.04	2.21
	October	14.93	1.23	67.27	1.68	1.72	0.15	1.26	0.77	96.00	2.03
South Western	Late July	14.60	1.41	65.96	2.29	1.77	0.17	1.00	0.60	96.44	2.08
	Early Aug	14.98	1.67	67.77	2.33	1.74	0.20	1.20	0.73	96.19	1.98
	Late Aug	15.15	1.62	67.70	2.06	1.69	0.14	1.31	0.83	95.94	2.19
	Early Sep	15.22	1.44	67.34	2.00	1.68	0.15	1.31	0.74	95.80	2.01
	Late Sep	15.26	1.42	67.41	2.06	1.72	0.17	1.40	0.71	95.71	1.98
	October	14.92	1.26	67.17	2.17	1.67	0.12	1.46	0.87	95.46	2.24
Scotland	Late July	14.55	1.77	63.25	3.76	0.00	0.00	0.00	0.00	0.00	0.00
	Early Aug	15.57	1.90	65.19	2.61	1.72	0.21	1.42	0.90	96.20	1.60
	Late Aug	18.20	1.72	65.26	2.13	1.43	0.11	1.58	0.92	95.64	2.13
	Early Sep	18.38	2.00	64.09	2.12	1.47	0.13	1.80	1.02	95.12	2.42
	Late Sep	18.45	2.15	63.62	2.18	1.51	0.13	1.95	1.11	94.69	2.74
	October	18.05	2.30	63.46	2.01	1.51	0.13	1.24	0.91	96.16	2.48

\* Standard Deviation

All averages are simple arithmetic means

**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	
			%	s.d*	Kg/hl	s.d*	%	s.d*	%	s.d*	%	s.d*
NFC-Tipple	Eastern	3210	15.27	1.32	66.61	2.09	1.88	0.19	1.54	0.86	95.90	2.14
	Midlands	710	15.12	1.24	68.25	1.85	1.69	0.18	1.44	0.91	95.87	2.39
	Northern	832	15.80	1.67	65.96	2.27	1.67	0.17	1.33	0.78	95.62	2.22
	S. East	2075	15.14	1.41	67.66	1.75	1.73	0.14	1.14	0.66	96.38	1.78
	S. West	2030	15.23	1.59	67.83	1.87	1.68	0.14	1.26	0.72	96.06	1.92
	Scot	172	19.29	1.83	61.10	0.85	1.46	0.12	2.82	0.65	92.74	1.75
	GB	9054	15.32	1.52	67.21	2.09	1.76	0.19	1.38	0.82	95.97	2.09
Concerto	Eastern	478	15.73	1.53	64.91	1.94	1.93	0.21	1.71	0.93	95.83	2.18
	Midlands	64	14.92	0.73	67.33	1.99	1.71	0.19	0.95	0.47	96.78	1.67
	Northern	179	16.97	2.25	65.25	2.33	1.67	0.17	1.22	0.64	96.21	1.81
	S. East	126	15.48	1.41	67.52	1.49	1.70	0.13	0.91	0.57	96.88	1.45
	S. West	105	14.98	1.42	67.41	1.85	1.76	0.16	0.70	0.50	97.50	1.30
	GB	5354	17.90	2.15	64.51	2.30	1.45	0.10	1.58	1.00	95.79	2.32
Cassata	Eastern	1080	14.71	1.27	65.83	2.27	1.94	0.15	0.99	0.61	97.04	1.70
	Midlands	167	14.14	1.24	67.13	2.52	1.92	0.19	1.24	0.69	96.39	1.96
	Northern	695	15.36	1.48	65.22	2.10	1.89	0.17	1.04	0.55	96.42	1.68
	S. East	338	14.12	1.16	65.88	2.05	1.91	0.18	1.08	0.72	96.30	2.17
	S. West	461	14.28	1.29	65.42	2.23	1.83	0.18	0.94	0.54	96.70	1.70
	Scot	-	-	-	-	-	-	-	-	-	-	-
	GB	2752	14.70	1.39	65.70	2.26	1.90	0.17	1.02	0.61	96.69	1.80
Quench	Eastern	648	14.90	1.31	66.12	2.12	1.81	0.20	1.54	0.90	95.71	2.21
	Midlands	430	14.73	1.19	66.95	2.18	1.75	0.20	1.87	0.86	94.30	2.61
	Northern	331	15.97	1.78	64.39	2.30	1.62	0.19	1.77	0.88	94.36	2.32
	S. East	428	15.12	1.35	66.42	1.71	1.70	0.16	1.53	0.83	94.86	2.31
	S. West	524	15.14	1.41	67.04	2.09	1.66	0.16	1.65	0.90	94.93	2.29
	Scot	-	-	-	-	-	-	-	-	-	-	-
	GB	2410	15.13	1.45	66.28	2.25	1.72	0.20	1.66	0.89	94.93	2.40

Top malting varieties \* Standard Deviation

All averages are simple arithmetic means

### 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	8,656	15.2	1.38	66.4	2.21	1.9	0.19	1.4	0.84	96.1	2.23
Winter	3508	15.06	1.38	66.48	2.29	1.93	0.17	1.19	0.73	96.42	2.29
Spring	5148	15.29	1.37	66.35	2.16	1.87	0.20	1.54	0.88	95.89	2.16
Midlands	2,058	14.8	1.27	67.7	2.20	1.75	0.20	1.5	0.87	95.7	2.45
Winter	723	14.41	1.32	67.82	2.34	1.82	0.20	1.27	0.75	96.36	2.13
Spring	1335	14.98	1.20	67.70	2.12	1.72	0.19	1.54	0.90	95.45	2.54
Northern	3,800	15.9	1.79	65.9	2.39	1.78	0.20	1.3	0.81	95.8	2.25
Winter	1974	15.68	1.65	66.18	2.33	1.89	0.17	1.19	0.72	96.30	2.02
Spring	1826	16.09	1.90	65.58	2.42	1.68	0.17	1.53	0.87	95.17	2.35
S. East	3,420	15.0	1.39	67.3	1.91	1.75	0.16	1.2	0.70	96.2	1.99
Winter	600	14.40	1.21	66.72	2.16	1.89	0.17	1.09	0.72	96.23	2.27
Spring	2820	15.15	1.39	67.44	1.83	1.72	0.15	1.17	0.70	96.20	1.93
S. West	3,640	15.1	1.53	67.4	2.20	1.71	0.16	1.3	0.77	96.0	2.09
Winter	710	14.42	1.29	66.31	2.58	1.82	0.18	1.03	0.60	96.33	2.03
Spring	2930	15.22	1.54	67.61	2.02	1.68	0.15	1.33	0.79	95.87	2.10
Scot	8,101	18.3	2.02	64.2	2.25	1.48	0.13	1.7	1.03	95.2	2.48
Winter	152	15.69	1.99	65.08	2.57	1.73	0.18	1.30	0.88	96.06	1.90
Spring	7949	18.34	1.98	64.15	2.23	1.48	0.13	1.75	1.03	95.20	2.49
<b>GB</b>	<b>29829</b>	<b>15.9</b>	<b>2.09</b>	<b>66.4</b>	<b>2.45</b>	<b>1.71</b>	<b>0.23</b>	<b>1.4</b>	<b>0.88</b>	<b>95.8</b>	<b>2.31</b>
Winter	7698	15.1	1.51	66.5	2.38	1.89	0.18	1.2	0.72	96.4	2.17
Spring	22131	16.3	2.18	66.3	2.47	1.66	0.22	1.5	0.92	95.6	2.32

\* Standard Deviation

All averages are simple arithmetic means

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