

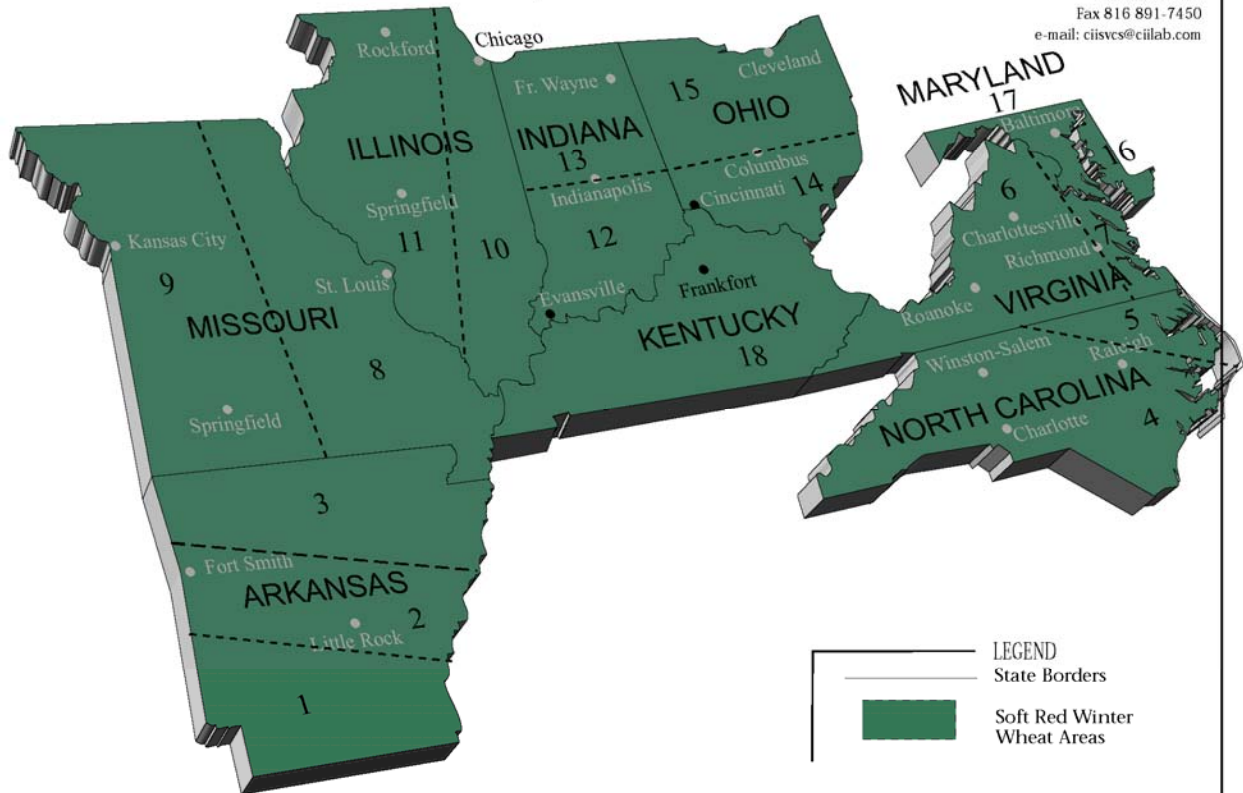


**2009 Soft Red Winter Wheat
Quality Survey**

Survey Overview

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Soft Red Winter Wheat

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CII Laboratory Services, Kansas City, Missouri, collected the soft red winter (SRW) samples and performed the quality evaluation except grade and single kernel analysis. Kansas Grain Inspection Service graded the samples. Kansas State University's International Grains Program performed single kernel analysis. U.S. Wheat Associates summarized the data.

The 18 areas shown above are used for reporting the results from approximately 350 SRW samples. Roughly half the samples in each area were collected early in harvest and half late, and samples for each time period were evaluated separately. The tests done on individual wheat samples include: test weight, moisture, protein, thousand kernel weight, ash, and falling number. An early and late composite was made for each area for the remaining analyses. The tables on the following pages summarize these individual sample and composite results in different ways.

This survey was funded by U.S. Wheat Associates and USDA's Foreign Agricultural Service.

SRW area map is reproduced with permission of CII Laboratory Services.

2009 Soft Red Winter Quality Summary

	Composite Average			East Coast*			Gulf Ports*		
	2009	2008	5-Year	2009	2008	5-Year	2009	2008	5-Year
Wheat Grade Data									
Test Weight (lb/bu)	57.6	59.2	59.5	59.2	60.5	59.6	57.3	58.9	59.5
Test Weight (kg/hl)	75.8	77.9	78.3	77.8	79.6	78.4	75.4	77.6	78.3
Damage - Total (%)	2.4	0.9	0.8	1.8	0.7	1.0	2.5	0.9	0.8
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Shrunken and Broken (%)	0.7	0.5	0.6	0.6	0.4	0.5	0.8	0.5	0.6
Total Defects (%)	3.1	1.4	1.5	2.4	1.2	1.6	3.2	1.4	1.4
Grade	3	2	2	2	1	2	3	2	2
Wheat Non-Grade Data									
Dockage (%)	0.8	0.9	0.9	1.1	0.9	0.7	0.8	0.9	0.9
Moisture (%)	12.8	13.0	13.1	13.1	12.6	13.1	12.8	13.1	13.1
Protein (%) 12%/0% mb	10.0/11.4	9.8/11.1	10.0/11.3	10.9/12.4	9.9/11.3	10.0/11.3	9.8/11.1	9.8/11.1	10.0/11.3
Wheat Ash (%) 14%/0% mb	1.56/1.82	1.55/1.80	1.54/1.79	1.55/1.80	1.48/1.72	1.48/1.72	1.57/1.82	1.56/1.81	1.55/1.80
1000 Kernel Weight (g)	30.8	35.3	33.5	32.9	36.8	34.6	30.4	35.1	33.2
Wheat Falling Number (sec)	325	325	341	322	352	333	325	320	343
Kernel Size (%) lg/med/sm	80/19/01	85/14/01	83/16/01	83/16/01	89/10/01	85/14/01	80/19/01	85/14/01	83/16/01
Single Kernel Hardness	20.1	14.4	18.2	25.9	18.2	17.3	18.9	13.7	18.5
Single Kernel Weight (mg)	30.6	32.4	30.9	32.2	35.3	34.0	30.2	31.9	30.2
Single Kernel Diameter (mm)	2.26	2.26	2.16	2.35	2.39	2.34	2.25	2.24	2.12
Sedimentation (cc)	12.3	11.6	13.2	16.7	13.0	14.1	11.4	11.3	13.0
DON (ppm)	1.8	0.6	0.5	1.5	0.7	0.4	1.9	0.6	0.5
Flour Data									
Lab Mill Extraction (%)	67.2	68.6	69.4	66.9	69.8	69.2	67.3	68.4	69.5
Flour Color - *L	93.3	93.8	93.3	93.2	94.0	93.4	93.3	93.8	93.3
Flour Color - *a	-3.1	-3.0	-3.1	-3.0	-3.0	-3.1	-3.1	-3.0	-3.1
Flour Color - *b	8.3	8.2	8.2	7.9	8.2	8.1	8.4	8.2	8.2
Flour Protein (%) 14%/0% mb	8.2/9.5	8.2/9.5	8.3/9.7	8.8/10.3	8.3/9.7	8.4/9.8	8.0/9.3	8.2/9.5	8.4/9.7
Flour Ash (%) 14%/0% mb	0.45/0.52	0.43/0.50	0.43/0.50	0.44/0.51	0.42/0.49	0.42/0.49	0.45/0.52	0.43/0.50	0.43/0.50
Wet Gluten (%)	21.4	21.7	21.9	22.9	21.1	20.5	21.1	21.8	22.3
Gluten Index	69.4	71.8	83.2	74.7	79.3	88.8	68.3	70.4	81.9
Falling Number (sec)	314	325	341	310	352	333	315	320	343
Amylograph (65g) (BU)	553	648	590	477	570	521	568	662	606
Starch Damage (%)	4.4	3.9	4.2	4.4	4.4	4.2	4.4	3.9	4.2
Solvent Retention Capacity									
Water/50% Sucrose	59/115	52/106	54/108	59/118	54/110	55/111	58/110	52/107	54/105
5% Lactic Acid/5% Na ₂ CO ₃	117/87	105/78	109/79	122/89	106/79	112/80	114/87	106/78	107/77
Dough Properties									
Farinograph Peak (min)	1.5	1.3	1.6	1.8	1.7	1.7	1.4	1.2	1.6
Farinograph Stability (min)	2.6	2.5	3.0	2.8	3.1	3.1	2.5	2.4	3.0
Farinograph Absorption (%)	51.3	51.7	52.4	52.8	53.0	52.7	51.0	51.4	52.4
Alveograph P (mm)	41	38	39	50	46	44	39	37	37
Alveograph L (mm)	83	70	93	85	66	89	83	71	95
Alveograph W (10-4 joules)	90	80	94	115	92	104	85	78	91
Alveograph P/L	0.50	0.55	0.41	0.59	0.69	0.49	0.48	0.52	0.40
Baking Evaluation									
Crumb Grain	5.2	5.4	5.4	5.8	5.4	5.5	5.1	5.4	5.3
Crumb Texture	5.2	5.3	5.6	5.6	5.7	5.6	5.1	5.2	5.6
Loaf Volume (cc)	733	705	714	737	690	712	732	708	715
Cookie Spread Ratio	9.0	9.2	8.6	8.1	8.3	8.4	9.2	9.3	8.6

% Area Production

100.0%

17.1%

82.9%

* East Coast - Maryland, Virginia, North Carolina; Gulf Ports - Arkansas, Illinois, Indiana, Kentucky, Missouri, Ohio

2009 State Summary

All Samples

	North								
	Arkansas	Missouri	Illinois	Indiana	Ohio	Kentucky	Carolina	Virginia	Maryland
Wheat Grade Data - from Individual Samples									
Test Weight (Lab) (lb/bu)	56.4	56.5	54.5	56.8	60.0	55.7	57.5	58.5	58.2
Count	53	32	28	21	24	20	48	35	34
Wheat Grade Data - from Area Composite Samples									
Test Weight (lb/bu)	56.4	56.9	55.4	57.6	60.4	56.4	59.5	59.0	58.5
Test Weight (kg/hl)	74.2	75.0	72.9	75.8	79.4	74.3	78.3	77.6	77.0
Damage - Total (%)	1.9	2.2	3.4	2.9	1.1	4.3	0.7	2.0	3.7
Foreign Material (%)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shrunken and Broken (%)	1.0	0.9	0.9	0.7	0.4	0.6	0.6	0.6	0.6
Total Defects (%)	2.9	3.1	4.3	3.6	1.5	4.8	1.3	2.7	4.2
Grade	3	3	4	3	1	3	2	2	2
Wheat Non-Grade Data - from Individual Samples									
Moisture (%)	12.8	12.4	11.7	12.1	13.0	12.4	13.1	13.0	12.8
Protein (%) 12%/0% mb	10.1/11.5	9.9/11.2	10.0/11.4	9.4/10.7	8.9/10.2	10.4/11.9	11.3/12.8	10.4/11.8	10.6/12.1
Ash (%) 14%/0% mb	1.6/1.85	1.6/1.84	1.6/1.86	1.6/1.83	1.5/1.75	1.5/1.79	1.6/1.83	1.5/1.77	1.6/1.82
1000 Kernel Weight (g)	28.0	29.0	27.7	30.5	35.4	30.9	33.5	32.4	32.5
Wheat Falling Number (sec)	298	335	339	322	324	319	326	324	314
DON (ppm)	1.1	1.9	2.7	1.7	1.2	2.6	0.2	1.2	4.0
Wheat Non-Grade Data - from Area Composite Samples									
Dockage (%)	1.1	0.7	0.7	1.3	0.5	0.7	1.7	0.8	0.9
Moisture (Lab) (%)	13.1	12.7	12.6	12.8	13.0	12.4	13.2	13.3	12.9
Protein (Lab) (%)	10.2	10.0	10.2	9.4	8.8	10.6	11.5	10.6	10.4
Kernel Size (%) lg/med/sm	76/23/01	76/23/01	76/23/01	83/16/01	89/11/00	80/19/01	84/15/01	83/16/01	82/17/01
Single Kernel Hardness	20.1	18.9	16.6	17.0	21.0	19.5	26.4	24.7	26.7
Single Kernel Weight (mg)	27.5	30.8	27.1	29.2	34.1	32.3	33.0	32.1	30.7
Single Kernel Diameter (mm)	2.17	2.29	2.10	2.23	2.37	2.33	2.39	2.34	2.29
Sedimentation (cc)	12.8	10.6	13.2	11.1	9.2	12.0	18.4	15.8	15.5
DON (ppm)	1.4	2.4	3.2	2.7	1.0	3.5	0.4	1.8	4.0
Flour Data									
Lab Mill Extraction (%)	67.7	65.7	67.2	69.0	68.0	66.8	67.2	65.9	67.4
Flour Color - *L	93.0	93.4	93.0	93.6	93.8	92.7	93.2	93.1	93.4
Flour Color - *a	-3.0	-3.2	-3.2	-3.0	-3.3	-2.9	-2.9	-3.0	-3.3
Flour Color - *b	8.2	8.6	8.5	7.9	8.5	8.1	7.7	8.1	8.2
Flour Protein (%) 14%/0% mb	8.3/9.7	7.9/9.2	8.6/10.0	8.3/9.6	7.0/8.1	8.6/10.0	9.1/10.6	8.5/9.8	8.6/10.0
Flour Ash (%) 14%/0% mb	0.47/0.54	0.42/0.48	0.49/0.57	0.44/0.52	0.41/0.48	0.45/0.53	0.45/0.53	0.43/0.50	0.42/0.49
Wet Gluten (%)	21.5	20.6	22.7	21.6	18.7	22.6	23.8	20.9	23.2
Gluten Index	72.6	63.1	67.7	84.0	69.8	57.0	80.0	78.0	65.1
Falling Number (sec)	309	318	335	315	287	331	304	321	307
Amylograph (65g) (BU)	444	701	530	603	602	470	495	442	447
Starch Damage (%)	4.0	3.8	5.7	5.1	3.8	4.0	4.0	4.6	4.9
Dough Properties									
Farinograph Peak (min)	1.4	1.0	1.2	2.0	1.5	1.8	2.0	1.7	1.6
Farinograph Stability (min)	2.3	1.8	2.5	2.8	3.0	3.0	2.8	2.8	2.6
Farinograph Absorption (%)	51.1	51.0	52.2	51.4	49.7	51.1	52.7	54.0	52.6
Alveograph P (mm)	42	39	43	41	35	37	50	59	45
Alveograph L (mm)	73	78	83	97	91	72	85	76	87
Alveograph W (10-4 joules)	87	81	97	106	74	68	117	130	103
Alveograph P/L	0.57	0.50	0.52	0.42	0.39	0.52	0.59	0.78	0.52
Baking Evaluation									
Crumb Grain	5.0	5.2	5.0	5.5	5.0	5.0	6.0	5.6	5.7
Crumb Texture	5.4	4.9	5.4	5.0	5.0	4.5	5.6	5.5	5.5
Loaf Volume (cc)	745	745	750	738	706	700	733	741	729
Cookie Spread Ratio	8.2	9.9	7.6	8.9	10.6	9.8	7.9	7.8	8.3

Soft Red Winter 2009 Survey - All Samples

	Arkansas			Missouri		Illinois		Indiana		Ohio		Kentucky	North Carolina		Virginia		Maryland	
	S	C	N	W	E	W	E	S	N	S	N		S	NE	W	E	W	E
Wheat Grade Data - from Individual Samples																		
Test Weight (Lab) (lb/bu)	56.2	56.6	56.3	57.4	55.8	54.6	54.4	54.3	59.5	58.8	60.3	55.7	57.0	59.4	58.4	58.5	58.0	58.2
Count	13	21	19	16	16	14	14	6	15	8	16	20	26	22	10	25	10	24
Wheat Grade Data - from Area Composite Samples																		
Test Weight (lb/bu)	56.2	56.4	56.5	58.0	56.2	55.4	55.3	55.0	60.3	59.0	60.8	56.4	59.5	59.7	58.7	59.1	58.4	58.6
Test Weight (kg/hl)	74.0	74.3	74.4	76.3	74.0	73.0	72.9	72.5	79.3	77.6	80.0	74.3	78.3	78.6	77.3	77.8	76.8	77.1
Damage - Total (%)	2.0	2.2	1.3	1.9	2.5	2.7	4.5	5.1	0.5	0.9	1.1	4.3	0.7	0.9	2.3	2.0	2.8	4.1
Foreign Material (%)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Shrunken and Broken (%)	1.1	1.0	0.8	1.0	0.9	1.0	0.8	1.1	0.3	0.5	0.4	0.6	0.6	0.4	0.6	0.7	0.5	0.6
Total Defects (%)	3.1	3.3	2.1	2.8	3.4	3.7	5.3	6.2	0.8	1.5	1.5	4.8	1.3	1.3	3.0	2.6	3.2	4.7
Grade	3	3	3	2	3	4	4	4	1	2	1	3	2	2	2	2	2	2
Wheat Non-Grade Data - from Individual Samples																		
Moisture (%)	12.3	12.8	13.1	12.3	12.4	11.6	11.9	11.3	13.0	13.8	12.8	12.4	13.1	13.0	12.8	13.1	13.1	12.7
Protein (%) 12% mb	10.2	10.1	10.1	9.5	10.2	10.1	9.9	10.0	8.8	9.4	8.8	10.4	11.4	10.9	10.6	10.4	11.1	10.4
Ash (%) 14% mb	1.67	1.57	1.55	1.60	1.57	1.61	1.59	1.61	1.53	1.55	1.50	1.54	1.60	1.50	1.53	1.52	1.61	1.55
1000 Kernel Weight (g)	28.2	28.2	27.7	28.7	29.1	27.9	27.5	26.8	34.4	35.2	35.5	30.9	33.8	32.7	31.6	32.7	32.8	32.3
Wheat Falling Number (sec)	267	291	338	338	332	342	335	338	305	329	323	319	326	323	323	324	338	304
DON (ppm)	0.8	1.8	0.5	1.7	2.1	2.6	2.9	2.6	0.7	0.8	1.3	2.6	0.2	0.4	1.5	1.1	3.5	4.2
Wheat Non-Grade Data - from Area Composite Samples																		
Dockage (%)	0.8	1.4	0.9	0.5	0.9	0.8	0.6	2.0	0.6	0.6	0.5	0.7	2.0	0.5	0.8	0.8	1.5	0.6
Moisture (%)	12.9	13.3	13.0	12.7	12.7	12.9	12.3	12.7	12.9	13.1	13.0	12.4	13.3	13.0	12.9	13.5	13.1	12.8
Protein (%) 12% mb	10.3	10.3	9.9	9.6	10.3	10.4	10.0	10.2	8.7	8.8	8.7	10.6	11.6	11.0	10.9	10.5	10.9	10.1
Kernel Size Large (Over 7) (%)	74	75	76	76	77	76	75	77	89	88	89	80	85	84	83	84	81	82
Kernel Size Medium (Over 9) (%)	24	23	23	23	22	23	24	22	10	12	11	19	15	15	16	15	18	17
Kernel Size Small (Thru 9) (%)	2	1	1	1	1	1	2	1	0	0	1	1	1	0	1	1	1	1
Single Kernel Hardness	16.8	23.1	19.0	21.8	16.7	15.4	18.5	14.5	19.7	20.1	21.3	19.5	26.8	24.9	25.3	24.5	31.3	24.7
Single Kernel Weight (mg)	28.2	27.1	27.2	30.8	30.7	27.0	27.2	26.4	32.2	33.1	34.5	32.3	32.9	33.3	31.4	32.3	29.6	31.2
Single Kernel Diameter (mm)	2.21	2.15	2.16	2.30	2.29	2.10	2.11	2.10	2.37	2.36	2.37	2.33	2.39	2.40	2.33	2.35	2.27	2.31
Sedimentation (cc)	15	12	13	10	11	14	12	13	9	10	9	12	19	16	17	16	16	16
DON (ppm)	0.6	2.0	1.1	1.8	2.9	3.6	2.5	4.2	1.1	1.1	1.0	3.5	0.3	0.8	1.6	1.9	3.6	4.1
Flour Data																		
Lab Mill Extraction (%)	68.4	67.3	67.7	65.2	66.1	68.4	65.4	70.2	67.8	67.4	68.2	66.8	67.4	66.6	66.9	65.6	72.1	65.3
Flour Color - *L	93.0	93.0	93.1	93.5	93.3	92.9	93.1	93.2	94.0	93.6	93.9	92.7	93.2	93.2	93.0	93.2	93.3	93.5
Flour Color - *a	-3.4	-3.0	-2.9	-3.2	-3.2	-2.9	-3.6	-3.0	-3.1	-3.2	-3.3	-2.9	-2.9	-2.7	-3.0	-3.0	-3.4	-3.2
Flour Color - *b	8.1	8.3	8.2	8.3	8.8	8.2	9.0	8.1	7.7	8.4	8.5	8.1	7.7	7.7	8.1	8.1	8.3	8.2
Flour Protein (%) 14% mb	8.3	8.4	8.2	7.8	7.9	8.3	9.1	8.7	7.9	7.5	6.8	8.6	9.2	9.0	9.0	8.3	9.4	8.3
Flour Ash (%) 14% mb	0.49	0.46	0.45	0.42	0.42	0.47	0.52	0.41	0.47	0.47	0.40	0.45	0.45	0.45	0.44	0.43	0.43	0.42
Wet Gluten (%)	22.6	22.0	19.6	20.6	20.6	22.5	23.0	22.9	20.1	17.1	19.2	22.6	24.1	22.7	22.2	20.4	26.3	21.8
Gluten Index	62.4	74.3	80.2	59.1	66.1	65.9	70.4	93.9	73.5	58.9	73.1	57.0	81.6	74.3	80.5	77.1	52.4	70.7
Falling Number (sec)	283	312	330	323	314	334	337	334	294	306	282	331	301	318	336	316	338	294
Amylograph (65g) (BU)	230	395	725	770	650	550	500	700	500	540	620	470	480	550	435	445	645	360
Starch Damage (%)	4.2	4.2	3.6	3.8	3.8	4.6	7.4	4.9	5.3	3.8	3.8	4.0	4.0	4.0	4.8	4.6	4.8	5.0
Dough Properties																		
Farinograph Peak (min)	1.8	1.3	1.3	1.0	1.0	1.0	1.5	2.0	2.0	1.5	1.5	1.8	2.0	2.0	1.5	1.8	2.3	1.3
Farinograph Stability (min)	2.3	2.3	2.5	1.6	2.0	2.5	2.5	3.0	2.5	3.0	3.0	3.0	2.8	3.0	2.8	2.8	2.8	2.5
Farinograph Absorption (%)	51.0	51.6	50.8	50.6	51.3	51.6	53.0	52.3	50.4	50.5	49.4	51.1	53.0	51.6	52.8	54.4	54.4	51.9
Alveograph P (mm)	38	45	40	38	40	32	60	44	37	42	33	37	52	45	59	59	47	45
Alveograph L (mm)	74	71	76	72	83	87	78	104	89	73	96	72	82	97	78	75	95	84
Alveograph W (10-4 joules)	76	93	90	73	87	68	140	124	86	80	72	68	121	106	132	129	100	105
Alveograph P/L	0.52	0.63	0.53	0.52	0.48	0.37	0.77	0.42	0.42	0.58	0.34	0.52	0.64	0.46	0.75	0.79	0.49	0.53
Baking Evaluation																		
Crumb Grain	5.0	5.0	5.0	5.5	5.0	5.0	5.0	6.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.5	6.0	5.5
Crumb Texture	5.5	5.0	6.0	4.0	5.5	5.0	6.0	6.0	4.0	5.0	5.0	4.5	5.5	6.0	5.5	5.5	5.5	5.5
Loaf Volume (cc)	750	713	788	738	750	750	750	750	725	725	700	700	725	763	750	738	738	725
Cookie Spread Ratio	8.7	8.0	8.1	9.6	10.2	8.1	6.8	8.5	9.4	10.7	10.6	9.8	7.8	8.7	7.7	7.9	8.1	8.4

N-North, S-South, E-East, W-West, C-Central, NE-North East, NA-Not Available

Soft Red Winter 2009 Survey - Early Samples

	Arkansas			Missouri		Illinois		Indiana		Ohio		Kentucky	North Carolina		Virginia		Maryland	
	S	C	N	W	E	W	E	S	N	S	N		S	NE	W	E	W	E
Wheat Grade Data - from Individual Samples																		
Test Weight (Lab) (lb/bu)	57.1	57.0	56.6	57.7	55.3	NA	NA	NA	NA	NA	NA	55.8	56.2	60.3	59.8	58.3	57.4	58.5
Count	6	11	10	9	7	NA	NA	NA	NA	NA	NA	9	15	11	5	13	4	12
Wheat Grade Data - from Area Composite Samples																		
Test Weight (lb/bu)	56.5	56.8	56.7	58.4	55.7	NA	NA	NA	NA	NA	NA	56.7	60.1	60.5	60.0	58.8	57.5	59.1
Test Weight (kg/hl)	74.4	74.8	74.7	76.9	73.4	NA	NA	NA	NA	NA	NA	74.7	79.1	79.6	78.9	77.4	75.7	77.8
Damage - Total (%)	2.5	2.4	1.6	1.1	3.4	NA	NA	NA	NA	NA	NA	3.7	0.5	0.7	1.1	1.5	2.6	3.4
Foreign Material (%)	0.0	0.0	0.1	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Shrunken and Broken (%)	1.1	1.0	0.7	0.8	0.9	NA	NA	NA	NA	NA	NA	0.5	0.6	0.4	0.2	0.8	0.5	0.6
Total Defects (%)	3.6	3.4	2.4	1.9	4.3	NA	NA	NA	NA	NA	NA	4.2	1.1	1.1	1.4	2.3	3.1	4.0
Grade	3	3	3	2	4	NA	NA	NA	NA	NA	NA	3	1	1	1	2	3	2
Wheat Non-Grade Data - from Individual Samples																		
Moisture (%)	12.2	12.7	13.2	12.4	12.4	NA	NA	NA	NA	NA	NA	13.0	13.4	13.4	12.8	13.3	15.0	12.5
Protein (%) 12% mb	10.2	10.2	10.0	9.2	10.2	NA	NA	NA	NA	NA	NA	10.5	11.4	10.7	10.4	10.4	11.4	10.1
Ash (%) 14% mb	1.76	1.60	1.57	1.58	1.57	NA	NA	NA	NA	NA	NA	1.55	1.62	1.51	1.47	1.47	1.61	1.55
1000 Kernel Weight (g)	28.1	28.3	28.8	29.1	29.1	NA	NA	NA	NA	NA	NA	30.6	33.5	32.5	33.8	32.8	32.9	32.1
Wheat Falling Number (sec)	261	311	333	334	337	NA	NA	NA	NA	NA	NA	321	337	326	324	320	333	306
DON (ppm)	0.7	1.9	0.5	1.8	1.6	NA	NA	NA	NA	NA	NA	2.3	0.3	0.4	0.9	1.1	2.3	3.9
Wheat Non-Grade Data - from Area Composite Samples																		
Dockage (%)	0.9	1.4	1.1	0.4	1.0	NA	NA	NA	NA	NA	NA	0.8	2.8	0.6	0.4	0.9	1.8	0.5
Moisture (%)	12.7	13.5	13.0	12.7	13.0	NA	NA	NA	NA	NA	NA	12.6	13.1	13.0	13.2	14.1	13.3	12.8
Protein (%) 12% mb	10.0	10.5	9.8	9.3	10.5	NA	NA	NA	NA	NA	NA	10.5	11.7	11.0	10.7	10.5	11.1	10.1
Kernel Size Large (Over 7) (%)	73	76	78	80	76	NA	NA	NA	NA	NA	NA	79	84	83	85	81	82	82
Kernel Size Medium (Over 9) (%)	25	23	21	19	23	NA	NA	NA	NA	NA	NA	21	15	17	14	18	17	17
Kernel Size Small (Thru 9) (%)	2	1	1	1	1	NA	NA	NA	NA	NA	NA	1	1	0	0	1	1	1
Single Kernel Hardness	17.1	24.1	22.1	20.3	13.7	NA	NA	NA	NA	NA	NA	21.3	30.1	29.8	25.2	24.1	34.2	25.3
Single Kernel Weight (mg)	27.6	27.3	27.4	31.3	31.7	NA	NA	NA	NA	NA	NA	32.2	32.5	32.1	34.5	32.6	30.5	30.9
Single Kernel Diameter (mm)	2.17	2.13	2.16	2.31	2.33	NA	NA	NA	NA	NA	NA	2.32	2.36	2.36	2.46	2.35	2.31	2.28
Sedimentation (cc)	15	13	13	9	11	NA	NA	NA	NA	NA	NA	12	20	17	17	17	16	15
DON (ppm)	0.6	1.9	1.2	1.7	3.8	NA	NA	NA	NA	NA	NA	3.4	0.3	0.6	1.1	2.4	3.1	4.3
Flour Data																		
Lab Mill Extraction (%)	67.5	67.4	67.3	65.5	65.6	NA	NA	NA	NA	NA	NA	66.8	68.5	66.9	68.0	64.8	70.6	64.0
Flour Color - *L	93.1	92.7	93.0	93.4	93.1	NA	NA	NA	NA	NA	NA	92.9	93.3	93.3	93.1	93.1	93.3	93.6
Flour Color - *a	-3.3	-2.9	-2.8	-3.2	-3.2	NA	NA	NA	NA	NA	NA	-3.0	-2.9	-2.7	-2.7	-2.9	-3.4	-3.0
Flour Color - *b	8.2	8.1	7.8	8.6	9.0	NA	NA	NA	NA	NA	NA	8.0	7.9	7.9	7.7	8.0	8.3	8.0
Flour Protein (%) 14% mb	8.2	8.5	8.1	8.2	8.1	NA	NA	NA	NA	NA	NA	8.9	9.2	9.3	8.8	8.4	9.4	8.1
Flour Ash (%) 14% mb	0.48	0.48	0.45	0.44	0.40	NA	NA	NA	NA	NA	NA	0.47	0.47	0.45	0.43	0.41	0.42	0.39
Wet Gluten (%)	22.5	22.4	20.5	18.9	20.2	NA	NA	NA	NA	NA	NA	24.0	25.4	22.6	20.9	20.3	25.3	21.3
Gluten Index	57.1	76.0	71.4	66.8	79.9	NA	NA	NA	NA	NA	NA	59.1	75.5	68.0	92.3	79.0	54.2	73.9
Falling Number (sec)	273	311	337	310	343	NA	NA	NA	NA	NA	NA	320	269	294	347	319	342	305
Amylograph (65g) (BU)	240	410	710	690	650	NA	NA	NA	NA	NA	NA	520	450	600	490	460	680	380
Starch Damage (%)	3.8	4.2	3.8	3.8	3.8	NA	NA	NA	NA	NA	NA	4.2	3.8	4.2	4.9	4.6	5.3	5.3
Dough Properties																		
Farinograph Peak (min)	1.5	1.5	1.0	1.0	1.0	NA	NA	NA	NA	NA	NA	2.0	2.0	2.0	1.0	1.5	2.0	1.0
Farinograph Stability (min)	2.0	3.0	2.0	2.0	2.0	NA	NA	NA	NA	NA	NA	3.0	2.5	3.0	2.5	2.5	3.0	2.5
Farinograph Absorption (%)	51.9	51.5	51.5	50.3	52.0	NA	NA	NA	NA	NA	NA	51.0	53.3	50.6	53.7	56.4	53.3	51.2
Alveograph P (mm)	41	46	39	38	43	NA	NA	NA	NA	NA	NA	35	51	40	65	71	40	49
Alveograph L (mm)	71	75	88	75	76	NA	NA	NA	NA	NA	NA	76	74	103	68	67	102	83
Alveograph W (10-4 joules)	83	98	94	75	88	NA	NA	NA	NA	NA	NA	70	112	95	138	150	92	117
Alveograph P/L	0.58	0.61	0.44	0.51	0.57	NA	NA	NA	NA	NA	NA	0.46	0.69	0.39	0.96	1.06	0.39	0.59
Baking Evaluation																		
Crumb Grain	5	5	5	5	5	NA	NA	NA	NA	NA	NA	5	5	7	6	5	6	6
Crumb Texture	5	5	6	4	6	NA	NA	NA	NA	NA	NA	5	4	7	6	6	5	5
Loaf Volume (cc)	750	725	800	725	750	NA	NA	NA	NA	NA	NA	725	750	800	750	750	725	700
Cookie Spread Ratio	9.2	7.8	7.7	9.2	9.9	NA	NA	NA	NA	NA	NA	9.6	7.7	8.8	8.1	8.2	8.3	8.5

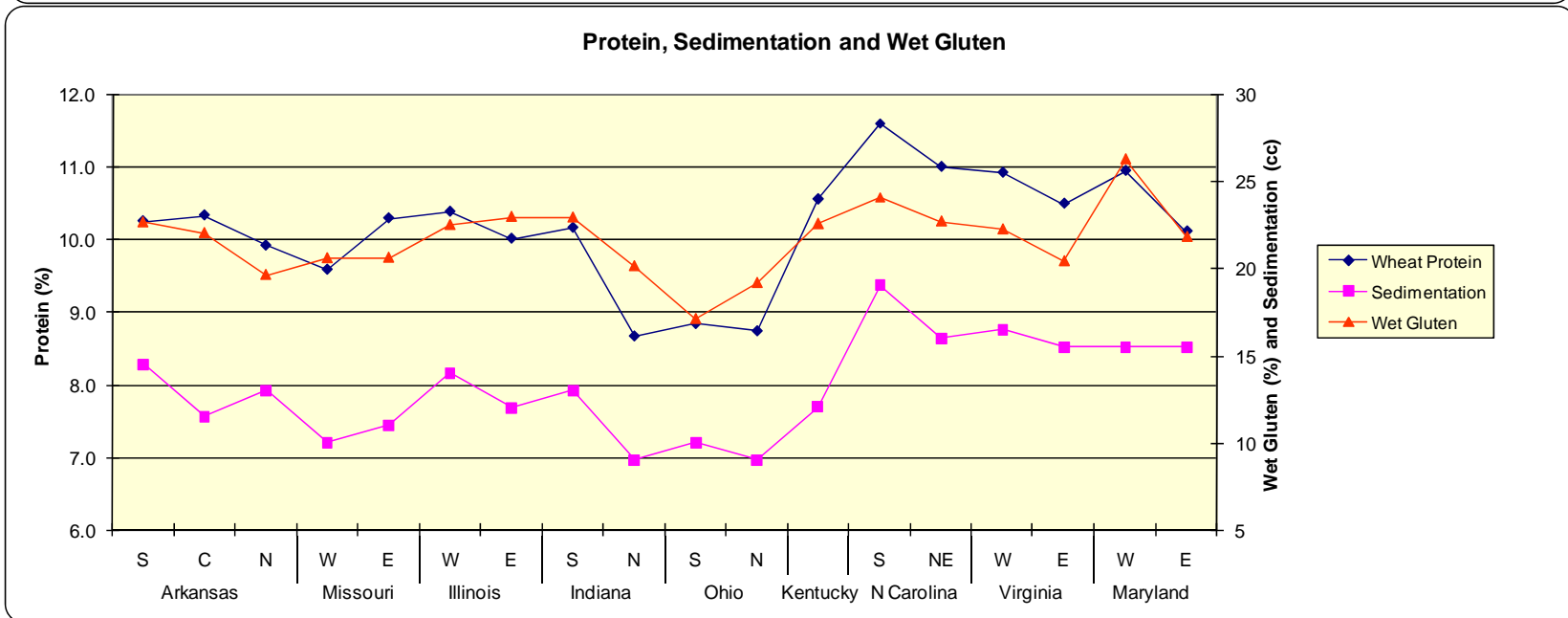
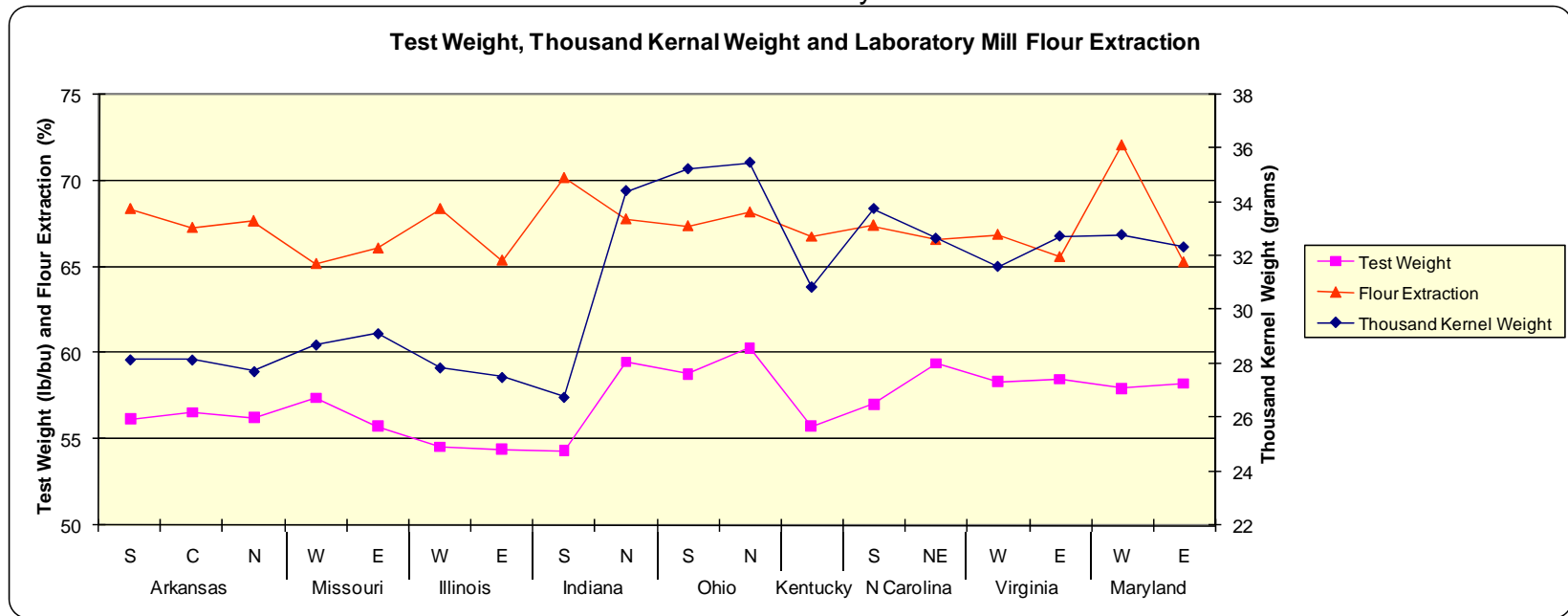
N-North, S-South, E-East, W-West, C-Central, NE-North East, NA-Not Available

Soft Red Winter 2009 Survey - Late Samples

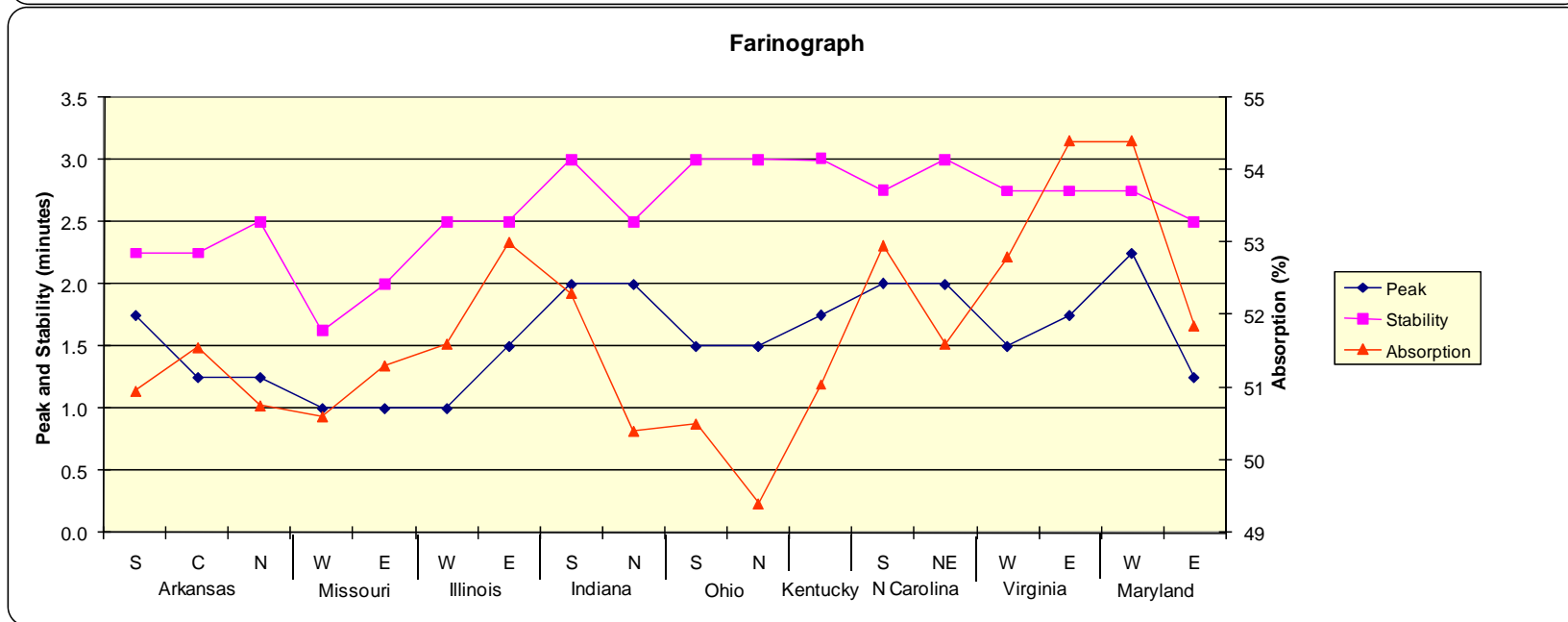
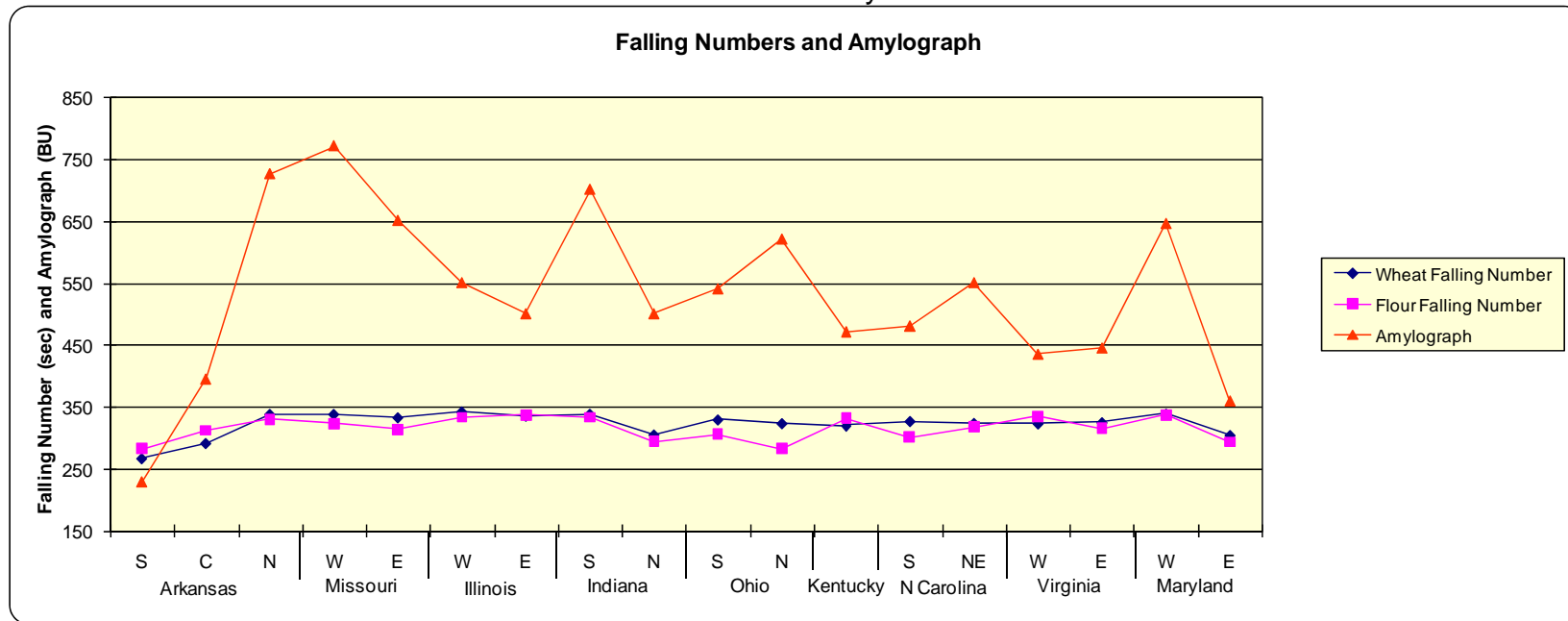
	Arkansas			Missouri		Illinois		Indiana		Ohio		Kentucky	North Carolina		Virginia		Maryland	
	S	C	N	W	E	W	E	S	N	S	N		S	NE	W	E	W	E
Wheat Grade Data - from Individual Samples																		
Test Weight (Lab) (lb/bu)	55.4	56.1	55.9	57.1	56.1	54.6	54.4	54.3	59.5	58.8	60.3	55.6	58.3	58.5	56.9	58.7	58.4	57.9
Count	7	10	9	7	9	14	14	6	15	8	16	11	11	11	5	12	6	12
Wheat Grade Data - from Area Composite Samples																		
Test Weight (lb/bu)	55.9	56.0	56.2	57.5	56.7	55.4	55.3	55.0	60.3	59.0	60.8	56.1	58.9	58.9	57.4	59.4	59.2	58.0
Test Weight (kg/hl)	73.6	73.8	74.0	75.7	74.7	73.0	72.9	72.5	79.3	77.6	80.0	73.9	77.5	77.5	75.6	78.2	77.9	76.4
Damage - Total (%)	1.4	2.0	0.9	2.6	1.6	2.7	4.5	5.1	0.5	0.9	1.1	4.8	0.8	1.1	3.5	2.4	2.9	4.7
Foreign Material (%)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shrunken and Broken (%)	1.1	1.0	0.8	1.1	0.9	1.0	0.8	1.1	0.3	0.5	0.4	0.6	0.6	0.4	1.0	0.5	0.4	0.6
Total Defects (%)	2.5	3.1	1.8	3.7	2.5	3.7	5.3	6.2	0.8	1.5	1.5	5.4	1.4	1.5	4.5	2.9	3.3	5.3
Grade	4	3	3	3	3	4	4	4	1	2	1	3	2	2	3	2	2	3
Wheat Non-Grade Data - from Individual Samples																		
Moisture (%)	12.5	13.0	13.0	12.3	12.4	11.6	11.9	11.3	13.0	13.8	12.8	11.9	12.8	12.7	12.7	12.9	11.9	12.9
Protein (%) 12% mb	10.2	9.9	10.2	9.8	10.1	10.1	9.9	10.0	8.8	9.4	8.8	10.4	11.3	11.0	10.9	10.3	11.0	10.7
Ash (%) 14% mb	1.60	1.54	1.54	1.62	1.58	1.61	1.59	1.61	1.53	1.55	1.50	1.53	1.57	1.49	1.58	1.56	1.61	1.54
1000 Kernel Weight (g)	28.2	28.0	26.6	28.2	29.2	27.9	27.5	26.8	34.4	35.2	35.5	31.1	34.1	32.9	29.4	32.7	32.7	32.6
Wheat Falling Number (sec)	272	269	343	342	328	342	335	338	305	329	323	318	312	320	321	329	342	302
DON (ppm)	0.8	1.8	0.5	1.6	2.5	2.6	2.9	2.6	0.7	0.8	1.3	2.7	0.1	0.4	2.1	1.2	4.3	4.4
Wheat Non-Grade Data - from Area Composite Samples																		
Dockage (%)	0.7	1.3	0.7	0.6	0.8	0.8	0.6	2.0	0.6	0.6	0.5	0.6	1.2	0.4	1.1	0.6	1.2	0.7
Moisture (%)	13.0	13.0	13.0	12.6	12.4	12.9	12.3	12.7	12.9	13.1	13.0	12.1	13.5	13.0	12.5	12.9	12.8	12.8
Protein (%) 12% mb	10.5	10.2	10.0	9.9	10.1	10.4	10.0	10.2	8.7	8.8	8.7	10.6	11.5	11.0	11.2	10.5	10.8	10.2
Kernel Size Large (Over 7) (%)	76	75	75	72	77	76	75	77	89	88	89	81	85	86	81	87	79	82
Kernel Size Medium (Over 9) (%)	22	24	25	27	22	23	24	22	10	12	11	18	14	14	18	13	20	17
Kernel Size Small (Thru 9) (%)	2	1	1	2	1	1	2	1	0	0	1	1	1	0	1	0	1	1
Single Kernel Hardness	16.5	22.0	15.9	23.2	19.7	15.4	18.5	14.5	19.7	20.1	21.3	17.7	23.6	19.9	25.4	24.9	28.3	24.1
Single Kernel Weight (mg)	28.7	27.0	27.1	30.4	29.8	27.0	27.2	26.4	32.2	33.1	34.5	32.3	33.4	34.4	28.4	32.0	28.7	31.5
Single Kernel Diameter (mm)	2.24	2.17	2.16	2.28	2.25	2.10	2.11	2.10	2.37	2.36	2.37	2.34	2.42	2.43	2.20	2.34	2.23	2.33
Sedimentation (cc)	14	10	13	11	11	14	12	13	9	10	9	12	18	15	16	14	15	16
DON (ppm)	0.6	2.1	1.1	2.0	1.9	3.6	2.5	4.2	1.1	1.1	1.0	3.6	0.2	0.9	2.1	1.5	4.1	4.0
Flour Data																		
Lab Mill Extraction (%)	69.3	67.2	68.0	64.9	66.6	68.4	65.4	70.2	67.8	67.4	68.2	66.8	66.3	66.3	65.8	66.4	73.6	66.6
Flour Color - *L	92.9	93.2	93.1	93.6	93.4	92.9	93.1	93.2	94.0	93.6	93.9	92.5	93.1	93.1	92.9	93.3	93.3	93.3
Flour Color - *a	-3.4	-3.0	-2.9	-3.1	-3.1	-2.9	-3.6	-3.0	-3.1	-3.2	-3.3	-2.8	-2.9	-2.7	-3.2	-3.0	-3.4	-3.4
Flour Color - *b	8.0	8.4	8.6	8.0	8.6	8.2	9.0	8.1	7.7	8.4	8.5	8.1	7.4	7.5	8.5	8.1	8.3	8.3
Flour Protein (%) 14% mb	8.5	8.2	8.4	7.5	7.7	8.3	9.1	8.7	7.9	7.5	6.8	8.4	9.2	8.7	9.3	8.1	9.3	8.4
Flour Ash (%) 14% mb	0.50	0.43	0.46	0.39	0.43	0.47	0.52	0.41	0.47	0.47	0.40	0.44	0.44	0.45	0.46	0.44	0.44	0.45
Wet Gluten (%)	22.8	21.6	18.8	22.3	21.0	22.5	23.0	22.9	20.1	17.1	19.2	21.1	22.8	22.8	23.5	20.6	27.3	22.3
Gluten Index	67.7	72.6	89.0	51.4	52.3	65.9	70.4	93.9	73.5	58.9	73.1	54.9	87.7	80.6	68.7	75.1	50.6	67.5
Falling Number (sec)	293	313	323	336	285	334	337	334	294	306	282	342	332	342	324	312	334	282
Amylograph (65g) (BU)	220	380	740	850	650	550	500	700	500	540	620	420	510	500	380	430	610	340
Starch Damage (%)	4.6	4.2	3.4	3.8	3.8	4.6	7.4	4.9	5.3	3.8	3.8	3.8	4.2	3.8	4.6	4.6	4.2	4.6
Dough Properties																		
Farinograph Peak (min)	2.0	1.0	1.5	1.0	1.0	1.0	1.5	2.0	2.0	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.5	1.5
Farinograph Stability (min)	2.5	1.5	3.0	1.3	2.0	2.5	2.5	3.0	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5
Farinograph Absorption (%)	50.0	51.6	50.0	50.9	50.6	51.6	53.0	52.3	50.4	50.5	49.4	51.1	52.6	52.6	51.9	52.4	55.5	52.5
Alveograph P (mm)	35	44	41	37	36	32	60	44	37	42	33	39	53	49	52	47	54	40
Alveograph L (mm)	76	67	64	69	89	87	78	104	89	73	96	67	89	90	88	83	88	85
Alveograph W (10-4 joules)	68	87	85	71	85	68	140	124	86	80	72	65	129	117	125	108	107	92
Alveograph P/L	0.46	0.66	0.64	0.54	0.40	0.37	0.77	0.42	0.42	0.58	0.34	0.58	0.60	0.54	0.59	0.57	0.61	0.47
Baking Evaluation																		
Crumb Grain	5	5	5	6	5	5	5	6	5	5	5	5	7	5	6	6	6	5
Crumb Texture	6	5	6	4	5	5	6	6	4	5	5	4	7	5	5	5	6	6
Loaf Volume (cc)	750	700	775	750	750	750	750	750	725	725	700	675	700	725	750	725	750	750
Cookie Spread Ratio	8.1	8.2	8.5	9.9	10.4	8.1	6.8	8.5	9.4	10.7	10.6	10.0	7.8	8.5	7.2	7.5	7.9	8.3

N-North, S-South, E-East, W-West, C-Central, NE-North East, NA-Not Available

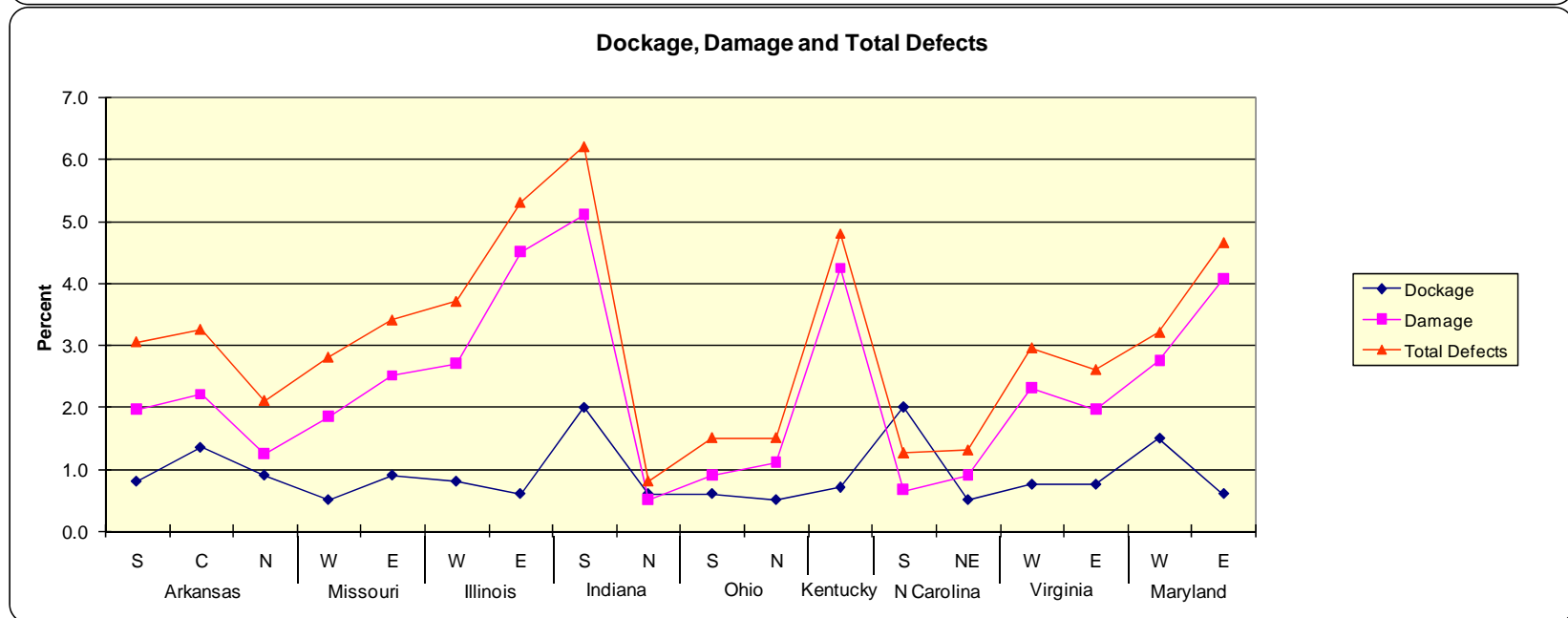
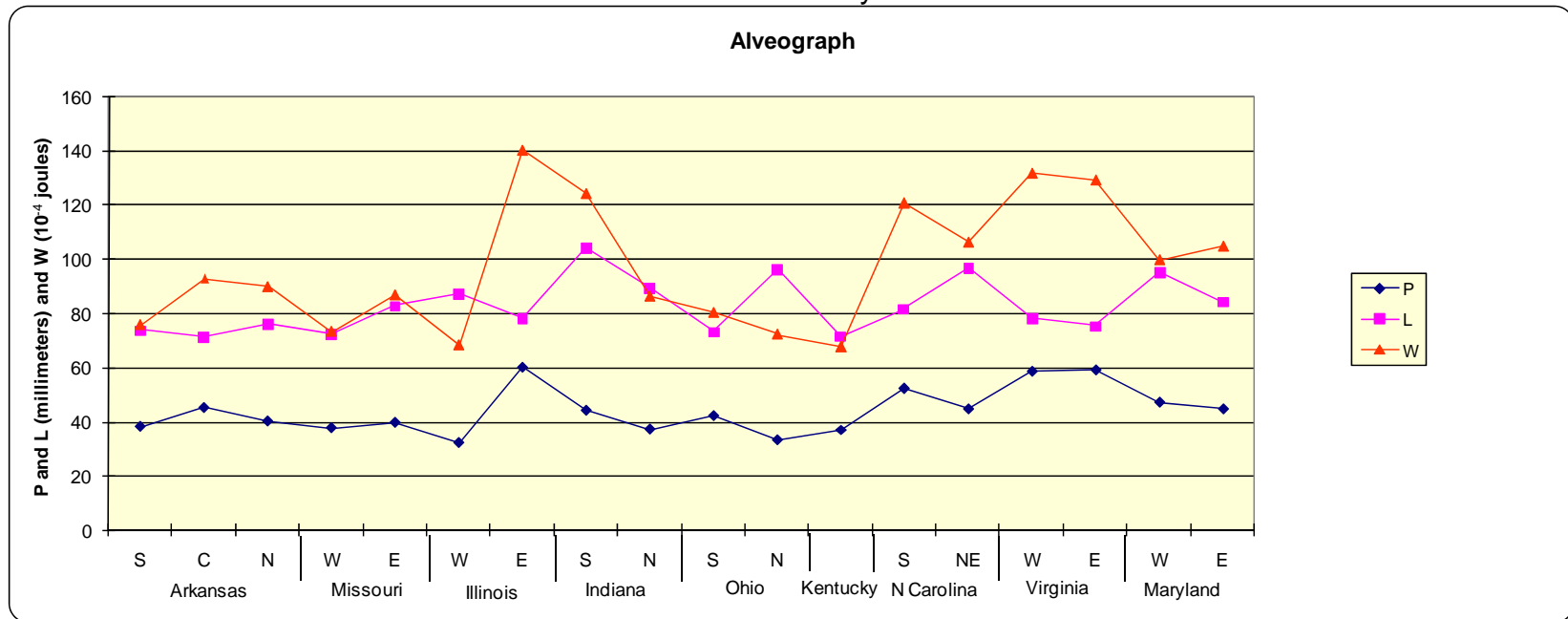
Comparisons of 2009 Results For Selected Quality Factors



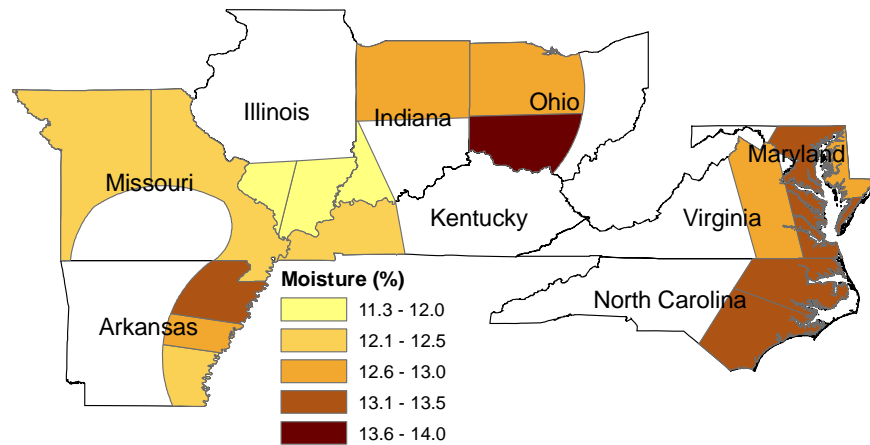
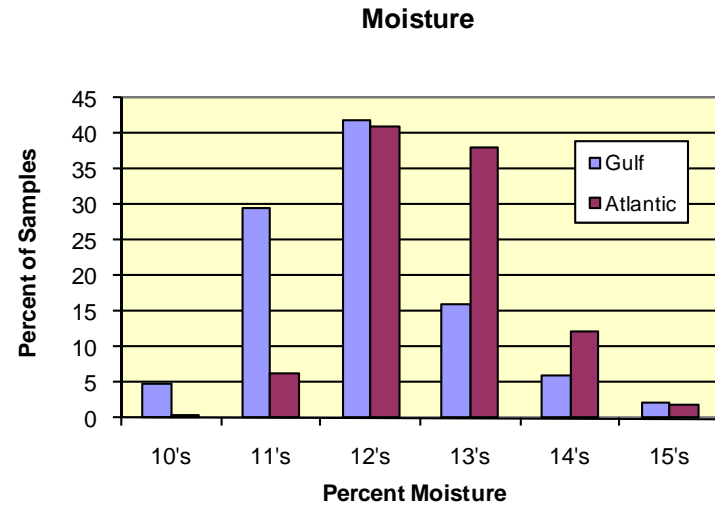
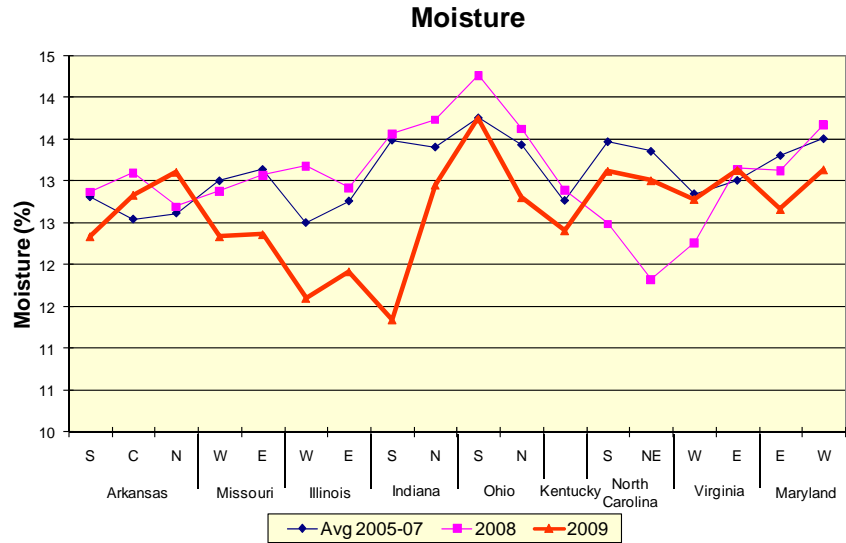
Comparisons of 2009 Results For Selected Quality Factors



Comparisons of 2009 Results For Selected Quality Factors

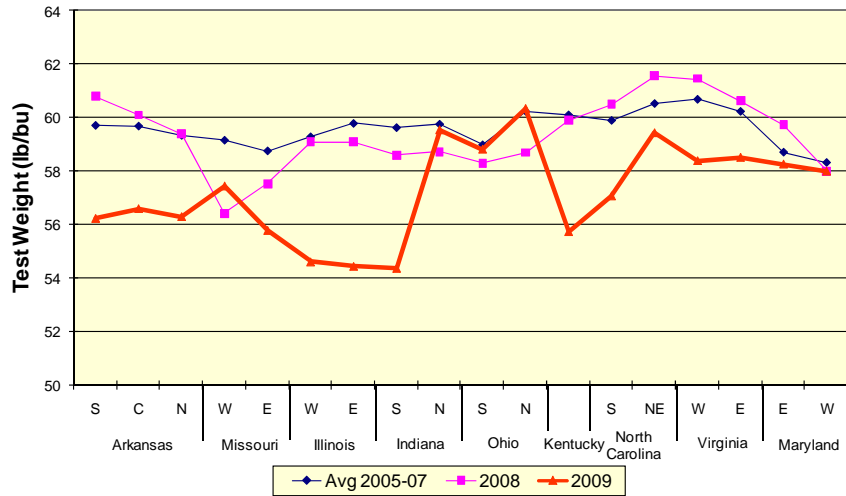


Distribution of 2009 Results and Comparisons with Previous Years For Selected Quality Factors

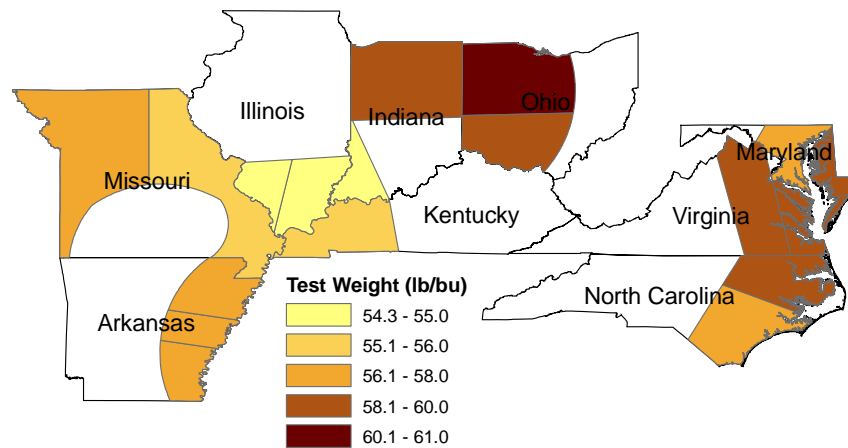
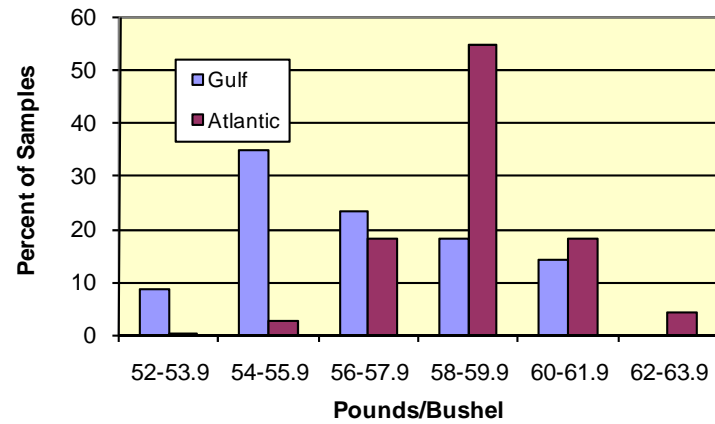


Distribution of 2009 Results and Comparisons with Previous Years For Selected Quality Factors

Test Weight

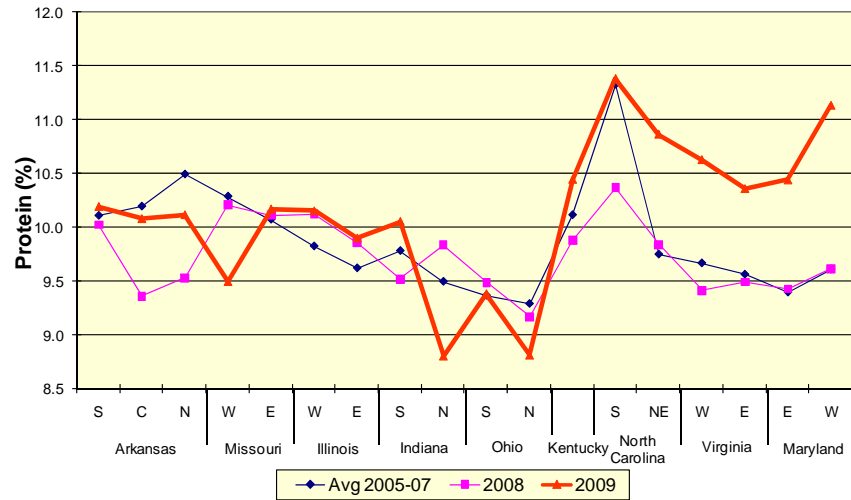


Test Weight

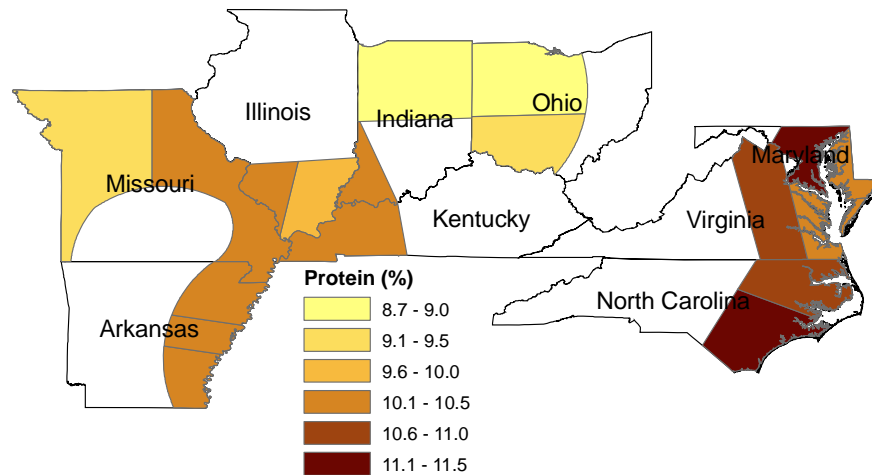
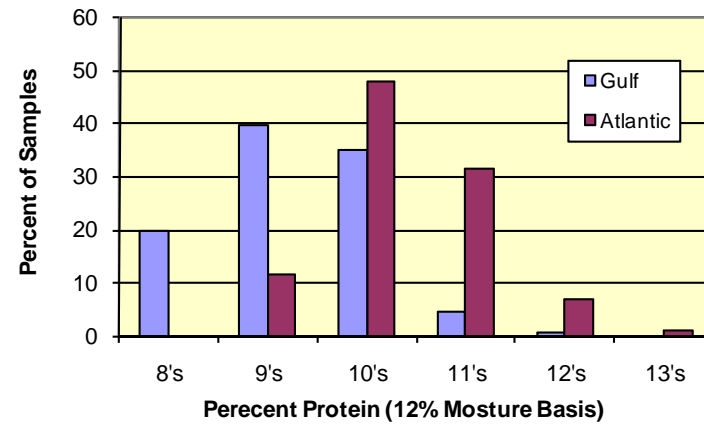


Distribution of 2009 Results and Comparisons with Previous Years For Selected Quality Factors

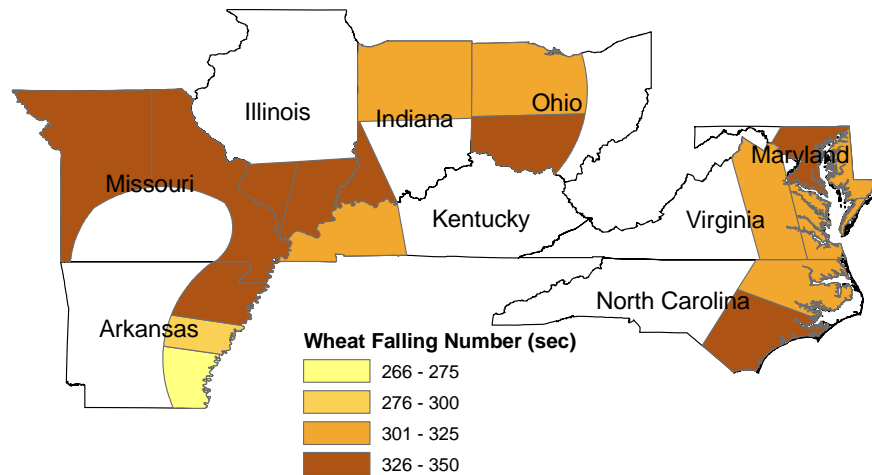
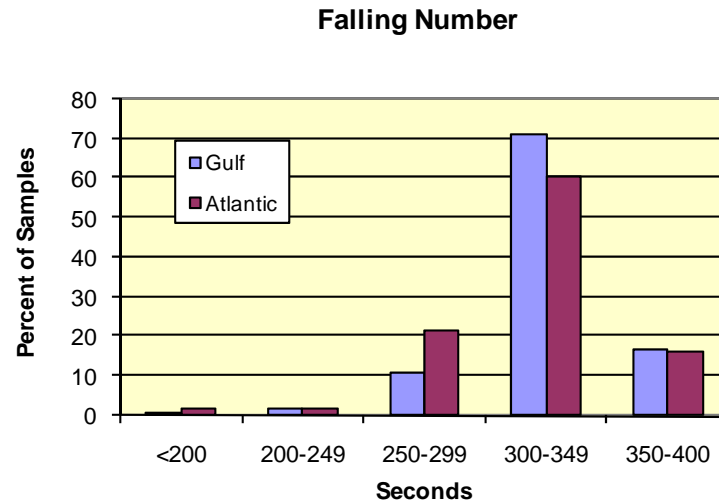
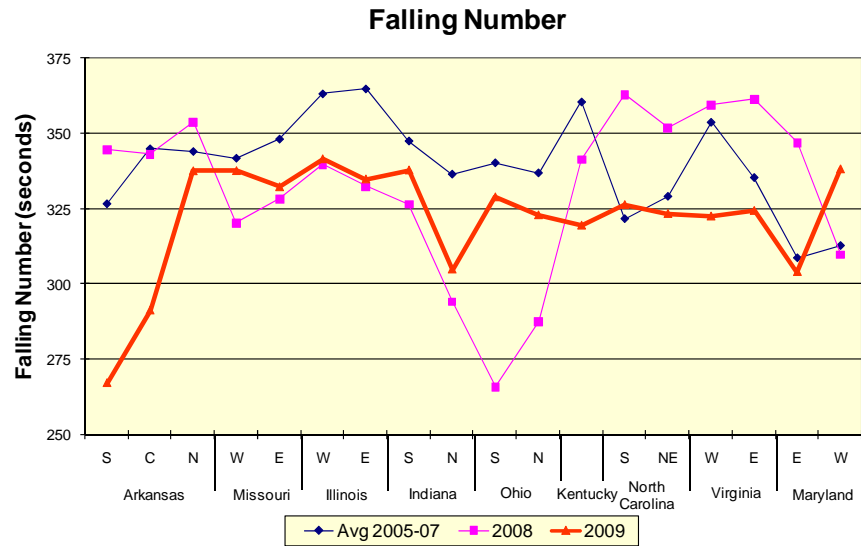
Protein



Protein

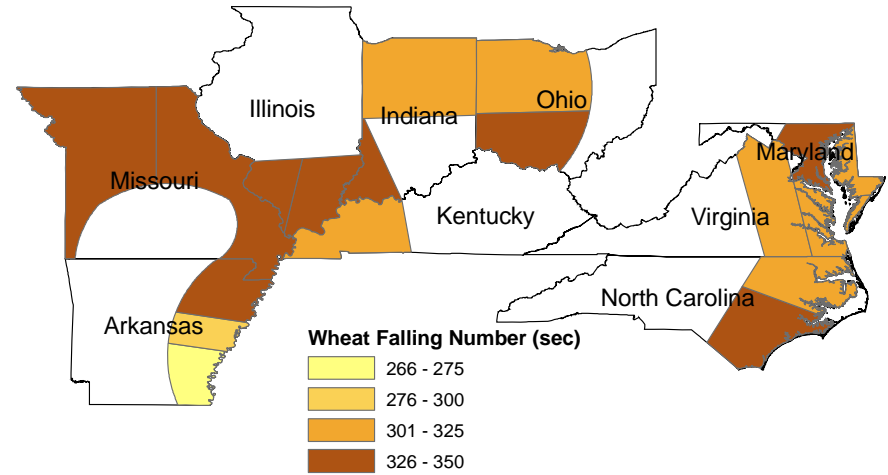
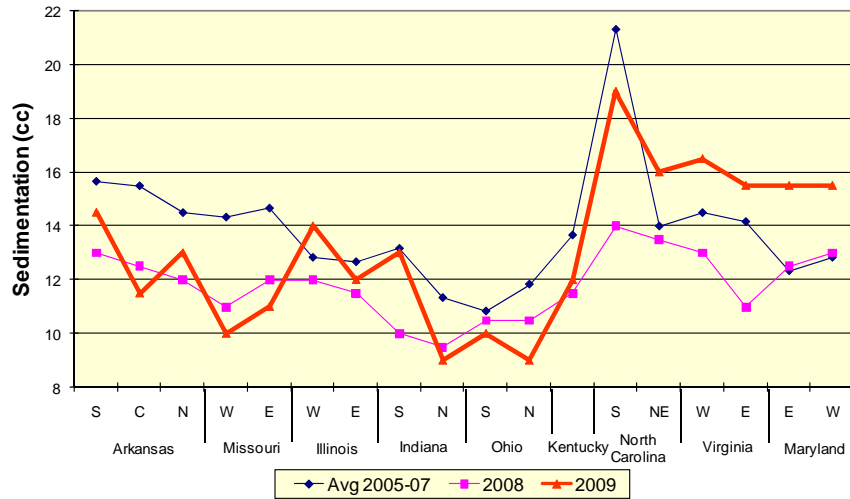


Distribution of 2009 Results and Comparisons with Previous Years For Selected Quality Factors

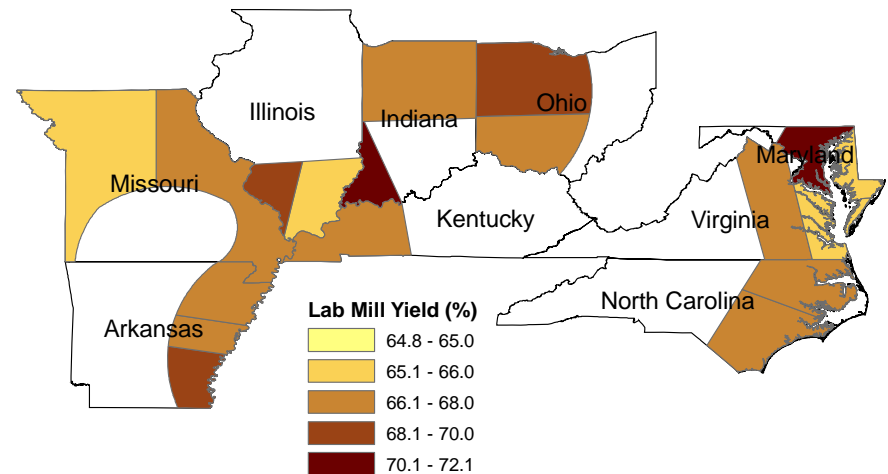
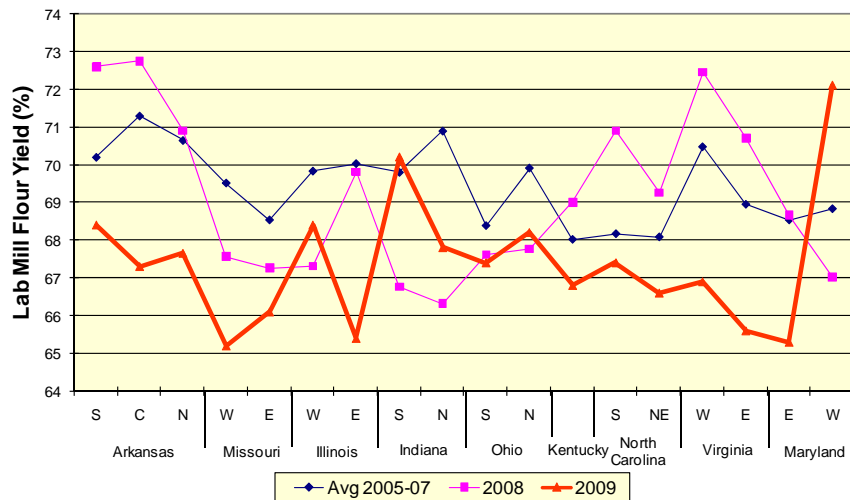


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Sedimentation

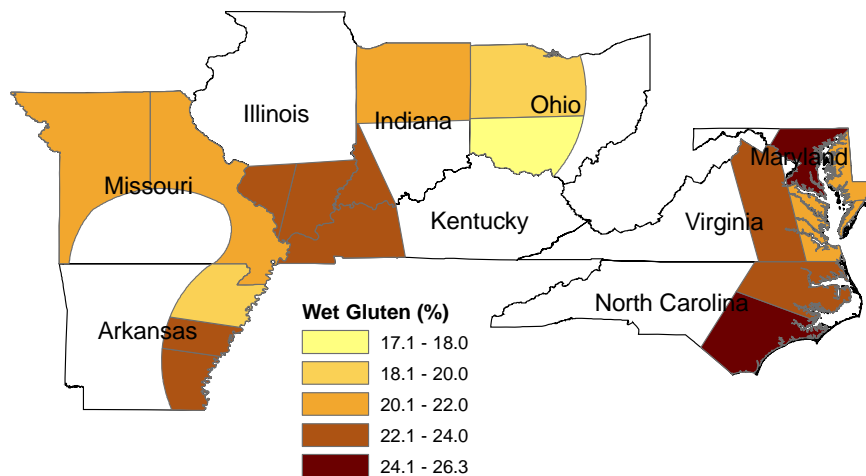
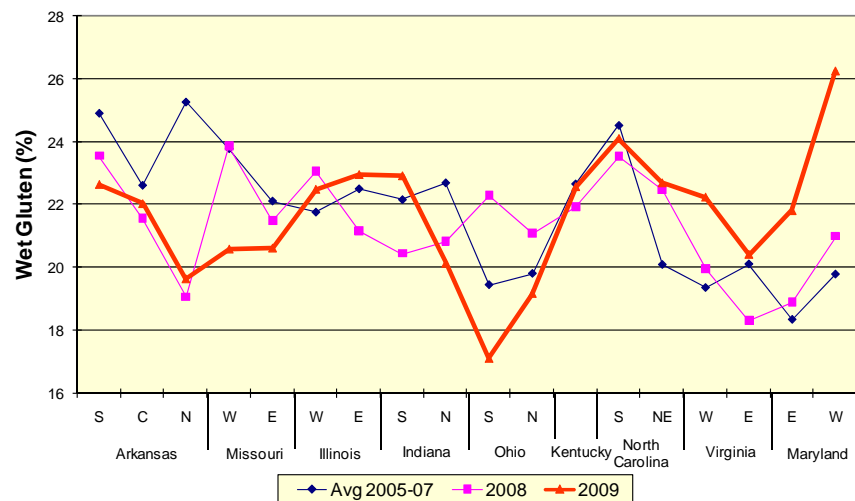


Laboratory Mill Flour Yield

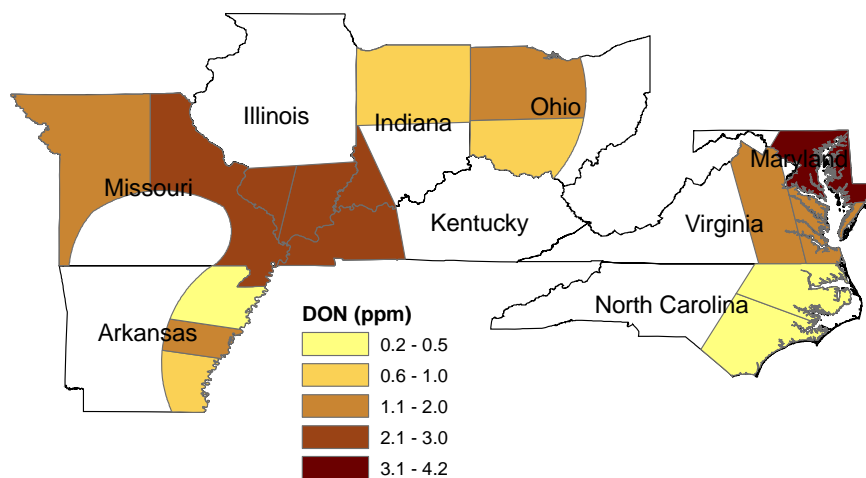
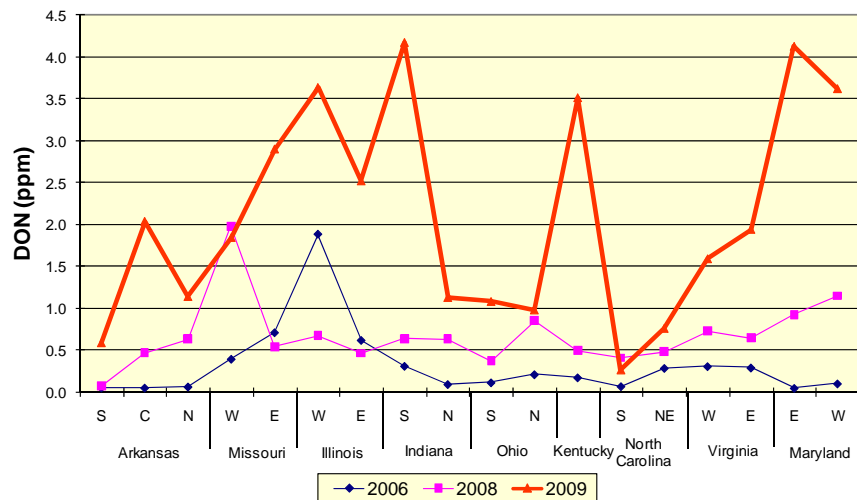


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Wet Gluten

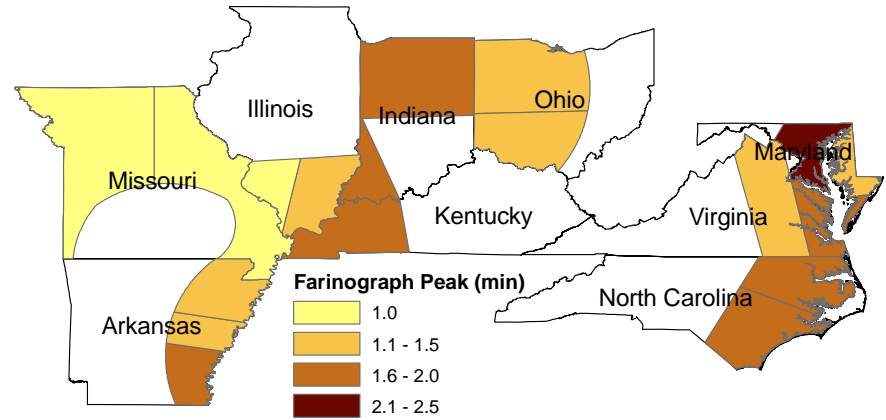
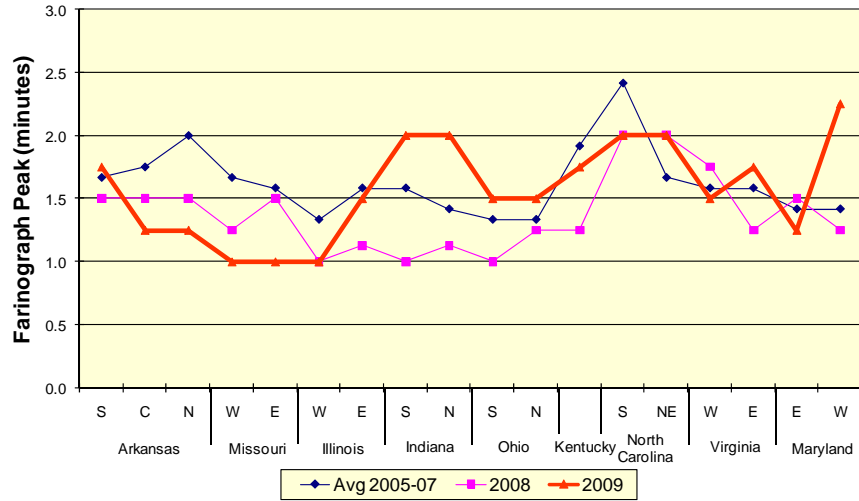


DON

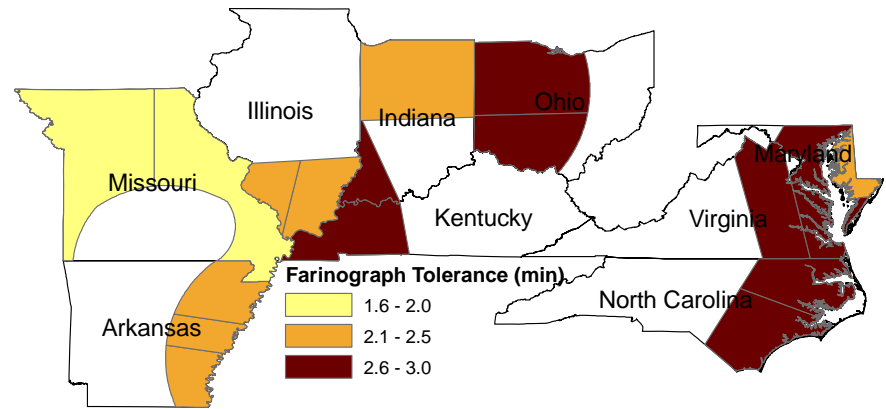
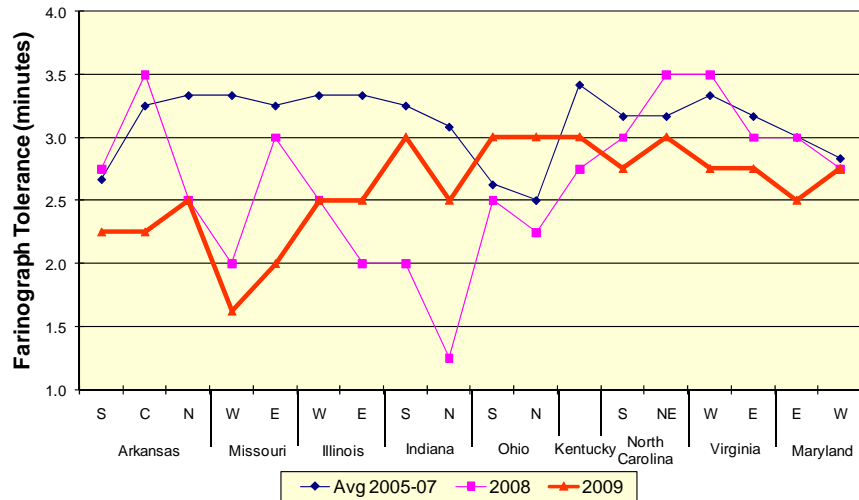


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Farinograph Peak

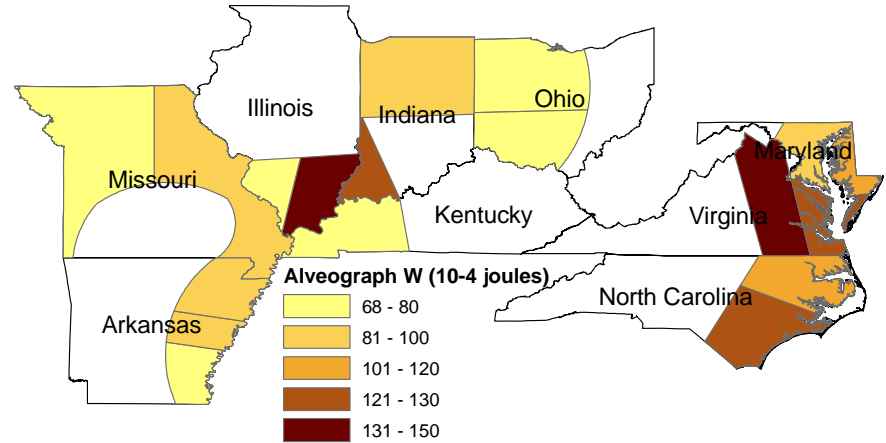
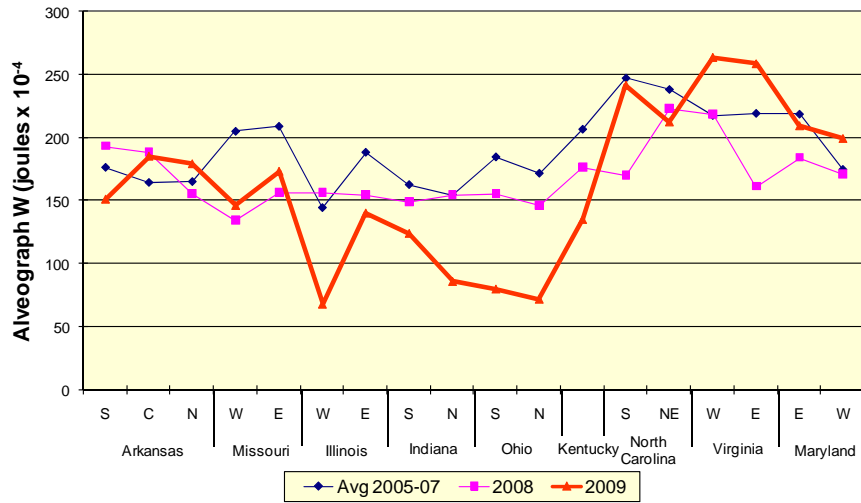


Farinograph Tolerance



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Alveograph W Value



Alveograph P/L

