



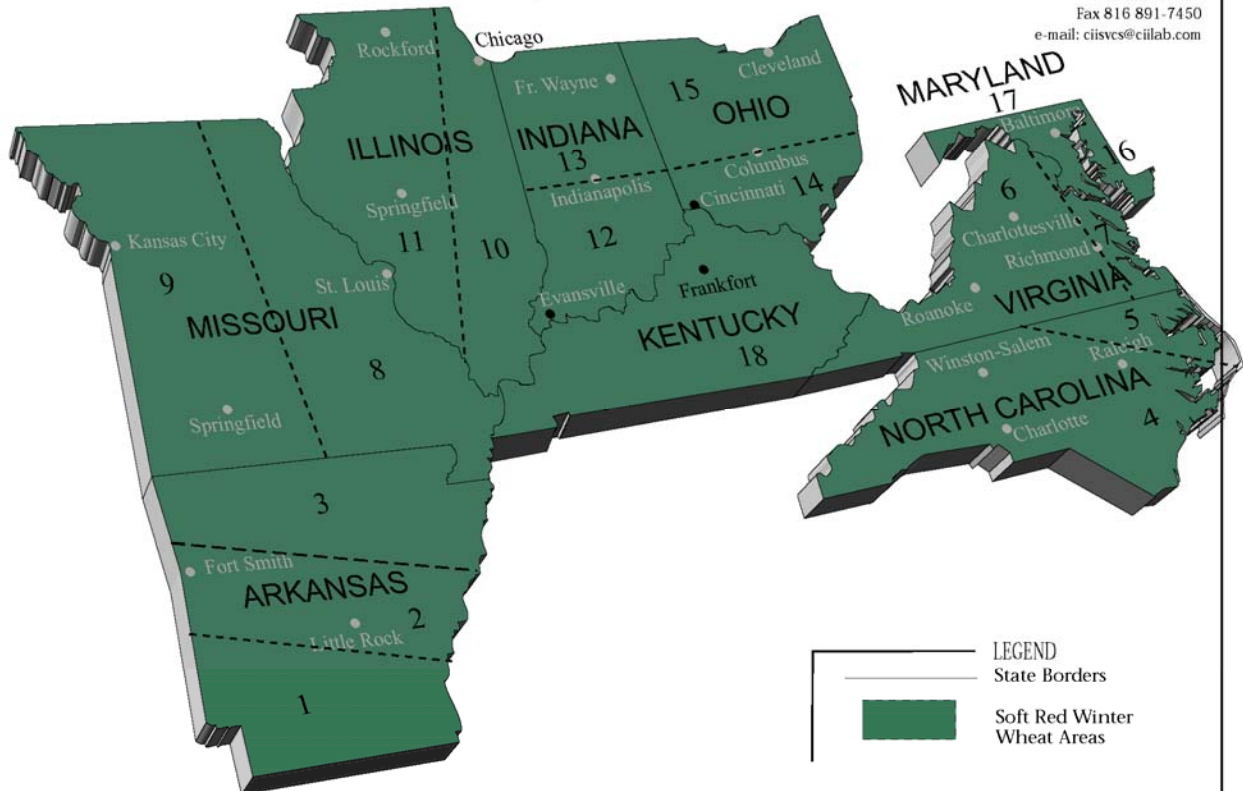
Soft Red Winter Wheat Quality Survey

2008

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.

2008 Soft Red Winter Quality Summary

	Composite Average			East Coast*			Gulf Ports*		
	2008	2007	5-Year	2008	2007	5-Year	2008	2007	5-Year
Wheat Grade Data									
Test Weight (lb/bu)	59.2	60.0	59.4	60.5	60.1	58.8	58.9	59.9	59.5
Test Weight (kg/hl)	77.9	78.9	78.2	79.6	79.0	77.4	77.6	78.9	78.3
Damage - Total (%)	0.9	0.2	1.1	0.7	0.2	1.7	0.9	0.2	1.0
Foreign Material (%)	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1
Shrunken and Broken (%)	0.5	0.6	0.6	0.4	0.6	0.7	0.5	0.7	0.7
Total Defects (%)	1.4	0.9	1.8	1.2	0.8	2.4	1.4	0.9	1.8
Grade	2	1	2	1	1	2	2	2	2
Wheat Non-Grade Data									
Dockage (%)	0.9	1.0	0.8	0.9	0.7	0.8	0.9	1.1	0.8
Moisture (%)	13.0	13.1	13.1	12.6	13.1	13.3	13.1	13.1	13.1
Protein (%) 12%/0% mb	9.8/11.2	10.3/11.7	10.0/11.3	9.9/11.2	9.8/11.1	10.2/11.6	9.8/11.1	10.5/11.9	10.0/11.3
Wheat Ash (%) 14%/0% mb	1.55/1.80	1.55/1.80	1.55/1.80	1.48/1.72	1.47/1.71	1.51/1.75	1.56/1.81	1.58/1.84	1.56/1.81
1000 Kernel Weight (g)	35.3	33.3	33.0	36.8	33.8	33.0	35.1	33.2	32.9
Wheat Falling Number (sec)	325	343	343	352	339	332	320	344	347
Kernel Size (%) lg/med/sm	85/14/01	81/18/01	83/16/01	89/10/01	81/18/01	82/17/01	85/14/01	81/18/01	83/16/01
Single Kernel Hardness	14.4	22.2	19.8	18.2	21.8	18.0	13.7	22.3	20.3
Single Kernel Weight (mg)	32.4	31.7	30.9	35.3	32.1	32.9	31.9	31.5	30.3
Single Kernel Diameter (mm)	2.26	2.22	2.17	2.39	2.22	2.29	2.24	2.22	2.14
Sedimentation (cc)	11.6	14.1	13.6	13.0	13.9	15.1	11.3	14.2	13.3
DON (ppm)	0.6	0.3	NA	0.7	0.2	NA	0.6	0.4	NA
Flour Data									
Lab Mill Extraction (%)	68.6	71.0	69.3	69.8	68.8	68.8	68.4	71.6	69.5
Flour Color - *L	93.8	93.4	93.2	94.0	93.5	93.2	93.8	93.4	93.1
Flour Color - *a	-3.0	-3.1	-3.1	-3.0	-3.1	-3.2	-3.0	-3.1	-3.1
Flour Color - *b	8.2	8.6	8.1	8.2	8.6	8.0	8.2	8.5	8.1
Flour Protein (%) 14%/0% mb	8.2/9.6	8.8/10.2	8.3/9.7	8.3/9.7	8.4/9.8	8.5/9.9	8.2/9.6	8.9/10.3	8.3/9.7
Flour Ash (%) 14%/0% mb	0.43/0.50	0.46/0.53	0.43/0.50	0.42/0.49	0.45/0.52	0.42/0.49	0.43/0.50	0.46/0.53	0.43/0.50
Wet Gluten (%)	21.7	23.1	21.7	21.1	19.3	20.7	21.8	24.3	22.0
Gluten Index	71.8	78.8	86.1	79.3	83.1	91.2	70.4	77.5	84.7
Falling Number (sec)	323	352	334	337	342	325	321	356	337
Amylograph (65g) (BU)	648	672	544	570	681	495	662	669	557
Starch Damage (%)	3.9	4.8	4.4	4.4	4.8	4.2	3.9	4.8	4.4
Dough Properties									
Farinograph Peak (min)	1.3	2.0	1.5	1.7	1.9	1.7	1.2	2.0	1.6
Farinograph Stability (min)	2.5	3.4	2.9	3.1	3.2	3.0	2.4	3.5	3.0
Farinograph Absorption (%)	51.7	52.5	52.6	53.0	51.3	52.7	51.4	52.9	52.6
Alveograph P (mm)	38	42	36	46	44	41	37	42	37
Alveograph L (mm)	70	100	97	66	84	97	71	105	98
Alveograph W (10-4 joules)	80	107	89	92	98	104	78	110	91
Alveograph P/L	0.55	0.42	0.38	0.69	0.52	0.43	0.52	0.40	0.37
Baking Evaluation									
Crumb Grain	5.4	5.5	5.3	5.4	5.4	5.5	5.4	5.5	5.3
Crumb Texture	5.3	5.8	5.7	5.7	5.2	5.7	5.2	6.0	5.7
Loaf Volume (cc)	705	749	710	690	719	721	708	759	717
Cookie Spread Ratio	9.2	8.5	8.3	8.3	8.6	8.3	9.3	8.5	8.3

% Area Production

100.0%

15.5%

84.5%

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

2008 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)	60.1	57.0	59.1	58.6	58.6	59.9	60.7	60.8	59.2
Count	56	52	44	41	42	22	39	32	31
Wheat Grade Data - from Area Composite Samples									
Test Weight (lb/bu)	60.3	56.7	59.3	58.8	59.3	60.1	60.7	60.9	59.4
Test Weight (kg/hl)	79.3	74.7	78.1	77.4	78.0	79.1	79.9	80.2	78.2
Damage - Total (%)	0.2	1.8	0.6	0.9	1.1	0.6	0.5	0.7	0.9
Foreign Material (%)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1
Shrunken and Broken (%)	0.4	0.6	0.5	0.4	0.4	0.5	0.5	0.4	0.3
Total Defects (%)	0.6	2.4	1.1	1.4	1.5	1.1	1.1	1.1	1.3
Grade	1	3	2	2	2	1	1	1	2
Wheat Non-Grade Data - from Individual Samples									
Moisture (%)	12.9	13.0	13.1	13.7	13.8	12.9	12.3	12.9	13.3
Protein (%) 12%/0% mb	9.6/10.9	10.2/11.5	10.0/11.4	9.7/11.0	9.2/10.5	9.9/11.2	10.2/11.6	9.5/10.8	9.5/10.8
Ash (%) 14%/0% mb	1.5/1.72	1.6/1.86	1.6/1.84	1.5/1.79	1.5/1.80	1.5/1.79	1.5/1.74	1.4/1.64	1.5/1.76
1000 Kernel Weight (g)	33.3	32.3	33.0	36.1	39.3	36.6	35.9	37.8	37.6
Wheat Falling Number (sec)	346	324	337	311	283	341	360	361	335
DON (ppm)	0.5	1.0	0.7	0.5	NA	0.4	0.3	0.7	1.0
Wheat Non-Grade Data - from Area Composite Samples									
Dockage (%)	1.0	1.7	0.8	1.3	0.4	0.6	1.0	0.6	1.2
Moisture (Lab) (%)	12.9	13.0	12.9	13.4	13.5	12.7	12.3	12.9	13.2
Protein (Lab) (%)	9.5	10.4	10.1	9.5	9.3	9.8	10.2	9.6	9.6
Kemel Size (%) lg/med/sm	84/15/01	82/17/01	83/16/01	86/13/01	88/11/01	86/13/01	89/11/00	89/10/01	88/11/01
Single Kernel Hardness	17.9	11.9	15.9	11.5	10.6	16.4	18.2	22.5	13.4
Single Kernel Weight (mg)	31.8	29.3	30.9	33.1	34.2	33.1	35.3	35.6	35.0
Single Kernel Diameter (mm)	2.24	2.13	2.18	2.30	2.36	2.25	2.41	2.41	2.35
Sedimentation (cc)	12.5	11.5	11.8	9.8	10.5	11.5	13.9	11.5	12.7
DON (ppm)	0.4	1.2	0.6	0.6	0.7	0.5	0.4	0.7	1.0
Flour Data									
Lab Mill Extraction (%)	72.2	67.4	68.3	66.5	67.7	69.0	70.5	71.2	68.1
Flour Color - *L	93.0	93.8	94.0	94.1	93.7	94.3	94.0	94.0	93.9
Flour Color - *a	-2.4	-3.0	-3.0	-3.2	-3.2	-3.1	-2.8	-3.0	-3.2
Flour Color - *b	9.0	7.8	8.7	7.9	7.7	8.5	8.1	8.3	8.4
Flour Protein (%) 14%/0% mb	8.3/9.7	8.2/9.6	8.6/10.0	7.7/8.9	8.0/9.2	8.3/9.7	8.8/10.2	7.9/9.1	7.9/9.2
Flour Ash (%) 14%/0% mb	0.45/0.52	0.44/0.51	0.42/0.48	0.39/0.46	0.44/0.51	0.41/0.47	0.43/0.50	0.41/0.48	0.41/0.48
Wet Gluten (%)	21.4	22.6	22.3	20.6	21.3	21.9	23.3	18.7	19.5
Gluten Index	68.9	57.5	77.3	79.0	72.4	69.9	73.1	82.5	86.9
Falling Number (sec)	346	316	344	286	288	351	349	347	313
Amylograph (65g) (BU)	602	693	855	615	455	750	564	570	575
Starch Damage (%)	4.0	3.7	3.9	3.6	4.0	3.8	4.5	4.8	4.0
Dough Properties									
Farinograph Peak (min)	1.5	1.4	1.0	1.1	1.2	1.3	2.0	1.4	1.4
Farinograph Stability (min)	3.0	2.5	2.3	1.6	2.3	2.8	3.1	3.1	2.9
Farinograph Absorption (%)	52.0	51.9	50.1	52.1	51.9	51.7	52.8	53.9	52.4
Alveograph P (mm)	42	36	35	35	36	42	44	51	41
Alveograph L (mm)	78	69	68	80	68	72	72	50	72
Alveograph W (10-4 joules)	90	73	78	76	74	88	91	88	90
Alveograph P/L	0.54	0.52	0.52	0.43	0.52	0.58	0.62	1.02	0.57
Baking Evaluation									
Crumb Grain	5.1	4.5	5.6	6.0	5.9	5.5	5.8	5.5	5.0
Crumb Texture	5.4	6.0	5.0	5.2	4.7	5.0	6.4	5.9	4.5
Loaf Volume (cc)	686	719	701	731	708	713	693	684	683
Cookie Spread Ratio	8.5	9.4	9.3	9.6	9.6	9.3	8.2	8.1	8.9

Soft Red Winter 2008 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)	60.8	60.1	59.4	56.4	57.5	59.1	59.1	58.6	58.7	58.3	58.7	59.9	60.5	61.6	61.4	60.6	58.0	59.7
Count	14	26	16	29	23	24	20	21	20	13	29	22	24	15	9	23	7	24
Wheat Grade Data - from Area Composite Samples																		
Test Weight (lb/bu)	60.8	60.6	59.5	56.2	57.1	59.3	59.5	58.8	58.8	58.9	59.4	60.1	60.5	61.7	62.1	60.6	58.6	59.8
Test Weight (kg/hl)	79.9	79.6	78.3	74.0	75.2	78.0	78.2	77.4	77.4	77.5	78.2	79.1	79.5	81.1	81.6	79.6	77.1	78.7
Damage - Total (%)	0.1	0.3	0.3	3.4	0.4	0.6	0.6	0.7	1.2	1.7	1.0	0.6	0.4	0.9	0.7	0.7	1.1	0.9
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1
Shrunken and Broken (%)	0.3	0.4	0.4	0.7	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.5	0.5	0.6	0.5	0.4	0.3	0.3
Total Defects (%)	0.4	0.7	0.7	4.1	1.0	1.2	1.1	1.2	1.7	2.1	1.4	1.1	1.0	1.4	1.2	1.1	1.5	1.2
Grade	1	1	2	3	3	2	2	2	2	2	2	1	1	1	1	1	2	2
Wheat Non-Grade Data - from Individual Samples																		
Moisture (%)	12.9	13.1	12.7	12.9	13.1	13.2	12.9	13.6	13.7	14.3	13.6	12.9	12.5	11.8	12.3	13.1	13.7	13.1
Protein (%) 12% mb	10.0	9.4	9.5	10.2	10.1	10.1	9.9	9.5	9.8	9.5	9.2	9.9	10.4	9.8	9.4	9.5	9.6	9.4
Ash (%) 14% mb	1.52	1.44	1.50	1.63	1.57	1.60	1.55	1.51	1.57	1.53	1.55	1.54	1.51	1.45	1.41	1.41	1.53	1.51
1000 Kernel Weight (g)	34.6	33.6	31.7	31.6	33.0	32.3	34.0	33.7	38.6	39.4	39.3	36.6	35.9	35.9	35.3	38.7	36.9	37.9
Wheat Falling Number (sec)	345	343	354	320	328	340	332	326	294	266	287	341	363	352	359	361	310	347
DON (ppm)	0.2	0.6	0.5	1.4	0.6	0.7	0.5	0.5	0.6	0.5	NA	0.4	0.2	0.8	0.7	0.7	1.4	0.8
Wheat Non-Grade Data - from Area Composite Samples																		
Dockage (%)	0.7	0.9	1.5	1.9	1.6	0.6	1.0	0.7	1.9	0.4	0.4	0.6	1.1	0.5	0.7	0.5	1.6	1.0
Moisture (%)	13.1	12.8	12.9	12.9	13.1	13.0	12.8	13.4	13.3	13.7	13.5	12.7	12.5	11.5	12.0	13.3	13.4	13.2
Protein (%) 12% mb	10.0	9.2	9.4	11.0	9.9	10.3	9.8	9.4	9.5	9.4	9.3	9.8	10.3	10.0	9.4	9.7	9.7	9.5
Kernel Size Large (Over 7) (%)	87	85	79	77	87	82	84	84	88	84	89	85	88	91	87	90	86	89
Kernel Size Medium (Over 9) (%)	12	15	20	22	13	17	15	15	11	15	10	13	12	8	12	9	13	10
Kernel Size Small (Thru 9) (%)	0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1
Single Kernel Hardness	17.7	17.5	18.6	13.4	10.5	16.4	15.2	11.9	11.0	10.3	10.7	16.4	16.8	23.1	27.2	20.9	13.7	13.2
Single Kernel Weight (mg)	33.4	31.5	30.7	28.6	29.9	30.7	31.3	32.7	33.5	35.2	33.9	33.1	35.3	35.2	34.2	36.0	33.7	35.5
Single Kernel Diameter (mm)	2.31	2.25	2.17	2.12	2.14	2.16	2.21	2.23	2.37	2.41	2.34	2.25	2.41	2.41	2.36	2.43	2.31	2.37
Sedimentation (cc)	13	13	12	11	12	12	12	10	10	11	11	12	14	14	13	11	13	13
DON (ppm)	0.1	0.5	0.6	2.0	0.5	0.7	0.5	0.6	0.6	0.4	0.9	0.5	0.4	0.5	0.7	0.6	1.1	0.9
Flour Data																		
Lab Mill Extraction (%)	72.6	72.8	70.9	67.6	67.3	67.3	69.8	66.8	66.3	67.6	67.8	69.0	70.9	69.3	72.5	70.7	67.0	68.7
Flour Color - *L	89.8	94.2	94.2	93.8	93.9	93.9	94.2	94.2	94.1	93.3	93.9	94.3	94.0	93.9	94.0	94.0	93.9	94.0
Flour Color - *a	-1.7	-2.7	-2.7	-3.3	-2.9	-2.9	-3.2	-3.1	-3.3	-2.8	-3.4	-3.1	-2.8	-2.8	-2.9	-3.1	-3.3	-3.2
Flour Color - *b	9.3	8.7	9.1	7.4	8.1	8.9	8.5	8.2	7.6	7.2	7.9	8.5	8.2	7.9	8.3	8.3	8.4	8.4
Flour Protein (%) 14% mb	8.6	8.2	8.1	8.3	8.2	9.0	8.0	7.6	7.7	8.2	7.9	8.3	8.8	8.6	8.0	7.8	8.0	7.8
Flour Ash (%) 14% mb	0.44	0.45	0.44	0.44	0.44	0.43	0.40	0.40	0.39	0.46	0.43	0.41	0.43	0.43	0.43	0.41	0.43	0.40
Wet Gluten (%)	23.5	21.5	19.0	23.9	21.5	23.1	21.1	20.4	20.8	22.3	21.1	21.9	23.5	22.5	19.9	18.3	21.0	18.9
Gluten Index	57.7	71.4	75.9	43.8	69.5	76.1	79.2	68.2	90.3	71.6	72.7	69.9	72.8	74.4	78.3	84.0	74.5	92.5
Falling Number (sec)	325	355	352	306	325	343	345	291	282	300	285	351	353	336	349	347	320	311
Amylograph (65g) (BU)	465	630	690	690	695	880	815	720	505	370	480	750	560	580	585	565	585	570
Starch Damage (%)	4.0	4.0	4.1	3.8	3.6	3.8	4.2	3.4	3.8	4.8	3.8	3.8	4.6	4.3	4.8	4.8	3.6	4.2
Dough Properties																		
Farinograph Peak (min)	1.5	1.5	1.5	1.3	1.5	1.0	1.1	1.0	1.1	1.0	1.3	1.3	2.0	2.0	1.8	1.3	1.3	1.5
Farinograph Stability (min)	2.8	3.5	2.5	2.0	3.0	2.5	2.0	2.0	1.3	2.5	2.3	2.8	3.0	3.5	3.5	3.0	2.8	3.0
Farinograph Absorption (%)	52.6	52.4	50.9	52.1	51.7	49.6	50.9	51.5	52.8	51.4	52.1	51.7	52.6	53.8	54.8	53.7	52.6	52.4
Alveograph P (mm)	42	48	35	34	38	36	34	36	33	39	35	42	41	56	60	49	40	41
Alveograph L (mm)	88	67	88	72	66	65	73	70	90	63	70	72	74	64	55	49	66	75
Alveograph W (10-4 joules)	97	94	78	67	78	78	77	75	77	78	73	88	85	112	109	81	86	92
Alveograph P/L	0.47	0.72	0.39	0.47	0.58	0.55	0.47	0.51	0.37	0.62	0.50	0.58	0.55	0.88	1.10	0.99	0.61	0.55
Baking Evaluation																		
Crumb Grain	5.0	5.5	4.5	4.0	5.0	6.0	5.0	5.5	6.5	5.5	6.0	5.5	6.0	5.0	5.5	5.5	5.0	5.0
Crumb Texture	5.5	5.5	5.0	6.0	6.0	5.0	5.0	4.5	6.0	5.5	4.5	5.0	6.5	6.0	5.5	6.0	4.5	4.5
Loaf Volume (cc)	663	725	650	713	725	725	663	738	725	650	725	713	688	713	675	688	700	675
Cookie Spread Ratio	8.5	8.6	8.6	9.0	9.7	9.5	9.1	10.1	9.2	9.0	9.8	9.3	8.4	7.5	7.7	8.3	9.5	8.6

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

Soft Red Winter 2008 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)	60.5	60.8	60.1	57.4	58.0	59.3	59.5	58.4	59.2	58.4	58.8	60.0	60.7	62.0	62.1	61.0	58.2	60.5
Count	7	13	8	14	12	12	10	10	11	6	13	12	12	7	4	11	4	12
Wheat Grade Data - from Area Composite Samples																		
Test Weight (lb/bu)	60.7	61.2	60.5	56.2	57.1	59.3	59.6	58.8	58.8	59.3	59.5	60.2	60.6	62.5	61.8	60.6	59.5	60.2
Test Weight (kg/hl)	79.8	80.5	79.6	74.0	75.2	78.0	78.4	77.4	77.4	78.0	78.3	79.2	79.7	82.2	81.3	79.7	78.3	79.2
Damage - Total (%)	0.2	0.2	0.0	3.4	0.4	0.7	0.6	0.7	1.2	1.1	1.1	0.7	0.4	0.6	0.6	0.4	0.6	0.5
Foreign Material (%)	0.0	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	0.0	0.0
Shrunken and Broken (%)	0.2	0.3	0.4	0.7	0.6	0.6	0.4	0.4	0.5	0.3	0.4	0.6	0.4	0.5	0.5	0.4	0.3	0.3
Total Defects (%)	0.4	0.5	0.4	4.1	1.0	1.3	1.0	1.2	1.7	1.4	1.5	1.3	0.8	1.1	1.1	0.8	0.9	0.8
Grade	1	1	1	3	3	2	2	2	2	2	2	1	1	1	1	1	2	1
Wheat Non-Grade Data - from Individual Samples																		
Moisture (%)	13.4	12.8	13.2	12.8	13.3	13.3	13.3	14.0	14.1	14.3	13.7	13.2	12.8	11.7	12.3	13.7	14.1	13.3
Protein (%) 12% mb	10.1	9.5	9.5	10.3	10.1	10.1	9.7	9.4	9.9	9.3	9.1	9.8	10.2	9.9	9.3	9.4	9.5	9.5
Ash (%) 14% mb	1.52	1.51	1.47	1.63	1.56	1.60	1.55	1.52	1.55	1.52	1.52	1.50	1.50	1.41	1.36	1.41	1.45	1.53
1000 Kernel Weight (g)	35.5	33.6	31.7	31.1	33.0	32.0	33.6	33.9	38.4	37.2	38.4	36.8	35.8	36.3	35.7	38.4	37.2	37.5
Wheat Falling Number (sec)	335	348	353	322	335	333	338	331	294	283	289	342	363	350	356	364	321	353
DON (ppm)	0.2	0.4	0.3	1.4	0.6	0.5	0.5	0.5	NA	0.7	NA	0.4	0.2	0.7	0.3	0.9	1.4	0.9
Wheat Non-Grade Data - from Area Composite Samples																		
Dockage (%)	0.8	0.9	1.2	1.9	1.6	0.6	0.9	0.7	1.9	0.4	0.4	0.6	0.6	0.6	0.6	0.6	2.5	0.5
Moisture (%)	13.5	13.1	12.6	13.6	13.5	13.3	12.5	13.5	14.0	14.1	13.5	13.1	13.0	11.2	12.1	13.6	14.0	13.1
Protein (%) 12% mb	10.4	9.0	9.2	10.7	9.8	10.3	9.5	9.2	9.4	9.4	9.0	9.5	10.0	10.1	9.9	9.8	9.8	9.8
Kernel Size Large (Over 7) (%)	91	86	81	76	83	84	83	87	90	80	88	87	87	91	87	91	83	89
Kernel Size Medium (Over 9) (%)	9	13	19	23	16	15	17	12	9	19	11	12	12	9	13	8	16	10
Kernel Size Small (Thru 9) (%)	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
Single Kernel Hardness	17.5	20.8	20.5	13.9	11.3	17.9	16.8	10.9	11.3	12.8	10.7	15.5	18.1	22.8	28.6	25.1	18.7	16.8
Single Kernel Weight (mg)	33.4	32.1	31.6	29.0	31.3	30.6	30.9	33.5	34.5	35.4	33.9	33.2	35.9	37.1	33.6	36.1	33.4	35.6
Single Kernel Diameter (mm)	2.32	2.29	2.20	2.11	2.19	2.16	2.20	2.23	2.39	2.41	2.34	2.23	2.42	2.47	2.36	2.45	2.28	2.37
Sedimentation (cc)	12	12	12	11	12	12	12	10	9	10	9	12	13	14	14	11	14	13
DON (ppm)	0.1	0.1	0.2	1.8	0.5	0.6	0.4	0.6	0.7	0.4	0.7	0.5	0.4	0.4	0.7	0.8	1.3	1.1
Flour Data																		
Lab Mill Extraction (%)	72.3	73.4	71.0	67.4	67.8	66.2	69.0	66.2	66.4	67.8	68.4	69.7	72.1	70.6	71.2	69.7	66.9	68.2
Flour Color - *L	86.0	94.1	94.2	93.8	94.0	93.7	94.2	94.1	94.0	93.7	93.9	94.3	94.0	94.4	94.0	94.0	94.0	94.0
Flour Color - *a	-1.1	-2.5	-2.5	-3.3	-2.9	-2.9	-3.3	-2.8	-3.3	-2.7	-3.2	-3.2	-2.5	-3.1	-2.9	-3.2	-3.1	-3.4
Flour Color - *b	9.8	8.8	8.6	7.6	8.3	9.1	8.6	8.1	7.7	7.4	7.3	8.1	8.7	8.3	8.1	8.2	8.3	8.8
Flour Protein (%) 14% mb	8.6	8.3	8.2	8.2	8.2	9.2	8.2	7.5	7.8	7.6	7.6	8.2	9.0	8.3	8.0	7.7	7.9	7.9
Flour Ash (%) 14% mb	0.42	0.45	0.45	0.48	0.44	0.45	0.41	0.43	0.41	0.45	0.41	0.42	0.43	0.40	0.40	0.38	0.41	0.41
Wet Gluten (%)	25.3	22.0	22.8	26.0	20.9	22.7	21.8	20.2	21.2	19.9	20.8	21.1	23.2	22.9	21.2	18.7	20.6	18.1
Gluten Index	53.6	65.4	63.2	40.9	71.1	93.7	78.7	58.1	87.7	75.4	61.9	60.4	63.1	53.3	81.8	77.1	65.5	93.4
Falling Number (sec)	318	357	374	309	319	343	339	303	289	269	262	358	357	302	354	330	331	341
Amylograph (65g) (BU)	520	600	640	740	690	890	840	810	530	360	470	730	550	600	580	550	680	620
Starch Damage (%)	4.2	4.6	4.9	3.8	3.8	3.8	4.2	3.4	3.8	4.6	4.2	3.8	3.8	3.8	4.9	4.9	3.8	3.8
Dough Properties																		
Farinograph Peak (min)	1.5	1.5	1.5	1.5	1.5	1.0	1.3	1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.0	1.0	1.5	1.5
Farinograph Stability (min)	3.0	3.5	3.0	2.0	3.5	2.5	2.0	2.0	1.5	2.5	2.0	3.0	3.0	3.5	3.5	3.0	3.0	3.5
Farinograph Absorption (%)	53.2	52.6	51.2	52.1	52.4	49.3	51.0	51.7	52.5	52.2	51.8	52.4	51.7	54.2	54.5	53.7	52.8	52.6
Alveograph P (mm)	44	52	37	34	40	33	35	34	34	42	30	46	34	58	60	47	41	46
Alveograph L (mm)	93	58	84	77	71	60	74	68	86	68	72	70	77	62	58	52	65	81
Alveograph W (10-4 joules)	102	97	84	72	86	71	81	68	75	84	60	96	69	115	113	81	85	113
Alveograph P/L	0.47	0.90	0.44	0.44	0.56	0.55	0.47	0.50	0.40	0.62	0.42	0.66	0.44	0.94	1.03	0.90	0.63	0.57
Baking Evaluation																		
Crumb Grain	5	6	5	4	5	6	5	5	6	5	7	5	5	5	6	6	5	5
Crumb Texture	5	6	5	6	6	5	5	5	6	5	4	5	6	6	6	6	4	4
Loaf Volume (cc)	650	725	700	725	750	700	700	725	700	550	725	700	650	700	650	700	675	700
Cookie Spread Ratio	8.7	8.2	8.7	9.4	9.6	9.4	10.1	10.1	9.1	8.9	9.9	9.2	8.5	7.4	7.9	8.3	9.3	8.6

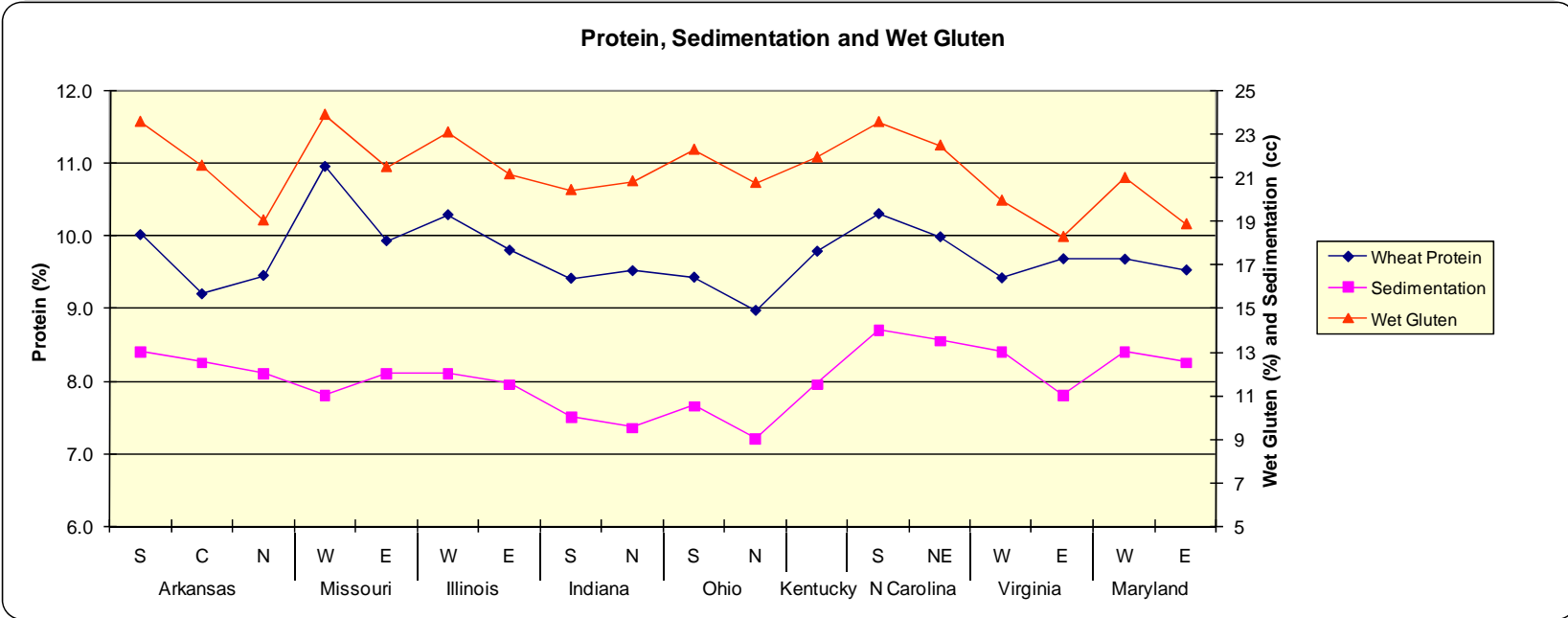
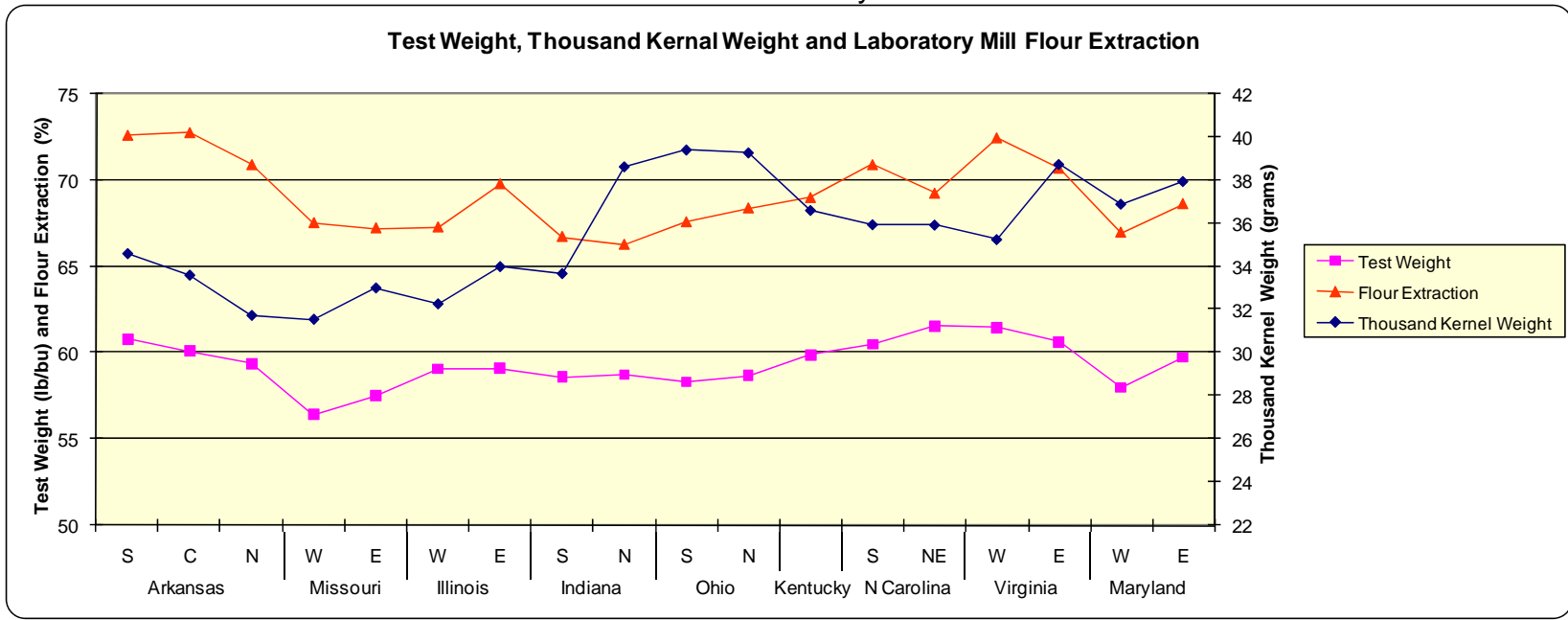
N-North, S-South, E-East, W-West, C-Central, NE-North East, NA-Not Available

Soft Red Winter 2008 Survey - Late Samples

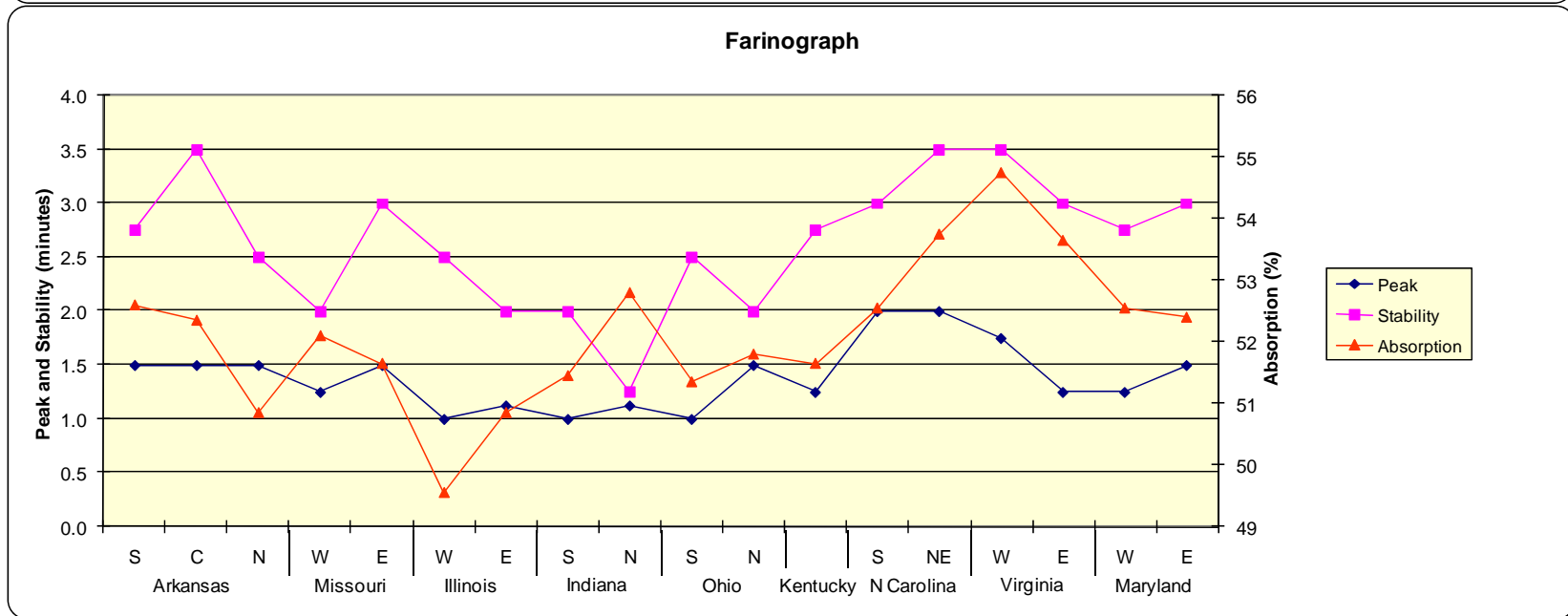
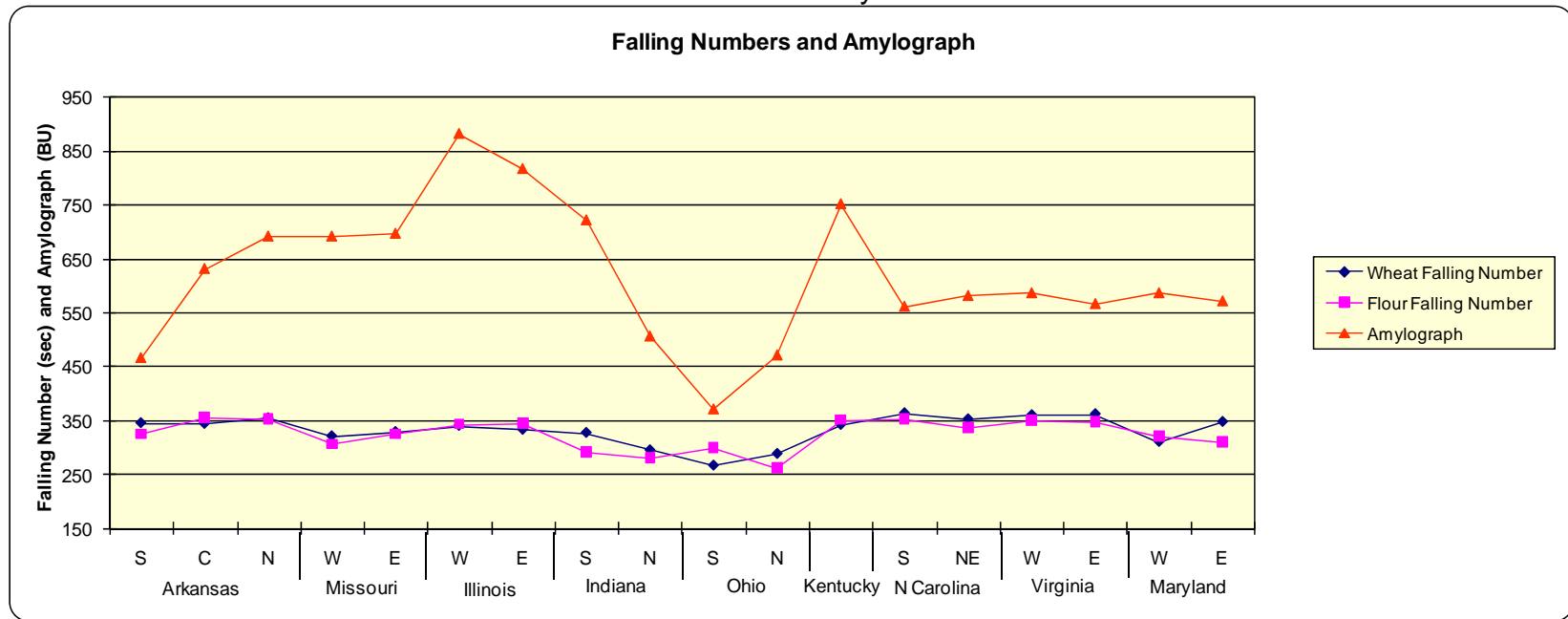
	Arkansas			Missouri		Illinois		Indiana		Ohio		Kentucky	North Carolina		Virginia		Maryland	
	S	C	N	W	E	W	E	S	N	S	N		S	NE	W	E	W	E
Wheat Grade Data - from Individual Samples																		
Test Weight (Lab) (lb/bu)	61.0	59.3	58.7	55.4	57.0	58.9	58.7	58.8	58.2	58.2	58.6	59.8	60.3	61.1	61.0	60.3	57.7	59.0
Count	7	13	8	15	11	12	10	11	9	7	16	10	12	8	5	12	3	12
Wheat Grade Data - from Area Composite Samples																		
Test Weight (lb/bu)	60.8	59.9	58.5	56.2	57.1	59.2	59.3	58.8	58.8	58.4	59.3	60.0	60.3	60.9	62.3	60.5	57.7	59.4
Test Weight (kg/hl)	80.0	78.8	77.0	74.0	75.2	77.9	78.0	77.4	77.4	76.9	78.0	78.9	79.3	80.1	81.9	79.6	76.0	78.2
Damage - Total (%)	0.0	0.4	0.6	3.4	0.4	0.5	0.5	0.7	1.2	2.2	0.8	0.5	0.4	1.1	0.8	1.0	1.6	1.2
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1
Shrunken and Broken (%)	0.4	0.4	0.4	0.7	0.6	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.6	0.6	0.4	0.3	0.3	0.3
Total Defects (%)	0.4	0.8	1.0	4.1	1.0	1.0	1.1	1.2	1.7	2.7	1.2	0.9	1.1	1.7	1.2	1.3	2.0	1.6
Grade	1	2	2	3	3	2	2	2	2	2	2	1	1	1	1	1	3	2
Wheat Non-Grade Data - from Individual Samples																		
Moisture (%)	12.4	13.4	12.2	12.9	12.8	13.1	12.6	13.2	13.3	14.3	13.5	12.5	12.2	11.9	12.3	12.7	13.1	12.9
Protein (%) 12% mb	9.9	9.2	9.6	10.1	10.1	10.1	10.0	9.7	9.8	9.6	9.2	9.9	10.5	9.8	9.5	9.5	9.8	9.3
Ash (%) 14% mb	1.52	1.38	1.53	1.64	1.59	1.61	1.56	1.51	1.60	1.54	1.58	1.57	1.52	1.49	1.45	1.41	1.63	1.49
1000 Kernel Weight (g)	33.7	33.6	31.8	32.0	33.0	32.6	34.4	33.5	38.9	41.3	40.0	36.3	36.1	35.6	34.9	39.0	36.4	38.4
Wheat Falling Number (sec)	354	338	354	319	320	346	326	322	294	251	286	340	363	354	362	358	295	341
DON (ppm)	0.2	0.9	0.6	NA	0.7	1.0	0.6	NA	0.6	0.4	NA	0.3	0.2	0.8	1.0	0.5	NA	0.8
Wheat Non-Grade Data - from Area Composite Samples																		
Dockage (%)	0.6	0.9	1.7	1.9	1.6	0.6	1.1	0.7	1.9	0.4	0.4	0.5	1.6	0.3	0.8	0.4	0.6	1.5
Moisture (%)	12.7	12.6	13.2	12.2	12.8	12.7	13.1	13.4	12.7	13.3	0.0	12.4	12.0	11.9	11.9	13.0	12.9	13.3
Protein (%) 12% mb	9.6	9.4	9.7	11.2	10.1	10.3	10.1	9.6	9.7	9.5	9.6	10.1	10.6	9.8	9.0	9.5	9.6	9.2
Kernel Size Large (Over 7) (%)	84	83	78	78	90	81	85	81	86	88	90	84	88	91	88	90	90	89
Kernel Size Medium (Over 9) (%)	16	16	21	21	10	18	14	17	13	12	9	14	12	8	11	10	9	10
Kernel Size Small (Thru 9) (%)	1	1	1	1	0	1	1	1	1	1	0	1	0	1	1	1	0	1
Single Kernel Hardness	18.0	14.2	16.7	12.9	9.8	14.8	13.7	13.0	10.7	7.8	9.9	17.4	15.5	23.3	25.7	16.7	8.7	9.6
Single Kernel Weight (mg)	33.4	30.9	29.8	28.1	28.6	30.8	31.6	31.8	32.4	35.0	33.7	33.1	34.8	33.4	34.8	36.0	34.1	35.5
Single Kernel Diameter (mm)	2.29	2.21	2.13	2.14	2.09	2.15	2.23	2.23	2.35	2.41	2.33	2.28	2.39	2.34	2.36	2.42	2.34	2.36
Sedimentation (cc)	14	13	12	11	12	12	11	10	10	11	12	11	15	13	12	11	12	12
DON (ppm)	0.1	0.9	1.0	2.2	0.6	0.7	0.5	0.6	0.6	0.4	1.0	0.5	0.4	0.5	0.7	0.5	1.0	0.8
Flour Data																		
Lab Mill Extraction (%)	72.9	72.1	70.8	67.7	66.7	68.4	70.6	67.3	66.2	67.4	67.1	68.3	69.7	67.9	73.7	71.7	67.1	69.1
Flour Color - *L	93.6	94.2	94.1	93.7	93.8	94.1	94.1	94.2	94.1	92.9	93.8	94.2	94.0	93.4	93.9	93.9	93.8	93.9
Flour Color - *a	-2.3	-2.8	-2.9	-3.2	-2.8	-2.9	-3.0	-3.4	-3.3	-2.8	-3.5	-3.0	-3.1	-2.4	-2.9	-2.9	-3.5	-2.9
Flour Color - *b	8.8	8.6	9.5	7.2	7.9	8.6	8.3	8.2	7.4	7.0	8.4	8.8	7.6	7.5	8.5	8.3	8.4	7.9
Flour Protein (%) 14% mb	8.6	8.2	7.9	8.3	8.3	8.8	7.9	7.6	7.7	8.9	8.2	8.4	8.7	9.0	7.9	8.0	8.2	7.8
Flour Ash (%) 14% mb	0.47	0.46	0.42	0.40	0.45	0.40	0.40	0.36	0.37	0.46	0.45	0.39	0.43	0.46	0.45	0.44	0.45	0.39
Wet Gluten (%)	21.8	21.0	15.3	21.7	22.0	23.5	20.5	20.7	20.5	24.6	21.4	22.7	23.8	22.0	18.6	17.9	21.4	19.6
Gluten Index	61.8	77.3	88.6	46.6	67.9	58.4	79.6	78.2	92.9	67.7	83.5	79.3	82.5	95.4	74.8	90.9	83.5	91.5
Falling Number (sec)	331	353	329	303	330	343	351	278	274	330	308	343	348	369	343	364	308	280
Amylograph (65g) (BU)	410	660	740	640	700	870	790	630	480	380	490	770	570	560	590	580	490	520
Starch Damage (%)	3.8	3.4	3.4	3.8	3.4	3.8	4.2	3.4	3.8	4.9	3.4	3.8	5.3	4.9	4.6	4.6	3.4	4.6
Dough Properties																		
Farinograph Peak (min)	1.5	1.5	1.5	1.0	1.5	1.0	1.0	1.0	1.3	1.0	1.0	1.0	2.0	2.0	1.5	1.5	1.0	1.5
Farinograph Stability (min)	2.5	3.5	2.0	2.0	2.5	2.5	2.0	2.0	1.0	2.5	2.5	2.5	3.0	3.5	3.5	3.0	2.5	2.5
Farinograph Absorption (%)	52.0	52.1	50.5	52.1	50.9	49.8	50.7	51.2	53.1	50.5	52.3	50.9	53.4	53.3	55.0	53.6	52.3	52.2
Alveograph P (mm)	39	44	32	33	36	38	33	38	32	36	39	37	48	54	60	50	39	36
Alveograph L (mm)	82	75	91	67	61	69	71	72	93	58	67	73	71	65	51	46	67	68
Alveograph W (10-4 joules)	91	91	71	62	70	85	73	81	79	71	86	80	101	108	105	80	86	71
Alveograph P/L	0.48	0.59	0.35	0.49	0.59	0.55	0.46	0.53	0.34	0.62	0.58	0.51	0.68	0.83	1.18	1.09	0.58	0.53
Baking Evaluation																		
Crumb Grain	5	5	4	4	5	6	5	6	7	6	5	6	7	5	5	5	5	5
Crumb Texture	6	5	5	6	6	5	5	4	6	6	5	5	7	6	5	6	5	5
Loaf Volume (cc)	675	725	600	700	700	750	625	750	750	750	725	725	725	725	700	675	725	650
Cookie Spread Ratio	8.3	8.9	8.5	8.6	9.7	9.6	8.1	10.1	9.4	9.1	9.7	9.5	8.4	7.6	7.5	8.3	9.7	8.6

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

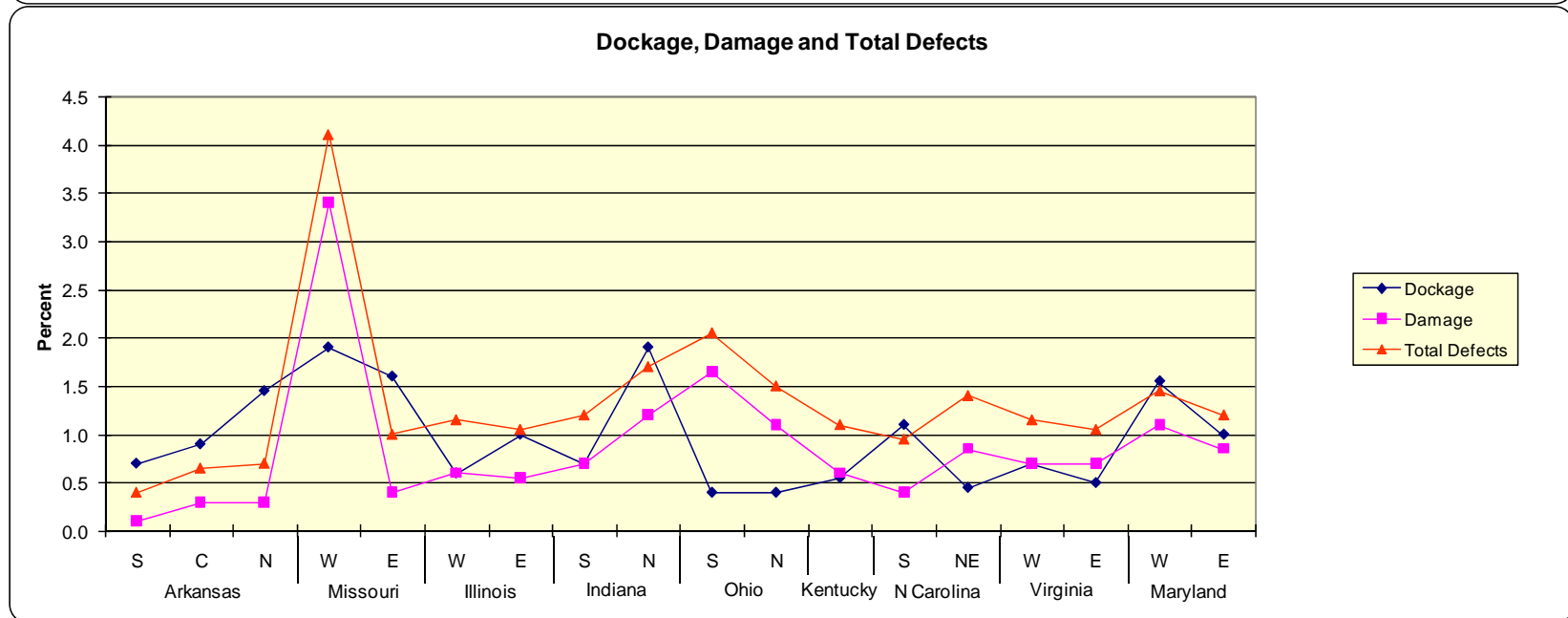
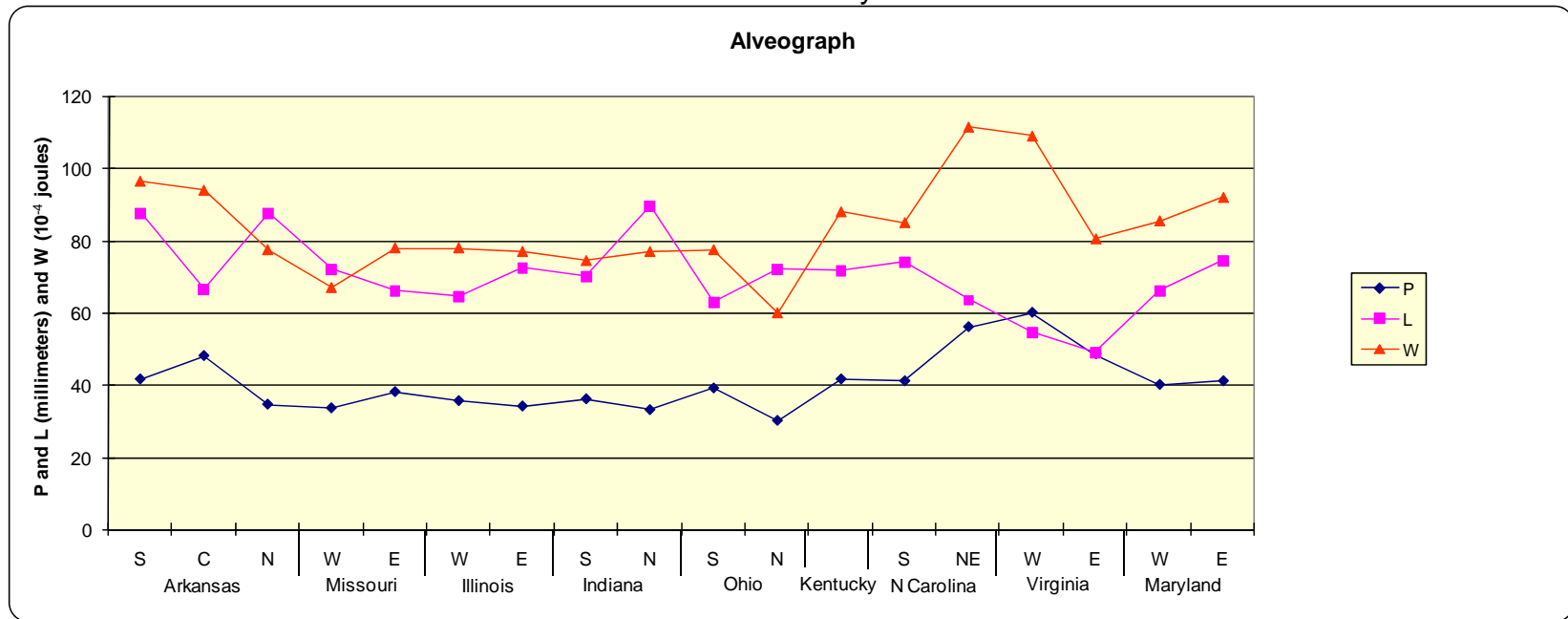
Comparisons of 2008 Results For Selected Quality Factors



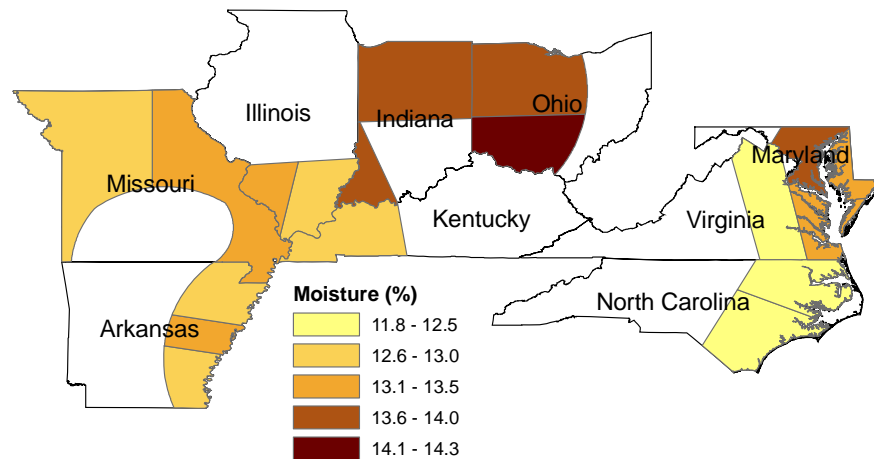
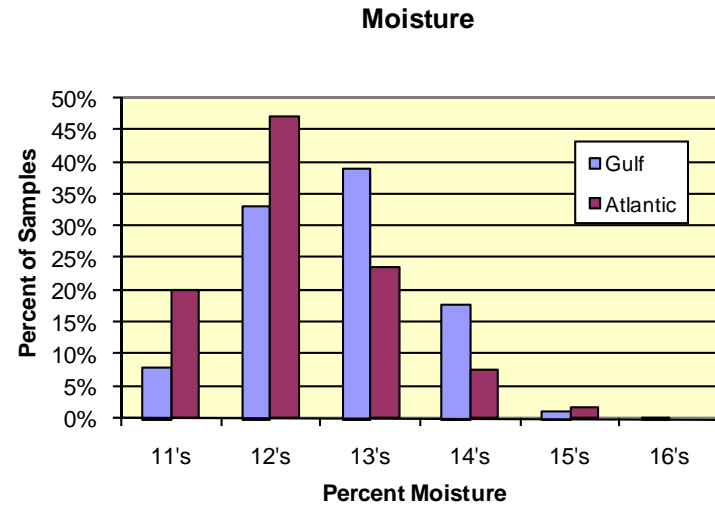
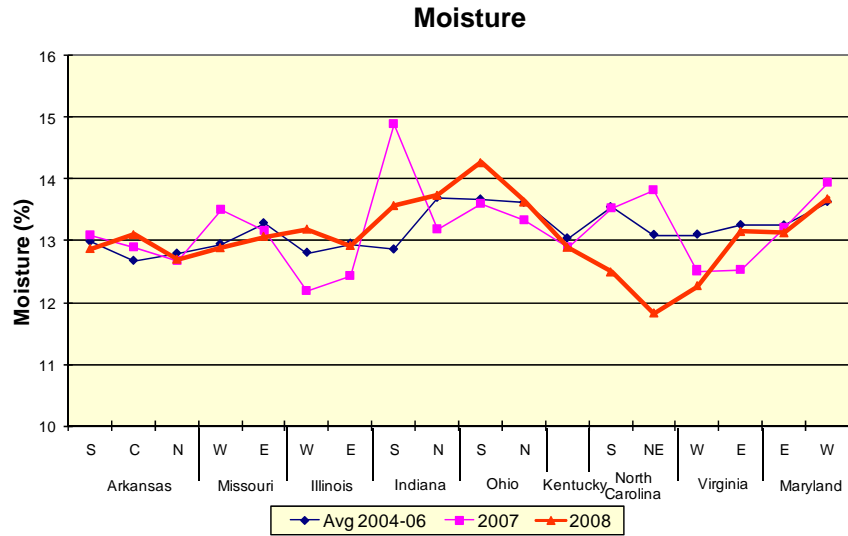
Comparisons of 2008 Results For Selected Quality Factors



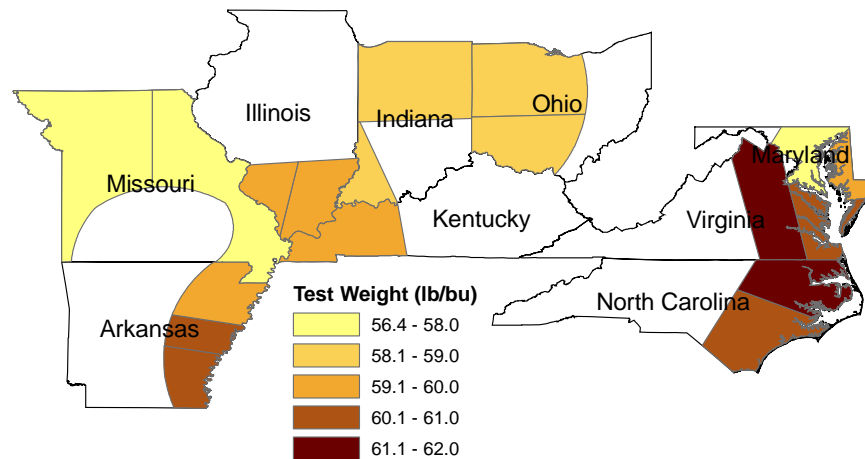
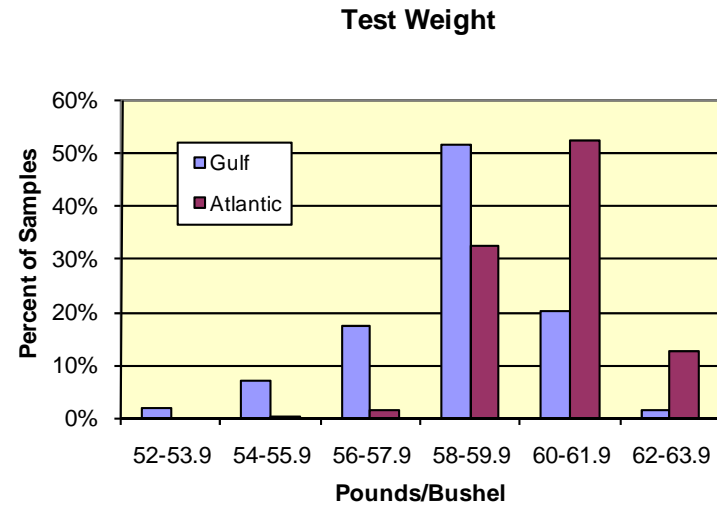
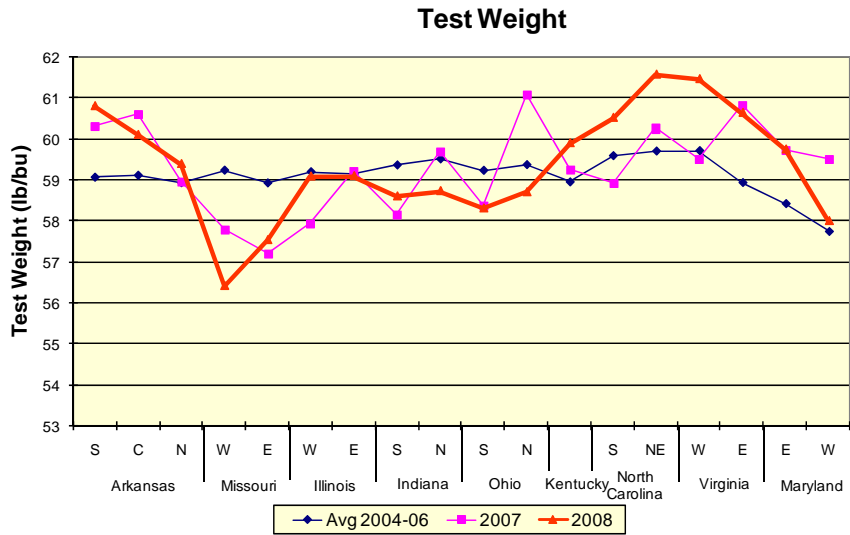
Comparisons of 2008 Results For Selected Quality Factors



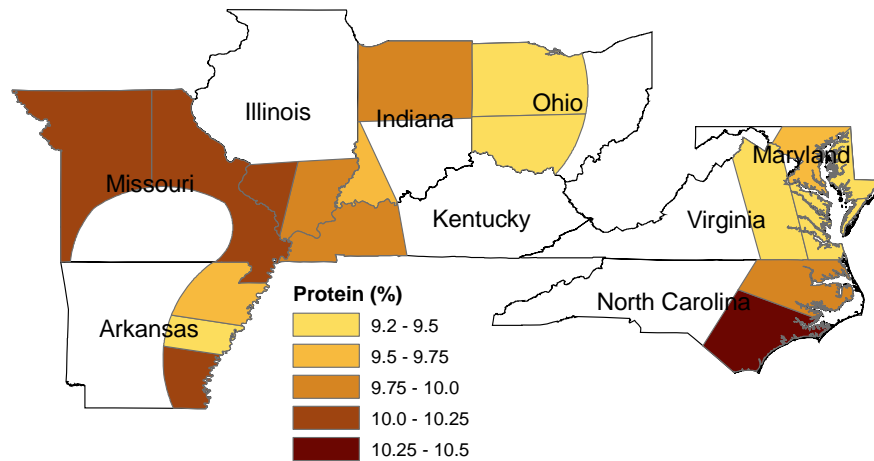
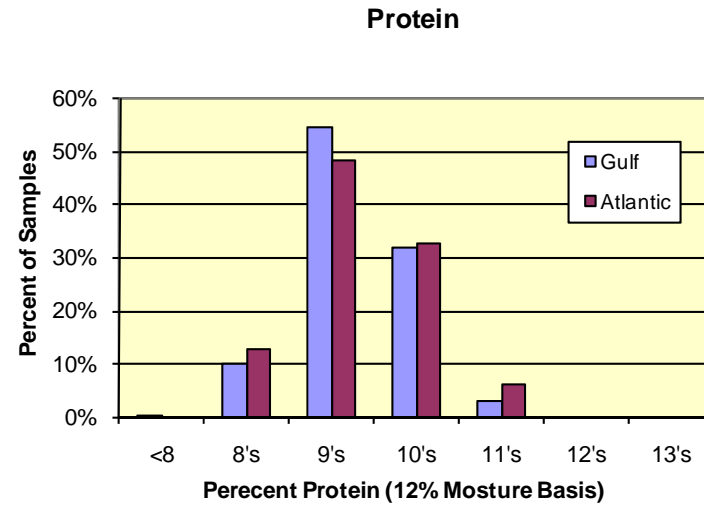
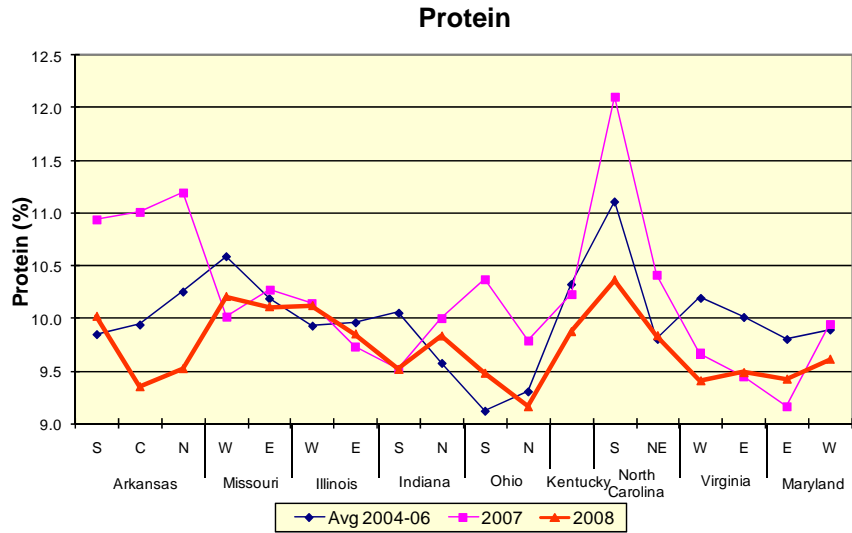
Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors



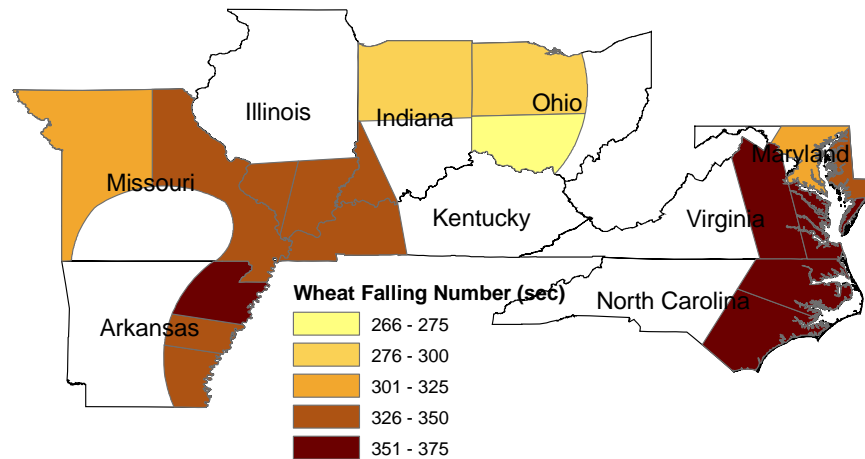
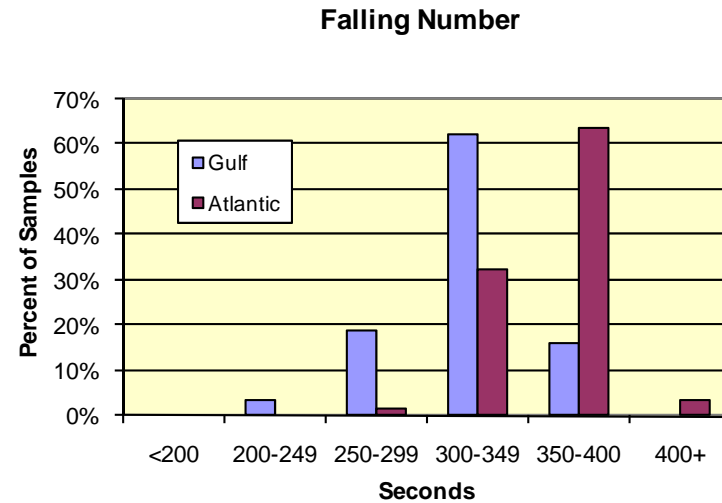
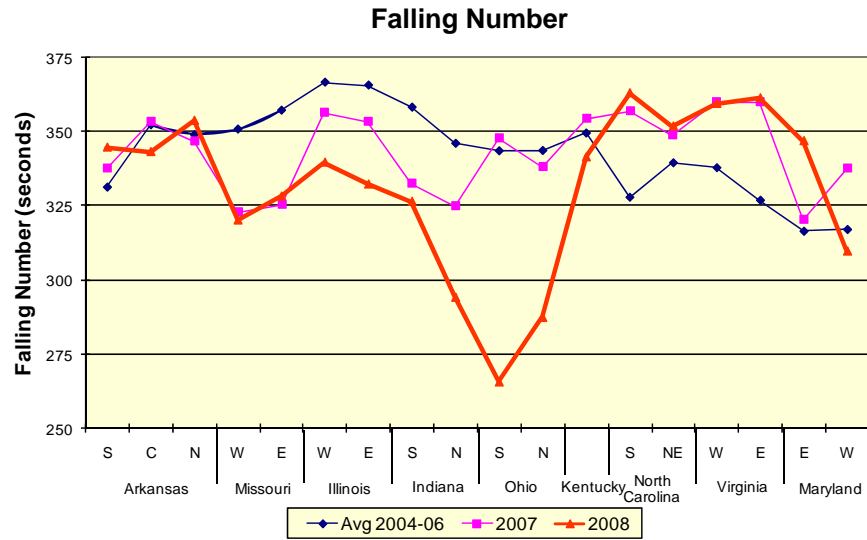
Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors



Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors

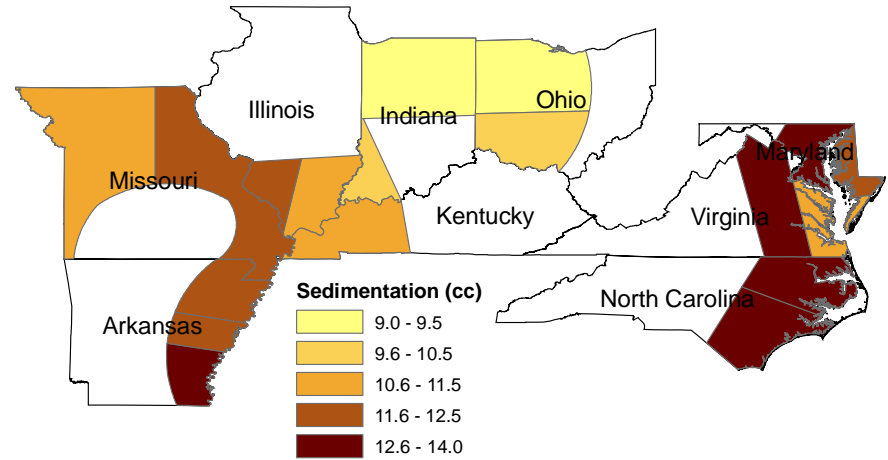
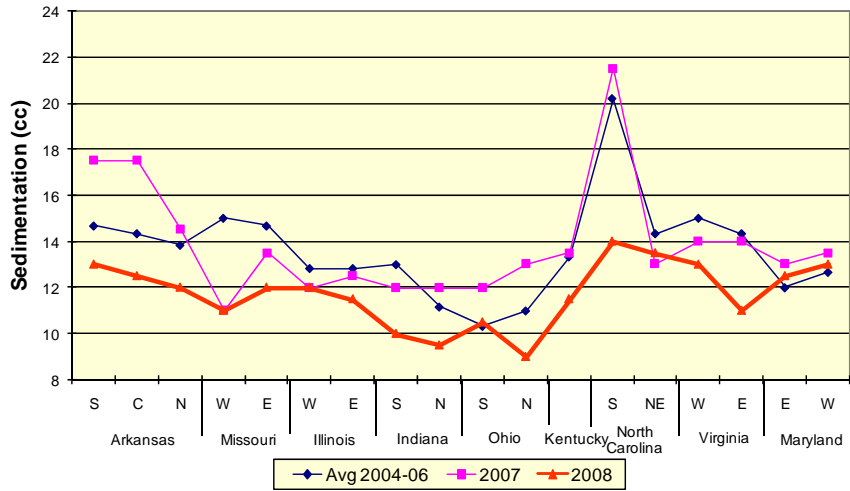


Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors

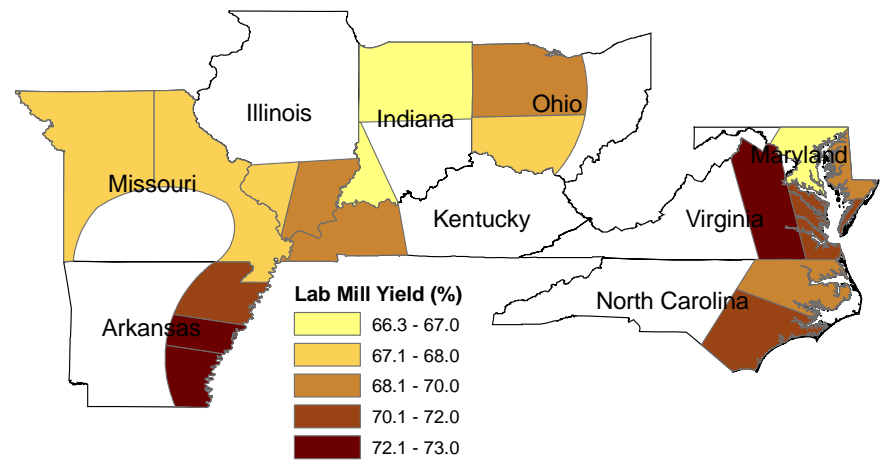
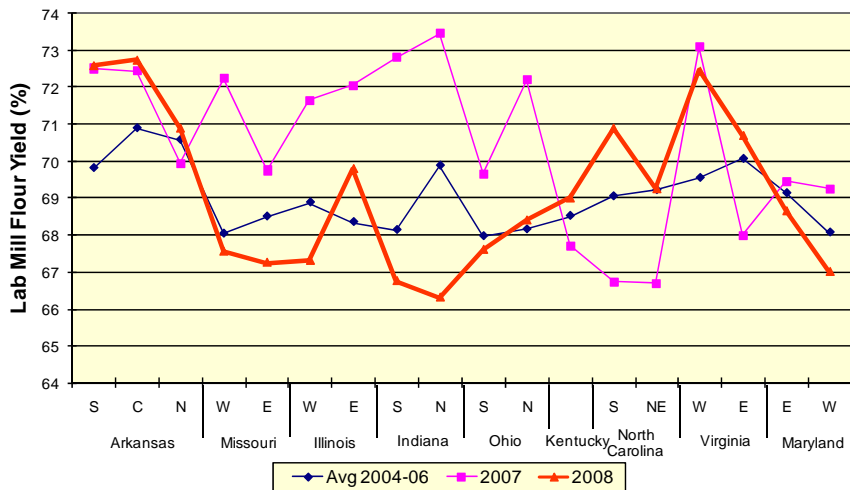


Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors

Sedimentation

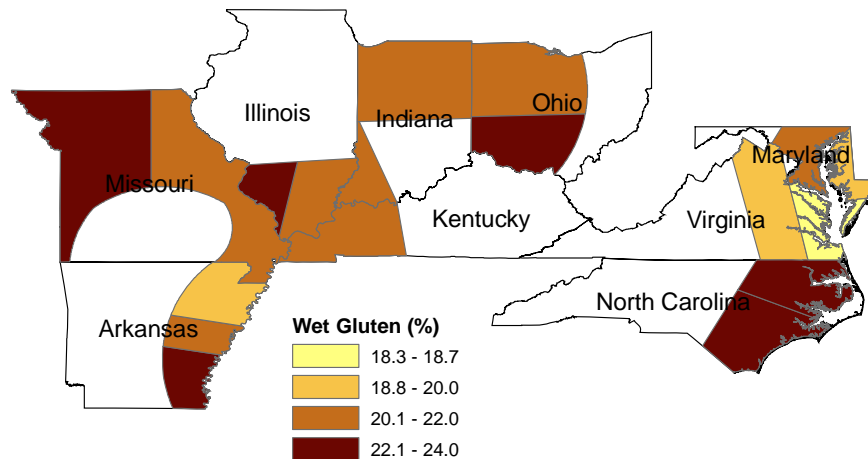
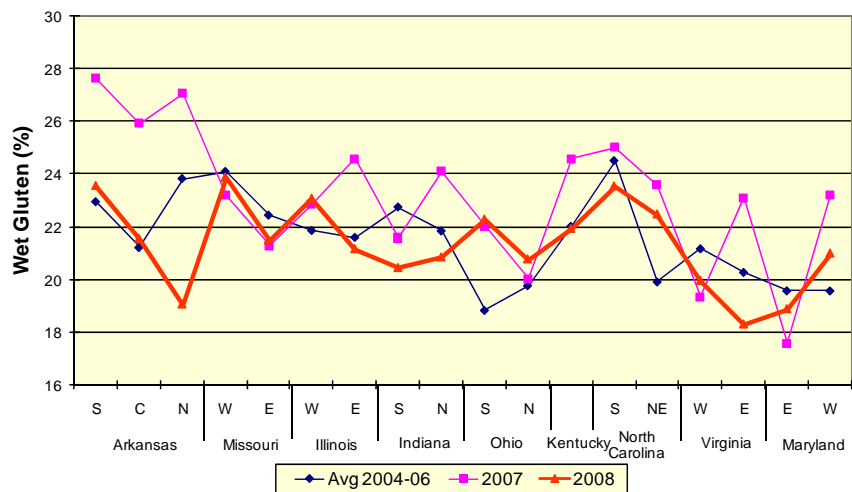


Laboratory Mill Flour Yield

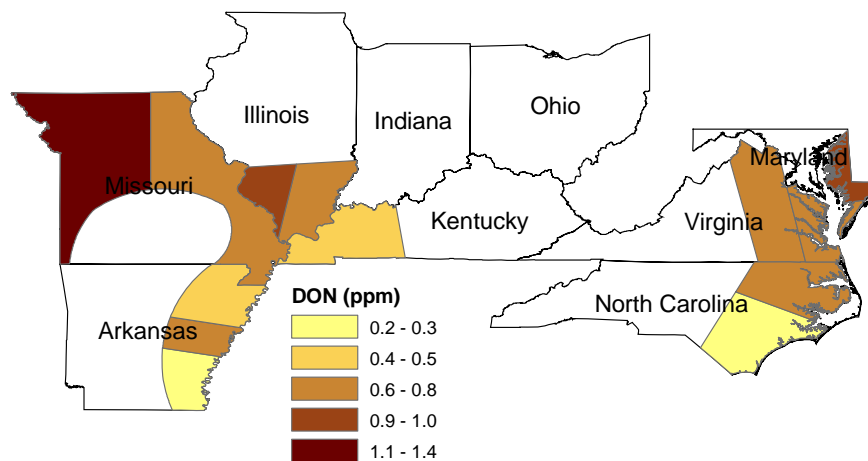
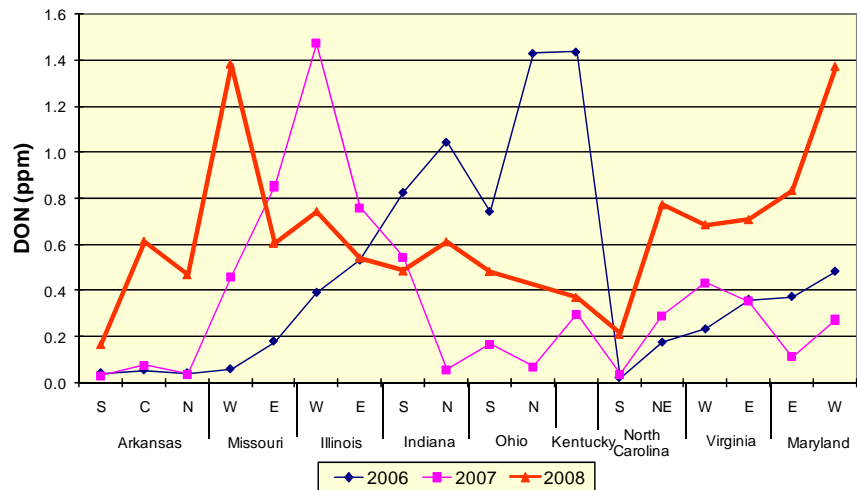


Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors

Wet Gluten

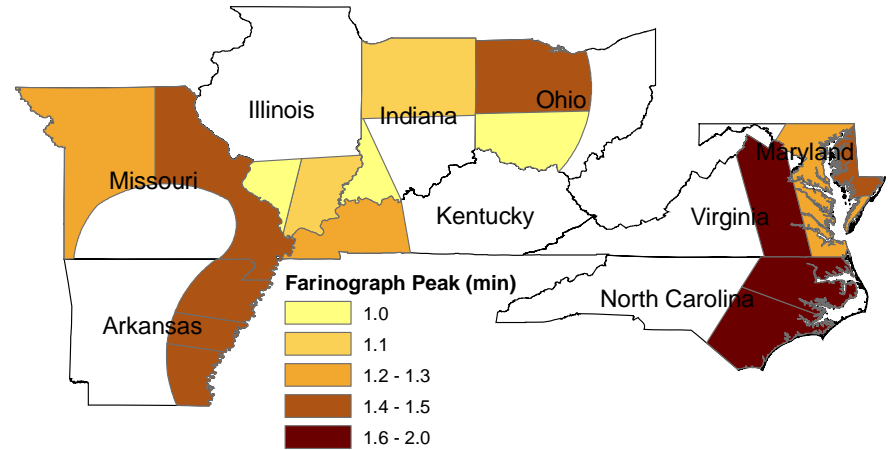
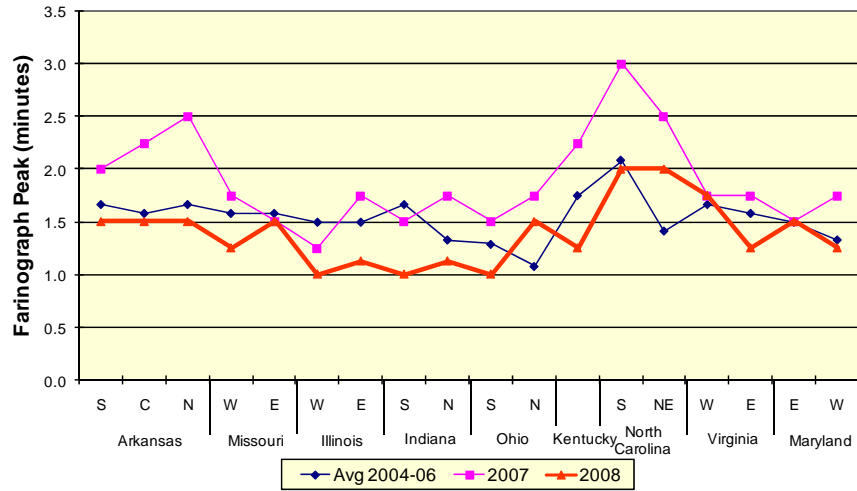


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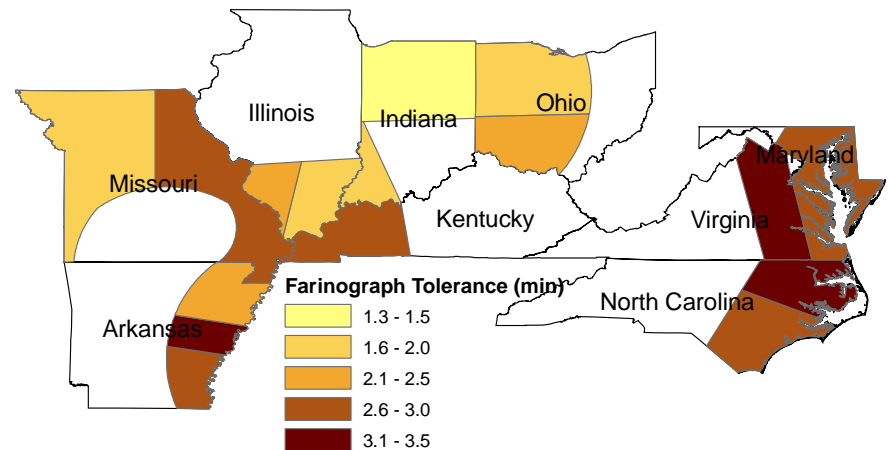
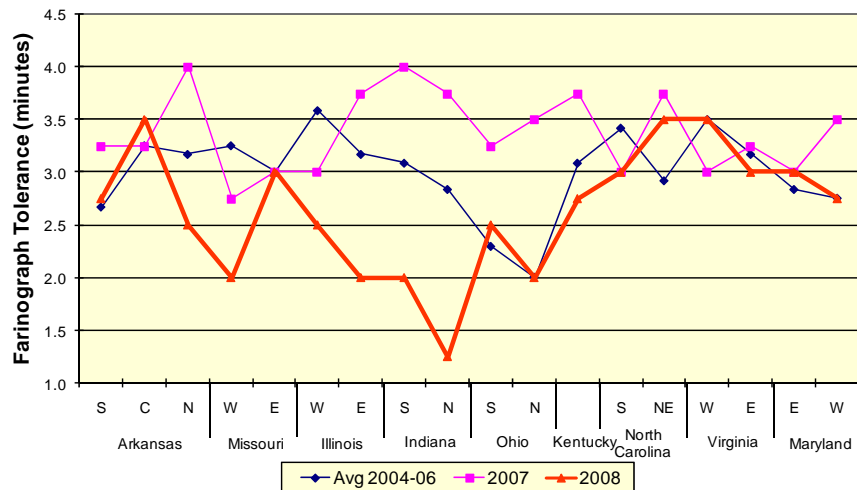


Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors

Farinograph Peak

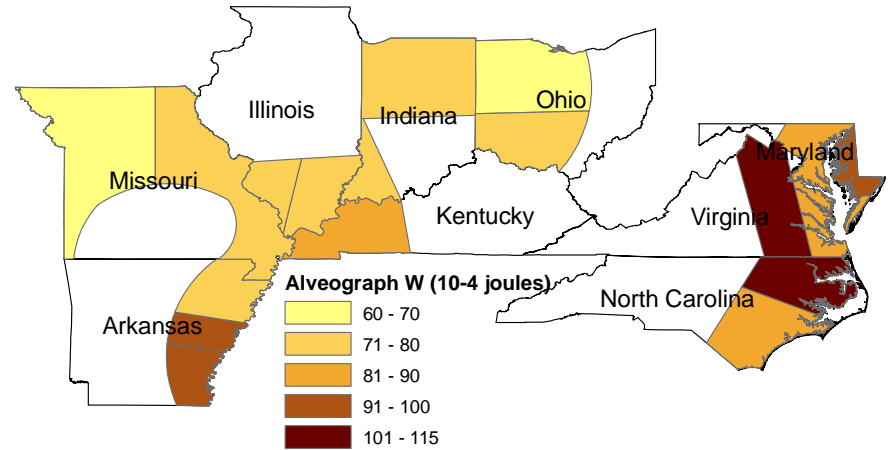
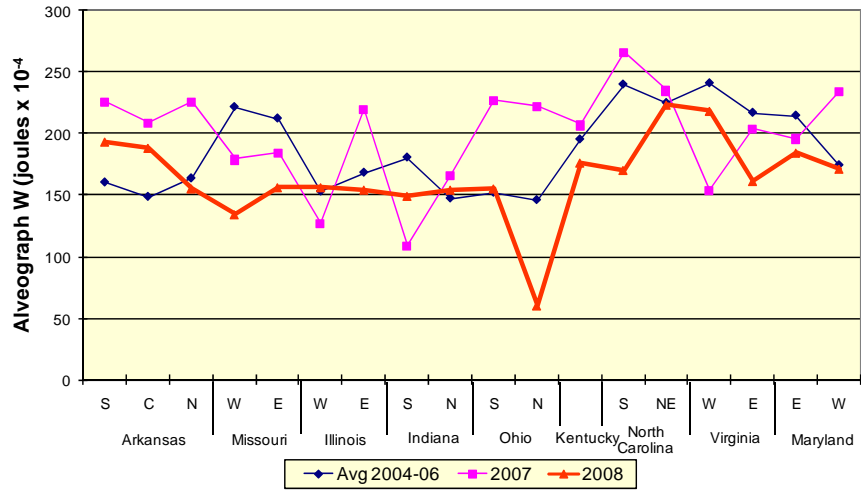


Farinograph Tolerance



Distribution of 2008 Results and Comparisons with Previous Years For Selected Quality Factors

Alveograph W Value



Alveograph P/L

