



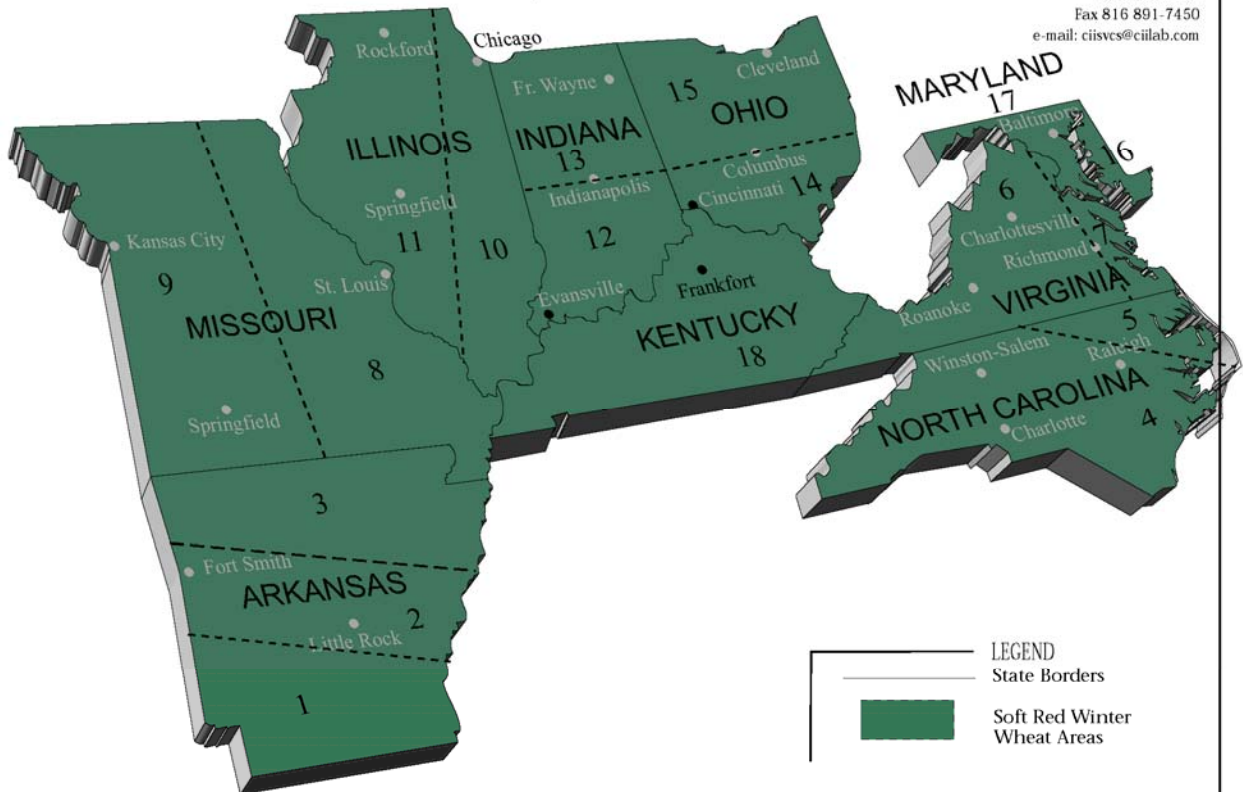
**Soft Red Winter Wheat  
Quality Survey**

**2006**

## 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.**

# 2006 Soft Red Winter Quality Summary

## Soft Red Winter 2006 Survey - All Samples

	Composite Average			East Coast			Gulf Ports		
	2006	2005	5-Year	2006	2005	5-Year	2006	2005	5-Year
<b>Wheat Grade Data</b>									
Test Weight (lb/bu)	59.8	60.3	59.1	59.0	60.3	58.8	60.0	60.3	59.2
Test Weight (kg/hl)	78.7	79.3	77.8	77.7	79.4	77.4	79.0	79.3	77.9
Damage - Total (%)	0.9	0.2	1.2	2.3	0.6	1.4	0.6	0.2	1.2
Foreign Material (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Shrunken and Broken (%)	0.5	0.8	0.7	0.4	0.5	0.7	0.6	0.8	0.7
Total Defects (%)	1.5	1.1	1.9	2.8	1.1	2.2	1.1	1.0	2.0
Grade	2	1	2	2	1	2	1	1	2
<b>Wheat Non-Grade Data</b>									
Dockage (%)	0.8	0.9	0.7	0.5	0.5	0.9	0.8	0.9	0.7
Moisture (%)	12.8	13.1	13.1	13.1	13.2	13.3	12.7	13.1	13.1
Protein (%) 12%/0% mb	9.9/11.3	9.5/10.8	10.1/11.5	9.8/11.2	9.8/11.1	10.7/12.1	10.0/11.3	9.4/10.7	10.0/11.4
Wheat Ash (%) 14%/0% mb	1.46/1.70	1.53/1.78	1.57/1.82	1.34/1.56	1.49/1.73	1.55/1.80	1.49/1.73	1.54/1.79	1.57/1.83
1000 Kernel Weight (g)	33.7	33.8	32.9	35.7	35.5	32.5	33.1	33.4	32.9
Wheat Falling Number (sec)	318	360	355	264	356	355	333	362	356
Kernel Size (%) lg/med/sm	85/14/01	84/15/01	82/17/01	90/10/00	87/12/01	80/19/01	84/15/01	84/15/01	82/17/01
Single Kernel Hardness	18.9	18.4	22.1	8.7	22.4	22.4	21.6	17.4	22.0
Single Kernel Weight (mg)	33.9	24.6	31.0	35.8	35.0	32.7	33.4	22.1	30.5
Single Kernel Diameter (mm)	2.34	1.72	2.19	2.38	2.43	2.30	2.32	1.55	2.18
Sedimentation (cc)	14.7	12.8	14.3	14.8	14.3	16.8	14.7	12.5	13.8
DON (ppm)	0.5	NA	NA	0.5	NA	NA	0.5	NA	NA
<b>Flour Data</b>									
Flour Extraction Rate (%)	68.0	70.1	69.8	68.8	68.5	69.3	67.8	70.5	69.8
Flour Color - *L	93.5	92.9	93.1	93.2	93.4	93.1	93.5	92.8	93.1
Flour Color - *a	-3.0	-3.0	-3.2	-3.1	-3.2	-3.3	-3.0	-2.9	-3.2
Flour Color - *b	8.0	8.2	8.0	7.6	8.2	8.0	8.1	8.2	8.0
Flour Protein (%) 14%/0% mb	8.2/9.6	7.9/9.2	8.5/9.9	8.3/9.6	8.1/9.4	8.9/10.4	8.2/9.6	7.9/9.2	8.4/9.8
Flour Ash (%) 14%/0% mb	0.40/0.47	0.43/0.50	0.44/0.51	0.39/0.46	0.43/0.50	0.44/0.51	0.40/0.47	0.43/0.50	0.44/0.51
Wet Gluten (%)	21.8	20.9	22.2	18.9	20.3	23.1	22.6	21.0	22.0
Gluten Index	83.6	91.7		91.7	95.4		81.5	90.9	
Falling Number (sec)	307	343	348	260	346	347	319	342	348
Amylograph (65g) (BU)	446	674	532	234	596	509	501	693	538
Starch Damage (%)	4.0	4.3	4.4	4.0	4.1	NA	4.0	4.3	NA
<b>Dough Properties</b>									
Farinograph Peak (min)	1.7	1.3	1.6	1.6	1.4	2.0	1.7	1.3	1.6
Farinograph Stability (min)	3.0	2.9	3.0	2.7	3.3	3.3	3.1	2.8	3.0
Farinograph Absorption (%)	52.5	52.3	52.6	52.8	53.1	53.4	52.4	52.1	52.4
Alveograph P (mm)	39	39	36	44	46	40	38	37	35
Alveograph L (mm)	100	90	99	96	86	106	101	91	98
Alveograph W (10-4 joules)	92	98	91	109	115	108	88	94	87
Alveograph P/L	0.39	0.43	0.36	0.45	0.54	0.38	0.37	0.41	0.36
<b>Baking Evaluation</b>									
Crumb Grain	5.0	5.5	5.6	5.3	5.9	5.8	4.9	5.5	5.5
Crumb Texture	5.3	5.8	5.8	5.6	5.7	6.1	5.2	5.8	5.8
Loaf Volume (cc)	687	707	730	699	729	745	684	701	728
Cookie Spread Ratio	8.4	8.5	8.3	8.5	8.1	8.1	8.3	8.6	8.4
<b>% Area Production</b>	100.0%			20.9%			79.1%		

## 2006 State Summary All Samples

	Arkansas	Missouri	Illinois	Indiana	Ohio	Kentucky	North Carolina	Virginia	Maryland
<b>Wheat Grade Data - from Individual Samples</b>									
Test Weight (Lab) (lb/bu)	59.8	58.9	58.5	59.5	59.4	59.4	59.4	59.9	57.4
Count	59	44	34	39	52	22	41	29	28
<b>Wheat Grade Data - from Area Composite Samples</b>									
Test Weight (lb/bu)	60.8	59.4	59.0	60.0	59.7	59.9	60.2	60.3	58.0
Test Weight (kg/hl)	79.9	78.2	77.7	79.0	78.6	78.8	79.2	79.3	76.3
Damage - Total (%)	0.2	0.6	0.4	0.6	0.7	1.9	2.1	2.2	2.4
Foreign Material (%)	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1
Shrunken and Broken (%)	0.7	0.5	0.6	0.4	0.3	0.5	0.6	0.3	0.3
Total Defects (%)	0.9	1.2	1.0	1.1	1.0	2.3	2.7	2.5	2.8
Grade	1	2	2	4	2	2	3	2	3
<b>Wheat Non-Grade Data - from Individual Samples</b>									
Moisture (%)	12.3	13.1	12.4	13.4	13.7	12.6	13.5	12.9	13.4
Protein (%) 12%/0% mb	10.3/11.7	10.4/11.8	9.7/11.0	9.3/10.5	8.7/9.9	10.1/11.4	10.6/12.0	9.5/10.8	9.3/10.6
Ash (%) 14%/0% mb	1.5/1.78	1.5/1.71	1.5/1.74	1.5/1.73	1.4/1.65	1.5/1.73	1.4/1.63	1.3/1.53	1.3/1.53
1000 Kernel Weight (g)	31.7	32.9	32.5	34.0	36.6	33.2	35.8	37.0	35.2
Wheat Falling Number (sec)	315	342	356	334	328	362	283	283	248
DON (ppm)	0.0	0.1	0.5	1.2	1.2	1.1	0.0	0.3	0.9
<b>Wheat Non-Grade Data - from Area Composite Samples</b>									
Dockage (%)	1.3	0.8	0.5	0.8	0.4	0.5	0.9	0.4	0.3
Moisture (Lab) (%)	12.2	13.3	12.6	13.1	13.7	12.3	13.3	13.1	13.0
Protein (Lab) (%)	10.4	10.5	9.6	9.2	9.0	10.2	10.7	9.6	9.4
Kernel Size (%) lg/med/sm	81/18/01	84/15/01	82/17/01	88/12/00	90/10/00	83/16/01	89/10/01	91/09/00	89/11/00
Single Kernel Hardness	26.4	21.0	17.9	18.1	13.8	26.6	17.2	14.5	2.2
Single Kernel Weight (mg)	32.6	32.4	33.0	34.1	36.6	32.6	37.0	36.1	35.1
Single Kernel Diameter (mm)	2.29	2.27	2.29	2.37	2.44	2.33	2.50	2.37	2.32
Sedimentation (cc)	15.6	16.7	13.9	12.8	12.7	14.0	18.8	15.7	12.4
DON (ppm)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Flour Data</b>									
Flour Extraction Rate (%)	68.5	66.9	67.3	67.5	68.0	66.9	68.3	68.1	69.3
Flour Color - *L	93.7	93.5	93.6	93.5	93.6	92.9	93.3	93.2	93.2
Flour Color - *a	-3.0	-2.7	-2.8	-3.1	-3.3	-3.0	-2.9	-3.1	-3.2
Flour Color - *b	8.0	8.2	8.3	8.1	7.7	8.9	7.5	8.5	7.4
Flour Protein (%) 14%/0% mb	8.6/10.0	8.4/9.8	8.1/9.4	7.9/9.2	7.4/8.6	8.3/9.7	9.0/10.5	7.9/9.2	8.0/9.3
Flour Ash (%) 14%/0% mb	0.40/0.47	0.40/0.47	0.41/0.48	0.39/0.46	0.39/0.45	0.41/0.48	0.42/0.49	0.39/0.45	0.38/0.44
Wet Gluten (%)	24.8	23.4	22.1	21.4	18.5	21.7	23.1	17.5	17.4
Gluten Index	79.5	76.2	70.5	85.1	91.6	94.9	85.1	86.9	96.5
Falling Number (sec)	293	350	353	320	300	361	265	274	253
Amylograph (65g) (BU)	371	697	697	611	435	485	240	304	209
Starch Damage (%)	4.2	3.6	3.7	4.0	3.9	4.4	4.2	3.9	3.9
<b>Dough Properties</b>									
Farinograph Peak (min)	2.0	1.8	1.7	1.5	1.2	2.0	2.0	1.5	1.4
Farinograph Stability (min)	3.3	3.1	3.5	3.4	2.3	3.3	3.2	2.9	2.4
Farinograph Absorption (%)	52.9	52.2	51.1	51.7	52.1	53.3	54.0	53.2	52.0
Alveograph P (mm)	39	40	27	37	38	46	45	49	41
Alveograph L (mm)	109	115	103	85	83	84	109	84	94
Alveograph W (10-4 joules)	93	105	68	83	80	93	119	116	101
Alveograph P/L	0.35	0.35	0.26	0.44	0.46	0.54	0.41	0.59	0.44
<b>Baking Evaluation</b>									
Crumb Grain	5.1	4.3	4.4	5.6	5.0	5.0	5.5	5.3	5.2
Crumb Texture	5.4	4.8	5.1	4.9	5.2	5.0	5.8	5.7	5.4
Loaf Volume (cc)	678	697	700	709	672	675	690	719	697
Cookie Spread Ratio	8.2	8.9	8.5	8.8	8.3	7.6	7.8	8.4	8.9

**Soft Red Winter 2006 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
<b>Wheat Grade Data - from Individual Samples</b>																		
Test Weight (Lab) (lb/bu)	60.0	59.6	59.9	58.7	59.0	58.5	58.5	59.1	59.9	59.6	59.2	59.4	59.7	59.0	60.3	59.5	57.2	57.5
Count	16	24	19	24	20	18	16	15	24	12	40	22	16	25	8	21	12	16
<b>Wheat Grade Data - from Area Composite Samples</b>																		
Test Weight (lb/bu)	60.7	60.2	61.6	59.1	59.7	58.9	59.4	59.7	60.4	59.9	59.7	59.9	60.6	59.6	60.4	60.2	57.6	58.1
Test Weight (kg/hl)	79.9	79.2	81.0	77.8	78.6	77.5	78.2	78.6	79.5	78.8	78.5	78.8	79.7	78.4	79.5	79.2	75.9	76.5
Damage - Total (%)	0.3	0.1	0.3	0.4	0.8	0.4	0.5	0.6	0.7	0.5	0.9	1.9	1.3	3.2	3.3	1.2	4.6	1.9
Foreign Material (%)	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Shrunken and Broken (%)	0.7	0.7	0.7	0.6	0.5	0.7	0.5	0.6	0.3	0.3	0.4	0.5	0.8	0.4	0.3	0.4	0.4	0.3
Total Defects (%)	1.0	0.9	1.0	1.1	1.3	1.1	1.0	1.3	0.9	0.8	1.2	2.3	2.2	3.6	3.6	1.6	5.1	2.2
Grade	1	1	1	2	2	2	2	4	1	2	2	2	4	2	2	1	3	2
<b>Wheat Non-Grade Data - from Individual Samples</b>																		
Moisture (%)	12.4	12.4	12.2	13.1	13.0	12.2	12.9	13.0	14.0	13.9	13.6	12.6	13.8	13.0	13.0	12.9	13.7	13.3
Protein (%) 12% mb	10.5	10.1	10.4	10.8	10.1	9.7	9.6	9.6	8.8	8.7	8.7	10.1	11.4	9.3	9.7	9.2	9.0	9.4
Ash (%) 14% mb	1.62	1.51	1.49	1.48	1.47	1.47	1.57	1.55	1.41	1.44	1.40	1.48	1.44	1.34	1.28	1.35	1.39	1.30
1000 Kernel Weight (g)	32.2	31.0	32.2	31.7	33.7	32.2	33.0	32.6	35.6	36.9	36.5	33.2	35.7	36.1	36.9	37.0	34.3	35.4
Wheat Falling Number (sec)	287	324	325	334	346	357	355	335	332	339	321	362	286	280	304	265	245	249
DON (ppm)	0.0	0.1	0.0	0.0	0.1	0.6	0.3	1.5	0.8	1.1	1.2	1.1	0.0	0.1	0.0	0.5	1.4	0.7
<b>Wheat Non-Grade Data - from Area Composite Samples</b>																		
Dockage (%)	1.9	1.2	1.0	0.8	0.9	0.4	0.9	1.1	0.4	0.5	0.4	0.5	1.1	0.7	0.5	0.3	0.4	0.3
Moisture (%)	12.4	12.5	11.7	13.0	13.5	12.5	12.9	12.5	13.9	14.2	13.3	12.3	13.4	13.2	13.5	12.8	13.4	12.9
Protein (%) 12% mb	10.6	10.2	10.5	10.8	10.3	9.6	9.7	9.7	8.7	9.4	8.8	10.2	11.5	9.6	9.8	9.4	9.3	9.5
Kernel Size Large (Over 7) (%)	84	79	83	80	87	82	84	84	91	91	89	83	90	90	90	91	90	88
Kernel Size Medium (Over 9) (%)	16	20	16	20	13	18	15	15	9	9	11	16	9	10	9	9	9	12
Kernel Size Small (Thru 9) (%)	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0
Single Kernel Hardness	25.5	25.7	28.1	21.4	20.7	17.4	19.1	20.9	14.7	15.4	12.7	26.6	19.6	13.5	16.0	13.2	6.5	1.0
Single Kernel Weight (mg)	33.6	31.7	32.8	31.2	33.1	33.1	32.7	32.7	35.8	37.4	36.0	32.6	37.3	36.5	35.3	36.7	35.8	35.0
Single Kernel Diameter (mm)	2.36	2.24	2.31	2.22	2.31	2.30	2.29	2.31	2.44	2.47	2.42	2.33	2.53	2.45	2.33	2.41	2.37	2.30
Sedimentation (cc)	18	15	15	17	17	14	14	14	12	13	13	14	22	14	17	15	12	13
DON (ppm)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Flour Data</b>																		
Flour Extraction Rate (%)	68.5	68.0	69.1	66.9	67.0	67.1	68.0	66.6	68.7	67.4	68.5	66.9	68.0	68.8	68.1	68.1	69.1	69.4
Flour Color - *L	93.6	93.7	93.7	93.4	93.6	93.7	93.4	93.5	93.6	93.4	93.7	92.9	93.1	93.5	93.1	93.3	93.2	93.2
Flour Color - *a	-3.0	-3.1	-3.1	-2.6	-2.8	-2.9	-2.8	-2.9	-3.5	-3.3	-3.3	-3.0	-2.8	-3.0	-3.2	-3.1	-3.2	-3.2
Flour Color - *b	7.9	8.1	8.1	8.0	8.3	8.4	8.2	8.0	8.3	7.7	7.7	8.9	7.4	7.6	8.7	8.3	7.5	7.4
Flour Protein (%) 14% mb	8.9	8.5	8.6	8.9	8.1	8.0	8.3	8.0	7.7	7.5	7.3	8.3	9.6	8.1	8.2	7.8	7.5	8.2
Flour Ash (%) 14% mb	0.43	0.40	0.40	0.41	0.40	0.41	0.42	0.41	0.38	0.40	0.39	0.41	0.44	0.40	0.39	0.39	0.37	0.39
Wet Gluten (%)	25.8	23.0	26.2	25.5	22.0	22.4	21.3	20.8	22.1	17.6	19.1	21.7	27.0	17.3	18.2	16.8	14.7	18.1
Gluten Index	68.1	82.9	84.4	81.2	73.1	73.1	64.3	83.0	87.6	85.8	95.4	94.9	80.8	91.8	85.7	88.0	91.6	97.9
Falling Number (sec)	263	298	313	353	349	355	348	341	295	318	290	361	286	235	294	257	262	251
Amylograph (65g) (BU)	205	395	475	740	670	720	640	645	570	420	445	485	270	195	360	255	205	210
Starch Damage (%)	3.8	4.4	4.2	3.6	3.6	3.6	4.0	3.8	4.2	4.2	3.8	4.4	4.6	3.8	3.8	4.0	4.4	3.8
<b>Dough Properties</b>																		
Farinograph Peak (min)	2.0	2.0	2.0	1.8	1.8	1.8	1.5	1.5	1.5	1.5	1.0	2.0	2.5	1.3	1.5	1.5	1.0	1.5
Farinograph Stability (min)	3.3	3.5	3.0	3.8	2.8	3.5	3.5	3.3	3.5	2.8	2.0	3.3	3.5	2.8	3.3	2.5	2.0	2.5
Farinograph Absorption (%)	52.5	52.7	53.7	52.4	52.1	51.1	51.2	52.2	51.2	52.2	52.1	53.3	54.7	53.0	53.1	53.3	53.1	51.7
Alveograph P (mm)	38	37	43	45	38	24	35	40	35	43	35	46	44	48	52	48	39	42
Alveograph L (mm)	121	110	100	101	124	106	96	88	81	86	81	84	113	104	88	80	69	101
Alveograph W (10-4 joules)	101	91	91	112	100	62	82	92	72	95	71	93	116	123	126	107	65	112
Alveograph P/L	0.31	0.33	0.43	0.45	0.30	0.23	0.37	0.45	0.43	0.50	0.43	0.54	0.38	0.46	0.59	0.59	0.57	0.41
<b>Baking Evaluation</b>																		
Crumb Grain	5.5	5.0	5.0	4.0	4.5	4.5	4.0	6.0	5.0	5.0	5.0	5.0	5.5	5.5	5.0	5.5	4.0	5.5
Crumb Texture	6.0	5.0	5.5	4.5	5.0	5.0	5.5	4.5	5.5	5.5	5.0	5.0	6.0	5.5	6.0	5.5	5.0	5.5
Loaf Volume (cc)	663	680	688	685	705	700	700	700	720	688	663	675	700	675	713	725	688	700
Cookie Spread Ratio	8.5	8.2	8.0	8.8	8.9	8.5	8.5	8.3	9.5	8.0	8.4	7.6	7.7	7.8	8.1	8.6	8.8	8.9

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

### Soft Red Winter 2006 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
<b>Wheat Grade Data - from Individual Samples</b>																		
Test Weight (Lab) (lb/bu)	60.6	60.2	60.0	59.1	59.2	58.9	59.2	59.8	59.6	60.0	59.7	60.5	60.6	59.6	61.3	60.6	57.5	58.0
Count	8	12	9	12	11	8	7	7	12	6	20	11	9	12	4	10	6	7
<b>Wheat Grade Data - from Area Composite Samples</b>																		
Test Weight (lb/bu)	61.1	60.4	62.8	59.4	60.0	59.3	60.0	60.2	60.2	60.5	59.9	61.1	61.6	60.0	61.7	61.4	57.8	58.3
Test Weight (kg/hl)	80.4	79.5	82.6	78.2	78.9	78.0	78.9	79.2	79.2	79.6	78.8	80.4	81.0	78.9	81.1	80.7	76.1	76.7
Damage - Total (%)	0.2	0.2	0.4	0.2	0.4	0.4	0.4	0.7	0.8	0.4	1.3	1.5	1.9	0.8	0.4	1.0	2.0	0.8
Foreign Material (%)	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1
Shrunken and Broken (%)	0.8	0.9	0.8	0.6	0.5	0.6	0.5	0.6	0.3	0.3	0.2	0.5	0.8	0.5	0.2	0.4	0.4	0.3
Total Defects (%)	1.0	1.2	1.3	0.9	0.9	1.0	1.0	1.4	1.1	0.7	1.5	2.0	2.8	1.3	0.6	1.4	2.5	1.2
Grade	1	1	1	2	1	2	1	4	1	1	2	1	4	1	1	1	3	2
<b>Wheat Non-Grade Data - from Individual Samples</b>																		
Moisture (%)	12.5	12.3	12.2	13.1	12.7	12.2	12.8	13.0	14.5	13.7	13.7	12.6	13.8	12.7	13.3	13.0	13.7	13.4
Protein (%) 12% mb	10.7	10.0	10.7	10.5	9.9	9.5	9.5	9.7	8.8	8.5	8.8	10.1	11.3	9.6	10.1	9.3	9.5	9.4
Ash (%) 14% mb	1.68	1.55	1.47	1.46	1.45	1.52	1.64	1.57	1.39	1.45	1.39	1.44	1.47	1.38	1.19	1.42	1.33	1.27
1000 Kernel Weight (g)	32.4	30.3	32.2	31.3	33.7	32.5	33.1	33.1	35.9	37.5	36.8	33.2	36.3	36.2	37.4	37.1	32.5	35.2
Wheat Falling Number (sec)	283	323	321	329	346	347	345	328	342	346	326	371	321	317	362	327	259	270
DON (ppm)	0.0	0.1	0.0	0.0	0.1	0.6	0.3	1.1	1.0	0.7	1.1	0.8	0.0	0.1	0.0	0.5	0.5	0.7
<b>Wheat Non-Grade Data - from Area Composite Samples</b>																		
Dockage (%)	1.8	1.4	0.3	0.6	0.5	0.2	0.8	1.1	0.3	0.5	0.3	0.7	1.5	1.0	0.4	0.3	0.4	0.3
Moisture (%)	12.4	12.3	11.7	13.1	13.4	13.0	13.1	12.5	14.4	14.2	13.5	12.4	13.8	13.1	14.2	13.1	13.5	13.0
Protein (%) 12% mb	10.7	10.1	10.6	10.7	10.1	9.6	9.4	9.7	8.6	9.9	8.7	10.2	11.3	10.1	9.9	9.4	9.7	9.4
Kernel Size Large (Over 7) (%)	84	76	85	80	87	81	82	85	91	93	86	83	90	89	91	91	90	86
Kernel Size Medium (Over 9) (%)	15	24	15	20	13	18	17	14	9	7	13	17	9	11	9	9	9	14
Kernel Size Small (Thru 9) (%)	1	1	0	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0
Single Kernel Hardness	23.1	34.4	27.8	25.1	22.6	18.3	24.4	20.4	14.7	16.7	16.2	30.6	25.3	16.6	19.6	17.9	8.8	0.2
Single Kernel Weight (mg)	35.0	30.3	32.9	31.4	32.8	34.2	31.4	33.5	36.1	37.9	36.7	32.8	36.9	36.1	35.3	36.2	35.3	34.5
Single Kernel Diameter (mm)	2.45	2.16	2.30	2.23	2.30	2.35	2.28	2.32	2.45	2.44	2.43	2.31	2.50	2.45	2.33	2.36	2.36	2.26
Sedimentation (cc)	19	14	15	16	17	14	12	14	12	10	15	15	22	16	17	16	11	10
DON (ppm)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Flour Data</b>																		
Flour Extraction Rate (%)	69.0	67.9	69.6	66.9	67.0	67.7	67.4	67.2	68.2	69.6	68.3	68.1	68.9	69.2	66.4	66.8	68.7	69.1
Flour Color - *L	93.4	93.7	93.8	93.4	93.5	93.7	93.5	93.6	93.7	93.4	93.8	92.6	92.9	93.7	93.4	93.5	93.3	93.2
Flour Color - *a	-3.0	-3.0	-3.0	-2.6	-2.8	-3.0	-2.8	-2.8	-3.4	-3.2	-3.3	-3.1	-2.5	-2.7	-3.2	-2.9	-3.2	-3.2
Flour Color - *b	8.1	8.1	8.0	8.0	8.7	8.8	8.1	7.8	8.2	7.8	7.9	9.3	8.0	8.0	9.2	8.6	7.5	7.5
Flour Protein (%) 14% mb	9.2	8.7	8.8	8.9	8.0	8.2	8.3	8.0	7.5	7.6	7.4	8.4	10.1	8.4	8.1	7.9	7.6	8.7
Flour Ash (%) 14% mb	0.46	0.40	0.40	0.42	0.38	0.44	0.41	0.42	0.37	0.40	0.40	0.42	0.49	0.39	0.42	0.39	0.39	0.38
Wet Gluten (%)	27.1	23.8	25.9	24.3	22.3	22.1	22.6	21.8	19.5	18.1	21.7	22.5	28.2	16.0	20.6	17.4	15.5	21.3
Gluten Index	65.4	82.1	89.9	80.3	75.1	78.5	63.9	90.4	82.1	84.4	95.0	95.1	73.2	85.1	80.9	82.9	89.7	95.8
Falling Number (sec)	263	295	294	337	344	361	344	342	282	277	310	355	343	313	356	311	268	276
Amylograph (65g) (BU)	190	300	450	720	660	700	580	650	590	170	570	530	400	330	630	440	270	300
Starch Damage (%)	4.2	4.6	4.6	3.8	3.8	3.4	4.6	3.4	4.2	4.2	3.8	4.2	4.9	3.4	3.8	3.8	4.2	3.8
<b>Dough Properties</b>																		
Farinograph Peak (min)	2.5	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.0	2.0	2.5	1.5	1.5	1.5	1.0	1.5
Farinograph Stability (min)	3.5	3.5	3.0	4.0	3.5	3.5	4.0	3.0	3.5	3.0	2.0	3.0	4.0	3.5	4.0	3.0	2.0	3.0
Farinograph Absorption (%)	52.2	52.5	53.6	51.4	51.9	51.3	51.8	51.8	50.5	52.9	52.1	53.9	55.7	53.0	53.5	52.5	53.1	52.6
Alveograph P (mm)	41	33	36	44	42	24	35	36	35	46	41	50	50	52	60	55	38	49
Alveograph L (mm)	130	112	114	100	135	106	95	98	74	100	82	89	114	102	88	81	64	111
Alveograph W (10-4 joules)	120	78	87	110	114	62	88	93	66	104	82	110	140	136	145	117	61	136
Alveograph P/L	0.32	0.29	0.32	0.44	0.31	0.23	0.37	0.37	0.47	0.46	0.50	0.56	0.44	0.51	0.68	0.68	0.59	0.44
<b>Baking Evaluation</b>																		
Crumb Grain	5	5	5	4	5	5	4	6	5	4	5	5	6	6	5	5	4	5
Crumb Texture	6	5	6	4	6	5	6	5	5	5	5	5	6	6	6	5	5	5
Loaf Volume (cc)	625	725	675	685	725	685	700	700	715	675	700	700	725	700	675	725	700	700
Cookie Spread Ratio	9.0	7.4	7.9	9.1	9.1	7.8	7.6	8.3	10.6	7.6	8.0	7.6	7.4	7.6	7.4	8.0	9.3	9.4

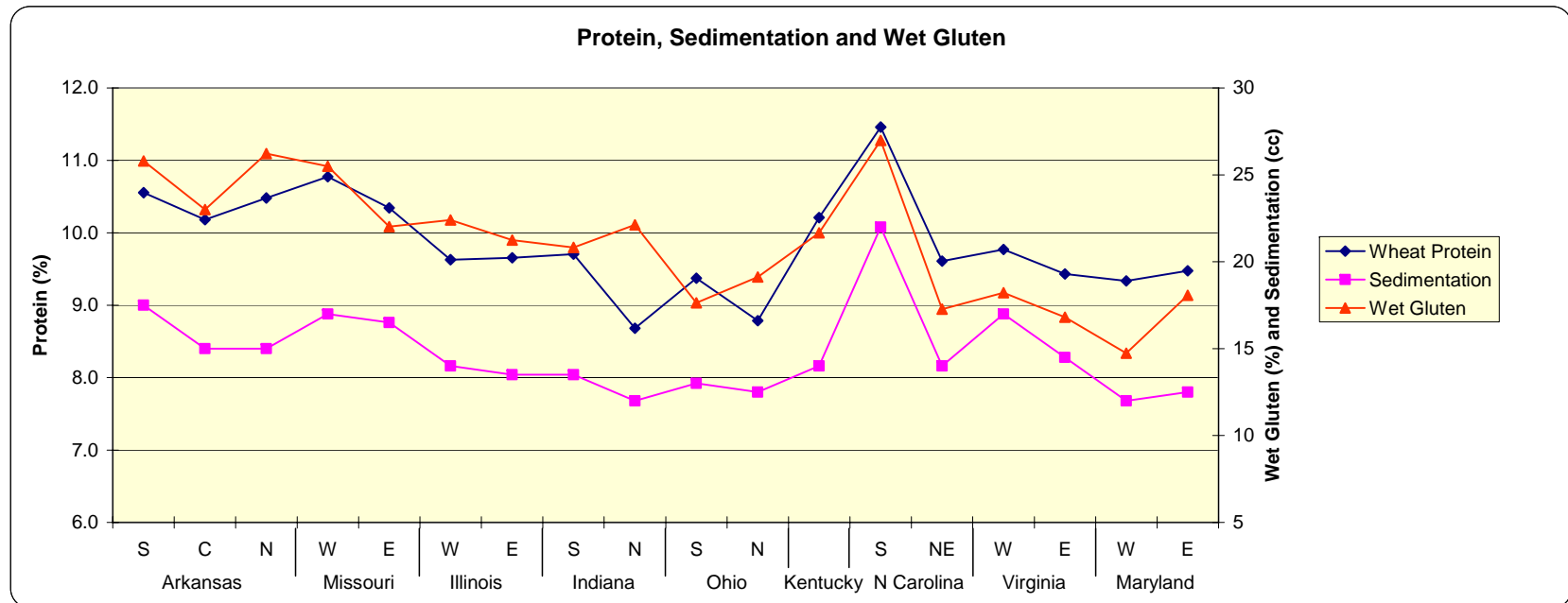
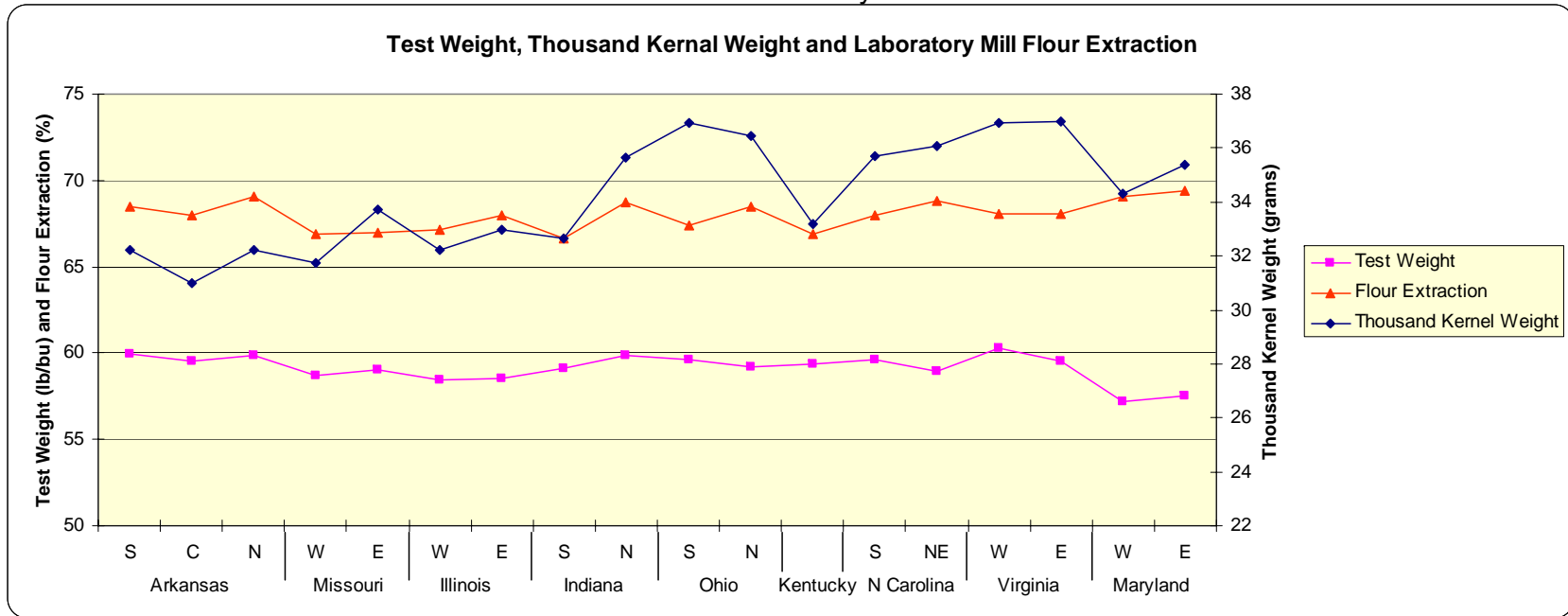
N-North, S-South, E-East, W-West, C-Central, NE-North East, NA-Not Available

**Soft Red Winter 2006 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
<b>Wheat Grade Data - from Individual Samples</b>																		
Test Weight (Lab) (lb/bu)	59.3	59.0	59.8	58.2	58.7	58.2	58.0	58.5	60.2	59.3	58.8	58.2	58.5	58.4	59.4	58.6	56.8	57.1
Count	8	12	10	12	9	10	9	8	12	6	20	11	7	13	4	11	6	9
<b>Wheat Grade Data - from Area Composite Samples</b>																		
Test Weight (lb/bu)	60.3	60.0	60.3	58.7	59.4	58.5	58.8	59.2	60.6	59.3	59.4	58.6	59.5	59.2	59.1	59.0	57.4	57.9
Test Weight (kg/hl)	79.3	78.9	79.3	77.3	78.2	77.0	77.4	77.9	79.7	78.0	78.2	77.1	78.3	77.9	77.8	77.6	75.6	76.2
Damage - Total (%)	0.4	0.0	0.2	0.6	1.1	0.3	0.5	0.4	0.5	0.6	0.5	2.2	0.7	5.6	6.2	1.4	7.2	2.9
Foreign Material (%)	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Shrunken and Broken (%)	0.5	0.5	0.5	0.6	0.5	0.8	0.4	0.6	0.2	0.3	0.5	0.4	0.8	0.2	0.3	0.3	0.4	0.3
Total Defects (%)	1.0	0.5	0.7	1.3	1.7	1.1	0.9	1.1	0.7	0.9	0.8	2.6	1.5	5.9	6.6	1.8	7.7	3.2
Grade	1	1	1	2	2	2	2	4	1	2	2	2	2	3	3	2	4	3
<b>Wheat Non-Grade Data - from Individual Samples</b>																		
Moisture (%)	12.2	12.5	12.1	13.1	13.4	12.1	13.0	13.0	13.5	14.1	13.5	12.7	13.8	13.3	12.7	12.8	13.7	13.2
Protein (%) 12% mb	10.2	10.2	10.2	11.2	10.4	9.9	9.8	9.6	8.8	8.9	8.7	10.0	11.5	9.1	9.4	9.2	8.6	9.3
Ash (%) 14% mb	1.56	1.46	1.50	1.50	1.49	1.43	1.51	1.53	1.42	1.43	1.42	1.53	1.41	1.29	1.36	1.29	1.45	1.32
1000 Kernel Weight (g)	32.0	31.8	32.2	32.2	33.7	32.0	32.9	32.2	35.3	36.4	36.1	33.2	34.9	36.0	36.5	36.9	36.1	35.6
Wheat Falling Number (sec)	291	325	329	339	347	365	362	341	322	332	316	352	241	246	246	208	231	232
DON (ppm)	0.0	0.0	0.0	0.1	0.1	0.6	0.5	1.5	0.8	1.1	1.2	1.1	0.1	0.1	0.3	1.9	1.4	0.2
<b>Wheat Non-Grade Data - from Area Composite Samples</b>																		
Dockage (%)	1.9	0.9	1.6	1.0	1.2	0.6	0.9	1.0	0.5	0.4	0.4	0.3	0.7	0.3	0.5	0.3	0.3	0.3
Moisture (%)	12.4	12.7	11.7	12.8	13.6	12.1	12.7	12.5	13.4	14.3	13.1	12.3	13.0	13.4	12.9	12.6	13.2	12.9
Protein (%) 12% mb	10.4	10.2	10.4	10.9	10.6	9.7	9.9	9.7	8.7	8.9	8.8	10.2	11.6	9.1	9.7	9.5	9.0	9.5
Kernel Size Large (Over 7) (%)	83	83	82	80	86	82	86	83	91	90	91	84	90	91	90	92	91	90
Kernel Size Medium (Over 9) (%)	17	17	18	20	13	17	13	17	9	10	9	15	9	9	10	8	9	10
Kernel Size Small (Thru 9) (%)	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0
Single Kernel Hardness	27.8	17.0	28.4	17.8	18.9	16.6	13.8	21.3	14.7	14.0	9.2	22.6	13.9	10.5	12.3	8.5	4.1	1.8
Single Kernel Weight (mg)	32.3	33.2	32.7	31.1	33.3	32.0	34.0	32.0	35.4	36.9	35.4	32.5	37.7	36.9	35.4	37.3	36.3	35.4
Single Kernel Diameter (mm)	2.28	2.32	2.31	2.21	2.31	2.25	2.30	2.30	2.43	2.50	2.41	2.36	2.56	2.45	2.33	2.46	2.39	2.34
Sedimentation (cc)	16	16	15	18	16	14	15	13	12	16	10	13	22	12	17	13	13	15
DON (ppm)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Flour Data</b>																		
Flour Extraction Rate (%)	68.0	68.0	68.6	66.9	66.9	66.5	68.5	66.0	69.2	65.1	68.6	65.6	67.0	68.4	69.8	69.3	69.5	69.7
Flour Color - *L	93.8	93.7	93.6	93.4	93.7	93.6	93.3	93.3	93.4	93.3	93.6	93.2	93.3	93.3	92.8	93.1	93.1	93.2
Flour Color - *a	-3.0	-3.1	-3.1	-2.6	-2.8	-2.7	-2.8	-2.9	-3.5	-3.3	-3.3	-2.9	-3.1	-3.3	-3.2	-3.2	-3.2	-3.2
Flour Color - *b	7.7	8.0	8.1	7.9	7.9	7.9	8.2	8.2	8.4	7.6	7.5	8.4	6.8	7.1	8.2	7.9	7.5	7.3
Flour Protein (%) 14% mb	8.6	8.3	8.4	8.9	8.3	7.9	8.3	8.1	8.0	7.3	7.3	8.3	9.1	7.8	8.2	7.6	7.3	7.7
Flour Ash (%) 14% mb	0.39	0.39	0.39	0.40	0.42	0.38	0.42	0.40	0.38	0.40	0.37	0.40	0.38	0.40	0.36	0.38	0.35	0.39
Wet Gluten (%)	24.5	22.2	26.6	26.6	21.8	22.8	19.9	19.9	24.7	17.2	16.5	20.8	25.8	18.6	15.9	16.2	14.0	14.8
Gluten Index	70.8	83.6	78.8	82.1	71.0	67.6	64.6	75.6	93.1	87.2	95.8	94.7	88.3	98.5	90.5	93.1	93.5	100.0
Falling Number (sec)	262	301	331	368	353	349	352	340	307	358	269	367	228	156	232	202	255	226
Amylograph (65g) (BU)	220	490	500	760	680	740	700	640	550	670	320	440	140	60	90	70	140	120
Starch Damage (%)	3.4	4.2	3.8	3.4	3.4	3.8	3.4	4.2	4.2	4.2	3.8	4.6	4.2	4.2	3.8	4.2	4.6	3.8
<b>Dough Properties</b>																		
Farinograph Peak (min)	1.5	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	2.0	2.5	1.0	1.5	1.5	1.0	1.5
Farinograph Stability (min)	3.0	3.5	3.0	3.5	2.0	3.5	3.0	3.5	3.5	2.5	2.0	3.5	3.0	2.0	2.5	2.0	2.0	2.0
Farinograph Absorption (%)	52.8	52.8	53.8	53.3	52.3	50.9	50.6	52.6	51.8	51.5	52.1	52.6	53.6	52.9	52.7	54.0	53.0	50.8
Alveograph P (mm)	34	40	49	46	33	24	35	43	35	40	29	41	37	43	43	40	40	34
Alveograph L (mm)	112	108	85	101	113	106	96	78	88	72	80	78	112	105	88	79	73	90
Alveograph W (10-4 joules)	82	103	94	114	86	62	76	90	78	86	59	76	92	110	107	97	68	87
Alveograph P/L	0.30	0.37	0.58	0.46	0.29	0.23	0.36	0.55	0.40	0.56	0.36	0.53	0.33	0.41	0.49	0.51	0.55	0.38
<b>Baking Evaluation</b>																		
Crumb Grain	6	5	5	4	4	4	4	6	5	6	5	5	5	5	5	6	4	6
Crumb Texture	6	5	5	5	4	5	5	4	6	6	5	5	6	5	6	6	5	6
Loaf Volume (cc)	700	635	700	685	685	715	700	700	725	700	625	650	675	650	750	725	675	700
Cookie Spread Ratio	8.0	9.0	8.0	8.5	8.7	9.2	9.4	8.3	8.3	8.4	8.9	7.7	8.0	8.1	8.7	9.3	8.2	8.4

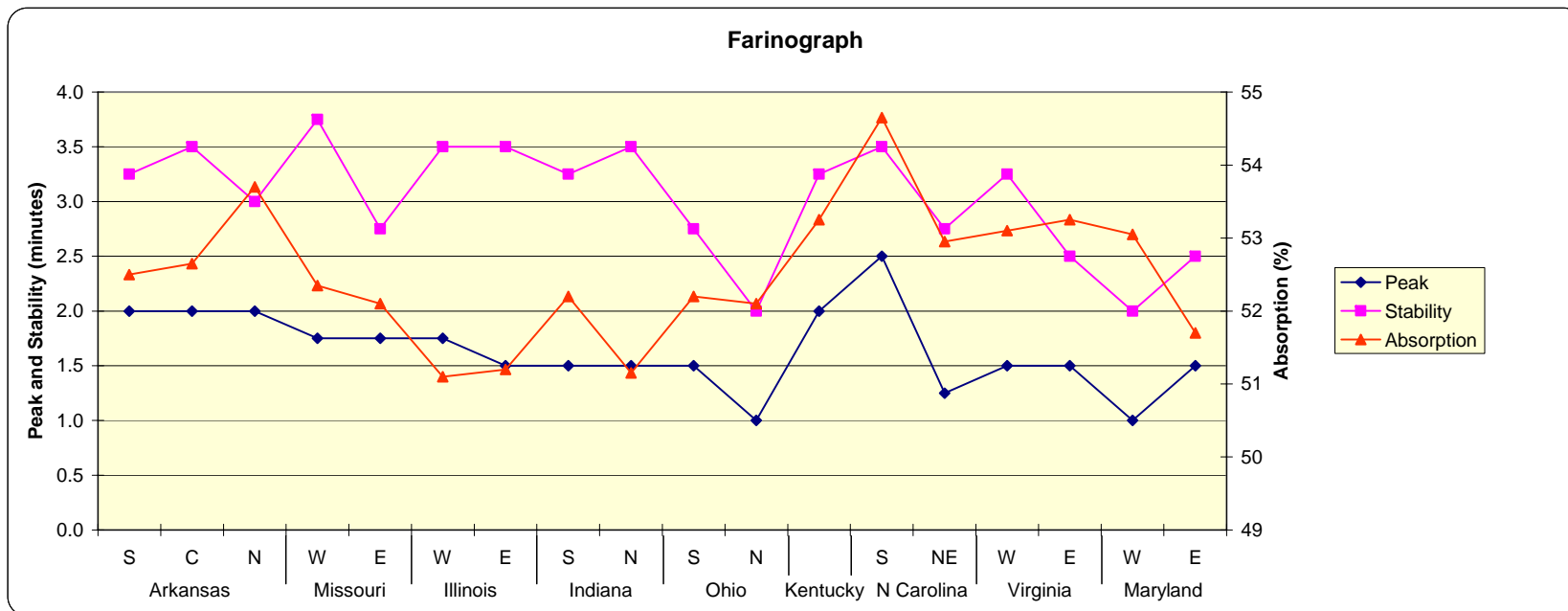
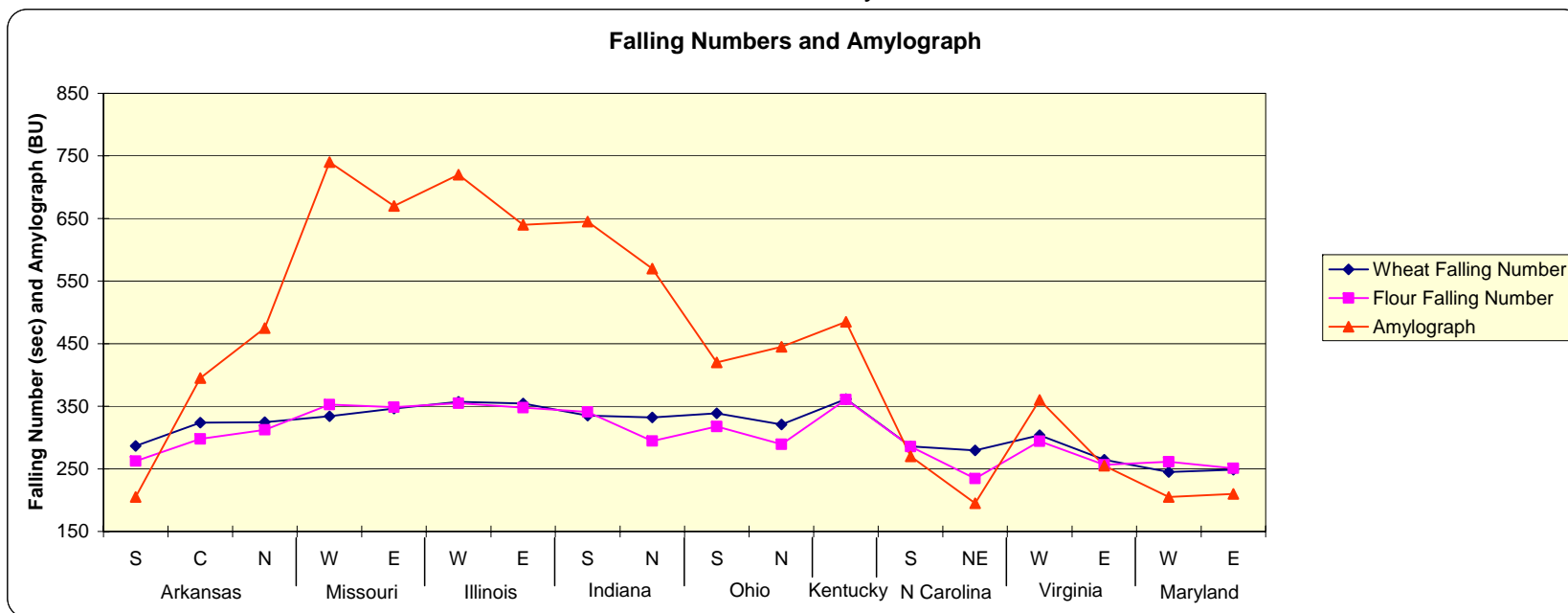
N-North, S-South, E-East, W-West, C-Central, NE-North East, NA-Not Available

## Comparisons of 2006 Results For Selected Quality Factors

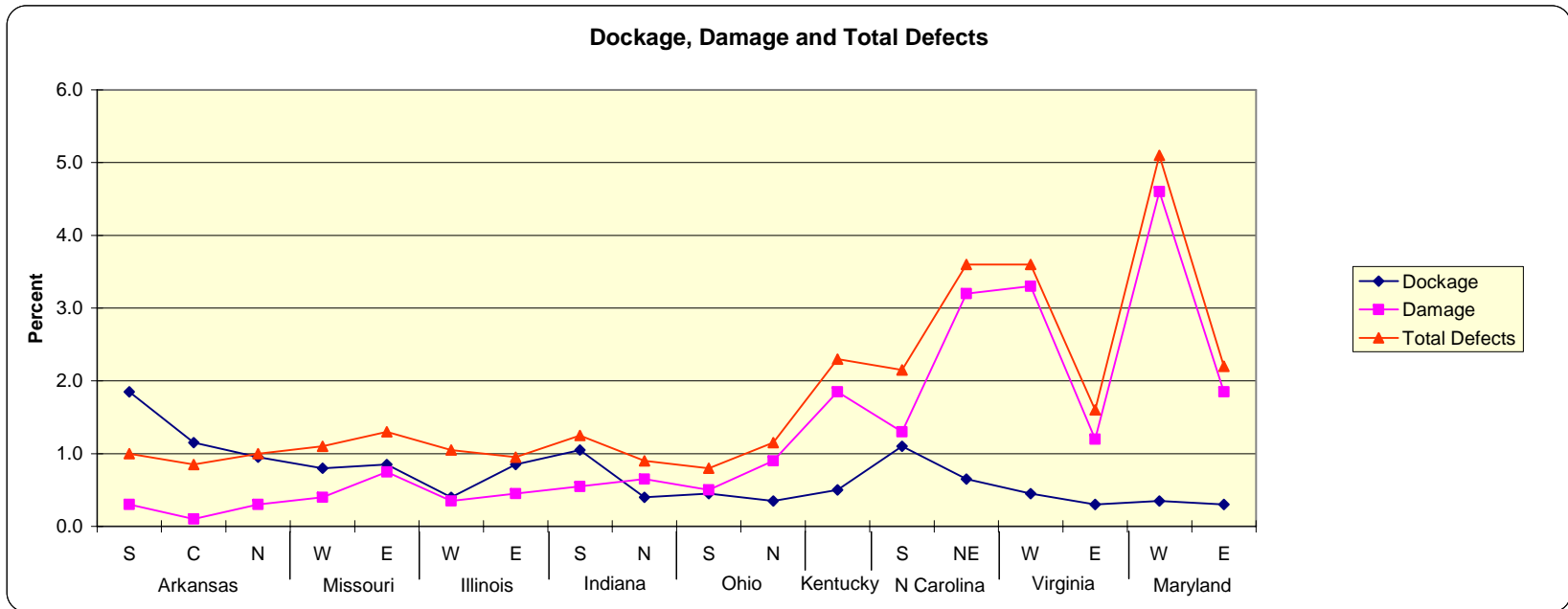
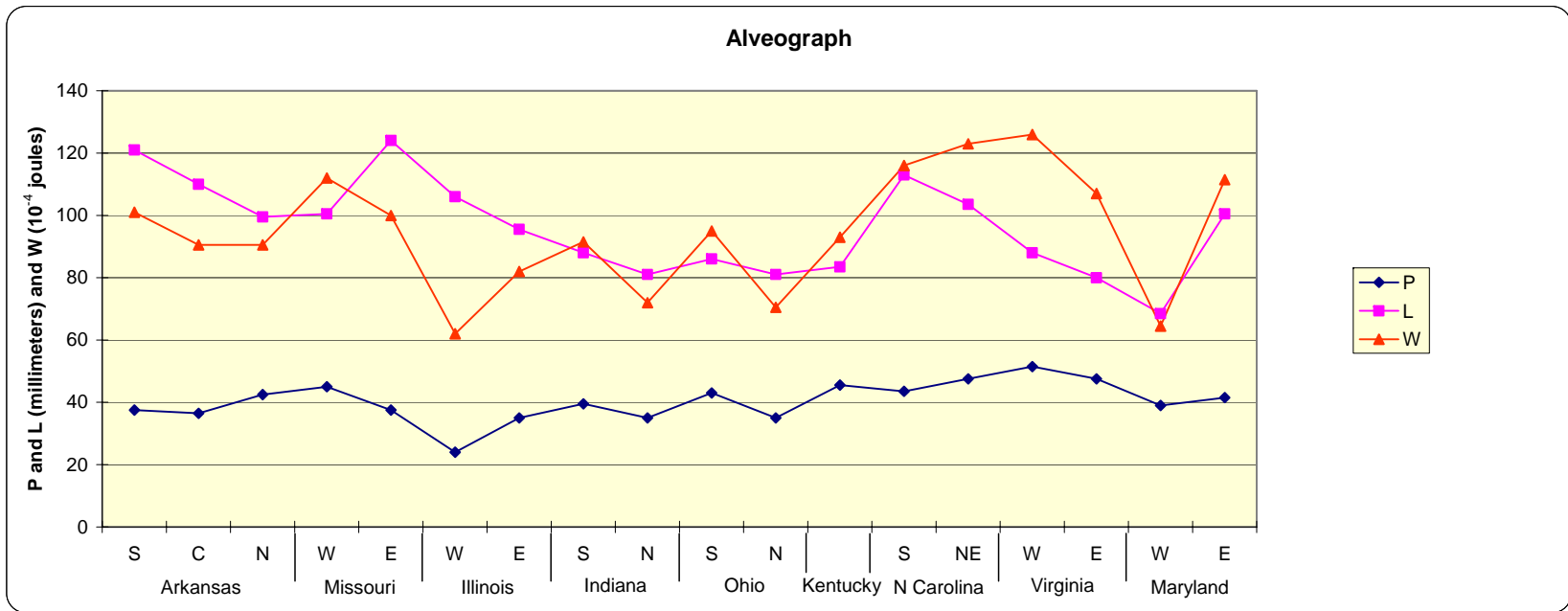




# Comparisons of 2006 Results For Selected Quality Factors

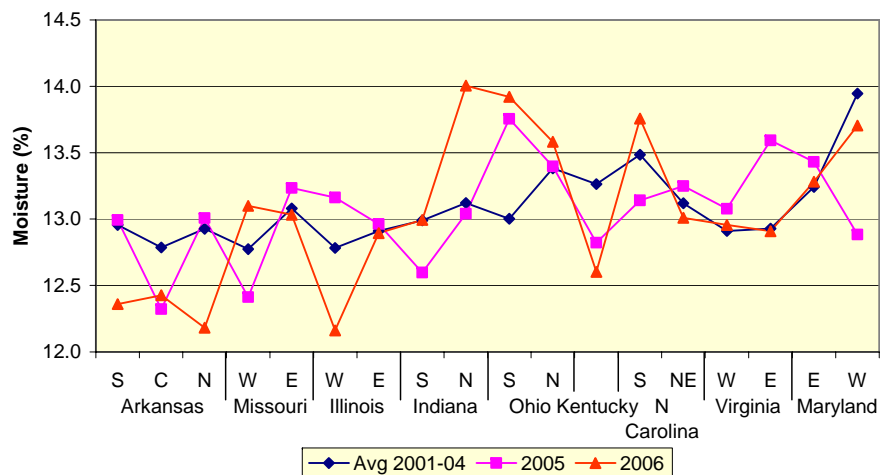


## Comparisons of 2006 Results For Selected Quality Factors

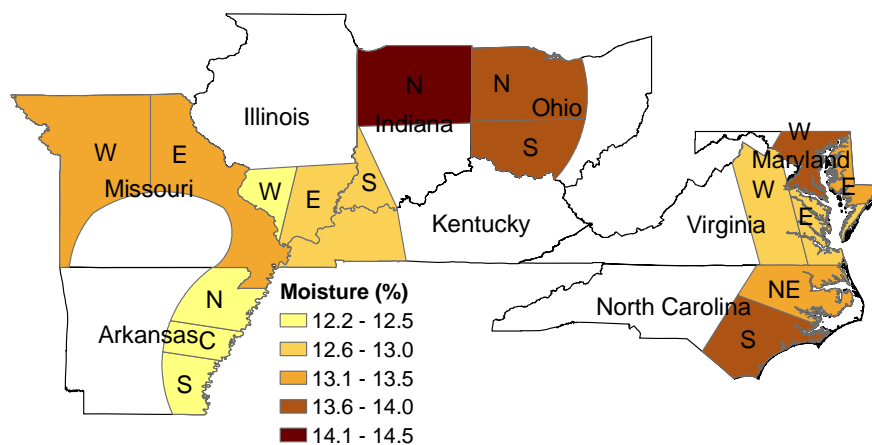
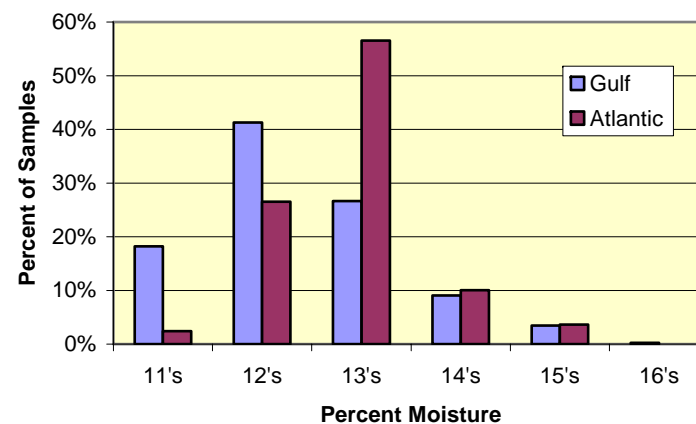


## Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

**Moisture**

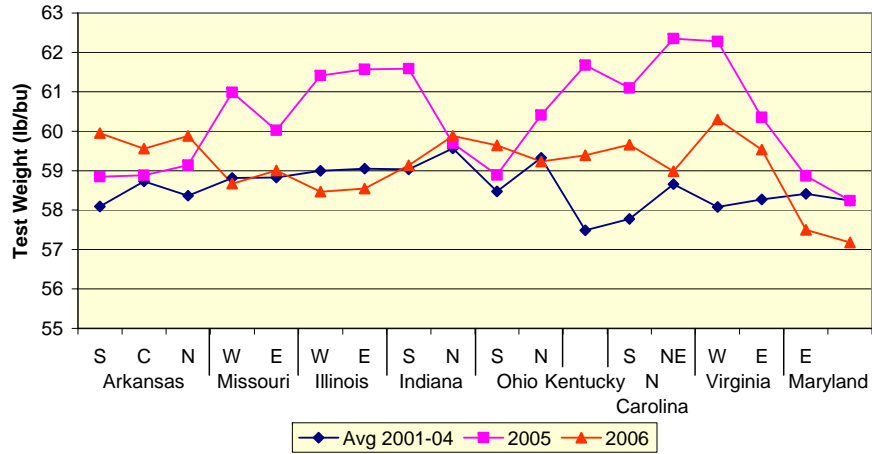


**Moisture**

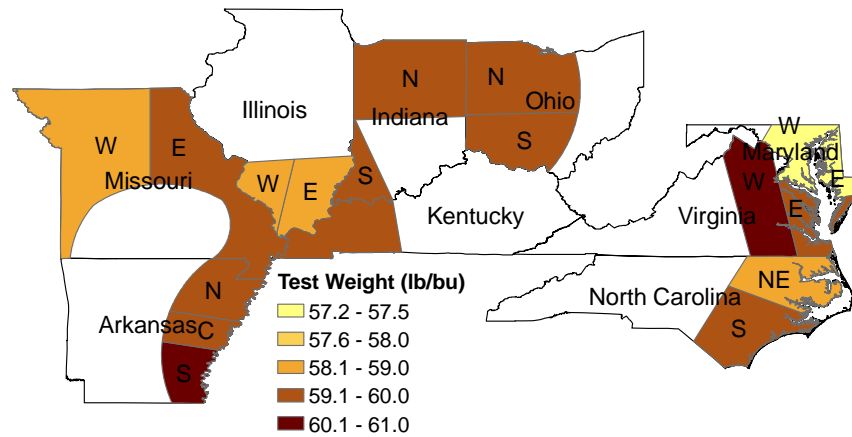
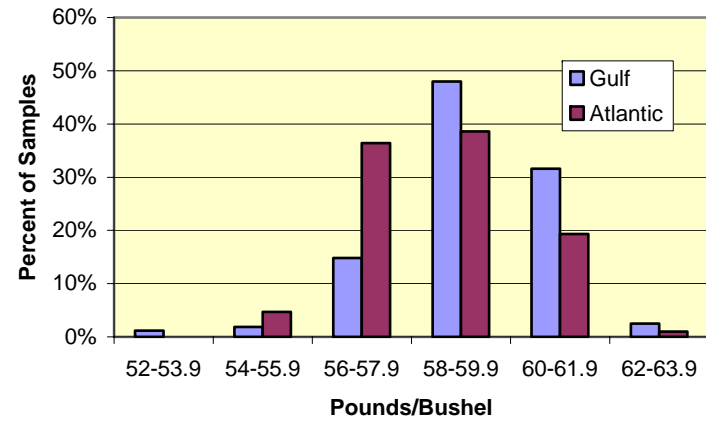


## Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

**Test Weight**

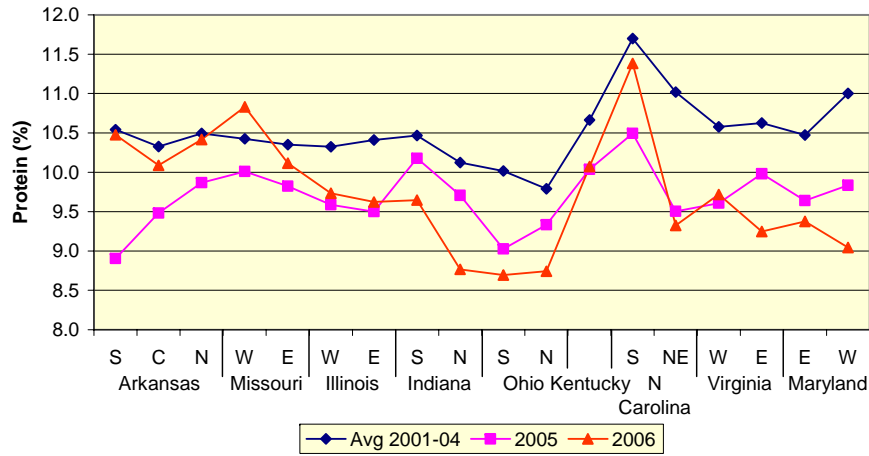


**Test Weight**

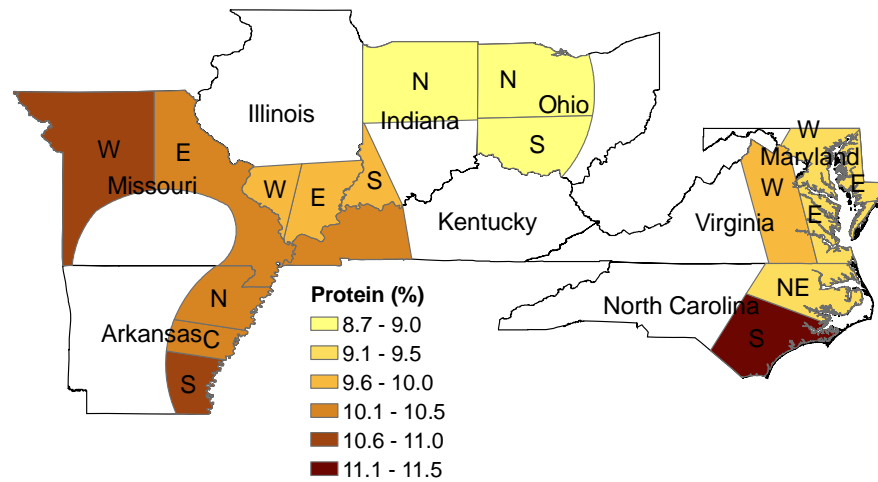
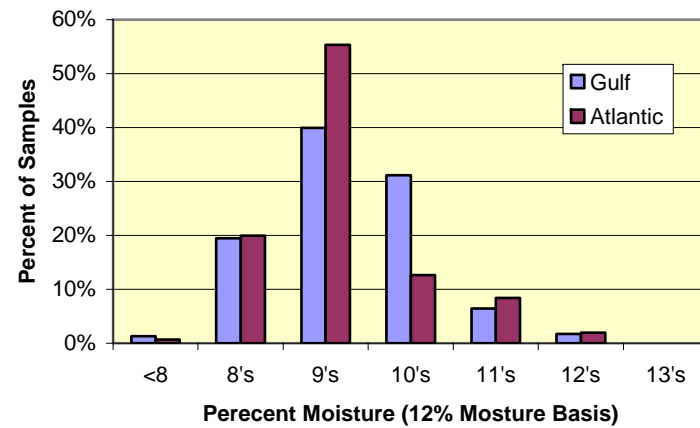


## Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

**Protein**

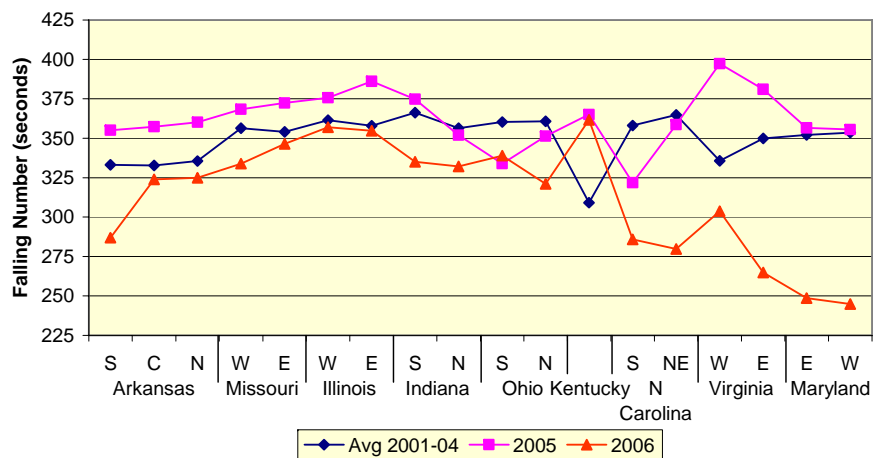


**Protein**

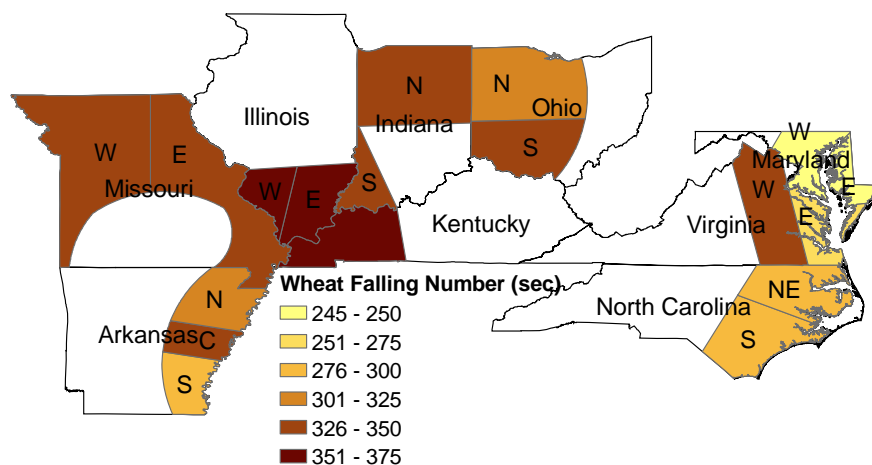
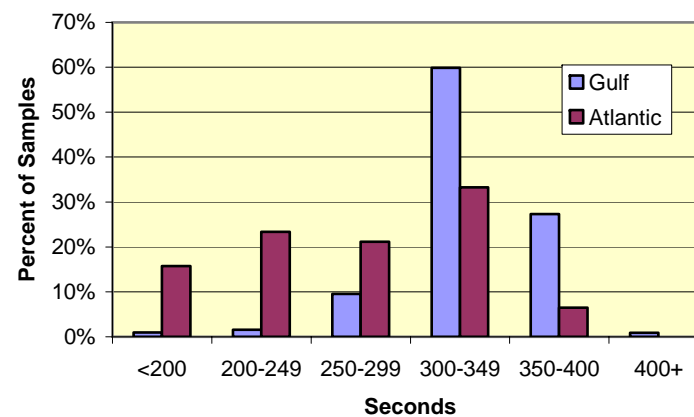


## Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

**Wheat Falling Number**

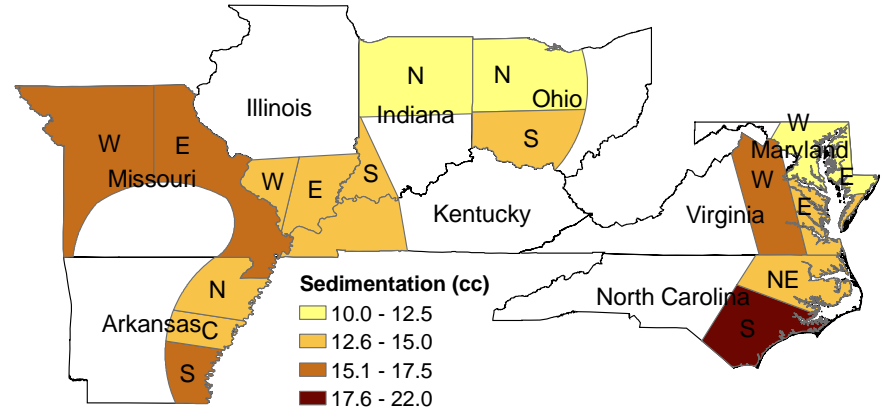
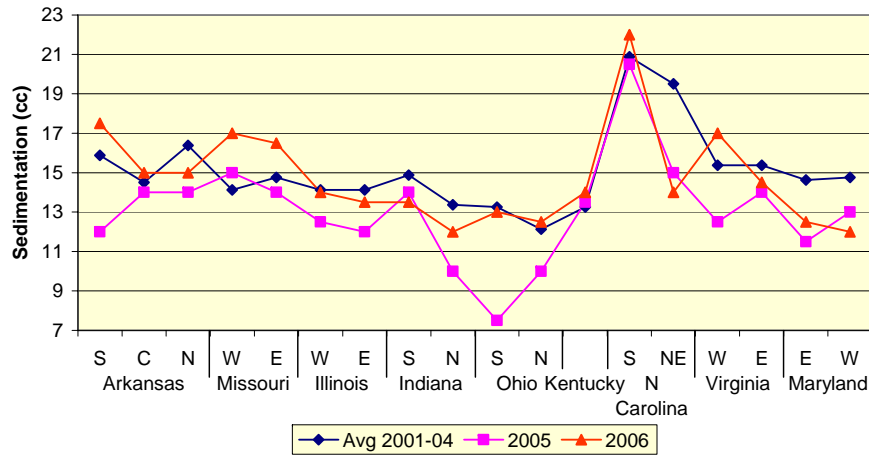


**Falling Number**

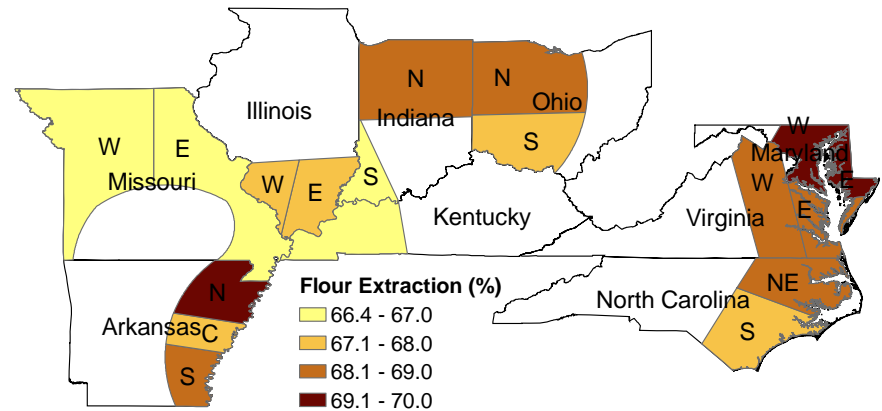
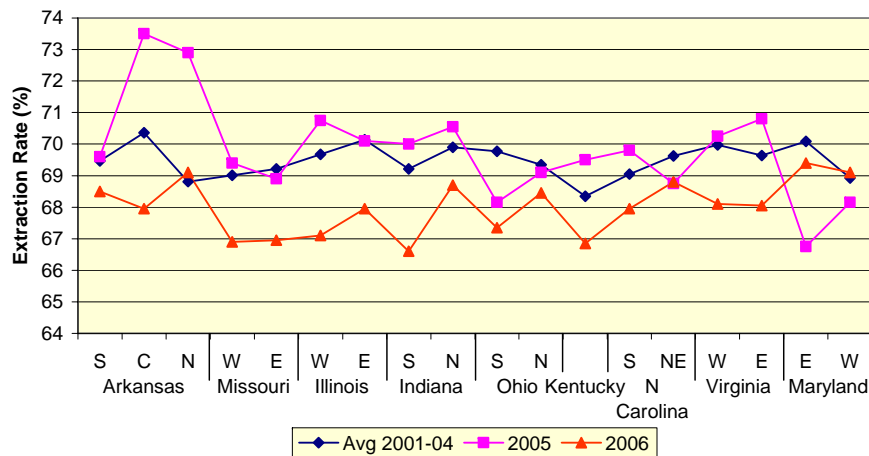


# Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

## Sedimentation

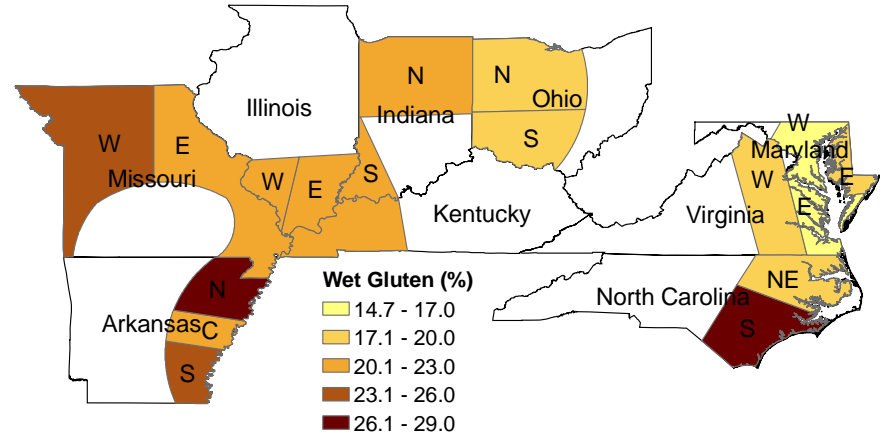
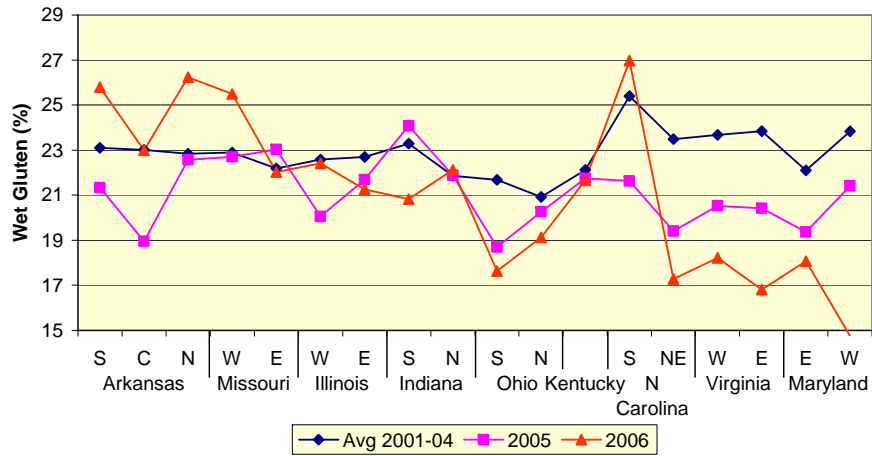


## Flour Extraction Rate

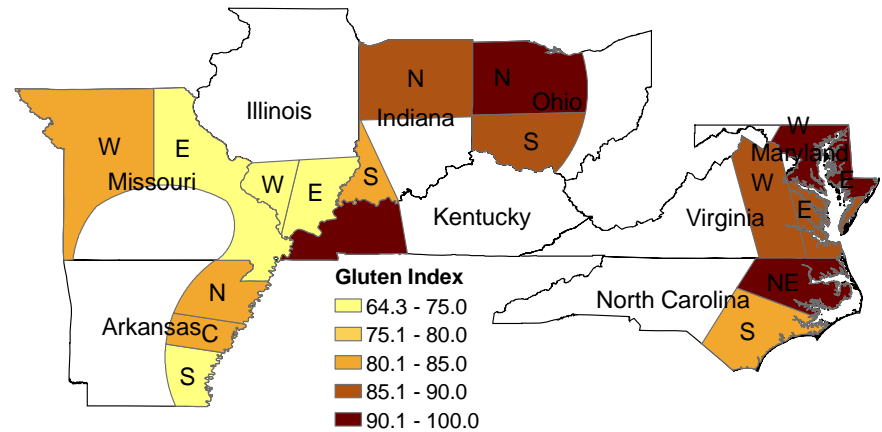
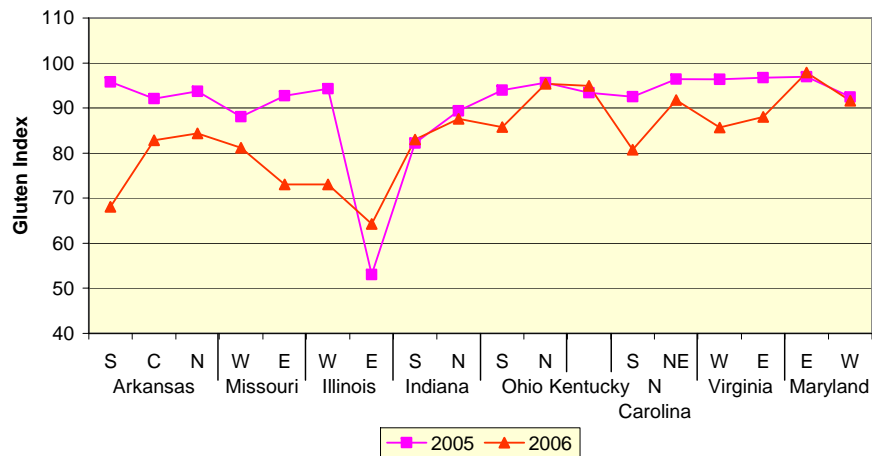


## Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

**Wet Gluten**



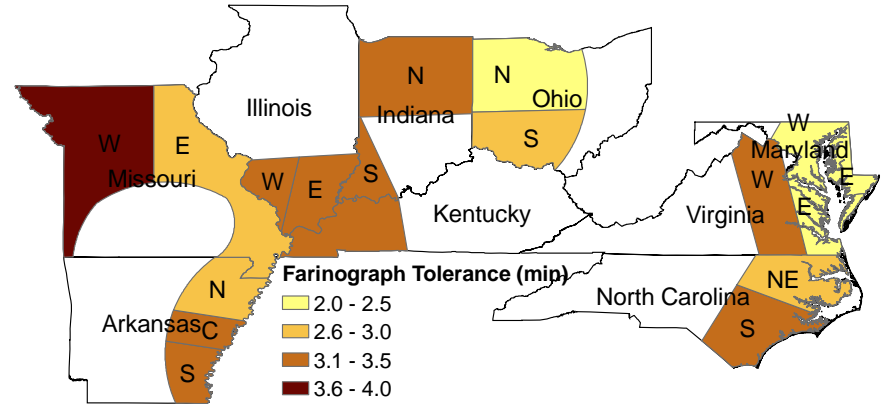
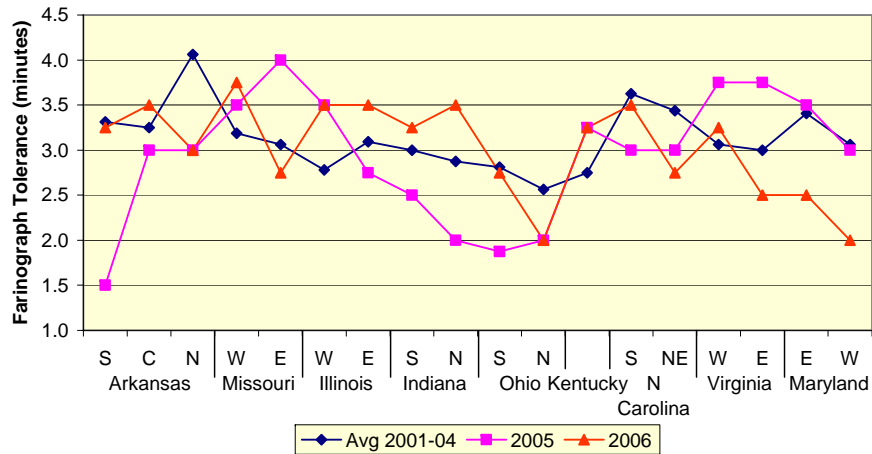
**Gluten Index**



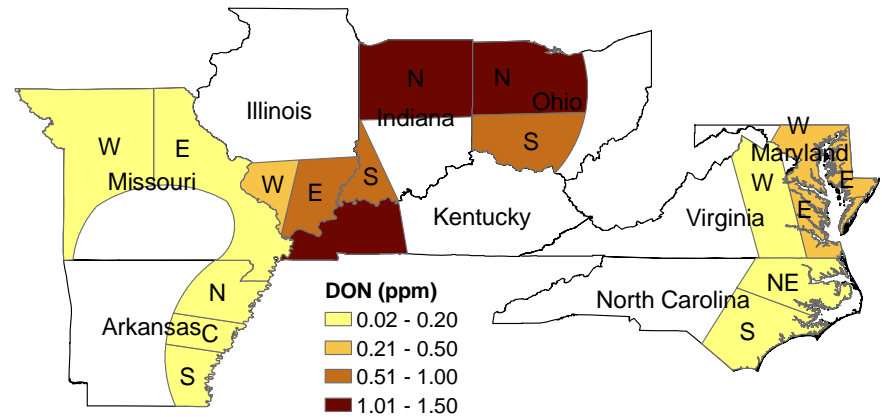
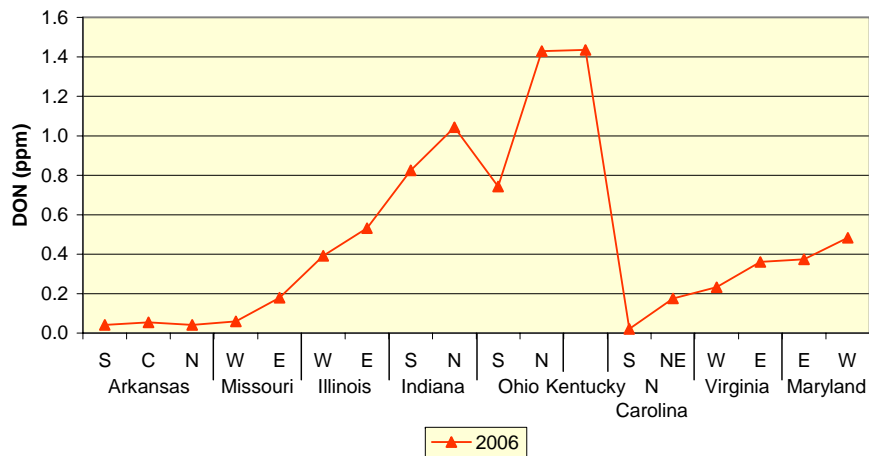


# Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

## Farinograph Tolerance

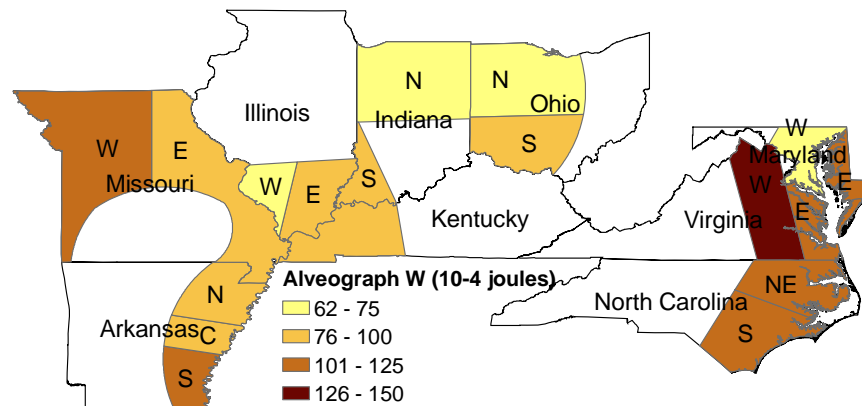
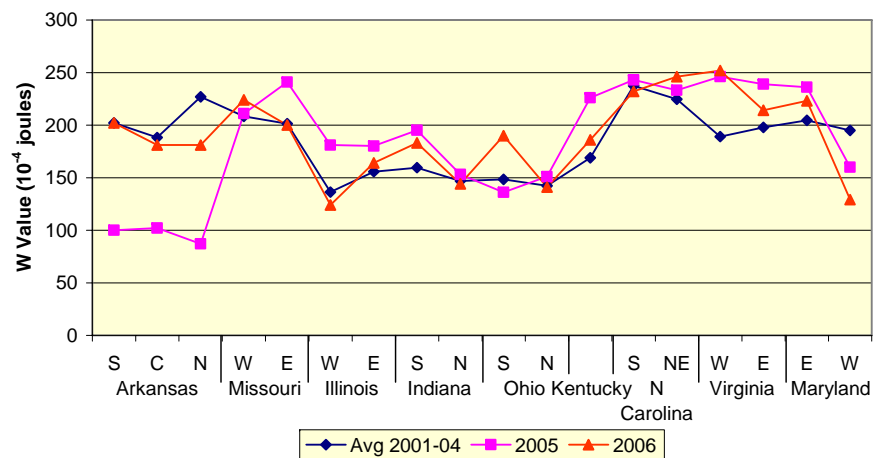


## DON



## Distribution of 2006 Results and Comparisons with Previous Years For Selected Quality Factors

**Alveograph W Value**



**Alveograph P/L**

