



SOFT RED WINTER WHEAT

.....
2025 QUALITY SURVEY

SOFT RED WINTER



COMPETITIVE ADVANTAGE

Soft red winter (SRW) wheat is the third largest class of wheat grown in the United States with an annual average production over the last five years of 9.5 million metric tons (MMT) or about 351 million bushels. Although SRW is the third largest class measured by production, it is the fourth largest as measured by export sales. U.S. SRW wheat is grown predominantly east of the Mississippi River and the South and far west as northeast Texas and southeast Kansas.

Importers of SRW are served from ports on the Lakes, East Coast, Gulf and Western Gulf. Mexico imports a portion of its SRW purchases via direct rail shipment. Importers and the domestic milling and baking industries use SRW for specialty products such as cookies (biscuits), crackers, snack foods and cake flour. SRW is a versatile wheat for blending with hard red spring (HRS) and hard red winter (HRW) wheat to lower grist cost and improve bread crumb texture or to improve the quality and appearance of a wide variety of products.

MILLING ADVANTAGES:

Few mills are designed for only SRW as it is generally a wheat class used for specialty productions and blending. Advantages to milling SRW include reduced energy requirements due to fewer roller mills and purifiers needed for mill flows designed specifically for soft wheat. SRW requires less grinding capacity and greater sifting capacity compared to hard wheats, but combining the two can be accomplished with minimal impact.

The real advantage for milling companies is in the cost reduction of the mill grist and increased diversity of products when SRW is included in a long term, strategic wheat procurement plan. SRW performs best on the mill at lower moisture content (14.5%) compared to hard wheat (16%). SRW also tends to produce a finer flour particle size which produces a more viscous flour, better aeration during mixing and a softer mouth feel for cakes.

BAKING ADVANTAGES:

As previously mentioned, the target market for SRW is confectionary products, but SRW performs well as a blending flour in a wider variety of products such as

crackers, cookies and some bread types. SRW can add extensibility to wheats that may have high resistance/extensibility ratios. The lower moisture content of the flour creates an advantage for the baker by increasing the amount of water added while optimizing water absorption and product quality to the consumer. The finer particle size will likely increase the rate of water absorption, decreasing mix time and improving production efficiencies.

As is the message with most U.S. wheat classes, blending SRW flour with other flour types gives opportunities to create the optimal flour type for any number of end-use products. Some markets have found success blending SRW wheat flour with HRS and HRW wheat flour to improve crumb texture and even the loaf volume of pan bread by improving the dough development and mixing properties.

SOURCING OPPORTUNITIES:

SRW wheat is lower in protein as compared to hard wheat classes and is generally lower cost. It is most often available out of the Mississippi River for export, but at times can be shipped via rail to the center Gulf or Mexico. Another key factor to consider when purchasing SRW is to include a maximum value for deoxynivalenol (DON), particularly in years when SRW matured during wet, humid conditions.

Optimal purchases of SRW are in combination with HRW or HRS to minimize storage constraints at the destination mill. There is a high demand for SRW in the domestic U.S. market. In years where acreage and production are lower than average, the price can be inverted in comparison to higher protein classes.

SOFT RED WINTER

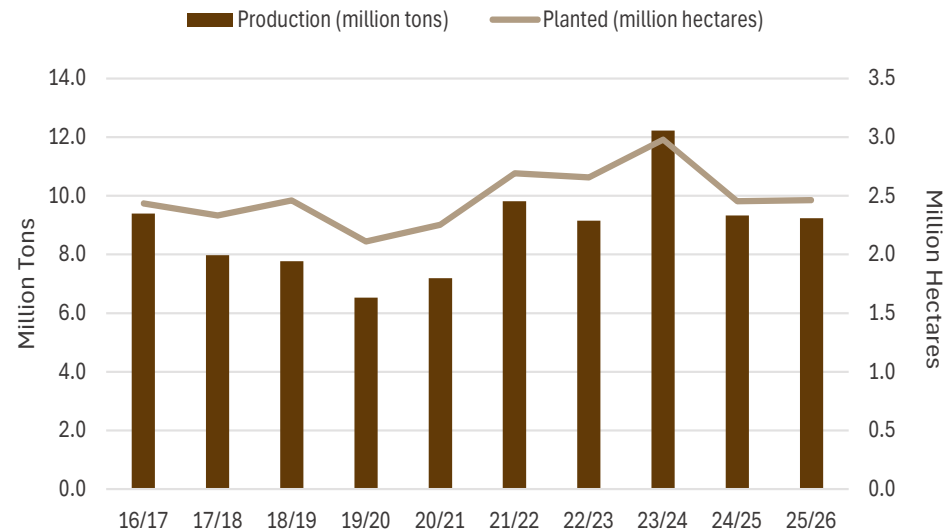
2025 PRODUCTION

FOR THE MAJOR PRODUCING STATES (MILLION METRIC TONS)

	2025	2024	2023	2022	2021
Alabama	0.1	0.1	0.3	0.2	0.2
Arkansas	0.1	0.1	0.3	0.2	0.2
Georgia	0.1	0.1	0.1	0.2	0.2
Illinois	1.6	1.6	1.8	1.2	1.3
Indiana	0.6	0.6	0.8	0.5	0.6
Kentucky	0.8	0.8	1.1	0.8	0.8
Maryland	0.3	0.4	0.5	0.4	0.3
Michigan	0.8	0.6	0.9	0.6	0.8
Missouri	0.9	1.0	1.1	0.7	0.9
North Carolina	0.2	0.2	0.2	0.2	0.2
New York	0.4	0.5	0.8	0.7	0.5
Ohio	1.2	1.1	1.4	1.0	1.2
Pennsylvania	0.4	0.4	0.5	0.4	0.4
Tennessee	0.5	0.7	0.8	0.7	0.6
Virginia	0.1	0.2	0.3	0.3	0.2
Wisconsin	0.5	0.5	0.5	0.5	0.5
Surveyed-States Total*	8.7	8.8	11.4	8.5	9.1
East Coast-Exportable	0.7	0.7	1.0	0.8	0.8
Gulf-Exportable	5.9	6.0	7.8	5.3	5.9
Sixteen-State Total	8.7	8.8	11.4	8.5	9.1
Total SRW Production	9.2	9.3	12.2	9.1	9.8

Based on August 2025 estimates from USDA's National Agricultural Statistics Service.

*Eleven states denoted by italics were surveyed accounting for 71% of 2025 SRW production.



SOFT RED WINTER

CROP SURVEY METHODS

SAMPLE COLLECTION AND ANALYSIS

Great Plains Analytical Laboratory, Kansas City, Missouri, collected, tested and analyzed 219 samples from elevators in 18 reporting areas across 11 states: 55 samples were from the East Coast states and 164 from the Gulf states.

SAMPLE TESTING

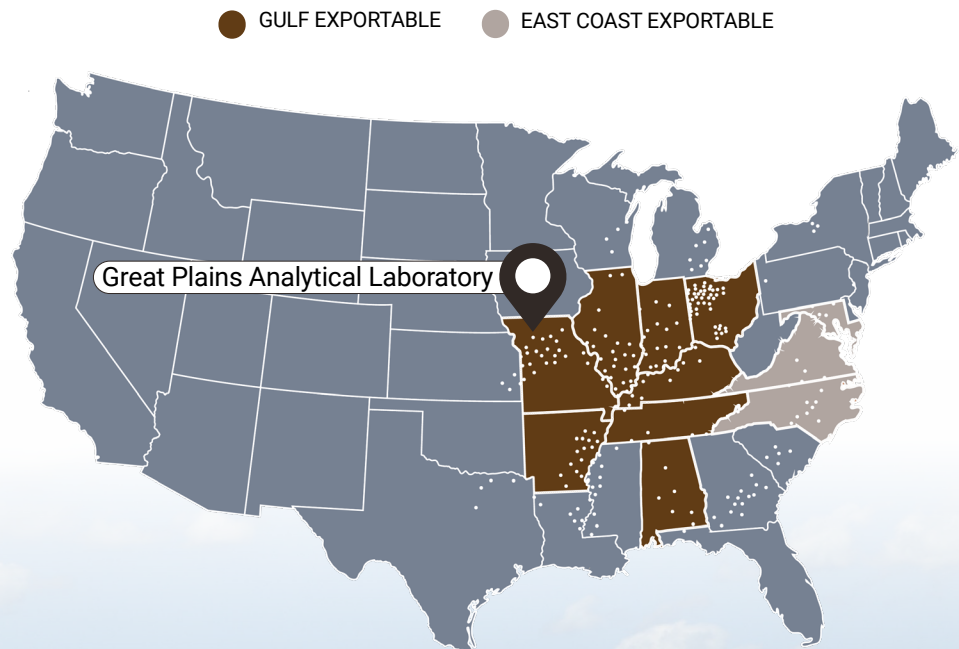
Test weight, wheat moisture, wheat protein, 1000 kernel weight, wheat ash and wheat falling number were determined on individual samples, DON was determined on individual samples. The remaining tests were determined on 18 composite samples.

The results were weighted by the estimated production for each reporting area and combined into "Composite," "East Coast" and "Gulf" values. Gulf states include Alabama, Arkansas, Illinois, Indiana, Kentucky, Missouri, Ohio, and Tennessee. East Coast states include Maryland, North Carolina and Virginia.

The states surveyed account for an estimated 71% of total 2025 U.S. SRW production. Of that, Gulf states account for 64% of production in the states surveyed and East Coast states represent the remaining 7%.

11
STATES SURVEYED

71%
OF TOTAL SRW
PRODUCTION
REPRESENTED



SOFT RED WINTER

2025 CROP HIGHLIGHTS

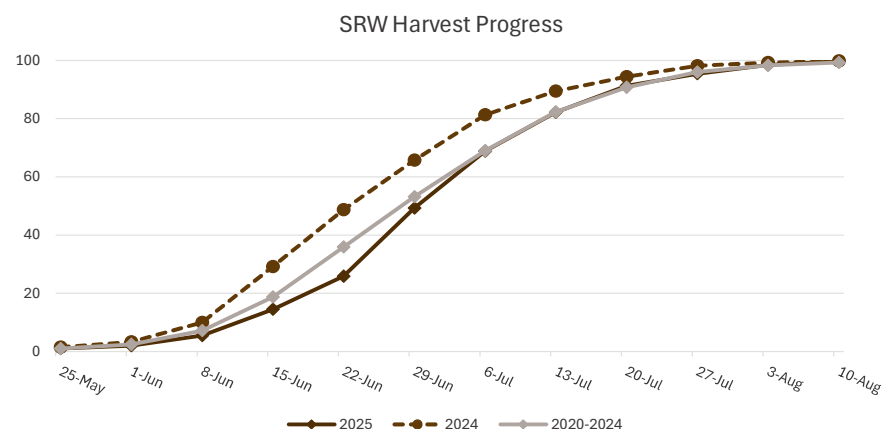
OVERVIEW

The U.S. soft red winter (SRW) wheat production region experienced a mild and mostly dry winter followed by plentiful spring rainfall, which helped yield potential but increased quality concerns. Despite the environmental challenges, the crop exhibits good milling characteristics. Processors will find a versatile crop with good qualities for cookies and crackers. With higher protein and good extensibility, the crop should also be valuable in blending for baking applications. Pockets of higher enzymatic activity (lower falling numbers) will naturally be directed into animal feed channels and not to milling wheat supplies. Overall, buyers should find good quality in the 2025 SRW crop and are encouraged to review their quality specifications to ensure they receive qualities that meet their needs for traditional soft wheat products or blending with stronger wheat.

PLANTING & EMERGENCE

The USDA estimated that 2.46 million hectares (6.09 million acres) of SRW wheat were seeded in fall 2024, a slight decrease of less than 1% from the previous year and 5% below the five-year average. The most notable acreage reductions occurred in the Southeast, with Virginia down 13% and North Carolina down 12%. These declines were offset by increases in the Central and Midwest states, particularly in Michigan, which saw a 35% increase in SRW wheat acreage.

Planting began in mid-September and progressed at a normal pace. October brought above-average temperatures and below-average precipitation, making it the seventh driest October on record for Maryland and 11th driest for Ohio. By the end of October, nearly all of the eastern U.S. was



experiencing drought, with portions of Ohio, Missouri and Arkansas classified under exceptional drought conditions.

By late November, 85% of the crop had emerged across the 11 SRW survey states. Throughout much of winter, dry conditions persisted and temperatures remained mostly mild. A bitter cold front swept through much of the U.S. in mid-February, and Kentucky experienced its seventh wettest February on record.

GROWING SEASON & HARVEST

As winter ended, seasonably cool and mild temperatures combined with rainfall helped improve soil moisture and supported crop development. April and May saw some of the wettest months on records for eight of the SRW survey states. In early May, rainfall continued across the eastern SRW region, accompanied by moderate temperatures, supporting crop development and yield potential.

Wet and humid conditions persisted into late May, raising concerns about disease and quality impacts as harvest began slowly in southern areas. By late June, widespread rainfall affected the Midwest and eastern U.S., while high heat in southern and central states pushed

temperatures above 100°F in some areas. Rain during harvest caused delays and raised concerns about grain quality and disease.

In early July, conditions began to dry out, with only isolated showers reported. The harvest concluded under hot, mostly dry conditions, and no major disease or pest outbreaks were reported. Final USDA estimates reported 1.8 million hectares (4.42 million acres) harvested, with an average yield of 2.1 tons per hectare (77 bushels per acre), up from last year's 2.0 tons per hectare (74 bushels per acre).

PRODUCTION & MARKET OUTLOOK

Although planted acreage was lower in 2025, higher yields helped offset the decline, resulting in production levels that were comparable to the previous year. For the 2025/26 marketing year, SRW wheat production is estimated at 9.2 million metric tons (339 million bushels), slightly below last year's 9.3 MMT (342 million bushels). As of September 16, the USDA projects SRW exports to reach 3.3 MMT (120 million bushels), an increase from 3.2 MMT (117 million bushels) the previous year, reflecting stronger export demand.

SOFT RED WINTER

2025 CROP HIGHLIGHTS

GRADE DATA:

GRADE

The average grade for the 2025 SRW harvest survey is U.S. No. 2 SRW. The average grade for the Gulf is U.S. No. 2 SRW, while the East Coast is No. 3 SRW.

TEST WEIGHT

Test weights in the Gulf region remained relatively unchanged. In contrast, East Coast samples showed a decline due to increased rainfall during the harvesting time.

TOTAL DEFECTS

Total defects averages were higher, driven by increased values in damaged and broken kernels compared to last year. Foreign material levels remained similar, reflecting consistent growing practices.

WHEAT NON-GRADE DATA:

WHEAT PROTEIN

Gulf region wheat had lower protein content this year, which was likely due to the increased grain yield with sufficient rainfall for grain filling. East Coast wheat showed higher protein levels, likely due to decreased starch production elevating the proportion of protein in grain.

WHEAT MOISTURE

Moisture levels in the Gulf region were consistent with last year. East Coast moisture was lower than last year.

WHEAT FALLING NUMBER

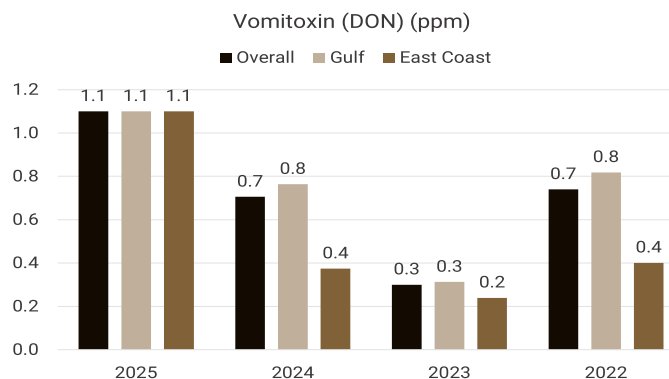
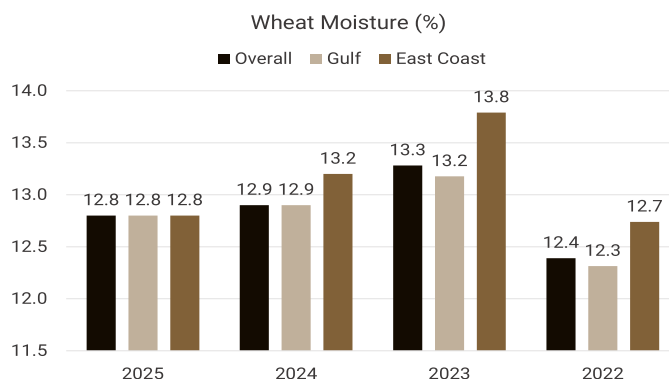
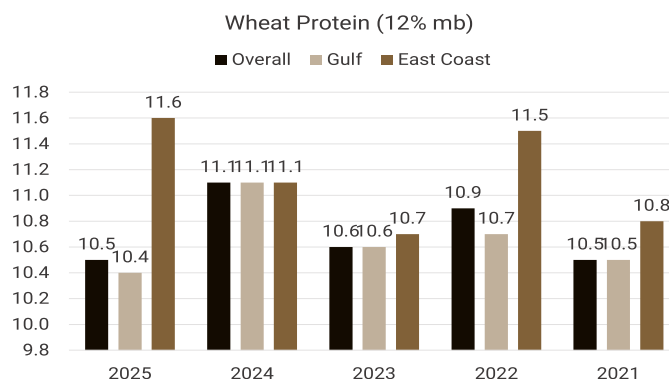
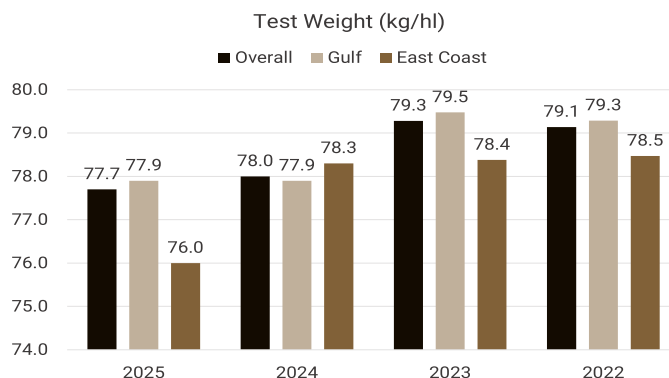
Falling numbers in the Gulf region were slightly below average, indicating minimal sprout damage. East Coast values were significantly lower, reflecting higher amylase activity.

SINGLE KERNEL

Gulf region kernel weights were higher than last year, reflecting good kernel development. East Coast thousand kernel weights were slightly smaller, aligning with environmental impacts. Overall kernel size remained similar to last year.

VOMITOXIN (DON)

Higher DON levels were observed across both regions, with Gulf samples showing moderate increases. East Coast levels were elevated, consistent with increased rainfall and *Fusarium* presence.



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2025 CROP HIGHLIGHTS

FLOUR DATA:

LABORATORY MILL FLOUR EXTRACTION

Samples were milled on a Buhler MLU 202. Gulf region extraction rates were slightly lower than last year but higher than the five-year average. East Coast rates were slightly lower than last year and lower than the five-year average.

Note: The extraction rate from a laboratory mill is not optimized and will always be significantly lower than the rate obtained from a commercial mill.

AMYLOGRAPH VISCOSITY

Gulf samples had a slight decrease in amylograph values, while East Coast samples dropped sharply because of higher amylase activity.

RVA (RAPID VISCO ANALYZER)

Gulf region RVA values showed only slight decreases, consistent with minimal sprout damage. East Coast samples had significantly lower pasting temperatures and peak viscosities, indicating elevated enzyme activity.

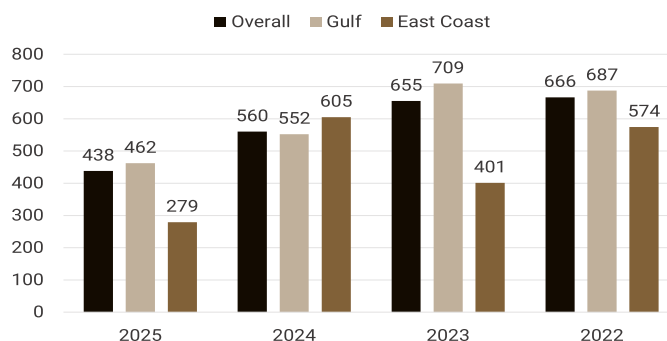
DAMAGED STARCH

Damaged starch levels of Gulf samples decreased, but East Coast samples showed no changes.

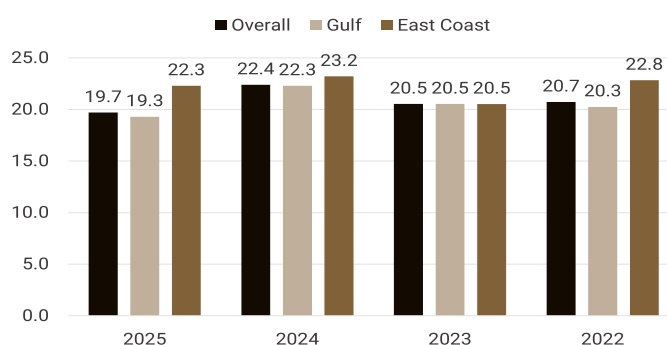
SOLVENT RETENTION CAPACITY (SRC)

Gulf SRC profiles were generally consistent with the average and supported traditional uses such as cookies, crackers, and cakes. East Coast SRC values were slightly higher than last year and the five-year average. Sodium carbonate SRC was higher in both regions, especially in the East Coast. East Coast SRC profiles aligned with cookie performance, suggesting suitability for low-moisture products.

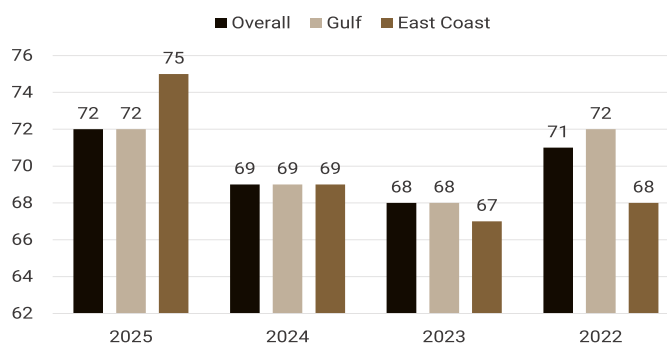
Amylograph Viscosity (65 g BU)



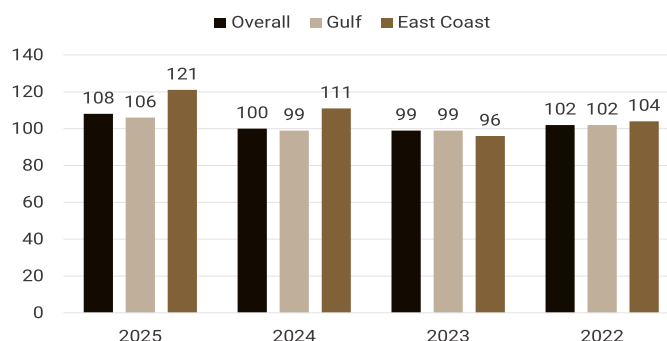
Wet Gluten (%)



SRC 5% Sodium Carbonate (%)



SRC 5% Lactic Acid (%)



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2025 CROP HIGHLIGHTS

DOUGH DATA:

DOUGH PROPERTIES

Gulf region dough properties were consistent with last year and the five-year average. East Coast dough showed functional protein, with no major shifts in rheology results.

ALVEOGRAPH

Gulf alveograph results were stable and aligned with previous years. East Coast samples showed functional protein though cookie baking performance may be reduced with increase protein content and lactic acid SRC.

END PRODUCT DATA:

BREAD

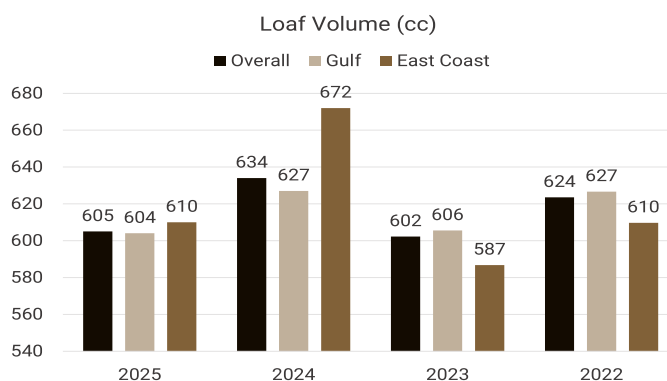
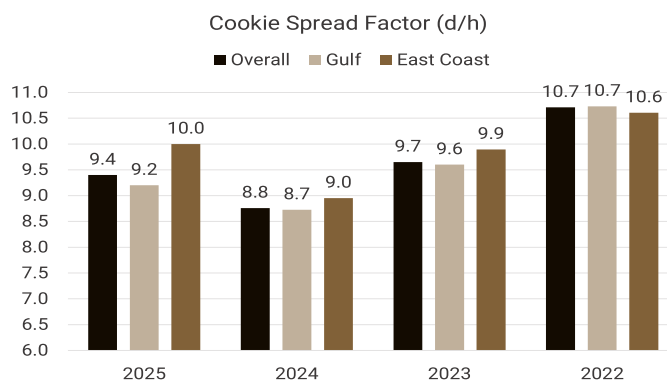
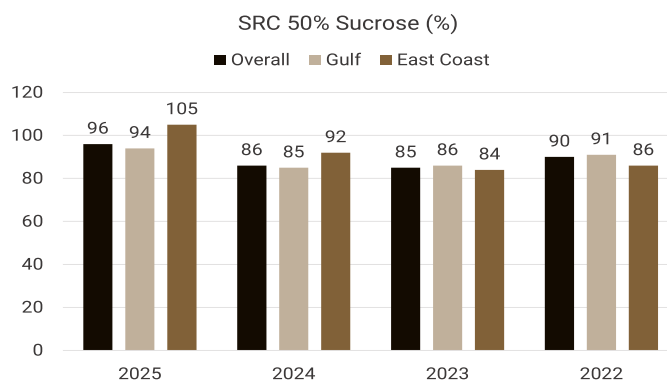
Gulf region bread performance was similar to last year and the five-year average, with lower volumes attributed to reduced protein but no significant functional concerns. East Coast pan bread had higher absorption and lower loaf volumes, likely due to lower falling number values.

CAKES

Gulf cakes performed well, with slightly improved quality over last year due to lower protein content. East Coast sponge cakes had higher volumes than last year. Structural integrity may be compromised by sprout damage, resulting in concave tops or weak crumb.

COOKIES

Gulf cookie quality remained similar to last year, with consistent spread and appearance. East Coast cookies exhibited smaller diameters, which may be attributed to higher protein content. Composites with reduced falling numbers displayed a slightly darker color.



2025 SRW QUALITY DATA – BY EXPORT REGION

	OVERALL			EAST COAST ¹			GULF ¹		
	2025 Avg	2024 Avg	5-Year Avg	2025 Avg	2024 Avg	5-Year Avg	2025 Avg	2024 Avg	5-Year Avg
WHEAT GRADE DATA:									
Test Weight (lb/bu)	59.0	59.2	59.8	57.7	59.5	59.4	59.2	59.2	59.9
(kg/hl)	77.7	78.0	78.7	76.0	78.3	78.1	77.9	77.9	78.8
Damaged Kernels (%)	1.2	0.5	0.3	1.5	0.5	0.5	1.1	0.5	0.3
Foreign Material (%)	0.2	0.2	0.1	0.3	0.2	0.1	0.2	0.2	0.1
Shrunken & Broken (%)	0.9	0.6	0.6	1.0	0.6	0.5	0.9	0.6	0.6
Total Defects (%)	2.3	1.3	1.0	2.7	1.3	1.1	2.2	1.3	0.9
Grade	2 SRW	2 SRW	2 SRW	3 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW
WHEAT NON-GRADE DATA:									
Dockage (%)	0.5	0.3	0.3	0.5	0.3	0.3	0.5	0.3	0.3
Moisture (%)	12.8	12.9	13.1	12.8	13.2	13.5	12.8	12.9	13.0
Protein (%) 12%/0% mb	9.3/10.5	9.8/11.1	9.5/10.8	10.2/11.6	9.8/11.1	9.6/11.0	9.1/10.4	9.8/11.1	9.4/10.7
Ash (%) 14%/0% mb	1.21/1.41	1.41/1.64	1.39/1.61	1.22/1.41	1.39/1.62	1.34/1.55	1.21/1.40	1.41/1.64	1.40/1.63
1000 Kernel Weight (g)	32.9	32.7	34.0	31.7	32.7	35.2	33.1	32.7	33.7
Kernel Size (%) Ig/md/sm	87/13/01	86/13/01	87/12/01	84/15/01	85/14/01	88/12/01	87/12/01	86/13/01	87/12/01
Single Kernel: Hardness	23.3	25.1	24.4	20.2	22.3	24.7	23.7	25.6	24.3
Weight (mg)	33.2	33.4	34.2	30.9	33.3	35.1	33.5	33.4	34.0
Diameter (mm)	2.63	2.63	2.64	2.53	2.59	2.65	2.65	2.64	2.64
Sedimentation (cc)	13.2	13.5	11.7	16.7	12.9	12.3	12.7	13.6	11.5
Falling Number (sec)	301	316	316	262	317	297	308	316	321
DON (ppm)	1.1	0.7	0.6	1.1	0.4	0.3	1.1	0.8	0.7
FLOUR DATA:									
Lab Mill Extraction (%)	69.5	70.1	67.5	68.4	68.8	66.9	69.7	70.4	67.7
Color: L*	91.5	90.8	91.1	91.5	90.9	91.0	91.4	90.8	91.1
a*	-2.2	-2.1	-2.3	-2.1	-2.1	-2.2	-2.2	-2.1	-2.3
b*	9.3	9.2	9.1	8.7	9.0	8.8	9.3	9.2	9.1
Protein (%) 14%/0% mb	7.6/8.8	8.0/9.3	7.6/8.8	8.4/9.7	8.1/9.4	7.7/9.0	7.4/8.6	8.0/9.3	7.5/8.8
Ash (%) 14%/0% mb	0.41/0.47	0.43/0.50	0.42/0.48	0.43/0.50	0.42/0.49	0.41/0.48	0.40/0.47	0.43/0.50	0.41/0.48
Wet Gluten (%) 14% mb	19.7	22.4	20.8	22.3	23.2	21.6	19.3	22.3	20.6
Falling Number (sec)	291	313	312	253	320	294	297	312	316
Amylograph Viscosity: 65g (BU)	438	560	597	279	605	438	462	552	637
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	80.2/2011	83.5/2452		80.3/1697	80.8/2429		80.2/2059	84.0/2456	
Hot Paste Visc. (cP)/Final Visc. (cP)	1241/2258	1469/2645		823/1574	1508/2688		1305/2363	1462/2638	
Damaged Starch (%)	3.4	3.8	3.9	3.6	3.5	4.0	3.3	3.8	3.9
SRC: Water/50% Sucrose (%)	54/96	51/86	52/86	55/105	51/92	52/89	53/94	51/85	52/85
5% Lactic Acid/5% Na ₂ CO ₃ (%)	108/72	100/69	102/71	121/75	111/69	106/72	106/72	99/69	101/70
Gluten Performance Index (GPI)	0.64	0.65	0.65	0.67	0.68	0.66	0.64	0.64	0.65
DOUGH PROPERTIES:									
Farinograph: Peak Time (min)	1.1	1.2	1.2	1.4	1.0	1.2	1.1	1.2	1.2
Stability (min)	1.4	1.9	1.7	1.7	1.4	1.7	1.4	2.0	1.7
Absorption (%)	53.0	52.7	52.2	53.5	52.0	52.5	52.9	52.8	52.1
Alveograph: P (mm)	45	41	41	42	40	42	45	41	41
L (mm)	75	90	74	102	97	79	71	89	73
P/L Ratio	0.63	0.45	0.55	0.48	0.41	0.54	0.66	0.46	0.56
W (10 ⁻⁴ J)	101	98	86	113	109	93	99	96	85
Extensograph (45 min): Resistance ₅₀ (BU)	204	206	200	254	245	198	196	199	198
Resistance Max (BU)	252	238	230	305	291	231	225	226	226
Extensibility (cm)	14.7	14.5	15.1	15.6	15.2	16.1	14.5	14.4	15.1
Area (cm ²)	52	51	52	68	64	55	49	49	52
R ₅₀ /E Ratio	1.45	1.41	1.31	1.71	1.66	1.28	1.32	1.32	1.27
BAKING EVALUATION:									
Cookie: Diameter (cm)	8.9	8.9	9.0	8.8	9.1	9.0	8.9	8.9	9.0
Spread Factor (diameter/height)	9.3	9.4	10.1	9.3	10.0	10.2	9.3	9.2	10.1
Pan Bread: Bake Absorption (%)	56.5	54.8	54.2	57.2	54.5	53.8	56.3	54.9	54.2
Loaf Volume (cc)	605	634	613	610	672	612	604	627	614
Specific Volume (cc/g)	4.00	4.59		4.06	4.87		3.99	4.54	
Sponge Cake: Volume (cc)	1154	1049		1147	1054		1155	1048	
Hardness (g)	279	345		317	389		274	337	
% OF SAMPLES:	100%	100%		25%	22%		75%	78%	

¹East Coast: Maryland, Virginia, North Carolina; Gulf: Alabama, Arkansas, Illinois, Indiana, Kentucky, Missouri, Ohio, Tennessee

2025 SRW QUALITY DATA – BY STATE

	Alabama	Arkansas	Illinois	Indiana	Kentucky	Missouri	Ohio	Tennessee	Maryland	North Carolina	Virginia
WHEAT GRADE DATA:											
Test Weight (lb/bu)	59.6	57.0	60.5	58.6	59.2	58.2	58.6	59.6	58.8	56.8	58.5
(kg/hl)	78.4	75.1	79.6	77.1	77.9	76.6	77.2	78.4	77.3	74.7	77.1
Damaged Kernels (%)	2.0	2.0	1.3	1.1	0.7	1.6	0.7	0.7	0.9	2.0	1.6
Foreign Material (%)	0.0	0.3	0.2	0.3	0.3	0.1	0.1	0.0	0.5	0.1	0.1
Shrunken & Broken (%)	0.8	1.0	0.9	0.8	1.1	0.4	1.0	1.0	1.1	0.9	0.8
Total Defects (%)	2.8	3.3	2.4	2.1	2.1	2.6	1.7	1.7	2.5	3.0	2.5
Grade	2 SRW	2 SRW	1 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	3 SRW	2 SRW
WHEAT NON-GRADE DATA:											
Dockage (%)	0.2	0.7	0.5	0.6	0.4	0.5	0.5	0.6	0.7	0.4	0.5
Moisture (%)	13.1	12.8	12.3	12.7	13.0	12.5	13.1	13.5	11.8	13.3	13.2
Protein (%) 12%/0% mb	9.9/11.3	10.2/11.6	9.1/10.4	8.8/10.0	9.5/10.8	9.4/10.7	8.8/10.0	9.8/11.1	9.5/10.8	11.0/12.5	9.9/11.2
Ash (%) 14%/0% mb	1.29/1.50	1.21/1.41	1.20/1.40	1.18/1.38	1.20/1.39	1.24/1.44	1.20/1.40	1.20/1.40	1.22/1.42	1.22/1.42	1.19/1.38
1000 Kernel Weight (g)	32.0	26.7	33.7	34.5	32.4	32.2	33.7	31.7	32.4	31.1	32.2
Kernel Size (%) Ig/md/sm	11/86/14	11/70/29	10/88/11	10/88/11	11/85/14	11/87/12	10/90/10	11/82/17	11/86/13	12/82/17	12/84/15
Single Kernel: Hardness	20.1	18.2	20.8	18.1	27.3	27.6	25.2	28.1	23.5	16.0	26.2
Weight (mg)	34.4	27.1	33.5	35.0	33.0	33.1	34.6	30.7	31.8	31.0	28.3
Diameter (mm)	2.63	2.45	2.66	2.69	2.64	2.63	2.67	2.55	2.55	2.53	2.50
Sedimentation (cc)	15.0	13.0	13.0	10.0	15.0	15.4	9.5	13.0	14.0	19.5	13.5
Falling Number (sec)	265	269	314	306	296	310	316	295	292	233	284
DON (ppm)	1.9	0.0	1.1	1.7	0.5	0.0	2.1	1.5	2.9	0.0	0.3
FLOUR DATA:											
Lab Mill Extraction (%)	68.3	67.8	71.0	68.7	69.1	71.3	68.0	70.0	68.0	68.8	68.1
Color: L*	91.8	91.5	91.3	91.7	91.2	91.9	91.3	91.3	91.8	91.3	91.6
a*	-2.0	-2.1	-2.2	-2.3	-2.3	-2.2	-2.3	-2.2	-2.2	-2.0	-2.1
b*	9.1	8.7	9.3	9.2	9.5	9.0	9.8	9.1	8.8	8.7	8.6
Protein (%) 14%/0% mb	8.1/9.4	8.0/9.3	7.3/8.5	7.0/8.1	7.6/8.8	7.9/9.2	7.2/8.4	7.9/9.2	7.5/8.7	9.1/10.6	8.2/9.6
Ash (%) 14%/0% mb	0.44/0.51	0.44/0.51	0.39/0.45	0.39/0.45	0.39/0.45	0.45/0.52	0.40/0.47	0.41/0.48	0.42/0.49	0.45/0.52	0.39/0.46
Wet Gluten (%) 14% mb	9.1	8.7	9.3	9.2	9.5	9.0	9.8	9.1	8.8	8.7	8.6
Falling Number (sec)	256	253	300	292	289	301	310	278	273	236	263
Amylograph Viscosity: 65g (BU)	239	313	457	495	451	387	589	321	326	250	260
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	71.0/1846	81.3/1748	74.1/1569	83.3/2263	81.5/2296	82.3/2104	85.3/2505	81.4/2009	83.1/1878	78.8/1473	78.1/2013
Hot Paste Visc. (cP)/Final Visc. (cP)	857/1688	794/1585	1325/2423	1309/2392	1217/2179	1203/2262	1564/2700	1094/1991	1010/1909	640/1242	977/1866
Damaged Starch (%)	3.0	3.4	3.8	3.1	4.2	3.5	2.1	4.2	4.2	3.1	3.8
SRC: Water/50% Sucrose (%)	57/100	56/112	56/99	49/78	54/97	56/102	49/82	55/100	56/102	54/105	56/111
5% Lactic Acid/5% Na ₂ CO ₃ (%)	113/70	129/81	112/78	89/66	112/71	114/72	91/65	113/72	114/75	124/76	128/75
Gluten Performance Index (GPI)	0.66	0.67	0.63	0.62	0.67	0.65	0.62	0.65	0.64	0.69	0.69
DOUGH PROPERTIES:											
Farinograph: Peak Time (min)	1.1	1.5	1.0	1.0	1.1	1.3	1.0	1.2	1.3	1.5	1.5
Stability (min)	1.3	1.7	1.4	0.9	1.5	1.8	1.3	1.5	1.4	1.8	2.0
Absorption (%)	53.0	53.3	54.1	51.9	51.9	53.6	52.0	52.0	54.2	52.9	53.7
Alveograph: P (mm)	43	45	54	32	44	50	36	38	49	36	48
L (mm)	85	98	59	70	82	70	74	98	67	127	104
P/L Ratio	0.51	0.46	0.93	0.46	0.54	0.72	0.48	0.39	0.73	0.28	0.46
W (10 ⁻⁴ J)	100	126	110	64	112	111	78	101	101	115	141
Extensograph (45 min): Resistance ₅₀ (BU)	162	194	193	157	224	219	184	208	343	205	196
Resistance Max (BU)	194	234	230	172	264	264	219	247	385	273	254
Extensibility (cm)	15.9	15.9	14.8	14.5	13.9	15.0	13.7	15.0	13.5	17.2	15.8
Area (cm²)	46	56	50	40	54	57	42	55	73	68	58
R ₅₀ /E Ratio	1.00	1.20	1.40	1.05	1.60	1.45	1.40	1.40	2.80	1.14	1.25
BAKING EVALUATION:											
Cookie: Diameter (cm)	8.9	9.0	8.8	9.0	9.2	8.7	8.9	9.0	8.9	8.8	9.0
Spread Factor (diameter/height)	9.3	9.4	8.9	9.8	10.5	8.7	9.3	9.2	9.3	9.3	9.3
Pan Bread: Bake Absorption (%)	56.5	57.0	57.0	54.3	57.5	56.5	55.3	57.0	58.2	56.5	57.2
Loaf Volume (cc)	534	634	637	556	607	623	570	597	628	592	626
Specific Volume (cc/g)	3.61	4.21	4.22	3.71	3.94	4.18	3.72	3.89	4.15	3.95	4.18
Sponge Cake: Volume (cc)	1159	1150	1133	1154	1166	1122	1210	1130	1165	1132	1153
Hardness (g)	299	266	285	229	275	313	239	306	314	319	318
% OF SAMPLES:	2%	3%	16%	7%	5%	17%	21%	5%	9%	10%	6%

*East Coast: Maryland, Virginia, North Carolina; Gulf: Alabama, Arkansas, Illinois, Indiana, Kentucky, Missouri, Ohio, Tennessee

2025 SRW QUALITY DATA – BY AREA

	Alabama	Arkansas	Illinois		Indiana		Kentucky	Missouri		Ohio		Tennessee	Maryland		North Carolina		Virginia	
			E	W	S	N		E	W	S	N	NE	E	W	SE	NE	W	E
WHEAT GRADE DATA:																		
Test Weight (lb/bu)	59.6	57.0	60.7	60.4	58.3	58.7	59.2	58.3	58.1	58.4	58.7	59.6	59.0	58.3	55.9	57.5	58.1	58.7
(kg/hl)	78.4	75.1	79.8	79.5	76.7	77.3	77.9	76.7	76.5	76.9	77.3	78.4	77.6	76.7	73.6	75.7	76.5	77.3
Damaged Kernels (%)	2.0	2.0	1.3	1.3	0.7	1.3	0.7	1.3	2.0	0.7	0.7	0.7	0.7	1.3	2.7	1.3	0.7	2.0
Foreign Material (%)	0.0	0.3	0.0	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.0	0.0	0.6	0.3	0.3	0.0	0.3	0.0
Shrunken & Broken (%)	0.8	1.0	0.8	1.0	0.7	0.9	1.1	0.1	0.8	0.8	1.0	1.0	1.2	1.0	1.0	0.8	0.7	0.8
Total Defects (%)	2.8	3.3	2.1	2.6	1.3	2.5	2.1	2.3	3.1	1.8	1.7	1.7	2.5	2.6	4.0	2.1	1.7	2.8
Grade	2 SRW	3 SRW	1 SRW	1 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW	4 SRW	3 SRW	2 SRW	2 SRW
WHEAT NON-GRADE DATA:																		
Dockage (%)	0.2	0.7	0.3	0.6	0.7	0.6	0.4	0.5	0.6	0.3	0.5	0.6	0.6	0.9	0.3	0.4	0.4	0.5
Moisture (%)	13.1	12.8	12.2	12.4	12.6	12.8	13.0	12.6	12.3	13.5	13.1	13.5	11.2	13.0	13.2	13.4	12.7	13.4
Protein (%) 12%/0% mb	9.9/11.3	10.2/11.6	9.1/10.4	9.1/10.4	8.8/10.0	8.8/10.0	9.5/10.8	9.4/10.7	9.4/10.7	9.1/10.3	8.7/9.9	9.8/11.1	9.3/10.6	9.9/11.2	11.4/12.9	10.7/12.1	10.4/11.8	9.7/11.0
Ash (%) 14%/0% mb	1.29/1.50	1.21/1.41	1.19/1.39	1.20/1.40	1.18/1.37	1.19/1.38	1.20/1.39	1.24/1.44	1.24/1.44	1.17/1.36	1.21/1.41	1.20/1.40	1.21/1.41	1.25/1.45	1.25/1.45	1.19/1.39	1.26/1.47	1.16/1.35
1000 Kernel Weight (g)	32.0	26.7	34.3	33.3	33.6	34.9	32.4	32.8	31.4	34.5	33.6	31.7	32.0	33.4	30.6	31.4	30.1	33.0
Kernel Size (%) lg/md/sm	11/86/14	11/70/29	10/88/11	10/88/11	10/87/12	10/89/10	11/85/14	11/88/12	11/86/13	10/91/09	10/90/10	11/82/17	10/85/14	11/86/12	12/82/17	12/83/16	12/78/21	12/87/13
Single Kernel: Hardness	20.1	18.2	18.1	22.3	15.7	19.3	27.3	24.9	31.5	27.4	24.8	28.1	18.9	32.5	10.8	20.5	30.7	24.3
Weight (mg)	34.4	27.1	34.4	33.1	32.1	36.4	33.0	33.2	33.1	35.3	34.4	30.7	31.5	32.6	30.6	31.4	28.1	28.4
Diameter (mm)	2.63	2.45	2.69	2.64	2.63	2.72	2.64	2.63	2.63	2.74	2.66	2.55	2.54	2.58	2.53	2.53	2.51	2.49
Sedimentation (cc)	15.0	13.0	13.0	13.0	10.0	10.0	15.0	15.0	16.0	12.0	9.0	13.0	14.0	14.0	19.0	20.0	17.0	12.0
Falling Number (sec)	265	269	317	313	287	316	296	310	309	308	318	295	298	279	212	251	272	288
DON (ppm)	1.9	0.0	1.1	1.2	1.7	1.7	0.5	0.0	0.0	2.0	2.1	1.5	2.6	3.4	0.0	0.0	0.3	0.3
FLOUR DATA:																		
Lab Mill Extraction (%)	68.3	67.8	71.1	70.9	68.2	68.9	69.1	71.6	70.9	68.2	67.9	70.0	67.4	69.2	70.6	67.2	67.0	68.6
Color: L*	91.8	91.5	90.3	91.9	91.6	91.8	91.2	91.9	91.8	91.5	91.2	91.3	91.8	91.7	91.1	91.5	91.2	91.8
a*	-2.0	-2.1	-2.2	-2.2	-2.3	-2.3	-2.3	-2.2	-2.2	-2.3	-2.4	-2.2	-2.2	-2.2	-1.9	-2.0	-2.0	-2.2
b*	9.1	8.7	9.7	9.1	9.4	9.2	9.5	8.8	9.2	9.2	9.9	9.1	8.7	8.9	8.6	8.8	8.9	8.5
Protein (%) 14%/0% mb	8.1/9.4	8.0/9.3	7.6/8.9	7.1/8.3	6.7/7.7	7.1/8.2	7.6/8.8	8.0/9.3	7.8/9.1	7.3/8.5	7.2/8.3	7.9/9.2	7.3/8.5	7.8/9.0	9.3/10.8	8.9/10.3	8.8/10.3	8.0/9.3
Ash (%) 14%/0% mb	0.44/0.51	0.44/0.51	0.38/0.44	0.39/0.46	0.40/0.46	0.38/0.44	0.39/0.45	0.46/0.54	0.43/0.50	0.46/0.53	0.39/0.46	0.41/0.48	0.42/0.48	0.43/0.50	0.48/0.56	0.42/0.49	0.39/0.46	0.40/0.46
Wet Gluten (%) 14% mb	9.1	8.7	9.7	9.1	9.4	9.2	9.5	8.8	9.2	9.2	9.9	9.1	8.7	8.9	8.6	8.8	8.9	8.5
Falling Number (sec)	256	253	295	302	289	293	289	289	317	327	307	278	285	250	196	271	245	271
Amylograph Viscosity: 65g (BU)	239	313	433	470	314	582	451	340	451	389	631	321	372	236	104	378	201	285
RVA: Pasting Temp. (°C)	71.0	81.3	84.5	68.5	82.2	83.9	81.5	82.3	82.2	83.9	85.6	81.4	82.3	84.8	75.8	81.5	70.2	81.4
Peak Visc. (cP)	1846	1748	223	2300	2048	2367	2296	1970	2288	2217	2565	2009	2101	1445	998	1888	1580	2193
Hot Paste Visc. (cP)	857	794	1339	1317	979	1469	1217	1069	1386	1318	1616	1094	1149	741	268	965	692	1095
Final Visc. (cP)	1688	1585	2452	2407	1920	2620	2179	2072	2523	2394	2764	1991	2124	1493	598	1805	1375	2070
Damaged Starch (%)	3.0	3.4	3.8	3.8	3.4	3.0	4.2	3.0	4.2	2.5	2.1	4.2	4.2	4.2	3.4	3.0	3.8	3.8
SRC: Water	57	56	55	56	50	49	54	55	57	49	49	55	57	56	54	53	58	54
50% Sucrose	100	112	98	100	81	77	97	100	105	81	83	100	102	103	107	103	112	111
5% Lactic Acid	113	129	108	115	91	88	112	114	113	95	91	113	116	111	127	121	131	127
5% Na ₂ CO ₃	70	81	71	82	67	66	71	70	75	66	65	72	76	74	78	73	79	74
Gluten Performance Index (GPI)	0.66	0.67	0.64	0.63	0.62	0.62	0.67	0.67	0.63	0.64	0.62	0.65	0.65	0.63	0.69	0.69	0.69	0.69
DOUGH PROPERTIES:																		
Farinograph: Peak Time (min)	1.1	1.5	1.2	0.8	1.1	0.9	1.1	1.3	1.3	1.0	1.0	1.2	1.3	1.1	1.3	1.7	1.5	1.5
Stability (min)	1.3	1.7	1.5	1.3	1.1	0.8	1.5	1.9	1.7	1.5	1.3	1.5	1.5	1.3	1.4	2.1	1.7	2.1
Absorption (%)	53.0	53.3	53.1	54.7	51.4	52.1	51.9	53.3	53.9	52.3	51.9	52.0	53.9	54.8	53.0	52.9	53.4	53.8
Alveograph: P (mm)	43	45	46	59	30	33	44	47	55	43	34	38	50	46	33	38	45	49
L (mm)	85	98	64	56	73	68	82	76	61	80	73	98	61	78	122	131	119	98
P/L Ratio	0.51	0.46	0.72	1.05	0.41	0.49	0.54	0.62	0.90	0.54	0.47	0.39	0.82	0.59	0.27	0.29	0.38	0.50
W (10 ⁻⁴ J)	100	126	96	118	59	67	112	108	115	100	73	101	102	98	96	131	145	140
Extensograph (45 min): Resistance ₅₀ (BU)	162	194	216	180	152	160	224	210	232	214	178	208	295	436	194	214	214	188
Resistance Max (BU)	194	234	248	215	161	177	264	244	279	243	193	247	329	438	268	282	282	237
Extensibility (cm)	15.9	15.9	13.9	15.3	15.0	14.3	13.9	15.0	15.1	13.9	13.6	15.0	14.1	12.4	17.0	17.3	16.8	15.4
Area (cm ²)	46	56	51	49	39	40	54	54	61	50	40	55	69	82	65	70	68	54
R ₅₀ /E Ratio	1.00	1.20	1.60	1.20	1.00	1.10	1.60	1.40	1.50	1.30	1.40	1.40	2.10	3.50	1.10	1.20	1.30	1.20
BAKING EVALUATION:																		
Cookie: Diameter (cm)	8.9	9.0	8.9	8.8	9.0	9.0	9.2	8.8	8.7	8.7	8.9	9.0	8.8	8.9	8.8	8.8	8.8	9.0
Spread Factor (diameter/height)	9.3	9.4	9.4	8.7	10.0	9.7	10.5	9.0	8.4	8.7	9.4	9.2	9.5	8.9	9.0	9.5	9.0	9.5
Pan Bread: Bake Absorption (%)	56.5	57.0	58.0	56.5	54.0	54.5	57.5	56.5	56.5	56.5	55.0	57.0	58.0	58.5	56.0	57.0	57.6	57.0
Loaf Volume (cc)	534	634	619	647	567	551	607	586	674	587	566	597	654	579	588	596	658	612
Specific Volume (cc/g)	3.61	4.21	4.06	4.31	3.72	3.70	3.94	3.91	4.54	3.86	3.69	3.89	4.32	3.81	3.96	3.95	4.46	4.07
Sponge Cake: Volume (cc)	1159	1150	1146	1126	1165	1149	1166	1120	1124	1144	1224	1130	1178	1141	1118	1145	1177	1143
Hardness (g)	299	266	284	286	234	227	275	310	316	298	227	306	322	299	326	313	329	313
% OF SAMPLES:	2%	3%	5%	11%	2%	5%	5%	10%	7%	4%	17%	5%	6%	2%	5%	5%	1%	5%

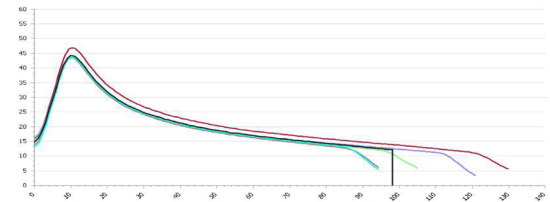
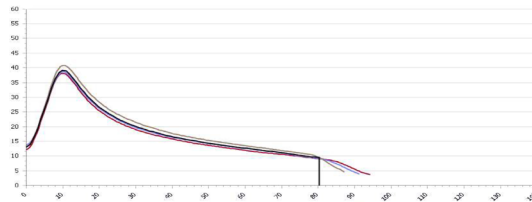
*N-North, S-South, E-East, W-West, NE-Northeast

COMPOSITE DOUGH PROPERTIES

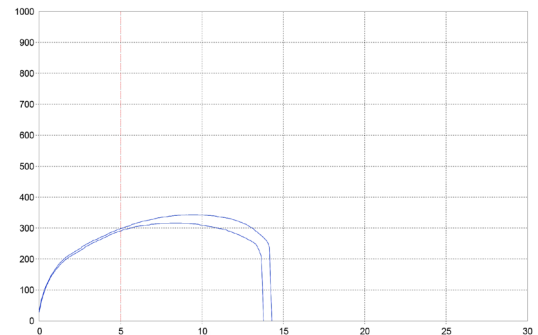
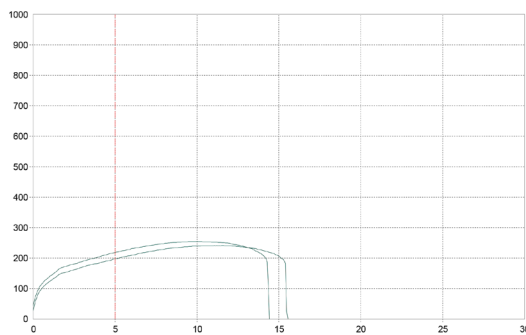
Gulf

East Coast

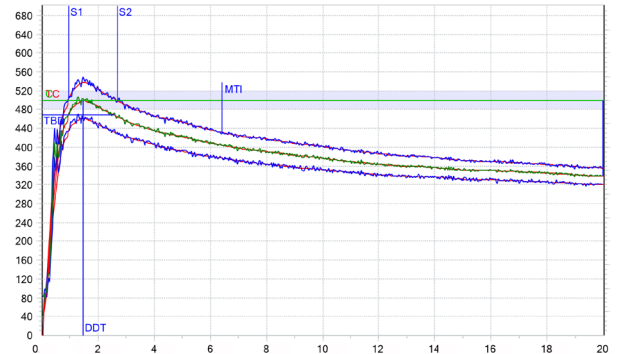
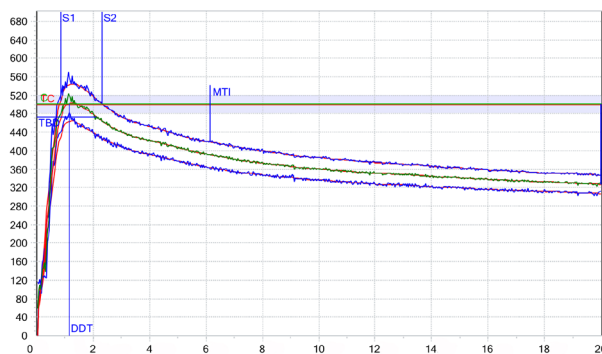
Alveograph



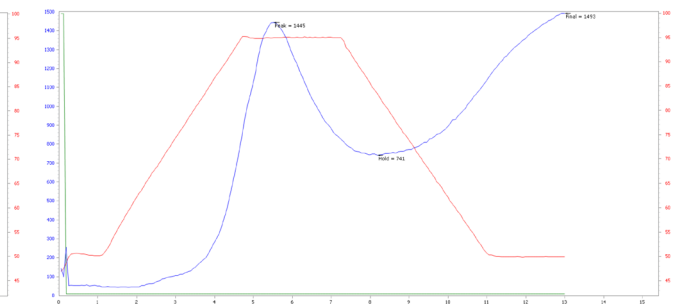
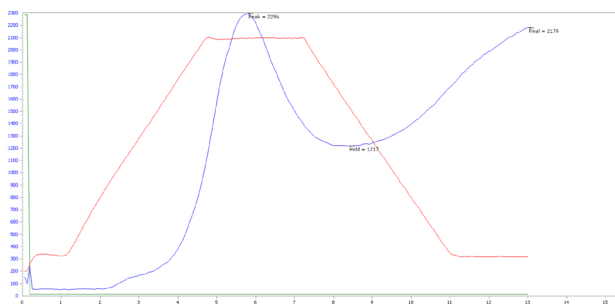
Extensograph



Farinograph



Rapid Visco Analyzer (RVA)



ANALYSIS METHODS

SOFT RED WINTER LABORATORY TESTING

All quality data contained in this report is the result of testing and analysis conducted by Great Plains Analytical Lab in Kansas City, Missouri.

TEST:	METHODOLOGY:
WHEAT GRADE FACTORS	
Grade	Official U.S. Standards for Grain.
Test Weight	AACCI 55-10.01.
Damaged Kernels	Official U.S. Standards for Grain.
Foreign Material	Official U.S. Standards for Grain.
Shrunken and Broken	Official U.S. Standards for Grain.
Total Defects	Official U.S. Standards for Grain.
WHEAT NON-GRADE FACTORS	
Dockage	Official USDA procedures.
Moisture	AACCI 44-15.02. • Wheat: DICKEY-john GAC® 2500-UGMA Grain Analysis Computer. • Flour: air oven method.
Protein (12% mb)	AACCI 46-30.01 (Dumas combustion nitrogen analysis or CNA method).
Ash (14% mb)	AACCI 08-01.01 expressed on a 14% mb.
1000 Kernel Weight	Based on a 10 g clean wheat sample counted by an electronic counter, results converted to express weight by 1000 kernels
Kernel Size	Wheat is sifted with a RoTap sifter using Tyler No. 7 (2.82 mm) and No. 9 (2.00 mm) screens.
Single Kernel Characterization System (SKCS)	AACCI 54-31.01 using Perten SKCS 4100.
Sedimentation	AACCI 56-61.02, Zeleny.
Falling Number	AACCI 56-81.04; 2019 FGIS barometric pressure correction procedure; average value is a simple mean of sample results.
DON	Neogen ELISA.



ANALYSIS METHODS

SOFT RED WINTER LABORATORY TESTING

TEST:	METHODOLOGY:
FLOUR FACTORS	
Laboratory Milling Extraction	AACCI 26-10.02, AACCI 26-21.02. Samples are milled on a Buhler Laboratory mill (MLU 202) using a 183-micron (μ) sieve.
Color	CIE 1976 L*a*b* color system. Minolta Chroma Meter with Granular-Materials attachment CR- A50 and CR-410 colorimeter.
Protein (14% mb)	AACCI 46-30.01 (Dumas CNA method).
Ash (14% mb)	AACCI 08-01.01 expressed on a 14% mb.
Wet Gluten	AACCI 38-12.02 expressed on a 14% mb.
Gluten Index	AACCI 38-12.02.
Falling Number	AACCI 56-81.04; 2019 FGIS barometric pressure correction procedure; average value is a simple mean of sample results.
Amylograph Viscosity	AACCI 22-10.01 modified to use 65 g flour (14% mb) and 450 ml distilled water with pins.
Damaged Starch	AACCI 76-30.02 (Enzymatic hydrolysis).
Solvent Retention Capacity	AACCI 56-11.02.
DOUGH PROPERTY FACTORS	
Farinograph	AACCI 54-21.02 (constant flour weight method) with 50 g bowl.
Alveograph	AACCI 54-30.02, Chopin-Alveolab.
Extensograph	AACCI 54-10.01; 45 min rest.
EVALUATION OF END-PRODUCTS	
Bread	AACCI 10-10.03 ("pup loaf" method); producing two loaves per batch using dry yeast and ascorbic acid. After mixing, the dough is divided into two equal portions, fermented for 160 min, molded and panned in pup loaf pans before proofing and baking. Loaf volume is measured immediately after baking by rapeseed displacement.
Sugar-Snap Cookies (Biscuits)	AACCI 10-50.05, macro-method.





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