2022 Hard Winter Wheat

Regional Performance Nursery

Quality Report

Hard Winter Wheat Quality Laboratory

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About the 2022 Crop ...

Locations from the **NRPN**, and **SRPN** were subdivided into **intraregional production zones**. The intraregional production zones represent broad production regions in which several locations have been composited by similar historical yield trends. Full quality testing is performed on these samples, and the data are listed beginning with the name of the nursery followed by a zone identifier (eg. "NRPN-NCP breadmaking properties," the NCP indicating North Central Plains Zone).

The **NRPN**, and **SRPN** regional nursery locations with number of samples submitted in the parenthesis were subdivided and variety-composited according to the following zones:

Northern Regional Performance Nursery (NRPN)

North Central Plains (NCP)

Lincoln NE
Brookings, SD
Winner, SD
Dakota Lakes, SD

Northern High Plains (NHP)

Moccasin, MT
Casselton, ND

Northern Plains (NP)

No Sample

Southern Regional Performance Nursery (SRPN)

North Central Plains (NCP)

Lincoln, NE
Brookings, SD
Dakota Lake, SD
Winner, SD
Salina, KS

Northern High Plains (NHP)

Ft. Collins, CO
Julesburg, CO

South Central Plains (SCP)

Chillicothe, TX
Tipton, OK
Lahoma, OK
Stillwater, OK
Bushland-irr, TX

Southern High Plains (SHP)

Hays, KS

HWWQL Laboratory Analyses

About the HWWQL Quality Data ...

Milling, flour chemical, physical dough, breadmaking, noodlemaking properties and flour protein analysis of 2022 Hard Winter Wheat regional performance nurseries have been evaluated and analyzed in the USDA Hard Winter Wheat Quality Laboratory. The nurseries are: **Northern Regional Performance Nursery (NRPN)**, and **Southern Regional Performance Nursery (SRPN).** Tested samples were composites from multi-location trials. Data are reported in five tables: Wheat physical data, Milling, flour chemical, and noodle color data, Mixograph data, Flour pasting properties, and Breadmaking properties.

The following parameters are currently reported:

Physical and Hardness Data

- Test weight (TW) = lbs/bushel. (AACC Method 55-10)
- SKCS kernel moisture, size, and weight = Single Kernel Characterization System: the average of 300 kernels for kernel moisture (%), size (mm), and weight (mg) and their standard deviations.
- SKCS hardness (AACC Method 55-31) = hardness score: the average of 300 kernels for kernel hardness and its standard deviation.

Chemical Data

NIR Protein Content
NIR calibrations for protein were developed according to standard AACC methods: wheat meal (AACC Method 39-10), wheat flour (AACC Method 39-11) and whole kernel wheat (AACC Method 39-25). Laboratory values for protein content and subsequent equation development and calibration checks were determined by nitrogen combustion method (AACC Method 46-30) in all three sample types.

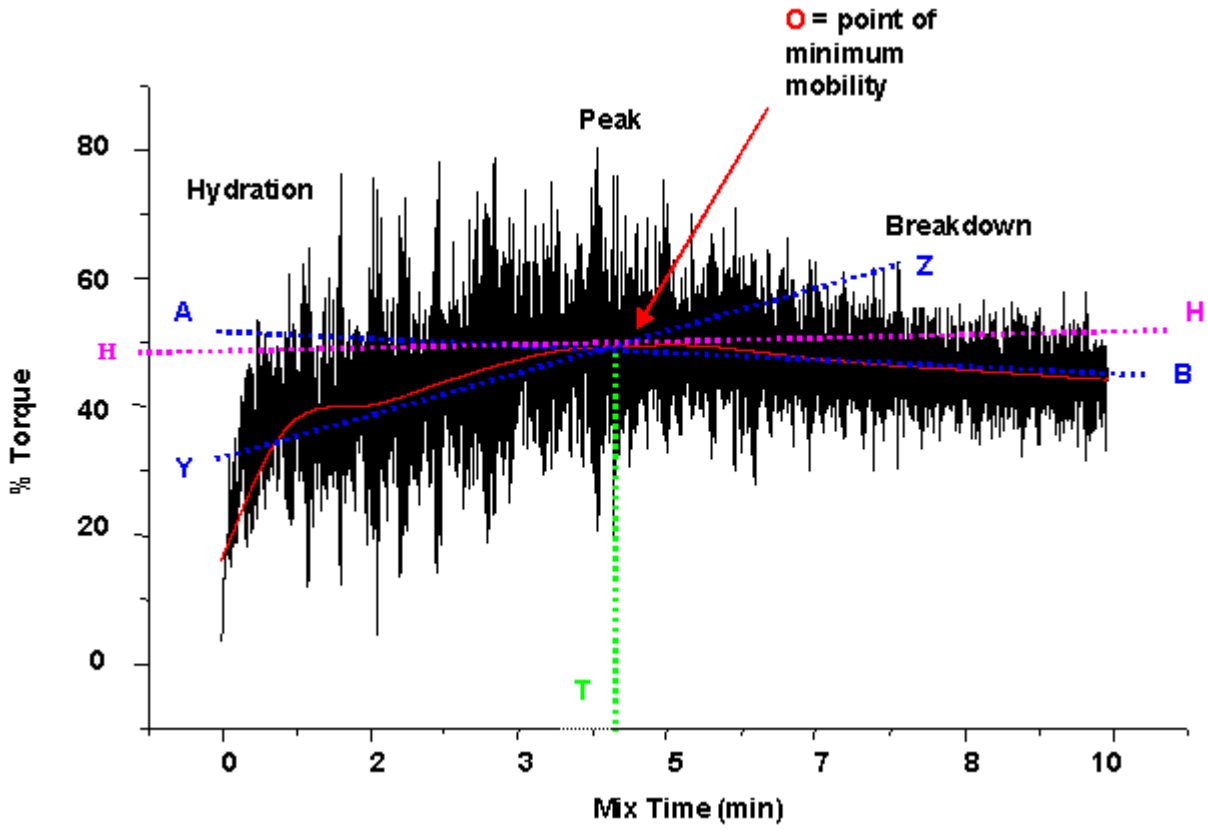
Wheat
- Protein (FP) = grain protein content (%) on 14% mb. (AACC Method 46-30 or 39-10)
- Flour % (FY) = flour yield (extraction) from milling (AACC Methods 26-10A, -50)

Flour
- Ash (FA) = flour ash content (%) on 14% mb. (AACC Method 08-01)
- Protein (FP) = flour protein content (%) on 14% mb. (AACC Method 46-30 or 39-11)
- Color (dry flour) = Minolta method
- PPO = polyphenol oxidase activity defined as a change of 0.001absorbance unit (AU)/min/mL

Mixograph Data

Mixograph (AACC Method 54-40)
- Absorption = optimal water added (% of flour wt. on 14% mb).
- Mix Time = time (as-is), in minutes, to peak dough development.
- Tolerance = resistance of dough to over-mixing (0 = unsatisfactory, 4 = satisfactory, 6 = outstanding).

Mixogram Curve

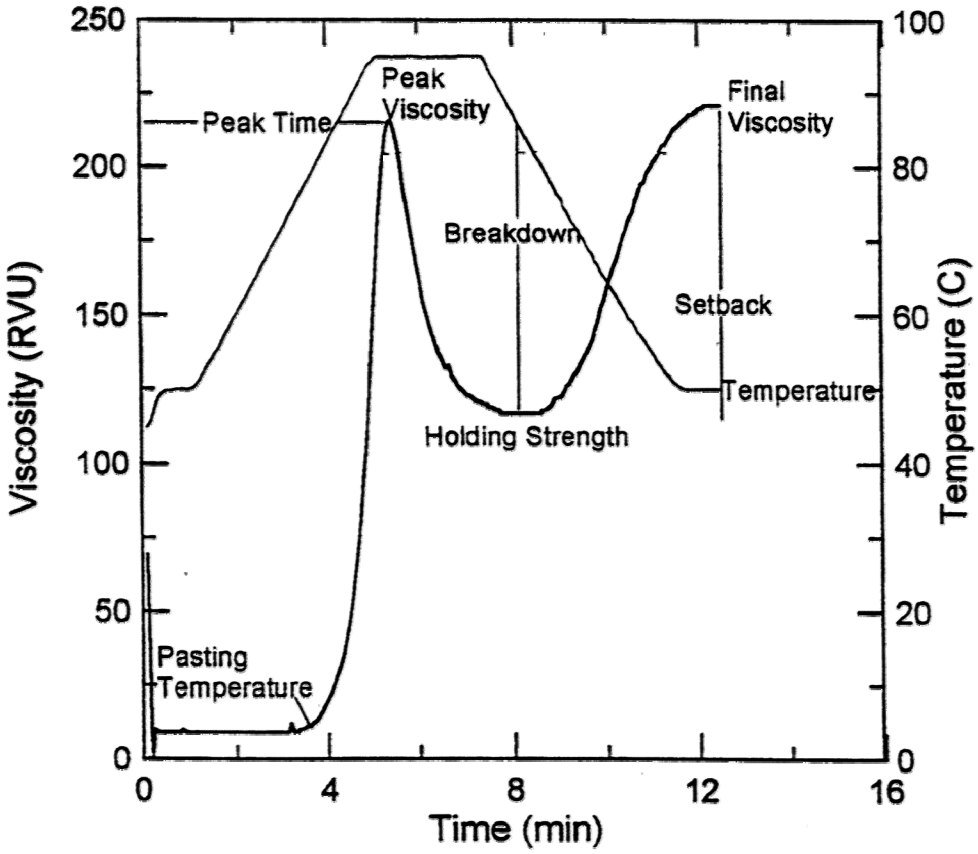


Rapid Visco Analyser (RVA) (AACC Method 61-02)

13 min pasting profile:

- Peak viscosity = maximum viscosity developed during or soon after the heating portion of the test, in RVU.
- Peak time = time at which the peak viscosity occurred, in minutes.
- Pasting temperature = temperature where viscosity first increases by at least 2 RVU over a 20 sec. period, in ºC.
- Peak temperature = temperature at which the peak viscosity occurred, in ºC.
- Holding strength = minimum viscosity after the peak, normally occurring around the commencement of sample cooling, in RVU.
- Breakdown = peak viscosity minus trough viscosity, in RVU.
- Final viscosity = viscosity at the end of the test, in RVU.
- Setback from Peak = final viscosity minus peak viscosity, in RVU.
- Setback from Trough = final viscosity minus trough viscosity, in RVU.

Pasting profile:



Breadmaking Properties *(Pup Loaf based on 100 g flour, AACC Method 10-10B)*
- Flour protein (FP) = flour protein content (14% mb) (AACC Method 46-30 or 39-11).
- Flour absorption = optimal water added (%) for breadmaking.
- Mix time = bake mix time, in min, as-is and corrected.
- Dough weight = dough weight (g) after mixing.
- Proof height = height of fermented dough (cm) after proofing.
- Crumb grain = internal loaf appearance; 0 = unsatisfactory, 4 = satisfactory 6 = outstanding).
- Loaf volume (LV) = cc (by rape seed displacement).

Noodlemaking Properties
- Alkaline noodle color by Minolta colorimeter

ACKNOWLEDGEMENTS

HWWQL personnel who contributed to the collection and analysis of the RPN samples are listed below:

Milling Lab: Rhett Kaufman, Ph.D. Kenyon Base, AS.

Bake Lab: Theresa Sutton, B.S.; Susan Xiao, M.D.; Guixiang (Lucy) Lu, M.D.; and Alicsa Mayer, M.S.

Analytical Lab: Kevin Fay, B.S.

Data evaluation & Written report: Yuanhong (Richard) Chen, Ph.D. (HWWQL Associate Director)

HWWQL: Brad Seabourn, Ph.D (HWWQL Director)

RPN Relational database: Scott Haley, Ph.D (Colorado State University)
Achieving acceptable end-use (milling and baking) quality is a fundamental objective of wheat breeding programs throughout the U.S. hard winter wheat region. Numerous statistical methods have been developed to measure quality. Several years ago, Dr. Scott Haley (Colorado State University), in conjunction with the USDA-ARS Hard Winter Wheat Quality Laboratory (HWWQL), developed a relational database for summarization and interpretation of regional performance nursery wheat end-use quality data generated annually by the HWWQL (Scott D. Haley, Rod D. May, Bradford W. Seabourn, and Okkyung K. Chung. 1999. *Relational database system for summarization and interpretation of Hard Winter Wheat regional quality data*. Crop Sci. 39:309–315). Until that time, few tools were available to assist in the decision-making process when faced with a large number of parameters from comprehensive milling and baking tests. The database system uses a graphical interface that requires input from the user. The database system provides simultaneous assessment of multiple quality traits on a standardized scale, *user-specified prioritization* of end-use quality traits for numerical and qualitative ratings of genotypes, tabulation of major quality deficiencies of genotypes, and summarization of quality ratings for a genotype across multiple nurseries.

Tables for milling and baking scores of each of Intraregional production zones in this report are direct outputs from the Relational Database program.

The data were provided by the Hard Winter Wheat Quality Laboratory (HWWQL), located at the USDA/ARS, Center for Grain and Animal Health Research (CGAHR) (Former name: Grain Marketing and Production Research Center, GMPRC), Manhattan, Kansas. Some data may not appear in all years.

**AACC methods cited are from the American Association of Cereal Chemists Approved Methods. 2000. The Association: St. Paul, MN. Regional Performance Nursery report and data may be viewed and downloaded at: https://www.ars.usda.gov/plains-area/lincoln-ne/wheat-sorghum-and-forage-research/docs/hard-winter-wheat-regional-nursery-program/research/.

Northern
Regional Performance Nursery

2022 NRPN Intraregional Production Zone

Entry	Selection No.	Pedigree	Source
1	Kharkof	Kharkof	Check
2	Overland	Millennium sib//Seward/Archer	Check
3	Wesley	KS831936-3/NE86501 = Sumner sib (Plainsman V/Odesskaya 51)//Colt/Cod	Check
4	Jagalene	Jagger/Abilene	Check
5	Jerry	Jerry	Check
6	SD15007-11	Art/SD07184//Ideal	SDSU
7	SD15007-5	Art/SD07184//Ideal	SDSU
8	SD15035-2	NE05425/SD07184//SD07056	SDSU
9	SD17B032-1	Wendy/SD07084	SDSU
10	SD17B210-2	NI09715/SD07126//SD05W030	SDSU
11	SD18B025-8	OK07719W/SD07W083-4//SD07W053/3/SD09161	SDSU
12	SD18B072-2	Alice/SY Wolf	SDSU
13	SD18B083-8	SY Wolf/Everest	SDSU
14	SD19B019-2	SD09118/Everest	SDSU
15	SD19B033-2	SD07W083-7/NE09499	SDSU
16	MTS1903	(Judee sib, MTS0819)//08X350-A6/Warhorse	Montana State
17	MTS1908	(Judee sib, MTS0819)//08X350-A6/Warhorse	Montana State
18	MTCL19151	MT0871/(06X445B1-2, SY Clearstone sib)	Montana State
19	NHH19668	OK09915C/NH11565	UNL
20	NI17410	TX06A001281/NI04420	UNL
21	NE18455	TX07A001505/NE06430	UNL
22	NE19412	OK09528/NE07486	UNL
23	NE19455	NE09521/NE11656	UNL
24	NE19590	NE10418/NE06545	UNL
25	NE19454	NE09521/NE11656	UNL
26	NE18625	SD08200/NE06545	UNL
27	NE18435	TX07A001505/NE05496	UNL
28	LCH19DH-147-68		LCS
29	LCH19DH-150-40		LCS
30	LCH19DH-149-10		LCS
31	LCH19DH-152-20		LCS
32	LCH19DH-151-36		LCS
33	LP855 (AAC Network)	LG237/LG278	AAFC Lethbridge
34	LQ148 (AAC Vortex)	LF1815/LD1829//Emerson	AAFC Lethbridge
35	LR535	Norstar/CDC Fallcon//LF1318	AAFC Lethbridge
36	17NORD-96	Accipiter/ Ideal	NDSU
37	19NORD-124	Crux/ND Noreen	NDSU
38	17NORD-138	CM82036/Jerry/5/Lr51/Superb//Norstar/3/Jerry/4/Accipiter	NDSU
39	17NORD-143	CM82036/Jerry//NE10628/Jerry	NDSU
40	17NORD-148	CM82036/Jerry//WB Matlock	NDSU

List of NRPN Sample ID

Entry	Line ID from Breeders	HWWQL ID		
		North Central Plains	Northern High Plains	Northern Plains
1	Kharkof	22-NNC1101	22-NNH1101	
2	Overland	22-NNC1102	22-NNH1102	
3	Wesley	22-NNC1103	22-NNH1103	
4	Jagalene	22-NNC1104	22-NNH1104	
5	Jerry	22-NNC1105	22-NNH1105	
6	SD15007-11	22-NNC1106	22-NNH1106	
7	SD15007-5	22-NNC1107	22-NNH1107	
8	SD15035-2	22-NNC1108	22-NNH1108	
9	SD17B032-1	22-NNC1109	22-NNH1109	
10	SD17B210-2	22-NNC1110	22-NNH1110	
11	SD18B025-8	22-NNC1111	22-NNH1111	
12	SD18B072-2	22-NNC1112	22-NNH1112	
13	SD18B083-8	22-NNC1113	22-NNH1113	
14	SD19B019-2	22-NNC1114	22-NNH1114	
15	SD19B033-2	22-NNC1115	22-NNH1115	
16	MTS1903	22-NNC1116	22-NNH1116	
17	MTS1908	22-NNC1117	22-NNH1117	
18	MTCL19151	22-NNC1118	22-NNH1118	
19	NHH19668	22-NNC1119	22-NNH1119	
20	NI17410	22-NNC1120	22-NNH1120	
21	NE18455	22-NNC1121	22-NNH1121	
22	NE19412	22-NNC1122	22-NNH1122	
23	NE19455	22-NNC1123	22-NNH1123	
24	NE19590	22-NNC1124	22-NNH1124	
25	NE19454	22-NNC1125	22-NNH1125	
26	NE18625	22-NNC1126	22-NNH1126	
27	NE18435	22-NNC1127	22-NNH1127	
28	LCH19DH-147-68	22-NNC1128	22-NNH1128	
29	LCH19DH-150-40	22-NNC1129	22-NNH1129	
30	LCH19DH-149-10	22-NNC1130	22-NNH1130	
31	LCH19DH-152-20	22-NNC1131	22-NNH1131	
32	LCH19DH-151-36	22-NNC1132	22-NNH1132	
33	LP855 (AAC Network)	22-NNC1133	22-NNH1133	
34	LQ148 (AAC Vortex)	22-NNC1134	22-NNH1134	
35	LR535	22-NNC1135	22-NNH1135	
36	17NORD-96	22-NNC1136	22-NNH1136	
37	19NORD-124	22-NNC1137	22-NNH1137	
38	17NORD-138	22-NNC1138	22-NNH1138	
39	17NORD-143	22-NNC1139	22-NNH1139	
40	17NORD-148	22-NNC1140	22-NNH1140	

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2022 NRPN-NCP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
Kharkof	34.7	Very Poor	64.3	59.4	Good	90.4		6,8,10,
Overland	52.0	Very Good	96.2	35.4	Very Poor	53.8		21,
Wesley	54.0	Very Good	100.0	60.0	Very Good	91.4		3,
Jagalene	49.9	Very Good	92.4	42.3	Poor	64.3		
Jerry	47.1	Average	87.2	47.4	Average	72.2	1AL	
SD15007-11	47.7	Good	88.2	40.3	Poor	61.4		14,15,21,
SD15007-5	48.7	Good	90.1	41.6	Poor	63.4	1AL	14,15,20,
SD15035-2	46.9	Average	86.8	65.7	Very Good	100.0		
SD17B032-1	51.1	Very Good	94.6	65.6	Very Good	99.8		
SD17B210-2	38.6	Very Poor	71.5	37.9	Very Poor	57.8	1BL	8,12,13,16,17,
SD18B025-8	44.1	Average	81.6	46.9	Average	71.5		
SD18B072-2	49.7	Good	91.9	47.5	Average	72.3	h1RS?	
SD18B083-8	48.3	Good	89.5	43.7	Poor	66.6		
SD19B019-2	48.6	Good	90.0	41.8	Poor	63.6	1BL	12,13,16,17,
SD19B033-2	52.6	Very Good	97.3	38.9	Poor	59.2		14,15,
MTS1903	42.1	Poor	78.0	49.0	Average	74.5		1,2,4,14,15,
MTS1908	42.0	Poor	77.7	49.3	Good	75.1		1,4,14,15,
MTCL19151	44.8	Average	82.9	60.5	Very Good	92.2		9,14,15,
NHH19668	48.5	Good	89.7	59.4	Good	90.4		16,
NI17410	53.6	Very Good	99.2	50.8	Good	77.4		15,
NE18455	44.0	Poor	81.4	28.9	Very Poor	44.0		11,14,15,17,21,
NE19412	43.5	Poor	80.5	54.3	Good	82.6		3,
NE19455	51.4	Very Good	95.1	38.7	Poor	58.9		
NE19590	40.6	Poor	75.1	38.6	Very Poor	58.7		11,16,19,20,21,
NE19454	44.8	Average	83.0	45.4	Poor	69.1		14,15,
NE18625	42.3	Poor	78.4	46.3	Average	70.4		9,10,
NE18435	45.1	Average	83.6	38.4	Very Poor	58.5		11,18,21,
LCH19DH-147-68	51.8	Very Good	95.8	30.1	Very Poor	45.8		16,19,20,21,
LCH19DH-150-40	44.3	Average	82.1	65.2	Very Good	99.3		10,
LCH19DH-149-10	36.2	Very Poor	66.9	49.8	Good	75.8		5,8,9,10,
LCH19DH-152-20	43.9	Poor	81.2	48.8	Average	74.3		6,

Quality scores and ratings are calculated directly from the relative trait weightings (printed at the top of the page) and are applicable only to the nursery selected.

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2022 NRPN-NCP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
LCH19DH-151-36	49.7	Good	92.0	36.7	Very Poor	55.8		16,
AAC Network	36.8	Very Poor	68.2	46.5	Average	70.8		1,4,14,15,
AAC Vortex	40.1	Very Poor	74.3	58.6	Good	89.2		1,2,14,15,
LR535	41.1	Poor	76.0	48.8	Average	74.2		4,14,15,
17NORD-96	39.7	Very Poor	73.5	30.1	Very Poor	45.9		11,14,15,18,
19NORD-124	47.6	Good	88.2	62.9	Very Good	95.7		
17NORD-138	39.4	Very Poor	73.0	60.4	Very Good	92.0		8,
17NORD-143	37.2	Very Poor	69.0	64.6	Very Good	98.4		1,3,5,
17NORD-148	45.7	Average	84.7	58.6	Good	89.3		

2022 NRPN Intraregional Production Zone

North Central Plains

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
Kharkof	58.7	11.6	0.5	28.4	8.7	2.51	0.28	33	19	SOFT	51-24-17-08-04
Overland	58.9	12.1	0.7	31.0	10.0	2.62	0.38	59	15	HARD	04-15-31-50-01
Wesley	58.4	11.4	0.9	33.7	11.7	2.73	0.35	52	15	MIXED	13-21-33-33-03
Jagalene	60.1	11.4	0.6	30.2	11.2	2.63	0.36	63	16	HARD	04-10-23-63-01
Jerry	58.1	11.8	0.8	29.5	9.9	2.55	0.35	61	17	HARD	06-14-25-55-01
SD15007-11	58.9	11.8	0.8	28.4	10.0	2.48	0.34	58	15	HARD	07-12-35-46-01
SD15007-5	59.0	11.7	0.7	29.5	11.3	2.53	0.37	54	15	HARD	09-22-32-37-01
SD15035-2	59.2	10.8	0.7	30.7	10.6	2.60	0.37	53	18	MIXED	15-21-32-32-03
SD17B032-1	58.8	11.3	0.6	28.8	9.8	2.52	0.36	59	15	HARD	05-16-29-50-01
SD17B210-2	56.7	11.3	0.9	28.9	9.3	2.53	0.34	52	16	MIXED	13-24-25-38-03
SD18B025-8	58.5	11.0	0.8	29.8	10.3	2.57	0.35	63	16	HARD	03-11-27-59-01
SD18B072-2	58.1	11.2	0.7	32.3	10.4	2.64	0.33	57	18	HARD	08-19-29-44-01
SD18B083-8	59.3	11.2	0.6	26.5	9.6	2.42	0.37	60	17	HARD	06-15-25-54-01
SD19B019-2	60.1	11.3	0.7	27.8	10.0	2.47	0.34	61	16	HARD	04-15-26-55-01
SD19B033-2	58.6	11.0	0.6	28.2	9.3	2.50	0.31	62	15	HARD	04-10-26-60-01
MTS1903	55.8	11.1	0.6	24.6	8.6	2.29	0.34	61	18	HARD	07-12-24-57-01
MTS1908	56.0	10.9	0.7	26.4	9.3	2.36	0.33	60	18	HARD	08-13-24-55-01
MTCL19151	56.8	10.9	0.6	26.7	8.7	2.53	0.35	64	16	HARD	04-07-27-62-01
NHH19668	59.5	10.7	0.7	29.3	9.4	2.63	0.39	55	16	HARD	08-18-35-39-01
NI17410	59.8	10.8	0.8	30.1	7.9	2.64	0.33	58	16	HARD	06-19-29-46-01
NE18455	58.4	11.4	0.6	27.4	10.2	2.43	0.37	50	16	MIXED	13-28-30-29-03
NE19412	58.3	11.4	0.6	32.4	11.5	2.56	0.39	57	17	HARD	08-18-34-40-01
NE19455	60.4	10.8	0.9	28.3	8.1	2.57	0.33	62	16	HARD	03-13-30-54-01
NE19590	57.5	11.7	0.8	29.1	10.7	2.52	0.36	50	17	MIXED	15-28-30-27-03
NE19454	59.9	11.4	0.8	28.2	9.9	2.52	0.37	59	17	HARD	06-17-29-48-01
NE18625	57.6	10.9	0.8	31.6	9.1	2.61	0.37	64	17	HARD	04-11-24-61-01
NE18435	59.4	11.2	1.0	28.2	10.2	2.52	0.38	55	17	MIXED	11-19-31-39-03
LCH19DH-147-68	59.1	10.8	0.8	31.8	9.4	2.64	0.32	56	15	HARD	07-17-36-40-01
LCH19DH-150-40	58.5	10.5	1.0	29.7	10.3	2.65	0.38	64	17	HARD	05-10-21-64-01
LCH19DH-149-10	56.8	10.4	0.8	26.5	9.5	2.50	0.40	60	17	HARD	07-13-31-49-01
LCH19DH-152-20	57.1	10.8	0.6	28.8	9.9	2.55	0.37	38	17	MIXED	38-35-14-13-03
LCH19DH-151-36	60.1	10.9	0.7	31.4	10.1	2.70	0.37	62	16	HARD	04-13-24-59-01
LP855 (AAC Network)	56.1	10.9	0.6	27.0	11.2	2.35	0.35	67	20	HARD	05-11-19-65-01
LQ148 (AAC Vortex)	56.0	11.2	0.6	25.8	9.9	2.41	0.38	56	17	HARD	08-21-29-42-01
LR535	57.9	10.5	0.7	26.6	10.2	2.33	0.37	49	19	MIXED	18-22-30-30-03
17NORD-96	58.3	10.4	0.5	26.6	10.4	2.39	0.35	55	18	MIXED	12-19-27-42-03
19NORD-124	57.4	10.4	0.7	29.4	10.2	2.59	0.38	48	17	MIXED	18-29-28-25-03
17NORD-138	58.6	10.3	0.6	29.6	10.7	2.53	0.37	53	17	HARD	10-28-30-32-01
17NORD-143	55.8	10.2	0.7	29.3	11.9	2.44	0.41	51	19	MIXED	18-21-30-31-03
17NORD-148	59.0	10.3	0.7	30.7	11.1	2.59	0.38	52	19	MIXED	15-23-30-32-03

2022 NRPN Intraregional Production Zone

North Central Plains

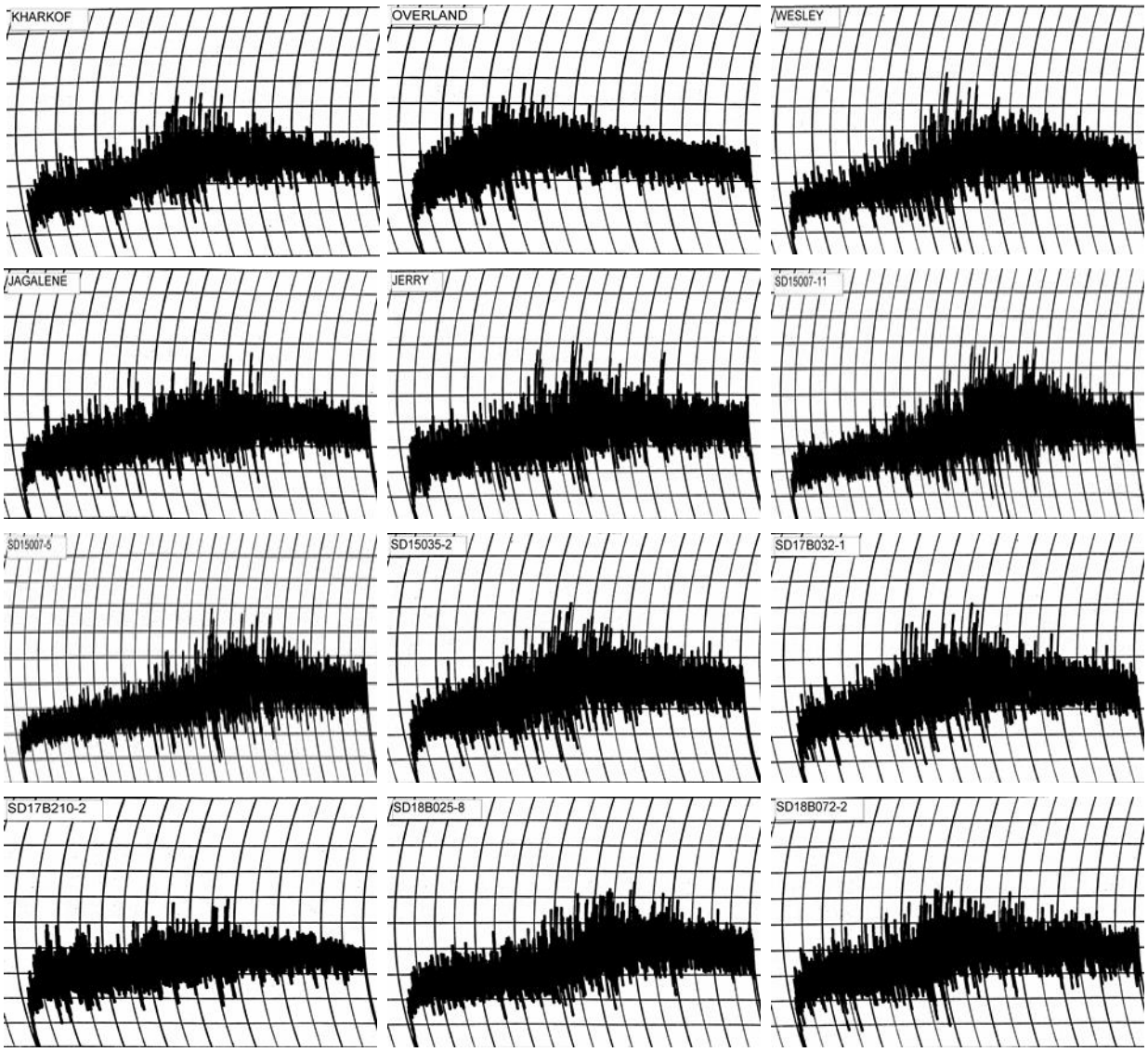
	Wheat		Flour			Noodle Color					
	Protein	Milling Yield	Ash	Protein	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
LINE	(%)	(%)	(%)	(%)							
Kharkof	15.5	61.5	0.41	13.7	0.600	79.75	-1.26	21.76	-9.65	1.38	3.02
Overland	13.7	68.2	0.41	12.4	0.560	78.41	-1.18	22.97	-9.04	1.39	1.26
Wesley	14.3	69.9	0.40	13.3	0.705	79.15	-1.33	21.62	-9.16	1.24	1.77
Jagalene	13.7	67.5	0.43	12.6	0.520	78.53	-1.09	23.23	-8.68	1.27	2.04
Jerry	14.4	66.8	0.42	13.3	0.549	79.22	-1.01	22.58	-9.35	1.16	3.54
SD15007-11	14.1	66.9	0.43	12.7	0.621	78.90	-0.82	20.01	-10.55	1.18	4.01
SD15007-5	13.9	67.7	0.39	12.7	0.622	78.79	-1.16	22.43	-9.20	1.26	2.16
SD15035-2	13.7	67.2	0.41	12.7	0.565	78.92	-1.10	21.19	-8.79	1.08	2.20
SD17B032-1	13.9	68.2	0.40	12.7	0.629	79.08	-1.12	22.22	-8.81	1.17	1.37
SD17B210-2	14.5	63.0	0.43	13.1	0.799	78.84	-1.22	23.30	-10.66	1.53	2.14
SD18B025-8	14.1	64.4	0.43	13.0	0.752	76.90	-0.47	21.77	-10.97	1.25	0.02
SD18B072-2	13.7	67.4	0.38	12.6	0.213	78.78	-1.09	23.32	-6.34	1.12	2.70
SD18B083-8	14.2	67.6	0.38	12.8	0.675	78.59	-1.20	23.29	-8.86	1.07	0.93
SD19B019-2	14.1	66.4	0.39	12.6	0.787	78.72	-1.48	24.68	-8.49	1.18	1.44
SD19B033-2	13.9	68.3	0.39	12.6	0.762	77.59	-0.44	21.88	-10.60	1.31	1.41
MTS1903	14.5	67.1	0.44	13.4	0.332	80.15	-1.17	22.95	-11.25	1.15	4.58
MTS1908	14.5	66.3	0.43	13.5	0.316	79.42	-1.23	25.10	-9.39	0.89	2.44
MTCL19151	14.1	66.1	0.46	13.2	0.275	80.21	-1.21	24.06	-7.61	1.08	4.38
NHH19668	13.2	66.6	0.40	12.2	0.631	80.40	-1.46	22.37	-7.41	0.98	2.74
NI17410	13.8	67.3	0.39	12.6	0.609	79.54	-1.00	21.47	-9.40	1.25	2.75
NE18455	12.7	66.3	0.40	11.7	0.661	79.54	-1.22	22.42	-9.11	1.03	3.87
NE19412	13.6	65.9	0.44	12.3	0.615	79.96	-1.36	22.32	-9.43	1.31	3.95
NE19455	13.7	66.6	0.42	12.5	0.459	79.82	-1.14	21.32	-8.90	1.07	4.27
NE19590	13.1	65.2	0.42	11.8	0.637	80.00	-1.36	22.03	-8.86	1.06	4.02
NE19454	13.5	65.0	0.40	12.2	0.255	80.51	-1.16	22.30	-7.92	0.80	5.52
NE18625	14.3	64.2	0.48	12.8	0.271	78.91	-0.98	22.63	-7.20	1.35	3.43
NE18435	13.1	66.8	0.45	11.8	0.585	79.59	-1.13	21.89	-7.49	0.95	2.92
LCH19DH-147-68	13.6	67.3	0.41	12.0	0.538	78.43	-0.78	21.62	-8.96	1.34	2.77
LCH19DH-150-40	14.6	65.4	0.44	13.1	0.630	78.95	-0.99	21.23	-9.55	1.23	2.41
LCH19DH-149-10	14.1	63.5	0.48	12.9	0.495	79.02	-1.32	24.07	-8.71	1.28	1.46
LCH19DH-152-20	14.7	67.7	0.40	13.4	0.646	80.94	-1.00	21.04	-11.48	1.33	5.25
LCH19DH-151-36	14.1	66.9	0.46	13.1	0.604	79.74	-1.88	24.92	-7.08	1.33	0.36
LP855 (AAC Network)	13.6	64.9	0.45	12.7	0.703	77.80	-1.23	26.61	-8.37	1.32	1.22
LQ148 (AAC Vortex)	14.5	66.3	0.44	13.4	0.728	78.19	-1.10	26.44	-8.94	1.14	-0.25
LR535	13.5	65.9	0.36	12.3	0.681	78.85	-1.19	23.21	-7.61	1.23	0.82
17NORD-96	13.2	64.9	0.41	11.8	0.617	78.04	-0.87	21.85	-7.87	1.02	1.72
19NORD-124	13.6	68.3	0.37	12.3	0.242	79.07	-1.47	24.75	-6.11	0.81	2.54
17NORD-138	13.8	63.6	0.41	12.8	0.589	79.12	-1.38	23.77	-7.67	1.01	1.28
17NORD-143	14.4	66.0	0.41	13.1	0.715	78.29	-0.87	22.81	-9.63	1.06	2.70
17NORD-148	13.7	67.1	0.39	12.6	0.626	78.82	-1.89	25.62	-6.82	1.36	1.76

2022 NRPN Intraregional Production Zone

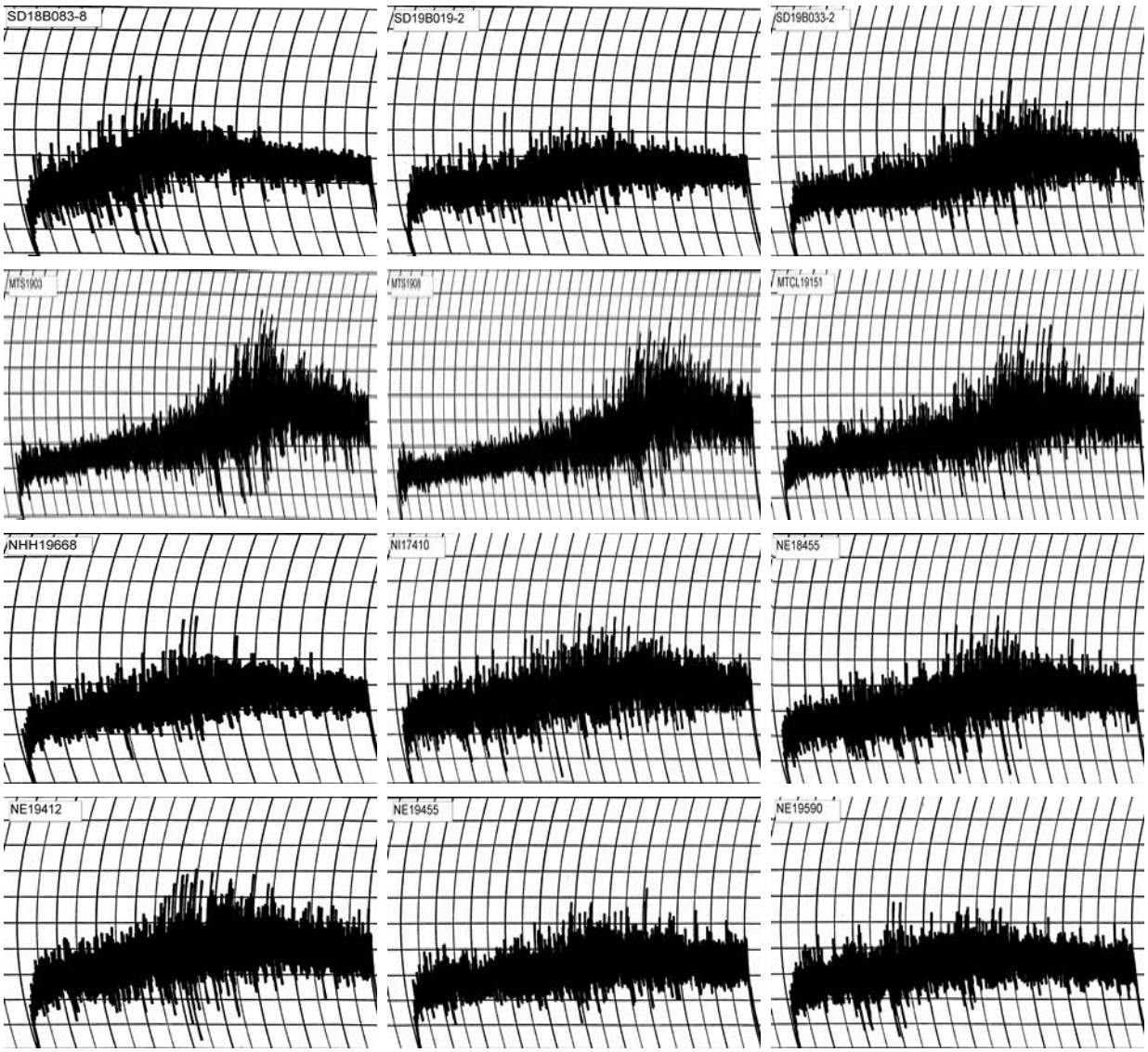
North Central Plains

		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
Kharkof	13.7	65.8	4.63	4.63	4
Overland	12.4	63.6	2.63	2.63	3
Wesley	13.3	65.0	5.25	5.25	4
Jagalene	12.6	63.9	6.00	6.00	4
Jerry	13.3	66.1	5.50	5.50	5
SD15007-11	12.7	65.7	7.25	7.25	6
SD15007-5	12.7	65.1	8.25	8.25	6
SD15035-2	12.7	63.6	4.50	4.50	4
SD17B032-1	12.7	64.6	4.88	4.88	4
SD17B210-2	13.1	60.4	4.50	4.50	2
SD18B025-8	13.0	64.6	5.38	5.38	4
SD18B072-2	12.6	63.9	4.50	4.50	4
SD18B083-8	12.8	64.4	3.13	3.13	3
SD19B019-2	12.6	62.1	4.50	4.50	2
SD19B033-2	12.6	63.9	7.25	7.25	5
MTS1903	13.4	69.4	10.63	10.63	6
MTS1908	13.5	67.8	12.75	12.75	6
MTCL19151	13.2	65.0	9.50	9.50	6
NHH19668	12.2	63.2	4.13	4.13	2
NI17410	12.6	65.3	6.50	6.50	5
NE18455	11.7	63.4	6.75	6.50	5
NE19412	12.3	64.9	5.25	5.25	4
NE19455	12.5	64.8	5.88	5.88	4
NE19590	11.8	63.6	5.25	5.11	2
NE19454	12.2	65.2	8.63	8.63	6
NE18625	12.8	65.3	4.00	4.00	4
NE18435	11.8	63.5	2.75	2.67	3
LCH19DH-147-68	12.0	62.9	2.88	2.87	2
LCH19DH-150-40	13.1	64.7	3.50	3.50	4
LCH19DH-149-10	12.9	65.0	4.75	4.75	4
LCH19DH-152-20	13.4	65.2	4.50	4.50	4
LCH19DH-151-36	13.1	64.8	2.50	2.50	2
LP855 (AAC Network)	12.7	64.6	9.00	9.00	6
LQ148 (AAC Vortex)	13.4	65.8	10.50	10.50	6
LR535	12.3	64.0	6.50	6.50	5
17NORD-96	11.8	63.0	7.63	7.41	5
19NORD-124	12.3	64.0	4.13	4.13	4
17NORD-138	12.8	64.7	4.00	4.00	4
17NORD-143	13.1	67.2	5.00	5.00	4
17NORD-148	12.6	64.4	5.50	5.50	4

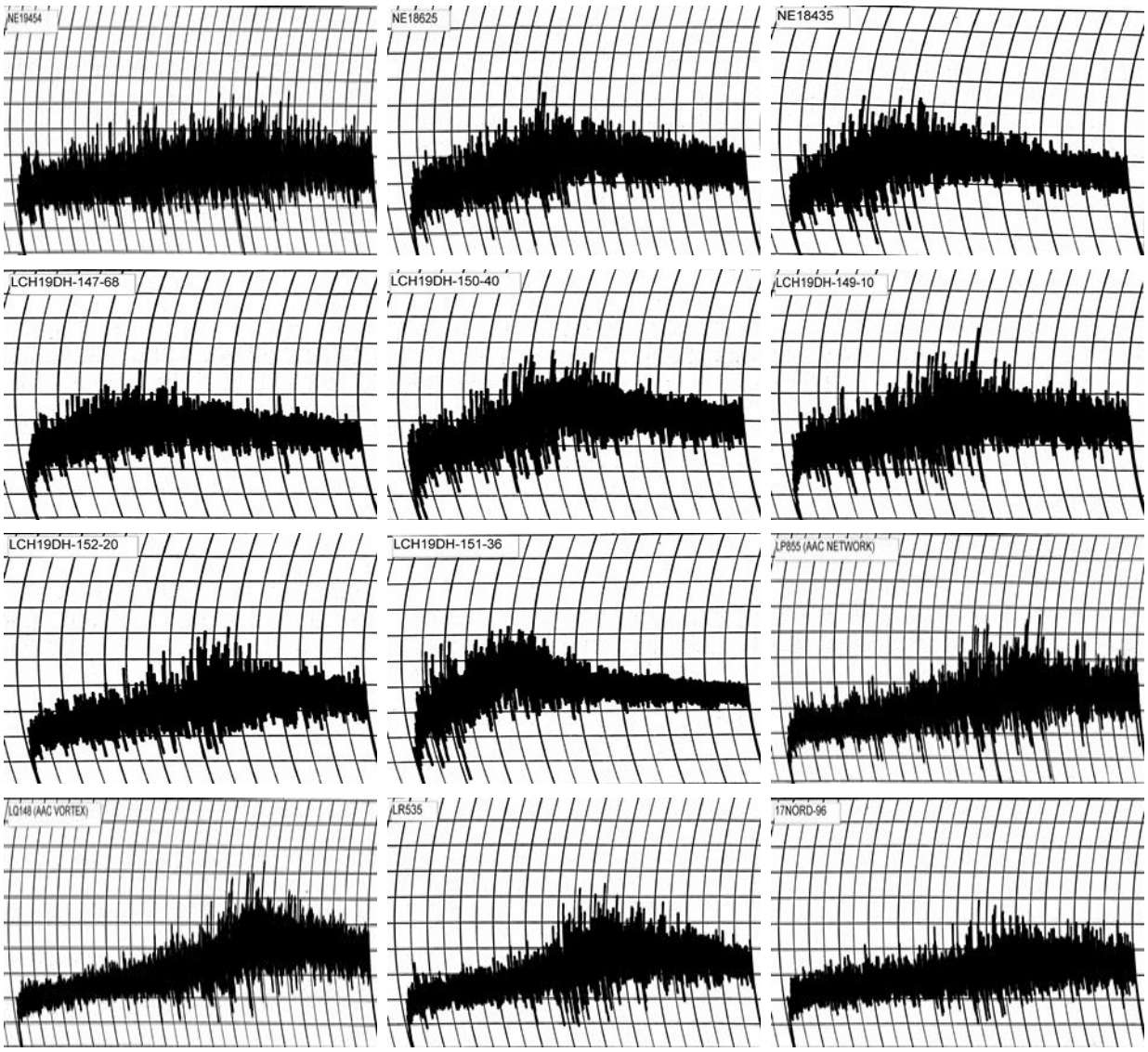
2022 NRPN Intraregional Production Zone
North Central Plains



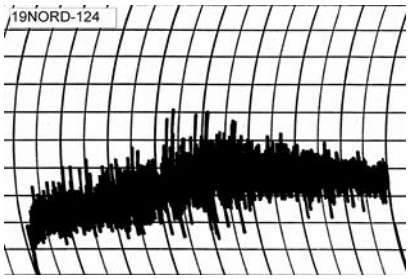
2022 NRPN Intraregional Production Zone
North Central Plains

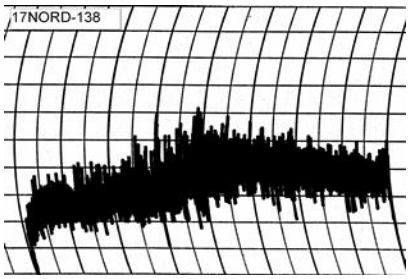


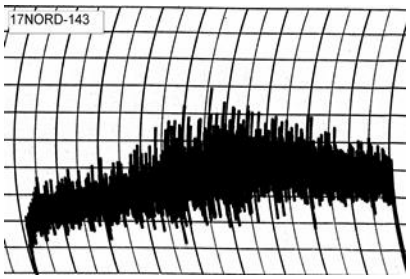
2022 NRPN Intraregional Production Zone
North Central Plains

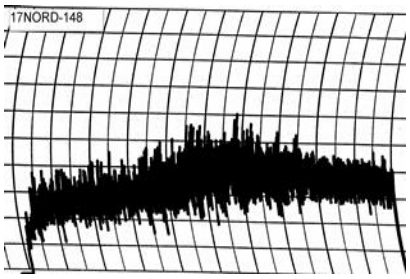


2022 NRPN Intraregional Production Zone
North Central Plains









2022 NRPN Intraregional Production Zone

North Central Plains

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
Kharkof	158.00	235.17	167.67	67.50	281.67	114.00	6.40	86.45
Overland	141.42	230.92	162.17	68.75	275.83	113.67	6.33	67.70
Wesley	132.50	218.17	153.08	65.08	274.67	121.58	6.27	67.75
Jagalene	136.08	228.42	157.58	70.83	279.17	121.58	6.27	67.85
Jerry	111.33	224.67	149.67	75.00	263.83	114.17	6.27	67.75
SD15007-11	128.33	211.33	145.00	66.33	263.83	118.83	6.20	85.75
SD15007-5	99.92	210.00	149.00	61.00	274.17	125.17	6.20	86.45
SD15035-2	158.25	210.58	160.75	49.83	273.75	113.00	6.40	87.30
SD17B032-1	166.92	211.58	164.00	47.58	277.75	113.75	6.40	87.30
SD17B210-2	154.83	232.92	164.67	68.25	272.25	107.58	6.40	85.65
SD18B025-8	162.92	228.67	166.08	62.58	276.50	110.42	6.40	86.45
SD18B072-2	115.33	235.25	157.00	78.25	272.08	115.08	6.27	68.50
SD18B083-8	145.83	240.33	169.42	70.92	287.83	118.42	6.33	85.65
SD19B019-2	148.25	209.67	155.50	54.17	270.08	114.58	6.33	86.45
SD19B033-2	127.25	239.75	150.42	89.33	263.92	113.50	6.13	67.80
MTS1903	107.92	247.83	170.50	77.33	304.17	133.67	6.20	84.80
MTS1908	98.67	248.83	170.92	77.92	303.67	132.75	6.27	84.85
MTCL19151	104.67	227.08	147.17	79.92	263.25	116.08	6.20	69.30
NHH19668	138.67	228.25	164.25	64.00	282.75	118.50	6.33	86.40
NI17410	113.25	216.33	149.00	67.33	266.33	117.33	6.20	67.75
NE18455	140.42	242.83	163.75	79.08	283.50	119.75	6.33	68.50
NE19412	150.83	248.58	173.58	75.00	294.50	120.92	6.33	67.75
NE19455	128.33	232.50	165.50	67.00	290.67	125.17	6.27	67.80
NE19590	114.00	252.33	170.33	82.00	284.83	114.50	6.33	69.40
NE19454	129.92	212.75	138.25	74.50	258.50	120.25	6.13	84.85
NE18625	143.42	224.00	154.50	69.50	267.17	112.67	6.40	67.65
NE18435	117.50	218.58	155.25	63.33	274.50	119.25	6.33	86.45
LCH19DH-147-68	113.83	232.92	157.83	75.08	277.25	119.42	6.20	67.75
LCH19DH-150-40	144.33	182.08	114.83	67.25	211.50	96.67	6.13	67.75
LCH19DH-149-10	157.67	224.00	159.33	64.67	275.33	116.00	6.33	68.55
LCH19DH-152-20	165.67	248.00	177.42	70.58	287.25	109.83	6.47	84.95
LCH19DH-151-36	124.75	225.25	133.83	91.42	226.33	92.50	6.27	68.70
LP855 (AAC Network)	109.75	208.92	139.83	69.08	256.50	116.67	6.07	69.35
LQ148 (AAC Vortex)	115.33	200.67	117.00	83.67	219.42	102.42	6.07	84.85
LR535	105.50	225.75	148.33	77.42	261.42	113.08	6.20	84.85
17NORD-96	145.25	230.58	164.58	66.00	286.58	122.00	6.27	84.85
19NORD-124	139.08	229.92	161.58	68.33	284.92	123.33	6.27	67.70
17NORD-138	140.83	195.17	136.00	59.17	245.50	109.50	6.20	86.55
17NORD-143	148.92	230.42	162.00	68.42	277.33	115.33	6.33	85.60
17NORD-148	121.08	222.42	156.33	66.08	271.83	115.50	6.27	68.60

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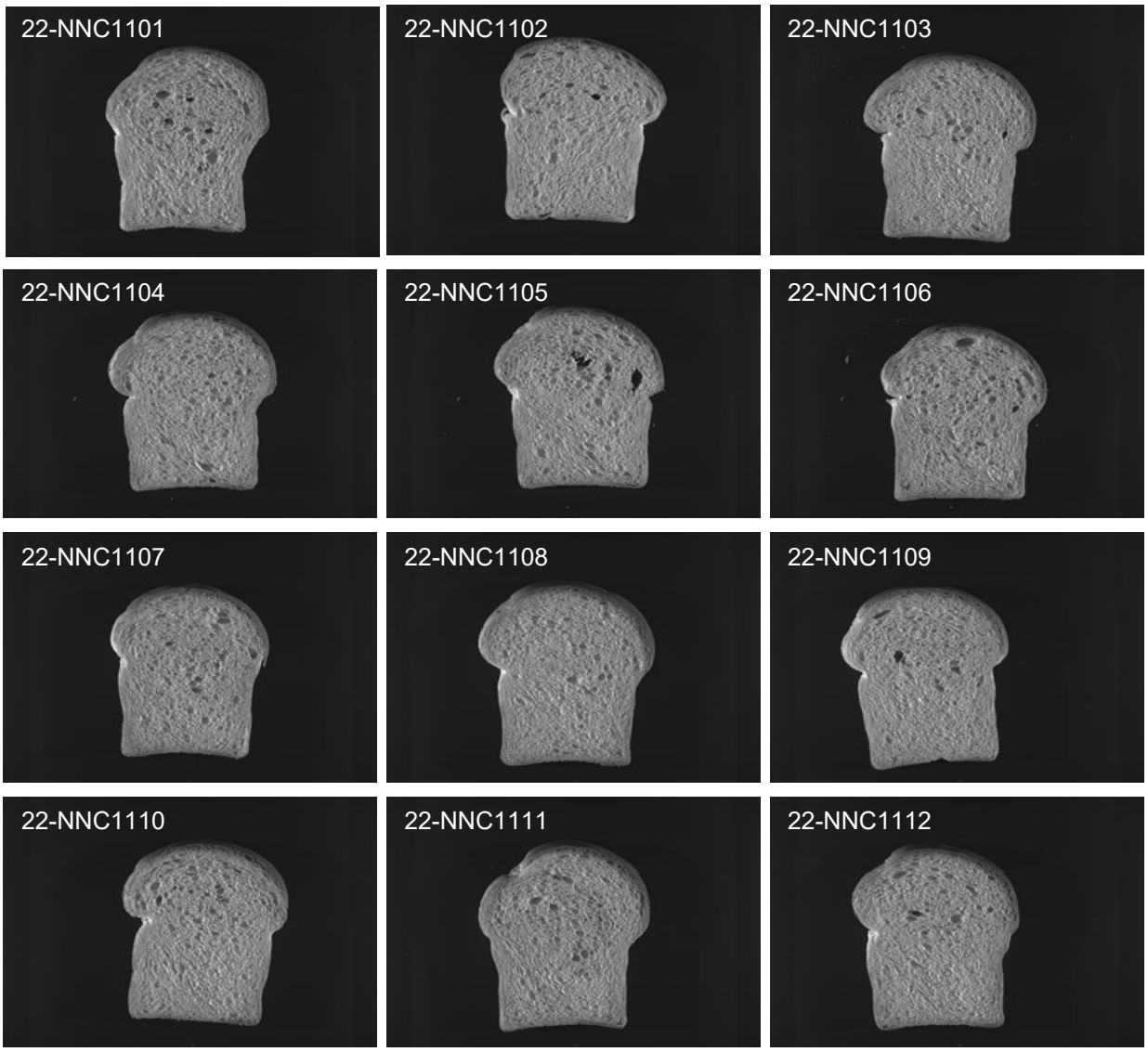
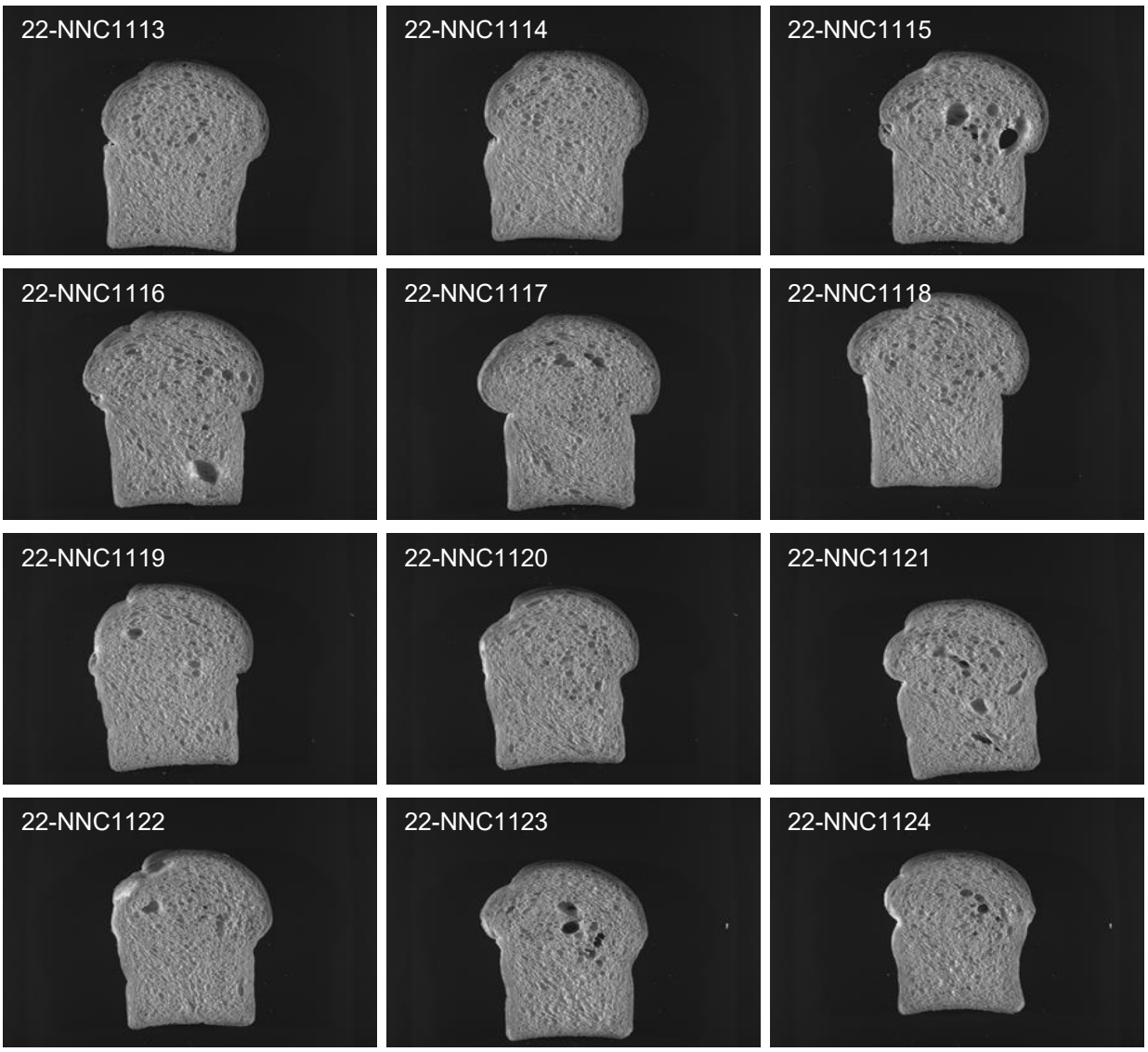
North Central Plains

	Flour		Mix Time		Dough					
Line	Protein (%)	Water Abs. (%)	As-is (min)	Corrected (min)	Weight (g)	Proof Height (cm)	Crumb Grain	As-Rec'd. (cc)	Specific Volume (cc/g)	Loaf Volume Potential (cc/%)
Kharkof	13.7	65.9	5.38	5.38	176.2	8.0	3.0	945	6.3	60
Overland	12.4	63.8	3.25	3.25	174.1	7.5	1.5	870	5.7	61
Wesley	13.3	64.9	7.00	7.00	174.2	7.5	4.0	1005	6.6	69
Jagalene	12.6	63.9	6.25	6.25	174.6	7.6	3.5	965	6.5	69
Jerry	13.3	65.9	6.50	6.50	175.9	7.4	2.5	990	6.5	67
SD15007-11	12.7	65.9	11.00	11.00	175.0	7.3	2.0	900	6.0	62
SD15007-5	12.7	64.8	12.00	12.00	174.5	7.4	3.0	850	5.6	57
SD15035-2	12.7	63.2	5.38	5.38	173.9	7.6	5.0	950	6.4	67
SD17B032-1	12.7	65.0	5.50	5.50	175.6	7.6	5.0	925	6.0	64
SD17B210-2	13.1	60.1	4.25	4.25	170.9	7.5	2.5	940	6.4	63
SD18B025-8	13.0	64.2	6.25	6.25	174.6	8.0	3.5	1020	6.9	72
SD18B072-2	12.6	64.2	4.50	4.50	175.3	7.7	3.5	975	6.5	71
SD18B083-8	12.8	64.2	3.50	3.50	175.0	8.1	3.5	980	6.5	69
SD19B019-2	12.6	62.3	4.50	4.50	172.5	7.8	3.5	950	6.4	68
SD19B033-2	12.6	64.1	8.75	8.75	174.1	7.8	3.5	1025	6.9	75
MTS1903	13.4	69.1	19.50	19.50	175.6	7.8	3.5	1070	7.1	74
MTS1908	13.5	68.1	20.50	20.50	175.9	7.8	3.5	1105	7.3	77
MTCL19151	13.2	65.2	13.50	13.50	174.2	7.9	4.0	1105	7.3	79
NHH19668	12.2	63.2	5.00	5.00	173.0	7.2	4.0	945	6.3	70
NI17410	12.6	65.1	7.25	7.25	174.9	7.5	3.0	965	6.3	69
NE18455	11.7	63.0	8.00	7.70	172.3	7.1	1.5	845	5.6	63
NE19412	12.3	65.1	5.63	5.63	174.8	7.3	3.0	925	6.1	67
NE19455	12.5	65.2	6.75	6.75	174.6	7.4	2.5	900	6.0	63
NE19590	11.8	63.6	5.63	5.48	173.2	7.3	2.0	800	5.3	57
NE19454	12.2	65.1	9.25	9.25	173.8	7.2	3.0	925	6.1	68
NE18625	12.8	65.2	4.75	4.75	174.9	7.3	2.5	900	6.0	61
NE18435	11.8	63.2	3.50	3.40	173.4	7.0	2.0	845	5.6	62
LCH19DH-147-68	12.0	63.1	3.00	2.99	174.0	7.1	1.5	825	5.5	58
LCH19DH-150-40	13.1	64.3	4.00	4.00	174.0	7.9	5.0	950	6.3	65
LCH19DH-149-10	12.9	65.1	5.50	5.50	174.9	7.7	3.5	995	6.6	70
LCH19DH-152-20	13.4	65.2	5.75	5.75	175.9	7.6	3.5	980	6.5	66
LCH19DH-151-36	13.1	65.1	3.00	3.00	175.7	7.3	2.5	905	5.9	60
LP855 (AAC Network)	12.7	65.0	9.75	9.75	174.2	7.4	3.0	945	6.3	66
LQ148 (AAC Vortex)	13.4	66.0	13.50	13.50	174.0	7.8	4.0	1045	7.0	71
LR535	12.3	64.2	8.75	8.75	172.9	7.4	4.0	930	6.2	68
17NORD-96	11.8	63.1	10.00	9.71	172.9	7.0	2.5	900	6.0	68
19NORD-124	12.3	64.3	4.75	4.75	174.0	8.1	4.0	950	6.3	70
17NORD-138	12.8	64.7	5.00	5.00	174.9	7.5	3.0	975	6.3	69
17NORD-143	13.1	67.2	5.75	5.75	176.4	7.6	4.0	965	6.3	66
17NORD-148	12.6	64.1	5.25	5.25	174.2	7.4	4.0	920	6.0	65

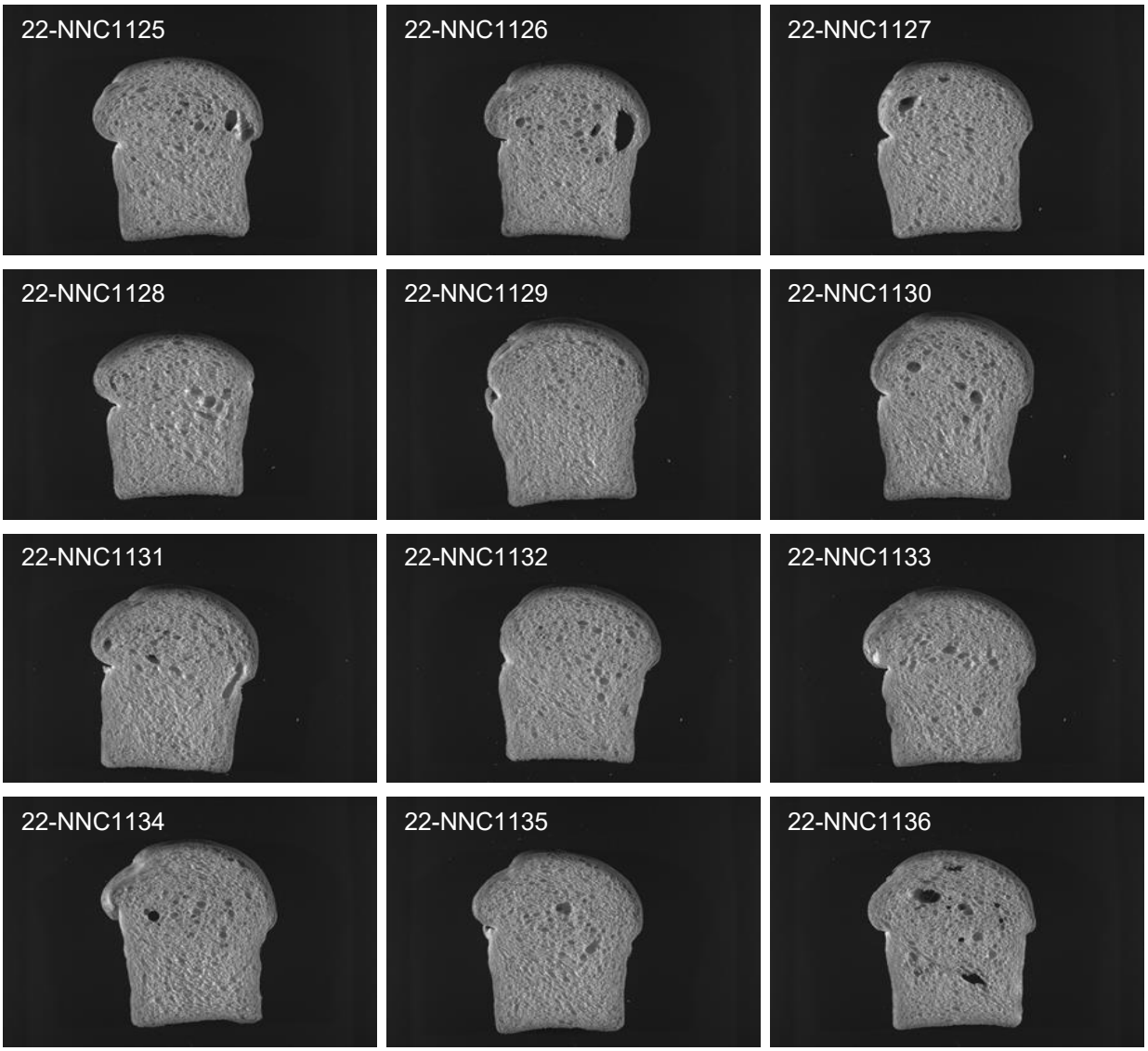
2022 NRPN Intraregional Production Zone
North Central Plains



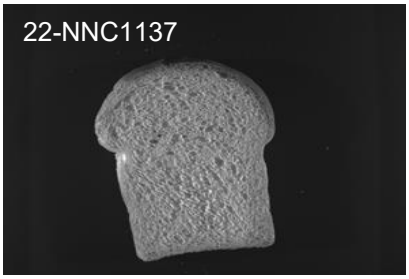
2022 NRPN Intraregional Production Zone
North Central Plains

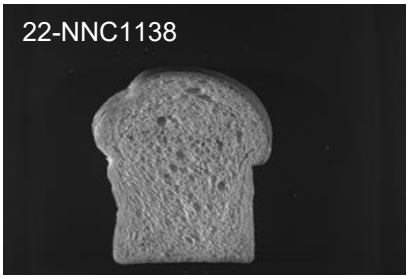


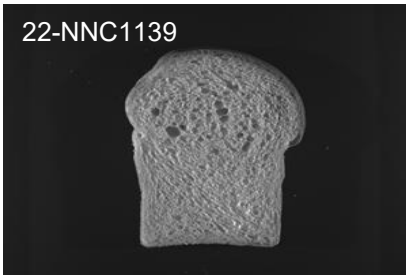
2022 NRPN Intraregional Production Zone
North Central Plains



2022 NRPN Intraregional Production Zone
North Central Plains







Hard Winter Wheat Quality Report

2022 NRPN-NHP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
Kharkof	44.4	Very Poor	69.4	36.4	Poor	56.4		8,
Overland	49.5	Very Poor	77.5	33.9	Very Poor	52.5		5,11,12,13,16,17,21,
Wesley	57.0	Good	89.2	44.9	Average	69.5		5,14,15,
Jagalene	50.4	Very Poor	78.9	35.7	Very Poor	55.3		5,11,15,
Jerry	53.8	Average	84.2	36.4	Poor	56.3	1AL	
SD15007-11	52.1	Poor	81.6	28.1	Very Poor	43.5		11,14,15,19,
SD15007-5	54.8	Average	85.8	41.8	Average	64.7	1AL	14,15,
SD15035-2	53.0	Poor	82.9	64.6	Very Good	100.0		3,
SD17B032-1	55.6	Average	87.0	47.8	Average	74.0		
SD17B210-2	44.1	Very Poor	69.0	33.4	Very Poor	51.8	1BL	8,12,13,16,17,21,
SD18B025-8	49.3	Very Poor	77.2	50.9	Good	78.8		
SD18B072-2	55.8	Average	87.4	45.3	Average	70.0	h1RS?	
SD18B083-8	60.4	Very Good	94.5	56.9	Good	88.0		4,16,
SD19B019-2	55.6	Average	87.0	35.8	Poor	55.4	1BL	12,13,16,17,
SD19B033-2	57.3	Good	89.7	45.1	Average	69.8		
MTS1903	58.1	Good	90.9	64.5	Very Good	99.8		
MTS1908	56.9	Good	89.0	61.1	Very Good	94.6		14,
MTCL19151	58.7	Good	91.9	46.8	Average	72.4		2,14,15,
NHH19668	60.4	Very Good	94.5	36.0	Poor	55.7		5,
NI17410	59.3	Very Good	92.8	54.8	Good	84.7		
NE18455	48.2	Very Poor	75.4	42.1	Average	65.1		2,4,21,
NE19412	50.2	Very Poor	78.5	51.0	Good	78.9		3,5,18,
NE19455	57.7	Good	90.4	39.1	Poor	60.5		18,
NE19590	51.3	Poor	80.3	35.9	Poor	55.5		
NE19454	45.1	Very Poor	70.5	33.2	Very Poor	51.3		1,15,
NE18625	54.6	Average	85.5	48.3	Good	74.7		6,21,
NE18435	59.2	Good	92.6	32.3	Very Poor	49.9		16,
LCH19DH-147-68	60.9	Very Good	95.3	24.7	Very Poor	38.2		14,15,16,18,19,20,21
LCH19DH-150-40	59.9	Very Good	93.7	60.4	Very Good	93.4		9,
LCH19DH-149-10	50.4	Poor	78.9	49.9	Good	77.1		2,9,
LCH19DH-152-20	59.4	Very Good	93.0	54.6	Good	84.5		

Quality scores and ratings are calculated directly from the relative trait weightings (printed at the top of the page) and are applicable only to the nursery selected.

Hard Winter Wheat Quality Report

2022 NRPN-NHP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
LCH19DH-151-36	53.6	Average	83.9	32.8	Very Poor	50.8		9,14,15,16,
AAC Network	50.7	Poor	79.4	38.5	Poor	59.6		6,
AAC Vortex	60.3	Very Good	94.4	56.1	Good	86.7		14,15,
LR535	53.3	Poor	83.4	57.7	Very Good	89.4		
17NORD-96	51.6	Poor	80.8	43.2	Average	66.8		11,13,17,
19NORD-124	63.9	Very Good	100.0	39.7	Poor	61.4		16,
17NORD-138	54.3	Average	85.0	57.6	Very Good	89.2		16,
17NORD-143	51.8	Poor	81.1	63.7	Very Good	98.5		3,
17NORD-148	57.8	Good	90.4	62.5	Very Good	96.8		

2022 NRPN Intraregional Production Zone

Northern High Plains

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
Kharkof	62.9	15.0	0.4	33.0	9.0	2.69	0.34	57	17	HARD	07-20-29-44-01
Overland	61.6	15.5	0.3	34.8	10.9	2.72	0.39	73	19	HARD	03-05-14-78-01
Wesley	61.2	14.5	0.4	37.3	12.1	2.79	0.40	68	16	HARD	01-09-21-69-01
Jagalene	62.3	14.1	0.5	34.6	12.0	2.71	0.39	79	19	HARD	02-04-14-80-01
Jerry	61.3	14.6	0.5	34.9	11.4	2.71	0.35	78	16	HARD	00-03-10-87-01
SD15007-11	62.2	14.0	0.6	33.4	11.7	2.61	0.36	74	18	HARD	01-08-15-76-01
SD15007-5	62.7	12.3	1.4	33.3	11.9	2.60	0.33	74	16	HARD	01-04-15-80-01
SD15035-2	62.7	13.6	0.6	34.4	12.6	2.64	0.34	73	17	HARD	01-06-11-82-01
SD17B032-1	62.4	12.4	1.4	33.8	11.3	2.63	0.37	74	15	HARD	00-05-14-81-01
SD17B210-2	60.9	12.9	1.4	33.7	10.8	2.62	0.37	73	16	HARD	01-03-16-80-01
SD18B025-8	61.3	14.2	0.8	35.9	12.2	2.71	0.35	77	16	HARD	00-03-11-86-01
SD18B072-2	62.0	12.5	1.3	36.2	11.7	2.72	0.36	77	16	HARD	01-03-10-86-01
SD18B083-8	64.4	12.8	1.3	30.9	10.3	2.52	0.36	80	16	HARD	01-02-07-90-01
SD19B019-2	62.8	15.3	0.4	32.0	9.5	2.59	0.37	79	15	HARD	00-02-07-91-01
SD19B033-2	61.6	15.4	0.6	34.3	9.9	2.64	0.33	80	16	HARD	01-02-07-90-01
MTS1903	60.7	14.0	0.7	32.0	10.5	2.59	0.36	79	15	HARD	00-01-08-91-01
MTS1908	60.4	14.7	0.6	31.2	10.2	2.55	0.37	78	16	HARD	01-03-07-89-01
MTCL19151	62.8	12.1	1.6	30.0	8.8	2.62	0.32	81	16	HARD	01-01-06-92-01
NHH19668	62.2	13.6	0.4	33.1	9.6	2.76	0.40	74	15	HARD	01-04-10-85-01
NI17410	62.5	13.2	0.4	33.4	10.2	2.68	0.34	76	15	HARD	00-04-09-87-01
NE18455	60.5	13.2	0.5	29.8	11.6	2.49	0.36	71	18	HARD	02-08-16-74-01
NE19412	61.4	11.5	1.7	33.3	12.9	2.58	0.41	75	16	HARD	01-03-10-86-01
NE19455	62.9	13.4	0.5	31.9	10.7	2.61	0.35	82	15	HARD	01-01-05-93-01
NE19590	62.4	12.2	1.7	32.1	10.3	2.60	0.36	74	18	HARD	01-06-16-77-01
NE19454	63.9	12.1	1.8	31.3	11.1	2.59	0.34	80	16	HARD	01-04-06-89-01
NE18625	61.6	13.2	0.8	35.4	9.5	2.71	0.35	86	15	HARD	00-01-03-96-01
NE18435	62.9	14.4	0.6	33.6	11.3	2.65	0.34	76	16	HARD	01-03-11-85-01
LCH19DH-147-68	62.0	14.3	0.7	34.7	9.2	2.72	0.33	77	16	HARD	00-02-09-89-01
LCH19DH-150-40	62.2	13.9	0.6	33.6	9.4	2.72	0.32	84	15	HARD	01-01-05-93-01
LCH19DH-149-10	61.5	14.0	0.6	30.7	10.7	2.59	0.36	82	16	HARD	01-02-03-94-01
LCH19DH-152-20	62.5	13.7	0.8	35.5	10.5	2.73	0.37	59	18	HARD	08-16-26-50-01
LCH19DH-151-36	62.9	13.6	0.4	33.1	11.5	2.68	0.37	84	17	HARD	01-02-05-92-01
LP855 (AAC Network)	61.9	13.5	0.4	32.5	12.0	2.54	0.37	87	17	HARD	00-01-07-92-01
LQ148 (AAC Vortex)	62.4	13.3	0.5	34.7	9.5	2.74	0.32	73	16	HARD	01-05-13-81-01
LR535	62.2	13.0	0.6	34.3	11.3	2.57	0.35	66	16	HARD	02-06-25-67-01
17NORD-96	61.9	12.9	0.6	34.5	10.5	2.68	0.35	66	16	HARD	02-09-22-67-01
19NORD-124	62.4	13.0	0.4	37.5	9.7	2.86	0.32	69	14	HARD	02-05-15-78-01
17NORD-138	63.0	12.5	0.5	35.9	11.1	2.69	0.35	67	15	HARD	02-05-22-71-01
17NORD-143	60.9	12.6	0.5	35.8	13.3	2.63	0.37	72	16	HARD	01-03-16-80-01
17NORD-148	62.5	12.7	0.6	31.8	10.2	2.63	0.34	76	15	HARD	01-04-10-85-01

2022 NRPN Intraregional Production Zone

Northern High Plains

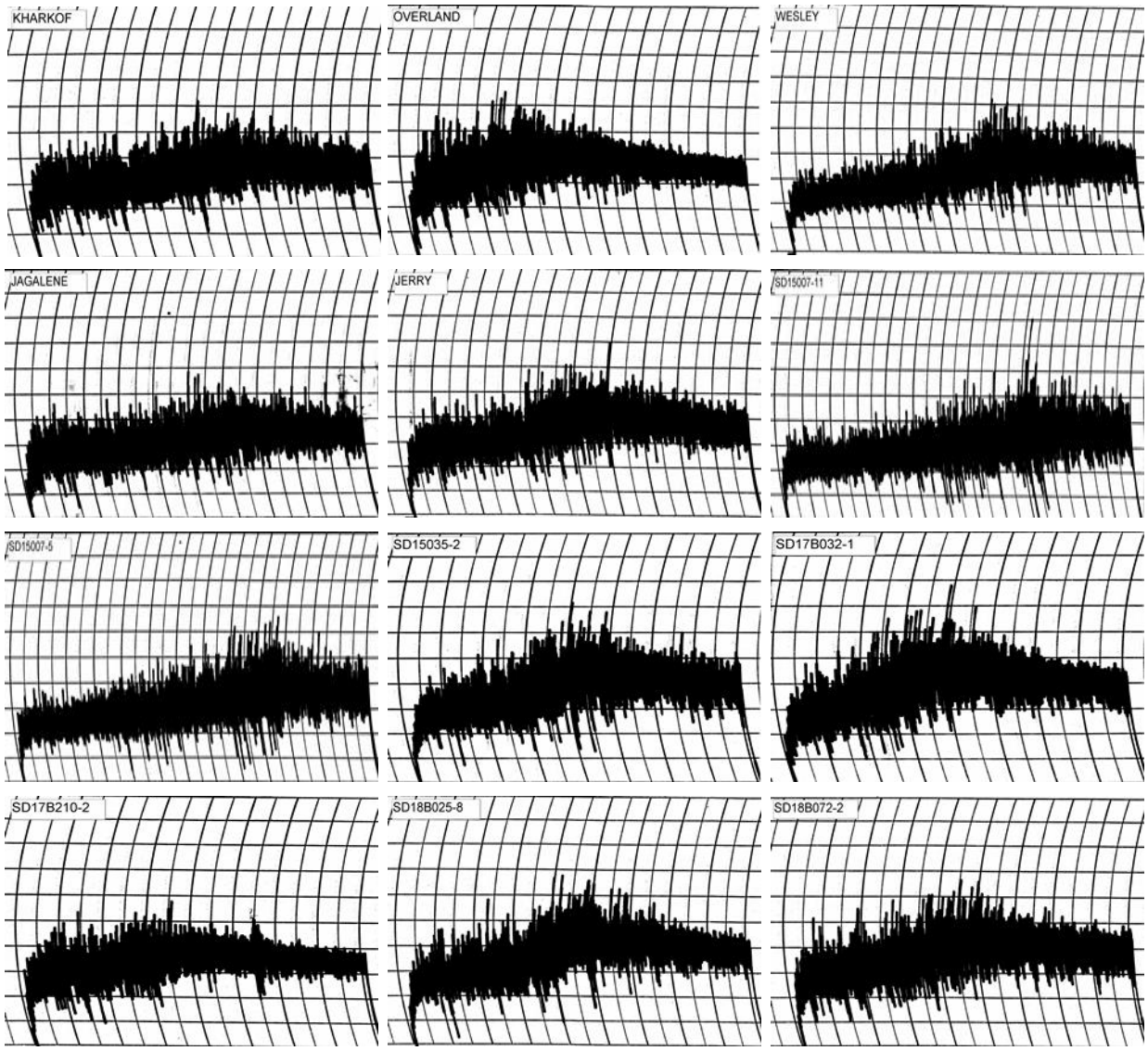
	Wheat		Flour			Noodle Color					
	Protein	Milling Yield	Ash	Protein	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
LINE	(%)	(%)	(%)	(%)							
Kharkof	13.5	61.6	0.43	12.0	0.450	79.08	-1.58	23.11	-7.44	1.20	1.63
Overland	12.2	65.6	0.45	10.9	0.467	79.07	-1.58	23.44	-7.28	1.16	0.35
Wesley	13.4	68.8	0.40	12.5	0.560	79.70	-1.53	23.12	-7.95	1.24	0.73
Jagalene	12.4	66.3	0.45	11.3	0.458	79.88	-1.75	24.59	-8.68	1.46	1.23
Jerry	12.6	66.1	0.42	11.7	0.449	79.66	-1.61	25.20	-7.72	1.12	1.72
SD15007-11	12.4	66.1	0.38	11.3	0.490	80.72	-1.49	22.18	-8.94	1.05	3.57
SD15007-5	13.1	66.7	0.38	12.0	0.466	79.92	-1.68	24.35	-8.37	1.33	1.29
SD15035-2	13.5	66.8	0.42	12.6	0.461	78.87	-1.42	23.31	-8.79	1.35	0.10
SD17B032-1	13.6	67.2	0.41	12.6	0.455	79.87	-1.62	23.11	-9.91	1.54	0.83
SD17B210-2	13.3	62.0	0.43	12.5	0.644	77.98	-1.44	25.42	-11.00	1.67	1.03
SD18B025-8	13.4	64.4	0.45	12.5	0.563	77.39	-1.49	22.72	-9.63	1.29	-0.29
SD18B072-2	12.8	66.5	0.38	11.9	0.186	79.33	-1.35	24.40	-6.57	1.04	2.33
SD18B083-8	13.0	69.0	0.42	11.9	0.646	79.43	-1.81	25.65	-8.65	1.32	0.72
SD19B019-2	13.0	65.8	0.39	11.7	0.649	79.47	-2.25	26.54	-7.10	1.25	0.05
SD19B033-2	13.2	66.9	0.40	12.1	0.633	78.26	-1.16	23.46	-9.88	1.31	-0.52
MTS1903	13.4	69.0	0.42	12.6	0.215	77.37	-1.61	27.01	-11.35	1.59	1.08
MTS1908	13.5	69.3	0.42	12.9	0.206	77.38	-1.55	26.92	-11.70	1.54	1.48
MTCL19151	12.6	68.1	0.45	12.1	0.188	80.04	-1.47	25.39	-8.27	1.30	4.19
NHH19668	12.9	68.8	0.39	12.0	0.472	79.48	-1.51	24.25	-9.99	1.46	2.58
NI17410	13.1	67.8	0.39	12.3	0.590	80.11	-1.42	22.70	-11.10	1.53	2.62
NE18455	12.5	66.5	0.41	11.8	0.611	78.99	-1.69	25.87	-8.27	1.39	0.95
NE19412	13.3	65.7	0.38	12.3	0.537	80.16	-1.63	24.46	-8.22	1.20	1.85
NE19455	12.6	67.5	0.41	11.8	0.402	79.63	-1.52	23.73	-9.22	1.29	2.75
NE19590	12.8	65.5	0.40	11.6	0.509	79.67	-1.62	23.77	-8.60	1.34	2.19
NE19454	12.5	64.7	0.36	11.5	0.254	80.49	-1.53	24.15	-7.44	1.07	3.73
NE18625	13.8	64.3	0.42	12.5	0.201	79.39	-1.24	24.22	-6.98	1.29	2.86
NE18435	12.6	68.8	0.41	11.7	0.493	78.62	-1.47	25.07	-8.28	1.40	1.36
LCH19DH-147-68	14.4	68.9	0.45	13.2	0.472	76.08	-0.81	24.82	-9.71	1.77	0.34
LCH19DH-150-40	14.0	68.3	0.48	13.0	0.529	77.42	-1.39	25.75	-10.32	1.60	-0.54
LCH19DH-149-10	13.3	66.3	0.52	12.6	0.456	78.05	-1.54	26.35	-10.18	1.60	0.54
LCH19DH-152-20	13.2	71.0	0.43	12.1	0.530	79.82	-1.55	23.58	-11.68	1.62	2.31
LCH19DH-151-36	13.8	66.5	0.47	12.8	0.512	79.87	-2.16	26.06	-8.59	1.61	0.44
LP855 (AAC Network)	12.8	65.6	0.44	11.9	0.457	79.22	-1.70	26.27	-10.25	1.37	1.53
LQ148 (AAC Vortex)	14.3	68.0	0.40	13.5	0.520	79.52	-1.98	26.50	-7.83	1.27	-0.68
LR535	12.6	66.1	0.37	11.9	0.491	79.33	-1.72	24.26	-8.08	1.41	-0.31
17NORD-96	12.4	65.0	0.39	11.2	0.412	79.05	-1.64	24.39	-7.63	1.32	0.13
19NORD-124	13.2	67.9	0.35	12.2	0.139	79.14	-1.76	26.09	-6.08	1.92	1.49
17NORD-138	13.3	65.0	0.36	12.5	0.497	78.98	-1.50	25.62	-8.48	0.91	-0.71
17NORD-143	13.7	65.8	0.37	12.8	0.483	77.73	-0.96	24.69	-10.18	1.37	1.31
17NORD-148	13.1	67.5	0.40	12.2	0.521	79.40	-2.07	26.70	-7.00	1.32	0.48

2022 NRPN Intraregional Production Zone

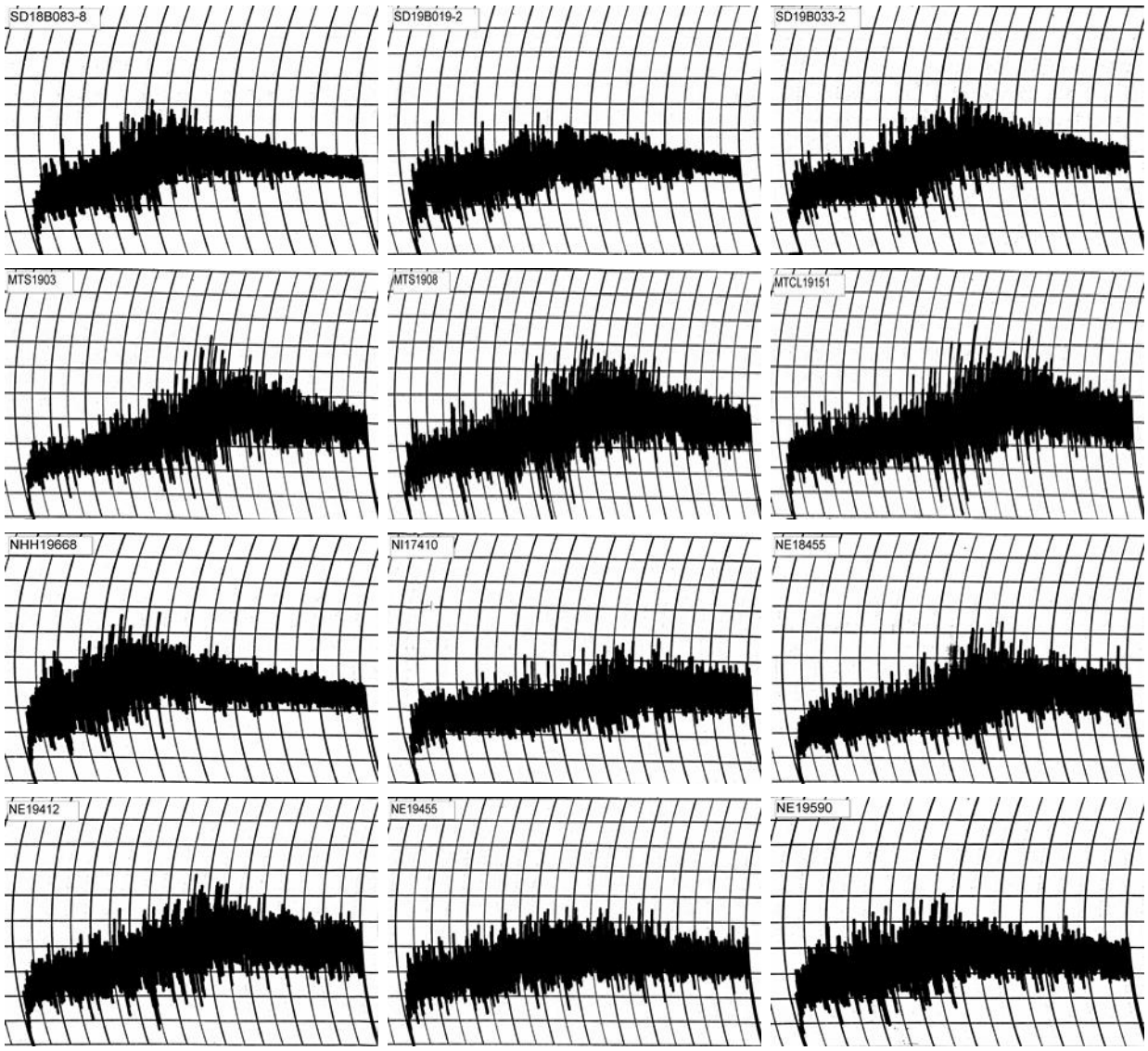
Northern High Plains

		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
Kharkof	12.0	63.0	5.38	5.38	3
Overland	10.9	61.1	3.00	2.60	2
Wesley	12.5	65.9	7.00	7.00	5
Jagalene	11.3	63.2	6.25	5.69	3
Jerry	11.7	64.4	5.75	5.54	4
SD15007-11	11.3	64.2	9.13	8.33	6
SD15007-5	12.0	64.9	9.63	9.63	6
SD15035-2	12.6	63.9	4.50	4.50	4
SD17B032-1	12.6	66.0	4.00	4.00	4
SD17B210-2	12.5	60.5	3.00	3.00	2
SD18B025-8	12.5	65.8	4.88	4.88	4
SD18B072-2	11.9	64.3	5.00	4.95	4
SD18B083-8	11.9	64.9	3.63	3.60	2
SD19B019-2	11.7	60.4	3.75	3.62	2
SD19B033-2	12.1	64.6	4.63	4.63	3
MTS1903	12.6	68.0	5.63	5.63	4
MTS1908	12.9	68.9	6.00	6.00	5
MTCL19151	12.1	67.2	7.00	7.00	5
NHH19668	12.0	63.0	3.00	3.00	3
NI17410	12.3	65.7	5.63	5.63	4
NE18455	11.8	64.6	5.50	5.35	4
NE19412	12.3	65.4	4.75	4.75	4
NE19455	11.8	63.2	5.00	4.90	3
NE19590	11.6	63.7	3.50	3.32	3
NE19454	11.5	64.6	6.75	6.36	4
NE18625	12.5	65.8	3.63	3.63	3
NE18435	11.7	64.4	2.25	2.16	2
LCH19DH-147-68	13.2	63.4	1.63	1.63	1
LCH19DH-150-40	13.0	65.1	2.75	2.75	3
LCH19DH-149-10	12.6	65.0	4.13	4.13	4
LCH19DH-152-20	12.1	63.0	4.50	4.50	4
LCH19DH-151-36	12.8	64.2	1.75	1.75	1
LP855 (AAC Network)	11.9	64.2	6.00	5.92	5
LQ148 (AAC Vortex)	13.5	65.9	7.25	7.25	6
LR535	11.9	62.7	3.75	3.68	3
17NORD-96	11.2	61.6	4.13	3.75	4
19NORD-124	12.2	63.3	2.88	2.88	2
17NORD-138	12.5	63.7	3.00	3.00	2
17NORD-143	12.8	67.3	4.00	4.00	3
17NORD-148	12.2	64.3	4.25	4.25	4

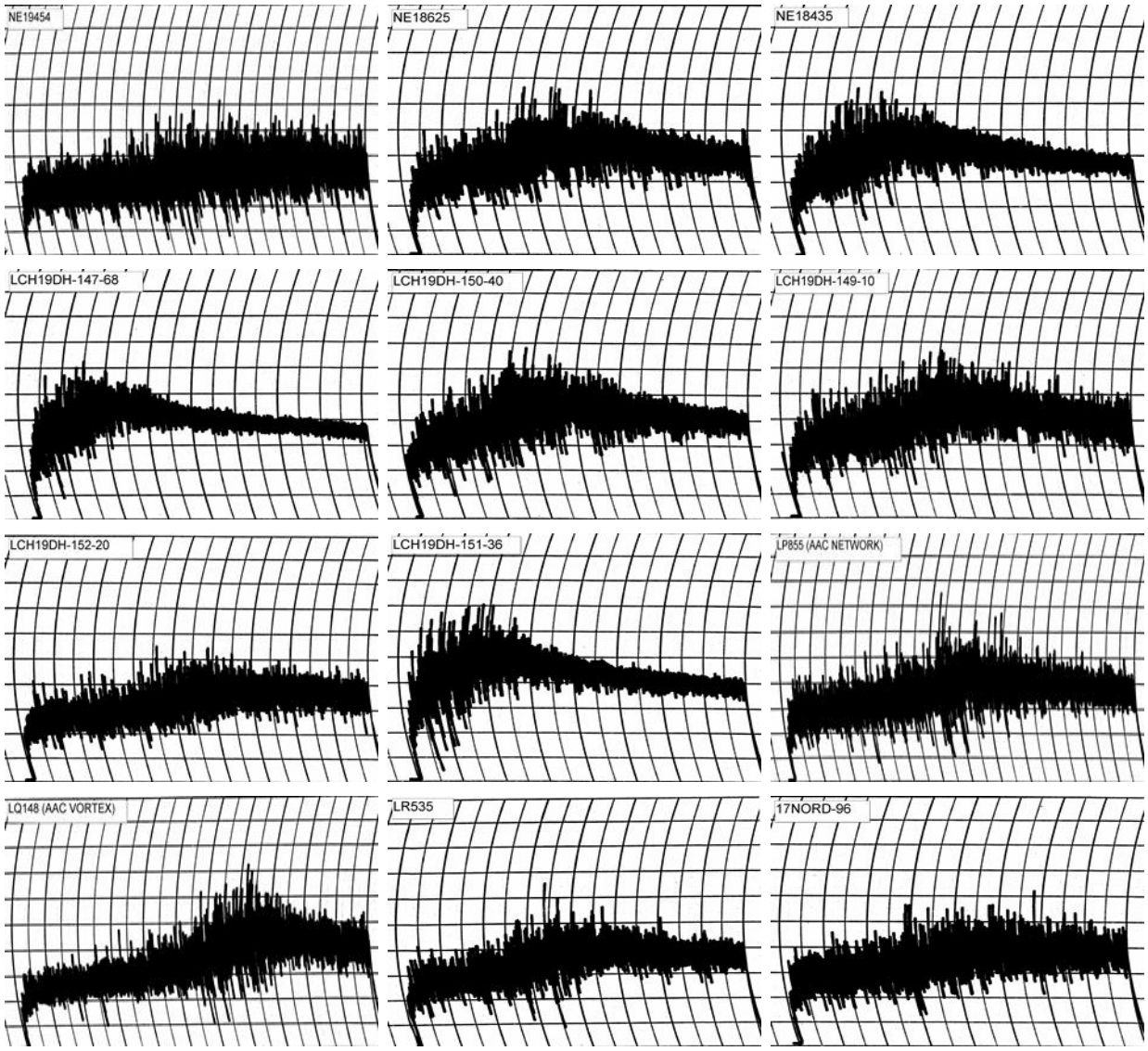
2022 NRPN Intraregional Production Zone
Northern High Plains



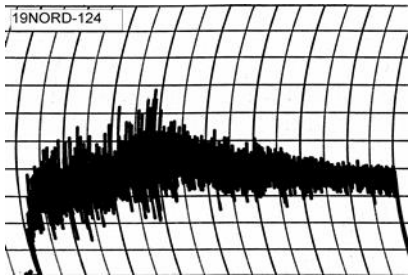
2022 NRPN Intraregional Production Zone
Northern High Plains

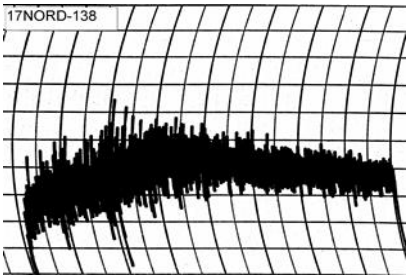


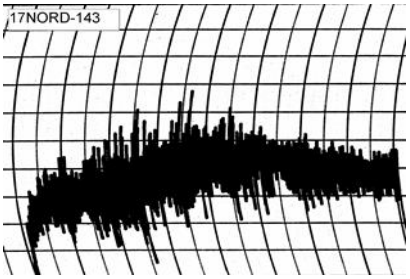
2022 NRPN Intraregional Production Zone
Northern High Plains

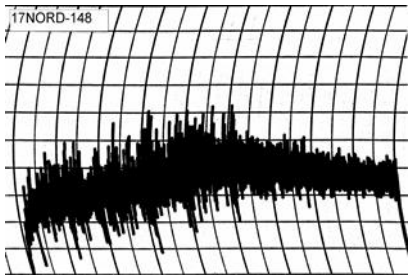


2022 NRPN Intraregional Production Zone
Northern High Plains









2022 NRPN Intraregional Production Zone

Northern High Plains

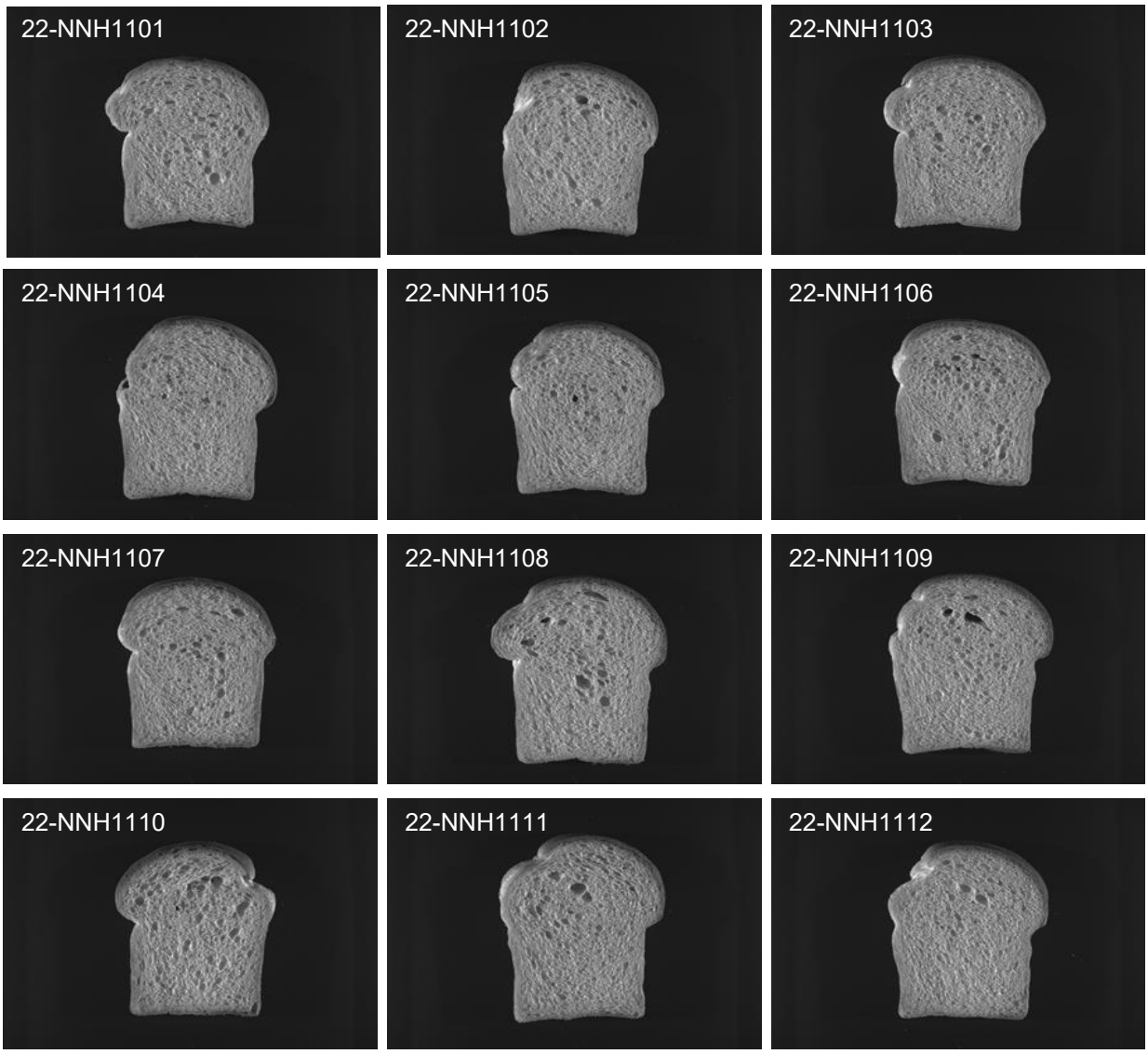
	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
Kharkof	153.58	247.33	174.17	73.17	288.83	114.67	6.40	86.50
Overland	139.17	236.33	162.08	74.25	280.33	118.25	6.27	67.00
Wesley	129.58	212.08	147.25	64.83	266.67	119.42	6.20	86.55
Jagalene	108.92	227.42	151.33	76.08	271.83	120.50	6.20	67.80
Jerry	146.17	238.08	162.75	75.33	282.75	120.00	6.27	86.40
SD15007-11	139.17	217.50	152.92	64.58	281.42	128.50	6.20	85.80
SD15007-5	143.67	209.75	151.58	58.17	280.00	128.42	6.20	86.45
SD15035-2	157.58	199.50	152.50	47.00	265.92	113.42	6.33	87.30
SD17B032-1	159.83	201.67	157.17	44.50	270.08	112.92	6.40	87.30
SD17B210-2	154.50	244.75	175.42	69.33	286.92	111.50	6.47	86.55
SD18B025-8	157.92	232.42	170.83	61.58	277.08	106.25	6.47	88.05
SD18B072-2	133.58	236.83	159.25	77.58	276.83	117.58	6.27	84.80
SD18B083-8	146.58	242.42	168.67	73.75	289.17	120.50	6.27	84.85
SD19B019-2	143.83	206.92	145.58	61.33	264.83	119.25	6.20	85.75
SD19B033-2	135.83	232.08	152.25	79.83	260.92	108.67	6.27	85.70
MTS1903	133.17	242.33	163.67	78.67	290.75	127.08	6.20	84.85
MTS1908	136.58	235.92	161.42	74.50	285.42	124.00	6.20	84.90
MTCL19151	132.42	247.50	167.17	80.33	288.50	121.33	6.27	85.70
NHH19668	136.17	231.00	161.33	69.67	281.08	119.75	6.27	86.45
NI17410	133.33	223.17	155.25	67.92	274.92	119.67	6.20	67.85
NE18455	134.25	245.75	160.75	85.00	273.67	112.92	6.27	84.95
NE19412	144.42	250.17	168.58	81.58	280.00	111.42	6.33	67.75
NE19455	129.50	236.00	155.25	80.75	276.33	121.08	6.20	84.90
NE19590	118.33	250.00	167.08	82.92	275.83	108.75	6.27	84.85
NE19454	114.25	233.08	160.83	72.25	290.33	129.50	6.20	84.85
NE18625	139.50	233.50	164.42	69.08	275.08	110.67	6.40	67.80
NE18435	125.08	212.42	143.33	69.08	255.92	112.58	6.20	84.80
LCH19DH-147-68	102.50	208.58	139.75	68.83	247.25	107.50	6.13	66.90
LCH19DH-150-40	144.42	213.75	150.25	63.50	254.33	104.08	6.33	86.45
LCH19DH-149-10	128.50	221.33	150.08	71.25	262.67	112.58	6.27	67.80
LCH19DH-152-20	146.58	248.17	179.92	68.25	287.92	108.00	6.47	85.70
LCH19DH-151-36	122.58	247.42	146.83	100.58	241.75	94.92	6.27	67.70
LP855 (AAC Network)	105.58	205.67	140.92	64.75	254.67	113.75	6.13	85.60
LQ148 (AAC Vortex)	125.00	212.83	139.83	73.00	250.58	110.75	6.13	86.40
LR535	113.42	223.08	155.42	67.67	269.92	114.50	6.27	85.70
17NORD-96	137.33	222.67	161.92	60.75	282.08	120.17	6.27	85.75
19NORD-124	118.33	229.67	164.25	65.42	286.83	122.58	6.27	86.50
17NORD-138	123.58	203.25	144.08	59.17	257.92	113.83	6.20	86.50
17NORD-143	131.08	243.33	167.75	75.58	289.42	121.67	6.27	85.70
17NORD-148	101.33	232.75	158.67	74.08	275.83	117.17	6.27	67.75

2022 NRPN Intraregional Production Zone

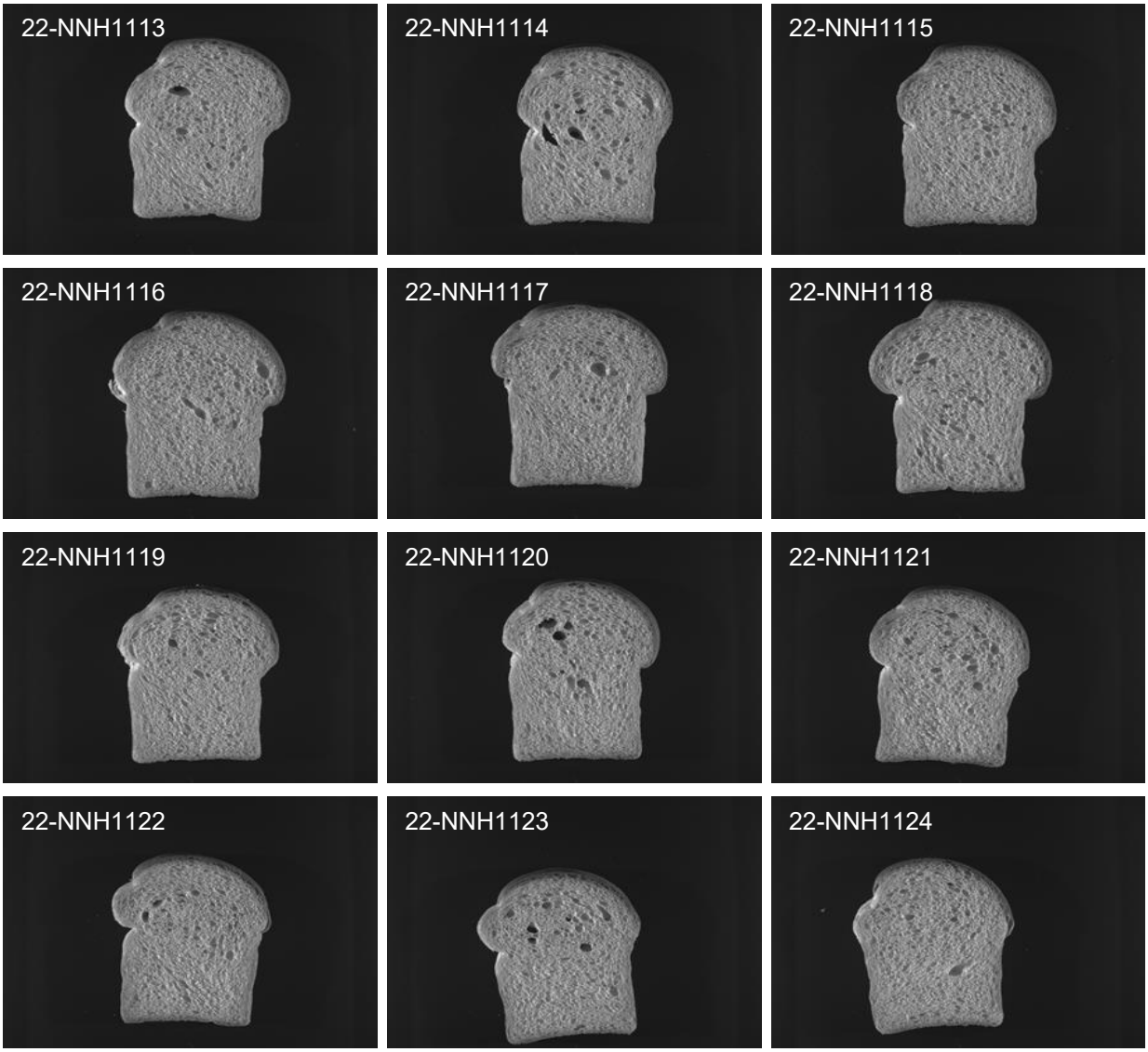
Northern High Plains

	Flour		Mix Time		Dough					
Line	Protein (%)	Water Abs. (%)	As-is (min)	Corrected (min)	Weight (g)	Proof Height (cm)	Crumb Grain	As-Rec'd. (cc)	Specific Volume (cc/g)	Loaf Volume Potential (cc/%)
Kharkof	12.0	62.6	5.38	5.38	171.9	7.6	2.5	850	5.7	61
Overland	10.9	60.9	3.50	3.03	170.8	7.5	2.0	835	5.6	67
Wesley	12.5	65.9	8.25	8.25	175.5	7.5	3.0	900	5.9	63
Jagalene	11.3	63.4	6.75	6.14	173.8	7.8	3.5	920	6.1	75
Jerry	11.7	64.4	6.25	6.03	174.3	7.4	2.5	850	5.6	63
SD15007-11	11.3	64.4	11.00	10.04	174.1	7.4	2.5	815	5.4	62
SD15007-5	12.0	65.2	11.50	11.50	174.1	7.6	3.0	855	5.7	62
SD15035-2	12.6	64.2	5.00	5.00	174.3	7.9	4.0	985	6.6	72
SD17B032-1	12.6	66.2	4.50	4.50	176.8	7.7	4.5	915	6.0	64
SD17B210-2	12.5	60.2	3.75	3.75	169.8	7.4	1.5	905	6.2	64
SD18B025-8	12.5	65.4	5.25	5.25	174.9	8.0	3.5	1000	6.7	74
SD18B072-2	11.9	64.4	5.00	4.95	174.2	7.6	3.5	925	6.1	70
SD18B083-8	11.9	65.3	3.75	3.72	176.1	7.5	4.0	925	6.1	70
SD19B019-2	11.7	60.6	4.00	3.86	170.2	7.6	2.5	910	6.2	70
SD19B033-2	12.1	64.6	5.75	5.75	174.9	7.6	3.5	960	6.3	73
MTS1903	12.6	67.6	7.00	7.00	176.6	8.0	4.0	1025	6.8	75
MTS1908	12.9	68.5	9.00	9.00	177.3	7.9	4.0	1015	6.6	72
MTCL19151	12.1	66.9	10.00	10.00	175.9	7.8	3.5	1100	7.3	88
NHH19668	12.0	62.7	3.25	3.25	172.8	7.3	3.5	895	5.9	66
NI17410	12.3	65.9	6.00	6.00	175.2	7.6	3.0	940	6.1	69
NE18455	11.8	64.7	7.00	6.81	174.4	7.4	2.0	875	5.7	65
NE19412	12.3	65.1	5.63	5.63	174.9	7.2	3.0	845	5.6	59
NE19455	11.8	63.6	5.25	5.15	173.6	7.2	2.5	850	5.6	62
NE19590	11.6	63.7	4.00	3.80	173.6	7.3	2.5	825	5.4	61
NE19454	11.5	64.2	7.50	7.07	173.8	7.5	2.5	885	5.9	68
NE18625	12.5	65.8	4.25	4.25	179.3	7.5	2.0	880	5.7	61
NE18435	11.7	64.7	2.50	2.40	175.0	7.5	2.5	865	5.7	65
LCH19DH-147-68	13.2	63.2	2.00	2.00	173.4	7.2	1.5	800	5.3	49
LCH19DH-150-40	13.0	65.3	4.25	4.25	175.8	8.0	4.0	945	6.3	65
LCH19DH-149-10	12.6	65.3	5.75	5.75	175.3	7.8	3.5	970	6.5	70
LCH19DH-152-20	12.1	62.6	5.50	5.50	173.3	7.7	3.0	940	6.3	71
LCH19DH-151-36	12.8	64.2	2.38	2.38	175.0	7.4	2.5	915	6.1	63
LP855 (AAC Network)	11.9	64.1	7.50	7.40	174.0	7.8	4.5	940	6.3	72
LQ148 (AAC Vortex)	13.5	66.1	10.00	10.00	175.9	7.5	4.0	1000	6.6	67
LR535	11.9	62.7	4.63	4.55	173.3	7.8	4.0	925	6.1	71
17NORD-96	11.2	61.6	5.00	4.54	171.0	7.5	3.5	920	6.3	75
19NORD-124	12.2	63.2	3.50	3.50	173.8	8.0	3.5	960	6.3	71
17NORD-138	12.5	64.1	4.00	4.00	174.7	7.9	4.0	965	6.4	70
17NORD-143	12.8	67.2	4.25	4.25	177.8	7.8	4.0	935	6.0	65
17NORD-148	12.2	64.1	5.25	5.25	174.2	7.5	4.0	950	6.3	70

2022 NRPN Intraregional Production Zone
Northern High Plains



2022 NRPN Intraregional Production Zone
Northern High Plains



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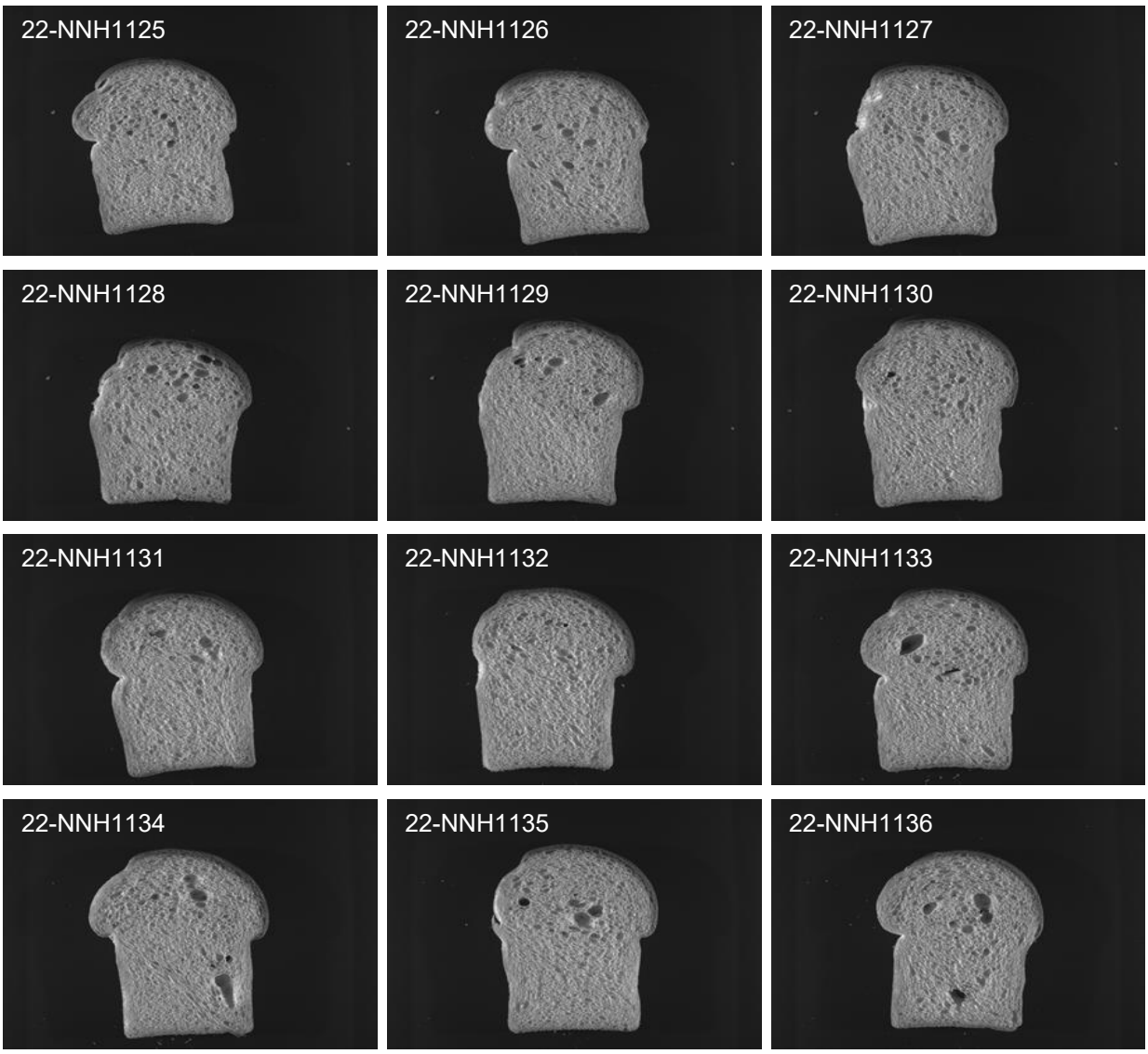
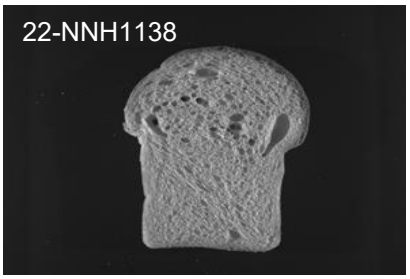
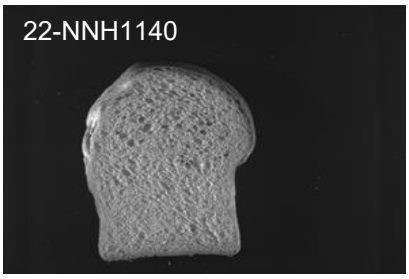
Northern High Plains



2022 NRPN Intraregional Production Zone
Northern High Plains





No data is available for NNP of this year RPN report due to lack of wheat samples from the locations.

Southern
Regional Performance Nursery

2022 SRPN Intraregional Production Zone

Entry	Selection No.	Pedigree	Source
1	Kharkof	Kharkof	check
2	Scout66	Scout66	check
3	TAM-107	TAM-107	check
4	Jagalene	Jagalene	check
5	OK18510	TCI982345/Ruby Lee//OK10415	OSU
6	OKP17D101A666	HV9W07-1031/Gallagher //OK09429	OSU
7	OK16D101237	OK09520/Cedar	OSU
8	OK19P808	CO050337-2/OK10218//OK10132	OSU
9	OK20D78S015	KS13U6030R1/OK118036	OSU
10	CO17449R	CO08346/Antero//Antero	CSU
11	CO18035RA	(AF28/Byrd//AF26/Byrd)//2*Byrd/(AF28/Byrd//AF10 M3/2*Byrd)//2*Byrd/Byrd//	CSU
12	CO18D007W	CO12D906/CO07W722-F5	CSU
13	CO18SFD009W	Warhorse/Breck//CO12D1028	CSU
14	CO19D322R	Snowmass 2.0/CO13D1164	CSU
15	KS120215K-6	Gallagher/KanMark	KSU-Manhattan
16	KS13DH0041-35	KS060634K-8/KS040640K-1	KSU-Manhattan
17	KS16DH0002-12	Gallagher/KS090529K-18	KSU-Manhattan
18	KS16DH0010-17	LCS Chrome/3/KS030810NT-9/90RN2491//3*KS020617~9	KSU-Manhattan
19	BASF-7		BASF
20	BASF-12		BASF
21	NHH19668	OK09915C/NH11565	UNL
22	NI17410	TX06A001281/NI04420	UNL
23	NE19638	NE09517/NE06430	UNL
24	NE18455	TX07A001505/NE06430	UNL
25	LCH19DH-150-85		LCS
26	LCH19DH-149-13		LCS
27	LCH19DH-152-25		LCS
28	LCH19DH-152-6		LCS
29	LCH19DH-148-43		LCS
30	21CP010029	WB-Cedar/Hot Rod//10BC347#33	AgriPro_Syngenta
31	21CP010038	X11PD030/06BC796#8//SY Wolf	AgriPro_Syngenta
32	21CP010041	Byrd/SY Sunrise//SY Wolf	AgriPro_Syngenta
33	21CP010042	Byrd/SY Sunrise//SY Wolf	AgriPro_Syngenta
34	KS19H10	KS11HW15-4-1/KS060476-M-6	KSU-Hays
35	KS19H21	KS10HW78-1-1/KS13-6039	KSU-Hays
36	KS19HD68	KS13HW126//Joe/TAM 114	KSU-Hays
37	KS19HD69	KS13HW126//KS10HW78-1/Gallagher	KSU-Hays
38	TXAMPSY 473-18AZ816	TAM 111*2/CIMMYT E951yn4152-27	TAMU-AMA
39	TX17M1572	Armour/OK05526	TAMU-CS
40	TX18A001119	TX08A001249/TX07A001418-Yr	TAMU-AMA
41	TX18A001129	TX09A001205/TAM 114	TAMU-AMA
42	TX18A001132	TX09A001205/TAM 114	TAMU-AMA
43	TX18A001399	Duster/TX07V7422//Ruby Lee	TAMU-AMA
44	TX18M2602	TX10A001006/TAM 305	TAMU-CS
45	TX14M7088-18AZ530	TAM 113/OK02522W	TAMU-CS

List of SRPN Sample ID

Entry	Breeder ID	HWWQL ID			
		North Central Plains	Northern High Plains	South Central Plains	Southern High Plains
1	Kharkof	22-SNC1001	22-SNH1001	22-SSC1001	22-SSH1001
2	Scout66	22-SNC1002	22-SNH1002	22-SSC1002	22-SSH1002
3	TAM-107	22-SNC1003	22-SNH1003	22-SSC1003	22-SSH1003
4	Jagalene	22-SNC1004	22-SNH1004	22-SSC1004	22-SSH1004
5	OK18510	22-SNC1005	22-SNH1005	22-SSC1005	22-SSH1005
6	OKP17D101A666	22-SNC1006	22-SNH1006	22-SSC1006	22-SSH1006
7	OK16D101237	22-SNC1007	22-SNH1007	22-SSC1007	22-SSH1007
8	OK19P808	22-SNC1008	22-SNH1008	22-SSC1008	22-SSH1008
9	OK20D78S015	22-SNC1009	22-SNH1009	22-SSC1009	22-SSH1009
10	CO17449R	22-SNC1010	22-SNH1010	22-SSC1010	22-SSH1010
11	CO18035RA	22-SNC1011	22-SNH1011	22-SSC1011	22-SSH1011
12	CO18D007W	22-SNC1012	22-SNH1012	22-SSC1012	22-SSH1012
13	CO18SFD009W	22-SNC1013	22-SNH1013	22-SSC1013	22-SSH1013
14	CO19D322R	22-SNC1014	22-SNH1014	22-SSC1014	22-SSH1014
15	KS120215K-6	22-SNC1015	22-SNH1015	22-SSC1015	22-SSH1015
16	KS13DH0041-35	22-SNC1016	22-SNH1016	22-SSC1016	22-SSH1016
17	KS16DH0002-12	22-SNC1017	22-SNH1017	22-SSC1017	22-SSH1017
18	KS16DH0010-17	22-SNC1018	22-SNH1018	22-SSC1018	22-SSH1018
19	BASF-7	22-SNC1019	22-SNH1019	22-SSC1019	22-SSH1019
20	BASF-12	22-SNC1020	22-SNH1020	22-SSC1020	22-SSH1020
21	NHH19668	22-SNC1021	22-SNH1021	22-SSC1021	22-SSH1021
22	NI17410	22-SNC1022	22-SNH1022	22-SSC1022	22-SSH1022
23	NE19638	22-SNC1023	22-SNH1023	22-SSC1023	22-SSH1023
24	NE18455	22-SNC1024	22-SNH1024	22-SSC1024	22-SSH1024
25	LCH19DH-150-85	22-SNC1025	22-SNH1025	22-SSC1025	22-SSH1025
26	LCH19DH-149-13	22-SNC1026	22-SNH1026	22-SSC1026	22-SSH1026
27	LCH19DH-152-25	22-SNC1027	22-SNH1027	22-SSC1027	22-SSH1027
28	LCH19DH-152-6	22-SNC1028	22-SNH1028	22-SSC1028	22-SSH1028
29	LCH19DH-148-43	22-SNC1029	22-SNH1029	22-SSC1029	22-SSH1029
30	21CP010029	22-SNC1030	22-SNH1030	22-SSC1030	22-SSH1030
31	21CP010038	22-SNC1031	22-SNH1031	22-SSC1031	22-SSH1031
32	21CP010041	22-SNC1032	22-SNH1032	22-SSC1032	22-SSH1032
33	21CP010042	22-SNC1033	22-SNH1033	22-SSC1033	22-SSH1033
34	KS19H10	22-SNC1034	22-SNH1034	22-SSC1034	22-SSH1034
35	KS19H21	22-SNC1035	22-SNH1035	22-SSC1035	22-SSH1035
36	KS19HD68	22-SNC1036	22-SNH1036	22-SSC1036	22-SSH1036
37	KS19HD69	22-SNC1037	22-SNH1037	22-SSC1037	22-SSH1037
38	TXAMPSY 473-18AZ816	22-SNC1038	22-SNH1038	22-SSC1038	22-SSH1038
39	TX17M1572	22-SNC1039	22-SNH1039	22-SSC1039	22-SSH1039
40	TX18A001119	22-SNC1040	22-SNH1040	22-SSC1040	22-SSH1040
41	TX18A001129	22-SNC1041	22-SNH1041	22-SSC1041	22-SSH1041
42	TX18A001132	22-SNC1042	22-SNH1042	22-SSC1042	22-SSH1042
43	TX18A001399	22-SNC1043	22-SNH1043	22-SSC1043	22-SSH1043
44	TX18M2602	22-SNC1044	22-SNH1044	22-SSC1044	22-SSH1044
45	TX14M7088-18AZ530	22-SNC1045	22-SNH1045	22-SSC1045	22-SSH1045

Hard Winter Wheat Quality Report

2022 SRPN-NCP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
Kharkof	33.8	Very Poor	60.3	64.1	Very Good	97.1		6,8,10,
Scout 66	54.0	Very Good	96.5	51.9	Good	78.6		
TAM 107	49.4	Average	88.2	49.9	Average	75.5	1AL	
Jagalene	53.9	Very Good	96.4	60.7	Very Good	91.9		
High Cotton	54.7	Very Good	97.7	49.8	Average	75.4		
OKP17D101A666	56.0	Very Good	100.0	54.6	Good	82.7		15,21,
OK16D101237	51.6	Average	92.1	40.8	Very Poor	61.7		2,14,15,
OK19P808	48.4	Poor	86.5	40.3	Very Poor	61.0		16,19,20,21,
OK20D78S015	46.4	Very Poor	82.9	61.9	Very Good	93.7		8,9,10,15,20,
CO17449R	52.1	Good	93.1	43.9	Poor	66.5		5,11,18,19,
CO18035RA	46.5	Poor	83.1	53.5	Good	81.0		4,14,15,17,
CO18D007W	47.8	Poor	85.5	37.9	Very Poor	57.4		14,15,
Windom SF	51.0	Average	91.0	49.5	Average	75.0		14,15,
CO19D322R	53.1	Good	94.8	53.7	Good	81.3		14,15,
KS120215K-6	54.1	Very Good	96.7	38.7	Very Poor	58.6		5,14,15,
KS13DH0041-35	47.7	Poor	85.3	42.2	Poor	63.9	1BL	12,13,17,
KS16DH0002-12	51.5	Average	92.1	45.9	Poor	69.5		2,
KS16DH0010-17	47.3	Poor	84.5	50.8	Average	76.9		3,5,
BASF-7	50.8	Average	90.8	43.2	Poor	65.3	h1RS?	3,5,15,
BASF-12	49.7	Average	88.7	58.8	Very Good	89.0		
NHH19668	54.7	Very Good	97.7	40.5	Very Poor	61.3		
NI17410	52.9	Good	94.4	54.4	Good	82.3		15,
NE19638	44.5	Very Poor	79.5	55.4	Good	83.9		1,3,14,15,
NE18455	46.4	Very Poor	82.9	48.6	Average	73.6		2,14,15,
LCH19DH-150-85	49.5	Average	88.4	61.1	Very Good	92.5		2,20,
LCH19DH-149-13	43.1	Very Poor	76.9	44.7	Poor	67.7		1,14,15,
LCH19DH-152-25	44.8	Very Poor	80.1	59.5	Very Good	90.1	h1RS?	1,
LCH19DH-152-6	45.9	Very Poor	81.9	39.4	Very Poor	59.7		13,15,
LCH19DH-148-43	54.4	Very Good	97.1	56.4	Good	85.4		15,
21CP010029	47.9	Poor	85.5	43.5	Poor	65.9		9,15,
21CP010038	46.2	Very Poor	82.5	57.1	Very Good	86.4	1BL	12,13,

Quality scores and ratings are calculated directly from the relative trait weightings (printed at the top of the page) and are applicable only to the nursery selected.

Hard Winter Wheat Quality Report

2022 SRPN-NCP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
21CP010041	55.6	Very Good	99.3	50.4	Average	76.3		
21CP010042	56.0	Very Good	100.0	40.6	Very Poor	61.5		14,15,
KS19H10	53.4	Good	95.4	42.8	Poor	64.8		15,
KS19H21	51.9	Good	92.6	54.5	Good	82.5		
KS19HD68	51.7	Average	92.3	45.7	Poor	69.2		
KS19HD69	52.0	Good	92.8	59.0	Very Good	89.3		
TXAMPSY 473-18AZ816	47.0	Poor	84.0	39.2	Very Poor	59.4		14,15,
TX17M1572	53.3	Good	95.2	66.1	Very Good	100.0		
TX18A001119	47.1	Poor	84.1	46.5	Average	70.3	1AL	8,9,10,
TX18A001129	51.7	Good	92.4	45.3	Poor	68.6	1AL	15,18,
TX18A001132	47.7	Poor	85.1	34.5	Very Poor	52.3	1AL	4,11,14,15,
TX18A001399	45.0	Very Poor	80.3	48.0	Average	72.7		9,10,14,15,
TX18M2602	50.6	Average	90.4	53.3	Good	80.7		21,
TX14M7088-18AZ530	53.2	Good	95.1	49.5	Average	75.0		

2022 SRPN Intraregional Production Zone

North Central Plains

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
Kharkof	59.2	11.8	0.6	28.3	9.3	2.51	0.35	39	19	MIXED	38-27-21-14-03
Scout66	60.4	11.6	0.6	33.4	10.5	2.70	0.34	56	20	HARD	10-22-30-38-01
TAM-107	59.0	11.3	0.7	31.0	9.7	2.64	0.36	57	20	HARD	10-18-27-45-01
Jagalene	61.0	11.3	0.7	29.5	9.7	2.64	0.36	69	19	HARD	02-09-22-67-01
OK18510	60.8	11.5	0.6	31.5	8.6	2.78	0.34	58	17	HARD	06-21-28-45-01
OKP17D101A666	60.9	11.5	0.6	30.8	8.0	2.72	0.31	69	17	HARD	02-07-22-69-01
OK16D101237	58.8	11.2	0.7	26.7	7.9	2.52	0.36	51	17	MIXED	14-28-30-28-03
OK19P808	60.0	11.3	0.5	32.2	10.1	2.69	0.32	65	17	HARD	03-10-26-61-01
OK20D78S015	61.0	10.8	0.6	32.9	9.7	2.75	0.34	62	18	HARD	03-12-33-52-01
CO17449R	61.5	11.7	0.6	30.9	9.8	2.62	0.39	57	21	HARD	10-21-23-46-01
CO18035RA	59.5	11.7	0.7	27.9	9.6	2.44	0.37	61	21	HARD	08-19-25-48-01
CO18D007W	59.3	11.3	0.7	28.2	10.9	2.52	0.37	57	19	HARD	09-22-28-41-01
CO18SFD009W	61.4	10.8	0.8	31.7	10.7	2.64	0.37	67	19	HARD	03-09-20-68-01
CO19D322R	60.1	11.2	0.6	31.1	9.9	2.65	0.38	66	19	HARD	04-11-25-60-01
KS120215K-6	60.1	11.4	0.6	30.0	10.0	2.64	0.39	57	17	HARD	08-18-32-42-01
KS13DH0041-35	59.2	11.5	0.7	32.3	10.9	2.61	0.35	62	17	HARD	04-14-27-55-01
KS16DH0002-12	61.3	11.3	0.7	26.1	9.7	2.53	0.33	71	20	HARD	02-07-21-70-01
KS16DH0010-17	59.6	11.4	0.8	28.0	11.7	2.56	0.39	62	21	HARD	09-13-26-52-01
BASF-7	60.7	11.7	0.6	33.8	11.5	2.69	0.39	58	18	HARD	10-15-30-45-01
BASF-12	60.2	12.0	0.7	35.0	10.9	2.73	0.38	54	20	MIXED	14-26-24-36-03
NHH19668	60.2	11.6	0.7	30.7	8.1	2.73	0.33	61	19	HARD	08-10-30-52-01
NI17410	60.5	11.4	0.7	31.6	10.4	2.71	0.33	66	19	HARD	03-12-26-59-01
NE19638	58.4	11.7	0.6	29.0	11.1	2.50	0.38	59	19	HARD	09-20-23-48-01
NE18455	59.2	11.6	0.7	27.3	8.6	2.50	0.34	58	19	HARD	08-18-31-43-01
LCH19DH-150-85	60.4	11.1	0.9	27.2	8.1	2.55	0.33	61	18	HARD	05-15-31-49-01
LCH19DH-149-13	58.7	11.3	0.7	28.7	9.8	2.54	0.37	58	18	HARD	07-18-32-43-01
LCH19DH-152-25	58.0	11.1	0.8	29.9	9.6	2.61	0.34	66	20	HARD	02-13-26-59-01
LCH19DH-152-6	59.5	11.3	0.8	28.0	9.5	2.52	0.37	50	20	MIXED	18-24-29-29-03
LCH19DH-148-43	60.8	11.2	0.8	33.5	8.3	2.77	0.35	60	16	HARD	04-13-36-47-01
21CP010029	60.4	11.3	0.8	30.9	9.6	2.67	0.38	75	21	HARD	01-07-18-74-01
21CP010038	59.3	11.3	0.9	29.2	9.3	2.56	0.36	67	17	HARD	03-07-24-66-01
21CP010041	61.3	11.5	0.8	31.8	9.5	2.68	0.38	59	20	MIXED	11-17-24-48-03
21CP010042	61.1	11.8	0.7	32.4	9.0	2.66	0.37	56	19	HARD	09-24-28-39-01
KS19H10	61.1	11.5	0.8	31.8	9.3	2.75	0.34	68	17	HARD	02-08-22-68-01
KS19H21	59.9	11.5	0.9	31.4	9.2	2.68	0.38	57	18	HARD	10-22-25-43-01
KS19HD68	60.9	11.5	0.9	33.9	9.0	2.79	0.33	60	20	HARD	07-21-28-44-01
KS19HD69	59.7	11.9	1.0	29.5	8.7	2.63	0.33	70	19	HARD	02-09-19-70-01
TXAMPSY 473-18AZ816	59.5	11.8	0.8	29.9	8.3	2.54	0.35	67	20	HARD	05-12-20-63-01
TX17M1572	59.4	12.0	0.7	29.6	8.8	2.54	0.35	56	17	HARD	08-22-30-40-01
TX18A001119	61.8	11.5	0.7	30.0	9.4	2.65	0.36	77	19	HARD	01-05-13-81-01
TX18A001129	59.9	11.7	0.7	29.8	8.3	2.53	0.34	64	18	HARD	04-13-20-63-01
TX18A001132	59.5	11.7	0.9	29.2	8.3	2.48	0.34	66	19	HARD	04-10-25-61-01
TX18A001399	59.2	11.9	0.8	29.9	10.9	2.55	0.38	65	18	HARD	04-10-25-61-01
TX18M2602	61.1	11.6	1.0	32.0	10.3	2.73	0.35	68	19	HARD	03-08-22-67-01

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
TX14M7088-18AZ530	60.9	11.9	1.1	32.3	8.3	2.70	0.33	68	18	HARD	03-08-23-66-01

2022 SRPN Intraregional Production Zone

North Central Plains

	Wheat		Flour			Noodle Color					
LINE	Protein (%)	Milling Yield (%)	Ash (%)	Protein (%)	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
Kharkof	15.6	61.9	0.43	14.0	0.570	77.61	-1.27	24.60	-9.16	1.45	0.30
Scout66	14.4	69.1	0.37	13.3	0.641	78.70	-1.08	22.14	-9.37	1.29	2.53
TAM-107	13.6	67.7	0.38	12.5	0.630	77.75	-1.21	24.22	-8.98	1.40	1.66
Jagalene	13.8	68.8	0.42	12.8	0.521	77.46	-0.97	23.90	-9.47	1.51	1.67
OK18510	13.8	67.5	0.37	12.7	0.544	78.07	-1.67	24.75	-9.16	1.43	1.55
OKP17D101A666	14.1	68.1	0.45	13.1	0.574	77.95	-1.45	23.68	-9.99	1.72	2.61
OK16D101237	13.6	68.8	0.37	12.7	0.219	80.03	-1.55	23.29	-6.79	1.04	3.15
OK19P808	14.5	65.4	0.44	13.7	0.199	79.62	-1.25	22.67	-7.35	1.33	3.68
OK20D78S015	14.8	64.5	0.46	13.2	0.508	76.53	-0.72	23.20	-10.07	1.86	2.79
CO17449R	12.8	68.7	0.37	11.5	0.629	78.36	-1.58	23.69	-8.63	1.39	2.72
CO18035RA	13.0	68.3	0.42	11.7	0.665	78.97	-1.49	23.97	-9.38	1.41	3.10
CO18D007W	13.3	67.6	0.34	12.1	0.680	79.74	-1.73	23.96	-8.69	1.27	2.33
CO18SFD009W	13.7	67.1	0.41	12.3	0.672	78.57	-1.29	23.36	-9.57	1.51	2.27
CO19D322R	13.5	68.8	0.39	12.4	0.513	78.07	-1.21	23.61	-8.47	1.22	1.79
KS120215K-6	13.1	70.1	0.41	12.2	0.671	79.15	-1.84	24.89	-8.93	1.44	1.04
KS13DH0041-35	13.5	66.4	0.42	12.2	0.190	78.39	-1.45	25.67	-5.89	1.09	2.32
KS16DH0002-12	12.8	68.0	0.39	11.8	0.208	79.27	-1.84	25.03	-5.63	1.15	2.97
KS16DH0010-17	13.6	68.0	0.35	12.7	0.723	79.45	-1.58	23.60	-8.84	1.31	2.31
BASF-7	13.8	67.9	0.39	12.4	0.539	78.49	-1.34	23.37	-9.29	1.37	2.92
BASF-12	13.7	67.9	0.40	12.5	0.558	78.89	-1.38	23.22	-9.13	1.31	2.99
NHH19668	13.3	68.1	0.38	12.1	0.567	78.66	-1.40	23.44	-8.40	1.21	1.44
NI17410	13.7	67.6	0.38	12.5	0.634	77.86	-0.88	22.23	-9.69	1.36	2.15
NE19638	13.7	66.8	0.38	12.4	0.537	78.36	-1.07	22.38	-8.41	1.06	3.40
NE18455	13.1	66.7	0.42	11.9	0.661	77.46	-1.17	23.51	-8.88	1.63	2.61
LCH19DH-150-85	15.0	66.1	0.39	13.8	0.828	78.51	-1.29	23.00	-10.16	1.55	16.47
LCH19DH-149-13	13.9	64.8	0.40	12.7	0.530	80.05	-1.11	21.75	-9.58	1.40	3.45
LCH19DH-152-25	14.2	66.0	0.45	12.8	0.727	78.67	-1.62	24.95	-10.45	1.95	1.23
LCH19DH-152-6	13.6	67.9	0.41	12.3	0.706	79.14	-1.58	24.50	-8.70	1.48	0.66
LCH19DH-148-43	14.1	65.8	0.37	12.9	0.630	79.53	-1.31	21.22	-10.61	1.67	3.67
21CP010029	13.5	66.5	0.46	12.3	0.539	78.29	-1.08	22.65	-10.67	2.01	2.69
21CP010038	14.4	64.9	0.43	12.9	0.743	76.58	-1.32	25.80	-10.16	1.71	-0.17
21CP010041	13.3	70.4	0.41	12.2	0.685	78.49	-1.43	23.57	-10.03	1.63	1.86
21CP010042	13.2	69.7	0.39	12.0	0.659	78.84	-1.13	21.65	-9.67	1.36	2.21
KS19H10	13.3	66.3	0.40	12.2	0.585	79.33	-1.59	23.61	-10.31	1.51	1.83
KS19H21	13.5	67.5	0.36	12.3	0.719	77.78	-1.13	23.23	-9.57	1.49	1.07
KS19HD68	13.4	66.1	0.38	11.9	0.544	78.80	-1.39	23.07	-8.15	1.27	2.39
KS19HD69	13.8	67.9	0.45	12.8	0.240	78.55	-1.09	23.17	-7.71	1.43	3.34
TXAMPSY 473-18AZ816	13.2	65.7	0.43	11.9	0.655	78.01	-1.23	23.44	-9.49	1.60	2.41
TX17M1572	13.7	69.1	0.39	12.7	0.617	79.16	-1.51	23.23	-9.21	1.52	2.01
TX18A001119	13.9	64.4	0.46	12.3	0.187	78.80	-1.02	22.99	-8.56	1.42	4.54
TX18A001129	13.1	67.1	0.38	11.7	0.577	78.95	-1.49	24.73	-9.00	1.47	3.45

	Wheat		Flour			Noodle Color					
	Protein	Milling Yield	Ash	Protein	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
LINE	(%)	(%)	(%)	(%)							
TX18A001132	12.6	66.0	0.41	11.4	0.636	79.60	-1.64	24.33	-9.35	1.51	3.64
TX18A001399	13.2	66.8	0.48	11.8	0.538	78.93	-1.10	23.60	-10.01	1.47	3.60
TX18M2602	13.7	66.2	0.39	12.6	0.638	78.10	-1.19	23.85	-9.69	1.52	2.53
TX14M7088-18AZ530	13.3	66.3	0.42	11.7	0.534	77.32	-0.98	22.69	-8.71	1.53	2.65

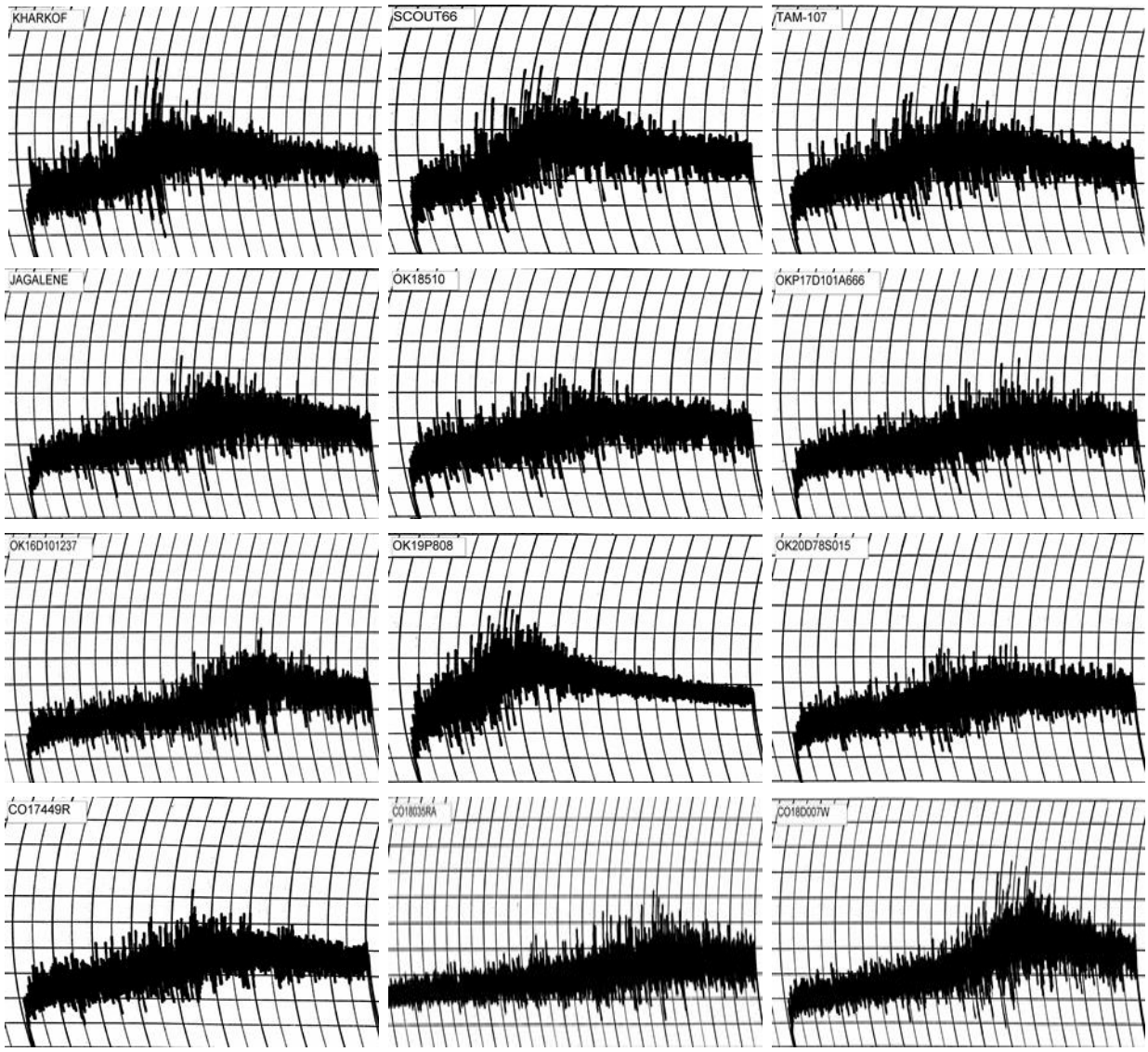
2022 SRPN Intraregional Production Zone

North Central Plains

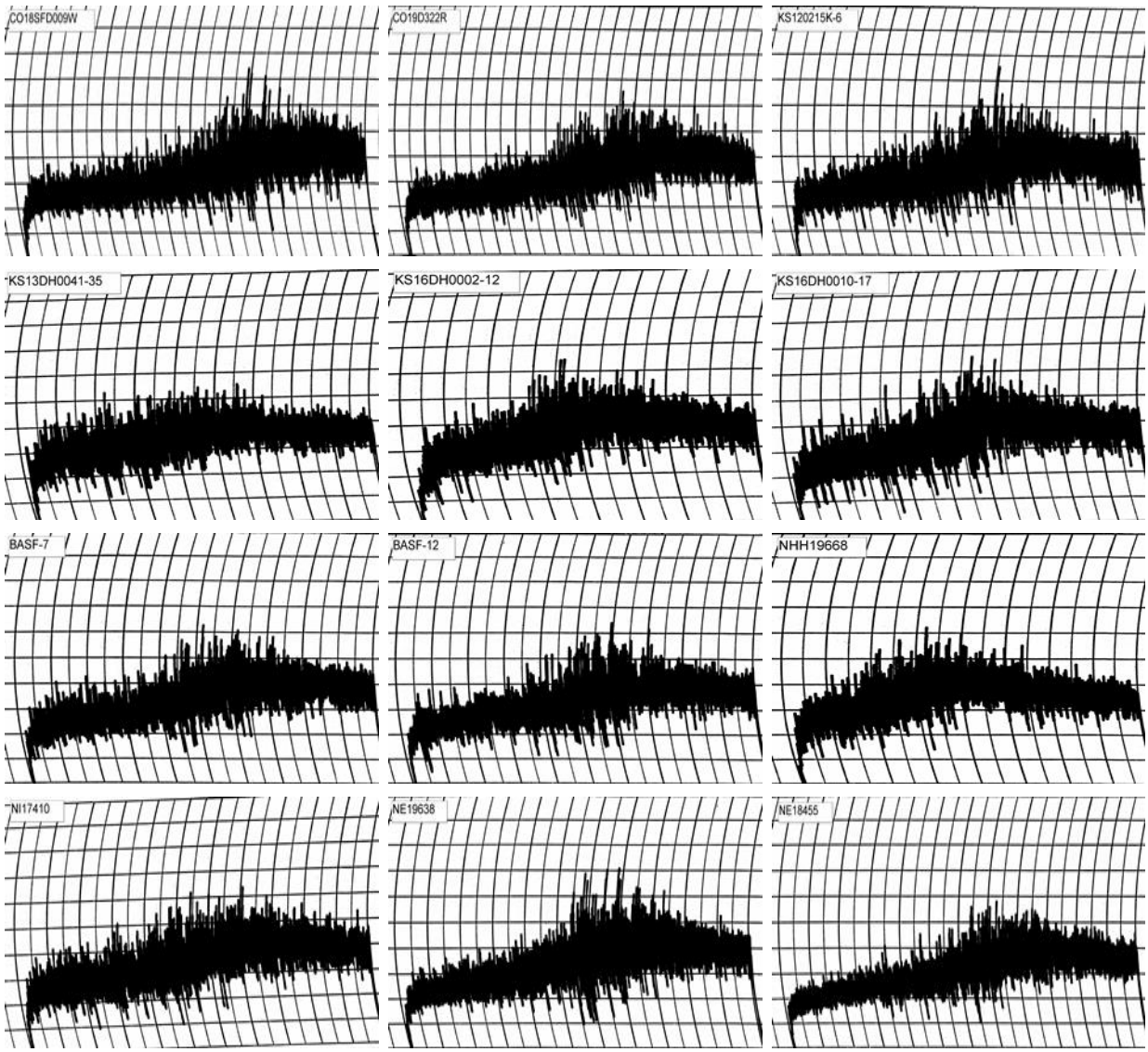
		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
Kharkof	14.0	66.4	3.75	3.75	3
Scout66	13.3	68.2	3.38	3.38	3
TAM-107	12.5	65.8	4.25	4.25	4
Jagalene	12.8	66.3	5.50	5.50	4
OK18510	12.7	64.6	4.50	4.50	4
OKP17D101A666	13.1	66.7	6.50	6.50	5
OK16D101237	12.7	64.5	7.63	7.63	5
OK19P808	13.7	67.8	2.63	2.63	2
OK20D78S015	13.2	68.3	6.13	6.13	4
CO17449R	11.5	64.2	4.63	4.37	4
CO18035RA	11.7	64.9	4.13	3.60	6
CO18D007W	12.1	66.6	9.00	9.00	6
CO18SFD009W	12.3	66.4	8.00	8.00	6
CO19D322R	12.4	65.0	7.63	7.63	5
KS120215K-6	12.2	65.2	6.63	6.63	5
KS13DH0041-35	12.2	61.7	4.63	4.63	4
KS16DH0002-12	11.8	64.5	3.88	3.77	4
KS16DH0010-17	12.7	65.7	4.75	4.75	4
BASF-7	12.4	65.7	6.13	6.13	5
BASF-12	12.5	66.7	6.00	6.00	4
NHH19668	12.1	64.1	3.50	3.50	3
NI17410	12.5	65.8	6.88	6.88	5
NE19638	12.4	65.6	6.88	6.88	5
NE18455	11.9	65.3	8.00	7.89	4
LCH19DH-150-85	13.8	66.9	4.88	4.88	4
LCH19DH-149-13	12.7	66.6	8.00	8.00	6
LCH19DH-152-25	12.8	65.2	5.50	5.50	5
LCH19DH-152-6	12.3	63.5	6.50	6.50	5
LCH19DH-148-43	12.9	66.0	6.25	6.25	5
21CP010029	12.3	65.5	6.25	6.25	5
21CP010038	12.9	63.1	4.63	4.63	4
21CP010041	12.2	63.7	4.25	4.25	4
21CP010042	12.0	64.8	8.13	8.09	6
KS19H10	12.2	65.3	7.00	7.00	5
KS19H21	12.3	65.0	3.50	3.50	3
KS19HD68	11.9	64.3	5.13	5.07	4
KS19HD69	12.8	66.2	4.88	4.88	4
TXAMPSY 473-18AZ816	11.9	66.2	9.50	9.39	6
TX17M1572	12.7	64.6	5.13	5.13	4
TX18A001119	12.3	67.0	5.00	5.00	4
TX18A001129	11.7	64.0	7.13	6.91	4

		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
TX18A001132	11.4	64.8	8.00	7.38	4
TX18A001399	11.8	66.6	1.88	1.64	6
TX18M2602	12.6	65.9	3.50	3.50	4
TX14M7088-18AZ530	11.7	64.4	4.00	3.84	4

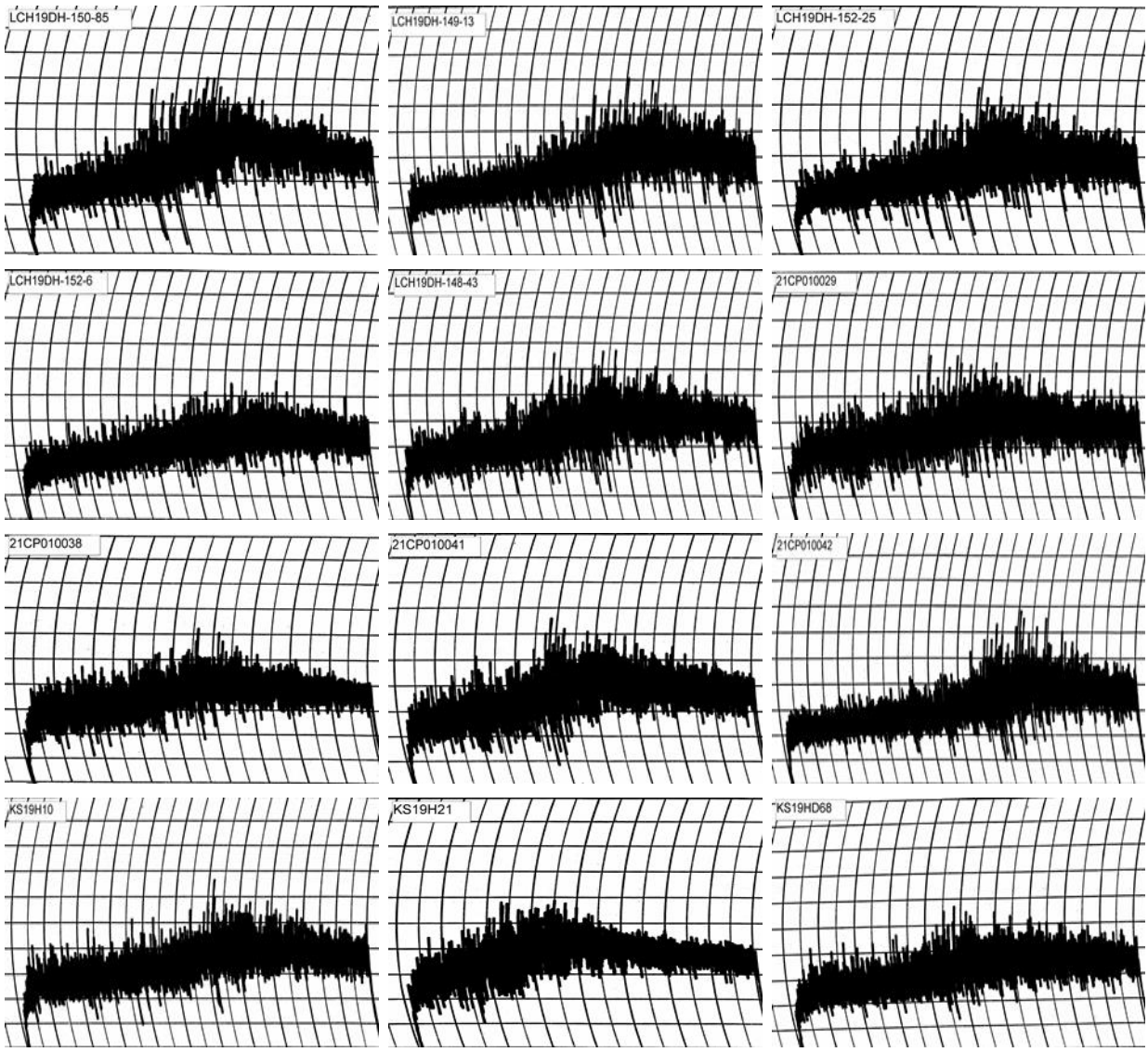
2022 SRPN Intraregional Production Zone
North Central Plains



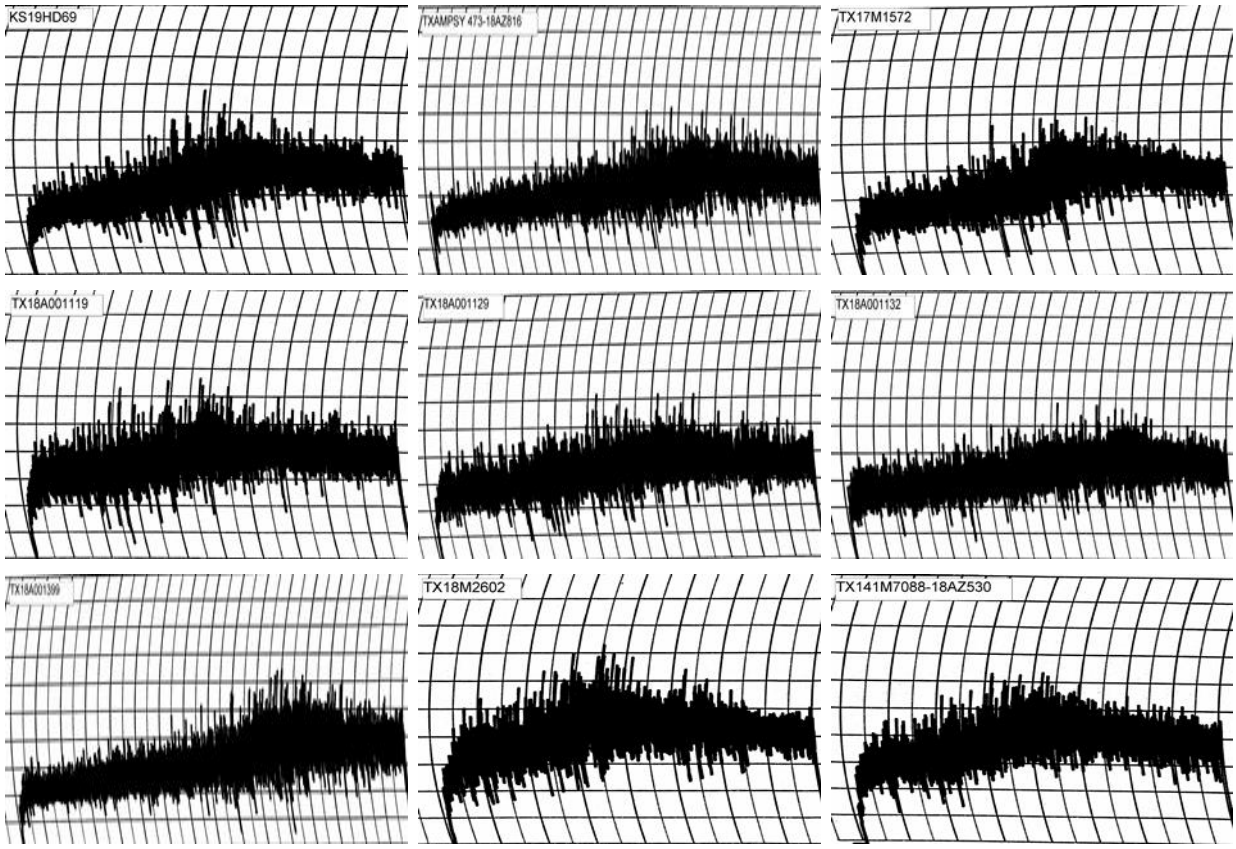
2022 SRPN Intraregional Production Zone
North Central Plains



2022 SRPN Intraregional Production Zone
North Central Plains



2022 SRPN Intraregional Production Zone
North Central Plains



2022 SRPN Intraregional Production Zone

North Central Plains

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
Kharkof	146.00	226.17	154.92	71.25	266.67	111.75	6.27	86.55
Scout66	127.75	215.92	141.67	74.25	250.83	109.17	6.27	85.70
TAM-107	110.00	213.58	130.17	83.42	238.42	108.25	6.13	68.65
Jagalene	125.08	220.33	145.58	74.75	260.75	115.17	6.20	67.75
OK18510	119.00	216.25	150.75	65.50	268.08	117.33	6.27	84.80
OKP17D101A666	109.00	188.58	106.67	81.92	205.67	99.00	6.07	67.80
OK16D101237	99.00	244.75	156.08	88.67	268.83	112.75	6.27	69.40
OK19P808	97.67	241.25	152.17	89.08	255.33	103.17	6.27	67.70
OK20D78S015	129.33	224.33	158.42	65.92	269.33	110.92	6.40	85.75
CO17449R	108.92	265.92	164.92	101.00	271.08	106.17	6.27	67.85
CO18035RA	114.33	221.67	126.17	95.50	238.75	112.58	6.00	67.70
CO18D007W	109.50	220.83	142.75	78.08	259.33	116.58	6.20	84.90
CO18SFD009W	132.17	229.42	140.25	89.17	231.67	91.42	6.27	67.80
CO19D322R	108.17	223.75	141.67	82.08	252.58	110.92	6.20	84.85
KS120215K-6	110.00	208.67	126.92	81.75	236.25	109.33	6.07	68.45
KS13DH0041-35	136.42	204.25	140.58	63.67	253.58	113.00	6.27	86.60
KS16DH0002-12	131.33	225.33	146.92	78.42	267.00	120.08	6.13	66.80
KS16DH0010-17	135.00	252.58	170.42	82.17	285.42	115.00	6.33	67.75
BASF-7	130.00	216.42	143.92	72.50	253.83	109.92	6.27	85.70
BASF-12	117.25	232.58	162.58	70.00	281.92	119.33	6.33	85.65
NHH19668	131.17	227.17	154.92	72.25	277.33	122.42	6.20	85.65
NI17410	98.25	210.00	137.33	72.67	250.83	113.50	6.13	67.85
NE19638	129.08	219.83	149.08	70.75	271.75	122.67	6.20	84.75
NE18455	115.67	233.67	146.08	87.58	262.25	116.17	6.20	67.70
LCH19DH-150-85	136.58	184.42	118.33	66.08	219.83	101.50	6.13	85.70
LCH19DH-149-13	114.17	231.17	155.17	76.00	270.92	115.75	6.27	85.60
LCH19DH-152-25	140.42	224.42	165.42	59.00	281.33	115.92	6.40	67.80
LCH19DH-152-6	137.75	232.33	159.00	73.33	278.17	119.17	6.27	85.70
LCH19DH-148-43	115.17	253.08	154.42	98.67	254.58	100.17	6.33	67.70
21CP010029	104.25	197.50	111.83	85.67	212.25	100.42	6.00	66.90
21CP010038	124.25	213.17	133.33	79.83	241.17	107.83	6.20	67.70
21CP010041	91.33	186.25	109.17	77.08	207.83	98.67	5.93	69.45
21CP010042	125.50	237.33	141.58	95.75	252.67	111.08	6.13	69.40
KS19H10	97.92	227.92	142.50	85.42	256.83	114.33	6.20	66.85
KS19H21	140.42	253.75	161.67	92.08	263.50	101.83	6.27	84.80
KS19HD68	162.75	256.33	186.50	69.83	307.25	120.75	6.47	86.50
KS19HD69	151.08	233.50	169.83	63.67	291.17	121.33	6.40	67.75
TXAMPSY 473-18AZ816	115.75	239.92	162.17	77.75	292.00	129.83	6.20	84.85
TX17M1572	96.67	228.42	150.67	77.75	280.83	130.17	6.07	66.80
TX18A001119	142.25	235.00	162.42	72.58	281.17	118.75	6.33	67.80
TX18A001129	131.17	234.17	156.25	77.92	277.25	121.00	6.27	67.75
TX18A001132	114.83	209.83	126.00	83.83	238.58	112.58	6.07	67.65
TX18A001399	134.67	241.50	158.17	83.33	287.75	129.58	6.13	67.80
TX18M2602	146.67	228.50	164.75	63.75	285.33	120.58	6.40	85.75

	RVA							
	Stirring Number	Peak Viscosity	Trough Viscosity	Breakdown	Final Viscosity	Set back	Peak Time	Pasting Temp
Line	(RVU)	(RVU)	(RVU)	(RVU)	(RVU)	(RVU)	(min)	(Deg. C)
TX14M7088-18AZ530	118.42	229.83	158.00	71.83	280.83	122.83	6.27	66.85

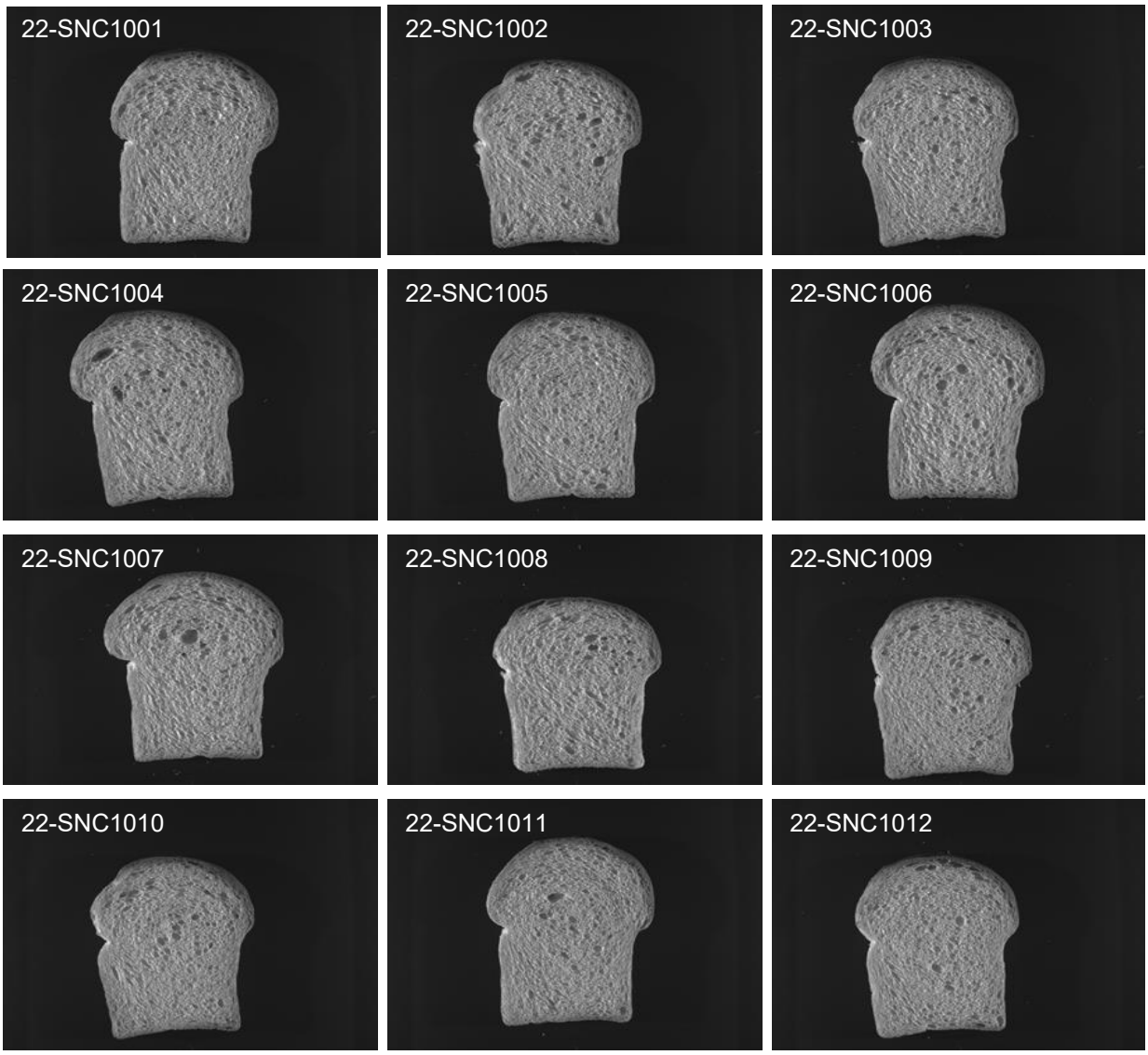
2022 SRPN Intraregional Production Zone

North Central Plains

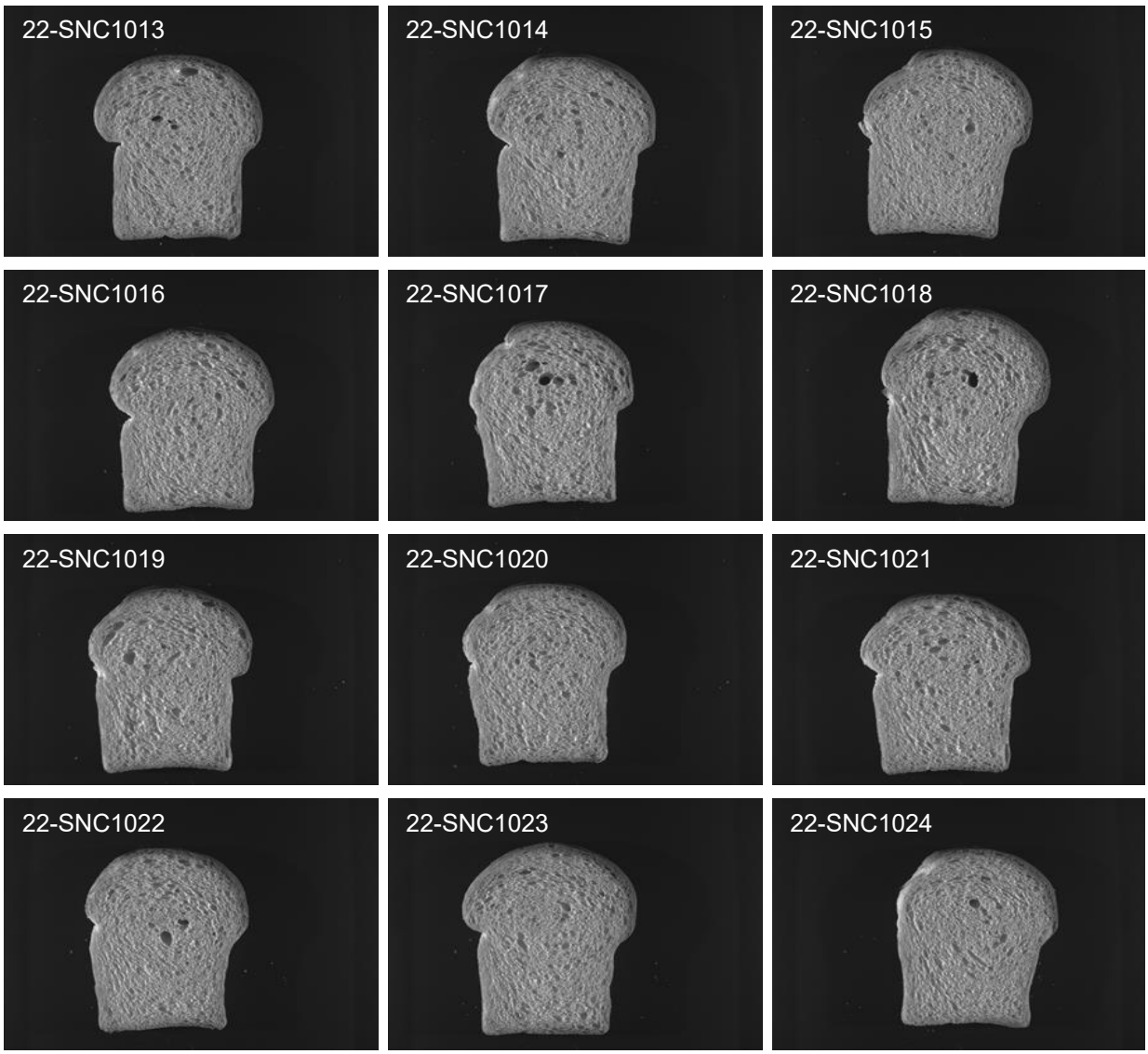
	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
Kharkof	14.0	66.5	5.00	5.00	175.5	7.9	3.0	1005	6.6	64
Scout66	13.3	68.2	4.25	4.25	177.4	8.0	2.5	980	6.4	66
TAM-107	12.5	65.7	4.63	4.63	175.2	7.8	3.5	955	6.3	69
Jagalene	12.8	66.7	6.25	6.25	176.3	7.8	3.0	1035	6.8	75
OK18510	12.7	64.7	4.75	4.75	174.1	7.9	3.5	980	6.5	70
OKP17D101A666	13.1	66.5	6.25	6.25	175.7	7.9	2.0	1025	6.8	72
OK16D101237	12.7	64.7	8.25	8.25	174.0	7.7	4.5	1025	6.8	75
OK19P808	13.7	67.6	3.00	3.00	177.4	7.7	1.5	885	5.7	54
OK20D78S015	13.2	68.7	6.25	6.25	178.0	8.0	4.0	930	6.0	62
CO17449R	11.5	64.2	5.00	4.72	174.0	7.3	3.5	885	5.9	68
CO18035RA	11.7	64.7	14.50	13.96	172.4	7.6	4.0	980	6.5	78
CO18D007W	12.1	66.8	11.00	11.00	175.1	7.8	3.5	920	6.0	68
CO18SFD009W	12.3	66.8	10.00	10.00	175.4	7.5	3.0	955	6.4	70
CO19D322R	12.4	64.7	8.50	8.50	174.1	7.8	4.0	995	6.5	74
KS120215K-6	12.2	65.2	9.00	9.00	174.6	7.6	4.5	990	6.6	75
KS13DH0041-35	12.2	61.8	4.75	4.75	170.5	7.6	3.5	920	6.2	68
KS16DH0002-12	11.8	64.8	4.25	4.13	174.3	7.5	2.5	930	6.1	72
KS16DH0010-17	12.7	65.8	6.00	6.00	175.4	7.7	3.5	1020	6.8	74
BASF-7	12.4	65.7	7.00	7.00	175.6	7.7	3.5	960	6.3	70
BASF-12	12.5	66.6	6.38	6.38	175.4	7.6	4.0	930	6.1	66
NHH19668	12.1	63.7	3.50	3.50	174.0	7.5	2.5	920	6.1	68
NI17410	12.5	65.7	7.38	7.38	174.3	7.5	4.0	930	6.2	66
NE19638	12.4	65.6	8.25	8.25	174.8	7.7	4.0	995	6.6	74
NE18455	11.9	65.6	8.75	8.63	175.2	7.4	4.0	910	6.0	69
LCH19DH-150-85	13.8	66.8	5.50	5.50	176.3	7.8	3.0	970	6.4	62
LCH19DH-149-13	12.7	66.7	9.00	9.00	175.7	7.9	3.5	1045	7.0	77
LCH19DH-152-25	12.8	65.2	5.75	5.75	174.6	7.5	3.0	1005	6.6	72
LCH19DH-152-6	12.3	63.8	7.25	7.25	173.1	7.5	4.5	970	6.5	72
LCH19DH-148-43	12.9	65.7	7.50	7.50	175.4	7.7	3.0	1050	7.0	76
21CP010029	12.3	65.6	7.25	7.25	174.7	7.8	3.5	985	6.6	73
21CP010038	12.9	62.8	4.63	4.63	173.0	8.1	3.0	980	6.5	69
21CP010041	12.2	63.8	4.75	4.75	173.7	8.0	2.5	1005	6.7	77
21CP010042	12.0	64.6	9.25	9.21	173.7	7.9	3.5	1015	6.8	80
KS19H10	12.2	64.9	7.00	7.00	174.2	7.9	2.5	990	6.6	75
KS19H21	12.3	64.7	3.88	3.88	175.2	7.9	3.0	945	6.1	69
KS19HD68	11.9	63.9	5.25	5.19	173.9	7.6	3.5	945	6.2	72
KS19HD69	12.8	66.2	5.63	5.63	176.1	7.6	3.0	960	6.2	68
TXAMPSY 473-18AZ816	11.9	66.2	10.00	9.88	175.0	7.5	3.5	960	6.3	74
TX17M1572	12.7	64.8	6.00	6.00	174.6	8.2	4.0	1055	7.0	78
TX18A001119	12.3	66.8	6.25	6.25	176.1	7.7	2.5	935	6.0	68
TX18A001129	11.7	63.9	7.25	7.02	173.6	7.2	3.0	920	6.2	71
TX18A001132	11.4	64.8	8.00	7.38	174.9	7.4	3.5	920	6.1	74
TX18A001399	11.8	66.9	15.50	15.18	174.8	7.6	3.0	925	6.1	71

	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
TX18M2602	12.6	65.9	3.50	3.50	175.8	8.1	2.0	990	6.5	72
TX14M7088-18AZ530	11.7	64.4	4.50	4.32	174.7	8.1	3.5	980	6.4	78

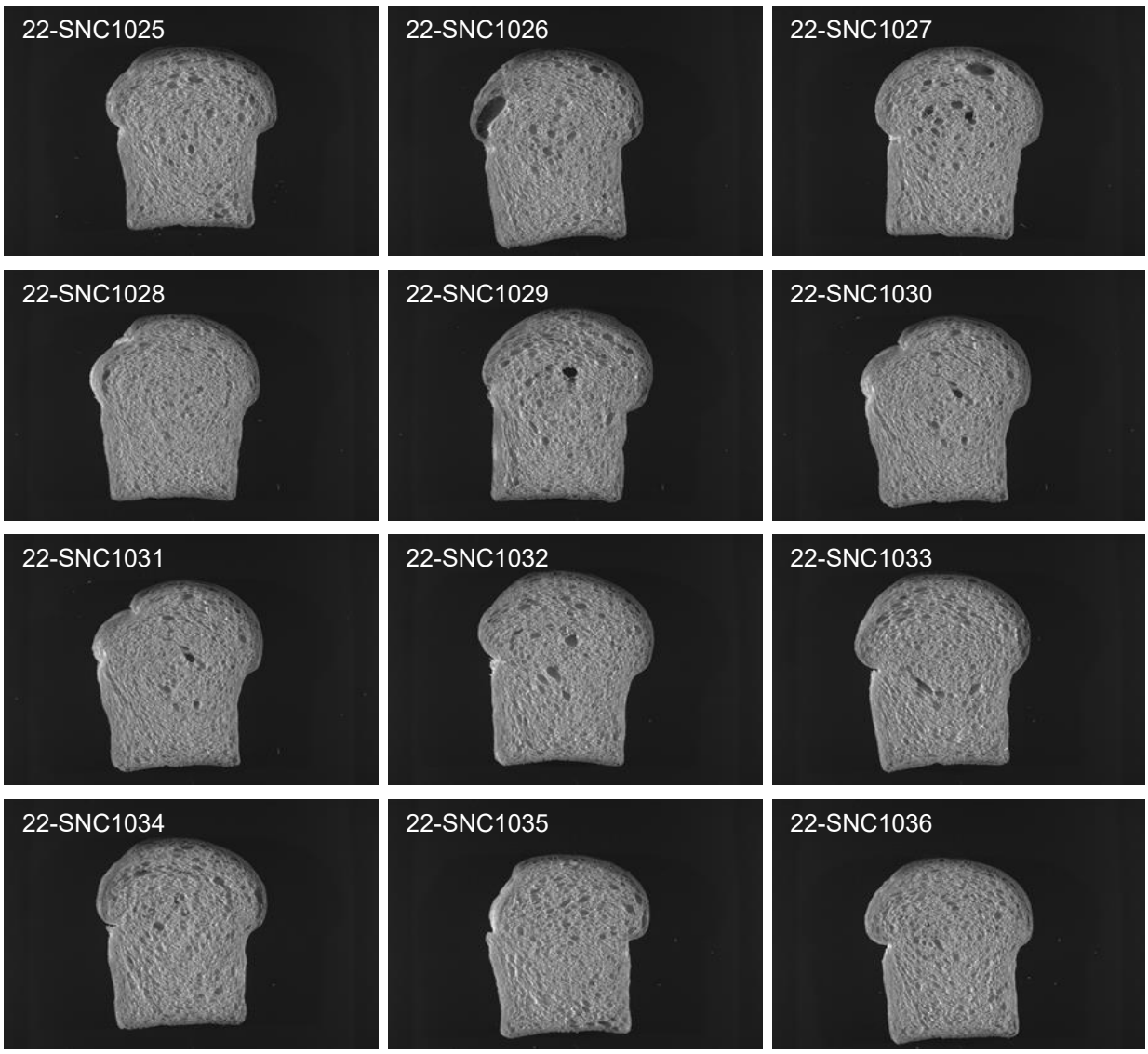
2022 SRPN Intraregional Production Zone
North Central Plains



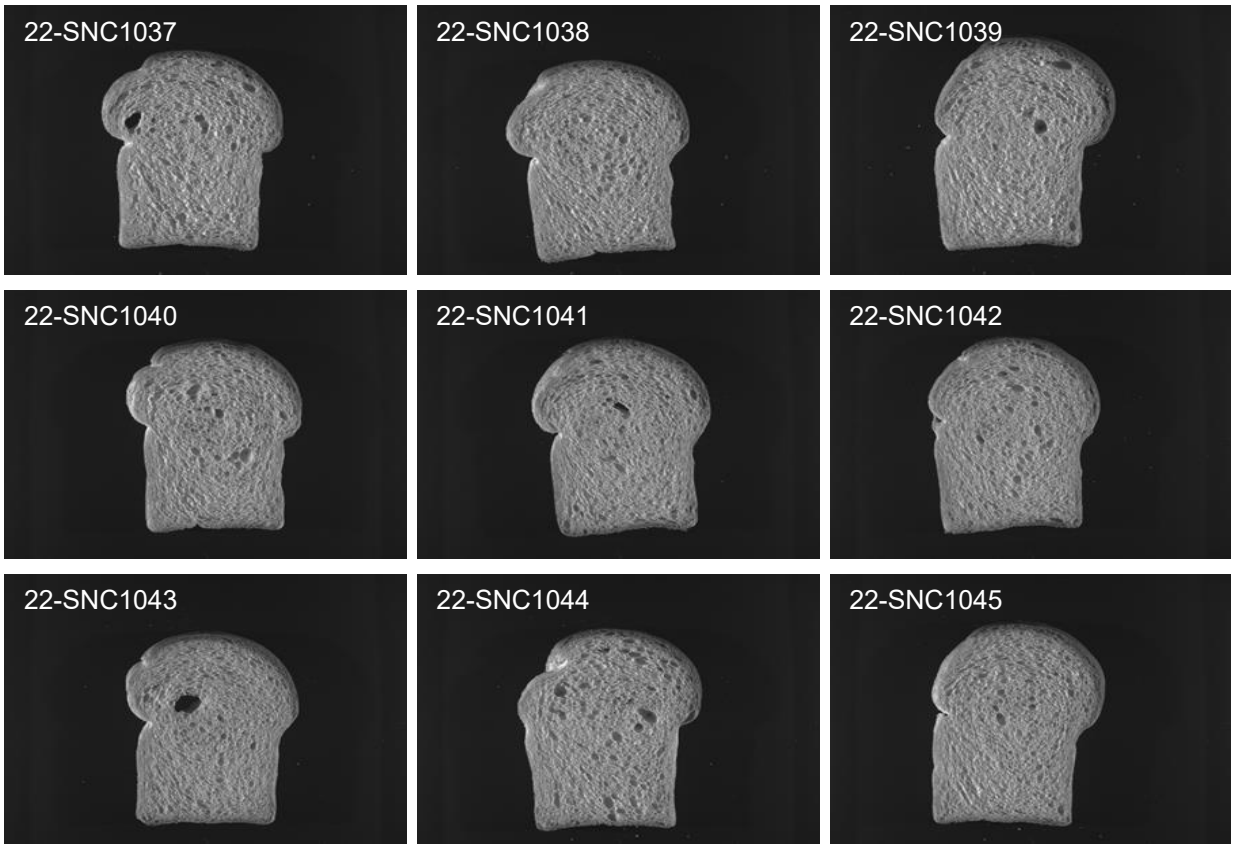
2022 SRPN Intraregional Production Zone
North Central Plains



2022 SRPN Intraregional Production Zone
North Central Plains



2022 SRPN Intraregional Production Zone
North Central Plains



Hard Winter Wheat Quality Report

2022 SRPN-NHP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
Kharkof	29.6	Very Poor	56.1	61.2	Good	82.9		4,8,10,16,
Scout 66	50.2	Very Good	95.0	43.3	Poor	58.7		14,15,16,21,
TAM 107	41.7	Average	79.0	35.7	Very Poor	48.3	1AL	14,16,21,
Jagalene	41.1	Average	77.8	48.0	Average	65.0		16,21,
High Cotton	39.3	Poor	74.4	46.4	Average	62.9		16,
OKP17D101A666	35.9	Very Poor	68.0	50.9	Average	69.0		1,9,16,
OK16D101237	43.7	Good	82.8	55.1	Good	74.7		16,
OK19P808	42.7	Good	80.9	29.9	Very Poor	40.6		14,15,16,18,19,20,21
OK20D78S015	39.4	Poor	74.7	32.9	Very Poor	44.5		8,10,14,16,19,20,21,
CO17449R	46.3	Very Good	87.6	45.6	Poor	61.9		11,12,13,16,17,21,
CO18035RA	37.6	Very Poor	71.2	57.4	Good	77.8		4,5,11,12,14,17,
CO18D007W	41.3	Average	78.2	49.1	Average	66.5		16,
Windom SF	44.0	Good	83.4	67.5	Very Good	91.6		3,
CO19D322R	48.5	Very Good	91.9	64.0	Very Good	86.8		
KS120215K-6	47.1	Very Good	89.3	62.0	Very Good	84.0		16,
KS13DH0041-35	38.4	Poor	72.8	43.9	Poor	59.5	1BL	1,12,13,15,16,21,
KS16DH0002-12	39.2	Poor	74.2	42.5	Very Poor	57.6		9,14,15,16,21,
KS16DH0010-17	42.7	Good	80.9	65.4	Very Good	88.7		16,
BASF-7	41.9	Average	79.3	45.7	Average	61.9	h1RS?	5,16,
BASF-12	42.4	Average	80.2	44.2	Poor	60.0		3,5,16,
NHH19668	43.8	Good	82.9	31.6	Very Poor	42.8		14,16,18,19,21,
NI17410	43.1	Good	81.6	57.5	Good	78.0		16,
NE19638	38.7	Poor	73.2	56.2	Good	76.2		16,21,
NE18455	37.2	Very Poor	70.4	55.0	Good	74.6		16,
LCH19DH-150-85	38.1	Poor	72.1	52.0	Average	70.5		2,16,21,
LCH19DH-149-13	40.5	Poor	76.8	73.8	Very Good	100.0		
LCH19DH-152-25	33.0	Very Poor	62.5	67.7	Very Good	91.8	h1RS?	1,9,
LCH19DH-152-6	38.2	Poor	72.4	43.3	Very Poor	58.7		12,16,17,
LCH19DH-148-43	46.0	Good	87.1	67.6	Very Good	91.6		
21CP010029	42.4	Average	80.4	55.8	Good	75.6		6,9,
21CP010038	38.0	Very Poor	72.0	41.7	Very Poor	56.5	1BL	2,12,13,16,17,21,

Quality scores and ratings are calculated directly from the relative trait weightings (printed at the top of the page) and are applicable only to the nursery selected.

Hard Winter Wheat Quality Report

2022 SRPN-NHP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
21CP010041	52.8	Very Good	100.0	46.1	Average	62.4		5,16,21,
21CP010042	52.3	Very Good	99.0	64.5	Very Good	87.4		
KS19H10	42.4	Average	80.4	52.6	Average	71.3		
KS19H21	47.3	Very Good	89.6	27.8	Very Poor	37.7		14,15,16,18,19,20,21
KS19HD68	49.2	Very Good	93.1	45.4	Poor	61.6		16,
KS19HD69	46.8	Very Good	88.7	61.4	Very Good	83.2		16,
TXAMPSY 473-18AZ816	37.8	Very Poor	71.5	52.3	Average	70.9		
TX17M1572	38.5	Poor	73.0	52.9	Good	71.7		1,16,21,
TX18A001119	42.7	Good	80.9	43.6	Poor	59.1	1AL	6,8,9,10,16,18,
TX18A001129	40.6	Average	77.0	43.8	Poor	59.3	1AL	16,
TX18A001132	36.1	Very Poor	68.3	57.2	Good	77.5	1AL	11,16,
TX18A001399	42.7	Good	80.9	45.4	Poor	61.6		14,15,
TX18M2602	36.7	Very Poor	69.5	32.8	Very Poor	44.5		3,14,15,16,19,20,21,
TX14M7088-18AZ530	41.4	Average	78.4	45.6	Poor	61.8		16,21,

2022 SRPN Intraregional Production Zone

Northern High Plains

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
Kharkof	58.6	13.0	0.7	26.6	10.1	2.35	0.34	48	17	MIXED	18-27-30-25-03
Scout66	59.9	12.9	0.6	32.8	11.1	2.59	0.31	62	17	HARD	06-13-26-55-01
TAM-107	58.5	12.6	0.6	30.8	12.3	2.51	0.36	67	17	HARD	02-10-23-65-01
Jagalene	58.9	12.8	0.6	29.9	11.1	2.52	0.37	69	19	HARD	03-08-21-68-01
OK18510	58.1	12.8	0.6	29.2	10.2	2.52	0.34	61	17	HARD	07-12-26-55-01
OKP17D101A666	57.3	12.5	0.5	29.4	11.7	2.54	0.35	74	18	HARD	02-06-15-77-01
OK16D101237	58.9	12.5	0.5	27.1	9.7	2.39	0.33	59	18	HARD	08-14-28-50-01
OK19P808	60.1	12.7	0.5	31.7	10.9	2.55	0.35	70	15	HARD	01-05-18-76-01
OK20D78S015	60.3	12.6	0.5	31.8	11.2	2.59	0.33	76	18	HARD	01-03-17-79-01
CO17449R	60.1	13.3	0.5	29.8	11.7	2.44	0.38	66	18	HARD	04-10-23-63-01
CO18035RA	58.8	12.4	0.7	28.4	11.8	2.29	0.41	59	21	HARD	10-18-23-49-01
CO18D007W	58.5	11.9	0.6	27.9	10.3	2.44	0.33	62	18	HARD	06-13-25-56-01
CO18SFD009W	60.8	11.8	0.6	33.2	13.4	2.54	0.38	72	18	HARD	02-07-17-74-01
CO19D322R	60.6	11.9	0.6	33.7	11.9	2.60	0.34	65	17	HARD	04-10-21-65-01
KS120215K-6	59.2	12.5	0.6	31.2	12.1	2.57	0.37	66	17	HARD	04-09-24-63-01
KS13DH0041-35	57.0	13.1	0.5	30.4	10.8	2.48	0.37	66	18	HARD	04-10-20-66-01
KS16DH0002-12	59.0	12.9	0.5	27.1	11.7	2.40	0.35	75	22	HARD	03-06-17-74-01
KS16DH0010-17	58.7	13.0	0.5	26.6	10.7	2.42	0.37	67	20	HARD	06-10-20-64-01
BASF-7	58.5	12.7	0.4	33.4	12.1	2.60	0.40	62	17	HARD	03-17-26-54-01
BASF-12	59.5	13.2	0.4	31.9	12.7	2.53	0.40	70	18	HARD	02-08-22-68-01
NHH19668	58.1	13.3	0.4	28.9	11.3	2.55	0.36	69	17	HARD	01-09-21-69-01
NI17410	59.4	13.0	0.4	29.1	11.5	2.46	0.37	71	18	HARD	01-09-18-72-01
NE19638	57.5	12.9	0.5	27.0	10.7	2.37	0.39	64	19	HARD	06-12-22-60-01
NE18455	58.2	12.8	0.5	28.5	11.7	2.40	0.36	62	19	HARD	04-14-27-55-01
LCH19DH-150-85	58.0	12.9	0.5	25.9	10.0	2.38	0.36	64	19	HARD	06-12-24-58-01
LCH19DH-149-13	59.0	12.3	0.4	28.7	10.0	2.49	0.38	61	17	HARD	05-19-21-55-01
LCH19DH-152-25	56.8	12.0	0.5	27.8	11.4	2.42	0.39	71	21	HARD	02-09-19-70-01
LCH19DH-152-6	59.0	11.8	0.5	27.2	10.1	2.42	0.36	58	21	MIXED	11-17-24-48-03
LCH19DH-148-43	58.8	12.1	0.4	31.3	8.9	2.61	0.33	69	16	HARD	02-06-16-76-01
21CP010029	59.7	12.7	0.5	31.2	10.2	2.60	0.35	87	21	HARD	01-02-06-91-01
21CP010038	58.6	13.1	0.7	26.4	8.4	2.38	0.38	76	21	HARD	03-06-15-76-01
21CP010041	60.5	13.2	0.5	29.3	9.6	2.54	0.41	74	17	HARD	01-06-14-79-01
21CP010042	59.8	13.5	0.5	30.0	8.9	2.46	0.35	67	17	HARD	02-08-25-65-01
KS19H10	60.0	12.7	0.4	29.2	9.2	2.53	0.36	75	20	HARD	03-05-17-75-01
KS19H21	59.6	12.7	0.4	28.9	9.4	2.51	0.34	68	16	HARD	01-05-24-70-01
KS19HD68	60.4	13.1	0.3	33.0	9.6	2.69	0.31	70	17	HARD	01-08-18-73-01
KS19HD69	59.5	12.8	0.4	30.1	9.4	2.56	0.31	78	19	HARD	02-03-13-82-01
TXAMPSY 473-18AZ816	58.6	13.1	0.5	29.7	11.8	2.40	0.35	74	19	HARD	02-07-15-76-01
TX17M1572	57.3	13.3	0.4	28.1	11.5	2.37	0.34	65	18	HARD	05-12-22-61-01
TX18A001119	61.3	12.8	0.4	29.3	10.1	2.56	0.33	93	17	HARD	00-00-03-97-01
TX18A001129	58.9	11.9	0.4	27.6	10.5	2.36	0.33	72	19	HARD	02-07-20-71-01
TX18A001132	58.4	11.9	0.6	29.3	10.7	2.37	0.35	71	20	HARD	04-07-16-73-01
TX18A001399	58.2	12.5	0.5	28.0	10.0	2.45	0.34	66	17	HARD	03-08-23-66-01
TX18M2602	58.3	12.5	0.5	30.7	14.1	2.53	0.39	68	18	HARD	04-09-19-68-01

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
TX14M7088-18AZ530	59.0	12.7	0.5	31.0	10.8	2.54	0.35	72	17	HARD	02-06-13-79-01

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	Wheat		Flour			Noodle Color					
LINE	Protein (%)	Milling Yield (%)	Ash (%)	Protein (%)	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
Kharkof	16.2	58.1	0.42	15.3	0.424	79.27	-1.30	23.59	-10.95	1.42	0.52
Scout66	14.9	66.6	0.38	14.7	0.413	78.77	-1.08	24.28	-10.07	1.41	0.24
TAM-107	15.2	64.4	0.42	14.4	0.421	78.67	-1.32	24.66	-11.80	1.66	0.18
Jagalene	15.7	64.5	0.46	15.4	0.387	78.10	-1.05	26.18	-10.96	1.47	-0.66
OK18510	15.6	62.3	0.40	15.0	0.353	78.19	-1.70	26.75	-10.54	1.52	-1.42
OKP17D101A666	16.6	62.3	0.49	16.3	0.407	77.16	-1.45	26.74	-12.77	1.55	-2.34
OK16D101237	15.1	65.7	0.42	15.0	0.113	80.86	-1.65	24.73	-8.24	1.32	3.08
OK19P808	16.1	62.5	0.46	15.6	0.150	78.99	-1.03	25.50	-7.57	1.61	3.17
OK20D78S015	16.1	61.0	0.47	15.2	0.384	76.40	-0.92	25.92	-11.95	2.12	-0.35
CO17449R	13.8	65.9	0.36	13.1	0.451	78.92	-1.60	24.81	-10.60	1.74	1.66
CO18035RA	13.5	65.5	0.43	12.8	0.437	79.31	-1.67	26.18	-11.08	1.44	-0.39
CO18D007W	14.6	63.6	0.38	14.0	0.464	80.63	-2.18	25.20	-10.22	1.58	0.66
CO18SFD009W	14.9	64.2	0.42	14.0	0.491	79.28	-1.61	24.67	-11.84	1.69	-0.17
CO19D322R	14.7	65.1	0.37	14.1	0.388	80.07	-1.62	24.64	-10.32	1.56	1.61
KS120215K-6	14.9	66.9	0.42	14.5	0.510	78.59	-1.79	26.98	-12.37	1.73	-1.51
KS13DH0041-35	15.0	63.4	0.44	14.7	0.120	78.99	-1.51	27.43	-7.37	1.43	0.73
KS16DH0002-12	14.5	65.3	0.48	14.1	0.109	78.15	-1.40	27.04	-6.84	1.60	2.55
KS16DH0010-17	15.3	65.8	0.39	15.1	0.533	78.38	-1.46	25.05	-12.55	1.66	-0.91
BASF-7	15.3	64.0	0.40	14.9	0.391	78.53	-1.44	25.79	-10.26	1.59	-0.53
BASF-12	14.3	64.1	0.40	13.6	0.390	79.65	-1.67	25.41	-10.15	1.47	0.80
NHH19668	14.9	64.9	0.41	14.3	0.417	79.34	-1.46	24.54	-10.20	1.35	-0.43
NI17410	14.8	64.7	0.41	14.4	0.508	78.32	-1.20	24.09	-11.78	1.81	-0.27
NE19638	15.3	64.6	0.41	14.7	0.381	77.77	-1.16	25.14	-11.46	1.53	-1.77
NE18455	14.7	63.3	0.41	14.1	0.464	78.60	-1.36	24.65	-11.24	1.47	0.62
LCH19DH-150-85	16.4	64.0	0.45	16.2	0.471	79.11	-1.53	24.03	-11.55	1.26	-2.53
LCH19DH-149-13	15.4	63.0	0.39	15.0	0.294	80.32	-1.37	24.14	-9.50	1.20	0.13
LCH19DH-152-25	15.3	62.9	0.48	14.4	0.420	78.40	-1.55	25.95	-13.21	1.87	-0.73
LCH19DH-152-6	14.8	64.7	0.45	14.3	0.421	79.48	-1.91	25.06	-11.04	1.73	-2.37
LCH19DH-148-43	15.0	62.6	0.38	14.7	0.484	80.10	-1.81	25.60	-9.64	1.80	-0.22
21CP010029	14.7	63.3	0.50	14.5	0.376	77.81	-1.04	26.16	-11.13	2.04	-0.67
21CP010038	15.2	62.8	0.46	14.7	0.595	76.23	-1.58	27.14	-12.96	1.97	-2.35
21CP010041	14.4	67.9	0.40	13.8	0.533	78.71	-1.60	24.72	-11.22	2.12	0.46
21CP010042	13.8	67.5	0.40	13.4	0.439	79.02	-1.50	24.82	-11.32	1.75	0.06
KS19H10	14.2	63.3	0.43	13.7	0.418	78.72	-1.76	26.45	-11.00	1.60	-0.78
KS19H21	14.8	64.2	0.38	14.2	0.456	79.68	-1.32	21.67	-12.08	1.57	2.41
KS19HD68	15.2	63.9	0.40	14.3	0.368	79.52	-1.63	24.64	-9.79	1.42	0.31
KS19HD69	15.4	65.1	0.45	14.8	0.136	79.43	-1.21	24.05	-7.96	1.19	1.53
TXAMPSY 473-18AZ816	14.5	62.8	0.44	13.7	0.450	79.23	-1.35	24.41	-13.57	1.97	1.36
TX17M1572	15.4	63.9	0.41	15.1	0.425	80.47	-1.71	23.81	-12.18	1.71	0.48
TX18A001119	15.2	60.6	0.48	14.0	0.131	78.51	-1.00	25.06	-8.36	1.59	2.51
TX18A001129	14.2	63.3	0.40	13.3	0.409	78.83	-1.87	27.51	-9.85	1.84	0.06

	Wheat		Flour			Noodle Color					
	Protein	Milling Yield	Ash	Protein	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
LINE	(%)	(%)	(%)	(%)							
TX18A001132	14.0	61.9	0.43	13.2	0.359	79.10	-2.08	27.93	-9.88	1.84	-0.19
TX18A001399	14.1	64.4	0.43	13.6	0.332	79.75	-1.34	24.99	-11.08	1.64	2.85
TX18M2602	15.3	62.1	0.41	14.7	0.433	78.16	-1.58	26.02	-11.11	1.62	-0.65
TX14M7088-18AZ530	14.7	62.8	0.45	14.0	0.351	78.20	-1.28	25.17	-10.99	1.73	1.14

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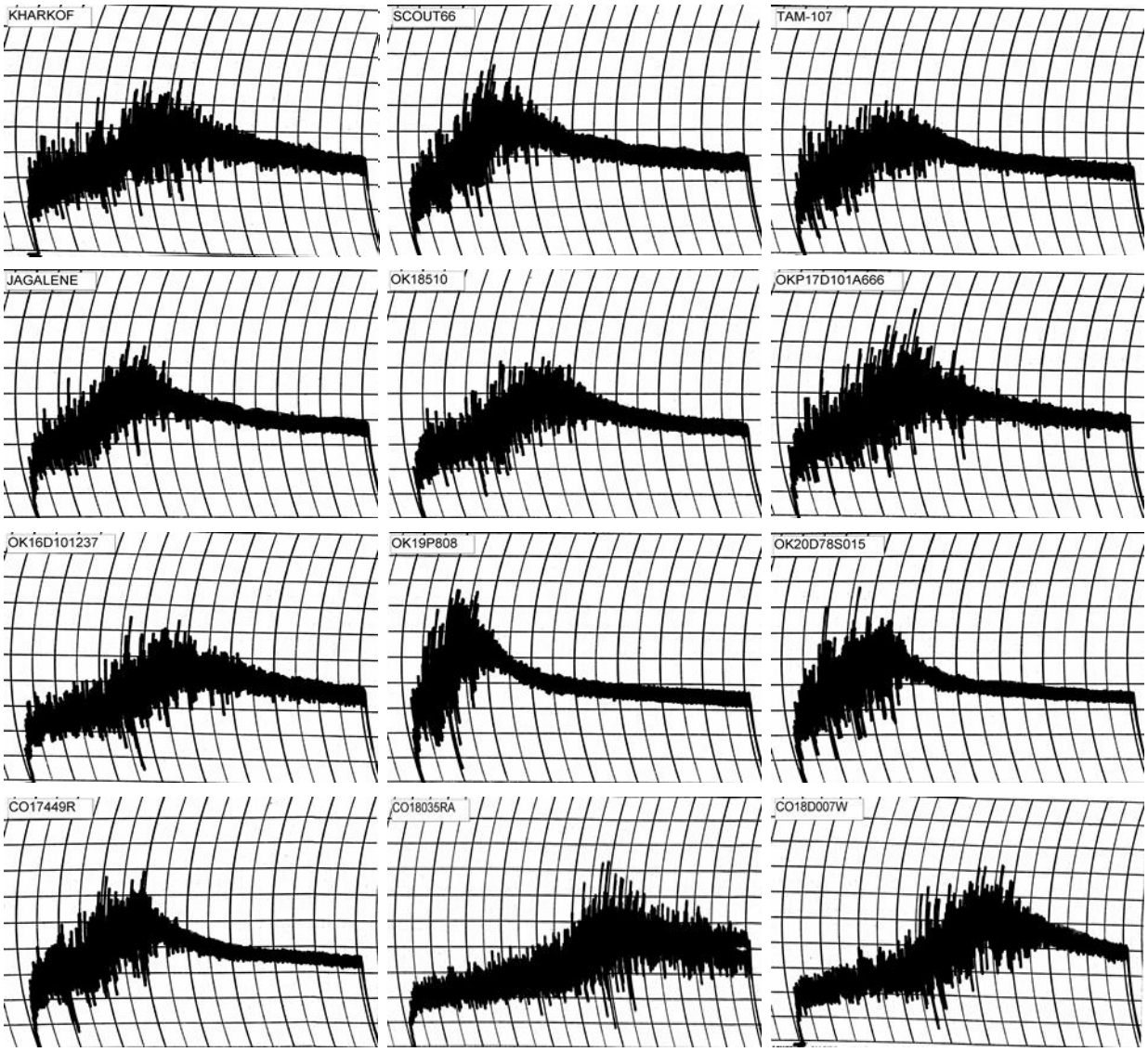
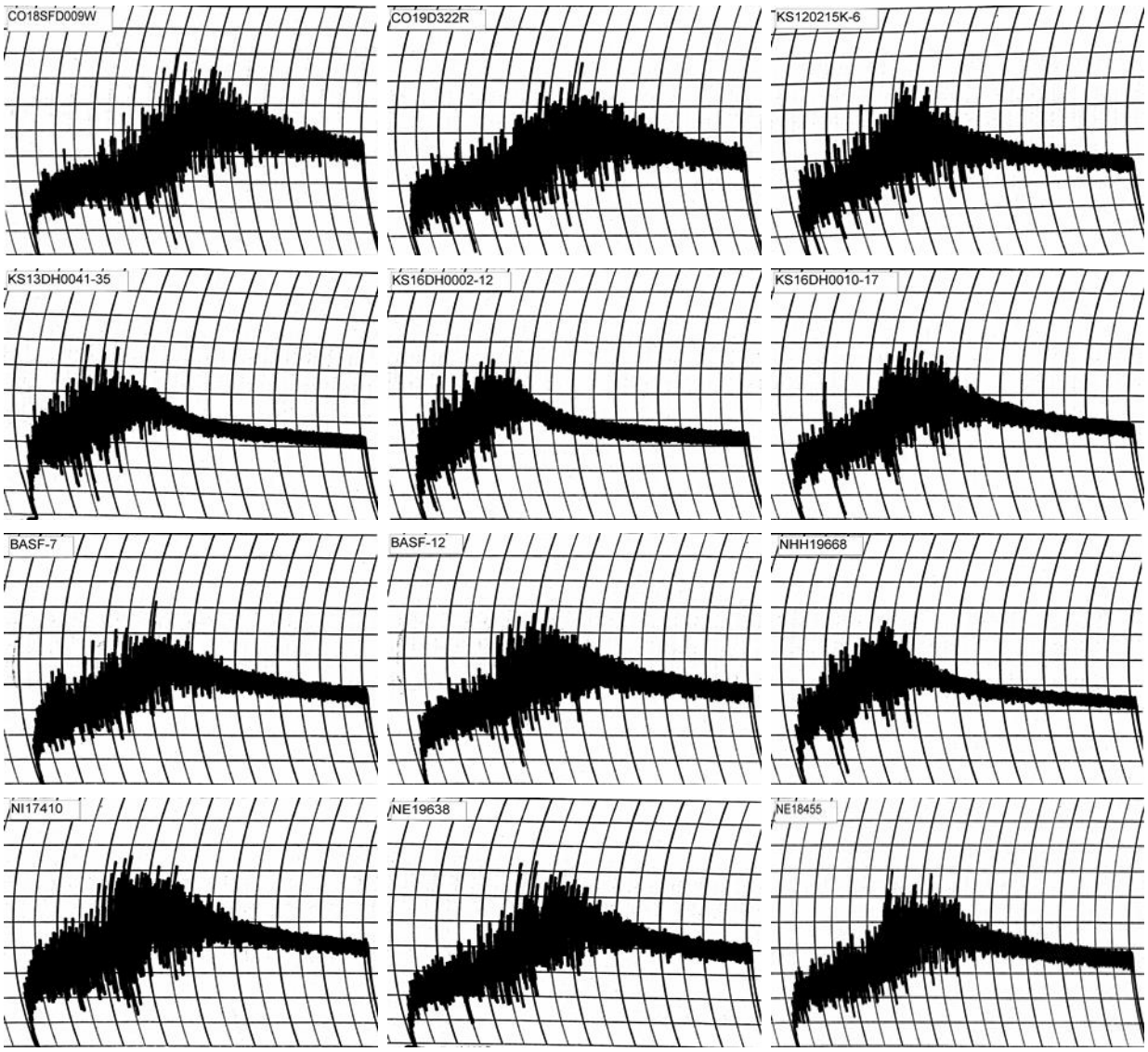
		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
Kharkof	15.3	68.4	3.25	3.25	2
Scout66	14.7	69.0	2.00	2.00	1
TAM-107	14.4	67.0	2.38	2.38	1
Jagalene	15.4	67.2	2.75	2.75	1
OK18510	15.0	67.0	3.25	3.25	2
OKP17D101A666	16.3	70.2	2.75	2.75	2
OK16D101237	15.0	66.9	3.50	3.50	2
OK19P808	15.6	67.1	1.13	1.13	1
OK20D78S015	15.2	67.3	2.25	2.25	1
CO17449R	13.1	64.8	2.75	2.75	2
CO18035RA	12.8	65.3	6.00	6.00	4
CO18D007W	14.0	67.8	5.13	5.13	2
CO18SFD009W	14.0	68.9	4.75	4.75	3
CO19D322R	14.1	67.5	4.00	4.00	3
KS120215K-6	14.5	67.6	2.75	2.75	2
KS13DH0041-35	14.7	64.4	2.00	2.00	2
KS16DH0002-12	14.1	65.4	2.00	2.00	2
KS16DH0010-17	15.1	68.0	3.00	3.00	2
BASF-7	14.9	67.3	3.00	3.00	2
BASF-12	13.6	66.5	3.00	3.00	2
NHH19668	14.3	65.3	2.25	2.25	1
NI17410	14.4	66.9	3.00	3.00	2
NE19638	14.7	69.0	3.75	3.75	2
NE18455	14.1	67.9	3.75	3.75	2
LCH19DH-150-85	16.2	69.4	2.50	2.50	2
LCH19DH-149-13	15.0	68.9	4.38	4.38	3
LCH19DH-152-25	14.4	68.0	3.00	3.00	3
LCH19DH-152-6	14.3	65.2	3.50	3.50	2
LCH19DH-148-43	14.7	68.4	3.25	3.25	3
21CP010029	14.5	68.5	3.25	3.25	4
21CP010038	14.7	63.4	2.25	2.25	2
21CP010041	13.8	65.9	2.63	2.63	1
21CP010042	13.4	66.2	4.25	4.25	4
KS19H10	13.7	66.8	4.63	4.63	4
KS19H21	14.2	66.6	1.63	1.63	1
KS19HD68	14.3	66.8	2.50	2.50	2
KS19HD69	14.8	68.6	2.88	2.88	2
TXAMPSY 473-18AZ816	13.7	69.2	5.38	5.38	4
TX17M1572	15.1	67.2	3.00	3.00	2
TX18A001119	14.0	68.8	2.63	2.63	2
TX18A001129	13.3	66.1	3.25	3.25	2

		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
TX18A001132	13.2	67.4	3.00	3.00	2
TX18A001399	13.6	68.0	6.50	6.50	5
TX18M2602	14.7	67.4	1.50	1.50	1
TX14M7088-18AZ530	14.0	66.2	2.50	2.50	1

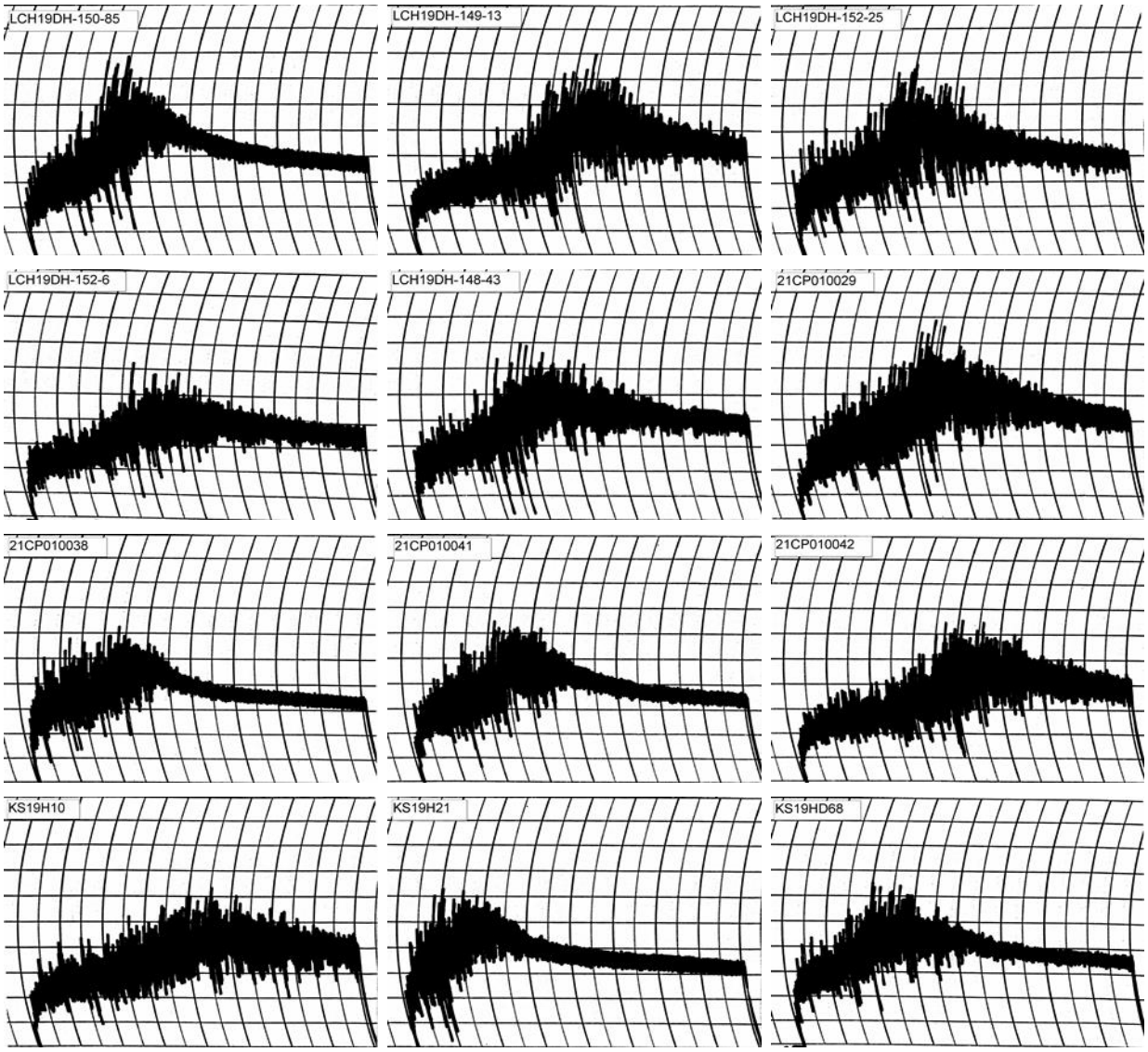
2022 SRPN Intraregional Production Zone
Northern High Plains



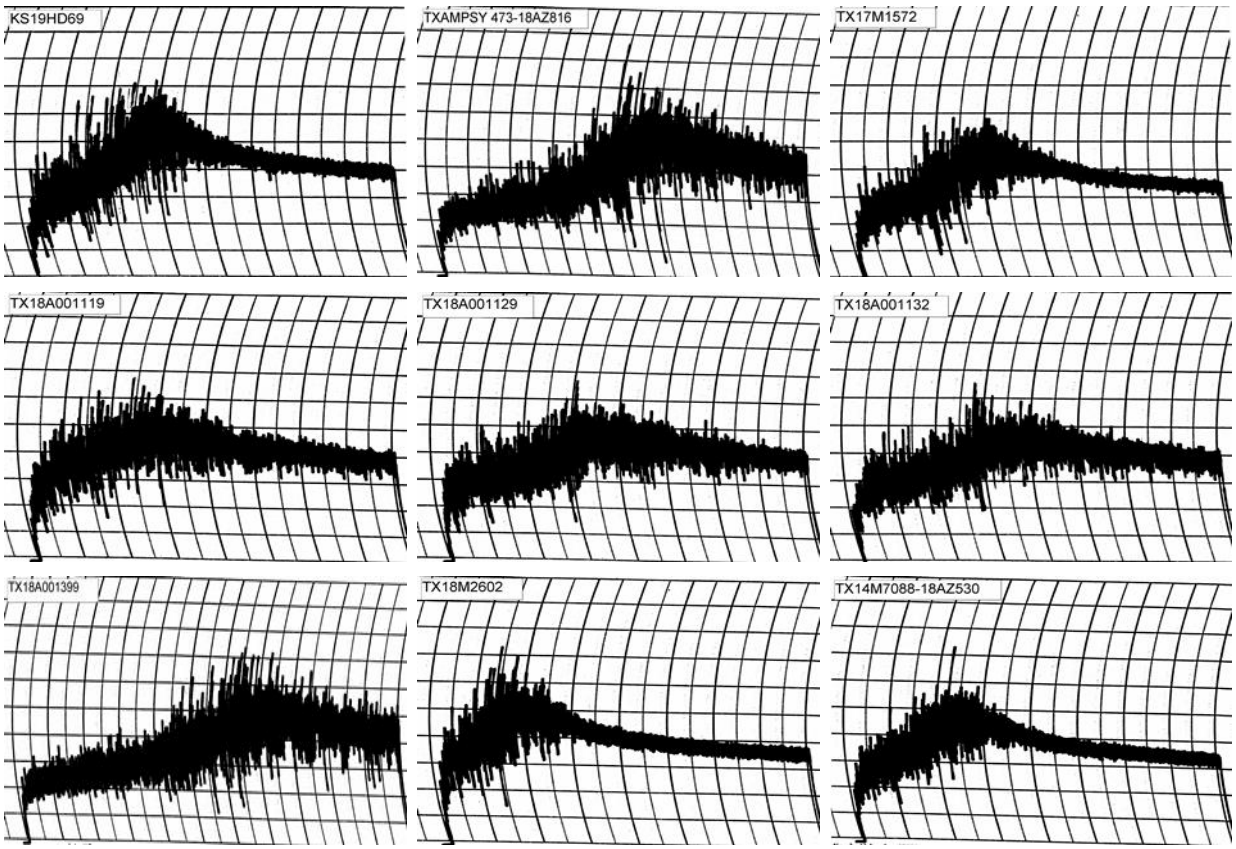
2022 SRPN Intraregional Production Zone
Northern High Plains



2022 SRPN Intraregional Production Zone
Northern High Plains



2022 SRPN Intraregional Production Zone
Northern High Plains



2022 SRPN Intraregional Production Zone

Northern High Plains

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
Kharkof	169.08	224.00	182.25	41.75	276.25	94.00	6.67	88.15
Scout66	146.75	203.92	156.75	47.17	255.25	98.50	6.47	86.50
TAM-107	157.00	225.17	180.50	44.67	278.58	98.08	6.67	86.55
Jagalene	144.83	194.17	144.58	49.58	241.58	97.00	6.33	87.30
OK18510	156.50	193.33	161.17	32.17	257.83	96.67	6.60	88.10
OKP17D101A666	148.42	175.50	124.75	50.75	217.75	93.00	6.40	68.65
OK16D101237	128.58	218.08	155.50	62.58	255.67	100.17	6.40	86.40
OK19P808	144.08	224.50	156.92	67.58	248.17	91.25	6.40	67.80
OK20D78S015	157.58	196.17	156.17	40.00	253.17	97.00	6.53	88.05
CO17449R	134.08	254.58	176.17	78.42	273.75	97.58	6.47	85.60
CO18035RA	106.75	233.75	158.25	75.50	278.08	119.83	6.20	84.90
CO18D007W	152.75	230.42	172.25	58.17	279.50	107.25	6.47	86.55
CO18SFD009W	156.25	250.58	181.67	68.92	274.50	92.83	6.53	68.45
CO19D322R	146.67	220.83	164.08	56.75	267.58	103.50	6.40	86.40
KS120215K-6	110.83	202.67	148.33	54.33	257.75	109.42	6.27	85.80
KS13DH0041-35	155.83	198.25	155.42	42.83	252.83	97.42	6.53	88.20
KS16DH0002-12	141.33	200.08	149.08	51.00	253.00	103.92	6.33	67.80
KS16DH0010-17	158.42	233.92	178.08	55.83	283.42	105.33	6.40	86.50
BASF-7	154.42	207.08	161.67	45.42	264.42	102.75	6.47	86.50
BASF-12	156.92	204.67	159.75	44.92	262.58	102.83	6.47	87.20
NHH19668	149.58	199.50	153.92	45.58	257.33	103.42	6.40	86.50
NI17410	134.83	197.08	154.33	42.75	258.00	103.67	6.40	86.50
NE19638	149.92	205.17	158.25	46.92	266.83	108.58	6.40	87.25
NE18455	144.33	220.58	163.50	57.08	268.58	105.08	6.40	86.55
LCH19DH-150-85	165.33	198.42	158.50	39.92	254.83	96.33	6.53	88.05
LCH19DH-149-13	146.67	212.00	162.42	49.58	257.83	95.42	6.47	87.20
LCH19DH-152-25	157.17	201.08	164.50	36.58	262.42	97.92	6.53	87.40
LCH19DH-152-6	164.75	207.50	163.58	43.92	263.33	99.75	6.53	88.10
LCH19DH-148-43	147.17	249.50	173.67	75.83	269.17	95.50	6.53	68.50
21CP010029	135.25	202.50	141.92	60.58	236.33	94.42	6.33	68.60
21CP010038	136.92	198.75	145.33	53.42	246.08	100.75	6.40	88.05
21CP010041	130.58	197.58	147.58	50.00	252.67	105.08	6.27	86.55
21CP010042	147.17	233.50	165.25	68.25	270.50	105.25	6.40	86.55
KS19H10	124.00	241.08	176.25	64.83	287.83	111.58	6.47	67.65
KS19H21	140.17	238.50	168.33	70.17	258.67	90.33	6.47	84.85
KS19HD68	158.67	223.08	174.67	48.42	276.75	102.08	6.53	88.15
KS19HD69	170.25	198.42	163.00	35.42	263.58	100.58	6.53	88.15
TXAMPSY 473-18AZ816	121.50	222.42	163.67	58.75	284.25	120.58	6.27	86.45
TX17M1572	114.58	205.33	153.17	52.17	271.58	118.42	6.27	68.65
TX18A001119	152.92	213.25	165.92	47.33	266.17	100.25	6.47	86.55
TX18A001129	121.67	225.33	177.25	48.08	286.75	109.50	6.47	86.55
TX18A001132	127.42	221.67	166.17	55.50	278.50	112.33	6.40	69.45
TX18A001399	127.75	235.58	178.50	57.08	286.58	108.08	6.47	85.75
TX18M2602	158.17	206.75	167.83	38.92	271.50	103.67	6.60	88.05

	RVA							
	Stirring Number	Peak Viscosity	Trough Viscosity	Breakdown	Final Viscosity	Set back	Peak Time	Pasting Temp
Line	(RVU)	(RVU)	(RVU)	(RVU)	(RVU)	(RVU)	(min)	(Deg. C)
TX14M7088-18AZ530	148.17	209.00	169.92	39.08	273.08	103.17	6.53	87.25

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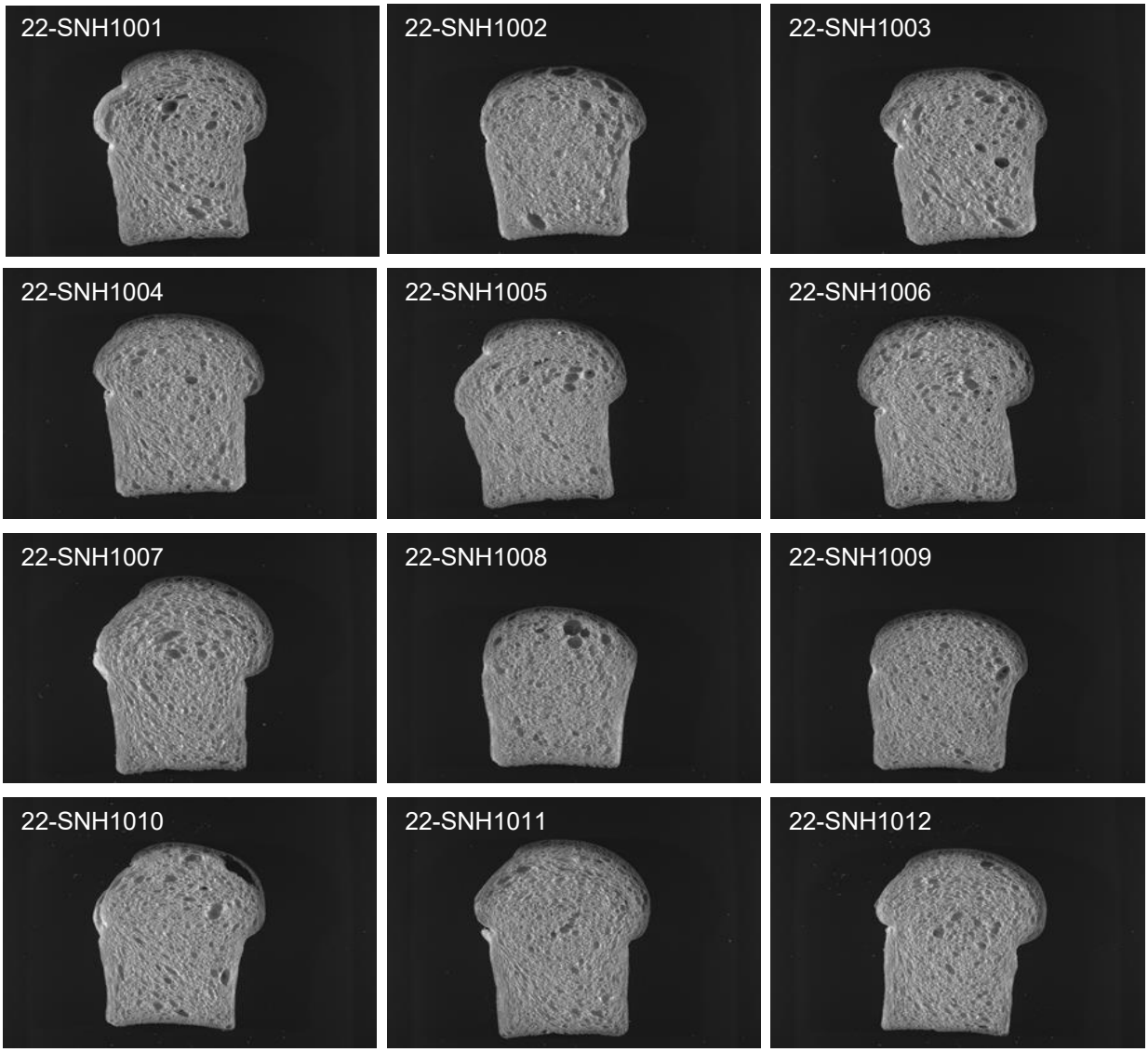
Northern High Plains

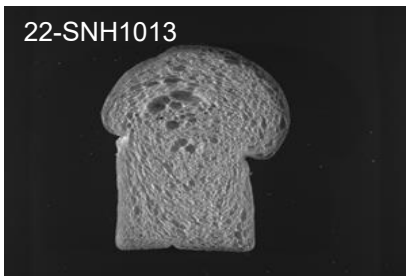
	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
Kharkof	15.3	67.6	3.38	3.38	177.1	8.4	3.0	1025	6.7	59
Scout66	14.7	67.9	2.25	2.25	178.0	7.9	2.0	900	5.7	51
TAM-107	14.4	65.8	2.38	2.38	176.0	7.6	1.5	885	5.7	51
Jagalene	15.4	65.8	2.75	2.75	177.0	7.8	2.0	980	6.3	55
OK18510	15.0	65.1	3.25	3.25	175.4	8.1	3.5	1010	6.6	59
OKP17D101A666	16.3	66.9	3.25	3.25	177.0	8.5	2.5	1045	6.8	56
OK16D101237	15.0	65.9	4.50	4.50	176.8	8.1	3.5	1085	7.1	66
OK19P808	15.6	65.7	1.63	1.63	177.2	7.2	1.0	780	5.0	38
OK20D78S015	15.2	65.9	2.25	2.25	176.5	7.8	1.5	825	5.3	43
CO17449R	13.1	64.0	3.00	3.00	173.8	7.9	2.0	980	6.4	67
CO18035RA	12.8	64.0	8.00	8.00	174.0	8.0	4.0	1045	7.0	76
CO18D007W	14.0	66.8	6.00	6.00	175.9	8.0	3.5	1005	6.5	64
CO18SFD009W	14.0	68.0	5.50	5.50	178.1	7.9	3.0	1075	7.0	71
CO19D322R	14.1	66.1	4.25	4.25	176.5	7.9	3.0	1045	6.8	67
KS120215K-6	14.5	66.9	3.75	3.75	176.5	8.3	3.0	1070	7.0	67
KS13DH0041-35	14.7	63.6	2.63	2.63	174.4	8.2	2.0	980	6.4	58
KS16DH0002-12	14.1	64.8	2.25	2.25	175.3	7.9	2.0	960	6.3	60
KS16DH0010-17	15.1	66.7	3.75	3.75	176.6	8.4	3.0	1120	7.4	68
BASF-7	14.9	66.1	3.13	3.13	176.2	8.0	2.5	995	6.5	59
BASF-12	13.6	65.5	3.25	3.25	176.0	7.9	3.5	985	6.4	65
NHH19668	14.3	64.3	2.25	2.25	174.5	7.4	1.5	860	5.7	49
NI17410	14.4	65.9	3.25	3.25	175.8	8.0	3.0	1030	6.8	64
NE19638	14.7	67.9	4.00	4.00	178.0	8.0	2.0	980	6.4	58
NE18455	14.1	66.9	4.38	4.38	176.4	7.9	3.5	1065	6.9	69
LCH19DH-150-85	16.2	68.4	3.25	3.25	178.4	8.0	2.0	960	6.2	50
LCH19DH-149-13	15.0	68.0	5.00	5.00	177.6	8.3	3.0	1165	7.7	72
LCH19DH-152-25	14.4	67.0	3.63	3.63	176.9	8.3	4.0	1060	6.9	66
LCH19DH-152-6	14.3	64.1	3.50	3.50	174.1	8.0	2.5	965	6.3	59
LCH19DH-148-43	14.7	67.1	3.25	3.25	177.3	8.0	4.0	1070	6.9	66
21CP010029	14.5	67.8	4.00	4.00	177.6	7.9	2.5	1055	6.9	66
21CP010038	14.7	62.6	2.50	2.50	174.1	7.9	2.0	965	6.4	57
21CP010041	13.8	64.8	2.63	2.63	174.7	8.1	2.0	990	6.6	64
21CP010042	13.4	65.2	4.50	4.50	174.8	7.9	3.0	1050	7.0	72
KS19H10	13.7	66.0	4.38	4.38	175.9	7.9	3.5	1020	6.8	67
KS19H21	14.2	65.8	1.75	1.75	175.7	6.9	1.5	810	5.3	46
KS19HD68	14.3	66.0	2.88	2.88	175.8	8.0	3.5	1030	6.8	65
KS19HD69	14.8	68.0	3.13	3.13	178.4	7.8	4.0	970	6.3	57
TXAMPSY 473-18AZ816	13.7	68.0	6.50	6.50	177.4	8.0	3.5	1030	6.8	68
TX17M1572	15.1	66.2	3.00	3.00	176.5	8.2	2.0	1040	6.9	61
TX18A001119	14.0	68.1	3.00	3.00	177.8	7.4	3.5	945	6.2	59
TX18A001129	13.3	65.2	3.63	3.63	175.5	7.6	3.5	965	6.4	65
TX18A001132	13.2	66.2	3.63	3.63	175.8	7.8	3.0	1010	6.6	70
TX18A001399	13.6	67.2	9.25	9.25	175.9	7.8	3.5	1060	7.0	72

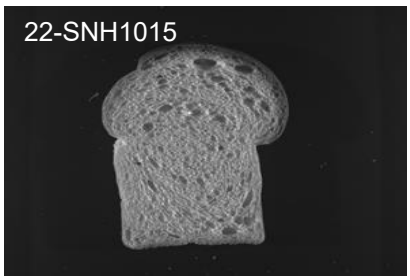
	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
TX18M2602	14.7	66.1	2.00	2.00	176.4	7.5	1.0	830	5.4	45
TX14M7088-18AZ530	14.0	65.0	2.50	2.50	175.4	8.0	2.0	990	6.5	63

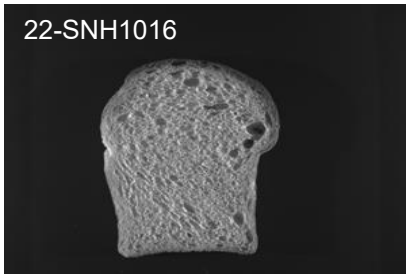
2022 SRPN Intraregional Production Zone
Northern High Plains

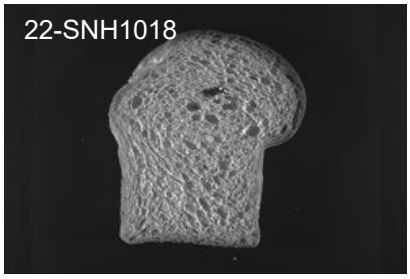


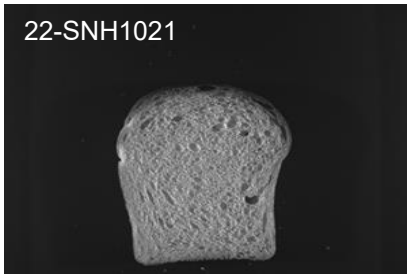
2022 SRPN Intraregional Production Zone
Northern High Plains



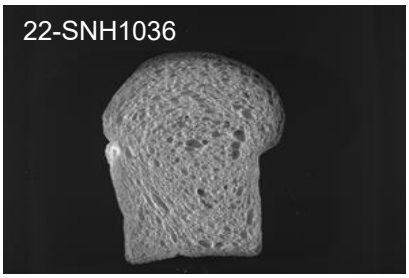




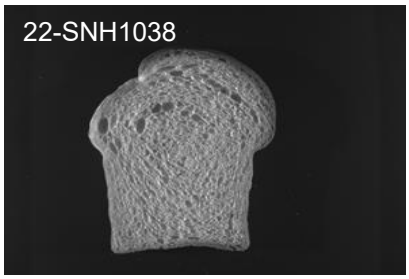


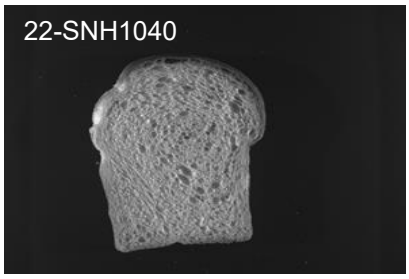


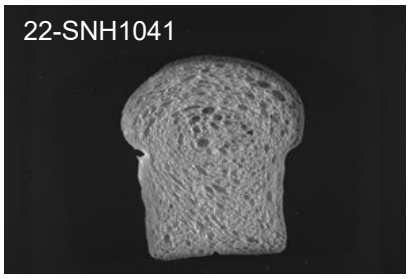
2022 SRPN Intraregional Production Zone
Northern High Plains

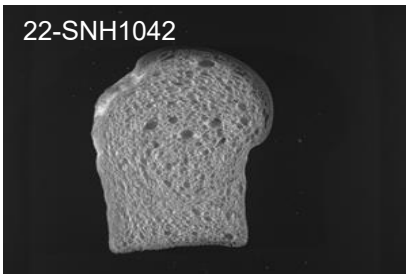


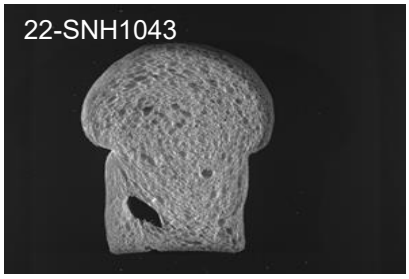
2022 SRPN Intraregional Production Zone
Northern High Plains

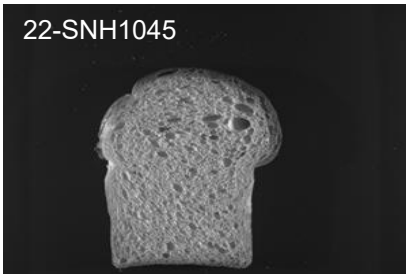












Hard Winter Wheat Quality Report

2022 SRPN-SCP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
Kharkof	33.6	Very Poor	59.8	63.8	Good	89.9		2,4,9,10,16,
Scout 66	52.6	Very Good	93.6	53.3	Poor	75.2		16,21,
TAM 107	48.3	Average	86.0	54.9	Poor	77.3	1AL	5,16,
Jagalene	53.0	Very Good	94.4	59.5	Good	83.9		3,9,
High Cotton	51.0	Good	90.9	55.5	Average	78.2		
OKP17D101A666	52.2	Good	93.0	70.9	Very Good	100.0		
OK16D101237	50.4	Average	89.8	66.5	Very Good	93.8		2,
OK19P808	49.8	Average	88.7	42.8	Very Poor	60.3		15,16,19,20,21,
OK20D78S015	47.6	Poor	84.7	55.3	Average	78.0		20,
CO17449R	50.5	Good	89.8	61.3	Good	86.4		16,19,
CO18035RA	46.6	Poor	83.0	62.5	Good	88.1		4,9,14,15,
CO18D007W	49.5	Average	88.2	46.8	Very Poor	66.0		14,15,
Windom SF	54.4	Very Good	96.9	59.1	Average	83.3		3,14,
CO19D322R	55.1	Very Good	98.2	64.2	Very Good	90.5		
KS120215K-6	53.7	Very Good	95.7	67.9	Very Good	95.7		
KS13DH0041-35	50.5	Good	89.9	49.5	Poor	69.8	1BL	12,13,16,17,
KS16DH0002-12	52.0	Good	92.6	49.2	Very Poor	69.3		16,17,21,
KS16DH0010-17	53.1	Very Good	94.5	59.6	Good	84.0		
BASF-7	50.3	Average	89.6	60.8	Good	85.7	h1RS?	20,
BASF-12	51.0	Good	90.8	48.5	Very Poor	68.3		
NHH19668	50.6	Good	90.1	44.0	Very Poor	62.0		16,
NI17410	47.7	Poor	84.9	50.4	Poor	71.0		
NE19638	40.8	Very Poor	72.7	66.1	Very Good	93.2		1,4,15,
NE18455	45.2	Poor	80.4	48.9	Very Poor	68.9		14,15,18,
LCH19DH-150-85	47.1	Poor	83.8	58.4	Average	82.4		
LCH19DH-149-13	39.2	Very Poor	69.8	62.5	Good	88.0		1,5,14,15,
LCH19DH-152-25	41.5	Very Poor	73.9	55.3	Poor	78.0	h1RS?	1,10,
LCH19DH-152-6	42.5	Very Poor	75.7	50.7	Poor	71.5		2,4,
LCH19DH-148-43	49.0	Average	87.3	57.4	Average	80.9		3,
21CP010029	46.3	Poor	82.5	64.0	Very Good	90.2		6,
21CP010038	42.1	Very Poor	74.9	58.3	Average	82.1	1BL	8,12,16,17,21,

Quality scores and ratings are calculated directly from the relative trait weightings (printed at the top of the page) and are applicable only to the nursery selected.

Hard Winter Wheat Quality Report

2022 SRPN-SCP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
21CP010041	56.2	Very Good	100.0	61.6	Good	86.9		
21CP010042	53.6	Very Good	95.4	55.6	Average	78.4		5,15,
KS19H10	48.8	Average	86.9	51.7	Poor	72.9		
KS19H21	51.5	Good	91.6	40.8	Very Poor	57.6		19,
KS19HD68	49.0	Average	87.2	51.5	Poor	72.6		
KS19HD69	53.6	Very Good	95.4	69.1	Very Good	97.3		
TXAMPSY 473-18AZ816	37.5	Very Poor	66.8	44.6	Very Poor	62.9		1,8,14,15,
TX17M1572	43.8	Poor	78.0	70.7	Very Good	99.6		
TX18A001119	44.6	Poor	79.3	57.5	Average	81.1	1AL	10,18,21,
TX18A001129	43.0	Very Poor	76.5	48.0	Very Poor	67.7	1AL	18,
TX18A001132	40.3	Very Poor	71.8	50.6	Poor	71.3	1AL	11,18,
TX18A001399	43.5	Poor	77.5	58.6	Average	82.6		14,15,
TX18M2602	48.2	Average	85.8	60.3	Good	85.0		3,
TX14M7088-18AZ530	50.5	Good	89.9	65.9	Very Good	92.9		

2022 SRPN Intraregional Production Zone

South Central Plains

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
Kharkof	59.1	14.1	0.8	26.1	11.2	2.36	0.34	57	19	HARD	08-20-28-44-01
Scout66	58.4	14.0	0.8	29.2	10.8	2.52	0.35	66	18	HARD	03-11-26-60-01
TAM-107	58.0	13.7	0.9	29.1	11.0	2.52	0.40	70	19	HARD	02-11-17-70-01
Jagalene	60.6	14.0	0.9	30.4	12.4	2.64	0.38	79	18	HARD	01-04-09-86-01
OK18510	60.1	13.8	0.9	31.3	10.8	2.70	0.34	63	19	HARD	04-14-25-57-01
OKP17D101A666	59.1	13.2	0.7	30.5	10.0	2.67	0.35	78	20	HARD	01-07-14-78-01
OK16D101237	58.2	12.7	0.7	26.1	8.9	2.42	0.34	57	20	MIXED	12-16-27-45-03
OK19P808	60.6	13.3	0.7	30.3	11.1	2.59	0.33	69	17	HARD	02-07-22-69-01
OK20D78S015	59.9	12.9	0.7	30.0	10.9	2.58	0.32	71	19	HARD	02-10-18-70-01
CO17449R	60.3	13.3	0.7	27.9	9.7	2.44	0.38	59	20	HARD	09-17-29-45-01
CO18035RA	58.6	13.2	0.6	28.3	11.5	2.36	0.38	63	18	HARD	05-14-26-55-01
CO18D007W	58.6	13.1	0.6	27.7	10.0	2.43	0.33	62	17	HARD	05-13-27-55-01
CO18SFD009W	60.6	13.1	0.6	33.5	11.8	2.63	0.34	74	18	HARD	02-05-13-80-01
CO19D322R	59.7	13.5	0.7	30.5	11.0	2.50	0.34	66	17	HARD	03-10-20-67-01
KS120215K-6	59.3	13.1	0.6	31.8	11.1	2.62	0.36	58	19	HARD	08-18-32-42-01
KS13DH0041-35	58.2	14.0	0.7	31.5	10.8	2.57	0.36	64	17	HARD	04-09-25-62-01
KS16DH0002-12	60.1	13.9	0.7	27.2	10.5	2.46	0.32	72	18	HARD	03-06-14-77-01
KS16DH0010-17	59.4	13.8	0.8	28.1	10.4	2.55	0.35	66	18	HARD	03-12-23-62-01
BASF-7	58.1	14.1	0.8	33.3	10.5	2.64	0.35	58	18	HARD	09-16-32-43-01
BASF-12	59.8	14.3	0.8	32.4	11.2	2.60	0.37	63	19	HARD	04-16-23-57-01
NHH19668	59.1	12.2	0.8	29.8	9.5	2.67	0.37	65	17	HARD	03-10-23-64-01
NI17410	59.2	12.1	0.6	29.4	10.5	2.53	0.36	68	18	HARD	02-08-23-67-01
NE19638	57.7	12.2	0.8	26.4	10.5	2.36	0.35	62	19	HARD	08-14-23-55-01
NE18455	58.4	11.4	1.0	26.9	9.0	2.46	0.31	60	18	HARD	07-15-29-49-01
LCH19DH-150-85	58.9	11.8	1.0	27.2	9.3	2.48	0.33	61	18	HARD	05-18-21-56-01
LCH19DH-149-13	57.7	12.0	0.9	27.6	10.2	2.46	0.40	58	19	HARD	09-17-28-46-01
LCH19DH-152-25	57.2	11.8	1.0	28.7	10.3	2.54	0.37	72	18	HARD	01-06-18-75-01
LCH19DH-152-6	58.5	11.6	1.0	25.4	9.9	2.37	0.36	57	18	HARD	09-21-27-43-01
LCH19DH-148-43	59.5	11.9	0.8	32.7	12.0	2.67	0.34	64	16	HARD	03-14-25-58-01
21CP010029	59.3	12.3	1.0	31.3	10.0	2.66	0.33	85	19	HARD	01-02-07-90-01
21CP010038	58.5	12.7	0.9	27.0	9.1	2.46	0.32	73	17	HARD	01-06-15-78-01
21CP010041	60.4	13.8	0.5	30.7	9.6	2.61	0.35	67	18	HARD	02-12-19-67-01
21CP010042	59.8	13.8	0.5	32.9	10.8	2.61	0.39	63	17	HARD	05-12-25-58-01
KS19H10	59.6	14.0	0.6	31.7	10.8	2.63	0.34	70	18	HARD	04-07-18-71-01
KS19H21	59.1	14.0	0.6	31.5	10.6	2.61	0.37	60	18	HARD	08-13-27-52-01
KS19HD68	60.1	13.3	0.5	31.9	10.4	2.66	0.35	65	18	HARD	04-12-23-61-01
KS19HD69	59.9	13.1	0.5	30.6	10.0	2.63	0.33	79	15	HARD	01-02-09-88-01
TXAMPSY 473-18AZ816	57.6	13.3	0.5	28.6	11.0	2.41	0.36	72	21	HARD	03-11-14-72-01
TX17M1572	57.9	13.5	0.7	27.1	10.8	2.41	0.36	65	19	HARD	05-11-23-61-01
TX18A001119	60.1	13.5	0.6	28.9	9.9	2.59	0.35	83	20	HARD	01-03-09-87-01
TX18A001129	58.2	13.6	0.6	27.9	11.1	2.40	0.35	72	19	HARD	02-08-18-72-01
TX18A001132	58.1	13.6	0.6	28.1	10.6	2.40	0.35	71	19	HARD	03-08-16-73-01
TX18A001399	58.4	13.5	0.5	31.0	11.6	2.53	0.35	62	19	HARD	06-14-27-53-01
TX18M2602	59.8	13.4	0.5	32.7	12.4	2.69	0.38	71	17	HARD	02-06-16-76-01

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
TX14M7088-18AZ530	59.9	13.6	0.4	33.5	11.1	2.65	0.31	70	16	HARD	01-07-17-75-01

2022 SRPN Intraregional Production Zone

South Central Plains

	Wheat		Flour			Noodle Color					
LINE	Protein (%)	Milling Yield (%)	Ash (%)	Protein (%)	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
Kharkof	16.3	63.7	0.53	15.1	0.608	74.66	-0.93	24.64	-12.91	2.01	0.56
Scout66	14.6	70.9	0.45	14.1	0.610	76.43	-1.40	25.99	-11.65	1.31	-0.40
TAM-107	14.4	69.3	0.44	13.7	0.642	76.31	-1.04	24.96	-12.13	1.80	1.09
Jagalene	14.8	70.1	0.49	14.4	0.619	75.32	-1.09	26.27	-11.19	1.80	-0.32
OK18510	14.5	68.3	0.43	13.9	0.660	77.05	-1.66	25.84	-11.79	1.71	1.27
OKP17D101A666	14.4	68.9	0.44	13.9	0.661	76.84	-1.73	25.61	-12.28	1.70	-0.43
OK16D101237	14.2	70.0	0.39	13.9	0.184	79.89	-1.63	24.01	-8.35	1.30	3.60
OK19P808	15.3	67.2	0.46	14.9	0.167	77.94	-1.09	25.44	-9.15	1.96	4.35
OK20D78S015	15.4	66.4	0.43	14.4	0.587	75.84	-0.69	25.27	-11.33	1.88	1.00
CO17449R	13.8	69.9	0.42	13.2	0.715	78.81	-1.72	24.12	-11.42	1.83	2.94
CO18035RA	13.9	69.6	0.48	13.1	0.691	77.83	-1.55	25.23	-10.98	1.22	1.36
CO18D007W	15.0	68.0	0.39	14.4	0.809	78.82	-1.68	23.78	-12.47	1.58	2.33
CO18SFD009W	14.0	68.7	0.42	13.4	0.760	78.85	-1.33	23.07	-13.14	1.91	3.02
CO19D322R	14.1	69.9	0.37	13.4	0.617	77.83	-1.11	23.97	-11.49	1.69	2.92
KS120215K-6	13.5	70.8	0.40	13.1	0.667	77.70	-1.94	25.93	-11.03	1.77	0.09
KS13DH0041-35	14.6	69.1	0.46	14.1	0.145	77.88	-1.40	25.76	-9.65	1.64	4.59
KS16DH0002-12	13.8	69.7	0.46	13.3	0.147	77.14	-1.56	26.19	-7.60	1.75	4.04
KS16DH0010-17	14.8	70.2	0.42	14.4	0.790	76.37	-1.50	26.22	-11.32	1.66	-0.63
BASF-7	15.2	68.6	0.43	14.3	0.650	77.11	-1.26	25.16	-12.17	1.89	1.33
BASF-12	13.9	69.7	0.47	13.2	0.626	77.02	-1.59	25.79	-10.89	1.78	1.32
NHH19668	14.2	66.5	0.36	13.5	0.672	77.97	-1.79	22.87	-8.17	1.60	1.26
NI17410	14.8	66.4	0.40	13.9	0.788	78.24	-1.03	22.83	-10.43	1.43	0.71
NE19638	14.8	65.1	0.38	13.8	0.657	78.49	-1.15	23.46	-10.18	1.35	0.31
NE18455	14.0	65.4	0.39	13.0	0.711	78.18	-1.31	24.46	-8.65	1.30	0.88
LCH19DH-150-85	15.8	66.3	0.38	15.2	0.684	78.34	-1.21	21.65	-12.46	1.43	-0.72
LCH19DH-149-13	14.8	64.1	0.38	14.0	0.590	79.56	-0.83	22.42	-8.96	0.81	1.20
LCH19DH-152-25	14.7	64.7	0.47	13.7	0.770	80.12	-1.54	22.67	-12.82	1.74	2.23
LCH19DH-152-6	14.9	66.6	0.43	14.0	0.751	79.29	-1.42	22.92	-11.05	1.45	0.12
LCH19DH-148-43	15.1	65.3	0.33	14.4	0.682	78.86	-1.16	23.67	-10.09	1.56	1.14
21CP010029	14.4	64.1	0.47	13.7	0.558	77.21	-0.75	23.89	-10.95	1.76	0.46
21CP010038	15.5	62.8	0.42	14.7	0.806	77.03	-1.27	24.86	-12.93	1.30	-1.42
21CP010041	14.2	69.0	0.37	13.3	0.796	77.20	-1.26	24.40	-12.08	1.58	0.14
21CP010042	13.7	68.5	0.38	13.0	0.710	78.48	-1.28	22.59	-11.53	1.29	0.88
KS19H10	13.6	66.0	0.40	12.8	0.638	77.64	-1.33	24.59	-11.32	1.26	0.36
KS19H21	14.0	68.1	0.36	12.9	0.761	78.02	-1.14	23.07	-10.53	1.47	0.91
KS19HD68	14.1	65.6	0.37	13.0	0.580	77.88	-1.20	24.51	-8.11	1.31	0.72
KS19HD69	15.0	66.7	0.42	14.0	0.181	78.45	-0.96	23.28	-7.18	1.30	2.36
TXAMPSY 473-18AZ816	14.4	63.5	0.41	13.3	0.739	78.20	-0.95	24.08	-10.77	1.45	1.67
TX17M1572	14.6	66.0	0.37	13.9	0.681	78.91	-1.54	23.61	-9.01	1.35	0.81
TX18A001119	14.7	63.6	0.42	13.5	0.164	77.56	-0.70	23.59	-8.01	1.43	3.47
TX18A001129	14.1	64.7	0.36	12.9	0.650	78.85	-1.62	26.23	-8.99	1.33	1.75

	Wheat		Flour			Noodle Color					
	Protein	Milling Yield	Ash	Protein	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
LINE	(%)	(%)	(%)	(%)							
TX18A001132	13.6	63.8	0.41	12.5	0.676	79.21	-1.93	26.62	-8.68	1.42	0.96
TX18A001399	14.2	65.9	0.42	13.1	0.527	79.37	-1.23	23.80	-10.09	1.35	3.10
TX18M2602	14.7	65.5	0.37	13.7	0.690	78.19	-1.22	24.70	-10.06	1.31	1.79
TX14M7088-18AZ530	14.3	65.2	0.39	13.1	0.593	78.46	-1.45	24.65	-8.73	1.48	1.03

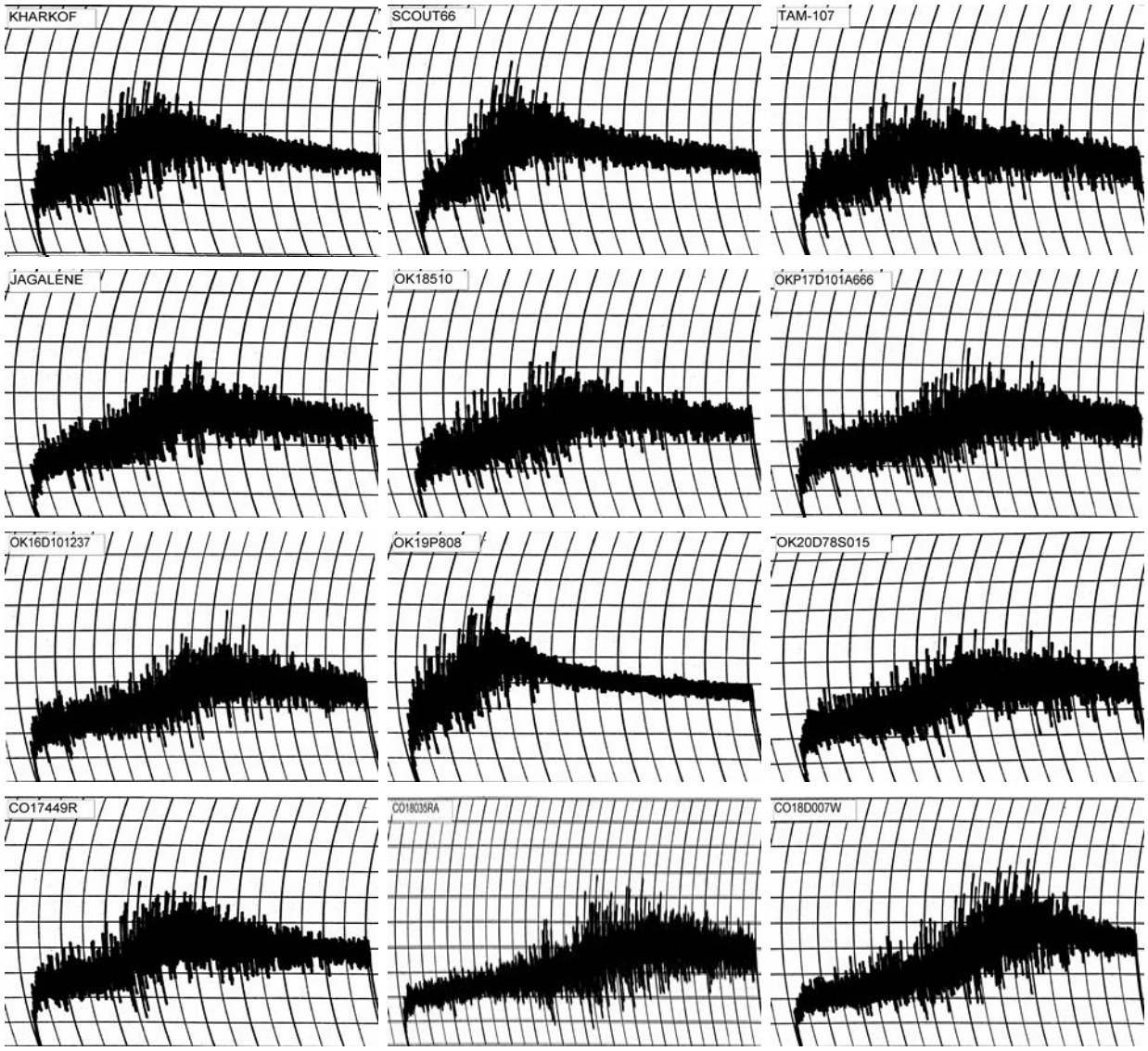
2022 SRPN Intraregional Production Zone

South Central Plains

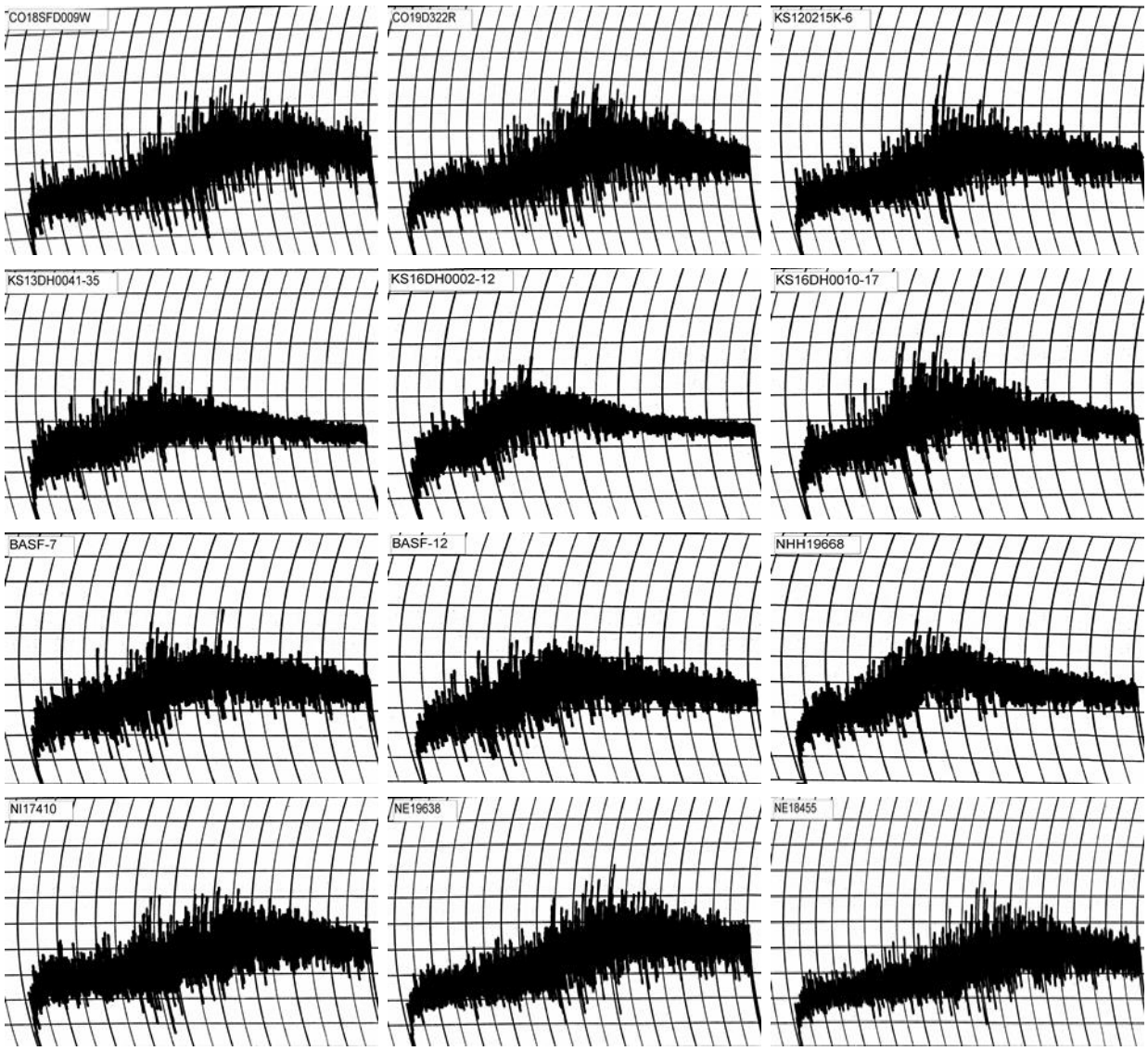
		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
Kharkof	15.1	67.7	3.13	3.13	2
Scout66	14.1	69.0	2.50	2.50	2
TAM-107	13.7	66.8	3.50	3.50	2
Jagalene	14.4	67.9	3.88	3.88	3
OK18510	13.9	66.1	3.75	3.75	3
OKP17D101A666	13.9	67.1	5.00	5.00	4
OK16D101237	13.9	65.6	5.38	5.38	3
OK19P808	14.9	67.8	2.00	2.00	1
OK20D78S015	14.4	68.9	4.75	4.75	4
CO17449R	13.2	65.3	3.75	3.75	2
CO18035RA	13.1	65.8	10.00	10.00	6
CO18D007W	14.4	68.3	6.88	6.88	5
CO18SFD009W	13.4	67.7	5.75	5.75	5
CO19D322R	13.4	66.7	5.63	5.63	4
KS120215K-6	13.1	65.8	4.63	4.63	4
KS13DH0041-35	14.1	63.4	3.63	3.63	2
KS16DH0002-12	13.3	65.1	3.00	3.00	2
KS16DH0010-17	14.4	67.5	3.38	3.38	3
BASF-7	14.3	66.8	4.00	4.00	3
BASF-12	13.2	66.0	3.50	3.50	3
NHH19668	13.5	65.4	3.13	3.13	2
NI17410	13.9	66.6	5.63	5.63	5
NE19638	13.8	68.0	6.13	6.13	5
NE18455	13.0	66.6	6.88	6.88	5
LCH19DH-150-85	15.2	68.3	4.13	4.13	3
LCH19DH-149-13	14.0	67.8	6.50	6.50	5
LCH19DH-152-25	13.7	67.7	5.13	5.13	4
LCH19DH-152-6	14.0	65.8	5.13	5.13	4
LCH19DH-148-43	14.4	67.4	4.63	4.63	4
21CP010029	13.7	67.7	4.75	4.75	4
21CP010038	14.7	65.3	4.13	4.13	2
21CP010041	13.3	65.1	3.75	3.75	3
21CP010042	13.0	65.6	7.00	7.00	5
KS19H10	12.8	65.8	5.13	5.13	4
KS19H21	12.9	65.5	3.00	3.00	3
KS19HD68	13.0	65.6	4.13	4.13	4
KS19HD69	14.0	67.7	4.00	4.00	4
TXAMPSY 473-18AZ816	13.3	68.2	7.50	7.50	6
TX17M1572	13.9	66.2	4.50	4.50	4
TX18A001119	13.5	66.8	3.63	3.63	4
TX18A001129	12.9	66.0	5.13	5.13	5

		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
TX18A001132	12.5	66.9	5.25	5.25	5
TX18A001399	13.1	67.8	10.50	10.50	6
TX18M2602	13.7	67.7	3.00	3.00	3
TX14M7088-18AZ530	13.1	66.7	4.00	4.00	3

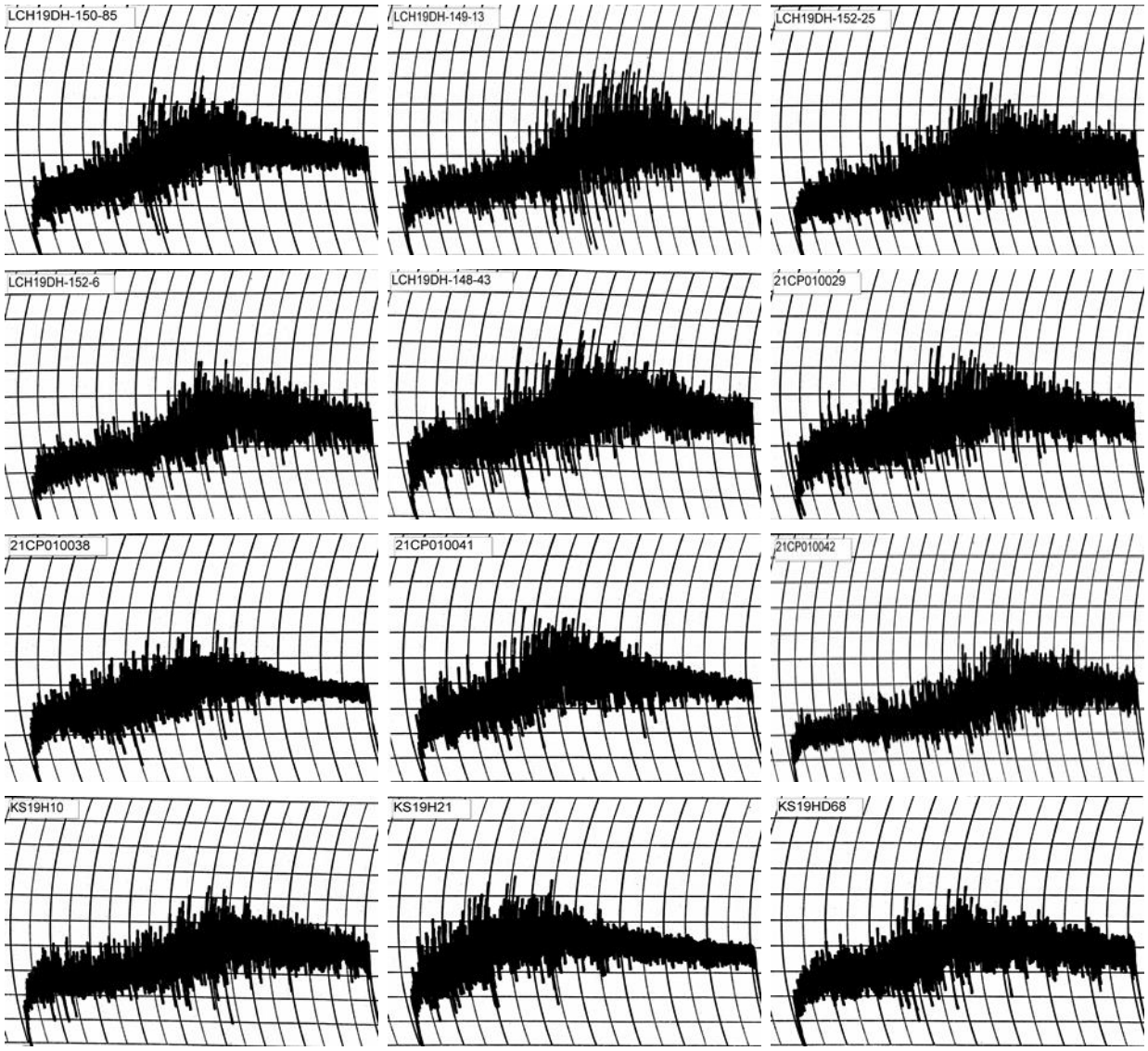
2022 SRPN Intraregional Production Zone
South Central Plains



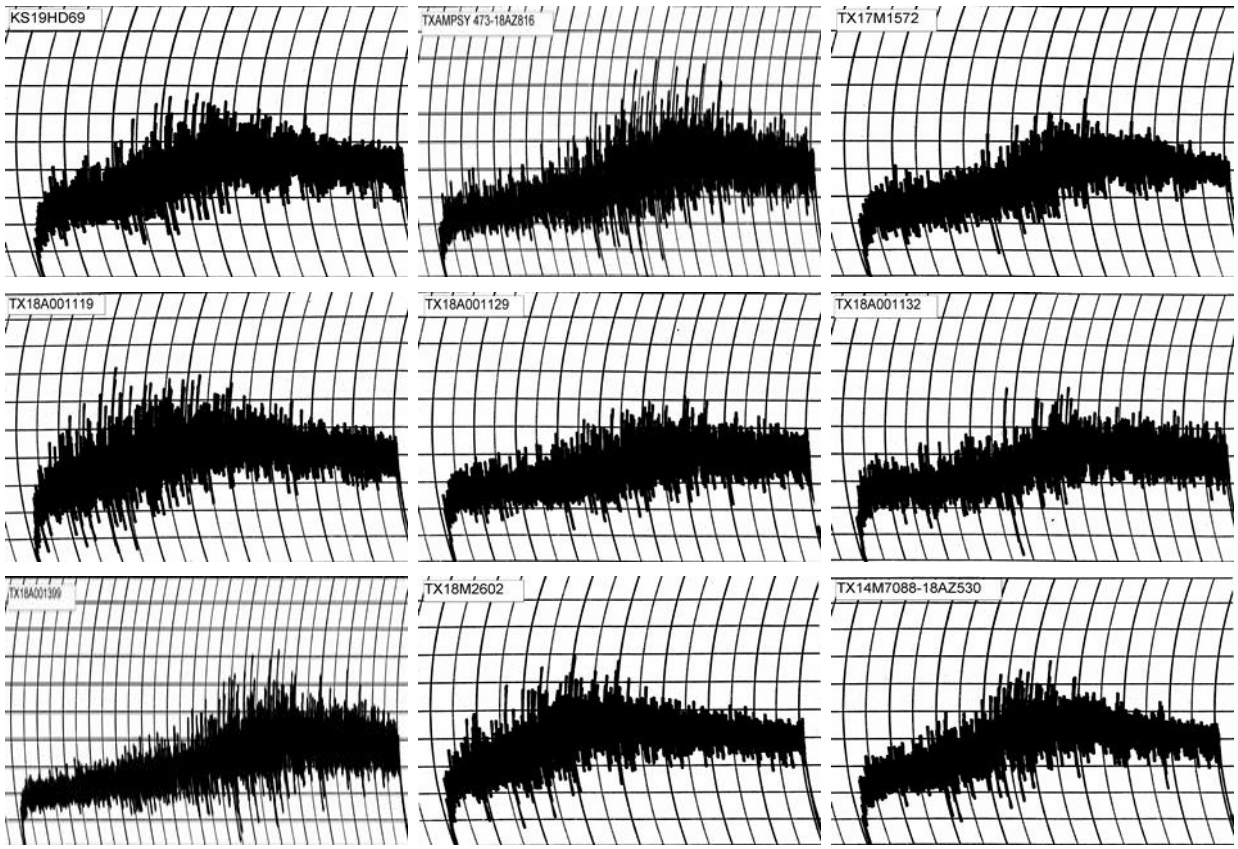
2022 SRPN Intraregional Production Zone
South Central Plains



2022 SRPN Intraregional Production Zone
South Central Plains



2022 SRPN Intraregional Production Zone
South Central Plains



2022 SRPN Intraregional Production Zone

Southern Central Plains

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
Kharkof	123.75	178.25	109.42	68.83	198.17	88.75	6.13	84.75
Scout66	63.58	96.00	32.83	63.17	75.67	42.83	5.20	69.45
TAM-107	93.42	176.42	101.75	74.67	187.25	85.50	6.00	69.30
Jagalene	102.08	176.83	112.58	64.25	204.67	92.08	6.00	68.45
OK18510	76.67	114.25	54.67	59.58	117.00	62.33	5.47	78.35
OKP17D101A666	20.75	32.08	3.50	28.58	8.08	4.58	3.87	69.40
OK16D101237	66.50	140.17	58.92	81.25	123.25	64.33	5.53	69.40
OK19P808	97.92	201.58	118.92	82.67	202.33	83.42	6.07	68.70
OK20D78S015	129.83	192.75	128.58	64.17	228.83	100.25	6.13	68.60
CO17449R	93.58	232.92	139.92	93.00	230.33	90.42	6.13	68.55
CO18035RA	98.58	192.50	115.42	77.08	217.00	101.58	5.87	68.60
CO18D007W	115.17	209.08	138.83	70.25	239.08	100.25	6.20	84.10
CO18SFD009W	95.08	179.33	89.67	89.67	163.17	73.50	5.87	67.80
CO19D322R	86.75	131.75	56.25	75.50	119.42	63.17	5.47	71.00
KS120215K-6	58.50	107.17	37.67	69.50	85.58	47.92	5.20	69.30
KS13DH0041-35	103.17	135.00	76.83	58.17	152.92	76.08	5.80	69.40
KS16DH0002-12	82.08	147.58	81.08	66.50	161.33	80.25	5.73	67.75
KS16DH0010-17	99.00	171.17	99.92	71.25	183.58	83.67	6.00	68.50
BASF-7	103.83	135.50	71.42	64.08	142.08	70.67	5.73	81.50
BASF-12	91.17	135.92	73.75	62.17	147.00	73.25	5.73	81.50
NHH19668	94.08	171.25	106.50	64.75	194.75	88.25	6.00	70.20
NI17410	67.25	97.67	39.17	58.50	89.50	50.33	5.20	68.55
NE19638	111.25	170.08	99.92	70.17	190.42	90.50	5.93	82.30
NE18455	90.25	205.25	124.50	80.75	225.33	100.83	6.07	69.30
LCH19DH-150-85	109.75	123.75	64.00	59.75	131.67	67.67	5.67	69.35
LCH19DH-149-13	107.58	163.08	88.50	74.58	168.83	80.33	5.87	81.70
LCH19DH-152-25	126.92	177.58	114.42	63.17	209.17	94.75	6.07	67.75
LCH19DH-152-6	122.83	192.42	124.33	68.08	219.92	95.58	6.13	84.90
LCH19DH-148-43	85.25	178.25	86.33	91.92	159.67	73.33	5.87	68.60
21CP010029	73.00	93.67	28.75	64.92	68.92	40.17	5.07	67.65
21CP010038	71.83	100.00	35.58	64.42	83.42	47.83	5.27	68.60
21CP010041	56.50	81.17	23.17	58.00	54.92	31.75	4.93	69.35
21CP010042	73.42	134.08	54.25	79.83	117.17	62.92	5.40	69.40
KS19H10	48.42	87.67	19.33	68.33	47.25	27.92	4.73	67.75
KS19H21	112.92	196.00	106.92	89.08	187.67	80.75	5.93	70.15
KS19HD68	103.33	231.33	161.58	69.75	264.42	102.83	6.40	71.05
KS19HD69	126.17	174.00	111.75	62.25	205.92	94.17	6.00	67.65
TXAMPSY 473-18AZ816	119.58	206.42	134.75	71.67	244.50	109.75	6.07	69.45
TX17M1572	85.25	207.17	138.00	69.17	255.08	117.08	6.00	67.70
TX18A001119	126.25	208.50	140.92	67.58	243.75	102.83	6.13	67.70
TX18A001129	105.75	208.58	138.00	70.58	245.25	107.25	6.07	68.40
TX18A001132	93.08	177.92	107.50	70.42	203.33	95.83	5.93	68.60
TX18A001399	91.17	188.08	116.17	71.92	213.00	96.83	5.93	67.70
TX18M2602	98.58	178.42	120.67	57.75	218.75	98.08	6.07	69.30

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
TX14M7088-18AZ530	105.83	166.33	103.83	62.50	197.00	93.17	5.93	67.80

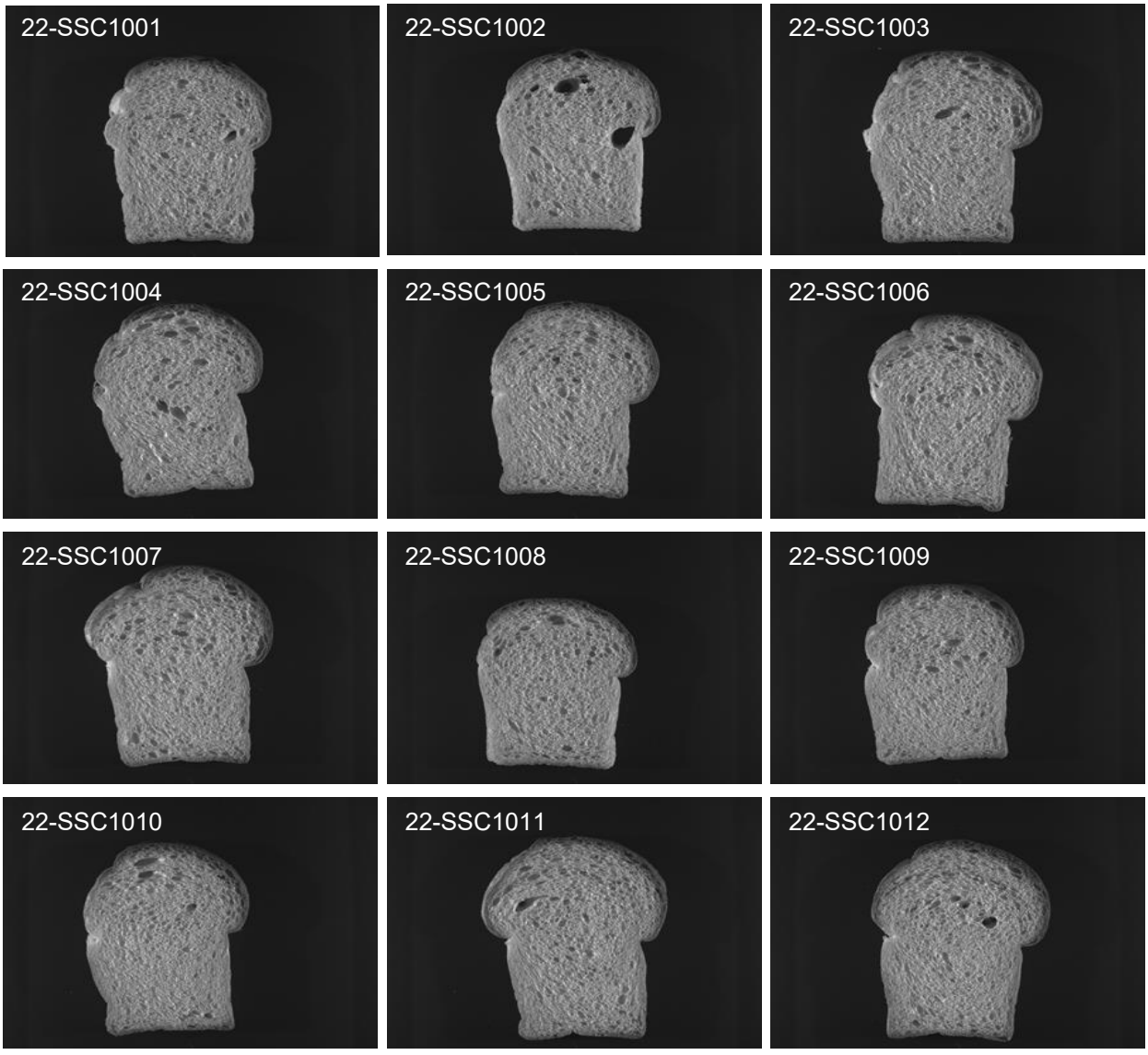
2022 SRPN Intraregional Production Zone

South Central Plains

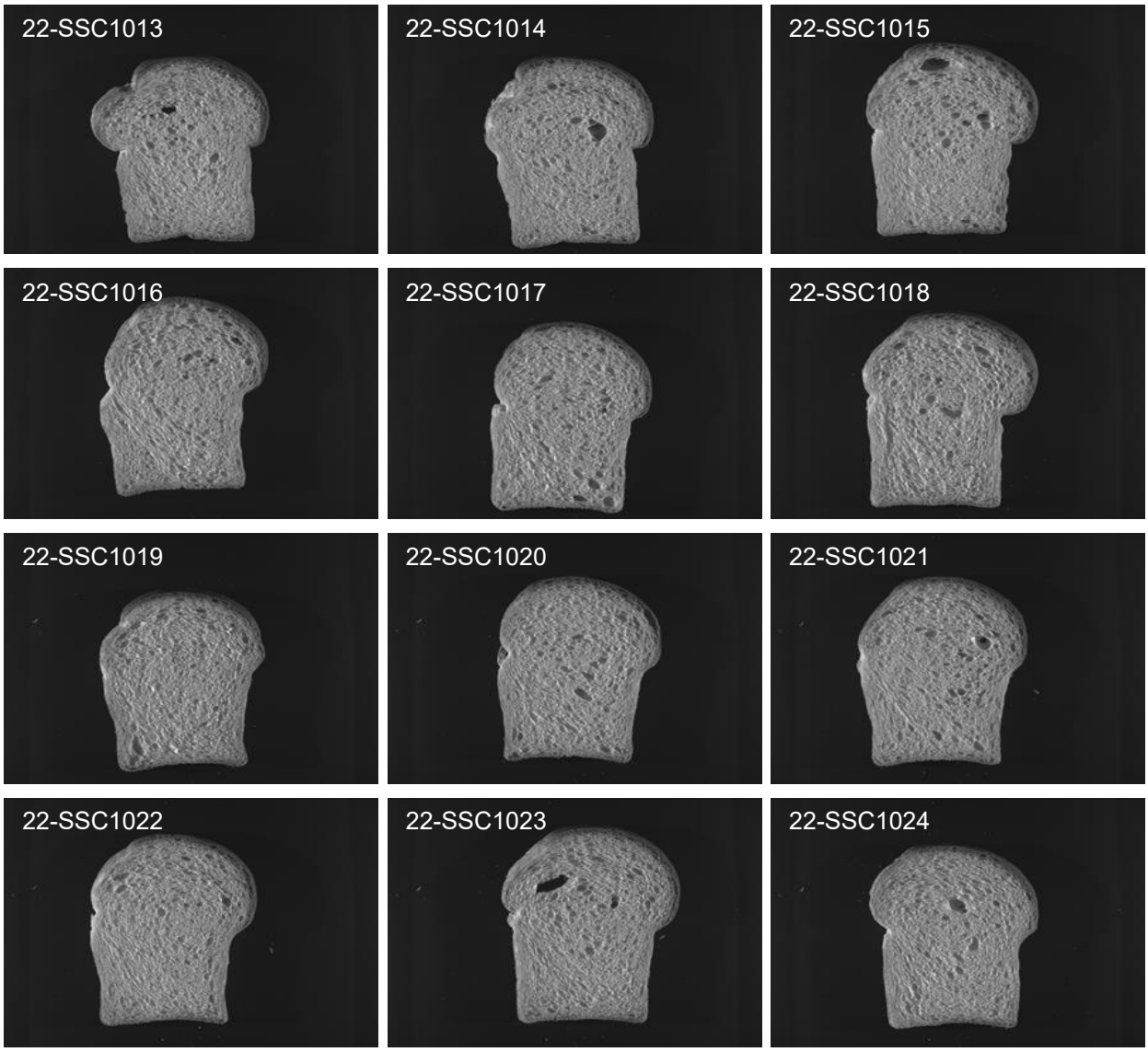
	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
Kharkof	15.1	67.7	4.50	4.50	177.2	8.5	3.0	1005	6.5	58
Scout66	14.1	68.6	3.75	3.75	178.9	8.4	2.0	945	6.0	58
TAM-107	13.7	66.6	4.25	4.25	177.2	8.5	3.5	1060	6.9	71
Jagalene	14.4	67.6	4.75	4.75	177.4	8.2	3.5	1065	6.9	67
OK18510	13.9	65.8	5.00	5.00	176.0	8.2	3.5	1030	6.8	67
OKP17D101A666	13.9	66.8	6.50	6.50	176.4	8.3	4.0	1095	7.2	73
OK16D101237	13.9	65.9	7.13	7.13	176.1	8.0	4.0	1110	7.4	74
OK19P808	14.9	67.8	2.50	2.50	178.3	7.8	2.0	865	5.5	47
OK20D78S015	14.4	69.1	5.25	5.25	179.2	8.5	3.5	950	6.1	57
CO17449R	13.2	65.3	5.00	5.00	175.3	7.9	4.0	895	6.0	59
CO18035RA	13.1	66.0	13.25	13.25	175.1	8.0	4.0	1100	7.4	79
CO18D007W	14.4	68.0	8.38	8.38	177.5	8.2	3.5	1035	7.0	65
CO18SFD009W	13.4	67.9	8.00	8.00	177.3	7.9	3.0	1040	6.9	71
CO19D322R	13.4	66.9	7.00	7.00	176.6	8.0	4.0	1025	6.8	70
KS120215K-6	13.1	65.9	6.25	6.25	175.5	8.0	4.0	1045	6.9	74
KS13DH0041-35	14.1	63.6	4.50	4.50	173.2	8.1	2.5	1020	6.8	65
KS16DH0002-12	13.3	64.7	3.38	3.38	174.0	7.9	2.0	980	6.4	66
KS16DH0010-17	14.4	67.7	4.75	4.75	177.1	8.3	2.5	1085	7.1	69
BASF-7	14.3	66.6	4.50	4.50	175.9	7.9	3.0	935	6.2	56
BASF-12	13.2	65.7	4.75	4.75	174.5	7.7	2.5	930	6.1	62
NHH19668	13.5	65.8	3.75	3.75	176.0	7.7	3.5	950	6.3	62
NI17410	13.9	67.0	6.13	6.13	175.9	7.8	4.5	1000	6.6	64
NE19638	13.8	68.0	7.25	7.25	177.7	8.2	4.0	1060	7.0	70
NE18455	13.0	66.6	8.50	8.50	175.6	7.5	3.0	965	6.4	67
LCH19DH-150-85	15.2	68.0	5.00	5.00	177.4	8.1	3.5	1040	6.8	61
LCH19DH-149-13	14.0	68.0	8.00	8.00	176.5	8.0	3.0	1145	7.7	77
LCH19DH-152-25	13.7	68.1	6.00	6.00	177.1	7.8	3.5	1065	6.9	72
LCH19DH-152-6	14.0	66.0	6.75	6.75	175.2	8.1	3.5	1060	7.1	69
LCH19DH-148-43	14.4	67.6	6.00	6.00	177.2	7.8	3.5	1085	7.1	69
21CP010029	13.7	67.9	5.75	5.75	176.7	7.9	3.0	1010	6.5	66
21CP010038	14.7	65.1	4.13	4.13	173.8	8.5	2.0	1080	7.2	67
21CP010041	13.3	65.1	4.00	4.00	174.5	8.3	3.0	1045	6.9	72
21CP010042	13.0	65.7	7.50	7.50	175.1	8.1	3.0	1045	7.0	75
KS19H10	12.8	65.7	6.00	6.00	175.1	8.0	3.5	1045	7.0	76
KS19H21	12.9	65.6	3.13	3.13	175.4	7.9	3.5	910	6.0	62
KS19HD68	13.0	65.9	4.50	4.50	175.5	7.7	3.5	990	6.5	69
KS19HD69	14.0	67.9	5.25	5.25	177.7	7.7	4.0	960	6.2	60
TXAMPSY 473-18AZ816	13.3	67.9	9.50	9.50	176.9	7.7	3.5	1015	6.7	69
TX17M1572	13.9	66.0	5.00	5.00	174.9	8.4	4.0	1035	6.9	67
TX18A001119	13.5	66.6	4.75	4.75	176.0	7.5	2.0	980	6.4	65
TX18A001129	12.9	65.8	6.00	6.00	175.2	7.3	3.5	965	6.4	67
TX18A001132	12.5	66.9	6.13	6.13	176.5	7.5	2.5	1000	6.5	73
TX18A001399	13.1	68.0	14.25	14.25	176.2	7.6	4.0	1000	6.5	69

	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
TX18M2602	13.7	68.1	3.38	3.38	177.9	8.0	3.0	1020	6.6	67
TX14M7088-18AZ530	13.1	67.0	5.00	5.00	176.4	8.1	3.0	1030	6.8	73

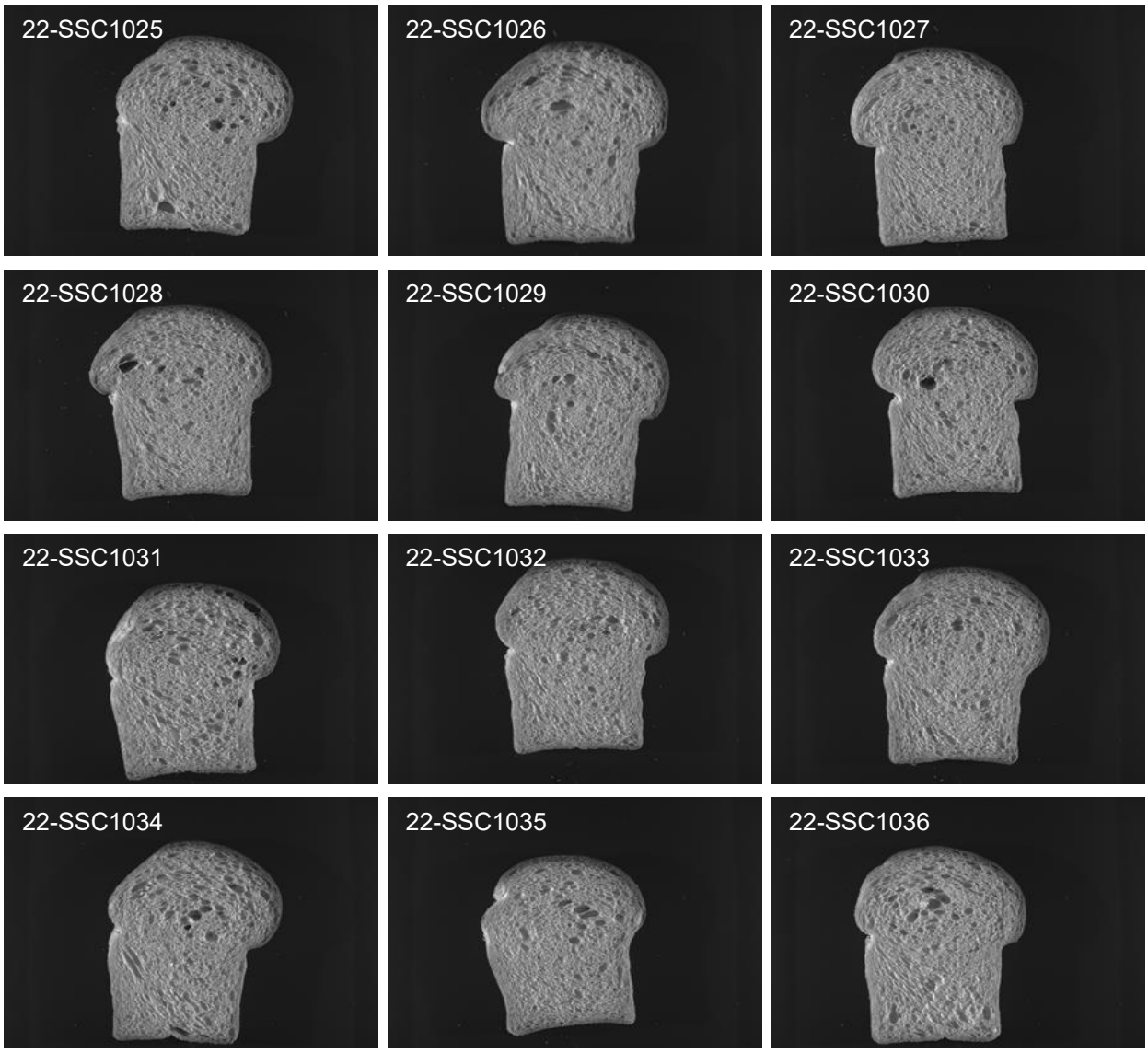
2022 SRPN Intraregional Production Zone
South Central Plains



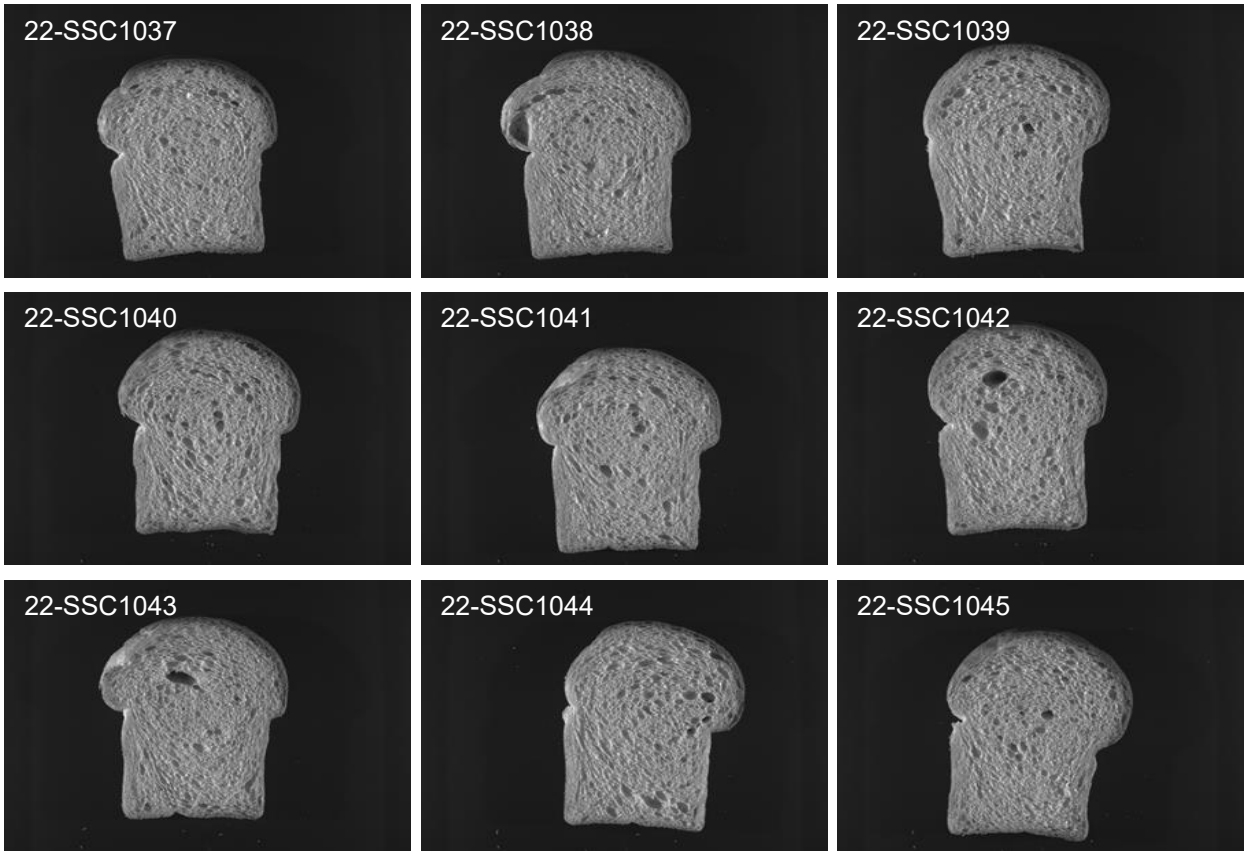
2022 SRPN Intraregional Production Zone
South Central Plains



2022 SRPN Intraregional Production Zone
South Central Plains



2022 SRPN Intraregional Production Zone
South Central Plains



Hard Winter Wheat Quality Report

2022 SRPN-SHP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
Kharkof	25.5	Very Poor	40.6	53.8	Good	78.7		1,2,4,8,20,
Scout 66	57.9	Good	92.4	50.4	Average	73.8		
TAM 107	59.4	Very Good	94.9	64.5	Very Good	94.4	1AL	
Jagalene	59.0	Very Good	94.2	50.8	Average	74.3		6,
High Cotton	53.1	Poor	84.8	51.2	Average	74.8		
OKP17D101A666	53.6	Average	85.5	50.2	Average	73.5		6,
OK16D101237	49.6	Very Poor	79.2	64.8	Very Good	94.8		2,4,
OK19P808	49.6	Very Poor	79.1	44.2	Poor	64.7		16,20,21,
OK20D78S015	57.6	Good	91.9	63.2	Very Good	92.4		
CO17449R	52.5	Poor	83.8	44.0	Poor	64.4		5,12,13,
CO18035RA	52.9	Poor	84.4	33.8	Very Poor	49.5		4,14,15,18,
CO18D007W	55.9	Average	89.2	30.2	Very Poor	44.2		11,14,15,19,
Windom SF	57.7	Good	92.1	43.6	Poor	63.9		6,11,14,15,
CO19D322R	62.2	Very Good	99.2	36.4	Very Poor	53.3		15,18,
KS120215K-6	61.2	Very Good	97.8	44.4	Poor	65.0		5,
KS13DH0041-35	57.3	Good	91.5	58.1	Good	85.0	1BL	12,13,16,17,
KS16DH0002-12	56.3	Good	89.9	56.3	Good	82.3		6,16,
KS16DH0010-17	56.0	Average	89.5	53.4	Good	78.1		
BASF-7	53.7	Average	85.8	58.4	Good	85.4	h1RS?	
BASF-12	52.4	Poor	83.7	42.2	Very Poor	61.8		12,17,
NHH19668	55.4	Average	88.4	50.2	Average	73.5		16,
NI17410	56.1	Average	89.5	59.1	Very Good	86.5		
NE19638	51.9	Poor	82.8	60.8	Very Good	89.0		
NE18455	51.4	Very Poor	82.1	38.5	Very Poor	56.3		14,15,
LCH19DH-150-85	53.3	Poor	85.1	49.7	Poor	72.7		
LCH19DH-149-13	51.8	Poor	82.7	68.4	Very Good	100.0		14,15,
LCH19DH-152-25	53.6	Average	85.5	52.4	Average	76.6	h1RS?	6,9,10,
LCH19DH-152-6	56.5	Good	90.1	46.0	Poor	67.4		12,13,
LCH19DH-148-43	57.0	Good	91.0	59.2	Very Good	86.6		
21CP010029	57.1	Good	91.1	49.2	Poor	72.0		6,9,10,
21CP010038	51.7	Very Poor	82.5	53.2	Good	77.9	1BL	2,6,16,21,

Quality scores and ratings are calculated directly from the relative trait weightings (printed at the top of the page) and are applicable only to the nursery selected.

Hard Winter Wheat Quality Report

2022 SRPN-SHP

1 - Test weight	10	11 - Flour protein	8
2 - SKCS kernel weight	8	12 - Bake absorption	15
3 - Kernel weight SD	8	13 - Mixograph absorption	5
4 - SKCS kernel diameter	8	14 - Bake mix time	10
5 - Kernel diameter SD	8	15 - Mixograph mix time	5
6 - SKCS hardness	10	16 - Mixograph tolerance	5
7 - Hardness SD	8	17 - Dough weight	
8 - Flour yield	30	18 - Proof height	2
9 - Flour ash	10	19 - Loaf volume	20
10 - Milling score		20 - Volume regression	5
		21 - Crumb grain	25

ID	Milling Score	Rating	%	Baking Score	Rating	%	1RS	Trait Deficiencies
21CP010041	62.2	Very Good	99.3	52.4	Average	76.7		
21CP010042	62.6	Very Good	100.0	42.8	Very Poor	62.7		15,
KS19H10	60.7	Very Good	97.0	64.3	Very Good	94.1		
KS19H21	57.9	Very Good	92.4	43.2	Very Poor	63.1		16,21,
KS19HD68	53.8	Average	85.8	45.7	Poor	66.9		
KS19HD69	61.5	Very Good	98.2	66.0	Very Good	96.5		6,
TXAMPSY 473-18AZ816	48.7	Very Poor	77.7	52.8	Good	77.2		6,14,15,
TX17M1572	48.2	Very Poor	77.0	54.6	Good	79.9		
TX18A001119	47.5	Very Poor	75.8	52.4	Average	76.6	1AL	3,6,8,10,18,20,21,
TX18A001129	53.7	Average	85.7	39.8	Very Poor	58.3	1AL	3,15,
TX18A001132	51.7	Poor	82.6	48.0	Poor	70.3	1AL	4,6,11,21,
TX18A001399	44.9	Very Poor	71.6	36.1	Very Poor	52.8		3,9,10,14,15,18,
TX18M2602	52.7	Poor	84.1	51.5	Average	75.4		
TX14M7088-18AZ530	56.8	Good	90.7	54.7	Good	80.0		16,

2022 SRPN Intraregional Production Zone

Southern High Plains

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
Kharkof	54.6	12.8	0.6	28.5	9.7	2.43	0.27	47	18	MIXED	22-29-28-21-03
Scout66	60.0	13.7	0.4	34.6	10.9	2.72	0.30	74	16	HARD	01-04-10-85-01
TAM-107	59.9	13.4	0.4	34.8	9.8	2.76	0.32	82	14	HARD	00-01-05-94-01
Jagalene	60.1	13.3	0.5	34.0	7.6	2.83	0.26	89	16	HARD	00-01-04-95-01
OK18510	58.8	13.5	0.5	34.3	9.4	2.84	0.26	76	15	HARD	01-03-10-86-01
OKP17D101A666	59.4	13.7	0.4	32.5	9.7	2.80	0.29	93	15	HARD	00-00-02-98-01
OK16D101237	58.4	13.3	0.5	29.5	9.5	2.55	0.30	67	15	HARD	01-09-21-69-01
OK19P808	59.4	13.2	0.4	32.4	9.1	2.69	0.28	79	15	HARD	00-02-07-91-01
OK20D78S015	61.4	12.8	0.4	32.4	8.5	2.72	0.31	84	13	HARD	00-01-02-97-01
CO17449R	60.2	13.9	0.3	32.0	10.8	2.63	0.35	78	15	HARD	01-03-05-91-01
CO18035RA	58.9	14.1	0.3	30.5	9.4	2.52	0.32	81	16	HARD	00-03-07-90-01
CO18D007W	60.6	13.8	0.3	32.8	10.3	2.69	0.29	78	13	HARD	01-01-07-91-01
CO18SFD009W	61.6	13.7	0.4	36.6	11.2	2.76	0.30	87	14	HARD	00-00-01-99-01
CO19D322R	61.5	13.5	0.3	35.5	10.6	2.79	0.32	80	14	HARD	01-01-05-93-01
KS120215K-6	60.9	13.8	0.3	35.7	10.4	2.82	0.36	75	14	HARD	00-02-13-85-01
KS13DH0041-35	59.9	13.3	0.3	34.6	9.6	2.73	0.29	74	13	HARD	00-02-09-89-01
KS16DH0002-12	61.5	13.0	0.3	32.2	11.6	2.67	0.27	87	16	HARD	00-01-06-93-01
KS16DH0010-17	60.1	14.1	0.3	31.8	9.8	2.71	0.32	81	15	HARD	00-01-07-92-01
BASF-7	58.9	13.7	0.3	38.0	9.7	2.82	0.30	69	15	HARD	01-05-22-72-01
BASF-12	60.2	13.8	0.3	35.1	10.7	2.71	0.34	79	15	HARD	00-02-08-90-01
NHH19668	59.6	13.7	0.3	33.7	9.8	2.82	0.34	78	15	HARD	00-01-11-88-01
NI17410	60.4	13.4	0.3	34.7	10.9	2.75	0.29	83	15	HARD	00-01-05-94-01
NE19638	58.7	13.4	0.4	30.9	11.3	2.58	0.33	75	15	HARD	01-03-08-88-01
NE18455	59.1	13.3	0.5	31.7	11.0	2.63	0.30	78	16	HARD	01-02-11-86-01
LCH19DH-150-85	59.7	13.4	0.5	33.0	10.1	2.66	0.30	74	16	HARD	01-04-13-82-01
LCH19DH-149-13	59.4	13.2	0.6	33.5	10.9	2.71	0.35	76	14	HARD	01-02-08-89-01
LCH19DH-152-25	59.1	13.3	0.6	34.7	9.3	2.77	0.34	87	15	HARD	00-00-03-97-01
LCH19DH-152-6	60.5	13.0	0.5	31.9	8.7	2.65	0.30	74	16	HARD	01-05-11-83-01
LCH19DH-148-43	60.7	12.8	0.5	37.0	9.1	2.86	0.29	75	15	HARD	01-03-09-87-01
21CP010029	60.5	13.1	0.5	35.4	7.8	2.84	0.28	95	16	HARD	00-00-02-98-01
21CP010038	59.7	13.7	0.4	30.0	9.9	2.65	0.32	85	16	HARD	00-01-04-95-01
21CP010041	61.3	12.9	0.4	33.6	10.5	2.78	0.35	79	16	HARD	00-02-08-90-01
21CP010042	61.5	13.4	0.4	34.4	9.5	2.70	0.34	80	15	HARD	00-02-06-92-01
KS19H10	61.9	13.4	0.3	32.6	8.6	2.73	0.27	85	14	HARD	00-01-03-96-01
KS19H21	60.4	13.4	0.3	35.2	11.0	2.75	0.30	72	16	HARD	01-06-13-80-01
KS19HD68	60.9	12.7	0.3	35.1	11.3	2.75	0.30	77	14	HARD	00-03-09-88-01
KS19HD69	61.4	12.7	0.3	33.5	9.1	2.76	0.32	86	14	HARD	00-00-04-96-01
TXAMPSY 473-18AZ816	59.5	13.0	0.3	31.1	9.8	2.60	0.32	85	15	HARD	00-01-04-95-01
TX17M1572	58.3	13.4	0.4	30.8	9.2	2.59	0.32	71	14	HARD	01-04-15-80-01
TX18A001119	61.9	12.6	0.3	33.2	12.7	2.75	0.34	94	17	HARD	01-01-02-96-01
TX18A001129	61.1	12.8	0.3	33.4	11.8	2.60	0.34	82	15	HARD	00-02-05-93-01
TX18A001132	60.5	12.7	0.3	32.8	9.8	2.53	0.30	88	14	HARD	00-00-03-97-01
TX18A001399	59.5	12.8	0.3	32.6	13.3	2.61	0.35	81	16	HARD	01-02-06-91-01
TX18M2602	60.1	12.8	0.3	33.8	9.1	2.78	0.27	83	14	HARD	00-02-04-94-01

		SKCS Average Kernel						Hardness			
		Moisture		Weight		Diameter		SKCS		Class	Distribution
LINE	Wt/Bu (lb)	(%)	(sd)	(mg)	(sd)	(mm)	(sd)		(sd)		
TX14M7088-18AZ530	61.1	12.9	0.3	38.0	10.2	2.85	0.31	80	14	HARD	00-01-06-93-01

2022 SRPN Intraregional Production Zone

Southern High Plains

	Wheat		Flour			Noodle Color					
LINE	Protein (%)	Milling Yield (%)	Ash (%)	Protein (%)	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
Kharkof	15.9	57.2	0.48	15.1	0.333	78.86	-1.07	24.30	-10.85	1.42	1.72
Scout66	13.1	68.6	0.42	12.7	0.323	80.09	-1.35	22.99	-12.64	1.90	2.16
TAM-107	12.7	67.1	0.39	11.9	0.347	79.86	-1.40	24.17	-12.46	1.84	2.58
Jagalene	13.9	66.9	0.49	13.1	0.291	78.21	-1.08	24.42	-12.06	1.87	1.35
OK18510	13.7	65.1	0.44	13.1	0.308	79.11	-1.44	24.02	-13.89	1.77	2.18
OKP17D101A666	13.9	64.9	0.48	13.2	0.297	78.83	-1.52	24.87	-12.16	1.63	0.96
OK16D101237	13.0	66.4	0.43	12.6	0.136	80.49	-1.66	25.43	-7.83	1.38	3.23
OK19P808	14.3	63.9	0.49	13.7	0.149	79.82	-1.10	24.61	-8.81	1.71	3.90
OK20D78S015	14.1	64.6	0.39	12.9	0.269	78.76	-0.96	23.43	-11.68	1.81	3.04
CO17449R	12.0	66.8	0.45	11.3	0.356	79.77	-1.53	23.87	-11.16	1.73	2.57
CO18035RA	12.0	67.9	0.50	11.2	0.344	79.54	-1.32	24.19	-11.78	1.59	3.38
CO18D007W	11.8	66.1	0.43	11.0	0.329	82.23	-1.65	22.47	-11.57	1.34	3.97
CO18SFD009W	11.8	65.7	0.44	10.9	0.396	81.98	-1.70	22.95	-11.84	1.39	4.17
CO19D322R	12.6	68.4	0.40	11.7	0.326	81.75	-1.39	22.17	-11.32	1.32	6.44
KS120215K-6	12.3	69.6	0.44	11.7	0.338	80.17	-1.79	23.75	-13.49	1.60	1.74
KS13DH0041-35	12.8	67.1	0.46	12.0	0.126	78.97	-1.41	27.04	-8.13	1.26	2.64
KS16DH0002-12	12.9	67.0	0.43	12.4	0.111	80.69	-1.70	23.85	-9.35	1.68	5.91
KS16DH0010-17	13.4	67.1	0.43	12.9	0.448	79.64	-1.66	25.41	-12.23	1.68	1.19
BASF-7	13.6	65.1	0.41	12.9	0.300	79.68	-1.19	24.32	-12.57	1.69	2.32
BASF-12	12.1	66.0	0.49	11.3	0.309	81.21	-1.79	23.67	-10.88	1.81	2.86
NHH19668	12.9	66.6	0.44	12.2	0.329	80.13	-1.46	24.13	-9.98	1.74	2.27
NI17410	13.6	66.1	0.41	13.0	0.373	79.70	-1.05	22.12	-12.97	1.94	2.80
NE19638	13.1	67.4	0.43	12.2	0.308	80.45	-1.29	22.26	-13.29	1.71	3.46
NE18455	12.8	66.6	0.44	12.3	0.340	78.05	-1.09	25.25	-11.27	1.77	1.82
LCH19DH-150-85	14.0	67.1	0.46	13.2	0.329	79.24	-1.36	23.28	-13.29	1.78	0.46
LCH19DH-149-13	13.9	66.0	0.46	13.1	0.301	79.62	-0.96	23.56	-11.24	1.39	2.14
LCH19DH-152-25	13.2	65.9	0.51	12.1	0.410	79.64	-1.52	24.00	-14.37	2.11	2.30
LCH19DH-152-6	12.1	68.4	0.48	11.2	0.391	79.12	-1.66	25.17	-11.78	1.70	0.00
LCH19DH-148-43	12.8	64.6	0.36	12.0	0.334	80.14	-1.47	23.34	-13.49	1.84	2.24
21CP010029	13.3	65.2	0.51	12.3	0.321	80.09	-1.05	22.22	-13.87	2.29	2.82
21CP010038	14.5	65.8	0.46	13.7	0.393	77.51	-1.37	26.25	-13.36	1.58	-0.78
21CP010041	13.9	70.2	0.39	13.1	0.393	77.94	-1.21	24.87	-11.78	1.68	1.08
21CP010042	12.5	68.8	0.38	11.9	0.367	79.59	-1.10	21.77	-13.99	1.51	1.96
KS19H10	12.8	66.4	0.41	12.0	0.377	79.14	-1.63	25.99	-10.31	1.53	1.14
KS19H21	13.2	67.9	0.38	12.4	0.409	79.84	-1.50	23.76	-10.74	1.43	0.58
KS19HD68	12.7	65.0	0.42	11.7	0.326	80.41	-1.46	23.36	-10.69	1.27	3.46
KS19HD69	13.7	67.7	0.43	12.8	0.137	79.21	-0.86	23.33	-9.11	1.40	3.97
TXAMPSY 473-18AZ816	13.0	64.3	0.48	11.9	0.389	79.68	-1.25	23.94	-13.27	1.74	1.73
TX17M1572	14.1	65.6	0.49	13.5	0.372	78.59	-1.07	23.14	-13.02	1.86	0.48
TX18A001119	14.7	62.5	0.45	13.5	0.106	78.40	-0.83	24.65	-9.54	1.66	3.69
TX18A001129	13.2	66.0	0.39	12.2	0.361	79.18	-1.53	27.07	-10.64	1.81	2.58

	Wheat		Flour			Noodle Color					
	Protein	Milling Yield	Ash	Protein	PPO	L @ 0	a @ 0	b @ 0	Delta L 24 hrs	Delta a 24 hrs	Delta b 24 hrs
LINE	(%)	(%)	(%)	(%)							
TX18A001132	11.7	64.5	0.48	10.6	0.349	80.86	-1.92	24.45	-11.85	1.85	4.51
TX18A001399	12.5	64.9	0.53	11.6	0.321	79.68	-1.28	25.16	-10.72	1.64	3.34
TX18M2602	14.1	63.5	0.45	12.9	0.410	79.19	-1.32	24.44	-13.46	1.78	2.09
TX14M7088-18AZ530	13.1	65.5	0.47	12.3	0.301	77.53	-1.27	25.52	-11.72	2.02	0.23

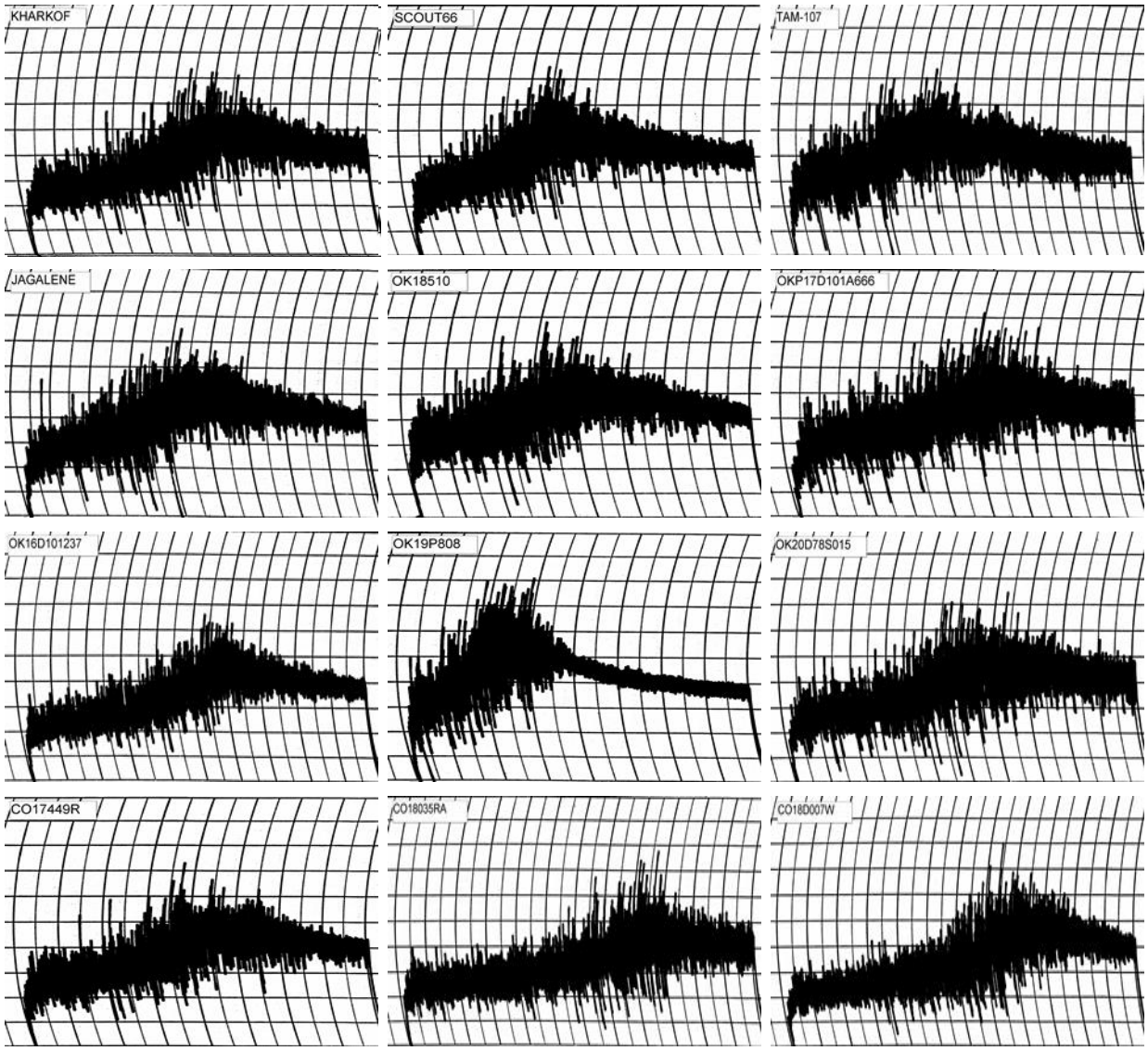
2022 SRPN Intraregional Production Zone

Southern High Plains

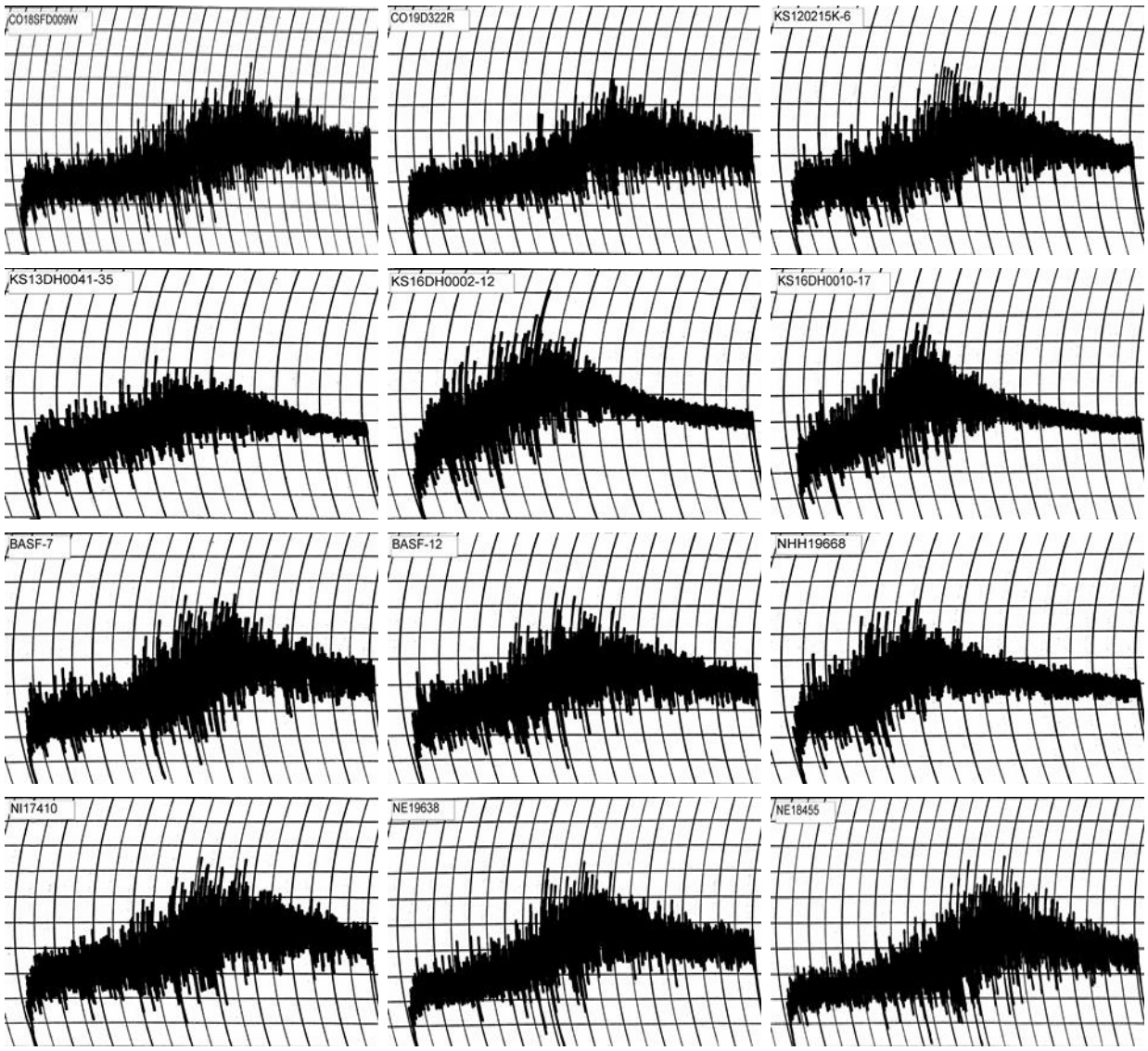
		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
Kharkof	15.1	67.6	5.00	5.00	4
Scout66	12.7	68.6	3.38	3.38	3
TAM-107	11.9	64.7	4.50	4.42	4
Jagalene	13.1	67.2	4.63	4.63	3
OK18510	13.1	65.2	3.75	3.75	3
OKP17D101A666	13.2	66.3	5.38	5.38	5
OK16D101237	12.6	65.5	5.88	5.88	3
OK19P808	13.7	67.8	2.25	2.25	1
OK20D78S015	12.9	69.5	5.50	5.50	5
CO17449R	11.3	63.8	4.00	3.67	3
CO18035RA	11.2	64.6	8.25	7.43	5
CO18D007W	11.0	65.8	8.00	7.02	5
CO18SFD009W	10.9	64.6	7.88	6.85	5
CO19D322R	11.7	64.5	6.13	5.90	5
KS120215K-6	11.7	64.4	4.38	4.21	4
KS13DH0041-35	12.0	62.9	3.75	3.74	2
KS16DH0002-12	12.4	65.6	3.00	3.00	2
KS16DH0010-17	12.9	66.4	3.50	3.50	3
BASF-7	12.9	66.9	5.38	5.38	4
BASF-12	11.3	64.2	4.63	4.22	4
NHH19668	12.2	65.2	3.00	3.00	2
NI17410	13.0	66.6	5.38	5.38	4
NE19638	12.2	65.7	5.38	5.38	4
NE18455	12.3	66.9	6.63	6.63	5
LCH19DH-150-85	13.2	66.9	3.63	3.63	3
LCH19DH-149-13	13.1	66.8	6.38	6.38	5
LCH19DH-152-25	12.1	65.2	3.88	3.88	4
LCH19DH-152-6	11.2	63.6	4.38	3.97	4
LCH19DH-148-43	12.0	65.4	5.00	5.00	4
21CP010029	12.3	66.9	4.75	4.75	5
21CP010038	13.7	64.7	4.25	4.25	2
21CP010041	13.1	65.9	4.13	4.13	3
21CP010042	11.9	66.2	6.50	6.42	4
KS19H10	12.0	66.5	5.00	4.99	4
KS19H21	12.4	66.6	3.25	3.25	2
KS19HD68	11.7	65.4	5.00	4.82	4
KS19HD69	12.8	68.3	4.13	4.13	4
TXAMPSY 473-18AZ816	11.9	67.9	10.50	10.42	6
TX17M1572	13.5	67.4	4.50	4.50	3
TX18A001119	13.5	67.4	5.50	5.50	5
TX18A001129	12.2	66.2	6.13	6.13	5

		Mixograph			
	Flour Protein	Absorption	As-Is	Corrected	Tolerance
Line	(%)	(%)	(min)	(min)	
TX18A001132	10.6	65.7	5.00	4.18	5
TX18A001399	11.6	67.4	8.13	7.78	6
TX18M2602	12.9	68.0	3.25	3.25	3
TX14M7088-18AZ530	12.3	66.9	2.75	2.75	1

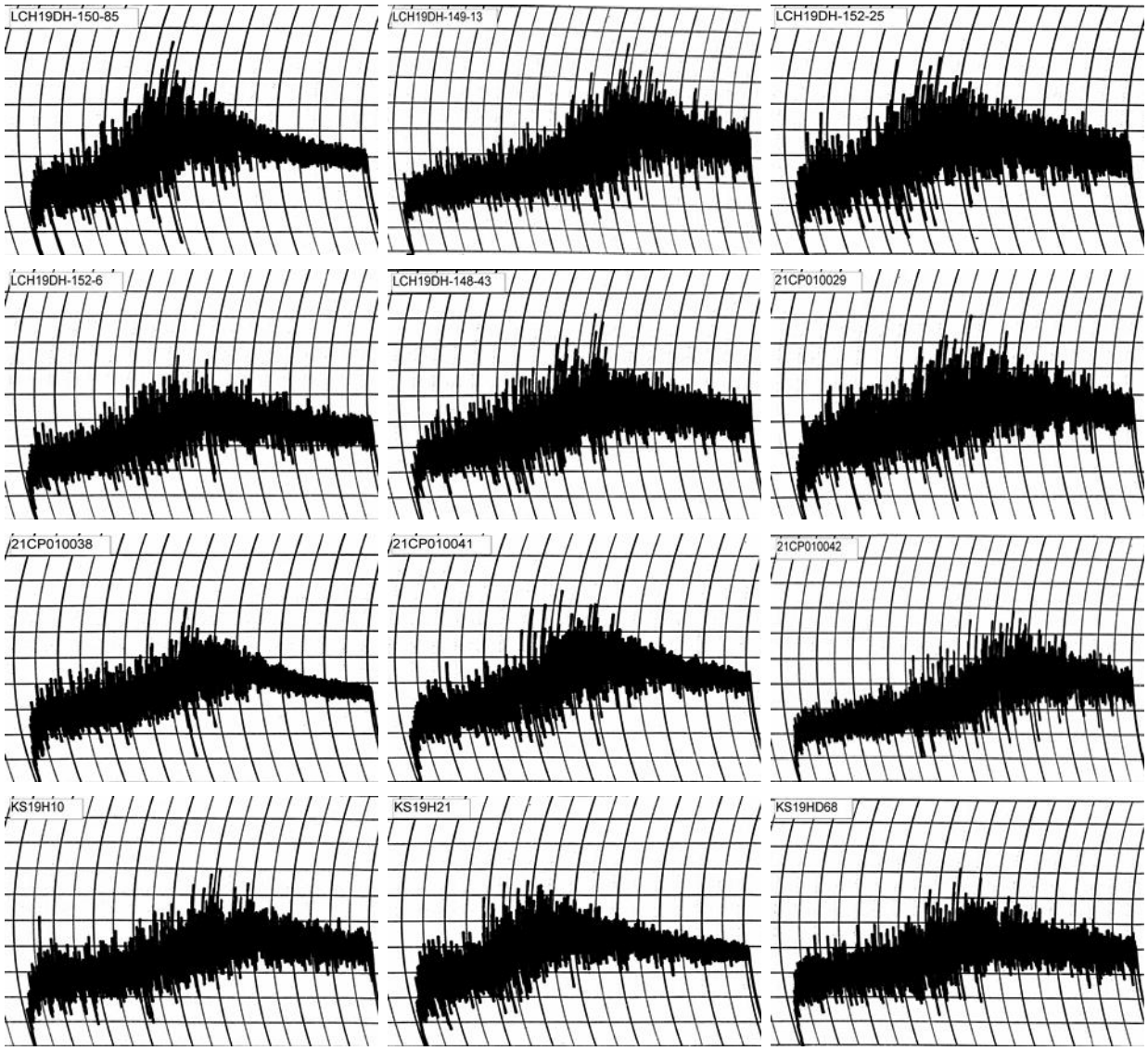
2022 SRPN Intraregional Production Zone
Southern High Plains



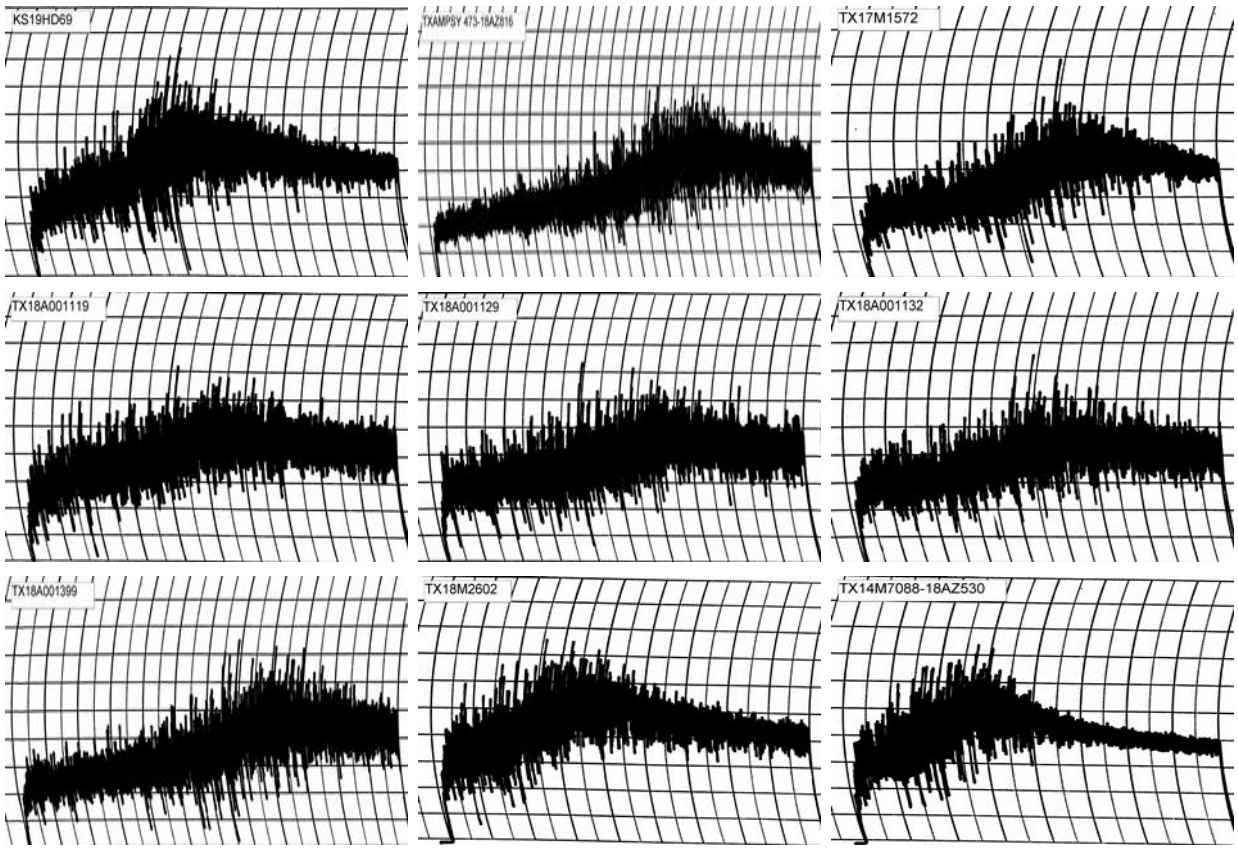
2022 SRPN Intraregional Production Zone
Southern High Plains



2022 SRPN Intraregional Production Zone
Southern High Plains



2022 SRPN Intraregional Production Zone
Southern High Plains



2022 SRPN Intraregional Production Zone

Southern High Plains

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
Kharkof	129.25	240.83	160.58	80.25	270.17	109.58	6.20	84.80
Scout66	106.08	178.58	111.67	66.92	212.25	100.58	5.87	67.75
TAM-107	91.42	230.67	150.42	80.25	269.58	119.17	6.07	67.70
Jagalene	92.25	192.42	130.83	61.58	245.75	114.92	6.00	67.75
OK18510	128.67	215.25	150.08	65.17	274.00	123.92	6.13	67.70
OKP17D101A666	111.75	212.83	138.67	74.17	261.00	122.33	6.00	67.05
OK16D101237	115.75	238.50	148.33	90.17	264.92	116.58	6.07	67.70
OK19P808	100.58	231.00	144.67	86.33	248.67	104.00	6.13	67.75
OK20D78S015	127.75	199.00	134.33	64.67	244.83	110.50	6.13	84.80
CO17449R	106.08	257.17	149.83	107.33	256.58	106.75	6.07	67.00
CO18035RA	87.00	209.50	134.00	75.50	254.67	120.67	5.80	67.75
CO18D007W	120.17	233.42	158.33	75.08	281.75	123.42	6.13	84.75
CO18SFD009W	126.08	265.42	163.08	102.33	274.25	111.17	6.20	66.95
CO19D322R	108.25	222.75	144.83	77.92	258.33	113.50	6.07	67.75
KS120215K-6	103.33	213.42	139.92	73.50	261.08	121.17	5.93	67.85
KS13DH0041-35	122.42	193.50	137.25	56.25	252.08	114.83	6.13	67.75
KS16DH0002-12	96.33	187.67	135.58	52.08	255.83	120.25	6.00	66.05
KS16DH0010-17	117.75	241.00	161.50	79.50	289.83	128.33	6.07	66.95
BASF-7	120.75	220.08	157.83	62.25	283.50	125.67	6.20	84.80
BASF-12	106.75	206.75	141.00	65.75	261.25	120.25	6.07	67.75
NHH19668	115.25	198.33	137.67	60.67	256.00	118.33	6.07	69.50
NI17410	115.50	201.08	142.58	58.50	263.33	120.75	6.07	66.95
NE19638	129.08	214.50	148.67	65.83	269.92	121.25	6.13	67.70
NE18455	110.00	220.17	142.83	77.33	264.75	121.92	6.00	67.75
LCH19DH-150-85	133.17	185.25	135.92	49.33	246.17	110.25	6.13	86.50
LCH19DH-149-13	114.83	206.83	137.25	69.58	254.08	116.83	6.00	69.40
LCH19DH-152-25	131.42	205.50	152.42	53.08	275.92	123.50	6.20	67.60
LCH19DH-152-6	106.83	195.83	134.75	61.08	252.83	118.08	6.07	85.60
LCH19DH-148-43	102.17	266.42	154.42	112.00	265.50	111.08	6.13	67.70
21CP010029	93.33	193.58	123.25	70.33	229.58	106.33	5.93	66.80
21CP010038	114.33	215.08	137.33	77.75	250.42	113.08	6.07	67.70
21CP010041	117.08	205.33	135.08	70.25	253.50	118.42	5.93	67.65
21CP010042	89.50	229.33	144.58	84.75	266.33	121.75	5.93	67.75
KS19H10	132.83	251.42	167.08	84.33	298.17	131.08	6.13	66.90
KS19H21	110.17	264.33	157.58	106.75	265.92	108.33	6.13	67.80
KS19HD68	113.50	241.92	163.67	78.25	289.08	125.42	6.13	69.50
KS19HD69	128.92	202.17	150.75	51.42	275.92	125.17	6.13	67.70
TXAMPSY 473-18AZ816	127.17	231.75	151.25	80.50	281.58	130.33	6.00	68.50
TX17M1572	101.83	206.67	140.00	66.67	259.17	119.17	6.00	67.70
TX18A001119	118.92	225.50	152.58	72.92	272.33	119.75	6.07	66.85
TX18A001129	105.83	208.75	139.33	69.42	257.50	118.17	6.00	67.80
TX18A001132	121.17	176.25	105.58	70.67	207.92	102.33	5.73	66.90
TX18A001399	104.50	237.92	148.42	89.50	273.58	125.17	5.93	66.90
TX18M2602	130.25	223.42	162.08	61.33	288.58	126.50	6.27	67.75

	RVA							
Line	Stirring Number (RVU)	Peak Viscosity (RVU)	Trough Viscosity (RVU)	Breakdown (RVU)	Final Viscosity (RVU)	Set back (RVU)	Peak Time (min)	Pasting Temp (Deg. C)
TX14M7088-18AZ530	117.83	206.58	149.08	57.50	270.17	121.08	6.13	66.85

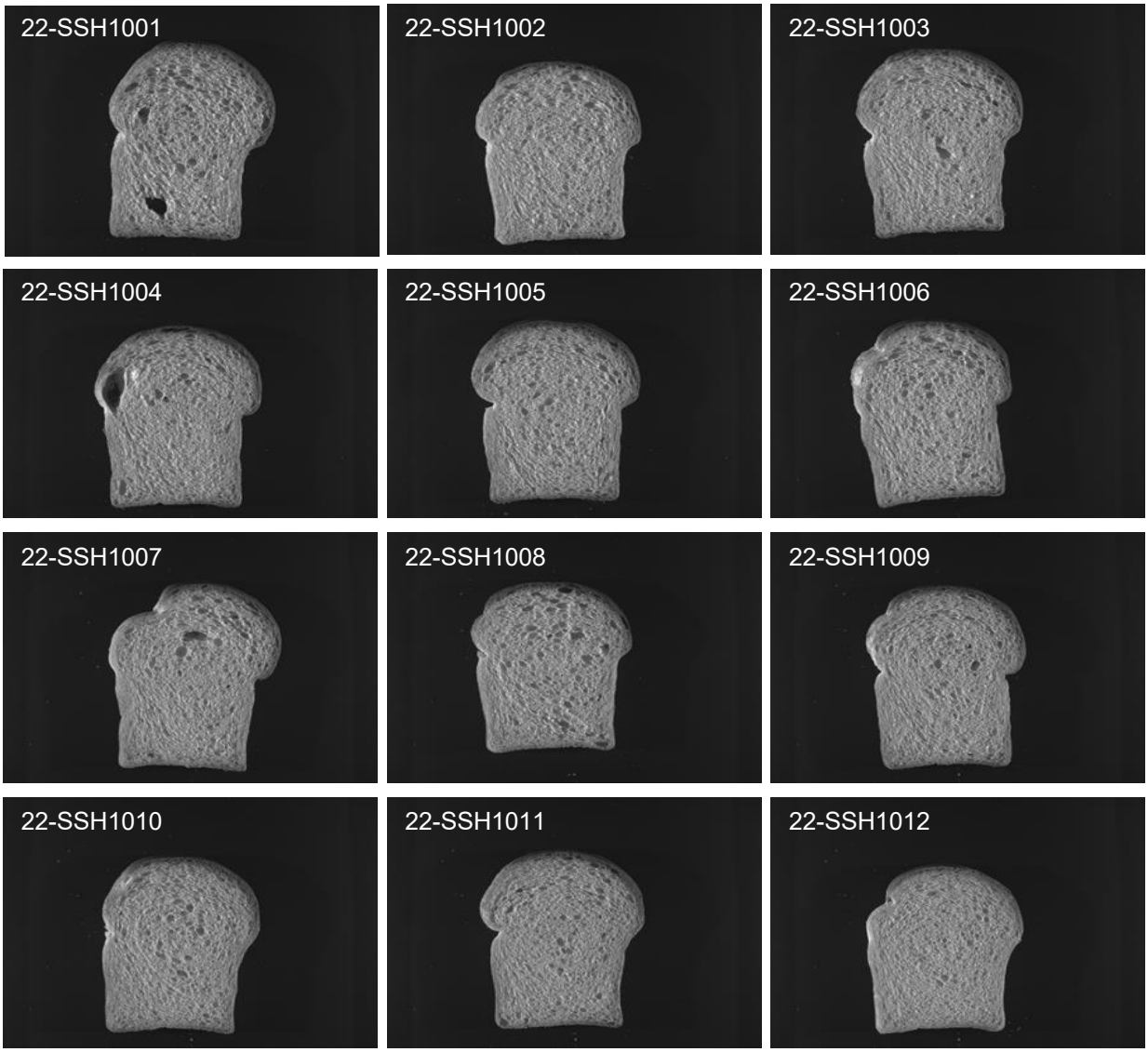
2022 SRPN Intraregional Production Zone

Southern High Plains

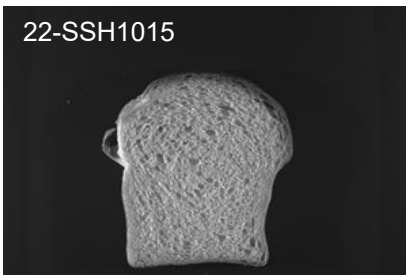
	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
Kharkof	15.1	67.6	6.00	6.00	176.6	7.9	2.5	1020	6.7	60
Scout66	12.7	68.8	4.25	4.25	178.3	7.9	3.5	945	6.1	67
TAM-107	11.9	64.9	5.00	4.91	174.7	7.7	4.0	965	6.4	75
Jagalene	13.1	67.6	5.75	5.75	177.2	7.9	3.5	970	6.4	67
OK18510	13.1	65.2	4.75	4.75	174.7	8.0	3.5	1000	6.6	69
OKP17D101A666	13.2	66.7	5.75	5.75	176.2	8.0	2.5	970	6.5	66
OK16D101237	12.6	65.9	7.00	7.00	175.2	7.7	5.0	1020	6.7	75
OK19P808	13.7	67.6	3.00	3.00	177.4	7.6	2.0	890	5.8	55
OK20D78S015	12.9	69.5	7.00	7.00	178.5	7.9	4.0	940	6.1	65
CO17449R	11.3	64.0	5.00	4.59	174.1	7.4	3.5	895	6.0	71
CO18035RA	11.2	65.0	11.38	10.25	174.0	7.3	3.5	920	6.1	76
CO18D007W	11.0	66.1	10.00	8.78	174.8	7.6	2.5	825	5.4	65
CO18SFD009W	10.9	64.9	8.25	7.17	173.4	7.4	3.0	900	6.0	75
CO19D322R	11.7	64.5	7.25	6.98	173.8	7.3	3.5	890	6.0	68
KS120215K-6	11.7	64.4	6.25	6.01	174.3	7.9	3.5	935	6.3	73
KS13DH0041-35	12.0	62.8	4.25	4.24	172.3	8.1	4.0	955	6.4	73
KS16DH0002-12	12.4	66.0	4.00	4.00	175.4	8.0	3.0	985	6.5	73
KS16DH0010-17	12.9	66.4	4.50	4.50	176.6	8.0	4.5	1040	6.9	75
BASF-7	12.9	66.9	6.25	6.25	175.8	7.9	3.0	980	6.4	69
BASF-12	11.3	64.0	5.38	4.91	173.3	7.5	3.5	875	5.8	69
NHH19668	12.2	64.9	3.50	3.50	175.0	7.6	3.0	925	6.1	68
NI17410	13.0	66.9	6.00	6.00	176.2	8.0	3.0	980	6.5	68
NE19638	12.2	65.6	6.50	6.50	174.9	7.8	4.0	975	6.5	74
NE18455	12.3	66.6	8.50	8.50	175.5	7.7	3.5	945	6.3	70
LCH19DH-150-85	13.2	66.7	4.50	4.50	176.3	8.1	2.5	950	6.2	64
LCH19DH-149-13	13.1	66.5	8.75	8.75	175.5	8.2	5.0	1115	7.4	81
LCH19DH-152-25	12.1	65.6	4.75	4.75	174.9	7.9	3.5	995	6.6	76
LCH19DH-152-6	11.2	63.8	5.25	4.76	173.7	7.7	2.5	930	6.2	76
LCH19DH-148-43	12.0	65.6	6.00	6.00	174.7	7.8	3.0	1000	6.6	78
21CP010029	12.3	66.6	6.00	6.00	175.7	8.1	3.5	940	6.2	69
21CP010038	13.7	64.7	4.25	4.25	173.9	8.2	2.0	995	6.5	65
21CP010041	13.1	65.9	4.75	4.75	175.2	8.0	2.5	1005	6.7	70
21CP010042	11.9	65.9	7.25	7.16	175.0	7.8	3.5	995	6.6	78
KS19H10	12.0	66.9	5.75	5.74	175.8	7.8	4.0	965	6.3	74
KS19H21	12.4	67.0	3.75	3.75	176.2	8.1	1.5	905	6.0	65
KS19HD68	11.7	65.0	6.00	5.78	174.2	7.7	3.5	955	6.4	75
KS19HD69	12.8	68.1	5.50	5.50	177.3	7.5	4.0	925	6.0	64
TXAMPSY 473-18AZ816	11.9	67.9	12.50	12.41	174.7	7.6	4.0	895	5.9	67
TX17M1572	13.5	67.4	5.50	5.50	176.0	8.3	3.5	1025	6.8	69
TX18A001119	13.5	67.4	6.00	6.00	176.3	7.1	2.0	930	6.1	60
TX18A001129	12.2	66.1	7.00	7.00	175.0	7.4	2.5	900	5.9	66
TX18A001132	10.6	66.1	6.00	5.01	174.7	7.4	2.0	875	5.7	75
TX18A001399	11.6	67.0	12.50	11.96	174.0	7.3	3.5	890	5.9	68

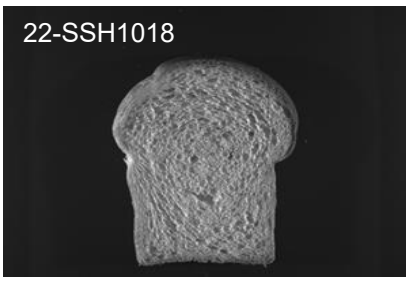
	Flour		Mix Time		Dough					
	Protein	Water Abs.	As-is	Corrected	Weight	Proof Height	Crumb Grain	As-Rec'd.	Specific Volume	Loaf Volume Potential
Line	(%)	(%)	(min)	(min)	(g)	(cm)		(cc)	(cc/g)	(cc/%)
TX18M2602	12.9	68.0	4.00	4.00	176.5	8.2	2.5	1000	6.6	71
TX14M7088-18AZ530	12.3	67.1	3.25	3.25	176.5	8.1	3.0	985	6.4	74

2022 SRPN Intraregional Production Zone
Southern High Plains



2022 SRPN Intraregional Production Zone
Southern High Plains





2022 SRPN Intraregional Production Zone
Southern High Plains

2022 SRPN Intraregional Production Zone
Southern High Plains

RECOMMENDED* QUALITY TARGETS FOR HARD RED WINTER WHEAT

HWW Quality Targets Committee
Approved February, 2006

** "The purpose of Recommended Quality Targets (RQT) for Hard Red Winter Wheat (HRW) is to provide specific quality 'goals' for the breeding community, wheat producers, and marketing programs in order to assist and guide the decisions needed to maintain the consistency and end-use quality of the U.S. HRW market class. The RQT will be dynamic over time in direct response to the primary needs of the marketplace (domestic and foreign), and the needs of the U.S. industry to breed, produce and market wheats to meet market needs. The RQT should NOT be used as essential criteria for variety release decisions in breeding programs, or as marketing/grading standards for private companies or federal/state agencies. This* ***Statement of Purpose*** *must accompany all published forms of the RQT."* *HWWQT Committee, 2006*

Quality Parameter (End-Use: Pan Bread)	**Recommended Target Value**
Wheat	
Test Weight (lb/bu)	***> 60***
SKCS-Hardness Index (SK-HI)	***60 – 80***
SK-HI Standard Deviation	***< 17.0***
SKCS-Weight (SK-WT, mg)	***> 30.0***
SK-WT Standard Deviation	***< 8.0***
SKCS-Diameter (SK-SZ, mm)	***> 2.40***
SK-SZ Standard Deviation	***< 0.40***
Protein Content (%, 12% mb)	***> 12.0***
Ash Content (%, 12% mb)	***< 1.60***
Falling Number (sec)	***> 300***
Straight Grade Flour Yield (%)	***> 68***
Flour	
Flour Color L-Value (Minolta Colorimeter)	***> 90***
Gluten Index	***> 95***
Sedimentation Volume (cc)	***> 40***
Farinograph:	
Water Absorption (%, 14% mb)	***62+***
Peak Time (min)	***4.00 – 8.00***
Stability (min)	***10.00-16.00***
Mixograph:	
Water Absorption (%, 14% mb)	***62+***
Peak Time (min)	***3.00 – 6.00***
Mixing Tolerance (HWWQL Score, 0-6)	***3.0***
Straight Dough Pup Method:	
Water Absorption (%, 14% mb)	***62+***
Mix Time (min)	***3.00 – 5.00***
Loaf Volume (cc)	***> 850***
Crumb Score (HWWQL Score, 0-6)	***> 3.0***

CONTACT:
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Hard Winter Wheat Quality Laboratory
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Thank you for reviewing this report on milling and baking data of 2022 Regional Performance Nursery samples. The report with data can be also viewed at https://www.ars.usda.gov/plains-area/lincoln-ne/wheat-sorghum-and-forage-research/docs/hard-winter-wheat-regional-nursery-program/research/. Please let me know if you have any comments on this report. I can be reached at (785) 776-2750 or by email, Richard.chen@usda.gov