2018 Harvest
U.S. Pacific Northwest

Soft White Wheat Quality Report

This project is funded by the Idaho Wheat Commission, Oregon Wheat Commission, Washington Grain Commission, U.S. Wheat Associates, and Wheat Marketing Center, Inc.

Executive Summary

Photo courtesy of Oregon Wheat Commission

Pacific Northwest (PNW) wheat production experienced good growing conditions in this crop year. PNW total production of soft white and club wheat exceeded the three-year average. The average protein was lower, kernels were similar in size and weight, and average test weight was higher than last year and three-year averages for both soft white and club wheat. Flour had similar ash content to three-year average, sound falling number values, and acceptable Amylograph peak viscosity. Dough testing indicated weak gluten strength typically found in soft white and club wheat flour with lower water absorption than three-year average.

All production zone averages for sponge cake volumes were lower than last year; however, their total scores were equivalent to or greater than last year and the three-year averages. Cookie diameters were all larger than last year and three-year averages. Chinese southern type steamed bread total scores for all production zones were lower than the three-year average.

Contents

Pacific Northwest
Wheat Production

U.S. soft white wheat is grown in the Pacific Northwest, which includes the states of Idaho, Oregon, and Washington.

Pacific Northwest soft white wheat is known for its white bran, low moisture content, and weak gluten characteristics. Consequently, soft white wheat is well suited for products such as cakes, pastries, cookies, crackers, pancakes, snack foods, flat breads, and Chinese southern-type steamed breads.

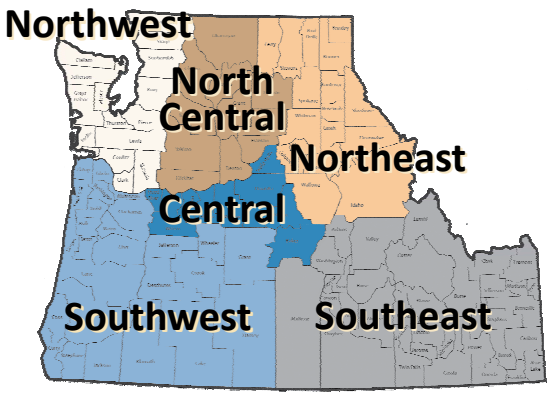
The soft white wheat class includes the subclasses of white club wheat and western white wheat. White club wheat has very weak gluten characteristics. Western white wheat is a blend of the white club wheat subclass and soft white wheat. The amount of white club wheat in western white wheat ranges from 10 to 90 percent. The minimum percentage of white club wheat in western white wheat is 10 percent and any higher amounts are contract specifications that are negotiated between buyer and seller (typically 10-30%).

Photo courtesy of Shaver Transportation Co.

Soft White and White Club Wheat Summary

	Soft White		White Club	
	2018	3 yr av	2018	3 yr av
Test Weight (lb/bu)	61.8	60.4	61.2	59.8
Hectoliter Weight (kg/hl)	81.2	79.5	80.5	78.7
Grade	1SWH	1SWH	1WHCB	1WHCB
Dockage (%)	0.4	0.6	0.5	0.7
Wheat Moisture (%)	8.6	9.2	8.1	8.6
Wheat Protein (%, 12% mb)	9.3	10.2	9.	10.5
Wheat Ash (%, 14% mb)	1.36	1.33	1.29	1.28
1000 Kernel Weight (g, 14% mb)	35.7	34.3	32.8	30.6
Wheat Falling Number (seconds, 14% mb)	315	335	316	337
Flour Extraction (%)	73.7	74.4	76.9	74.0
Flour Ash (%, 14% mb)	0.44	0.43	0.42	0.41
Flour Wet Gluten (%, 14% mb)	20.4	23.7	18.4	21.6
Farinograph: Absorption (%, 14% mb)	51.2	53.1	49.9	52.1
Peak Time (minutes)	2.1	2.4	1.5	1.7
Stability Time (minutes)	3.0	3.3	1.4	1.3
Alveograph: L (mm)	99	93	76	66
W (10^{-4} joules)	74	101	31	49
Production (mmt)	6.04	5.22	0.37	0.36

Production Zones



2018 Soft White and White Club Wheat Production
by production zone

Production Zone	Million Metric Tons (mmt)	Million Bushels
North Central	1.90	69.9
Northeast	1.78	65.5
Central	1.27	46.6
Southeast	0.69	25.5
Southwest	0.36	13.3
Northwest	0.04	1.0
Total	6.04	221.8

Wheat production estimates from Washington Grain Commission.

Photo courtesy of Idaho Wheat Commission

Weather

The Pacific Northwest (PNW) had good growing conditions for the 2018 soft white wheat (SW) crop. There was adequate soil moisture at planting, and most of the area received adequate rainfall during winter and spring. Late spring was generally warm and dry, while wheat harvest was dry. Yields were higher in all three states. USDA estimates total 2018 PNW SW production at 6.04 million metric tons (MMT), up from 2017's 5.64 MMT. Of that, white club (WC) is estimated to account for 373,000 metric tons (MT).

Wheat Samples

At harvest, wheat samples were collected from a number of sources, including state and private grain inspection agencies and commercial wheat handling operations throughout the Pacific Northwest. Sample collection was based on wheat production in each location. For the 2018 harvest, Wheat Marketing Center (WMC) received and tested 473 soft white wheat and 128 white club wheat samples from Idaho, Oregon, and Washington. Federal Grain Inspection Service (FGIS) graded and ran wheat protein on each sample. WMC conducted wheat, flour, Solvent Retention Capacity (SRC), dough, and finished product tests on composites based on production zones and protein levels.

The top soft white varieties planted in Washington were Otto, Curiosity CL+, SY Ovation, and UI Magic; in Oregon UI Magic; and in Idaho SY Ovation for soft white winter and UI Stone for soft white spring. Bruehl was the top white club variety planted in Washington.

Wheat Quality

Production Zone	Wheat Protein Range 12% mb %	Grade	Test Weight lb/bu	Dockage %	Whole Kernel Moisture %	Wheat Falling Number 14% mb seconds	Wheat Ash 14% mb %	Thousand Kernel Weight 14% mb g	SKCS Kernel Hardness Index	Whole Meal Wet Gluten 14% mb %
North Central	<8.5	1SWH	61.3	0.3	8.0	297	1.27	34.0	26	15.9
Soft White	8.5-9.4	1SWH	61.8	0.3	8.3	303	1.24	34.3	27	20.6
Wheat Estimated	9.5-10.4	1SWH	62.2	0.3	8.3	315	1.26	35.1	29	24.0
Production	10.5-12.0	1SWH	61.2	0.5	8.2	345	1.35	34.2	27	28.4
1.66 MMT	**2018 Average**	**1SWH**	**61.7**	**0.3**	**8.2**	**308**	**1.26**	**34.4**	**27**	**20.8**
	2017 Average	1SWH	61.0	0.4	8.6	343	1.28	34.2	29	20.7
	3 Year Average	1SWH	60.5	0.5	8.9	341	1.29	33.0	32	22.8
Northeast	<8.5	1SWH	62.2	1.3	8.8	312	1.37	38.2	26	15.1
Soft White	8.5-9.4	1SWH	62.5	0.3	8.6	319	1.38	37.3	29	19.3
Wheat Estimated	9.5-10.4	1SWH	62.6	0.4	8.9	330	1.37	35.1	28	21.1
Production	10.5-12.0	1SWH	62.8	0.2	8.9	359	1.42	34.7	29	23.8
1.70 MMT	**2018 Average**	**1SWH**	**62.5**	**0.5**	**8.7**	**322**	**1.38**	**36.8**	**28**	**19.3**
	2017 Average	1SWH	62.0	0.5	8.4	345	1.33	35.7	30	20.5
	3 Year Average	1SWH	60.9	0.6	8.9	337	1.33	34.5	30	23.0
Central	<8.5	1SWH	61.0	0.7	8.8	318	1.34	35.6	23	15.9
Soft White	8.5-9.4	1SWH	61.2	0.4	8.4	323	1.36	35.1	26	21.2
Wheat Estimated	9.5-10.4	1SWH	61.1	0.6	8.5	321	1.32	34.1	26	23.9
Production	10.5-12.0	1SWH	60.1	0.7	8.3	350	1.40	32.1	28	27.9
1.22 MMT	>12.0	2SWH	59.8	0.4	7.8	384	1.38	29.4	30	35.5
	2018 Average	**1SWH**	**60.9**	**0.5**	**8.5**	**330**	**1.36**	**34.2**	**26**	**22.3**
	2017 Average	1SWH	60.4	0.5	8.8	325	1.28	34.7	32	20.6
	3 Year Average	2SWH	59.9	0.6	9.0	334	1.27	32.6	33	23.2
Southeast	<8.5	1SWH	61.5	0.3	8.6	310	1.49	37.1	24	15.1
Soft White	8.5-9.4	1SWH	62.1	0.3	9.3	314	1.46	40.2	26	18.7
Wheat Estimated	9.5-10.4	1SWH	61.3	0.4	9.2	334	1.52	40.2	27	20.8
Production	10.5-12.0	1SWH	61.7	0.4	9.2	362	1.59	33.7	35	23.1
0.69 MMT	**2018 Average**	**1SWH**	**61.5**	**0.4**	**9.1**	**337**	**1.53**	**38.0**	**29**	**20.5**
	2017 Average	1SWH	60.8	0.6	9.7	336	1.49	39.1	28	19.4
	3 Year Average	1SWH	61.0	0.6	10.0	332	1.49	38.1	31	19.5
Southwest	<8.5	1SWH	62.1	0.4	10.8	326	1.36	41.2	21	16.8
Soft White	8.5-9.4	1SWH	62.7	0.4	10.7	319	1.47	41.5	23	20.1
Wheat Estimated	**2018 Average**	**1SWH**	**62.3**	**0.4**	**10.8**	**323**	**1.41**	**41.3**	**22**	**18.1**
Production	2017 Average	2SWH	59.6	0.6	10.3	354	1.32	37.2	25	16.5
0.36 MMT	3 Year Average	2SWH	59.7	0.7	10.7	339	1.38	37.1	25	18.5
White Club	**2018 Average**	**1WHCB**	**61.2**	**0.5**	**8.1**	**316**	**1.29**	**32.8**	**28**	**15.8**
Wheat	2017 Average	1WHCB	60.2	0.5	8.3	348	1.27	32.5	31	17.1
Estimated	3 Year Average	1WHCB	59.8	0.7	8.6	337	1.28	30.6	34	18.7
Production										
0.37 MMT										

Flour Quality

Production Zone	Wheat Protein Range 12% mb %	Flour Yield %	Flour Ash 14% mb %	Flour Protein 14% mb %	Flour Color L*	Flour Color a*	Flour Color b*	Flour Wet Gluten 14% mb %	Flour Falling Number 14% mb seconds	Amylograph Peak Viscosity BU
North Central	<8.5	73.5	0.41	6.9	92.3	-2.4	8.9	12.2	354	435
Soft White	8.5-9.4	73.5	0.40	7.7	92.1	-2.3	8.7	18.9	344	435
Wheat Estimated	9.5-10.4	73.8	0.41	8.6	91.7	-2.3	8.8	24.8	358	483
Production	10.5-12.0	72.1	0.47	10.1	92.9	-2.1	8.7	27.5	377	528
1.66 MMT	**2018 Average**	**73.4**	**0.41**	**7.9**	**92.1**	**-2.3**	**8.8**	**19.2**	**354**	**456**
	2017 Average	73.6	0.39	8.7	93.1	-2.1	8.3	21.6	362	510
	3 Year Average	74.1	0.41	9.2	93.0	-2.1	7.7	23.4	367	496
Northeast	<8.5	73.5	0.48	7.2	92.9	-2.3	8.9	16.0	361	470
Soft White	8.5-9.4	74.4	0.40	7.7	92.7	-2.2	8.8	21.1	364	480
Wheat Estimated	9.5-10.4	74.6	0.47	8.4	92.6	-2.1	8.4	22.4	373	511
Production	10.5-12.0	74.3	0.45	9.5	92.5	-1.9	8.0	30.4	372	666
1.70 MMT	**2018 Average**	**74.3**	**0.43**	**7.9**	**92.7**	**-2.2**	**8.7**	**21.0**	**366**	**494**
	2017 Average	74.4	0.38	8.3	92.7	-2.0	7.9	19.7	373	524
	3 Year Average	74.8	0.42	9.0	92.6	-2.1	7.4	22.7	367	485
Central	<8.5	73.7	0.46	6.9	92.9	-2.3	8.8	14.6	360	464
Soft White	8.5-9.4	73.0	0.44	7.7	92.8	-2.2	8.6	20.9	339	518
Wheat Estimated	9.5-10.4	73.0	0.50	8.8	92.9	-2.1	8.3	22.9	357	540
Production	10.5-12.0	72.2	0.51	9.8	92.5	-2.0	8.2	28.8	375	546
1.22 MMT	>12.0	69.0	0.38	11.9	92.2	-1.9	7.8	42.3	432	610
	2018 Average	**72.8**	**0.46**	**8.3**	**92.7**	**-2.2**	**8.5**	**22.3**	**359**	**518**
	2017 Average	73.9	0.37	8.5	92.7	-2.1	8.4	22.3	351	511
	3 Year Average	74.0	0.41	9.1	92.8	-2.2	7.7	24.5	365	527
Southeast	<8.5	74.1	0.50	6.7	92.1	-2.0	7.8	13.7	341	516
Soft White	8.5-9.4	75.6	0.48	7.8	92.9	-2.0	7.9	20.2	335	470
Wheat Estimated	9.5-10.4	74.7	0.49	8.5	92.9	-2.0	8.2	22.9	334	475
Production	10.5-12.0	73.7	0.51	9.6	92.7	-2.1	8.7	25.3	373	546
0.69 MMT	**2018 Average**	**74.5**	**0.49**	**8.5**	**92.7**	**-2.0**	**8.3**	**22.2**	**346**	**499**
	2017 Average	74.4	0.45	8.3	92.7	-1.9	7.4	19.2	378	433
	3 Year Average	75.9	0.47	8.6	93.1	-2.1	7.3	23.0	367	438
Southwest	<8.5	74.8	0.52	6.8	91.8	-2.4	9.3	11.5	339	479
Soft White	8.5-9.4	73.9	0.50	7.7	91.7	-1.9	7.7	15.7	345	529
Wheat Estimated	**2018 Average**	**74.4**	**0.51**	**7.1**	**91.8**	**-2.2**	**8.7**	**13.1**	**341**	**499**
Production	2017 Average	74.1	0.45	7.2	92.4	-2.1	8.3	16.7	375	463
0.36 MMT	3 Year Average	75.2	0.45	7.8	92.9	-2.1	7.5	18.8	353	516
White Club	**2018 Average**	**76.9**	**0.42**	**8.0**	**92.3**	**-2.1**	**8.9**	**18.4**	**315**	**415**
Wheat	2017 Average	74.0	0.39	8.0	92.1	-2.0	7.9	20.8	388	546
Estimated	3 Year Average	74.0	0.41	9.0	92.0	-2.0	7.4	21.6	377	497
Production 0.37 MMT										

Solvent Retention Capacity (SRC)

Production Zone	Wheat Protein Range 12% mb	Water 14% mb	50% Sucrose 14% mb	5% Lactic Acid 14% mb	5% Sodium Carbonate 14% mb	Gluten Performance Index
	%	%	%	%	%	
North Central	<8.5	56	78	112	79	0.71
Soft White	8.5-9.4	60	80	115	76	0.74
Wheat Estimated	9.5-10.4	53	77	118	74	0.78
Production	10.5-12.0	61	80	132	78	0.83
1.66MMT	**2018 Average**	**57**	**79**	**116**	**77**	**0.75**
	2017 Average	52	91	104	74	0.63
	3 Year Average	58	97	116	88	0.63
Northeast	<8.5	59	77	96	75	0.63
Soft White	8.5-9.4	63	73	100	76	0.67
Wheat Estimated	9.5-10.4	61	72	106	77	0.71
Production	10.5-12.0	59	70	107	77	0.73
1.70 MMT	**2018 Average**	**62**	**73**	**101**	**76**	**0.68**
	2017 Average	51	87	92	73	0.57
	3 Year Average	55	89	106	88	0.60
Central	<8.5	62	77	99	78	0.64
Soft White	8.5-9.4	62	73	105	78	0.70
Wheat Estimated	9.5-10.4	60	74	110	79	0.72
Production	10.5-12.0	60	72	112	79	0.74
1.22 MMT	>12.0	59	80	110	80	0.69
	2018 Average	**61**	**74**	**106**	**78**	**0.69**
	2017 Average	52	89	90	72	0.56
	3 Year Average	55	97	102	82	0.57
Southeast	<8.5	58	84	85	77	0.53
Soft White	8.5-9.4	58	84	86	78	0.53
Wheat Estimated	9.5-10.4	58	84	84	75	0.53
Production	10.5-12.0	59	84	88	78	0.54
0.69 MMT	**2018 Average**	**58**	**84**	**86**	**77**	**0.53**
	2017 Average	51	87	74	69	0.48
	3 Year Average	55	94	84	79	0.48
Southwest	<8.5	61	89	95	83	0.56
Soft White	8.5-9.4	60	87	112	80	0.67
Wheat Estimated	**2018 Average**	**60**	**88**	**102**	**82**	**0.60**
Production	2017 Average	54	89	96	75	0.58
0.36 MMT	3 Year Average	56	91	106	86	0.60
White Club	**2018 Average**	**52**	**94**	**77**	**76**	**0.46**
Wheat	2017 Average	54	86	72	65	0.48
Estimated	3 Year Average	52	94	80	71	0.48
Production						
0.37 MMT						

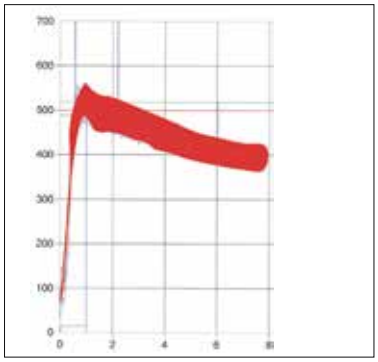
Physical Dough Properties

Production Zone	Wheat Protein Range 12% mb %	Farinograph Absorption 14%mb %	Farinograph Peak Time minutes	Farinograph Stability minutes	Alveograph P mm	Alveograph L mm	Alveograph P/L	Alveograph W 10^{-4} joules
North Central	<8.5	50.5	1.2	2.8	36	76	0.47	82
Soft White	8.5-9.4	50.7	2.7	4.4	33	107	0.31	88
Wheat Estimated	9.5-10.4	51.7	3.3	4.0	33	118	0.28	93
Production	10.5-12.0	52.8	3.3	4.1	38	156	0.24	133
1.66 MMT	**2018 Average**	**51.1**	**2.5**	**3.8**	**34**	**105**	**0.34**	**92**
	2017 Average	51.7	2.4	4.1	49	81	0.64	117
	3 Year Average	53.6	3.1	4.3	49	105	0.53	139
Northeast	<8.5	51.2	1.2	1.9	32	68	0.47	57
Soft White	8.5-9.4	51.7	2.0	2.8	34	74	0.46	65
Wheat Estimated	9.5-10.4	51.8	2.0	2.7	30	117	0.26	73
Production	10.5-12.0	52.8	2.2	2.5	32	125	0.26	82
1.70 MMT	**2018 Average**	**51.7**	**1.9**	**2.6**	**33**	**86**	**0.40**	**66**
	2017 Average	51.3	1.6	3.0	40	82	0.50	89
	3 Year Average	52.9	2.5	3.3	37	96	0.41	97
Central	<8.5	49.3	1.0	2.3	29	101	0.29	69
Soft White	8.5-9.4	49.9	2.4	3.6	33	93	0.35	82
Wheat Estimated	9.5-10.4	50.5	2.3	2.9	29	147	0.20	89
Production	10.5-12.0	52.1	2.7	2.6	29	144	0.20	85
1.22 MMT	>12.0	53.5	2.4	3.1	25	129	0.19	65
	2018 Average	**50.4**	**2.1**	**3.0**	**30**	**112**	**0.28**	**79**
	2017 Average	51.6	1.5	2.4	40	82	0.55	85
	3 Year Average	52.7	2.2	2.6	38	91	0.47	89
Southeast	<8.5	50.7	1.0	1.6	28	102	0.27	57
Soft White	8.5-9.4	51.4	2.2	2.4	27	96	0.28	49
Wheat Estimated	9.5-10.4	51.7	1.7	2.0	27	99	0.27	49
Production	10.5-12.0	53.1	2.0	2.3	27	84	0.32	43
0.69 MMT	**2018 Average**	**52.0**	**1.8**	**2.1**	**27**	**95**	**0.29**	**48**
	2017 Average	52.3	1.7	1.9	35	70	0.53	61
	3 Year Average	53.5	1.8	2.2	35	71	0.52	60
Southwest	<8.5	50.4	1.0	2.2	30	82	0.37	59
Soft White	8.5-9.4	50.6	2.7	3.8	32	100	0.32	80
Wheat Estimated	**2018 Average**	**50.5**	**1.7**	**2.8**	**31**	**89**	**0.35**	**67**
Production	2017 Average	50.6	1.2	2.1	41	64	0.64	80
0.36 MMT	3 Year Average	51.9	1.8	3.0	41	80	0.52	90
White Club	**2018 Average**	**49.9**	**1.5**	**1.4**	**21**	**76**	**0.28**	**31**
Wheat	2017 Average	49.9	1.5	1.2	31	54	0.57	49
Estimated	3 Year Average	52.1	1.7	1.3	29	66	0.46	49
Production								
0.37 MMT								

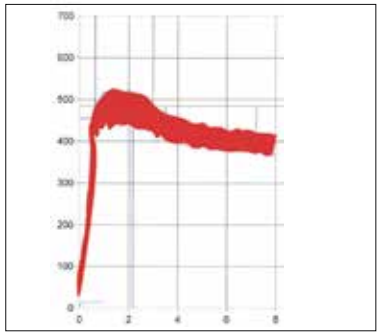
Finished Products

Production Zone	Wheat Protein Range	Sugar Snap Cookie			Sponge Cake		Chinese Southern Type Steamed Bread	
	12% mb	Spread	Spread Factor	Top Grain Score	Volume	Total Score	Specific Volume	Total Score Control is 70
	%	cm	width/height		cc		cc/g	
North Central	<8.5	9.4	10.8	6.0	1138	51	1.92	63
Soft White	8.5-9.4	9.2	9.2	5.5	1121	52	1.99	65
Wheat Estimated	9.5-10.4	9.1	9.1	4.5	1056	43	2.07	65
Production	10.5-12.0	8.7	8.3	4.5	1023	34	2.13	65
1.66 MMT	**2018 Average**	**9.2**	**9.6**	**5.3**	**1101**	**48**	**2.00**	**64**
	2017 Average	8.9	10.1	4.8	1158	49	2.05	68
	3 Year Average	8.6	9.4	2.5	1189	44	2.07	69
Northeast	<8.5	9.4	10.4	6.5	1173	57	1.89	64
Soft White	8.5-9.4	8.9	9.4	4.5	1150	49	1.94	63
Wheat Estimated	9.5-10.4	9.2	9.5	4.5	1110	55	2.01	67
Production	10.5-12.0	8.9	8.9	3.5	1077	46	2.08	67
1.70 MMT	**2018 Average**	**9.1**	**9.6**	**4.8**	**1140**	**52**	**1.96**	**64**
	2017 Average	9.0	10.4	4.6	1158	47	2.17	67
	3 Year Average	8.6	9.4	2.8	1200	45	2.16	67
Central	<8.5	9.3	9.8	6.5	1144	57	1.99	63
Soft White	8.5-9.4	9.1	9.3	4.5	1151	57	1.95	65
Wheat Estimated	9.5-10.4	9.1	9.6	5.0	1063	40	2.01	65
Production	10.5-12.0	8.9	8.9	6.0	1057	46	2.25	65
1.22 MMT	>12.0	8.5	7.9	3.0	982	29	2.26	67
	2018 Average	**9.1**	**9.3**	**5.2**	**1112**	**51**	**2.04**	**65**
	2017 Average	8.8	10.3	5.3	1133	48	2.16	68
	3 Year Average	8.6	9.5	3.1	1205	47	2.19	67
Southeast	<8.5	9.4	11.1	7.0	1125	55	1.91	65
Soft White	8.5-9.4	9.5	9.2	4.5	1070	51	2.00	65
Wheat Estimated	9.5-10.4	9.3	9.3	3.5	1132	59	1.99	65
Production	10.5-12.0	9.3	8.8	4.0	1090	51	2.13	66
0.69 MMT	**2018 Average**	**9.3**	**9.4**	**4.2**	**1111**	**55**	**2.02**	**65**
	2017 Average	9.0	10.9	4.9	1150	52	2.06	66
	3 Year Average	8.8	9.7	3.3	1213	51	2.08	66
Southwest	<8.5	9.2	9.2	4.5	1180	57	1.94	66
Soft White	8.5-9.4	9.3	9.3	4.0	1065	47	1.83	62
Wheat Estimated	**2018 Average**	**9.2**	**9.2**	**4.3**	**1134**	**53**	**1.90**	**64**
Production	2017 Average	8.8	10.0	5.0	1189	54	1.91	65
0.36 MMT	3 Year Average	8.7	9.2	4.1	1221	50	2.06	67
White Club	**2018 Average**	**9.5**	**11.2**	**5.5**	**1115**	**53**	**2.20**	**62**
Wheat	2017 Average	9.5	12.2	7.5	1176	50	2.10	66
Estimated	3 Year Average	8.9	10.8	4.5	1225	46	2.20	66
Production 0.37 MMT								

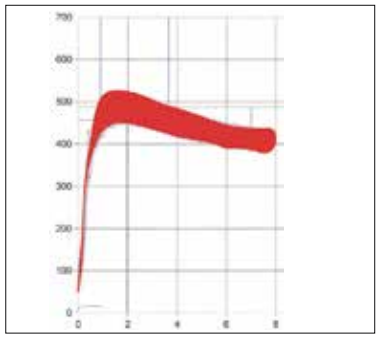
Farinograph



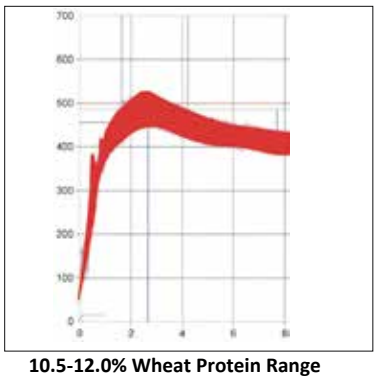
<8.5% Wheat Protein Range



8.5-9.4% Wheat Protein Range



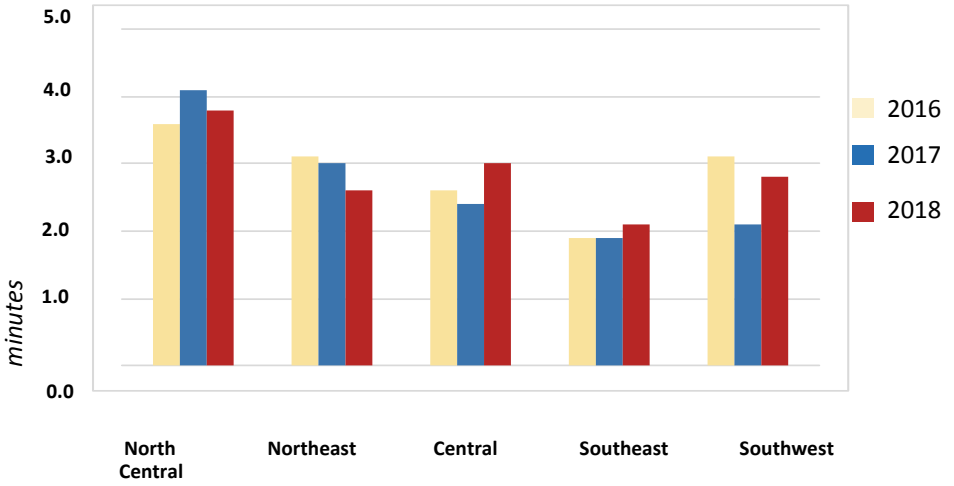
9.5-10.4% Wheat Protein Range



10.5-12.0% Wheat Protein Range

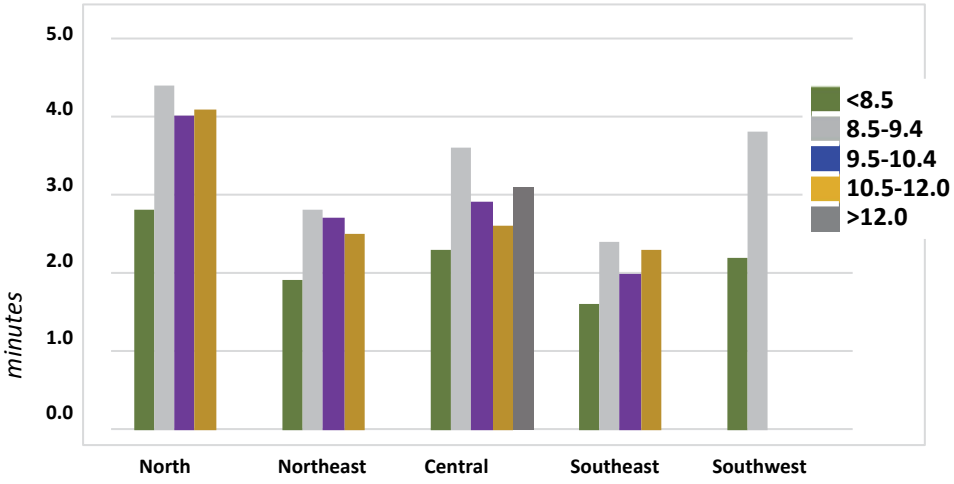
PNW Soft White Wheat Farinograph Stability

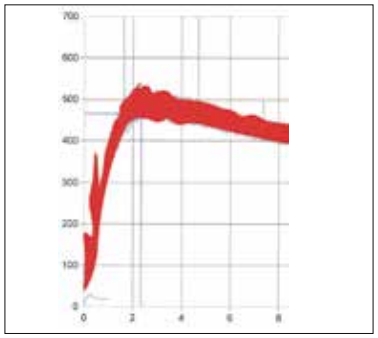
Yearly Average by Production Zone



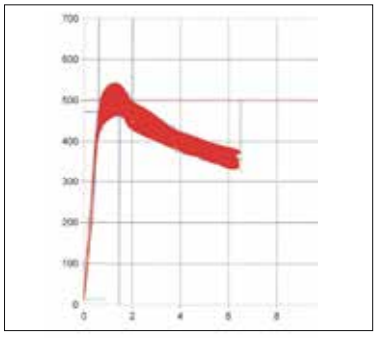
PNW Soft White Wheat Farinograph Stability

by Protein Content and Production Zone, 2018



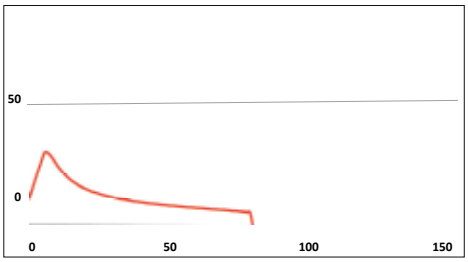


>12.0% Wheat Protein Range

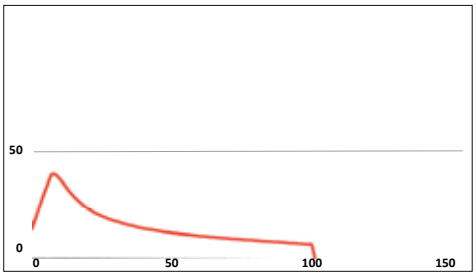


White Club Wheat

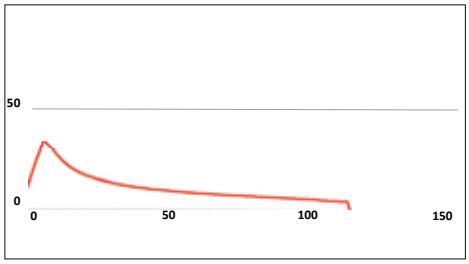
Alveograph



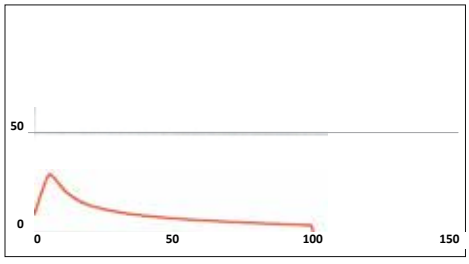
<8.5% Wheat Protein Range



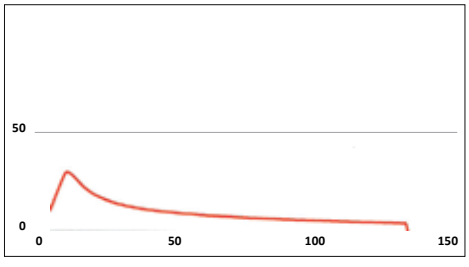
8.5-9.4% Wheat Protein Range



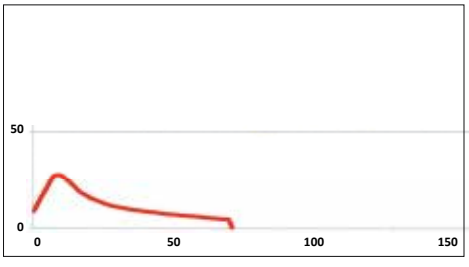
9.5-10.4% Wheat Protein Range



10.5-12.0% Wheat Protein Range



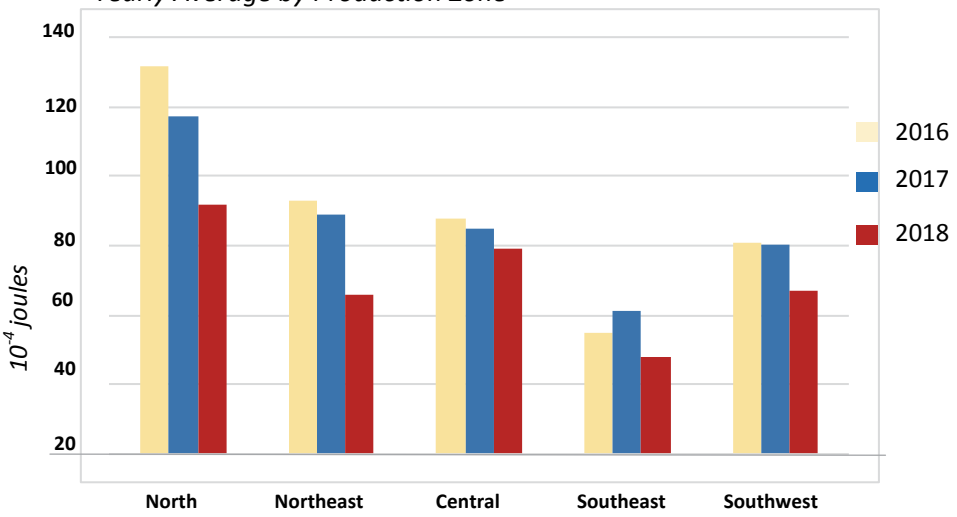
>12.0% Wheat Protein Range



White Club Wheat

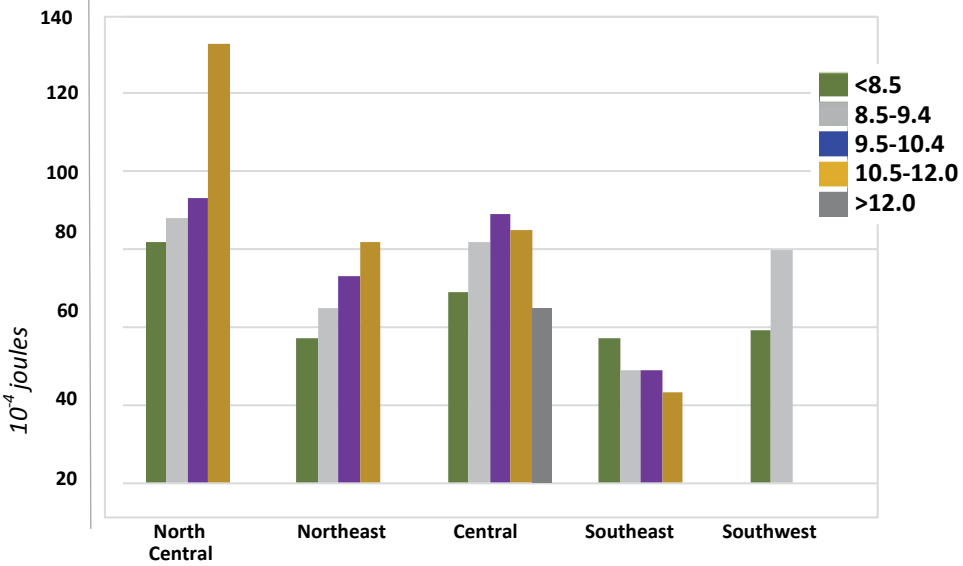
PNW Soft White Wheat Alveograph "W" Value

Yearly Average by Production Zone

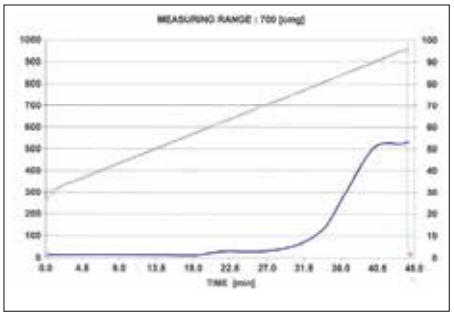


PNW Soft White Wheat Alveograph "W" Value

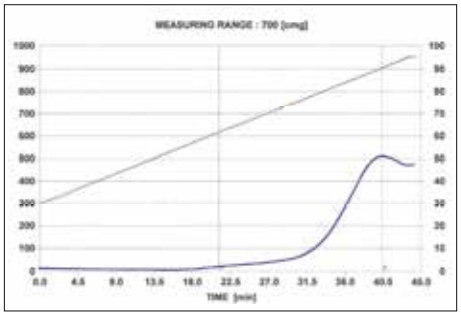
by Protein Content and Production Zone, 2018



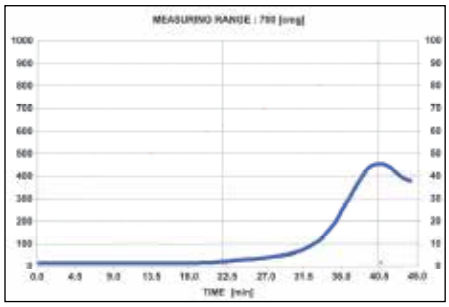
Amylograph



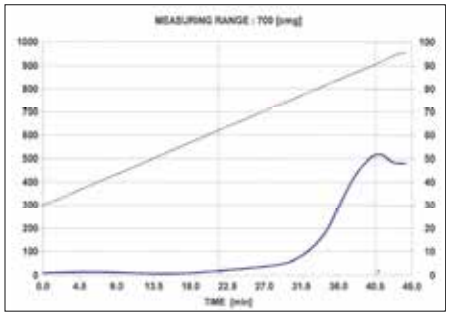
North Central Production Zone



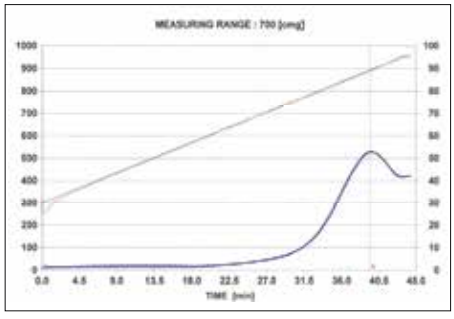
Northeast Production Zone



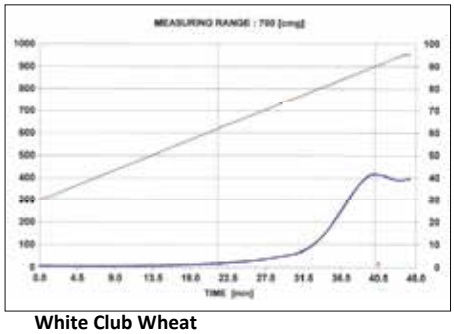
Central Production Zone



Southeast Production Zone



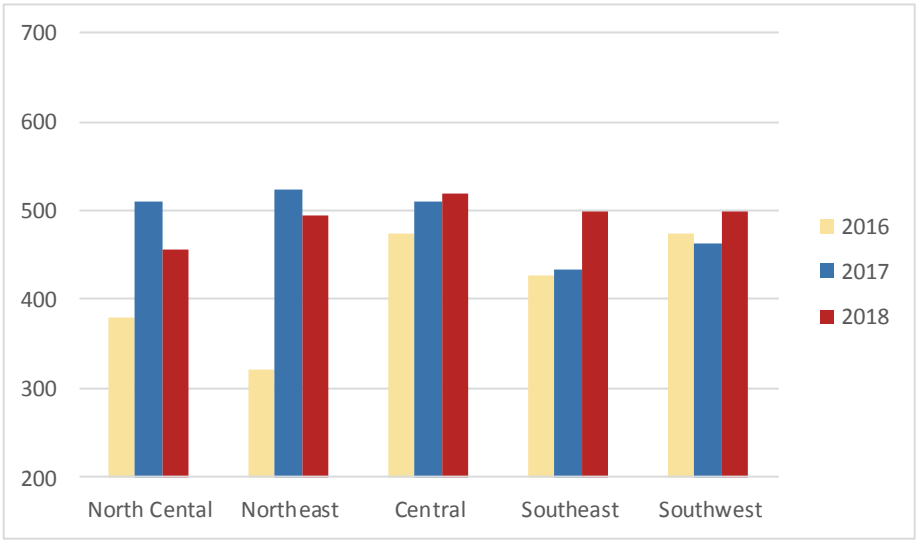
Southwest Production Zone



White Club Wheat

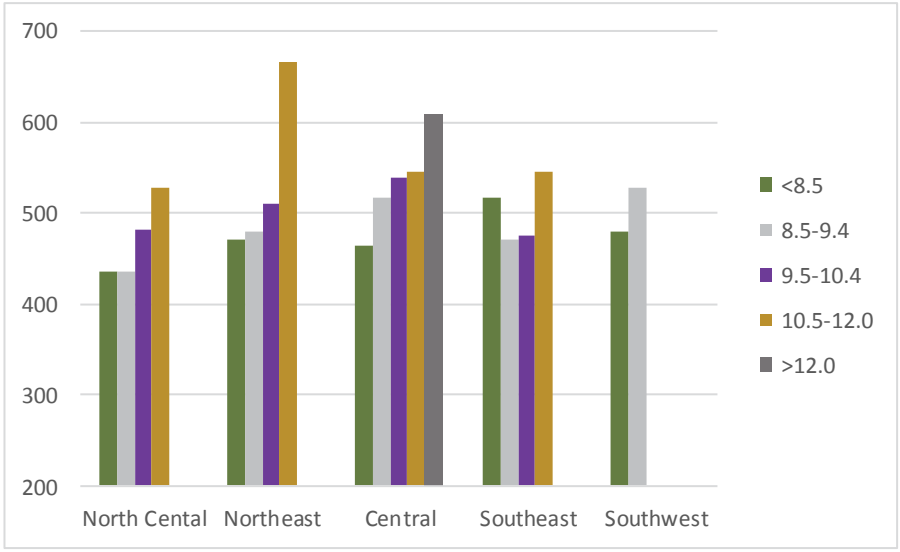
PNW Soft White Wheat Amylograph Peak Viscosity

Yearly Average by Production Zone



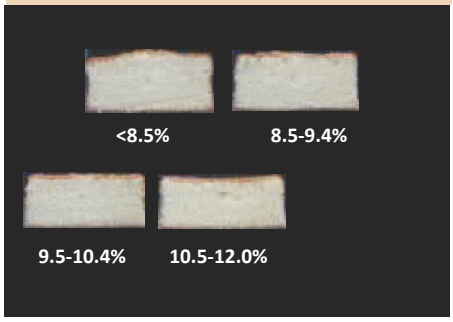
PNW Soft White Wheat Amylograph Peak Viscosity

by Protein Content and Production Zone, 2018

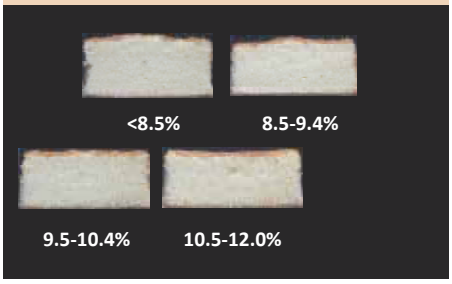


Sponge Cake

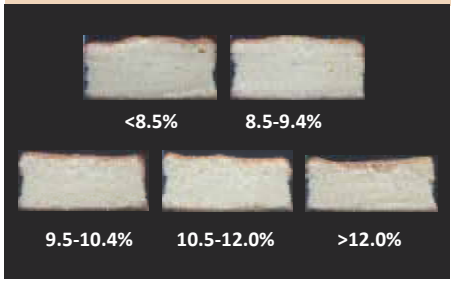
North Central Production Zone



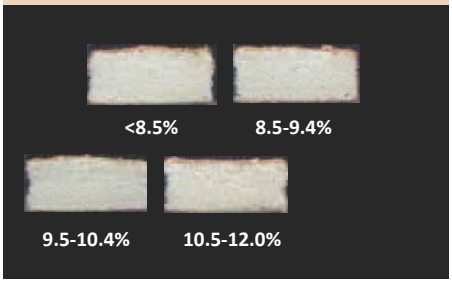
Northeast Production Zone



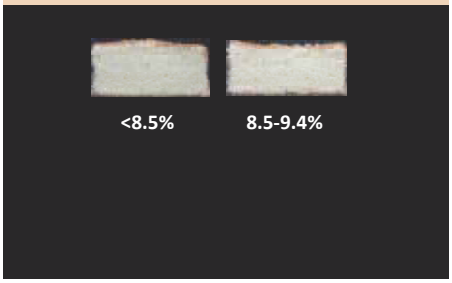
Central Production Zone



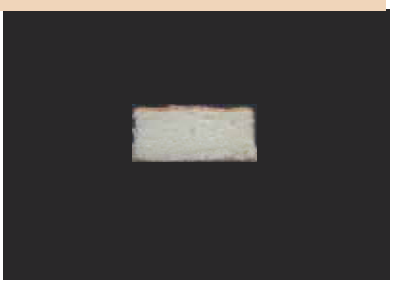
Southeast Production Zone



Southwest Production Zone

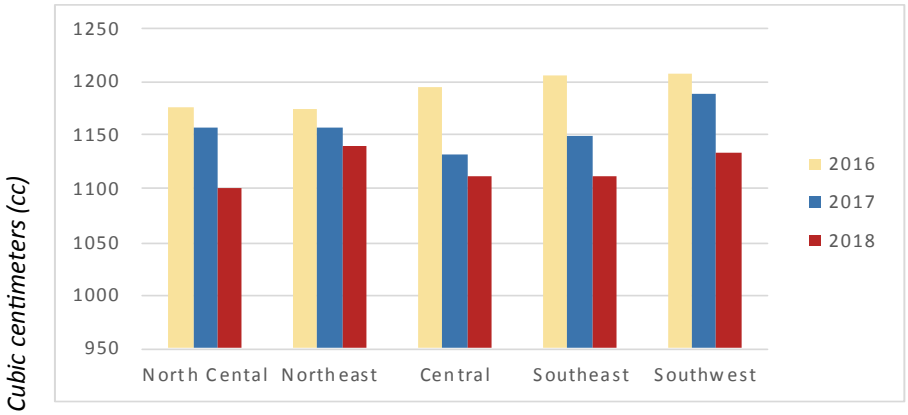


White Club Wheat



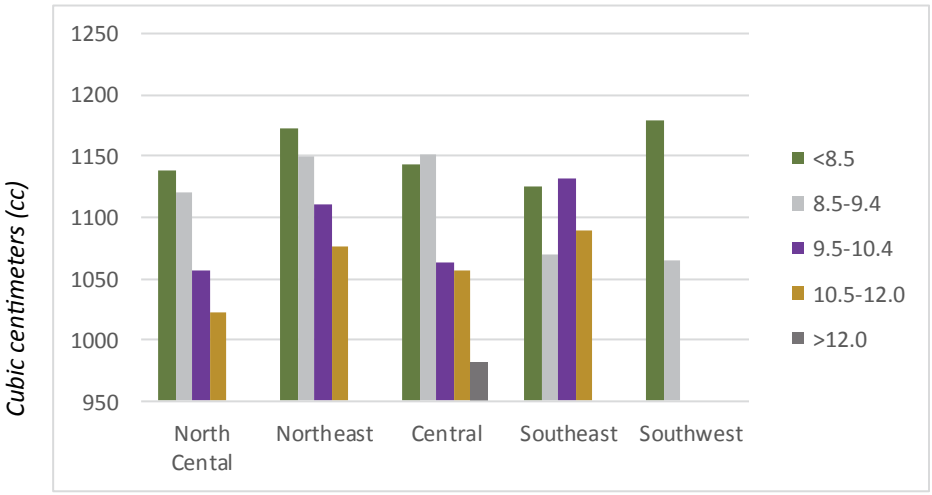
PNW Soft White Wheat Sponge Cake Volume

Yearly Average by Production Zone



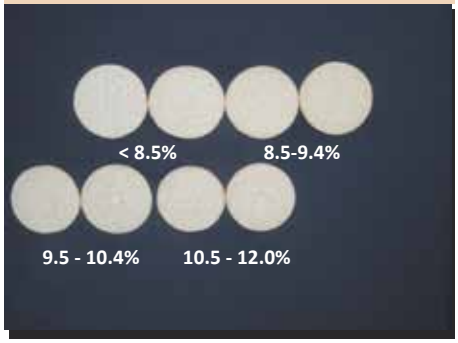
PNW Soft White Wheat Sponge Cake Volume

by Protein Content and Production Zone, 2018

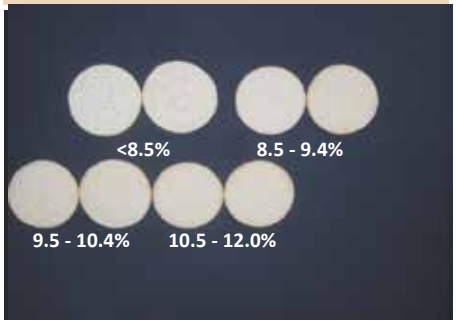


Sugar Snap Cookie

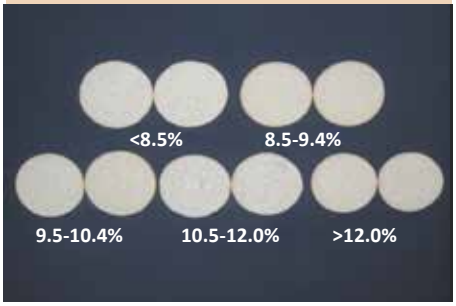
North Central Production Zone



Northeast Production Zone

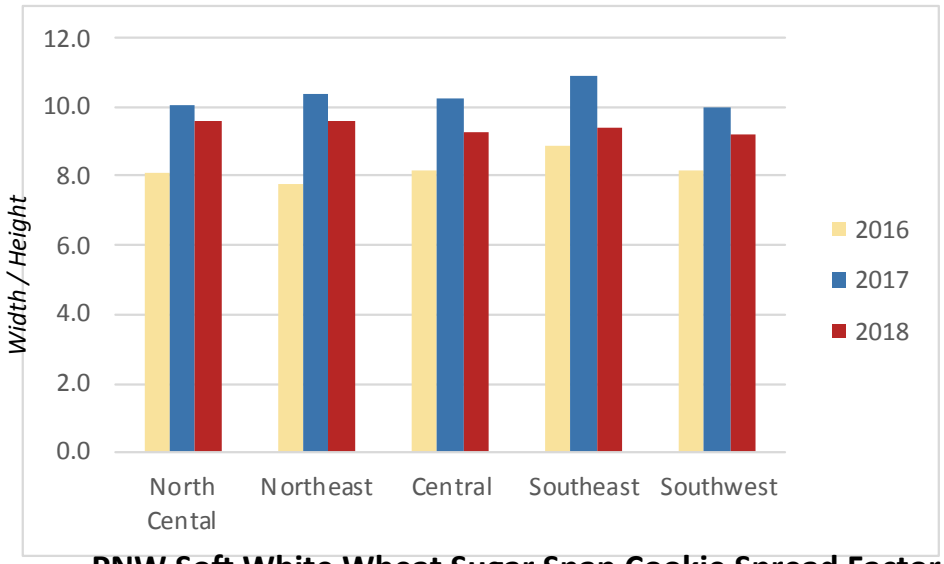


Central Production Zone



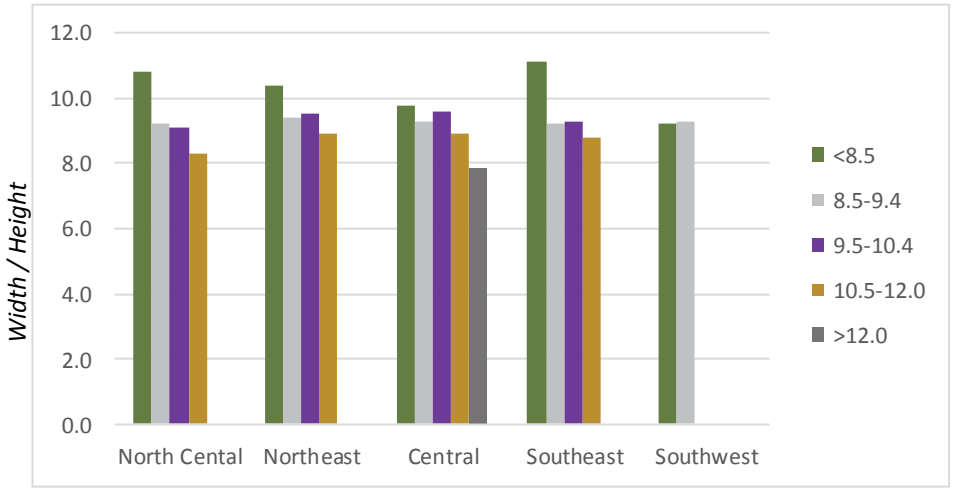
PNW Soft White Wheat Sugar Snap Cookie Spread Factor

Yearly Average by Production Zone

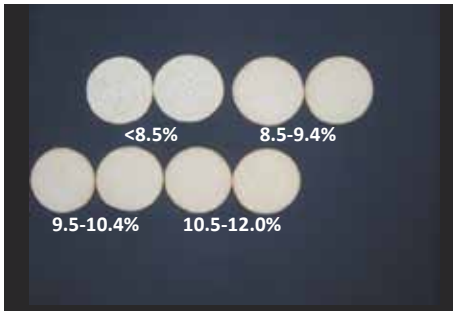


PNW Soft White Wheat Sugar Snap Cookie Spread Factor

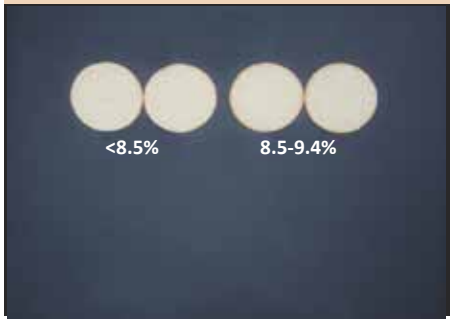
By Production Zone and Protein Content, 2018



Southeast Production Zone



Southwest Production Zone



White Club Wheat

Pictures and bar graphs for Chinese Southern-type steamed bread are available upon request from WMC

Summary

These results were derived from composite samples from the Pacific Northwest soft white wheat and white club wheat harvest. Soft white wheat composites were prepared by production zone and protein levels, and all white club wheat samples were made into one composite. These composite samples were analyzed for wheat quality, flour quality, solvent retention capacity, physical dough properties, and finished product characteristics. Harvest information is summarized as follows:

Wheat Quality

Average test weights were over 60 pounds per bushel (lbs/bu) at most protein levels in most production zones. Dockage averages were the same or less than last year and the three-year averages in all production zones. Wheat moisture averages were less than 10 percent in the major wheat producing zones of North Central, Northeast, Central, and Southeast. Average falling number values at most
protein levels in all production zones exceeded 300 seconds. Average wheat ash content was lower than last year in North Central zone, and higher in the other wheat producing zones. Thousand kernel weights were similar to last year in all production zones. SKCS kernel hardness index values were similar to last year in all production zones. Whole meal wet gluten averages were lower than last year in Northeast, and higher than last year in other production zones .

Flour Quality

Average flour yields were similar to last year in all production zones. Average flour ash contents were higher than last year in all production zones. Flour color averages were similar to last year in all production zones. Flour quality parameters indicated higher wet gluten content in samples with higher protein content. Flour falling number values were greater than 300 seconds in all production zones for all protein levels. Amylograph peak viscosity averages were lower than last year in North Central and Northeast production zones, and higher in other production zones.

Solvent Retention Capacity (SRC)

Water SRC average values were higher than last year in all production zones. Sucrose SRC average values were lower than last year in all production zones. Lactic acid and sodium carbonate SRC averages were higher than last year. Gluten performance index values were higher than last year in all production zones.

Physical Dough Properties

Physical dough property tests indicated generally lower water absorption values and generally weaker gluten strength, as measured by the Farinograph, in samples with lower protein content in each production zone. Longer dough extensibility, as shown by Alveograph L value, was observed in samples with higher protein content in North Central, Northeast, Central, and Southwest production zones. White club wheat had weaker gluten strength than soft white wheat samples, as indicated by much lower Alveograph W values.

Finished Products

In general, lower protein soft white wheat samples, within each production zone, made better sugar snap cookies as measured by spread factor and top grain scores. Average sponge cake volumes were smaller than last year and the three-year averages in all production zones. However, sponge cake total score averages were similar to last year and greater than the three-year averages in all production zones. Steamed bread-specific volumes generally increased with increasing protein content within each production zone. Steamed bread-specific volume averages were lower than last year and the three-year average in all production zones. The white club wheat composite sample followed the same trend as soft white wheat. In summary, the overall quality of the crop can be described as low to very low gluten strength with excellent potential to produce soft wheat flour products.

Wheat Marketing Center thanks the many individuals and organizations that provided samples for the 2018 Annual Pacific Northwest Crop Quality Survey, and recognizes with gratitude the project's funding partners:

Idaho Wheat Commission

www.idahowheat.org

OWC Oregon Wheat Commission

www.owgl.org

Washington Grain Commission

www.wagrains.org

U.S. Wheat Associates

www.uswheat.org

Wheat Marketing Center

www.wmcinc.org
1200 NW Naito Parkway, Suite 230
Portland, Oregon 97209 USA

Sherman County, Oregon, Photo courtesy of Logan Padget