2022 Small Grain Variety Trial Report

University of California
Agriculture and Natural Resources
Research and Extension Center System

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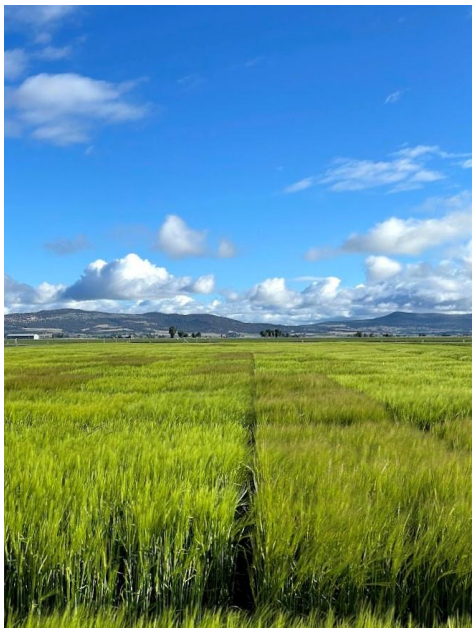
Introduction

This report summarizes grain yield and agronomic characteristics for public and private entries in IREC's 2022 small grain variety testing. Thanks to well water provided through Tulelake Irrigation District and a small well on-site, the 2022 IREC grain trials were fully irrigated. This project is a cooperative effort with Oregon State University's Cereal Variety Testing organized by Ryan Graebner and University of California Small Grain Breeding Programs. Research received funding support from the California Wheat Commission, private seed companies, and UC ANR. Trials conducted during the 2021-2022 growing season included: winter wheat, winter barley, spring hard wheat, spring soft wheat, and spring barley. Entries included released and experimental varieties adapted to Tulelake's high desert climate.



Grain yield and agronomic data was collected by IREC staff. Grain protein and test weights were generated in collaboration with Ryan Graebner, Oregon State University. Four-year average yield tables along with variety agronomic traits are summarized in this report. These tables can be viewed online along with other Northwest locations at: https://cropandsoil.oregonstate.edu/wheat/variety-trials/2022-oregon-wheat-and-barley-yield-trial-data

UC small grain variety trial summaries for multi-year and multi-trial data can be found at http://smallgrainselection.plantsciences.ucdavis.edu/.

2022 General Trial Information for all trials

Location:	Intermountain Research and Extension Center, Tulelake, CA
Soil Type:	Tulebasin mucky silty clay loam
Weed Control:	Rhomene MCPA @ 1 pt. /Acre; Detonate @ 2 fl oz./Acre; Express 0.5 oz./Acre
Plot size:	Winter Trials 75 ft^2
	Spring Trials 75ft^2
Seeding Rate:	100 lbs./Acre
Row Spacing:	6 Inches
Number of Reps:	4

Hard Winter Wheat Trial

Planting Date: 10/12/2021

Previous Crop: Fallow

Spring 2022 Soil Test N: 30.4 ppm (73 lbs. N/Acre)

Fertilizer: Season total applied Nitrogen was 161 lbs. N/Acre applied through the season. 21 lbs. N/A at planting (10/12/2021), 30 lbs. N/A early through late tillering (4/7/2022), 80lbs. N/A through stem elongation (5/13/2022), 30 lbs. N/A at flowering (6/24/2022) to raise protein in the seed.

Irrigation Quantity: Solid-set sprinklers 14.65 Acre inches (final irrigation 6/24/2022)

Harvest Date: 8/22/2022

Variety Highlights Only LCS Evina met the quality protein standard of 13% in 2022. This variety is an awnless hard red wheat and made protein in both 2021 and 2022 with 30 lbs. of nitrogen applied at flowering. The varieties with the highest 3-Year yield were WB4394, Millie, and LCS Jet. All had yields above 171 bu/ac for this period. LCS Evina was ranked near the bottom for average yield during this same time.

OSU Extension Cereals

2022 OREGON HARD WINTER WHEAT YIELD TRIALS
Tulelake (Irrigated)

UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources

3-Year averages include data from 2022, 2021, and 2019
This trial was a collaboration between the OSU Cereal Extension Program and the UC-Davis Intermountain Research and Extension Center

		2022 Yield		2-Year		3-Year		4-Year		Best Estimate*
		Yield		Yield		Yield		Yield		Yield
Variety	Class	bu/ac	Rank	bu/ac	Rank	bu/ac	Rank	bu/ac	Rank	bu/ac
LWH18-0122	HRW	176	2	171	3					**178 ± 15**
WB4394	HRW	172	3	176	1	177	1			**177 ± 12**
Millie	HWW	176	1	173	2	171	2			**171 ± 12**
Keldin	HRW	170	4							**170 ± 14**
OR2190064R	HRW	164	6							**166 ± 20**
LCS Jet	HRW	162	8	153	5	166	3			**166 ± 12**
LWH19-1103	HRW	163	7							**165 ± 20**
PN13201002-04	HRW	167	5	156	4					**163 ± 15**
OR2170052H	HWW	154	12	152	6					**159 ± 15**
Scorpio	HRW	156	10	145	10	157	4			**157 ± 12**
Irv	HWW	157	9	149	7	157	5			**157 ± 12**
LWH19-0192	HRW	148	14	148	8					**155 ± 15**
IDO2006	HWW	155	11	146	9					**154 ± 15**
LCS Rocket	HRW	137	19	141	12	152	6			**152 ± 12**
Snowmass 2.0	HWW	147	16	142	11					**150 ± 15**
LCS Evina	HRW	133	20	135	14	147	7			**147 ± 12**
OR2170199R	HRW	144	17							**145 ± 20**
OR2160065H	HWW	141	18	135	13	141	8			**141 ± 12**
WB4311	HRW	148	15							**141 ± 14**
WA8309	HRW	149	13	133	15					**141 ± 15**
	Average	156		151		158				**158**
	LSD (0.05)	15								
	CV (%)	6.9								

*Best linear unbiased estimators (BLUEs) are best estimators of variety performance relative to other varieties, based on up to four years of data.

2022 OREGON HARD WINTER WHEAT YIELD TRIALS
Tulelake (Irrigated)

OSU Extension Cereals

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Variety	Class	Quality*	Height in	Test Weight lbs/bu	Protein %	Heading Date	Lodging %
LWH18-0122	HRW		34.9	60.0	11.9	6/16	0.0
WB4394	HRW	A	43.3	63.5	10.9	6/19	16.3
Millie	HWW	MD	36.3	63.7	10.7	6/18	0.0
Keldin	HRW	D	36.6	63.2	11.2	6/18	31.3
OR2190064R	HRW		36.0	62.4	11.9	6/19	0.0
LCS Jet	HRW	A	37.2	61.2	11.2	6/19	0.0
LWH19-1103	HRW		36.8	62.0	10.9	6/18	52.5
PN13201002-04	HRW		42.4	61.9	11.0	6/21	31.3
OR2170052H	HWW		38.1	60.0	10.4	6/23	1.3
Scorpio	HRW	MD	34.5	60.6	11.0	6/22	0.0
Irv	HWW	MD	38.0	60.9	11.2	6/18	0.0
LWH19-0192	HRW		36.9	60.4	11.6	6/20	0.0
IDO2006	HWW		38.6	61.6	10.8	6/17	0.0
LCS Rocket	HRW	A	33.1	56.7	11.0	6/21	0.0
Snow mass 2.0	HWW		36.0	62.9	11.1	6/19	75.0
LCS Evina	HRW	A	42.1	61.0	13.0	6/24	0.0
OR2170199R	HRW		33.9	59.2	11.2	6/17	0.0
OR2160065H	HWW		38.2	59.9	11.7	6/19	0.0
WB4311	HRW	D	35.5	63.4	12.0	6/17	2.5
WA8309	HRW		29.9	57.2	11.0	6/21	0.0
	Average		36.9	61.1	11.3	6/19	10.5
	LSD (0.05)		1.9	1.0	0.6	3.4	18.5
	CV (%)		3.7	1.2	3.7		

*Quality ratings assigned by the USDA Western Wheat Quality Laboratory.
Quality Ratings: MD = Most Desirable; D = Desirable; A = Acceptable; LD = Least Desirable; UCS = Unacceptable Except Customer-Specific Uses

Soft White Winter Wheat Trial

Planting Date: 10/12/2021
Previous Crop: Fallow
Spring 2022 Soil Test N: 30.4 ppm (73 lbs. N/Acre)
Fertilizer: Season **t**otal Nitrogen was 131 lbs. N/Acre applied through the season. 21 lbs. N/A at planting (10/12/2021), 30 lbs. N/A early through late tillering (4/7/2022), 80lbs. N/A through stem elongation (5/13/2022).
Irrigation Quantity: Solid-set sprinklers 14.65 Acre inches (final irrigation 6/24/2022)
Harvest Date: 8/23/2022

Variety Highlights Soft white winter wheats continue to be the highest yielding class of wheat raised in the Tulelake, CA area under full irrigation. The awnless variety LCS Blackjack ranked the highest with a 4-year average yield of 186 bu/ac (5.58 tons/A). Other released varieties with high 4-year average yields were Bobtail (179 bu/ac), LCS Hulk (176 bu/ac) and LCS Shine (172 bu/ac). Bobtail is a recent release of the Oregon State University Small Grains Program. Lastly, Bobtail and LCS Blackjack have shown no lodging in either the 2021 or 2022 season.

2022 OREGON SOFT WINTER WHEAT YIELD TRIALS
Tulelake (Irrigated)

OSU Extension Cereals

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This trial was a collaboration between the OSU Cereal Extension Program and the UC-Davis Intermountain Research and Extension Center

Variety	Herbicide Resistance	Class	2022 Yield		2-Year		3-Year		4-Year		Best Estimate*
			Yield		Yield		Yield		Yield		Yield
			bu/ac	Rank	bu/ac	Rank	bu/ac	Rank	bu/ac	Rank	bu/ac
AP Exceed		SWW	190	1	183	1					**193 ± 11**
LWW19-2232		SWW	187	2							**191 ± 15**
LWW19-6219		SWW	185	3							**190 ± 15**
LCS Blackjack		SWW	170	11	168	4	179	1	186	1	**186 ± 8**
OR2160264		SWW	182	4	172	2					**182 ± 11**
Bobtail		SWW	180	5	169	3	176	2	179	2	**179 ± 8**
LWW19-6591		SWW	175	8							**179 ± 15**
LCS Hulk		SWW	172	9	168	6	173	3	176	3	**176 ± 8**
WA8307		SWW	171	10							**175 ± 15**
OR2160243		SWW	163	15	162	7					**172 ± 11**
LCS Shine		SWW	179	6	168	5	169	4	172	4	**172 ± 8**
LWW17-5877		SWW	164	13	160	8					**171 ± 11**
Rosalyn		SWW	161	16	153	12	163	5	171	5	**171 ± 8**
OR2180149		SWW	166	12							**170 ± 15**
LCS Jefe (LWW17-8185)		SWW	179	7	159	9					**169 ± 11**
AP Iliad		SWW	164	14							**168 ± 15**
LCS Artdeco		SWW	160	18	156	10					**166 ± 9**
Norwest Duet		SWW	154	23	149	13	159	6	164	6	**164 ± 8**
15-451104B		SWW	159	19							**163 ± 15**
Nixon		SWW	149	32	145	17	156	7	163	7	**163 ± 8**
LWW19-5862		SWW	157	21							**161 ± 15**
SY Dayton		SWW	160	17	153	11	154	8	160	8	**160 ± 8**
Cameo		Club	155	22	149	15					**159 ± 11**
WB1621		SWW	154	24							**158 ± 15**
IDO2008		SWW	158	20	148	16					**158 ± 11**
WB1922		SWW	153	26							**157 ± 15**
WB1720		SWW	151	28							**155 ± 15**
LWW19-1576		SWW	150	29							**155 ± 15**
OR2130755		SWW	141	37	145	18					**155 ± 9**
LCS Drive		SWW	146	34	143	19					**154 ± 9**
SY Assure		SWW	150	30	149	14					**154 ± 9**
ORI2190027 CL+	CL+	SWW	149	31							**154 ± 15**
WA8371		SWW	148	33							**153 ± 15**
OR2170559		SWW	154	25	140	20					**150 ± 11**
OR5180071		Club	151	27	139	21					**149 ± 11**
ORI2190025 CL+	CL+	SWW	144	35							**149 ± 15**
OR2180377		SWW	144	36							**149 ± 15**
Norwest Tandem		SWW	139	39	134	22					**145 ± 9**
ARS09500-17CBW		Club	139	38							**144 ± 15**
		Average	160		155		166		171		**165**
		LSD (0.05)	12								
		CV (%)	5.4								

*Best linear unbiased estimators (BLUEs) are best estimators of variety performance relative to other varieties, based on up to four years of data.

2022 OREGON SOFT WINTER WHEAT YIELD TRIALS

Tulelake (Irrigated)

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Variety	Class	Quality*	Height in	Test Weight lbs/bu	Protein %	Heading Date	Lodging %
AP Exceed	SWW		41.1	60.6	9.4	6/17	1.3
LWW19-2232	SWW		46.0	60.3	10.2	6/21	27.5
LWW19-6219	SWW		40.9	60.3	10.0	6/20	0.0
LCS Blackjack	SWW	D	37.0	58.3	9.8	6/20	0.0
OR2160264	SWW		40.8	59.7	10.5	6/17	0.0
Bobtail	SWW	MD	37.9	58.9	10.0	6/18	0.0
LWW19-6591	SWW		39.6	59.7	9.8	6/20	5.0
LCS Hulk	SWW	A	40.6	60.9	10.3	6/20	1.3
WA8307	SWW		43.4	60.1	10.5	6/21	3.8
OR2160243	SWW		39.2	59.2	10.0	6/20	0.0
LCS Shine	SWW	MD	35.1	59.4	10.5	6/16	1.3
LWW17-5877	SWW		39.3	59.3	10.4	6/17	0.0
Rosalyn	SWW	A	39.3	58.3	9.9	6/21	0.0
OR2180149	SWW		40.1	58.6	10.4	6/21	0.0
LCS Jefe (LWW17-8185)	SWW		40.9	59.6	9.7	6/21	0.0
AP Iliad	SWW	A	39.2	60.0	11.1	6/21	0.0
LCS Artdeco	SWW	A	39.2	56.3	10.0	6/19	0.0
Norwest Duet	SWW	D	47.0	59.9	10.1	6/22	33.8
15-451104B	SWW		41.5	57.0	9.6	6/17	0.0
Nixon	SWW	MD	42.3	57.5	9.8	6/22	0.0
LWW19-5862	SWW		38.4	56.6	9.8	6/23	0.0
SY Dayton	SWW	A	38.6	59.8	10.4	6/21	0.0
Cameo	Club		39.5	58.3	11.0	6/20	6.3
WB1621	SWW		42.9	61.5	10.4	6/21	3.8
IDO2008	SWW		42.9	58.5	10.4	6/21	5.0
WB1922	SWW		42.8	60.7	10.4	6/22	1.3
WB1720	SWW		37.0	58.6	10.5	6/18	0.0
LWW19-1576	SWW		36.9	59.0	10.3	6/20	0.0
OR2130755	SWW		44.0	59.4	10.6	6/17	2.5
LCS Drive	SWW	D	32.9	55.0	10.0	6/14	1.3
SY Assure	SWW	D	36.6	60.4	11.9	6/16	0.0
ORI2190027 CL+	SWW		39.8	59.9	10.9	6/19	1.3
WA8371	SWW		41.3	61.0	9.8	6/20	0.0
OR2170559	SWW		37.5	58.8	10.9	6/22	0.0
OR5180071	Club		40.3	59.5	10.7	6/23	0.0
ORI2190025 CL+	SWW		38.1	58.6	10.6	6/18	0.0
OR2180377	SWW		37.7	57.3	10.3	6/22	0.0
Norwest Tandem	SWW	A	36.0	55.9	10.6	6/17	0.0
ARS09500-17CBW	Club		41.2	59.4	10.7	6/20	5.0
	Average		39.9	59.0	10.3	6/19	2.6
	LSD (0.05)		1.3	1.4	0.5	2.4	12.3
	CV (%)		2.4	1.7	3.8		

*Quality ratings assigned by the USDA Western Wheat Quality Laboratory.
Quality Ratings: MD = Most Desirable; D = Desirable; A = Acceptable; LD = Least Desirable; UCS = Unacceptable Except Customer-Specific Uses

Winter Barley Trial

Planting Date: 10/12/2021

Previous Crop: Fallow

Spring Soil Test N: 30.4 ppm (73 lbs. N/Acre)

Fertilizer: Season total Nitrogen was 51 lbs. N/Acre applied through growing season. 22 lbs. N/A at planting (10/12/2021), 30 lbs. N/A at tillering (4/7/2027)

Irrigation Quantity: Solid-set sprinklers 10.71 Acre inches (final irrigation 6/8/2022)

Harvest Date: 8/16/2022 (delayed 1 week due to mechanical issues)

Variety Highlights: Newer winter barley varieties have shown promise in our basin recently since they require less irrigation and a lower amount of nitrogen fertilizer when compared to wheat. This is done to keep protein levels low and lessen the likelihood of lodging. Thunder (malting type) and Lightning (feed type) are both recent releases from the Oregon State University Barley Program. Thunder was ranked highest for 3-year average yield at 7,572 lbs./A. Desirable protein levels for malting barley range between 9.5-12.5% dry basis. Thunder met this requirement in both 2021 and 2022.

2022 OREGON WINTER BARLEY YIELD TRIALS

Tulelake (Irrigated)

OSU Extension Cereals

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This trial was a collaboration between the OSU Cereal Extension Program and the UC-Davis Intermountain Research and Extension Center

		2022 Yield		2-Year		3-Year		4-Year		Best
		Yield		Yield		Yield		Yield		Yield
Variety	Class	lb/ac	Rank	lb/ac	Rank	lb/ac	Rank	lb/ac	Rank	lb/ac
DH141917	Malt	7642	2							**7663 ± 1493**
Thunder	Malt	7447	4	8068	2	7572	1			**7572 ± 903**
Wintmalt	Malt	8003	1	8247	1	7438	2			**7438 ± 903**
DH141225	Malt	7600	3	7514	3					**7214 ± 1087**
DH141222	Malt	7089	6	7406	4					**7105 ± 1087**
Lightning	Feed	7280	5	7380	5	6933	3			**6933 ± 903**
DH150683	Malt	6779	7							**6800 ± 1493**
Alba	Feed	5487	9	6638	6	6798	4			**6798 ± 903**
DH162310	Malt	5526	8							**5547 ± 1493**
	Average	6984		7542		7185				**7008**
	LSD (0.05)	720								
	CV (%)	7.4								

*Best linear unbiased estimators (BLUEs) are best estimators of variety performance relative to other varieties, based on up to four years of data.

2022 OREGON WINTER BARLEY YIELD TRIALS

Tulelake (Irrigated)

OSU Extension Cereals

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Variety	Class	Height in	Test Weight lbs/bu	Protein %	Heading Date	Lodging %
DH141917	Malt	43.5	50.7	9.0	6/11	30.0
Thunder	Malt	42.5	53.0	9.6	6/11	42.5
Wintmalt	Malt	42.5	51.1	9.0	6/10	43.8
DH141225	Malt	44.7	53.5	9.6	6/6	65.0
DH141222	Malt	42.9	53.7	10.4	6/6	31.3
Lightning	Feed	43.9	52.9	10.4	6/10	18.8
DH150683	Malt	41.7	51.8	10.7	6/6	25.0
Alba	Feed	47.3	50.5	8.9	6/10	42.5
DH162310	Malt	43.8	53.0	11.4	6/8	10.0
	Average	43.7	52.2	9.9	6/9	34.3
	LSD (0.05)	2.1	0.7	0.7	1.2	22.9
	CV (%)	3.4	1.0	4.9		

Spring Soft Wheat Trial

Planting Date: 4/25/2022
Previous Crop: Dryland Grain Forage
Spring Soil Test N: 31.7 ppm (76lbs. N/Acre)
Fertilizer: Season total nitrogen was 131 lbs. per acre applied through the season. 21 lbs. N/A at planting (4/25/2022), 30 lbs. N/A at tillering (5/27/2022), 80 lbs. N/A through early boot (6/24/2022).
Irrigation Quantity: Solid-set sprinklers 15.54 Acre inches (final irrigation 7/12/2022)
Harvest Date: 8/30/2022

Variety Highlights: UI Cookie, Tekoa, and WB6121 were three varieties with high grain yields, minimal lodging, and desirable grain quality over a 4-year period. UI Cookie had the highest 4-year yield averaging 164 bu/ac (4.92 tons/A). Several new spring soft white wheat varieties including Ryan, Roger, and Louise had greater than 50% lodging under Tulelake conditions.

OSU Extension Cereals

2022 OREGON SOFT SPRING WHEAT YIELD TRIALS
Tulelake (Irrigated)

UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources

This trial was a collaboration between the OSU Cereal Extension Program and the UC-Davis Intermountain Research and Extension Center

Variety	Herbicide Resistance	Class	2022 Yield Yield bu/ac	Rank	2-Year Yield bu/ac	Rank	3-Year Yield bu/ac	Rank	4-Year Yield bu/ac	Rank	Best Estimate* Yield bu/ac
UI Cookie		SWS	141	2	152	1	158	1	164	1	**164 ± 9**
IDO1902S		SWS	143	1	146	2					**159 ± 12**
Tekoa		SWS	120	6	131	6	142	3	151	2	**151 ± 9**
IDO1702S		SWS	125	4	141	3	144	2	148	3	**148 ± 9**
WB6211 CLP	CL+	SWS	122	5	133	4					**145 ± 12**
IDO1404S		SWS	116	7							**145 ± 12**
WB6121		SWS	116	8	131	5	138	4	140	4	**140 ± 9**
IDO 2101 FHB		SWS	114	9							**136 ± 17**
Ryan		SWS	109	11	119	8	129	5			**135 ± 10**
Seahawk		SWS	126	3	122	7					**134 ± 12**
WA8377		SWS	111	10							**133 ± 17**
Roger (WA 8325)		Club	107	12	117	9					**130 ± 12**
WA8321		SWS	107	13	113	10					**126 ± 12**
Louise		SWS	96	14	105	11					**118 ± 12**
AP Coachman		SWS	92	15							**113 ± 10**
		Average	116		128		142		151		**138**
		LSD (0.05)	8								
		CV (%)	5.1								

*Best linear unbiased estimators (BLUEs) are best estimators of variety performance relative to other varieties, based on up to four years of data.

2022 OREGON SOFT SPRING WHEAT YIELD TRIALS

Tulelake (Irrigated)

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Variety	Class	Quality*	Height in	Test Weight lbs/bu	Protein %	Heading Date	Lodging %
UI Cookie	SWS	MD	39.4	62.6	10.7	7/4	4.3
IDO1902S	SWS		39.9	64.2	10.4	7/4	10.0
Tekoa	SWS	MD	40.9	63.2	10.4	7/7	12.5
IDO1702S	SWS		38.3	62.6	10.1	7/2	0.0
WB6211 CLP	SWS		39.0	60.6	11.0	7/2	3.8
IDO1404S	SWS		38.2	61.1	10.0	7/7	1.3
WB6121	SWS	D	37.5	62.0	11.4	7/3	1.3
IDO 2101 FHB	SWS		40.2	62.5	10.7	7/4	7.5
Ryan	SWS	MD	37.9	58.1	10.7	7/2	86.3
Seahawk	SWS	MD	41.1	62.0	10.7	7/7	5.0
WA8377	SWS		40.6	59.7	11.3	7/4	68.8
Roger (WA 8325)	Club		38.6	61.2	9.8	7/4	26.3
WA8321	SWS		38.3	61.3	10.3	7/7	61.8
Louise	SWS	MD	41.6	58.5	11.1	7/5	72.5
AP Coachman	SWS	A	40.5	59.6	10.4	7/8	24.8
	Average		39.5	61.3	10.6	7/4	25.7
	LSD (0.05)		1.6	1.0	0.3	1.8	19.6
	CV (%)		2.8	1.2	2.1		

*Quality ratings assigned by the USDA Western Wheat Quality Laboratory.
Quality Ratings: MD = Most Desirable; D = Desirable; A = Acceptable; LD = Least Desirable; UCS = Unacceptable Except Customer-Specific Uses

Spring Hard Wheat Trial

Planting Date: 4/25/2022
Previous Crop: Dryland Grain Forage
Spring Soil Test N: 31.7 ppm (76 lbs. N/Acre)
Fertilizer: Season total nitrogen was 161 lbs. per acre applied through the season. 22 lbs. N/A at planting (4/25/2022), 30 lbs. N/A at tillering (5/27/2022), 80 lbs. N/A through early boot (6/24/2022), and 30 lbs. N/A at flowering (7/12/2022) to raise protein in the seed.
Irrigation Quantity: Solid-set sprinklers 15.54 Acre inches (final irrigation 7/12/2022)
Harvest Date: 8/31/2022

Variety Highlights: AP Renegade, WB9668, WB9303 and Kelse all met the protein standard of 13% with a nitrogen fertilizer application applied during flowering in 2022. WB9668 was rated as desirable by the USDA Western Wheat Quality Laboratory and ranked highest for 4-year average yield at 138 bu/ac (4.14 tons/A).

OSU Extension Cereals

2022 OREGON HARD SPRING WHEAT YIELD TRIALS
Tulelake (Irrigated)

UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources

This trial was a collaboration between the OSU Cereal Extension Program and the UC-Davis Intermountain Research and Extension Center

			2022 Yield		2-Year		3-Year		4-Year		Best
Variety	Herbicide Resistance	Class	Yield bu/ac	Rank	Yield bu/ac	Rank	Yield bu/ac	Rank	Yield bu/ac	Rank	Yield bu/ac
UC1838		HRS	128	1	141	1					**152 ± 11**
UC1917		HWS	128	2							**147 ± 16**
AP Renegade		HRS	121	5							**144 ± 9**
IDO2004S		HWS	128	3	133	2					**143 ± 11**
UC1932		HWS	120	7							**139 ± 16**
UC Central Red		HRS	113	14	128	4					**138 ± 11**
IDO2002S		HWS	122	4	128	5					**138 ± 11**
WB9668		HRS	114	13	131	3	137	1	138	1	**138 ± 8**
Hale (WA8315)		HRS	115	9							**136 ± 11**
WB9303		HRS	114	11	128	6	131	2			**135 ± 9**
Jefferson HF		HRS	115	8							**134 ± 16**
WA8355		HRS	114	10							**134 ± 16**
IDO2202CL2	CL+	HRS	114	12							**133 ± 16**
IDO1804S		HWS	120	6	118	7	126	3			**130 ± 9**
WB9623		HRS	110	15							**129 ± 16**
Kelse		HRS	103	18	115	8					**126 ± 11**
IDO2104HF		HWS	105	16							**125 ± 16**
WA8387 CL+	CL+	HRS	105	17							**124 ± 16**
WA8358 CL+	CL+	HRS	99	20							**118 ± 16**
UC Amarillo		HWS	95	23	107	9					**117 ± 11**
IDO 2103 FHB		HWS	98	22							**117 ± 16**
Glee		HRS	99	21	104	10					**114 ± 11**
Net CL+	CL+	HRS	99	19	104	11					**114 ± 11**
WA8356		HRS	94	24							**113 ± 16**
WA8357		HRS	86	25							**105 ± 16**
		Average	110		122		131		138		**130**
		LSD (0.05)	8								
		CV (%)	5.1								

*Best linear unbiased estimators (BLUEs) are best estimators of variety performance relative to other varieties, based on up to four years of data.

2022 OREGON HARD SPRING WHEAT YIELD TRIALS

Tulelake (Irrigated)

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Variety	Class	Quality*	Height in	Test Weight lbs/bu	Protein %	Heading Date	Lodging %
UC1838	HRS		39.9	63.1	12.5	7/4	1.3
UC1917	HWS		35.4	61.3	12.3	7/4	0.0
AP Renegade	HRS	D	34.2	63.8	13.1	7/4	0.0
IDO2004S	HWS		40.5	62.6	11.0	7/4	1.3
UC1932	HWS		34.5	62.9	12.4	7/4	0.0
UC Central Red	HRS		33.0	62.1	12.6	7/4	0.0
IDO2002S	HWS		35.3	62.7	12.3	7/4	0.0
WB9668	HRS	D	34.4	63.1	13.6	7/4	0.0
Hale (WA8315)	HRS	MD	40.6	63.1	12.8	7/4	50.0
WB9303	HRS		37.8	64.1	13.7	6/28	0.0
Jefferson HF	HRS		40.6	62.8	12.5	7/4	16.3
WA8355	HRS		38.0	63.6	12.4	7/4	7.3
IDO2202CL2	HRS		38.9	63.0	12.4	7/4	2.5
IDO1804S	HWS		38.4	61.2	12.3	7/4	4.0
WB9623	HRS		40.1	60.4	12.7	7/4	5.0
Kelse	HRS	D	39.7	63.3	13.7	7/4	0.0
IDO2104HF	HWS		38.8	62.0	12.6	7/4	0.0
WA8387 CL+	HRS		37.9	63.2	12.3	7/4	2.0
WA8358 CL+	HRS		38.6	62.6	13.8	7/4	2.5
UC Amarillo	HWS		30.0	61.0	12.5	7/3	0.0
IDO 2103 FHB	HWS		40.6	63.4	13.7	6/29	2.5
Glee	HRS	MD	39.0	62.4	12.8	7/4	24.3
Net CL+	HRS	MD	39.8	63.9	12.5	7/4	11.3
WA8356	HRS		37.8	61.8	13.6	7/4	7.8
WA8357	HRS		43.7	65.0	14.3	7/4	53.8
	Average		37.9	62.7	12.8	7/3	7.7
	LSD (0.05)		2.2	0.9	0.4	0.4	12.7
	CV (%)		4.1	1.1	2.5		

*Quality ratings assigned by the USDA Western Wheat Quality Laboratory.
Quality Ratings: MD = Most Desirable; D = Desirable; A = Acceptable; LD = Least Desirable; UCS = Unacceptable Except Customer-Specific Uses

Spring Barley Trial

Planting Date: 4/25/2022
Previous Crop: Dryland Grain Forage
Spring Soil Test N: 31.7 ppm (76 lbs. N/Acre)
Fertilizer: Season total Nitrogen was 51 lbs. N/Acre applied through growing season. 22 lbs. N/A at planting (4/14/2021), 30 lbs. N/A late tillering (5/27/2022).
Irrigation Quantity: Solid-set sprinklers 14.07 Acre inches (final irrigation 7/6/2022)
Harvest Date: 8/26/22

Variety Highlights: The 2022 Spring Barley trial included many promising new varieties to keep an eye on. KWS Jessie ranked highest with a 3-year yield of 8,937 lbs./A for a malting type, while Claymore (feed type) ranked highest for 4-year average yield of 8,621 lbs./A. KWS Jessie had minimal lodging in 2021 and 2022 due to its average height only being 33.55 inches.

OSU Extension Cereals

2022 OREGON SPRING BARLEY YIELD TRIALS
Tulelake (Irrigated)

UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources

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Variety	Class	2022 Yield		2-Year		3-Year		4-Year		Best Estimate*
		Yield lb/ac	Rank	Yield lb/ac	Rank	Yield lb/ac	Rank	Yield lb/ac	Rank	Yield lb/ac
KWS Jessie	Malt	9039	1	9407	1	8937	1			**8904 ± 526**
KWS Thalis	Malt	8714	2	8992	2					**8802 ± 652**
Claymore	Feed	8568	3	8839	3	8509	2	8621	1	**8621 ± 447**
BC Lexy		8450	4							**8537 ± 899**
LCS Opera	Malt	7763	8							**8387 ± 520**
Oreana	Feed	8248	5	8263	4	8349	3			**8315 ± 526**
BC Leandra		8003	7							**8089 ± 899**
KWS Willis	Malt	7543	11	8021	5					**7831 ± 652**
BC Ellinore		7700	9							**7786 ± 899**
HO517-245		7582	10							**7668 ± 899**
KWS Amadora	Malt	7315	14	7843	6					**7652 ± 652**
MS21-B1		7476	12							**7563 ± 899**
Altorado	Feed	7223	16	7634	7	7491	4			**7457 ± 526**
DH190481	Feed	7362	13							**7449 ± 899**
LCS Odyssey	Malt	8052	6							**7428 ± 635**
DH190346	Feed	7285	15							**7372 ± 899**
AAC Connect	Malt	7106	17							**6950 ± 638**
MS21-B2		6716	19							**6803 ± 899**
Survivor	Feed	6805	18	6939	8					**6748 ± 652**
Lenetah	Feed	6203	20	6843	9					**6652 ± 652**
	Average	7658		8087		8321		8621		**7751**
	LSD (0.05)	978								
	CV (%)	9.1								

*Best linear unbiased estimators (BLUEs) are best estimators of variety performance relative to other varieties, based on up to four years of data.

2022 OREGON SPRING BARLEY YIELD TRIALS

Tulelake (Irrigated)

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Variety	Class	Height in	Test Weight lbs/bu	Protein %	Heading Date	Lodging %
KWS Jessie	Malt	34.4	49.4	8.5	7/9	7.0
KWS Thalis	Malt	36.8	50.2	9.7	7/1	26.3
Claymore	Feed	46.3	51.2	9.0	7/1	25.0
BC Lexy		36.3	48.1	8.8	7/10	6.3
LCS Opera	Malt	37.3	47.1	8.8	7/9	22.5
Oreana	Feed	35.7	51.1	9.1	7/10	20.0
BC Leandra		37.3	48.0	9.2	7/8	21.3
KWS Willis	Malt	38.9	49.7	10.1	7/8	7.5
BC Ellinore		36.8	47.7	8.6	7/9	5.0
HO517-245		44.6	51.5	9.0	7/1	22.5
KWS Amadora	Malt	35.1	50.9	9.3	7/7	16.3
MS21-B1		46.3	50.4	9.6	7/3	37.5
Altorado	Feed	41.9	50.0	10.1	7/1	23.8
DH190481	Feed	41.1	52.3	10.4	6/25	12.5
LCS Odyssey	Malt	35.6	49.3	9.0	7/9	3.8
DH190346	Feed	37.6	49.3	11.4	6/25	28.8
AAC Connect	Malt	46.1	50.4	9.9	7/1	30.0
MS21-B2		45.6	51.3	10.1	7/3	27.5
Survivor	Feed	43.1	52.3	11.1	7/1	22.5
Lenetah	Feed	41.7	50.8	11.8	7/1	63.8
	Average	39.9	50.1	9.7	7/4	21.5
	LSD (0.05)	2.9	1.6	1.0	2.7	25.8
	CV (%)	5.3	2.2	7.4		