2015-2016 Winter Wheat Breeder Variety Portfolio

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Washington State University



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The purpose of this technical bulletin is to aid the grower in choosing the optimal variety for his or her farm based on location, climatic condition, disease pressure, and harvest date. Small grain seed dealers and other agriculture industry fieldmen will also use this bulletin to assist their customers (producers) in selecting the variety that best fits their needs.

The most effective way to use this technical bulletin is to look at the varieties that best fit your production area based on adaptation zone map, precipitation zone, disease ratings (four or less) for the problem diseases in your area, winter hardiness, and maturity.

The following data is a compilation of WSU variety trial information. The area of adaptation is determined by breeders and seed sales.

This portfolio will be updated annually with new variety information and other data when it becomes available.

Index of Varieties

Limagrain: Artdeco Washington State University/ARS: Cara WestBred: WB523

AgriPro: SY Ovation Washington State University/ARS: Chrystal WestBred: WB456

AgriPro: AP Badger Washington State University: Madsen WSU: Bruehl

AgriPro: AP Legion Washington State University: Jasper

AgriPro: SY 107 **Washington State University: Eltan**

University of Idaho: Brundage 96 Washington State University/ARS: Amber

University of Idaho: Bruneau Washington State University/ARS: Selbu

University of Idaho: Bitterroot Washington State University: Puma

Oregon State University: Goetze Washington State University: Masami

Oregon State University: Bobtail Washington State University: Xerpha

Oregon State University: Kaseberg Washington State University: Otto

Oregon State University: Ladd AgriPro: AP 700CL

Oregon State University: Mary AgriPro: UICF Brundage

Oregon State University: Tubbs06 Oregon State University: ORCF 102

Oregon State University: Rosalyn Oregon State University: ORCF 103

Oregon State University: Skiles WestBred: WB1070CL

Oregon State University: Stephens WestBred: WB1066CL

WestBred: Junction Washington State University: Mela CL+

WestBred: WB528 **Washington State University: Curiosity CL+**

Washington State University: Huffman

Washington State University/ARS: Crescent

Washington State University/ARS: Coda

Washington State University/ARS: Chukar

AgriPro: Whetstone

University of Idaho: Boundary

Limagrain: LCS Azimut

Limagrain: LCS Colonia

Oregon State University: Norwest 553

WestBred: Arrowhead

WestBred: Keldin

WestBred: Rimrock

Washington State University: Farnum

Washington State University: Finley

Washington State University: Bauermeister

AgriPro: SY Clearstone

AgriPro: AP 503 CL2

Definition of Terms

*Varieties labeled with ratings for Fusarium Crown Rot, Soil Borne Mosaic Virus or Aluminum Tolerance have been tested by research scientists at their respective universities. All other varieties should be assumed to be non-tolerant lines.

Stature = height at harvest (e.g., shorter stature is less likely to lodge)

Straw strength = the likelihood for a variety to lodge (linked with stature)

Winter hardiness = ability of the plant to survive throughout the winter under freezing temperatures

Maturity = the time in late summer in which the wheat variety is ready to harvest

Plant Variety Protection (PVP) = limits control of the germplasm of a variety to the breeder

OR, ID, & WA Preferred Wheat Varieties Quality Ratings¹

Most Desirable (MD) – These varieties generally have high test weights, appropriate protein content (kernel properties), and excellent milling and end-use properties.

Desirable (D) – The kernel, milling, and end-use qualities of these varieties range from good to very good. The quality attributes of these varieties are desirable in international trade.

Acceptable (A) – The kernel, milling, and end-use qualities of these varieties range from acceptable to good. Individual varieties may possess minor flaws. The quality attributes of these varieties are acceptable in international trade.

Least Desirable (LD) – One or more critical flaws in quality are present in these varieties. The intrinsic quality of PNW wheat will be improved if these varieties are not planted.

¹Washington Grain Commission: http://wagrains.org/wp-content/uploads/2015/05/PreferredVarieties2015ForWeb.pdf

DATA TABLE: Missing values (—) indicates that the variety has not been tested in a variety testing program.

Type: SWWW = Soft White Winter Wheat; HRWW = Hard Red Winter Wheat; SWWC = Soft White Winter Club Wheat

Winter hardiness: 1-3 = extremely winter hardy; 4-5 = winter hardy; 6 moderate; 7-8 moderately susceptible to susceptible

Disease scale key: 1-2 = resistant; 3-4 = moderately resistant; 5 = moderate; 6-7 = moderately susceptible; 8-9 = susceptible

Summary Data:

Values highlighted in green are not from the current variety trials and were obtained from prior data and breeder input. When data becomes available from WSU variety trials, this information will be updated.

All data will be updated on an annual basis and missing values replaced when data is available.

Breeder Varietal Summary Data

Туре	Variety	Winter Hardiness	Test Weight (lbs/bu)	Protein (%)	Stripe Rust	Cephalosporium Stripe	Strawbreaker Tolerance	Snow Mold Tolerance	Quality Rating	Page
SWWW	Amber	5	59.4	10.7	2	8	7	3	MD	22
SWWW	AP 700 CL	5	59.1	11.4	2	6	3	_	А	26
SWWW	AP Badger	4	59.8	10.3	5	_	7	5	D	11
SWWW	AP Legacy	4	59.2	10.6	7	5	5	6	MD	11
SWWW	Bitterroot	5	60.1	11.2	4	5	8	_	MD	14
SWWW	Bobtail	6	57.1	10.4	1	6	7	_	MD	15
SWWW	Brundage 96	4	58.9	10.8	6	7	4	9	MD	13
SWWW	Bruneau	_	59.9	10.8	1	66	6	_	MD	13
SWWW	Curiosity CL+	3	59.9	10.8	4	5	7	3	D	29
SWWW	Eltan	2	59.5	11.0	5	4	7	2	D	22
SWWW	Goetze	8			8	6	6	9	Α	14
SWWW	Huffman	5	58.8	10.9	3			_	MD	25
SWWW	Jasper	5	57.5	11.4	3	9	4	_	_	21
SWWW	WB - Junction	5	60.9	11.1	3	8	9	_	MD	19
SWWW	Kaseberg	5	59.1	10.4	3	6	8	_	MD	15
SWWW	Ladd	5	59.5	11.4	5	7	7	6	MD	16
SWWW	LCS - Artdeco	7	58.9	10.5	3	4	9	9	D	10
SWWW	Legion	5	58.4	11.0	2	8	7	_	D	12
SWWW	Madsen	6	59.5	11.3	1	6	4	5	Α	21
SWWW	Mary	6	60.0	10.9	4	8	7	5	D	16
SWWW	Masami	4	58.4	10.5	3	5	3	5	D	24
SWWW	Mela CL+	3	59.8	10.9	5	5	7	2	D	29
SWWW	ORCF 102	6	60.0	11.2	3	5	4	8	Α	27
SWWW	ORCF 103	4	59.1	11.1	6	6	6	4	D	27
SWWW	Otto	3	59.3	11.2	2	6	3	2	D	25
SWWW	Puma	4	59.9	11.0	3	7	4	8	MD	23

SUMMARY DATA - Cont

Туре	Variety	Winter Hardiness	Test Weight (lbs/bu)	Protein (%)	Stripe Rust	Cephalosporium Stripe	StrawBreaker Tolerance	Snow Mold Tolerance	Quality Rating	Page
SWWW	Rosalyn	6	58.0	10.1	1	6	3	8	D	17
SWWW	Selbu	6	60.9	11.3	1	7	5	8	D	23
SWWW	Skiles	6	60.0	11.7	1	4	6	9	D	18
SWWW	Stephens	7	59.0	11.1	4	9	6	9	D	18
SWWW	SY 107	7	59.5	10.8	4	8	7	_	MD	12
SWWW	SY Ovation	7	60.1	10.9	2	6	8	9	D	10
SWWW	Tubbs 06	5	58.7	10.9	7	_	4	8	А	17
SWWW	UICF Brundage	4	58.8	11.1	4	7	9	3	MD	26
SWWW	WB 1066 CL	2	61.1	12.3	2	4	5	_	MD	28
SWWW	WB 1070 CL	3	61.7	12.0	2	7	5	_	А	28
SWWW	WB 456	4	60.9	12.3	4	_	3	_	MD	20
SWWW	WB 523	4	60.2	11.4	3	_	5	_	Α	20
SWWW	WB 528	5	60.9	11.1	3	5	5	9	D	19
SWWW	Xerpha	4	59.4	10.8	5	4	6	4	А	24
SWWC	Bruehl	4	57.6	10.9	3	3	6	2	D	31
SWWC	Cara	5	58.1	11.1	2	6	4	9	MD	30
SWWC	Chrystal	4	59.8	11.1	3	8	5	6	MD	30
SWWC	Chukar	5	58.5	10.4	1	7	4	9	MD	32
SWWC	Coda	5	61.0	11.2	3	3	3	7	D	32
SWWC	Crescent	4	59.3	10.6	3	7	7	9	MD	31
HRWW	AP 503 CL2	5	62.8	13.3	5	4	_	_	MD	39
HRWW	WB - Arrowhead	4	61.5	12.6	6	_	_	_	А	35
HRWW	Bauermeister	5	59.4	11.8	6	4	7	2	А	38
HRWW	Boundary	3	60.4	11.9	5	_	_	2	А	33
HRWW	Farnum	4	59.0	12.7	2	5	6	2	D	37

SUMMARY DATA - Cont

Туре	Variety	Winter Hardiness	Test Weight (lbs/bu)	Protein (%)	Stripe Rust	Cephalosporium Stripe	StrawBreaker Tolerance	Snow Mold Tolerance	Quality Rating	Page
HRWW	Finley	3	62.0	12.4	3	8	6	7	MD	37
HRWW	Keldin	3	61.4	12.8	4	_	_	_	А	36
HRWW	LCS Azimut	5	57.3	12.1	1	7	5	_	А	34
HRWW	LCS Colonia	7	56.9	12.6	3	_	_	_	А	34
HRWW	Norwest 553	8	61.1	12.8	1	_	5	9	А	35
HRWW	Rimrock	4	60.3	12.3	6	_	_	_	А	36
HRWW	Whetstone	4	61.2	12.8	3	_	8	9	MD	33
HRWW	SY Clearstone CL2	4	59.9	14.3	4	3	_	_	А	39

All hardiness, area of adaptation, and disease ratings are based on rankings directly from the variety testing programs with input from the breeders of the varieties.

LCS Artdeco



Soft White Winter Wheat

Released 2011, PVP 201300198

Pedigree: NSA02-1466/VR99B057 (both Limagrain European lines)

Short stature; early maturity; excellent straw strength

Protein = 10.5%; Test Weight = 58.9 lbs/bu

Precipitation Zone: 16-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
7.0	3	4	9	9	D



SY Ovation





Soft White Winter Wheat

Released 2012, PVP Title V; Pedigree: ORH010837/OR2001611

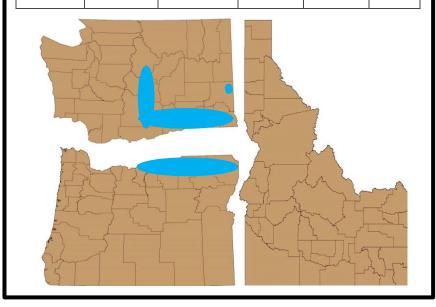
Medium stature; early maturity; excellent straw strength

Protein = 10.9%; Test Weight = 60.9 lbs/bu

Precipitation Zone: 12-16"

*Soil Borne Mosaic Virus = 3; Fusarium Crown Rot = 3

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
7.0	2	6	8	9	D



AP Badger





Soft White Winter Wheat

Released 2010, PVP 201000078; Pedigree: Stephens/Oratorio

Short stature; medium-early maturity; excellent straw strength

Protein = 10.3%; Test Weight = 59.8 lbs/bu

Precipitation Zone: 16-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	5	_	7	5	D



AP Legacy





Soft White Winter Wheat

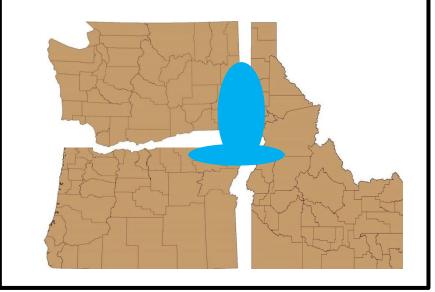
Released 2009, PVP 200900300; Pedigree: SPN/Madsen/Rod

Medium stature; medium-early maturity; excellent straw strength

Protein = 10.6%; Test Weight = 59.2 lbs/bu

Precipitation Zone: 12-20"

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	7	5	5	6	MD



Legion





Soft White Winter Wheat

Released 2008, PVP 200900413; Pedigree: Tubbs sib/Stephens

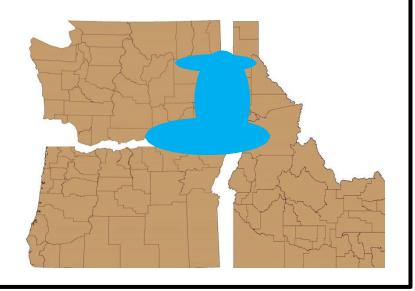
Medium stature; medium maturity; good straw strength

Protein = 11.0%; Test Weight = 58.4 lbs/bu

Precipitation Zone: 12-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	2	8	7	_	D



SY 107





Soft White Winter Wheat

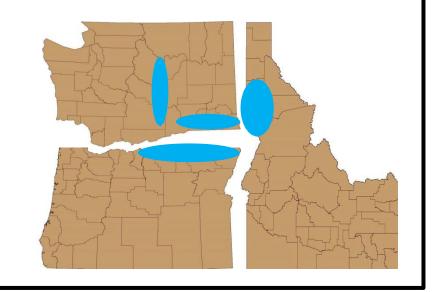
Released 2013, PVP 201200115; Pedigree: ORH010837/Finch

Medium stature; medium-early maturity; excellent straw strength

Protein = 10.8%; Test Weight = 59.5 lbs/bu

Precipitation Zone: 12-20"

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
7.0	4	8	7	_	MD



Brundage 96University of Idaho

Soft White Winter Wheat—Awnless

Released 2001, PVP 200200245; Pedigree: Stephens/Geneva—reselection of Brundage for stripe rust resistance

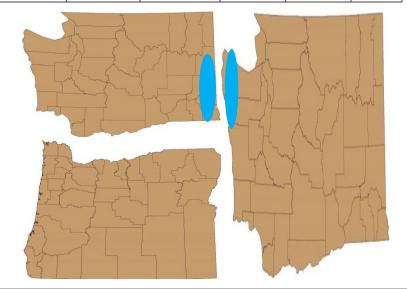
Medium stature; medium maturity; excellent straw strength

Protein = 10.8%; Test Weight = 58.9 lbs/bu

Precipitation Zone: 16" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	6	7	4	9	MD



Bruneau University of Idaho

Soft White Winter Wheat

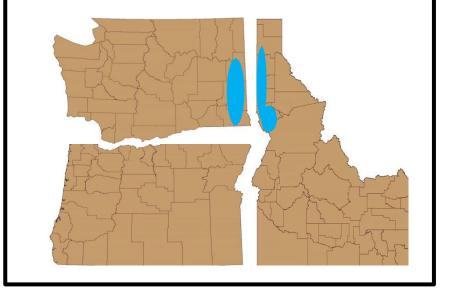
Released 2009, PVP 20120004; Pedigree: Dusty/WA7433/4/ Lewjain/3/RDL/SU92//KAL/BB

Medium stature; early-medium maturity; good straw strength

Protein = 10.8%; Test Weight = 59.9 lbs/bu

Precipitation Zone: 16" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
?	1	6	6	_	MD	



Bitterroot University of Idaho

Soft White Winter Wheat

Released 2008, PVP 200800411; Pedigree: DH-31/4/Lewjain/3/RDL/SU92//KAL/BB

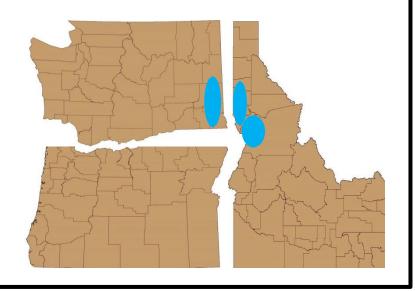
Medium stature; medium maturity; good straw strength

Protein = 10.2%; Test Weight = 60.1 lbs/bu

Precipitation Zone: 16"or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	4	5	8	_	MD



Goetze



Soft White Winter Wheat

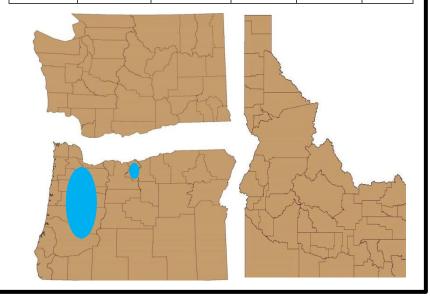
Released 2007, PVP 200800393; Pedigree: OR8303765/E81FR

Short stature; early maturity; excellent straw strength

Protein = --; Test Weight = --

Precipitation Zone: 20" or greater - primarily irrigated

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
8.0	8	6	6	9	А



Bobtail



Soft White Winter Wheat

Released 2012, PVP 201400488; Pedigree: Einstein/Tubbs

Medium stature; medium maturity; excellent straw strength

Protein = 10.4%; Test Weight = 57.1 lbs/bu

Precipitation Zone: 12" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
6.0	1	6	7	_	MD



Kaseberg



Soft White Winter Wheat

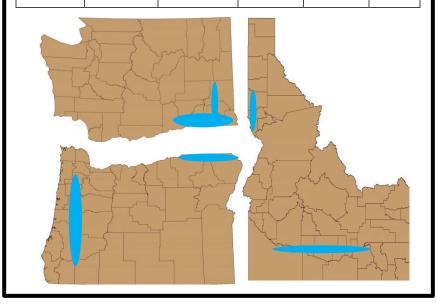
Released 2012, PVP 201300487; Pedigree: OR981756/NSA 99-0792// ORSS-1757

Medium stature; medium maturity; excellent straw strength

Protein = 10.4%; Test Weight = 59.1 lbs/bu

Precipitation Zone: 12-20" also under irrigation

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	3	6	8	_	MD



Ladd



Soft White Winter Wheat

Released 2012, PVP 201300486; Pedigree: OR951431/NSA 94-2137

Short stature; medium maturity; excellent straw strength

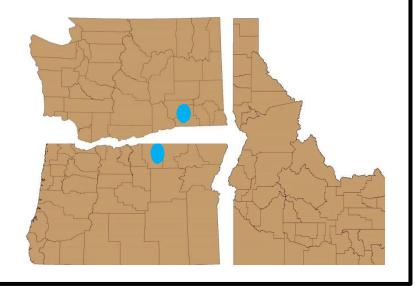
Protein = 11.4%; Test Weight = 59.5 lbs/bu

Precipitation Zone: 16" or greater

*Soil Borne Mosaic Virus = 3

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	5	7	7	6	MD



Mary



Soft White Winter Wheat

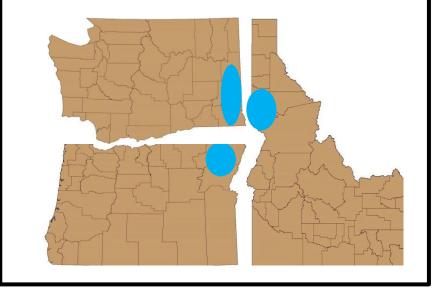
Released 2011, PVP 201200472; Pedigree: Stephens/Madsen/3/WA7163 Sister/SA 463 GBR//Stephens

Short stature; early-medium maturity; excellent straw strength

Protein = 10.9%; Test Weight = 60.0 lbs/bu

Precipitation Zone: 16" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
6.0	4	8	7	5	D



Tubbs 06



Soft White Winter Wheat

Released 2006, PVP 200700423; Pedigree: Malcolm/Madsen

Medium stature; medium maturity; good straw strength

Protein = 10.9%; Test Weight = 58.7 lbs/bu

Precipitation Zone: 14-18" Fits the drier zones of Oregon

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	7	_	4	8	А



Rosalyn



Soft White Winter Wheat

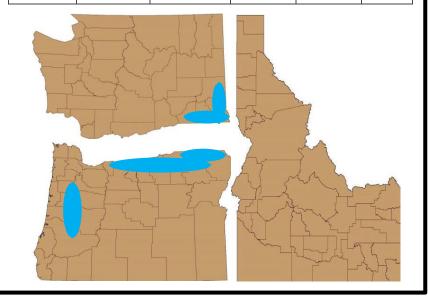
Released 2012, PVP 201400487; Pedigree: NSL99-4160/Tubbs

Medium stature; medium maturity; excellent straw strength

Protein = 10.1%; Test Weight = 58.0 lbs/bu

Precipitation Zone: 16" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
6.0	1	6	3	8	D



Skiles



Soft White Winter Wheat

Released 2008, PVP 200900465; Pedigree: Dusty/ZGP-4074/

Unknown

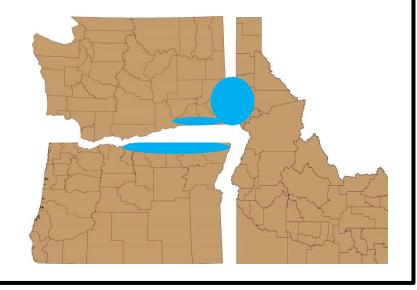
Medium stature; early-medium maturity; excellent straw strength

Protein = 11.7%; Test Weight = 60.0 lbs/bu

Precipitation Zone: 16-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
6.0	1	4	6	9	D



Stephens



Soft White Winter Wheat

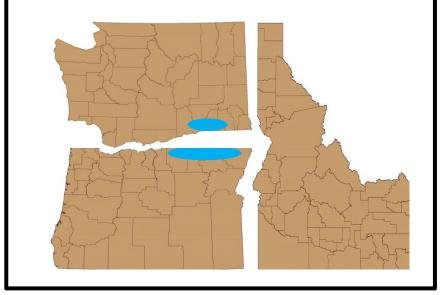
Released 2007; PVP free; Pedigree: 1965v cross of Nord Desprez and Pullman selection 101

Medium stature; early-medium maturity; excellent straw strength

Protein = 11.1%; Test Weight = 59.0 lbs/bu

Precipitation Zone: 16-20"

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
7.0	4	9	6	9	D





Soft White Winter Wheat

Released 2013, PVP 201100478; Pedigree: Brundage/Mohler

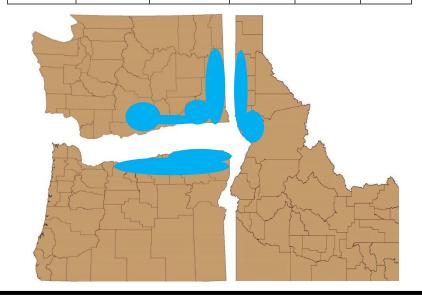
Medium stature; early maturity; good straw strength

Protein = 11.1%; Test Weight = 60.9 lbs/bu

Precipitation Zone: 16-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	3	8	9	_	MD



WB 528



Soft White Winter Wheat

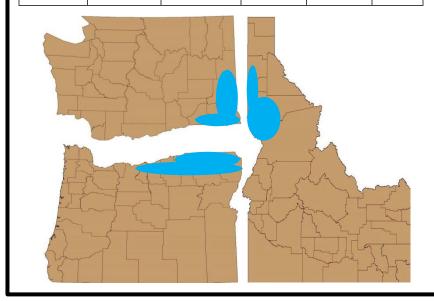
Released 2004, PVP 200600273; Pedigree: WB 470/Madsen

Medium stature; medium-early maturity; good straw strength

Protein = 11.1%; Test Weight = 60.9 lbs/bu

Precipitation Zone: 16-20"

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
5.0	3	5	5	9	D	





Soft White Winter Wheat

Released 2008, PVP 200900446; Pedigree: Malcolm/Madsen//

Cashup

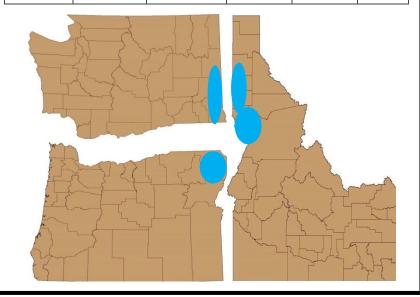
Short-medium stature; late maturity; good-excellent straw strength

Protein = 11.4%; Test Weight = 60.2 lbs/bu

Precipitation Zone: 18" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	3	_	6	_	MD



WB 456



Soft White Winter Wheat

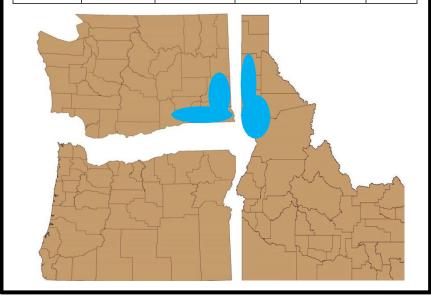
Released 2008, PVP 200900445; Pedigree: WB470/Madsen

Short stature; early maturity; excellent straw strength

Protein = 12.3%; Test Weight = 60.9 lbs/bu

Precipitation Zone: 16" or greater

П	Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
	4.0	4	_	3	_	А



Madsen



Soft White Winter Wheat

Released 1988, PVP free; Pedigree: Hill81/Moisson951

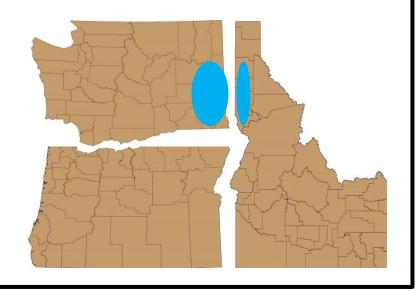
Medium stature; medium maturity; excellent straw strength

Protein = 11.3%; Test Weight = 59.5 lbs/bu

Precipitation Zone: 16" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
6.0	1	6	4	5	А



Jasper



Soft White Winter Wheat

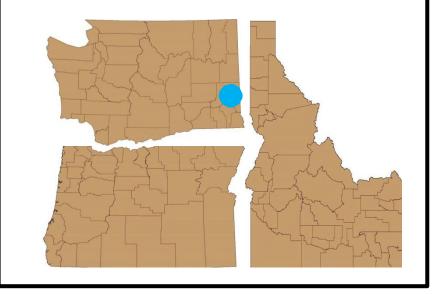
Released 2014, PVP; Pedigree: Sentry/Lewjain//Madsen*3/// Brundage 96

Medium stature; medium maturity; excellent straw strength

Protein = 11.4%; Test Weight = 57.5 lbs/bu

Precipitation Zone: 16" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	3	9	4		D



Eltan



Soft White Winter Wheat

Released 1990, PVP free; Pedigree: Luke/Brevor/Norin10/...

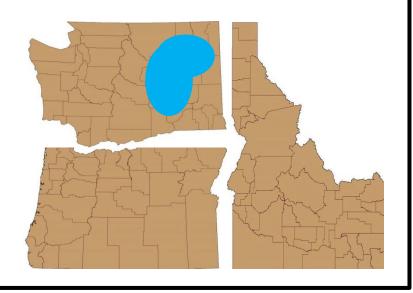
Medium stature; late maturity; good straw strength

Protein = 11.0%; Test Weight = 59.5 lbs/bu

Precipitation Zone: 15" or less

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
2.0	5	4	7	2	D





Soft White Winter Wheat

Released 2011, PVP free; Pedigree: Eltan/4/WA7217/3/WA6581// Paha/Tres/5/WA7665//Madsen/Tyee

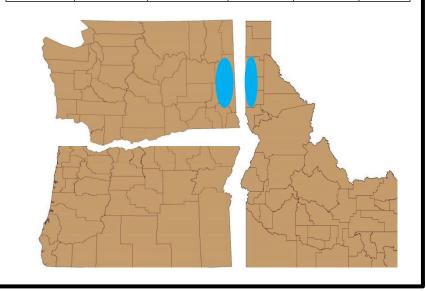
Medium stature; early-medium maturity; excellent straw strength

Protein = 10.7%; Test Weight = 59.4 lbs/bu

Precipitation Zone: 16-20" or greater

*Aluminum tolerance = 3

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	2	8	7	3	MD



Selbu





Soft White Winter Wheat

Released 2012, PVP free; Pedigree: Dusty//Madsen sib/Dusty/// Tres//Madsen sib/Tres

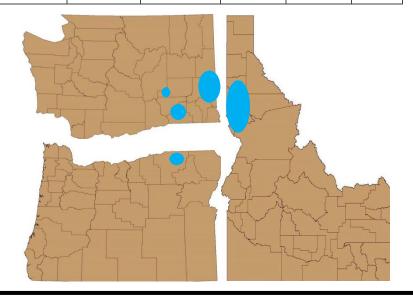
Medium stature; medium maturity; excellent straw strength

Protein = 11.3%; Test Weight = 60.9 lbs/bu

Precipitation Zone: 16-20" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	1	7	5	8	D



Puma



Soft White Winter Wheat

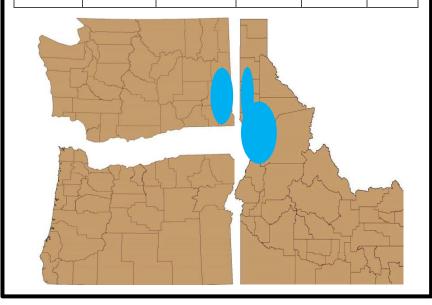
Released 2013, PVP 201400085; Pedigree: Spitzer/Madsen/Rod// Spitzer/Madsen

Medium-tall stature; early maturity; excellent straw strength

Protein = 11.0%; Test Weight = 59.9 lbs/bu

Precipitation Zone: 16-20" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	3	7	4	8	MD



Masami



Soft White Winter Wheat

Released 2004, PVP 200600244; Pedigree: MacVicar/PI561031

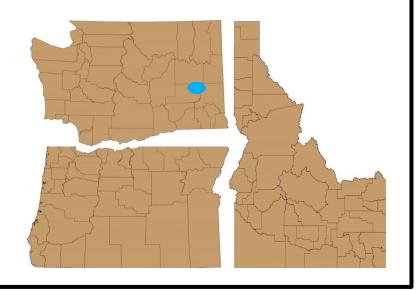
Medium stature; late maturity; excellent straw strength

Protein = 10.5%; Test Weight = 58.4 lbs/bu

Precipitation Zone: 12-16"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	3	5	3	5	D



Xerpha



Soft White Winter Wheat

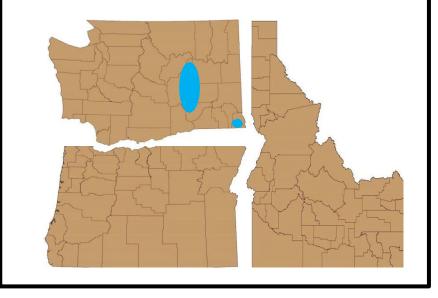
Released 2009, PVP 200900289; Pedigree: Eltan/Estica

Medium stature; medium maturity; good straw strength

Protein = 10.8%; Test Weight = 59.4 lbs/bu

Precipitation Zone: 16" or less

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
5.0	5	4	6	4	А	



Otto



Soft White Winter Wheat

Released 2011, PVP 201300360; Pedigree: Eltan/Madsen//Eltan*3

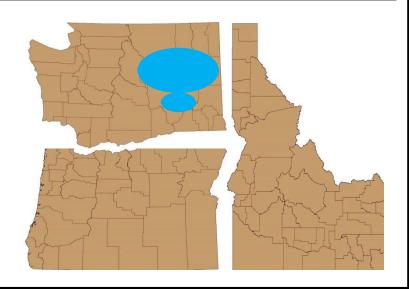
Medium stature; medium-late maturity; excellent straw strength

Protein = 11.2%; Test Weight = 59.3 lbs/bu

Precipitation Zone: 15" or less

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	2	6	3	2	D



Huffman



Soft White Winter Wheat

Released 2014, PVP 201500295; Pedigree: J99C0009//'Bruneau'/ J99C0009 (WSU breeding line with high *Cephalosporium* stripe tolerance)

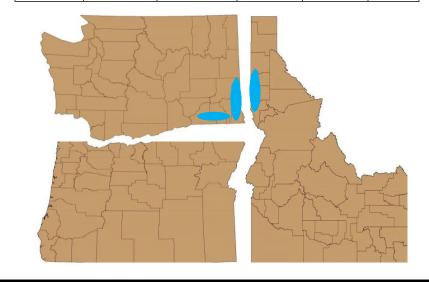
Medium stature; late maturity; good straw strength

Protein = 10.9%; Test Weight=58.8 lbs/bu

Precipitation Zone: 16" or greater

*Soil Borne Mosaic Virus = 3

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	3				MD



AP 700 CL





Soft White Winter Wheat - Clearfield type

Released 2007, PVP 200800323; Pedigree: Tubbs sib/Stephens/FS-4

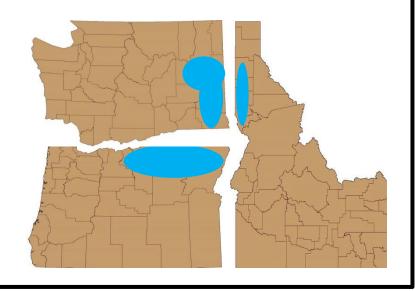
Medium stature; early maturity; excellent straw strength

Protein = 11.4%; Test Weight = 59.1 lbs/bu

Precipitation Zone: 12-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	2	6	3	-	А



UICF Brundage University of Idaho

Soft White Winter Wheat – Awnless - Clearfield type

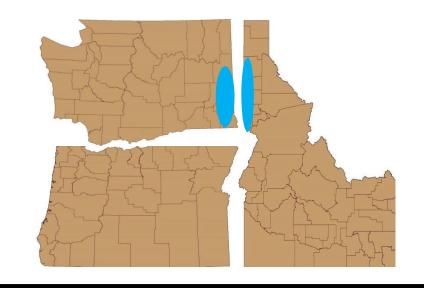
Released 2009, PVP 201100031; Pedigree: Madsen*4/FS4/2* Brundage/3*Brundage 96

Medium stature; early-medium maturity; excellent straw strength

Protein = 11.1%; Test Weight = 58.8 lbs/bu

Precipitation Zone: 16" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	4	7	9	3	MD



ORCF 102



Soft White Winter Wheat - Clearfield type

Released 2004, PVP 200500337; Pedigree: Madsen/FS-4// Weatherford

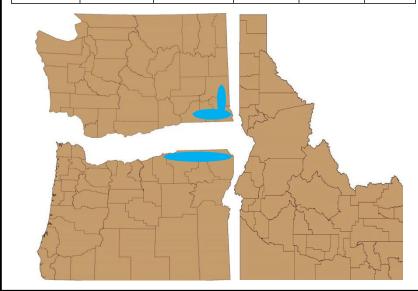
Medium-tall stature; medium maturity; excellent straw strength

Protein = 11.2%; Test Weight = 60.0 lbs/bu

Precipitation Zone: 12-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
5.0	3	5	4	8	А	



ORCF 103



Soft White Winter Wheat - Clearfield type

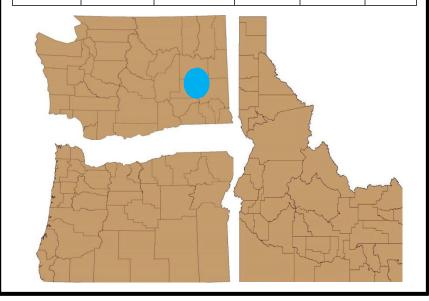
Released 2008, PVP 200900464; Pedigree: Eltan/3/FS-4//Stephens/ Madsen

Short stature; medium-late maturity; good straw strength

Protein = 11.1%; Test Weight = 59.1 lbs/bu

Precipitation Zone: 12" or less

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
4.0	6	6	6	4	D	



WB 1070 CL WestBred

Soft White Winter Wheat - Clearfield type

Released 2001, PVP 201100470; Pedigree: WB-528/FS4

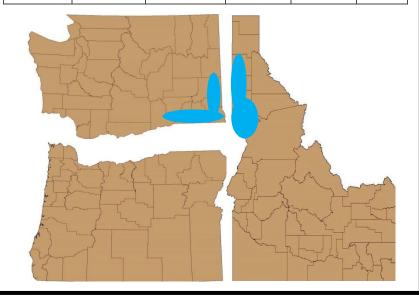
Short stature; early maturity; excellent straw strength

Protein = 12.0%; Test Weight = 61.7 lbs/bu

Precipitation Zone: 16-24"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
7.0	2	7	5	_	А



WB 1066 CL WestBred

Soft White Winter Wheat - Clearfield type

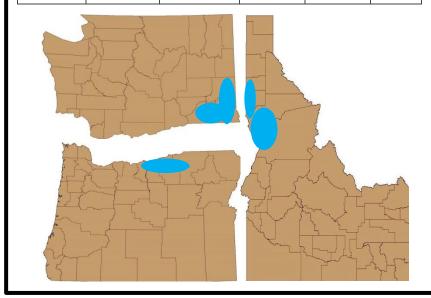
Released 2001, PVP 201100477; Pedigree: WB-528/FS4

Medium stature; early maturity; very good straw strength

Protein = 12.3%; Test Weight = 61.1 lbs/bu

Precipitation Zone: 16-24"

- 1	Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
	2.0	2	4	5	_	MD	



Mela CL+



Soft White Winter Wheat - Clearfield type (2-gene)

Released 2013, PVP "Pending"; Pedigree: Eltan derived

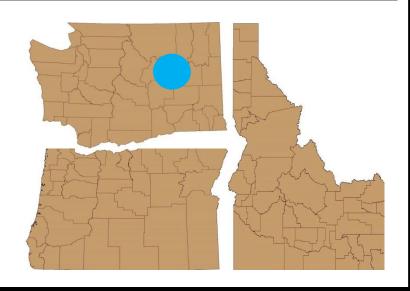
Medium stature; medium maturity; good straw strength

Protein = 10.9%; Test Weight = 59.8 lbs/bu

Precipitation Zone: 15" or less

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	5	5	7	2	D



Curiosity CL+ WASHINGTON STATE UNIVERSITY

Soft White Winter Wheat - Clearfield type (2-gene)

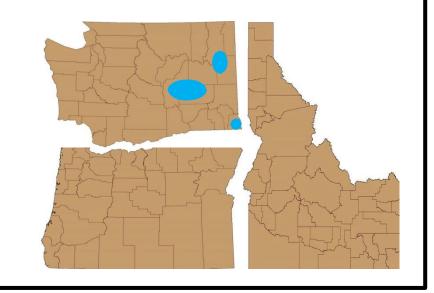
Released 2013, PVP "Pending"; Pedigree: Eltan derived

Medium stature; medium maturity; good straw strength

Protein = 10.8%; Test Weight = 59.9 lbs/bu

Precipitation Zone: 15" or less

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	4	5	7	3	D



Cara





Soft White Winter Club Wheat

Released 2007, PVP free; Pedigree: Tres/Madsen + Omar +

Moisson951*Barbee

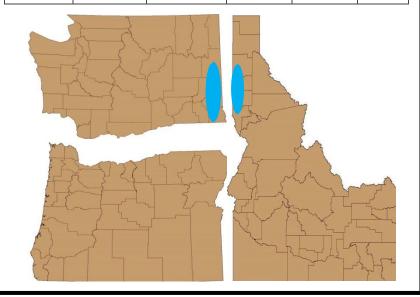
Medium stature; medium maturity; excellent straw strength

Protein = 11.1%; Test Weight = 58.1 lbs/bu

Precipitation Zone: 12-20" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	2	6	4	9	MD



Chrystal





Soft White Winter Club Wheat

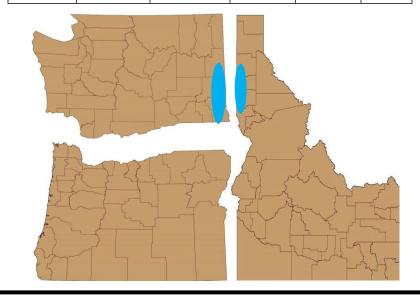
Released 2011, PVP free; Pedigree: Chukar sib//Brimstone/Moro

Medium stature; medium maturity; excellent straw strength

Protein = 11.1%; Test Weight = 59.8 lbs/bu

Precipitation Zone: 12-20" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	3	8	5	6	MD



Bruehl



Soft White Winter Club Wheat

Released 2000, PVP free; Pedigree: Oasis/Luke/Itana/Tres/Eltan. Luke and Eltan are SWW common, Itana is a hard red winter, Oasis is a soft red winter and Tres is a SWW club.

Medium-tall stature; late maturity; poor straw strength

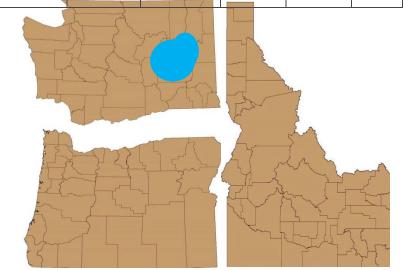
Protein = 10.9%; Test Weight = 57.6 lbs/bu **Precipitation**

Zone: 14" or less

Susceptible to low falling number

Disease/Quality and Adaptation Data

Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3	3	6	2	D
	Stripe Rust		Tolerance Breaker Rating	Tolerance Breaker Mold Rating





Soft White Winter Club Wheat

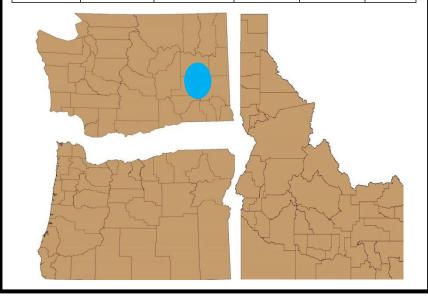
Released 2012, PVP free; Pedigree: Dusty/Madsen/Rulo/Tyee, Dusty - Nugaines, Madsen - Moisson951/Hill81, Rulo - Capelle Desprez/Tres, Tyee - Roazon/Tres

Medium-tall stature; medium maturity; very good straw strength

Protein = 10.6%; Test Weight = 59.3 lbs/bu

Precipitation Zone: 14" or less

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	3	7	7	9	MD



Coda





Soft White Winter Club Wheat

Released 1998, PVP free; Pedigree: Madsen/Tres

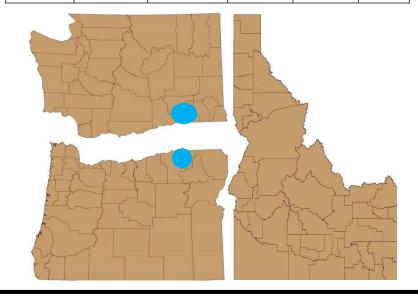
Medium stature; medium maturity; excellent straw strength

Protein = 11.2%; Test Weight = 61.0 lbs/bu

Precipitation Zone: 16-20"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	3	3	3	7	D



Chukar Spara





Soft White Winter Club Wheat

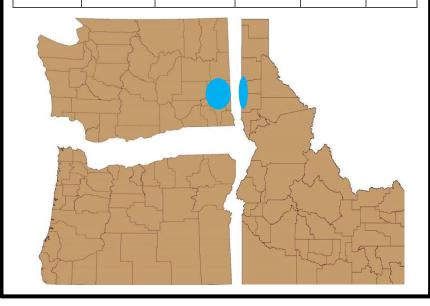
Released 2001, PVP free; Pedigree: Rulo - Capelle Desprez/Tres + Tyee - Roazon/Tres

Medium stature; medium-late maturity; excellent straw strength

Protein = 10.4%; Test Weight = 58.5 lbs/bu

Precipitation Zone: 16-20" or greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	1	6	3	9	MD



Whetstone





Hard Red Winter Wheat

Released 2008, PVP 200900301; Pedigree: Pecos/W94-462

Medium stature; early maturity; excellent straw strength

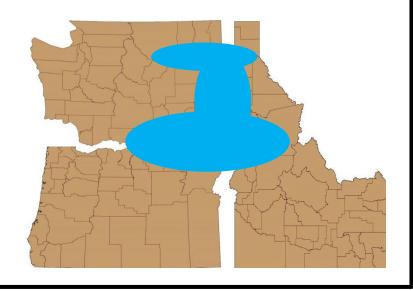
Protein = 12.8%; Test Weight = 61.2 lbs/bu

Precipitation Zone: 12-20"

*Soil Borne Mosaic Virus = 3

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	3	_	_	9	MD



Boundary University of Idaho

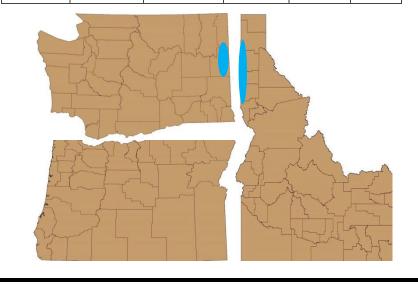
Hard Red Winter Wheat

Released 1997, PVP Free; Pedigree: A76327W-2-3T-5P/A7457W-13-1-1T-2P. Breeding line A76327W-2-3T-5P = Norin 10/Brevor// 2*Centana, Centana*2/CI14106. Breeding line A7457W-13-1-1T2P = II60-155/CI 14106//McCall/4/Kiowa/UT222a-437-2//Delmar/3/SM4/MT6619

Medium stature; medium maturity; excellent straw strength

Protein = 11.9%; Test Weight = 60.4; **Precipitation Zone: 14" or greater**

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	5	_	_	2	Α



LCS Azimut



Hard Red Winter Wheat

Released 2010, PVP (not protected)

Pedigree: Alicante/Oratorio

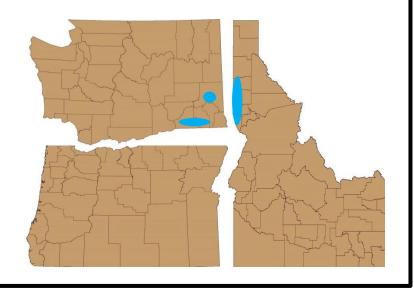
Short stature; early maturity; excellent straw strength

Protein = 12.1%; Test Weight = 57.3 lbs/bu

Precipitation Zone: 12-20" or greater

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
2.0	1	7	5	_	А



LCS Colonia



Hard Red Winter Wheat

Released 2013, PVP "Pending"

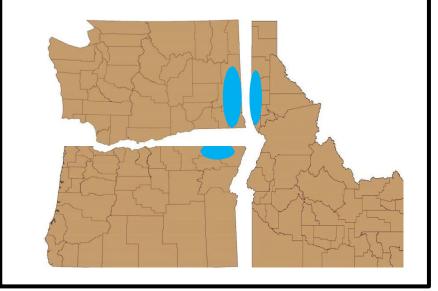
Pedigree: Manhattan x Harlem x NIC97-3068-B

Medium stature; early-medium maturity; excellent straw strength

Protein = 12.6%; Test Weight = 56.9 lbs/bu

Precipitation Zone: 16-20"

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
2.0	3	_	_	_	Α



Norwest 553



Hard Red Winter Wheat

Released 2007, PVP 200800394; Pedigree: 95B343/Isengrain

Short stature; medium maturity; excellent straw strength

Protein = 12.8%; Test Weight = 61.1 lbs/bu

Precipitation Zone: 12" or greater

Susceptible to winter kill

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating	
8.0	1	_	5	9	А	

Arrowhead WestBred



Hard Red Winter Wheat

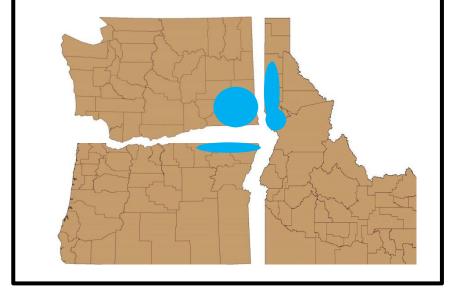
Released 2012, PVP 201100479; Pedigree: Promontory/Karl 92

Medium-tall stature; medium maturity; good straw strength

Protein = 12.6%; Test Weight = 61.5 lbs/bu

Precipitation Zone: 12-24"

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
3.0	6	_	_	_	А



Keldin



Hard Red Winter Wheat

Released 2013, PVP 201300462; Pedigree: Barenburg 235 x Carlisle/TRX-Al6-3-2, developed by Pflanzenzucht Oberlimpurg of Germany, and licensed to WestBred

Medium stature; Late maturity; very good straw strength

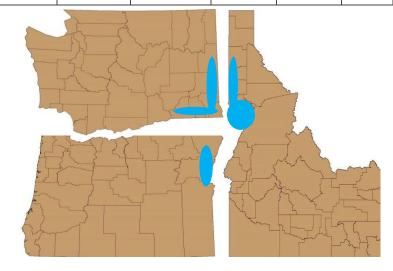
Protein = 12.8%; Test Weight = 61.4 lbs/bu

Precipitation Zone: 16-

24"

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
2.0	4	_	_	_	А



Rimrock



Hard Red Winter Wheat

Released 2012, PVP 201100463; Pedigree: Fundulea 4 x 5 IWWSN-1185; IWWSN is a CIMMYT line, never registered as a variety

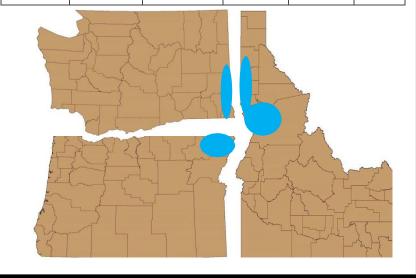
Medium stature; medium maturity; very good straw strength

Protein = 12.3%; Test Weight = 60.3 lbs/bu

Precipitation Zone: 20" or

greater

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	6	_	_	-	А



Farnum



Hard Red Winter Wheat

Released 2008, PVP 200900327; Pedigree: 'Buchanan' (PI 532994)/4/'Kavkaz' (PI 361879)/3/'PI173467'/'Itana'(Cltr 12933)//'Wanser'(Cltr 13844).

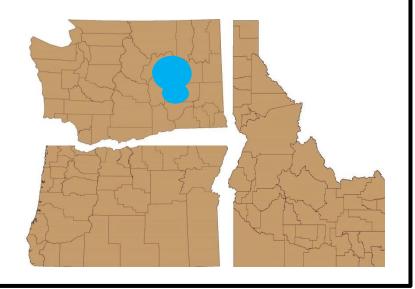
Tall stature; medium maturity; very good straw strength

Protein = 12.7%; Test Weight = 59.0 lbs/bu

Precipitation Zone: 16" or less

Disease/Quality and Adaptation Data

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
5.0	2	5	6	2	D



Finley



Hard Red Winter Wheat

Released 2005, PVP free; Pedigree: 'Weston'/ 'Hatton sib'/TX69A450.

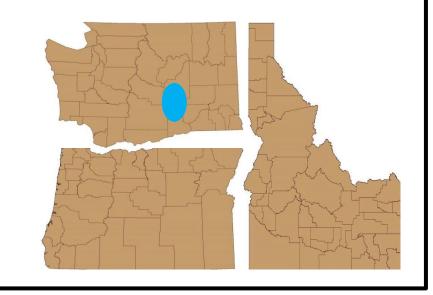
TX69A450 is a Texas selection from a short wheat/Scout composite

Tall stature; medium maturity; excellent straw strength

Protein = 12.4%; Test Weight = 62.0 lbs/bu

Precipitation Zone: 14" or less

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	3	8	6	7	MD



Bauermeister WASHINGTON STATE UNIVERSITY



Hard Red Winter Wheat

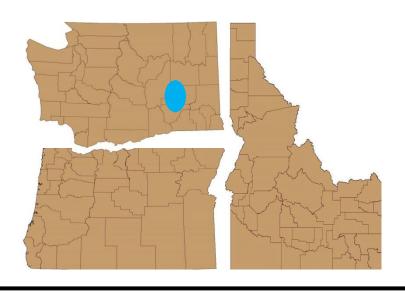
Released 2005, PVP 200600245; Pedigree: TAM200/Eltan

Medium stature; medium maturity; good straw strength

Protein = 11.8%; Test Weight = 59.4 lbs/bu

Precipitation Zone: 12" or less

Winter Hardiness	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
4.0	6	4	7	2	А



SY Clearstone CL2



Hard Red Winter Wheat - Clearfield Type (2-gene)

Released 2013, PVP Title V; Pedigree: Yellowstone*4/MTCL01158/ CDC Teal11A//Jagalene

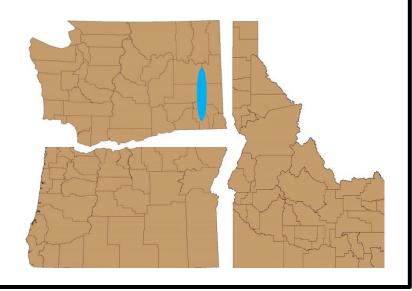
Medium-Tall stature; Medium maturity; good straw strength

Winter hardiness = 4.0%; Test Weight = 59.9 lbs/bu

Precipitation Zone: 12-16" Proposed area of adaptation below

Disease/Quality and Adaptation Data

Protein	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
14.3	4	3	_	_	А



AP 503 CL2





Hard Red Winter Wheat - Clearfield type (2-gene)

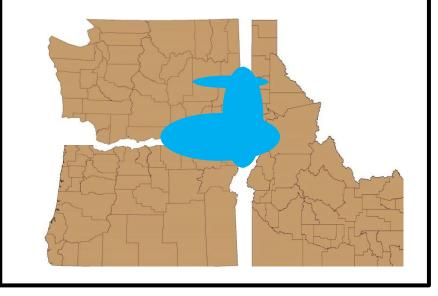
Released 2007, PVP 200800322; Pedigree: i98-362/AP502CL, i98-362A1 is a line derived from Jagalene (W98-362)

Medium stature; early maturity; good straw strength

Winter hardiness = 5.0%; Test Weight = 62.8 lbs/bu

Precipitation Zone: 12-20" *Soil Borne Mosaic Virus = 3

Protein	Stripe Rust	Ceph. Stripe Tolerance	Straw- Breaker Rating	Snow Mold Rating	Quality Rating
13.3	5	4	_	_	MD



WASHINGTON SEEDSMEN FOR CERTIFIED SEED OF FIELD PEA, LENTIL, and SMALL GRAIN²

*Plant approved for conditioning certified seed.

**Plant approved for conditioning certified seed which has acceptable automatic mechanical seed sampler.

ADAMS COUNTY

**CHS, Inc., Othello	509-488-9681
**Ritzville Seed, LLC, Ritzville	509-659-0270
**Union Elevator & Warehouse Company, Lind	509-677-3441

BENTON COUNTY

*M & E Seed Company, Prosser	. 509-786-3446
Horse Heaven Grain, LLC, Prosser	509-786-4997

COLUMBIA COUNTY

**Abbey Farms, Inc	c., Waitsburg			509-337-8860
**Columbia County	Grain Growers,	Inc., Day	/ton	509-382-2571

DOUGLAS COUNTY

**Central Washington Grain Growers, Inc., Waterville	509-745-8551
**Labor L Malaca Cood Commence Coulos City	E00 (22 E220

**John L. McLean Seed Company, Coulee City.......509-632-5238

FRANKLIN COUNTY

Bleyhl Farm Service, Pasco	509-547-5577
**Connell Grain Growers, Inc., Connell	1-800-572-5932, 509-234-2641
Frishnecht	509-234-2641
**Eppich Grain, Inc., Basin City	509-269-4693
*L & H Seeds, Connell	509-234-4433
*Tri-State Seed, LLC, Connell	509-234-2500
*Washington Producers, Inc., Basin City	509-269-9218
Wilbur Ellis Company, Pasco	800-967-2148

GARFIELD COUNTY

Tomco Seed, Pomeroy	509-843-1468
Western Farm Service, Pomeroy	509-843-3491

GRANT COLINTY

GRANT COUNTY	
**Tomco Seeds, Warden	509-349-8893
**Connell Grain Growers	509-765-3881
Moses Lake	509-765-3898
**Golden West Bean & Grain, Royal City	509-346-9454
**CHS, Inc., Quincy	509-787-3511
**KAPA Seed Service, Quincy	509-787-1561
**McKay Seed Company, Inc., Moses Lake	509-766-9894

WASHINGTON SEEDSMEN FOR CERTIFIED SEED OF FIELD PEA, LENTIL, and SMALL GRAIN²

*Plant approved for conditioning certified seed.

**Plant approved for conditioning certified seed which has acceptable automatic mechanical seed sampler.

GRANT COUNTY (Cont.)

**Quincy Farm Chemicals, Inc., Quincy	509-787-4541
Saddle Mountain Supply Company, Royal City	509-346-2291
*Wagner Seed Company, Warden	509-349-8094
**Wilson Creek Union Grain & Trading Co. Wilson Creek	509-345-2551

KITTITAS COUNTY

*Foothills Farm, Thorp	509-964-2515/929-5334
*Old Mill Country Store, Ellensburg	509-925-5397

KLICKITAT COUNTY

**Jensen Seed Farm, Inc., Bickleton	509-896-2312
Mid Columbia Producers, Inc., Goldendale	541-442-5555
Centerville	541-442-5555

LINCOLN COUNTY

**AgVentures, Harrington	509-253-4604
AgVentures, Odessa	509-982-2691
**Almira Farmers Warehouse, Almira	509-639-2431
**Central Washington Grain Growers, Inc., Wilbur	509-647-5510
**Davenport Union Warehouse Company, Davenport	509-725-7081
**McKay Seed Company, Inc., Almira	509-639-2293
**Ritzville Seed, LLC, Odessa	509-982-2661
**Reardan Seed Company, Inc., Reardan	509-796-2575

SNOHOMISH COUNTY

TTIME VIEW FORMS STONWOOD	360-674-3457
ivialitie view Latitis, stallwood,	

SPOKANE COUNTY

**C	o-Ag, Fairfield	509-283-2333
**C	ustom Seed Conditioning, Inc., Elk (Portable)	509-292-2506
**H	ager Seed Processing, Inc., Oakesdale (Portable).	509-999-SEED 509-285-4243
F	Primeland, Rockford	509-291-5511
*Spo	okane Seed Company, Spokane	509-535-3671

**WSCIA Foundation Seed Service, WSU Seedhouse, Pullman 509-335-4365

WASHINGTON SEEDSMEN FOR CERTIFIED SEED OF FIELD PEA, LENTIL, and SMALL GRAIN²

WALLA WALLA COUNTY

**Blue Mountain Seed, Inc., Walla Walla	509-529-3366
**Northwest Grain Growers, Inc., Walla Walla	509-525-6510
**Tomco Seed, Clyde/Prescott	509-749-2237
Walla Walla (Hwy 125)	509-749-2237
Walla Walla (Airport)	509-529-6787
Adams, OR	541-566-3522

WHITMAN COUNTY

*BNP Lentil Company, Farmington	509-287-2711
**Co-Ag, Oakesdale	509-285-5516
Garfield	509-635-1227
Rosalia	509-523-3511
**Columbia Grain, Pullman	509-332-1000
**Hager Seed Processing, Inc., Oakesdale	509-999-SEED509-285-4243
**Johnson Seed, LLC, Garfield	509-290-3649 509-635-0107
**McKay Seed Company, Inc., Rosalia	509-523-3471
Ritzville Seed, LLC, Lacrosse	509-549-3541
**RMK Farms, Inc., Oakesdale	509-285-5521
**Whitgro, Inc., St. John	509-648-3713
**State Line Processors, Inc., Tekoa	509-284-4101
Tomco Seed, Lacrosse	509-549-3545
**Uniontown Cooperative Assn., Uniontown	509-229-3828
**PNW Farmers Co-op, Steptoe	

YAKIMA COUNTY

biejini dini service, Grandview	
Sunnyside	509-837-5755
Toppenish	509-865-2700
Zillah	509-829-6922
Connell Grain Growers, Inc., Toppenish	509-865-2451
Golden West Seed Co., Inc., Zillah	509-829-9500
**Tri-West Specialties, LLC, Harrah	509-848-2842
Yakima Co-op, Yakima	509-457-3333

REFERENCES:

- 1. Related information on small grain varieties http://smallgrains.wsu.edu/variety/
- 2. Washington State Crop Improvement Association http://washingtoncrop.com/

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^{**}Plant approved for conditioning certified seed which has acceptable automatic mechanical seed sampler.