



**varsity**  **IDAHO**

LIMAGRAIN CEREAL SEEDS + UNIVERSITY of IDAHO

# WHEAT SEED GUIDE

..... Edition One

# Collaboration Breeds Innovation

**Varsity Idaho (VI) is an independent wheat breeding program with collaborators, the University of Idaho (U of I) and Limagrain Cereal Seeds (LCS).** Both partners co-breed, co-select and co-release VI varieties, creating shared success and a robust pipeline of wheat genetics for Pacific Northwest growers.

Local farmers are reaping the benefits of the Varsity Idaho program on their farms with the portfolio of proven VI wheat varieties bred to thrive on Idaho, Washington and Oregon fields. They are also seeing a positive return on investment in the form of royalty payments dedicated to wheat research at the U of I College of Agricultural Life Sciences.

**Varsity Idaho brings the best wheat genetics to your acres, both now and in the years ahead. Explore the VI variety suite in the following pages, and visit [VarsityIdaho.com](http://VarsityIdaho.com) anytime for the latest variety information.**

## Inside

### SOFT WHITE WINTER WHEAT, CONVENTIONAL

VI Gem.....	4
VI Shock.....	6
VI Bulldog.....	8
VI Frost.....	10

### SOFT WHITE WINTER WHEAT, CLEARFIELD PLUS

VI Encore CL+ .....	12
VI Voodoo CL+.....	14
VI Presto CL+ .....	16
UI Magic CL+ .....	18

### HARD WHITE SPRING WHEAT

UI Platinum .....	20
-------------------	----

### SOFT WHITE SPRING WHEAT

UI Stone .....	21
----------------	----

### TECHNICAL INFORMATION

Data Sources .....	22
Wheat Quality.....	23

Agronomic, disease resistance and quality scores in this guide are based on the most recent data available at the time of publication, November 1, 2023. Visit [VarsityIdaho.com](http://VarsityIdaho.com) year-round to see the latest trial data.



## A gem of a variety



**Targeted**  
for high-production zones



**Most desirable**  
end-use quality



**Excellent**  
stripe rust tolerance



**Reliable**  
performance

SOFT WHITE WINTER WHEAT

# VI Gem

ADAPTATION



### YIELD

	BU/AC	VI Gem	Trial Avg.	MEAN
2022 UI S. Irrigated	159			105% of mean
	151			
2021 UI S. Irrigated	149			106% of mean
	140			
2021 UI All	107			109% of mean
	98			
2022 UI All	122			106% of mean
	115			

### AGRONOMIC FEATURES

	VI Gem	SY Ovation	LCS Artdeco	SY Assure
Test Weight	59.6	60.4	59.6	61.2
Protein (%)	10.2	12.2	11.3	12.0
Heading (Julian)	153	154	151	149
Plant Height (in.)	33	33	31	32
Coleoptile Length (in.)	3.4	3.5	3.3	2.9
Straw Strength	Excellent	Excellent	Excellent	Excellent

All available public and private data used in compiling scores

### DISEASE TOLERANCE



All available public and private data used in compiling scores

### END-USE QUALITY

Overall Quality	Baking Quality	Flour Protein	Milling Quality
Most Desirable	Most Desirable	Desirable	Most Desirable

Data obtained from the LCS and U of I Quality Laboratories



# Shockingly high yields



**Exceptional yield**  
in UI South trials  
4 years running



**Excellent**  
stripe rust tolerance



**Good**  
straw strength



**Heavy test weight**  
and desirable  
end-use quality

## SOFT WHITE WINTER WHEAT VI Shock

ADAPTATION



YIELD			
	BU/AC	VI Shock	Trial Avg. MEAN
3-Year S. ID Irrigated	142		147
2022 S. ID Irrigated	146		151



AGRONOMIC FEATURES				
	VI Shock	SY Ovation	LCS Artdeco	AP Illiad
Test Weight	59.1	60.4	59.6	60.4
Protein (%)	10.0	12.2	11.3	12.0
Winter-Hardiness	Good	Good	Below Avg.	Below Avg.
Heading (Julian)	154	154	151	153
Plant Height (in.)	34	33	31	34
Coleoptile Length (in.)	3.4	3.5	3.3	3.1
Straw Strength	Excellent	Excellent	Excellent	Excellent

All available public and private data used in compiling scores

DISEASE TOLERANCE			
	Susceptible	Intermediate	Resistant
Stripe Rust			
Strawbreaker Foot Rot			
C-Stripe			

All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Most Desirable	Desirable	Desirable	Desirable

Data obtained from the LCS and U of I Quality Laboratories



## Reigning over wheat fields with straw strength and yield



**Extremely**  
strong straw



**Striking wheat**  
with large heads



**Excellent**  
stripe rust tolerance



**Excellent**  
end-use quality

## SOFT WHITE WINTER WHEAT VI Bulldog

ADAPTATION



### YIELD

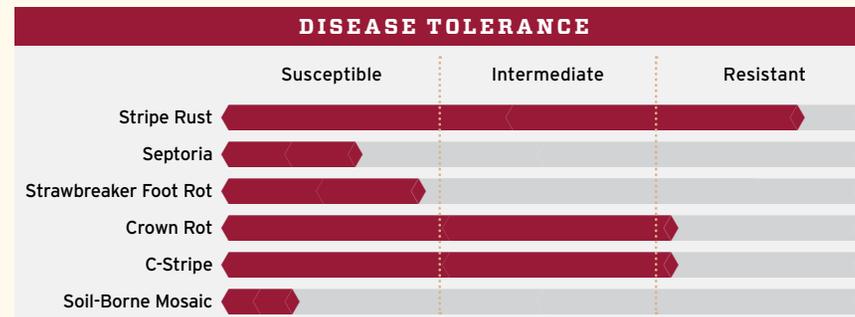
	BU/AC	VI Bulldog	Trial Avg.	MEAN
1-Year OSU Low Rain	68			<b>105%</b> of mean
3-Year UI North	119			<b>104%</b> of mean
2-Year WSU > 20"	116			<b>104%</b> of mean
3-Year WSU Irrigated	107			<b>103%</b> of mean
3-Year WSU > 20"	116			<b>103%</b> of mean
3-Year WSU 16-20"	112			<b>102%</b> of mean
2-Year UI North	123			<b>101%</b> of mean
1-Year WSU > 20"	101			<b>101%</b> of mean

### AGRONOMIC FEATURES

	VI Bulldog	Rosalyn	SY Ovation	Stephens	Xerpha
Test Weight	62.2	59.6	61.1	60.2	61.0
Protein %	9.8	9.0	9.1	9.4	9.7
Winter-Hardiness	Good	Good	Good	Below Avg.	Very Good
Heading (Julian)	156	160	158	155	159
Plant Height (in.)	34	34	35	34	35
Straw Strength	Excellent	Very Good	Very Good	Very Good	Good
Head Type	Awnless	Awnless	Awned	Awned	Awned

All available public and private data used in compiling scores

### DISEASE TOLERANCE



All available public and private data used in compiling scores

### END-USE QUALITY

Overall Quality	Baking Quality	Flour Protein	Milling Quality
<b>Most Desirable</b>	Most Desirable	Desirable	Most Desirable

Data obtained from the LCS and U of I Quality Laboratories



## Foil the freeze



**Excellent**  
winter-hardiness



**Ideal**  
low rainfall adaptation



**Good**  
stripe rust and promising  
snow mold tolerance



**Most desirable**  
end-use quality

## SOFT WHITE WINTER WHEAT VI Frost

ADAPTATION



YIELD			
	BU/AC	VI Frost	Trial Avg. MEAN
4-Year WSU < 12"	43		91% of mean
	47		
4-Year WSU 12-16"	80		98% of mean
	82		



AGRONOMIC FEATURES				
	VI Frost	Devote	Otto	Norwest Duet
Test Weight	59.8	60.5	59.0	58.6
Protein (%)	12.6	11.5	11.9	11.4
Winter-Hardiness	Excellent	Good	Good	Good
Heading (Julian)	154	158	160	154
Plant Height (in.)	35	33	35	35
Coleoptile Length (in.)	4.1	3.6	-	3.4
Straw Strength	Excellent	Excellent	Excellent	Average

All available public and private data used in compiling scores

DISEASE TOLERANCE			
	Susceptible	Intermediate	Resistant
Stripe Rust			
Strawbreaker Foot Rot			
Soil-Borne Mosaic			

All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Most Desirable	Most Desirable	Less Desirable	Most Desirable

Data obtained from the LCS and U of I Quality Laboratories



## When you want more



**Two-gene**  
Clearfield Plus



**Improved**  
stripe rust tolerance



**Attractive**  
plant type



**Excellent**  
performance  
in intermediate to high  
rainfall zones

SOFT WHITE WINTER WHEAT

# VI Encore CL+

ADAPTATION



### YIELD

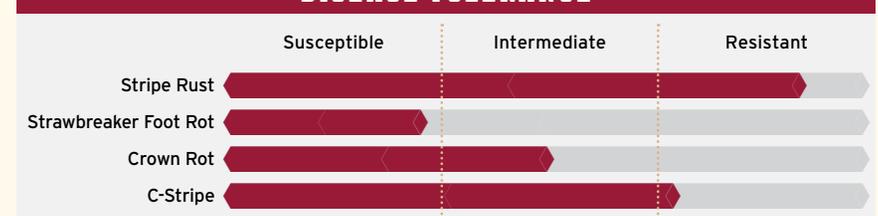
	BU/AC	VI Encore CL+	Trial Avg.	MEAN
2-Year WSU < 12"	45		41	110% of mean
3-Year WSU 12-16"	78		77	101% of mean
2-Year WSU 12-16"	87		87	100% of mean
3-Year OSU Int. Rain	100		99	101% of mean
3-Year WSU > 20"	103		101	102% of mean
2023 WSU Irrigated	136		126	108% of mean

### AGRONOMIC FEATURES

	VI Encore CL+	VI Presto CL+	UI Magic CL+	Piranha CL+
Test Weight	60.2	61.2	59.7	58.6
Protein (%)	10.5	10.8	10.3	10.5
Winter-Hardiness	Below Avg.	Good	Below Avg.	Good
Heading (Julian)	155	154	153	154
Plant Height (in.)	34	37	32	35
Coleoptile Length (in.)	4.4	4.0	4.1	3.4
Straw Strength	Excellent	Excellent	Excellent	Average

All available public and private data used in compiling scores

### DISEASE TOLERANCE



All available public and private data used in compiling scores

### END-USE QUALITY

Overall Quality	Baking Quality	Flour Protein	Milling Quality
Desirable	Desirable	Acceptable	Desirable

Data obtained from the LCS and U of I Quality Laboratories



# It's not magic, it's Voodoo

**Similar plant**  
type to UI Magic CL+

**Improved**  
yield and stripe  
rust tolerance

**Top performer**  
in WSU 16-20" 4-year

**Best-yielding**  
variety in OSU high and  
intermediate rain trials

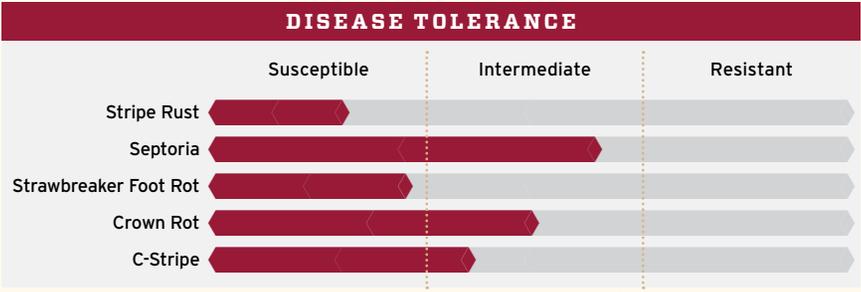
## SOFT WHITE WINTER WHEAT VI Voodoo CL+



YIELD			
	BU/AC	VI Voodoo CL+ Trial Avg.	MEAN
3-Year WSU 12-16"	73		95% of mean
4-Year WSU 16-20"	111		103% of mean
4-Year WSU > 20"	110		99% of mean
4-Year OSU Int. Rain	103		104% of mean
4-Year OSU High Rain	135		108% of mean
4-Year OSU Irrigated	122		102% of mean

AGRONOMIC FEATURES				
	VI Voodoo CL+	UI Magic CL+	Piranha CL+	LCS Artdeco
Test Weight	58.6	59.7	58.6	59.6
Protein (%)	11.0	10.3	10.5	11.3
Winter-Hardiness	Average	Below Avg.	Good	Below Avg.
Heading (Julian)	154	153	154	151
Plant Height (in.)	30	32	35	31
Coleoptile Length (in.)	4.0	4.1	3.4	3.3
Straw Strength	Excellent	Excellent	Average	Excellent

All available public and private data used in compiling scores



All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Most Desirable	Most Desirable	Desirable	Desirable

Data obtained from the LCS and U of I Quality Laboratories



## Levitate your production



**Very heavy test weight**  
consistent trial topper



**Excellent performance**  
in WSU low rainfall trials



**Good tolerance**  
to stripe rust



**Taller plant type**  
ideal for low rainfall

SOFT WHITE WINTER WHEAT

## VI Presto CL+

ADAPTATION



YIELD			
	BU/AC	VI Presto CL+ Trial Avg.	MEAN
4-Year WSU < 12"	47		100% of mean
4-Year WSU 12-16"	74		99% of mean
5-Year OSU Low Rain	56		97% of mean
5-Year OSU Int. Rain	98		99% of mean

AGRONOMIC FEATURES					
	VI Presto CL+	Piranha CL+	UI Magic CL+	LCS Artdeco	Norwest Duet
Test Weight	61.2	58.6	59.7	59.6	58.6
Protein (%)	10.8	10.5	10.3	11.3	10.5
Winter-Hardiness	Good	Good	Below Avg.	Below Avg.	Good
Heading (Julian)	154	154	153	151	154
Plant Height (in.)	37	35	32	31	35
Coleoptile Length (in.)	4.0	3.4	4.1	3.3	3.4
Straw Strength	Excellent	Average	Excellent	Excellent	Average

All available public and private data used in compiling scores

DISEASE TOLERANCE			
	Susceptible	Intermediate	Resistant
Stripe Rust			
Septoria			
Strawbreaker Foot Rot			
Crown Rot			
C-Stripe			

All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Desirable	Desirable	Acceptable	Desirable

Data obtained from the LCS and U of I Quality Laboratories



## It's no illusion



**Most widely grown**  
CL+ variety in the PNW



**Large region**  
of adaptation



**Proven**  
on-farm performance



**Two-gene**  
Clearfield Plus

## SOFT WHITE WINTER WHEAT UI Magic CL+

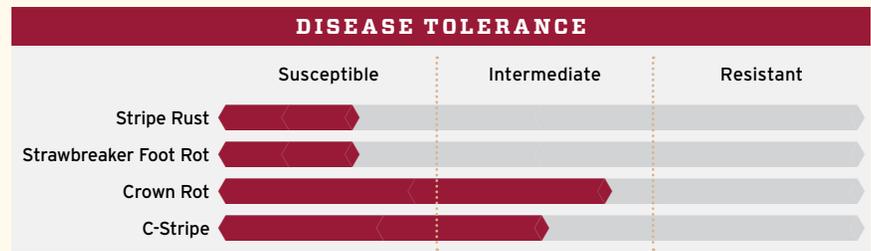
ADAPTATION



YIELD			
	BU/AC	VI Voodoo CL+ Trial Avg.	MEAN
4-Year WSU 12-16"	69		92% of mean
4-Year WSU 16-20"	98		91% of mean
5-Year OSU Low Rain	56		97% of mean
5-Year OSU Int. Rain	89		90% of mean
2-Year WSU > 20"	109		93% of mean
5-Year OSU High Rain	123		98% of mean
5-Year OSU Irrigated	118		98% of mean

AGRONOMIC FEATURES				
	UI Magic CL+	Stingray CL+	LCS Artdeco	WB 1529
Test Weight	59.5	57.8	57.3	60.2
Protein (%)	12.0	12.1	10.8	11.9
Winter-Hardiness	Average	Average	Below Avg.	Good
Heading (Julian)	151	153	151	151
Plant Height (in.)	29	30	28	29
Straw Strength	Good	Good	Very Good	Very Good
Head Type	Awned	Awned	Awned	Awned

All available public and private data used in compiling scores



All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Desirable	Desirable	Desirable	Acceptable

Data obtained from the LCS and U of I Quality Laboratories



HARD WHITE SPRING WHEAT  
**UI Platinum**

ADAPTATION



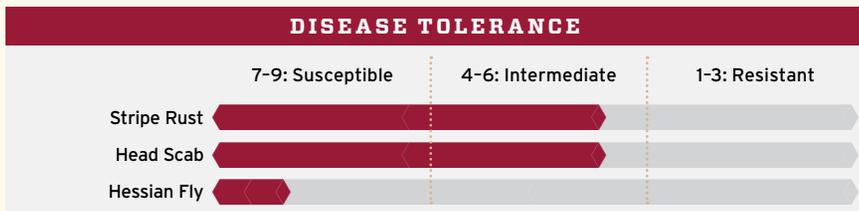
SOFT WHITE SPRING WHEAT  
**UI Stone**

ADAPTATION



AGRONOMIC FEATURES				
	UI Platinum	Dayn	SY Teton	WB 7589
Test Weight	56.6	58.0	56.6	56.9
Heading (Julian)	166	169	167	168
Plant Height (in.)	30	33	30	27
Straw Strength	Very Good	Very Good	Very Good	Very Good

Southern Idaho 2021 average | All available public and private data used in compiling scores



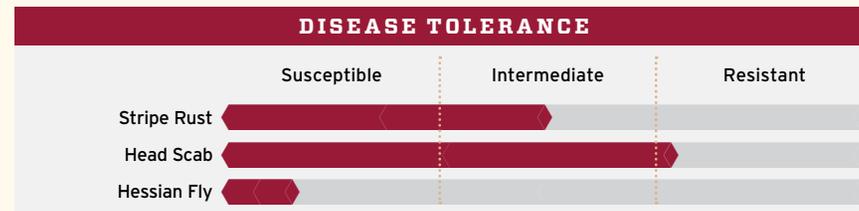
All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Most Desirable	Most Desirable	Desirable	Most Desirable

Data obtained from the LCS and U of I Quality Laboratories

AGRONOMIC FEATURES				
	UI Stone	Alturas	Louise	Seahawk
Test Weight	55.4	56.9	55.5	58.2
Heading (Julian)	168	170	171	172
Plant Height (in.)	35	36	37	36
Straw Strength	Very Good	Good	Below Avg.	Very Good

All available public and private data used in compiling scores



All available public and private data used in compiling scores

END-USE QUALITY			
Overall Quality	Baking Quality	Flour Protein	Milling Quality
Most Desirable	Most Desirable	Desirable	Desirable

Data obtained from the LCS and U of I Quality Laboratories



## The latest technical data

To obtain the most accurate data possible, all available public and private multi-year data are used to compile agronomic, disease and yield scores. Quality data are obtained from the LCS and U of I Quality Laboratories. All agronomic, disease and yield scores published in this guide are based on the most recent data available at the time of publication (November 1, 2023). For updated data and variety information, visit [VarsityIdaho.com](http://VarsityIdaho.com) year-round.

Agronomic performance, disease scores and yield performance data from universities are available in their entirety at:

**University of Idaho – Southern:**

[uidaho.edu/extension/cereals/scseidaho](http://uidaho.edu/extension/cereals/scseidaho)

**University of Idaho – Northern:**

[uidaho.edu/extension/cereals/nidaho](http://uidaho.edu/extension/cereals/nidaho)

**Oregon State University:**

[cropandsoil.oregonstate.edu/wheat/osu-wheat-variety-trials](http://cropandsoil.oregonstate.edu/wheat/osu-wheat-variety-trials)

**Washington State University:**

[smallgrains.wsu.edu](http://smallgrains.wsu.edu)

The results presented in this guide may not be an indicator of results you may obtain in your individual location, as local growing conditions – including soil type and weather – may vary. All growers are advised to evaluate data from multiple locations and years whenever possible.



## Superior wheat quality

The LCS Quality Laboratory utilizes a comprehensive set of data, compiled over multiple years, to determine the end-use quality of all wheat varieties we release. Key attributes include:

**Baking quality**, including loaf volume, cookie diameter and dough rheology.

**Milling quality**, including flour yields and protein loss from grain to flour.

**Flour protein**, including water absorption, gluten strength and percentage of protein content.

These characteristics are weighted and combined into a single score: baking quality (30%), dough properties (20%), milling quality (40%), test weight (5%) and flour protein (5%). Overall end-use quality is classified in one of four categories:

**Most Desirable.** Elite varieties with excellent intrinsic (kernel) qualities and a superior combination of milling, baking and dough properties.

**Desirable.** High-demand varieties with strong intrinsic qualities and very good to good milling, baking and dough properties.

**Acceptable.** One or more quality parameters may have minor flaws. Overall, these varieties are acceptable to end users.

**Less Desirable.** Varieties with quality parameters that are less than adequate for current end-user standards or a single critical flaw.



UNIVERSITY of IDAHO + LIMAGRAIN CEREAL SEEDS

education . innovation . cooperation

## Looking for more?

Check out the latest elite genetics from Varsity Idaho online anytime at

**[VarsityIdaho.com](http://VarsityIdaho.com)**

Talk to a wheat specialist  
**509.520.5661**



### University of Idaho + LCS

In 2012, the Idaho Wheat Commission worked with the University of Idaho (U of I) to establish a collaboration with Limagrain Cereal Seeds (LCS). The synergy was undeniable from the start: U of I has excellent regionally adapted germplasm, and LCS has advanced breeding techniques and a strong global presence in cereal crops. In 2014, U of I and LCS launched Varsity Idaho, a joint breeding program where each partner co-breeds, co-selects and co-releases new VI varieties.

### Investing in the future of wheat

Local growers are reaping the benefits of Varsity