

## **2017 Varietal Recommendation**

### **LCS Pro**

#### **Approved for Recommendation 2/26/2017**

A motion that "LCS Pro" hard red spring wheat from Limagrain Cereal Seeds be recommended dryland and irrigated production for all districts in the state of Montana.

LCS Pro is a hollow stemmed, hard red spring wheat variety developed by Limagrain Cereal Seeds and released to our dealer network in 2015. PVPA certificate No. 201500065 was issued March 1 2016. LCS Pro was derived from a cross of Alsen / Howard and was tested under the experimental code LNR10-0493. LCS Pro is a tall semi-dwarf with average straw strength. It is approximately 3 inches taller than Vida and it is medium in maturity, averaging 1.2 days earlier to head than Vida. LCS Pro has very good test weight patterns, averaging approximately 1.1 Lb/Bu greater than Vida. LCS Pro has historically shown intermediate resistance to Fusarium Head Blight, Bacterial Leaf Streak, Leaf and Stem Rusts. Septoria Leaf Spot and Tan Spot have historically been in the resistant category.

LCS Pro was entered in the 2014 Spring Wheat Quality Advisory Council evaluations and received overall satisfactory scores.

LCS Pro has shown excellent adaptation across the western portions of the HRSW growing area, including western North Dakota and several areas in Montana. In 22 location years of testing (*see table 1. below*) in official MSU trials from 2014 thru 2016, LCS Pro averaged 63.7 Bu/ac or ~99% yield of Vida. In those same trials LCS Pro has averaged equal grain protein than Vida. Closer examination of the MSU data suggests that LCS Pro is exceptionally well adapted across the entire State of Montana, with the possible exception of dryland trials in Sidney (Zone 6) where it did not perform quite as well on average as it did over the entire State. Conversely, the 3 year data from the other lower yielding dryland sites in Conrad and Havre (Zone 5) and Moccasin (Zone 4) show that LCS Pro has been very competitive in those conditions, so at this point we would request recommendation for all districts. Limited data is available from Irrigated sites (2014-2016 Sidney Irrigated); but there LCS Pro has out-performed Vida by an average of 4.8 Bu/acre (106.7%). It also has out-performed Vida over the same 3 year period in Kalispell (Zone 1) by 8.6 Bu/acre (107.8%) which shows LCS Pro has excellent yield potential under higher yielding conditions. However, given the plant height and average straw strength, LCS Pro would, like many taller varieties, benefit from an application of PGR in higher yield or irrigated production zones.

# Yield (3 yr average)

	State Wide Mean		Zone 1 Mean		Zone 2 Mean		Zone 4 Mean		Zone 5 Mean		Zone 6 Mean	
	bu/ac	% Mean	bu/ac	% Mean	bu/ac	% Mean	bu/ac	% Mean	bu/ac	% Mean	bu/ac	% Mean
BRENNAN	57.9	95.5%	88.6	88.4%	47.8	89.1%	46.7	102.3%	53.4	96.8%	62.4	99.4%
CORBIN	60.3	99.3%	103.8	103.6%	53.3	99.2%	44.3	97.0%	57.1	103.3%	58.2	92.8%
DUCLAIR	63.0	103.8%	106.4	106.1%	52.5	97.9%	48.3	105.8%	55.5	100.5%	67.0	106.8%
FORTUNA	50.2	82.7%	90.9	90.7%	44.4	82.8%	34.9	76.5%	46.5	84.2%	48.8	77.7%
LCS Prime	64.0	105.5%	110.0	109.8%	56.3	104.9%	46.2	101.3%	58.0	105.0%	66.1	105.3%
LCS Pro	63.7	105.0%	118.8	118.5%	58.1	108.3%	45.0	98.6%	58.0	105.0%	59.6	94.9%
MCNEAL	60.7	100.0%	102.7	102.5%	51.8	96.4%	45.5	99.7%	54.9	99.3%	63.0	100.3%
SY SOREN	59.8	98.6%	99.4	99.2%	53.7	100.0%	43.1	94.5%	54.8	99.2%	62.5	99.7%
SY TYRA	59.9	98.8%	97.9	97.7%	53.5	99.8%	41.8	91.6%	56.1	101.7%	63.7	101.4%
THATCHER	51.4	84.8%	89.0	88.8%	50.3	93.8%	38.0	83.3%	45.9	83.2%	49.6	79.0%
VIDA	64.4	106.1%	110.2	109.9%	62.5	116.4%	46.3	101.5%	59.6	108.0%	61.7	98.3%
WB GUNNISON	60.5	99.7%	108.4	108.2%	53.6	100.0%	44.9	98.5%	54.1	98.0%	59.0	94.0%
<b>Trial Averages</b>	<b>60.7</b>		<b>100.2</b>		<b>53.7</b>		<b>45.6</b>		<b>55.2</b>		<b>62.8</b>	

# Protein (3 yr avg)

	State Wide Mean		Zone 1 Mean		Zone 2 Mean		Zone 4 Mean		Zone 5 Mean		Zone 6 Mean	
	%	% Mean	%	% Mean	%	% Mean	%	% Mean	%	% Mean	%	% Mean
BRENNAN	15.1	104.2%	15.2	105.3%	16.0	106.2%	15.5	105.3%	15.4	103.6%	13.8	101.6%
CORBIN	14.6	100.9%	14.5	100.5%	14.8	98.2%	15.2	103.1%	14.8	99.8%	13.9	101.9%
DUCLAIR	14.4	99.4%	15.0	104.4%	14.6	96.7%	14.5	98.4%	14.9	100.3%	13.4	98.1%
FORTUNA	14.5	100.2%	15.4	106.9%	14.6	96.9%	14.6	99.0%	14.8	99.7%	13.6	100.0%
LCS Prime	13.7	94.3%	13.4	92.8%	13.7	90.7%	13.9	94.6%	13.8	93.0%	13.5	99.1%
LCS Pro	14.3	98.6%	14.8	103.0%	14.3	94.5%	14.4	98.2%	14.8	99.6%	13.3	97.8%
MCNEAL	14.5	100.2%	14.8	102.5%	15.1	99.8%	15.0	101.8%	14.9	100.6%	13.2	96.8%
SY SOREN	15.2	104.8%	15.5	107.6%	15.8	104.9%	15.7	106.8%	15.3	103.3%	14.0	102.8%
SY TYRA	13.9	95.6%	14.0	97.0%	14.2	94.0%	14.1	96.2%	14.4	96.7%	12.7	93.5%
THATCHER	15.0	103.1%	15.0	104.2%	14.8	98.2%	15.7	106.5%	15.3	103.0%	13.9	102.2%
VIDA	14.3	98.8%	15.0	103.9%	14.8	98.0%	14.3	97.3%	14.5	97.6%	13.5	99.1%
WB GUNNISON	14.0	96.2%	14.1	98.1%	14.2	94.0%	14.2	96.5%	14.3	96.1%	13.1	96.2%
<b>Trial Averages</b>	<b>14.5</b>		<b>14.4</b>		<b>15.1</b>		<b>14.7</b>		<b>14.8</b>		<b>13.6</b>	

# Test Weight (3 yr avg)

	State Wide Mean		Zone 1 Mean		Zone 2 Mean		Zone 4 Mean		Zone 5 Mean		Zone 6 Mean	
	lb/bu	% Mean	lb/bu	% Mean	lb/bu	% Mean	lb/bu	% Mean	lb/bu	% Mean	lb/bu	% Mean
BRENNAN	61.2	102.3%	61.2	100.6%	61.3	101.8%	60.2	102.6%	61.2	103.8%	61.9	101.5%
CORBIN	60.3	100.8%	61.8	101.5%	61.1	101.4%	58.6	99.8%	59.6	101.1%	61.3	100.6%
DUCLAIR	59.0	98.6%	60.3	98.9%	59.5	98.8%	57.6	98.1%	57.8	98.0%	60.6	99.5%
FORTUNA	60.2	100.7%	61.4	100.9%	61.1	101.5%	59.4	101.2%	59.4	100.8%	60.7	99.6%
LCS Prime	60.9	101.9%	62.6	102.7%	61.2	101.6%	59.1	100.6%	60.4	102.4%	62.2	102.0%
LCS Pro	60.3	100.9%	62.2	102.1%	60.8	100.9%	58.9	100.4%	59.1	100.3%	61.7	101.2%
MCNEAL	59.2	99.0%	60.9	99.9%	59.1	98.1%	58.0	98.8%	58.3	98.9%	60.5	99.1%
SY SOREN	60.2	100.7%	61.8	101.5%	60.5	100.5%	58.7	100.0%	59.2	100.4%	61.8	101.4%
SY TYRA	60.5	101.1%	61.9	101.6%	61.3	101.9%	59.5	101.4%	59.2	100.4%	61.6	101.0%
THATCHER	58.2	97.3%	60.4	99.2%	58.0	96.4%	57.5	97.9%	56.7	96.1%	59.6	97.7%
VIDA	59.2	99.0%	60.8	99.8%	59.8	99.3%	57.9	98.7%	58.6	99.4%	59.9	98.3%
WB GUNNISON	60.4	101.0%	62.1	102.0%	60.2	100.0%	59.1	100.6%	59.6	101.1%	61.8	101.3%
<b>Trial Averages</b>	<b>59.8</b>		<b>60.9</b>		<b>60.2</b>		<b>58.7</b>		<b>59.0</b>		<b>61.0</b>	

# Heading (3 yr avg)

	State Wide Mean		Zone 1 Mean		Zone 2 Mean		Zone 4 Mean		Zone 5 Mean		Zone 6 Mean	
	julian	% Mean	julian	% Mean	julian	% Mean	julian	% Mean	julian	% Mean	julian	% Mean
BRENNAN	172.3	99.3%	171.6	98.8%	176.4	99.3%	171.1	99.4%	172.3	99.2%	171.5	99.6%
CORBIN	172.9	99.6%	173.2	99.8%	176.8	99.5%	172.0	99.9%	172.6	99.4%	171.5	99.6%
DUCLAIR	172.2	99.3%	172.4	99.3%	175.8	99.0%	170.8	99.3%	172.4	99.2%	171.3	99.5%
FORTUNA	174.2	100.4%	173.8	100.1%	178.5	100.5%	172.7	100.4%	174.7	100.6%	172.6	100.3%
LCS Prime	173.0	99.7%	173.3	99.8%	177.4	99.9%	172.3	100.1%	172.8	99.4%	171.2	99.5%
LCS Pro	173.5	100.0%	173.5	99.9%	177.4	99.8%	172.7	100.3%	173.7	100.0%	171.6	99.7%
MCNEAL	175.1	100.9%	175.1	100.8%	179.4	101.0%	172.9	100.5%	175.9	101.2%	173.5	100.8%
SY SOREN	174.0	100.3%	174.4	100.4%	178.2	100.3%	173.0	100.5%	174.4	100.4%	171.9	99.9%
SY TYRA	174.1	100.3%	174.8	100.7%	178.1	100.3%	172.7	100.3%	174.6	100.5%	172.1	100.0%
THATCHER	177.5	102.3%	177.9	102.5%	182.1	102.5%	174.9	101.6%	177.4	102.1%	177.1	102.9%
VIDA	174.7	100.7%	175.6	101.1%	178.3	100.4%	172.9	100.5%	175.3	100.9%	173.2	100.6%
WB GUNNISON	173.8	100.1%	174.3	100.4%	177.7	100.0%	172.2	100.1%	173.8	100.0%	172.6	100.3%
<b>Trial Averages</b>	<b>173.5</b>		<b>173.7</b>		<b>177.6</b>		<b>172.1</b>		<b>173.8</b>		<b>172.1</b>	

# Height (3 yr avg)

	State Wide Mean		Zone 1 Mean		Zone 2 Mean		Zone 4 Mean		Zone 5 Mean		Zone 6 Mean	
	inch	% Mean	inch	% Mean	inch	% Mean	inch	% Mean	inch	% Mean	inch	% Mean
BRENNAN	29.1	94.3%	30.9	89.0%	27.3	95.5%	29.8	97.1%	27.5	94.5%	30.4	94.4%
CORBIN	31.1	100.6%	35.8	102.9%	29.4	102.7%	31.1	101.2%	29.2	100.1%	31.6	98.0%
DUCLAIR	31.4	101.8%	35.1	101.1%	29.6	103.5%	31.8	103.5%	29.0	99.4%	33.0	102.3%
FORTUNA	37.1	120.0%	43.8	126.2%	35.5	124.0%	37.7	123.0%	33.9	116.2%	37.1	115.2%
LCS Prime	31.6	102.3%	35.6	102.6%	27.7	96.8%	32.4	105.6%	29.8	102.2%	32.9	102.2%
LCS Pro	34.1	110.4%	40.1	115.6%	31.9	111.5%	33.5	109.3%	32.2	110.5%	34.6	107.4%
MCNEAL	31.6	102.4%	34.1	98.2%	29.2	102.3%	31.6	103.0%	30.2	103.4%	33.4	103.7%
SY SOREN	28.7	93.0%	32.0	92.0%	26.6	93.1%	29.0	94.4%	27.3	93.7%	29.5	91.6%
SY TYRA	27.9	90.3%	31.3	90.0%	25.1	87.6%	26.9	87.5%	27.0	92.5%	29.7	92.2%
THATCHER	38.2	123.7%	45.9	132.3%	36.1	126.2%	38.3	124.8%	35.1	120.2%	38.5	119.4%
VIDA	31.3	101.2%	35.4	101.9%	29.3	102.6%	30.4	99.0%	29.8	102.2%	32.6	101.1%
WB GUNNISON	29.3	94.9%	34.7	100.0%	26.3	91.9%	28.2	92.0%	28.0	95.9%	30.6	94.8%
<b>Trial Averages</b>	<b>30.9</b>		<b>34.7</b>		<b>28.6</b>		<b>30.7</b>		<b>29.2</b>		<b>32.2</b>	