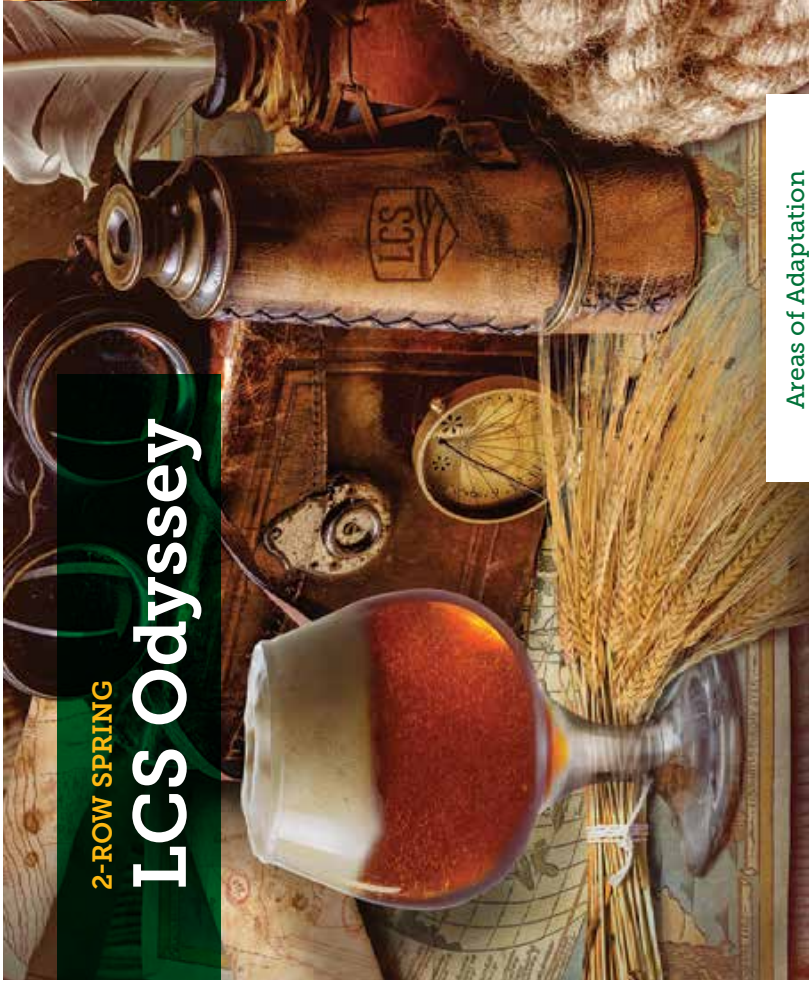


2-ROW SPRING

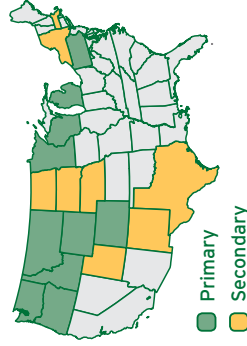
# LCS Odyssey



## An Adventure in Craft Barley

LCS Odyssey is a must-have variety for distillers, as it is the only malting barley variety available in the United States today rated as non-GN (zero glycosidic nitrile content).

Areas of Adaptation



By the Numbers

**Non-producer** of GN (glycosidic nitrile)

**#1 choice** for cereal cyst nematode resistance

**Highest** yielding variety in 2016 Montana State University trials



# Malting & Brewing LCS Odyssey

## Malting Specifications

Specification	2016 LCS <sup>1</sup> Fort Collins, Colorado	2016 MSU <sup>2</sup> Bozeman, Montana	2015 MSU <sup>3</sup> Combined Michigan	2013 AMBA <sup>4</sup> Idaho Falls, Idaho	2013 AMBA <sup>4</sup> Pullman, Washington
<b>Barley</b>					
Plump (On 6/64) (%)	97.0	99.9	97.8	97.9	94.5
Moisture (%)	10.4	-	15.0	8.1	8.6
Total Protein (% db.)	10.9	13.6	10.8	10.7	10.3
Pre-Harvest Sprouting (RVA)	154	-	142	-	-
DON (ppm)	< 0.1	-	0.0	-	-
<b>Malt</b>					
Extract, Fine Grind (% db.)	82.4	79.0	83.2	82.9	81.2
Wort Color (Deg. Lov.)	1.56	1.90	2.45	1.66	1.88
Diastatic Power (Deg. L)	110	127	77	125	124
Alpha Amylase (D.U.)	54.9	44.7	62.0	61.5	60.4
Soluble Protein (% db.)	4.40	3.62	4.25	4.78	4.14
Total Protein (% db.)	11.1	13.6	10.7	11.5	10.9
Soluble/Total Protein (% db.)	39.6	27.5	42.6	41.8	37.8
Beta-Glucan (ppm)	82	190	56	76	78
Free Amino Nitrogen (FAN)	160	105	214	192	179

## Malt House Analysis<sup>1</sup>

Chitting (%)	Steep Out Moisture (%)	Malt Yield (%)	96-Hour Acrospire Count			
			0-1/4	> 1/4-1/2	> 1/2-3/4	> 3/4-1
95	45.4	91.3	0	30	35	0

<sup>1</sup>LCS data obtained from Hartwick College: hartwick.edu/about-us/centers-institutes/center-for-craft-food-and-beverage/

<sup>2</sup>Data obtained from Montana State University: plantsciences.montana.edu/crops/index.html

<sup>3</sup>Data obtained from Michigan State University: msu.anr.msu.edu/topic/malting\_barley/research

<sup>4</sup>Data obtained from the American Malting Barley Association: ambainc.org/



# Growing LCS Odyssey

Yield & Protein Content		MEAN
3-Year WSU High Rainfall	LCS Odyssey Trial Avg. <b>107.0 bu/ac yield</b> Associated protein content: <b>11.8%</b>	<b>105%</b> of mean
3-Year WSU Med. Rainfall	LCS Odyssey Trial Avg. <b>84.9 bu/ac yield</b> Associated protein content: <b>12.6%</b>	<b>111%</b> of mean
3-Year WSU Low Rainfall	LCS Odyssey Trial Avg. <b>72.9 bu/ac yield</b> Associated protein content: <b>13.6%</b>	<b>123%</b> of mean
2-Year OSU	LCS Odyssey Trial Avg. <b>88.9 bu/ac yield</b> Associated protein content: <b>12.5%</b>	<b>111%</b> of mean
2016 UI North	LCS Odyssey Trial Avg. <b>126.8 bu/ac yield</b> Associated protein content: <b>N/A</b>	<b>113%</b> of mean
2-Year UI South	LCS Odyssey Trial Avg. <b>142.8 bu/ac yield</b> Associated protein content: <b>11.5%</b>	<b>111%</b> of mean
2016 MSU (MT) Irrigated	LCS Odyssey Trial Avg. <b>130.4 bu/ac yield</b> Associated protein content: <b>10.0%</b>	<b>116%</b> of mean
2016 MSU (MT) Dryland	LCS Odyssey Trial Avg. <b>101.7 bu/ac yield</b> Associated protein content: <b>11.7%</b>	<b>117%</b> of mean
2016 UMN	LCS Odyssey Trial Avg. <b>108.6 bu/ac yield</b> Associated protein content: <b>N/A</b>	<b>115%</b> of mean
3-Year MSU (MI)	LCS Odyssey Trial Avg. <b>79.7 bu/ac yield</b> Associated protein content: <b>10.9%</b>	<b>110%</b> of mean

Single-season use grower agreement required.

## Agronomic Features

University of Idaho South			Oregon State			
TW (lb/bu)	Height (in)	Heading	TW (lb/bu)	Height (in)	Heading	
LCS Odyssey	48.4	28.7	3.2	LCS Odyssey	50.2	26.3
CDC Copeland	49.1	34.3	0.5	Full Pint	53.5	25.2
AAC Synergy	48.5	32.7	-1.1	CDC Copeland	50.3	29.0
AC Metcalfe	50.0	33.7	-1.5	AAC Synergy	52.8	29.4
Moravian 69	46.0	27.0	3.2			

Montana State			Dryland			
TW (lb/bu)	Height (in)	Heading	TW (lb/bu)	Height (in)	Heading	
LCS Odyssey	52.6	26.7	4.2	53.4	25.1	3.1
CDC Copeland	53.9	31.9	2.2	53.3	27.8	1.3
AC Metcalfe	54.0	32.6	-1.8	53.6	29.5	-1.1
AAC Synergy	52.5	31.7	0.2	53.0	28.7	-0.5

University of Minnesota			Michigan State		
Lodging (1-9)	Height (in)	Heading (DOM*)	TW (lb/bu)	Height (in)	Heading (DOM*)
LCS Odyssey	3.4	29.0	2.6		
ND Genesis	3.2	35.2	-0.9		
AC Metcalfe	4.9	35.0	0.6		
AAC Synergy	3.7	34.2	1.1		

Washington State			Washington State		
TW (lb/bu)	Height (in)	Heading (DOM*)	TW (lb/bu)	Height (in)	Heading (DOM*)
LCS Odyssey	49.2	22.9	1.3	142.3	
CDC Copeland	37.2	24.0	1.7	77.8	
AC Metcalfe	50.3	25.6	-1.0	51.7	
AAC Synergy	50.4	24.7	-1.7	36.7	

High Rainfall	Medium Rainfall	Low Rainfall
LCS Odyssey	LCS Odyssey	LCS Odyssey
51.7	52.7	53.1
28.7	27.0	26.5
8.0	1.0	1.0
51.4	51.6	52.5
38.0	35.0	34.0
8.4	3.5	3.0

Data sets are available in their entirety at individual university websites. Links to these websites are listed on page 32 of this guide.  
\*Days off mean of trial