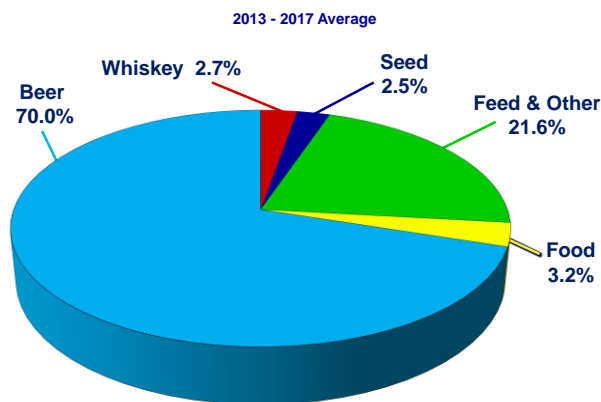


**ECONOMIC SIGNIFICANCE OF BARLEY**

One of the strengths of the U.S. economy is its crop production and agricultural based industries. Crop and value-added product exports reduce the unfavorable trade balance and generate new employment, grower income, and federal revenue. Maintenance of U.S. strength in agriculture requires continuing efforts to improve crop productivity and quality. U.S. agricultural production that can supply both domestic demands and can compete in world markets will only be accomplished by strong investments in agricultural research programs. Innovative and competitive research will keep the U.S. at the forefront of the development and implementation of new agricultural technologies.

**Domestic Use of Barley in the US**



Barley is a significant U.S. crop. Barley production is approximately 215 million bushels with an estimated value of \$1.2 billion as a raw agricultural commodity (2012 Census).

Barley producers stimulate the rural economy through the purchase of fertilizer, seed, chemicals, fuel, labor, other supplies and farm equipment. These variable cash expenses averaged \$560 million annually (2012-2016).

The impact of barley on the U.S. economy is even more significant if the value-added products

resulting from its utilization as an animal feed, in malt beverages, and in food products are considered. The economy also benefits from exports which annually average \$57 million for barley and its milled products, \$226 million for malt and malt extracts, \$609 million for beer, and \$1.06 billion for whiskey (2013-2017).

**BARLEY BALANCE SHEET**

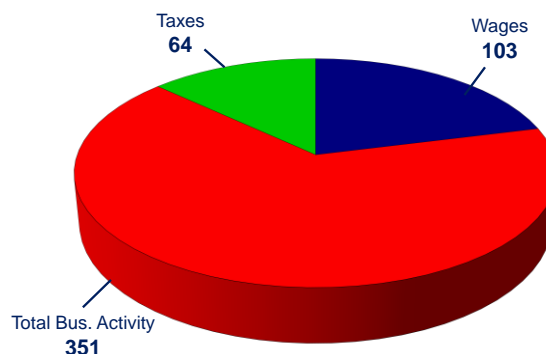
ANNUAL FEDERAL RESEARCH INVESTMENT*	ANNUAL RETURN ON INVESTMENT
\$ 13.978 USDA-Agricultural Research Service (ARS)	\$ 1.2 Raw agricultural commodity
0.758 Other Grants (NIFA-AFRI, NSF)	350.8 Brewing industry business
NA USDA-NIFA Formula Grants (Hatch Act, Smith-Lever)	3.7 Federal excise tax revenue
<b>\$14.736 Million</b>	25.9 Federal income tax
	2.4 Value-added use as feed
	NA Value-added use as food
	<b>\$384.0 Billion</b>

\*FY2018 Funding Levels  
NA: Not Available

**ECONOMIC CONTRIBUTION OF THE BREWING INDUSTRY**

Barley is a critical and primary raw material for beer. **Without malting barley, there would be no beer.** The economic value of the U.S. brewing industry is substantial.

**Economic Contribution of Brewing**  
Billions of Dollars



**BARLEY: ECONOMIC SIGNIFICANCE BY STATE**

State	Annual <sup>1</sup> Production	Crop <sup>1</sup> Value	Brewing Industry <sup>2</sup>			Whiskey Distillers <sup>5</sup>	Malt Plants <sup>4</sup>	
			Employment	Total Bus. Activity	Taxes <sup>3</sup>			Brewers <sup>4</sup>
	(million bu)	(million \$)		(million \$)	(million \$)			
Alabama	0.0	0.1	22,055	2,826	615	28	7	1
Alaska	0.2	1.0	5,692	830	199	32	5	
Arizona	5.0	27.0	47,356	6,483	1,094	88	7	1
Arkansas			10,836	1,500	280	28	4	
California	5.3	29.2	267,576	48,175	9,965	635	54	6
Colorado	6.6	42.0	68,705	15,311	2,184	341	48	7
Connecticut			20,468	2,855	596	49	6	3
Delaware	2.8	11.7	5,999	996	142	20	3	1
District of Columbia			9,680	1,159	194	10	3	
Florida			160,706	21,687	3,949	196	18	
Georgia	0.0	0.2	53,487	8,479	1,400	54	12	
Hawaii			13,756	1,900	366	15		
Idaho	51.1	306.1	11,987	1,713	250	54	8	4
Illinois	0.1	---	89,692	13,943	2,356	183	21	2
Indiana	0.0	0.5	36,609	4,825	740	127	20	2
Iowa	0.1	0.6	29,233	3,764	587	70	9	
Kansas	0.3	2.0	15,582	2,091	302	31	5	1
Kentucky	0.5	2.5	17,191	2,118	413	34	35	
Louisiana			33,995	4,500	772	26	4	
Maine	0.9	3.7	16,993	2,328	433	77	7	3
Maryland	3.3	13.2	31,351	4,338	883	65	18	2
Massachusetts	---	---	58,645	9,040	1,615	110	12	1
Michigan	0.4	1.8	66,403	9,290	1,492	223	27	16
Minnesota	6.1	38.4	53,971	7,894	1,466	112	19	5
Mississippi			11,553	1,516	319	9	3	
Missouri	0.1	0.3	57,656	12,457	2,030	79	22	2
Montana	37.5	211.8	10,152	1,351	158	68	15	6
Nebraska	0.1	0.4	16,476	2,263	331	42	4	1
Nevada	0.2	0.7	49,210	7,115	1,212	37	7	3
New Hampshire	0.0	---	13,588	2,206	377	56	8	
New Jersey	0.1	0.5	43,901	6,525	1,150	83	6	1
New Mexico	---	---	13,076	1,690	272	57	10	
New York	0.3	1.6	130,762	23,588	5,350	275	73	12
North Carolina	1.0	3.5	58,949	8,842	1,651	201	17	4
North Dakota	60.2	367.7	7,271	939	139	10	2	2
Ohio	0.2	1.1	81,341	13,269	2,503	179	25	6
Oklahoma	0.2	0.8	17,842	3,031	559	20	4	2
Oregon	3.9	20.4	44,910	7,424	975	246	30	6
Pennsylvania	3.8	15.7	72,698	11,406	1,812	206	37	5
Rhode Island			7,756	1,000	169	15	2	
South Carolina	0.0	---	27,914	3,322	692	51	21	
South Dakota	0.8	3.8	8,462	1,044	149	15	3	
Tennessee	0.1	---	29,277	3,991	830	68	23	1
Texas	0.2	1.0	165,249	26,729	4,573	203	36	3
Utah	2.0	7.7	12,690	1,587	271	27	5	1
Vermont	0.0	---	8,566	1,137	203	51	7	2
Virginia	2.9	10.9	55,314	9,346	2,050	168	24	4
Washington	12.1	61.7	53,619	8,679	1,556	340	59	4
West Virginia	0.1	0.5	7,196	1,009	161	15	10	
Wisconsin	0.9	3.4	69,163	10,505	1,611	143	15	6
Wyoming	5.5	33.7	5,354	806	110	23	3	2
<b>Total U.S.</b>	<b>215.1</b>	<b>1,228.2</b>	<b>2,227,913</b>	<b>350,820</b>	<b>63,541</b>	<b>5,297</b>	<b>823</b>	<b>128</b>

<sup>1</sup> 2012 Census production and crop values. (Source: USDA\NASS). (---) Data not available for some minor states.

<sup>2</sup> Source: Economic Impact, 2016 Prepared for the Beer Institute by John Dunham and Associates.

<sup>3</sup> Taxes paid and generated - business, consumption & personal.

<sup>4</sup> Various published and unpublished sources. Malting companies include those under construction.

<sup>5</sup> Sku's Recent Eats "The Complete List of American Whiskey Distilleries & Brands"

MAJOR & REGIONAL BREWERS IN THE UNITED STATES<sup>1</sup>

STATE	COMPANY	CITY
Alaska	Alaskan Brewing Co.	Juneau
Arizona	Four Peaks Brewing Co. SanTan Brewing Co.	Tempe Chandler
California	21 <sup>ST</sup> Amendment Brewery AleSmith Brewing Co. Anchor Brewing Co. Anderson Valley Brewing Co. Anheuser-Busch, Inc. Anheuser-Busch, Inc. Ballast Point Brewing Co. Bear Republic Brewing Co. BJ's Chicago Pizza & Brewery Coronado Brewing Co. Drakes Brewing/Triple Rock Brewery Fieldwork Brewing Figueroa Mountain Brewing Firestone Walker Brewing Co. Golden Road Brewery Gordon Biersch Brewing Co. Green Flash Brewing Co. Hangar 24 Craft Brewery Hermitage Brewing Co. Karl Strauss Breweries Knee Deep Brewing Co. Lagunitas Brewing Co. Lost Coast Brewery and Café Mendocino Brewing Co. MillerCoors, LLC Modern Times Beer Mother Earth Brew Co. North Coast Brewing Co. Pizza Port Russian River Brewing Co. Saint Archer Brewing Co. Sierra Nevada Brewing Co. Speakeasy Ales and Lagers Stone Brewing Co. Trumer Brauerei	San Francisco San Diego San Francisco Boonville Fairfield Los Angeles San Diego Healdsburg Huntington Beach Coronado Berkeley Berkeley Buellton, California Paso Robles Los Angeles San Jose San Diego Redlands San Jose San Diego Auburn Petaluma Eureka Ukiah Irwindale San Diego Vista Fort Bragg Carlsbad Santa Rosa San Diego Chico San Francisco San Marcos Berkeley
Colorado	Anheuser-Busch, Inc. Avery Brewing Co. Blue Moon Brewing Co. Boulder Beer Co. Breckenridge Brewery CraftWorks Brewery & Restaurant Crazy Mountain Brewing Co. Dry Dock Brewing Co. Great Divide Brewing Co. Left Hand Brewing Co. MillerCoors, LLC New Belgium Brewing Co. Odell Brewing Co.	Fort Collins Boulder Denver Boulder Littleton Broomfield Edwards Aurora Denver Longmont Golden Fort Collins Fort Collins

Colorado (cont.)	Oskar Blues Brewery	Longmont
	SKA Brewing	Durango
	Sleeping Giant Brewing Co.	Denver
	Upslope Brewing Co.	Boulder
Connecticut	Thomas Hooker Brewing Co.	Bloomfield
	Stony Creek Brewery	Branford
	Two Roads Brewing Co.	Stratford
Delaware	Dogfish Head Craft Brewery	Milton
District of Columbia	DC Brau Brewing	Washington
Florida	Anheuser-Busch, Inc.	Jacksonville
	Brew Hub LLC	Lakeland
	Cigar City Brewing Co.	Tampa
	D.G. Yuengling & Son	Tampa
	Florida Beer Co.	Cape Canaveral
	Funky Buddha Brewery	Oakland Park
Georgia	Anheuser-Busch, Inc.	Cartersville
	Creature Comforts Brewing Co.	Athens
	MillerCoors, LLC	Albany
	Sweetwater Brewing Co.	Atlanta
	Terrapin Beer Co.	Athens
Hawaii	Maui Brewing Co.	Lahaina
Illinois	Goose Island Beer Co.	Chicago
	Half Acre Beer Co.	Chicago
	Revolution Brewing	Chicago
	Two Brothers Brewing Co.	Warrenville
Indiana	Sun King Brewing	Indianapolis
	Three Floyds Brewing Co.	Munster
	Upland Brewing Co.	Bloomington
Kansas	Tallgrass Brewing Co.	Manhattan
Kentucky	Lexington Brewing & Distilling Co.	Lexington
Louisiana	Abita Brewing Co.	Abita Springs
Maine	Allagash Brewing Co.	Portland
	Baxter Brewing Co.	Lewiston
	Shipyard Brewing Co.	Portland
Maryland	DuClaw Brewing Co.	Baltimore
	Evolution Craft Brewing Co.	Salisbury
	Flying Dog Brewing Co.	Frederick
	Heavy Seas Beer	Baltimore
Massachusetts	Berkshire Brewing Co.	South Deerfield
	Boston Beer Co.	Boston
	Cisco Brewers	Nantucket
	Harpoon Brewery	Boston
	Ipswich Ale Brewery	Ipswich
	Jack's Abby Brewing	Framingham
	Lord Hobo Brewing Co.	Woburn
	Night Shift Brewing	Everett
	Notch Brewing	Salem
	Wachusett Brewing Co.	Westminster
	Wormtown Brewery	Worcester
Michigan	Arcadia Brewing Co.	Kalamazoo
	Atwater Brewing Co.	Detroit
	Bell's Brewery, Inc.	Galesburg
	Dark Horse Brewing Co.	Marshall
	Founders Brewing Co.	Grand Rapids

Michigan (cont.)	New Holland Brewing Co. Perrin Brewing Co. Shorts Brewing Co.	Holland Comstock Bellaire
Minnesota	August Schell Brewing Co. Bent Paddle Brewing Co. Fulton Beer Granite City Food & Brewery Summit Brewing Co. Surly Brewing Co. Third Street Brewhouse	New Ulm Duluth Minneapolis Maple Grove St. Paul Minneapolis Cold Spring
Mississippi	Lazy Magnolia Brewing Co.	Kiln
Missouri	4 Hands Brewing Co. Anheuser-Busch, Inc. Boulevard Brewing Co. Schlafly Beer Urban Chestnut Brewing Co.	St. Louis St. Louis Kansas City Maplewood St. Louis
Montana	Big Sky Brewing Co. Kettlehouse Brewing Co.	Missoula Missoula
New Hampshire	Anheuser-Busch, Inc. Redhook Ale Brewery, Inc. Smuttynose Brewing Co.	Merrimack Portsmouth Portsmouth
New Jersey	Anheuser-Busch, Inc. Flying Fish Brewing Co.	Newark Somerdale
New Mexico	Marble Brewery Santa Fe Brewing Co.	Albuquerque Santa Fe
New York	Anheuser-Busch, Inc. Blue Point Brewing Co. Brewery Ommegang Brooklyn Brewery Captain Lawrence Brewing Co. Genesee Brewing Co. Ithaca Beer Co. Lake Placid Craft Brewing Co. The Matt Brewing Co. Shmaltz Brewing Co. Sixpoint Brewery Southern Tier Brewing Co. Olde Saratoga Brewing Co.	Baldwinsville Patchogue Cooperstown Brooklyn Elmsford Rochester Ithaca Lake Placid Utica Clifton Park Brooklyn Lakewood Saratoga Springs
North Carolina	Aviator Brewing Co. Catawba Brewing Foothills Brewing Co. Highland Brewing Co. LoneRider Brewing Co. Natty Green's Brewing Co. New Belgium Brewing Co. NoDa Brewing Co. Olde Mecklenburg Brewery Oskar Blues Brewery Red Oak Brewing Co. Sierra Nevada Brewing Co. Wicked Weed Brewing	Fuquay Varina Morganton Winston Salem Asheville Raleigh Greensboro Asheville Charlotte Charlotte Brevard Whitsett Mills River Asheville

Ohio	Anheuser-Busch, Inc.	Columbus
	Boston Beer Co.	Cincinnati
	Brewdog	Columbus
	Christian Moerlein Brewing Co.	Cincinnati
	Columbus Brewing Co.	Columbus
	Fat Head's Brewery & Tap House	Middleburg Heights
	Great Lakes Brewing Co.	Cleveland
	MadTree Brewing	Cincinnati
	MillerCoors, LLC	Trenton
	Rhinegeist Brewing	Cincinnati
Thirsty Dog Brewing Co.	Akron	
Oregon	10 Barrel Brewing Co.	Bend
	Boneyard Beer Co.	Bend
	Breakside Brewery & Taproom	Portland
	Bridgeport Brewing Co.	Portland
	Crux Fermentation Project	Bend
	Deschutes Brewing Co.	Bend
	Fort George Brewery	Astoria
	Full Sail Brewing Co.	Hood River
	GoodLife Brewing Co.	Bend
	Hop Valley Brewing Co.	Springfield
	McMenamins Breweries	Portland
	Ninkasi Brewing Co.	Eugene
	Pelican Brewing Co.	Pacific City
	pFriem Family Brewers	Hood River
Pyramid Breweries	Portland	
Rogue Ales	Newport	
Widmer Brothers Brewing Co.	Portland	
Pennsylvania	Boston Beer Co.	Breinigsville
	City Brewing Co.	Latrobe
	D.G. Yuengling Son, Inc.	Pottsville
	Lancaster Brewing Co.	Lancaster
	The Lion Brewery, Inc.	Wilkes-Barre
	Sly Fox Brewing Co.	Pottstown
	Straub Brewery, Inc.	St. Mary's
	Tröegs Brewing Co.	Harrisburg
	Victory Brewing Co.	Downingtown
Weyerbacher Brewing Co.	Easton	
Yards Brewing Co.	Philadelphia	
Rhode Island	Narragansett Brewing Co.	Providence
South Carolina	Thomas Creek Brewery	Greenville
Tennessee	City Brewing Co.	Memphis
	Wiseacre Brewing Co.	Memphis
	Yazoo Brewing Co.	Nashville
Texas	Anheuser-Busch, Inc.	Houston
	Austin Beerworks	Austin
	BJ's Chicago Pizza & Brewery	Temple
	Community Beer Co.	Dallas
	Deep Ellum Brewing Co.	Dallas
	Independence Brewing Co.	Austin,
	Karbach Brewing Co.	Houston
	Live Oak Brewing co.	Del Valle
MillerCoors, LLC	Fort Worth	

Texas (cont.)	Rahr and Sons Brewing Co. Real Ale Brewing Co. Revolver Brewing Saint Arnold Brewing Co. Spoetzl Brewery, Inc.	Fort Worth Blanco Granbury Houston Shiner
Utah	Epic Brewing Co. Uinta Brewing Co. Utah Brewers Cooperative	Salt Lake City Salt Lake City Salt Lake City
Vermont	The Alchemist Harpoon Brewery Long Trail Brewing Co. Magic Hat Brewing Co.	Stowe Windsor Bridgewater Corners South Burlington
Virginia	Anheuser-Busch, Inc. Devils Backbone Brewing Co. MillerCoors, LLC Port City Brewing Co. Starr Hill Brewing Co. Stone Brewing	Williamsburg Lexington Elkton Alexandria Crozet Richmond
Washington	Bale Breaker Brewing Co. Elysian Brewing Co. Fremont Brewing Co. Georgetown Brewing Co. Iron Horse Brewery Mac and Jack's Brewery Pyramid Breweries RAM Restaurant & Brewery Redhook Ale Brewery Silver City Brewery	Yakima Seattle Seattle Seattle Ellensburg Redmond Seattle Lakewood Woodinville Silverdale
Wisconsin	Ale Asylum Capitol Brewing Co. Central Waters Brewery City Brewing Co. Jacob Leinenkugel Brewing Co. Lakefront Brewery Inc. MillerCoors, LLC Milwaukee Premium Brewing Co. Minhas Craft Brewery New Glarus Brewing Co. Rhineland Brewing Co. Sprecher Brewing Co. Stevens Point Brewery Wisconsin Brewing Co.	Madison Middleton Amherst La Crosse Chippewa Falls Milwaukee Milwaukee Milwaukee Monroe New Glarus Rhineland Glendale Stevens Point Verona
Wyoming	Melvin Brewing Co.	Alpine

<sup>1</sup> Breweries with production of 15,000 barrels or more in 2016.

MALTING PLANTS IN THE UNITED STATES<sup>1</sup>

<b>STATE</b>	<b>COMPANY</b>	<b>CITY</b>
Alabama	Old South Malt House	Birmingham
Arizona	Sinagua Malt	Camp Verde
California	Adams Grain Co.	Arbuckle
	Admiral Maltings	Alameda
	California Malting Co.	Santa Ynez
	Eckert Malting & Brewing Co.	Chico
	Grizzly Malt	Santa Rosa
	Watermark Farms	West Sacramento
Colorado	Colorado Malting Company	Alamosa
	Grouse Malting & Roasting Co.	Wellington
	Leopold Bros. Distilling	Denver
	MillerCoors, LLC	Golden
	Proximity Malt	Monte Vista
	Root Shoot Malting	Loveland
	Troubador Maltings LLC	Ft. Collins
Connecticut	Rooster Malt Co.	Newtown
	Thrall Family Malt	Windsor
	Yankee Malting	Willington
Delaware	Proximity Malt	Laurel
Idaho	Anheuser-Busch, Inc.	Idaho Falls
	Great Western Malting Co.	Pocatello
	InteGrow Malt	Idaho Falls
	Mountain Malt	Idaho Falls
Illinois	Heartland Malting	Normal
	Mammoth Malt	Thawville
Indiana	Academy Malt Co.	Indianapolis
	Sugar Creek Malt Co.	Lebanon
Kansas	Amber Waves Malt	Garden Plain
Maine	Blue Ox Malthouse	Lisbon Falls
	Maine Craft Distilling	Portland
	Maine Malt House	Mapleton
Maryland	Chesapeake Malting	Havre de Grace
	Dark Cloud Malthouse	Cooksville
Massachusetts	Valley Malt	Hadley
Michigan	Arrowhead Malt House LLC	Spring Arbor
	Artisan Malts LLC	Sault Ste. Marie
	Emergent Malt	Zeeland
	Empire Malting Co.	Empire
	Fedora Malthouse	DeWitt
	Great Lakes Malting Co.	Traverse City
	Koops' Malt Haus	Mount Pleasant
	Macon Creek Malt	Saline
	Michigan Malt	Shepherd
	Mitten State Malt	Okemos
	Motorcity Malt House LLC	Macomb
	Mushroom Head Malts	Saranac
	Pilot Malt House	Byron Center
	Superior Malt	Escanaba
	U.P. Malt Company	Marquette
	Valley View Farm LLC	East Jordan



Minnesota	Anheuser-Busch, Inc. Malteurop North America Maltwerks Rahr Malting Company Vertical Malt	Moorhead Winona Detroit Lakes Shakopee Fisher
Missouri	Gateway Custom Malt Sparrow Malting	Montgomery City Ozark
Montana	Big Sky Malts Bridger Malt House Farm Power Malt Gallatin Valley Malt Malteurop North America Montana Craft Malt	Bozeman Bozeman Power Bozeman Great Falls Butte
Nebraska	Nebraska Malt	Lincoln
Nevada	Bently Heritage Estate Distillery Frey Ranch Estate Distillery Rebel Malt	Reno Fallon Reno
New Jersey	Rabbit Hill Farms	Shiloh
New York	1886 Maltings Argyle Craft Malt & Hops Black Dirt Malt Convergence Craft Farmhouse Malt Hillrock Estate Distillery Hudson Valley Malt Murmuration Malts New York Craft Malt Niagara Malt Pioneer Malting Subversive Malting & Brewing	Fulton Argyle Pine Island Albany Newark Valley Ancram Germantown Bloomfield Batavia Cambria Rochester Catham
North Carolina	Carolina Malt House Epiphany Craft Malt Farm Boy Farms Riverbend Malt House	Cleveland Durham Pittsboro Ashville
North Dakota	Cargill Malt Two Track Malting	Spiritwood Bismarck
Ohio	Barley Five Malt House Haus Malts Ohio Malting Company Rustic Brew Farm Sweet Acres Malt West Branch Malts	Columbus Grove Cleveland Wakeman Marysville New Vienna Brunswick
Oklahoma	46 Grain Native Malt House	Ames Tulsa
Oregon	Christensen Farms Malting Co. Gold Rush Malt LLC High Desert Malt & Grain, Inc. Mecca Grade Estate Malt Mountain Malting Rogue Ales Farmstead Malthouse	McMinnville Baker City Bend Madras Bend Newport

Pennsylvania	Appalachian Malting C’N’C Malting Company Deer Creek Malthouse Double Eagle Malt Sprague Farm and Brew Works	Portage Butler Glen Mills Philadelphia Venango
Tennessee	Corsair Artisan Distillery	Nashville
Texas	Blacklands Malt Maverick Malt House TexMalt	Leander Vega Fort Worth
Utah	Solstice Malt	Salt Lake City
Vermont	Peterson Quality Malt Slow Hand Malting	Monkton Hinesburg
Virginia	Copper Fox Distillery & Maltings Foster Malt Mount Gilead Malt Murphy & Rude Malting Co.	Sperryville Suffolk Lovettsville Charlottesville
Washington	Great Western Malting Company LINC Foods (Palouse Pint Malt) Mainstem Malt Skagit Valley Malting	Vancouver Spokane Walla Walla Mt Vernon
Wisconsin	Autumn Moon Farm Malteurop North America Briess Malt & Ingredients Company Briess Malt & Ingredients Company Briess Malt & Ingredients Company Cargill Malt	Belleville Milwaukee Chilton Manitowoc Waterloo Sheboygan
Wyoming	Wyoming Malting Co. Wyoming High Desert Malt	Pine Bluffs Powell

<sup>1</sup> Malt plants operating or under construction.