



2018

STATISTICAL REPORT

RELEASED JANUARY 2019

PRESENTED BY
HOP GROWERS OF AMERICA



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Conversions used while compiling
the data presented in this document:

1 hectare = 2.4711 acres
 1 acre = 0.404686 hectares
 1 kilogram = 2.2046 pounds
 1 pound = 0.4536 kilograms
 1 metric tonne = 2204.6 pounds
 1 hectoliter = 26.417 gallons
 1 zentner = 110.23 pounds

Editor's Note: For 2018, the U.S. Hop Acreage chart on pages 4-5 includes estimates for 26 additional states, in addition to the three Pacific Northwest states where commercial hops have traditionally been grown. Data for Oregon, Washington and Idaho were provided by the USDA National Agricultural Statistics Service from annual grower surveys. Estimates for the remaining states were provided to Hop Growers of America by a network of growers, researchers, Extension specialists, brewers, and hop marketers. Special thanks to members of the Great Lakes Hop Working Group and Hop Growers of America Small Grower Council for their assistance in estimating acreage for many of these additional states.

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EXECUTIVE SUMMARY

Commercial U.S. hop acreage was relatively stable this year, with just a slight increase in production and some notable changes from 2017: Citra® became the first proprietary hop to reach the highest acreage of all US-grown varieties, Idaho surpassed Oregon in acreage as well as production, and a resurgence of alpha acreage represented 25.8% of the crop thanks to a 5.8% increase jump after years of downward trending acreage in that category of hops. Average yields per acre also declined slightly to 1,943 pounds per acre from 2017's yield of 1,956. This was likely a result of growing conditions and newly planted acreage combined.

Despite the slight decline in yields, 2018's production still surpassed 2017's by 910,200 pounds with the final 2018 count at 108,406,700. This 108 million also includes small farms not counted by NASS in 26 additional states. At this time, NASS only surveys the PNW – Washington, Oregon, and Idaho – as they grow the majority of the US crop and are the modern traditional home of the US commercial hop industry. HGA's network of contacts across the country provided estimates for acreage and yields – this year the survey calculated an estimate of 2,433 acres outside of the PNW yielding 1,500,000 pounds.

Washington production represented 72.7% of the Pacific Northwest, followed by Idaho with 15.2% and Oregon with 12.1%. The remaining 26 states reported commercial hop production on an estimated 2,433 acres. Weather related challenges in several regions caused decreased yields, resulting in estimated total production of 1,500,000 pounds.

Since 2012 (6 years) US hop acreage has increased 94.6%, from 29,683 to 57,772 acres. During that period the variety balance shifted from roughly 50-50 alpha and aroma hops in 2012 to 80% aroma varieties in 2017. In 2018 new alpha variety acreage resulted in a reversal of this trend, with alpha now representing 25.8% of US acreage.

Top 10 PNW Hop Varieties by Acreage:

Rank	2013	2014	2015	2016	2017	2018
1	Cascade	Cascade	Cascade	Cascade	Cascade	Citra®, HBC 394
2	Zeus	Zeus	Centennial	Centennial	Centennial	Cascade
3	Summit	Centennial	Zeus	Citra®, HBC 394	Citra®, HBC 394	Centennial
4	Columbus/Tomahawk	Summit	Simcoe®, YCR 14	Simcoe®, YCR 14	Simcoe®, YCR 14	Zeus
5	Centennial	Simcoe®, YCR 14	Citra®, HBC 394	Zeus	Zeus	Simcoe®, YCR 14
6	Nugget	Citra®, HBC 394	Mosaic®, HBC 369	Mosaic®, HBC 369	Mosaic®, HBC 369	Chinook
7	Chinook	Columbus/Tomahawk	Chinook	Chinook	Chinook	Mosaic®, HBC 369
8	Citra®, HBC 394	Chinook	Columbus/Tomahawk	Summit	Willamette	Columbus/Tomahawk
9	Simcoe®, YCR 14	Nugget	Summit	Willamette	Summit	Amarillo®, VGXP01
10	Super Galena™	Willamette	Willamette	Columbus/Tomahawk	Columbus/Tomahawk	Pahto®, HBC 682

Growers have faced substantial increases in the cost of production, driven by expansion of harvesting and production capacity to handle 95% growth in acreage over the past 6 years, updating equipment, increased labor costs (including health care and other benefits), and inflation in the cost of production inputs. Administrative and operating costs associated with food safety, best practices compliance and other customer requirements have also increased. Lower yielding aroma varieties have a higher cost per pound to maintain a consistent gross income per acre.

The 2015 Washington State University Pacific Northwest Hop Cost of Production Study estimated the annual cost of producing standard trellis hops under drip irrigation in the PNW at \$9,806 per acre (including fixed costs) – see <https://www.usahops.org/growers/cost-of-production.html>. The US Department of Labor Bureau of Labor Statistics' national Consumer Price Index, used to calculate inflation, was 0.7%, 2.1% and 2.1% respectively for 2015 through 2017. Applying these adjustments results in estimated 2018 production costs of \$10,294 per acre.

Year	PNW Acres Harvested	PNW Production (pounds)	Yield	Value of Production (\$1,000)	Gross Return per acre*
2011	29,787	64,781,600	2,175	\$203,378	\$6,828
2012	29,683	58,911,400	1,985	\$186,876	\$6,296
2013	35,288	69,246,100	1,962	\$232,308	\$6,583
2014	38,011	70,995,900	1,868	\$260,627	\$6,857
2015	43,633	78,846,000	1,807	\$345,388	\$7,916
2016	50,857	87,139,600	1,713	\$498,420	\$9,800
2017	53,989	105,621,500	1,959	\$591,375	\$10,954
2018	55,035	106,906,700	1,943	\$583,444	\$10,601

* Gross return per acre before deducting production costs.

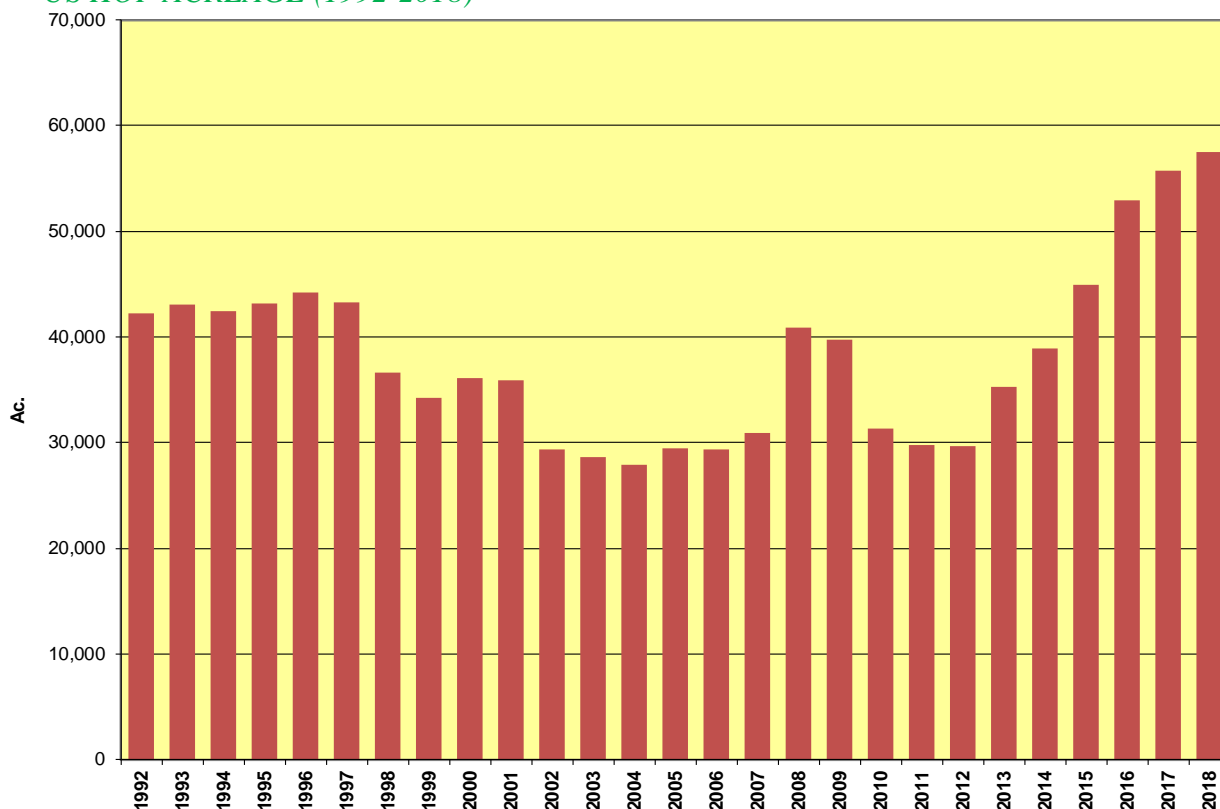
Source: USDA-NASS, prepared by HGA.

US HOP ACREAGE BY STATE AND VARIETY (FIVE YEARS)

STATE & VARIETY	ACRES HARVESTED					2017-18
	2014	2015	2016	2017	2018	% +/-
ARIZONA	*	1.0	1.0	1.0	1.0	0.00%
CALIFORNIA	65.0	85.0	130.0	130.0	130.0	0.00%
COLORADO	*	125.0	200.0	200.0	147.0	-26.50%
CONNECTICUT	*	*	15.0	15.0	15.0	0.00%
IDAHO #						
Amarillo®, VGXP01	*	*	*	983.0	825.0	-16.07%
Apollo™	285.0	286.0	235.0	228.0	232.0	1.75%
Bravo™	126.0	166.0	151.0	149.0	87.0	-41.61%
Calypso	*	81.0	81.0	81.0	81.0	0.00%
Cascade	821.0	770.0	788.0	882.0	836.0	-5.22%
Centennial	74.0	*	*	255.0	*	
Chinook	344.0	358.0	418.0	699.0	962.0	37.63%
Citra®, HBC 394	91.0	412.0	576.0	759.0	855.0	12.65%
Cluster	*	*	*	*	63.0	
Crystal	29.0	*	123.0	182.0	150.0	-17.58%
El Dorado®	63.0	205.0	227.0	219.0	120.0	-45.21%
Eureka!™	*	*	*	*	133.0	
Galena	*	*	*	*	109.0	
Mosaic®, HBC 369	*	272.0	496.0	500.0	506.0	1.20%
Simcoe®, YCR 14	67.0	199.0	232.0	394.0	449.0	13.96%
Super Galena™	161.0	92.0	69.0	*	84.0	
Willamette	*	*	*	128.0	*	
Zeus	662.0	661.0	580.0	1,061.0	1,496.0	41.00%
Experimental	41.0	72.0	9.0	26.0	*	
Other Varieties	979.0	1,289.0	1,663.0	579.0	1,152.0	98.96%
TOTAL IDAHO #	3,743.0	4,863.0	5,648.0	7,125.0	8,140.0	14.25%
ILLINOIS	10.0	30.0	30.0	30.0	30.0	0.00%
INDIANA	8.0	25.0	50.0	50.0	50.0	0.00%
IOWA	*	30.0	40.0	60.0	60.0	0.00%
KENTUCKY	*	*	20.0	30.0	12.0	-60.00%
MAINE	10.0	11.5	24.0	24.0	24.0	0.00%
MARYLAND	*	15.0	15.0	20.0	20.0	0.00%
MASSACHUSETTS	*	*	25.0	25.0	30.0	20.00%
MICHIGAN	300.0	320.0	650.0	810.0	750.0	-7.41%
MINNESOTA	20.0	26.0	73.0	120.0	120.0	0.00%
MONTANA	1.0	1.0	12.0	17.0	36.0	111.76%
NEBRASKA	12.0	17.0	24.0	39.0	44.0	12.82%
NEW HAMPSHIRE	*	*	2.0	2.0	2.0	0.00%
NEW JERSEY	*	*	15.0	15.0	15.0	0.00%
NEW YORK	150.0	250.0	300.0	400.0	400.0	0.00%
NORTH CAROLINA	30.0	40.0	30.0	30.0	30.0	0.00%
NORTH DAKOTA	*	*	2.0	3.5	3.5	
OHIO	30.0	50.0	70.0	100.0	70.0	-30.00%
OREGON #						
Cascade	961.0	1,085.0	1,211.0	1,247.0	1,064.0	-14.68%
Centennial	443.0	631.0	723.0	789.0	698.0	-11.53%
Chinook	*	129.0	107.0	124.0	129.0	4.03%
Citra®, HBC 394	*	246.0	654.0	766.0	690.0	-9.92%
Crystal	*	377.0	423.0	407.0	354.0	-13.02%
Fuggle	*	85.0	141.0	86.0	59.0	-31.40%
Golding	234.0	238.0	*	215.0	121.0	-43.72%
Liberty	*	210.0	*	*	*	
Magnum	176.0	199.0	151.0	47.0	105.0	123.40%
Mosaic®, HBC 369	*	*	*	337.0	*	
Mt. Hood	269.0	288.0	324.0	318.0	311.0	-2.20%
Nugget	1,363.0	1,484.0	1,460.0	1,467.0	1,307.0	-10.91%
Perle	100.0	*	*	76.0	77.0	1.32%
Simcoe®, YCR 14	*	191.0	330.0	461.0	436.0	-5.42%
Sterling	130.0	209.0	228.0	227.0	191.0	-15.86%
Super Galena™	125.0	82.0	*	67.0	84.0	25.37%
Tettnanger	*	133.0	122.0	72.0	72.0	0.00%
Willamette	564.0	661.0	833.0	892.0	913.0	2.35%
Experimental	*	*	*	*	*	
Other Varieties	1,045.0	364.0	1,058.0	618.0	1,114.0	80.26%
TOTAL OREGON #	5,410.0	6,612.0	7,765.0	8,216.0	7,725.0	-5.98%
PENNSYLVANIA	*	5.5	15.0	20.0	30.0	50.00%
RHODE ISLAND	*	*	10.0	10.0	10.0	0.00%
VERMONT	25.0	45.0	25.0	25.0	25.0	0.00%
VIRGINIA	25.0	30.0	30.0	30.0	30.0	0.00%

STATE & VARIETY	ACRES HARVESTED					2017-18
	2014	2015	2016	2017	2018	% +/-
WASHINGTON #						
Ahtanum™	194.0	145.0	155.0	371.0	255.0	-31.27%
Amarillo®, VGXP01	*	*	*	1,984.0	1,895.0	-4.49%
Apollo™	700.0	708.0	735.0	684.0	795.0	16.23%
Azacca™, ADHA-483	79.0	175.0	506.0	578.0	546.0	-5.54%
Bravo™	584.0	569.0	573.0	486.0	280.0	-42.39%
Cascade	4,837.0	4,935.0	5,582.0	4,966.0	4,274.0	-13.93%
Cashmere	*	*	*	*	195.0	
Centennial	2,836.0	3,770.0	4,359.0	4,375.0	3,875.0	-11.43%
Chinook	1,297.0	1,300.0	1,415.0	1,632.0	1,734.0	6.25%
Citra®, HBC 394	1,670.0	2,335.0	3,264.0	3,715.0	4,837.0	30.20%
Cluster	728.0	666.0	623.0	621.0	610.0	-1.77%
Columbus/Tomahawk®	1,738.0	1,673.0	1,416.0	1,659.0	2,034.0	22.60%
Comet	*	108.0	163.0	205.0	218.0	6.34%
Crystal	181.0	131.0	191.0	122.0	114.0	-6.56%
Ekuanot™, HBC 366	*	*	*	890.0	865.0	-2.81%
El Dorado®	82.0	243.0	396.0	463.0	418.0	-9.72%
Eureka!™	*	*	*	362.0	409.0	12.98%
Galena	306.0	295.0	262.0	378.0	390.0	3.17%
Glacier	126.0	155.0	145.0	*	*	
Golding	94.0	53.0	*	*	*	
Jarrylo™, ADHA-881	75.0	122.0	131.0	*	*	
Loral™, HBC 291	*	*	*	186.0	172.0	-7.53%
Magnum	*	108.0	*	*	*	
Millennium	113.0	*	*	*	*	
Mosaic®, HBC 369	671.0	1,528.0	2,029.0	1,877.0	1,932.0	2.93%
Mt. Hood	150.0	130.0	88.0	87.0	104.0	19.54%
Mt. Rainier	*	*	*	*	306.0	
Northern Brewer	131.0	123.0	*	*	*	
Nugget	265.0	202.0	186.0	125.0	126.0	0.80%
Pahto™, HBC 682	*	*	*	*	1,721.0	
Palisade®, YCR-4	223.0	454.0	580.0	571.0	515.0	-9.81%
Pekko™, ADHA-871	*	*	*	*	92.0	
Simcoe®, YCR 14	1,819.0	2,916.0	3,769.0	3,753.0	3,103.0	-17.32%
Sorachi Ace	*	*	*	*	146.0	
Summit™	2,522.0	1,620.0	1,769.0	1,617.0	1,574.0	-2.66%
Super Galena™	606.0	351.0	310.0	435.0	500.0	14.94%
Tahoma	*	*	*	217.0	209.0	-3.69%
Tettnanger	*	*	*	38.0	*	
Vanguard	58.0	84.0	*	*	*	
Warrior®, YCR-5	192.0	*	*	*	*	
Willamette	595.0	698.0	728.0	571.0	376.0	-34.15%
Zeus	3,375.0	2,989.0	2,502.0	2,214.0	2,592.0	17.07%
Experimental	392.0	316.0	567.0	421.0	374.0	-11.16%
Other Varieties	2,219.0	3,256.0	5,000.0	3,045.0	1,584.0	-47.98%
TOTAL WASHINGTON #	28,858.0	32,158.0	37,444.0	38,648.0	39,170.0	1.35%
WISCONSIN	120.0	170.0	297.0	297.0	297.0	0.00%
TOTAL PACIFIC NORTHWEST	38,011.0	43,633.0	50,857.0	53,989.0	55,035.0	1.94%
TOTAL NON-PNW US	881.0	1,277.0	2,106.0	2,503.5	2,433.0	-2.82%
TOTAL UNITED STATES	38,892.0	44,910.0	52,963.0	56,492.5	57,468.0	1.73%

SOURCE: USDA-NASS (for Idaho, Oregon and Washington) and Hop Growers of America (for remaining state estimates). Prepared by HGA. "Other Varieties" includes data to avoid disclosure of individual operations.

US HOP ACREAGE (1992-2018)

SOURCE: USDA-NASS and HGA Hop Acreage Reports

TOP 10 US HOP VARIETIES (WITH ACREAGE) (2013-2018)

Rank	2013	2014	2015	2016	2017	2018
1	Cascade (5288)	Cascade (6619)	Cascade (6790)	Cascade (7581)	Cascade (7175)	Citra®, HBC 394 (6652)
2	Zeus (3825)	Zeus (4037)	Centennial (4401)	Centennial (5082)	Centennial (5534)	Cascade (6009)
3	Summit (2844)	Centennial (3353)	Zeus (3650)	Citra®, HBC 394 (4494)	Citra®, HBC 394 (5284)	Centennial (4864)
4	Columbus/Tomahawk (2336)	Summit (2522)	Simcoe®, YCR 14 (3306)	Simcoe®, YCR 14 (4331)	Simcoe®, YCR 14 (4598)	Zeus (3964)
5	Centennial (2175)	Simcoe®, YCR 14 (1886)	Citra®, HBC 394 (2993)	Zeus (3082)	Zeus (3539)	Simcoe®, YCR 14 (3916)
6	Nugget (2062)	Citra®, HBC 394 (1761)	Mosaic®, HBC 369 (1800)	Mosaic®, HBC 369 (2525)	Mosaic®, HBC 369 (2773)	Chinook (2839)
7	Chinook (1739)	Columbus/Tomahawk (1738)	Chinook (1787)	Chinook (1940)	Chinook (2429)	Mosaic®, HBC 369 (2768)
8	Citra®, HBC 394 (1315)	Chinook (1641)	Columbus/Tomahawk (1673)	Summit (1769)	Willamette (1657)	Columbus/Tomahawk (2138)
9	Simcoe®, YCR 14 (1298)	Nugget (1628)	Summit (1620)	Willamette (1561)	Summit (1616)	Amarillo®, VGXP01 (2734)
10	Super Galena™ (1250)	Willamette (1159)	Willamette (1359)	Columbus/Tomahawk (1416)	Columbus/Tomahawk (1413)	Pahto®, HBC 682 (1659)

HOP YIELDS BY STATE AND VARIETY (FIVE YEARS)

STATE & VARIETY	YIELDS (POUNDS PER ACRE)					2017-18
	2014	2015	2016	2017	2018	% +/-
IDAHO						
Amarillo [®] , VGXP01	*	*	*	1,569	2,009	28.04%
Apollo [™]	2,004	2,062	1,893	1,798	1,951	8.51%
Bravo [™]	2,579	2,625	2,359	2,799	2,226	-20.47%
Calypto [™]	*	1,710	1,937	2,159	2,138	-0.97%
Cascade	1,746	1,633	1,585	1,771	1,716	-3.11%
Centennial	754	*	*	2,028	*	
Chinook	1,673	1,850	1,712	1,665	1,873	12.49%
Citra [®] , HBC 394	1,200	1,271	1,213	1,657	1,415	-14.60%
Cluster	*	*	*	*	2,126	
Crystal	2,186	*	1,678	2,084	1,927	-7.53%
El Dorado [®]	1,144	1,125	1,658	2,163	1,463	-32.36%
Eureka! [™]	*	*	*	*	2,299	
Galena	*	*	*	*	1,715	
Mosaic [®] , HBC 369	*	2,278	2,204	2,581	2,333	-9.61%
Simcoe [®] , YCR 14	969	1,576	1,335	1,494	1,245	-16.67%
Super Galena [™]	2,165	2,189	1,872	*	2,493	
Willamette	*	*	*	1,689	*	
Zeus	2,891	2,909	2,761	2,756	2,764	0.29%
Experimental	1,366	1,269	1,000	611	*	
Other Varieties ²	1,354	1,348	1,174	1,929	1,845	-4.35%
Total Idaho¹	1,847	1,794	1,646	1,974	1,995	1.06%
OREGON						
Cascade	1,402	1,994	1,597	1,425	1,623	13.89%
Centennial	1,095	1,352	1,235	1,273	1,277	0.31%
Chinook	*	1,861	1,675	1,667	1,674	0.42%
Citra [®] , HBC 394	*	980	1,047	1,475	1,600	8.47%
Crystal	*	2,011	2,216	1,772	1,819	2.65%
Fuggle	*	1,066	1,021	1,251	1,034	-17.35%
Golding	955	837	*	1,181	1,160	-1.78%
Liberty	*	1,360	*	*	*	
Magnum	1,077	1,572	1,493	1,714	1,284	-25.09%
Mosaic [®] , HBC 369	*	*	*	1,875	*	
Mt. Hood	1,450	1,276	1,463	1,439	1,411	-1.95%
Nugget	1,978	1,888	1,925	1,820	1,946	6.92%
Perle	1,057	*	*	1,164	1,093	-6.10%
Simcoe [®] , YCR 14	*	1,678	1,969	1,421	1,588	11.75%
Sterling	1,423	1,344	1,626	1,407	1,760	25.09%
Super Galena [™]	2,309	2,340	*	2,096	2,216	5.73%
Tettnanger	*	1,242	1,193	1,013	1,027	1.38%
Willamette	1,453	1,226	1,573	1,324	1,484	12.08%
Experimental	*	*	*	*	*	
Other Varieties ²	1,426	1,609	1,546	1,573	2,068	31.47%
Total Oregon	1,520	1,613	1,596	1,518	1,675	10.34%
WASHINGTON						
Ahtanum [™] , YCR 1	1,680	1,557	1,012	1,052	2,730	159.51%
Amarillo [®] , VGXP01	*	*	*	1,687	1,868	
Apollo [™]	2,649	2,738	2,225	2,729	2,848	4.36%
Azacca [™] , ADHA-483	1,704	1,872	1,870	2,463	2,491	1.14%
Bravo [™]	2,768	2,824	2,671	2,671	2,671	0.00%
Cascade	1,824	1,936	1,727	2,124	1,972	-7.16%
Cashmere	*	*	*	*	1,519	
Centennial	1,347	1,145	1,355	1,703	1,364	-19.91%
Chinook	1,815	1,793	1,420	1,784	1,875	5.10%
Citra [®] , HBC 394	1,570	1,541	1,543	1,748	1,611	-7.84%
Cluster	1,825	1,705	1,700	1,937	1,813	-6.40%
Columbus/Tomahawk [®]	2,629	2,524	1,969	2,646	2,482	-6.20%
Comet	*	1,780	949	1,855	1,750	-5.66%
Crystal	1,366	1,183	1,475	2,063	2,357	14.25%
Ekuanot [™] , HBC 366	*	*	*	2,740	2,583	-5.73%
El Dorado [®]	2,206	2,154	1,904	1,946	1,880	-3.39%
Eureka! [™]	*	*	*	2,244	2,954	
Galena	1,801	1,968	1,692	2,134	2,149	0.70%
Glacier	1,202	996	1,168	*	*	
Golding	772	854	*	*	*	
(continued next page)						

STATE & VARIETY	YIELDS (POUNDS PER ACRE)					2017-18 % +/-
	2014	2015	2016	2017	2018	
WASHINGTON cont.						
Jarrylo™, ADHA-881	1,548	1,541	1,408	*	*	
Loral™, HBC 291	*	*	*	2,295	2,349	
Magnum	*	1,255	*	*	*	
Millennium	1,996	*	*	*	*	
Mosaic®, HBC 369	2,225	2,036	2,326	2,439	2,351	-3.61%
Mt. Hood	1,333	1,069	1,075	1,043	1,454	39.41%
Mt. Rainier	*	*	*	*	1,899	
Northern Brewer	1,244	991	*	*	*	
Nugget	1,538	1,927	1,774	1,950	1,498	-23.18%
Pahto™, HBC 682	*	*	*	*	2,087	
Palisade®, YCR-4	2,469	1,950	2,228	2,209	2,441	10.50%
Pekko™, ADHA-871	*	*	*	*	1,889	
Simcoe®, YCR 14	1,542	1,540	1,673	1,792	1,642	-8.37%
Sorachi Ace	*	*	*	*	1,042	
Summit™	2,105	1,969	1,648	2,067	1,826	-11.66%
Super Galena™	2,562	2,729	2,501	2,647	3,133	18.36%
Tahoma	*	*	*	1,752	2,147	22.55%
Tettnanger	*	*	*	1,202	*	
Vanguard	1,455	1,223	*	*	*	
Warrior®, YCR-5	1,821	*	*	*	*	
Willamette	1,130	1,007	1,277	1,446	1,348	-6.78%
Zeus	2,811	2,819	2,469	3,088	2,619	-15.19%
Experimental	1,625	1,545	1,592	1,901	1,889	-0.63%
Other Varieties ²	1,418	1,603	1,662	1,746	1,896	8.59%
Total Washington	1,936	1,849	1,748	2,047	1,984	-3.08%
Total Pacific Northwest	1,868	1,807	1,713	1,959	1,943	-0.82%

SOURCE: USDA-NASS. Prepared by HGA. State and variety yields for production outside of the Pacific Northwest are not reported.
"Other Varieties" includes data to avoid disclosure of individual operations.

HOP PRODUCTION BY STATE AND VARIETY (FIVE YEARS)

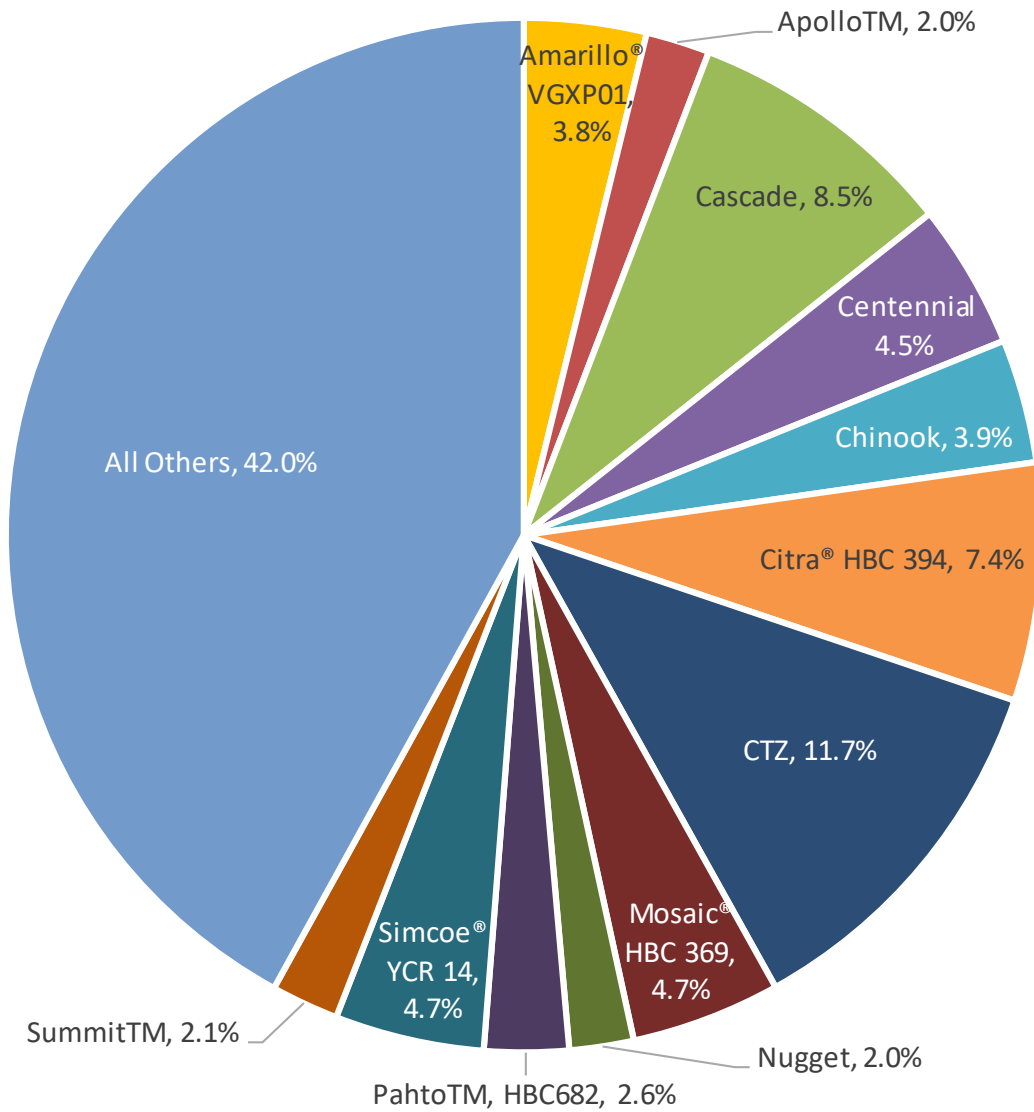
STATE & VARIETY	HOP PRODUCTION (POUNDS)					2017-18 % +/-
	2014	2015	2016	2017	2018	
IDAHO						
Amarillo®, VGXP01	*	*	*	1,542,300	1,657,400	7.46%
Apollo™	571,100	589,600	444,900	409,900	452,600	10.42%
Bravo™	324,900	435,700	356,200	417,100	193,700	-53.56%
Calypso™	*	138,500	156,900	174,900	173,200	-0.97%
Cascade	1,433,100	1,257,800	1,248,900	1,562,000	1,434,600	-8.16%
Centennial	55,800	*	*	517,100	*	
Chinook	575,400	662,200	715,500	1,163,800	1,801,800	54.82%
Citra®, HBC 394	109,200	523,700	698,500	1,257,700	1,229,500	-2.24%
Cluster	*	*	*	*	133,900	
Crystal	63,400	*	206,400	379,300	289,100	
El Dorado®	72,100	230,600	376,300	473,700	175,600	-62.93%
Eureka!™	*	*	*	*	305,800	
Galena	*	*	*	*	186,900	
Mosaic®, HBC 369	*	619,700	1,093,400	1,290,500	1,180,500	-8.52%
Simcoe®, YCR 14	64,900	313,600	309,800	588,600	559,000	-5.03%
Super Galena™	348,500	201,400	129,200	*	209,400	
Willamette	*	*	*	216,200	*	
Zeus	1,913,900	1,922,800	1,601,100	2,924,100	4,134,900	41.41%
Experimental	56,000	91,400	9,000	15,900	*	
Other Varieties	1,325,500	1,737,900	1,951,600	1,134,200	2,124,900	87.35%
Total Idaho	6,913,800	8,724,900	9,297,700	14,067,300	16,242,800	15.46%
(continued next page)						

STATE & VARIETY	HOP PRODUCTION (POUNDS)					2017-18
	2014	2015	2016	2017	2018	% +/-
OREGON						
Cascade	1,347,400	2,163,000	1,934,500	1,777,000	1,726,900	-2.82%
Centennial	485,200	853,300	893,200	1,004,400	891,300	-11.26%
Chinook	*	240,000	179,200	206,700	215,900	4.45%
Citra®, HBC 394	*	241,000	684,700	1,129,900	1,104,000	-2.29%
Crystal	*	758,100	937,200	721,200	643,900	-10.72%
Fuggle	*	90,600	143,900	107,600	61,000	-43.31%
Golding	223,500	199,300	*	253,900	140,400	-44.70%
Liberty	*	285,600	*	*	*	
Magnum	189,600	312,900	225,500	80,600	134,800	67.25%
Mosaic®, HBC 369	*	*	*	631,900	*	
Mt. Hood	390,000	367,600	473,900	457,600	438,800	-4.11%
Nugget	2,696,400	2,802,100	2,810,900	2,669,900	2,543,400	-4.74%
Perle	105,700	*	*	88,500	84,200	
Simcoe®, YCR 14	*	320,500	649,900	655,100	692,400	5.69%
Sterling	185,000	280,800	370,800	319,400	336,200	5.26%
Super Galena™	288,600	191,900	*	140,400	186,100	
Tettnanger	*	165,200	145,600	72,900	73,900	1.37%
Willamette	819,500	810,300	1,310,000	1,181,000	1,359,500	15.11%
Experimental	*	*	*	*	*	
Other Varieties	1,490,100	585,600	1,636,000	972,400	2,303,500	136.89%
Total Oregon	8,221,000	10,667,800	12,395,300	12,470,400	12,936,200	3.74%
WASHINGTON						
Ahtanum	326,000	225,800	156,900	390,300	696,200	78.38%
Amarillo®, VGXP01	*	*	*	3,347,000	3,539,900	5.76%
Apollo™	1,854,300	1,938,600	1,635,600	1,866,600	2,264,200	21.30%
Azacca™, ADHA-483	134,600	327,600	946,400	1,423,600	1,360,100	-4.46%
Bravo™	1,616,700	1,606,700	1,530,500	1,444,900	912,200	-36.87%
Cascade	8,821,000	9,553,300	9,638,800	10,547,800	8,428,300	-20.09%
Cashmere	*	*	*	*	296,200	
Centennial	3,818,800	4,317,300	5,908,600	7,450,600	5,285,500	-29.06%
Chinook	2,354,300	2,331,100	2,008,900	2,911,500	3,251,300	11.67%
Citra®, HBC 394	2,622,500	3,597,200	5,035,000	6,493,800	7,792,400	20.00%
Cluster	1,328,600	1,135,700	1,058,800	1,202,900	1,105,900	-8.06%
Columbus/Tomahawk®	4,569,200	4,223,400	2,787,900	4,389,700	5,048,400	15.01%
Comet	*	192,200	154,700	380,300	381,500	0.32%
Crystal	247,200	155,000	281,700	251,700	268,700	6.75%
Ekuanot™, HBC 366	*	*	*	2,438,600	2,234,300	-8.38%
El Dorado®	180,900	523,500	754,000	901,000	785,800	-12.79%
Eureka!™	*	*	*	812,300	1,208,200	48.74%
Galena	551,000	580,600	443,300	806,700	838,100	3.89%
Glacier	151,500	154,400	169,300	*	*	
Golding	72,600	45,300	*	*	*	
Jarrylo™, ADHA-881	116,100	188,000	184,400	*	*	
Loral™, HBC 291	*	*	*	426,900	404,000	-5.36%
Magnum	*	135,500	*	*	*	
Millennium	225,600	*	*	*	*	
Mosaic®, HBC 369	1,493,200	3,111,600	4,720,400	4,578,000	4,542,100	-0.78%
Mt. Hood	199,900	139,000	94,600	90,700	151,200	66.70%
Mt. Rainier	*	*	*	*	581,100	
Northern Brewer	163,000	121,900	*	*	*	
Nugget	419,500	389,200	330,000	243,800	188,700	-22.60%
Pahto™, HBC 682	*	*	*	*	3,591,700	
Palisade®, YCR-4	550,600	885,200	1,292,500	1,261,300	1,257,100	-0.33%
Pekko™, ADHA-871	*	*	*	*	173,800	
Simcoe®, YCR 14	2,805,800	4,489,500	6,305,100	6,725,400	5,095,100	-24.24%
Sorachi Ace	*	*	*	*	152,100	
Summit™	5,308,300	3,189,600	2,914,500	3,342,300	2,874,100	-14.01%
Super Galena™	1,552,400	957,800	775,300	1,151,400	1,566,500	36.05%
Tahoma	*	*	*	380,200	448,700	
Tettnanger	*	*	*	45,700	*	
Vanguard	84,400	102,700	*	*	*	
Willamette	672,500	703,100	929,300	825,700	506,800	-38.62%
Warrior®, YCR-5	349,700	*	*	*	*	
Zeus	9,488,400	8,426,300	6,178,500	6,836,800	6,788,400	-0.71%
Experimental	637,000	488,400	902,700	800,300	706,500	-11.72%
Other Varieties	3,145,500	5,217,800	8,308,900	5,316,000	3,002,600	-43.52%
Total Washington	55,861,100	59,453,300	65,446,600	79,083,800	77,727,700	-1.71%
Total Pacific Northwest	70,995,900	78,846,000	87,139,600	105,621,500	106,906,700	1.22%
Other States Estimate ¹	*	1,249,000	1,500,000	1,875,000	1,500,000	-20.00%
Total US Estimate	70,995,900	80,095,000	88,639,600	107,496,500	108,406,700	0.85%

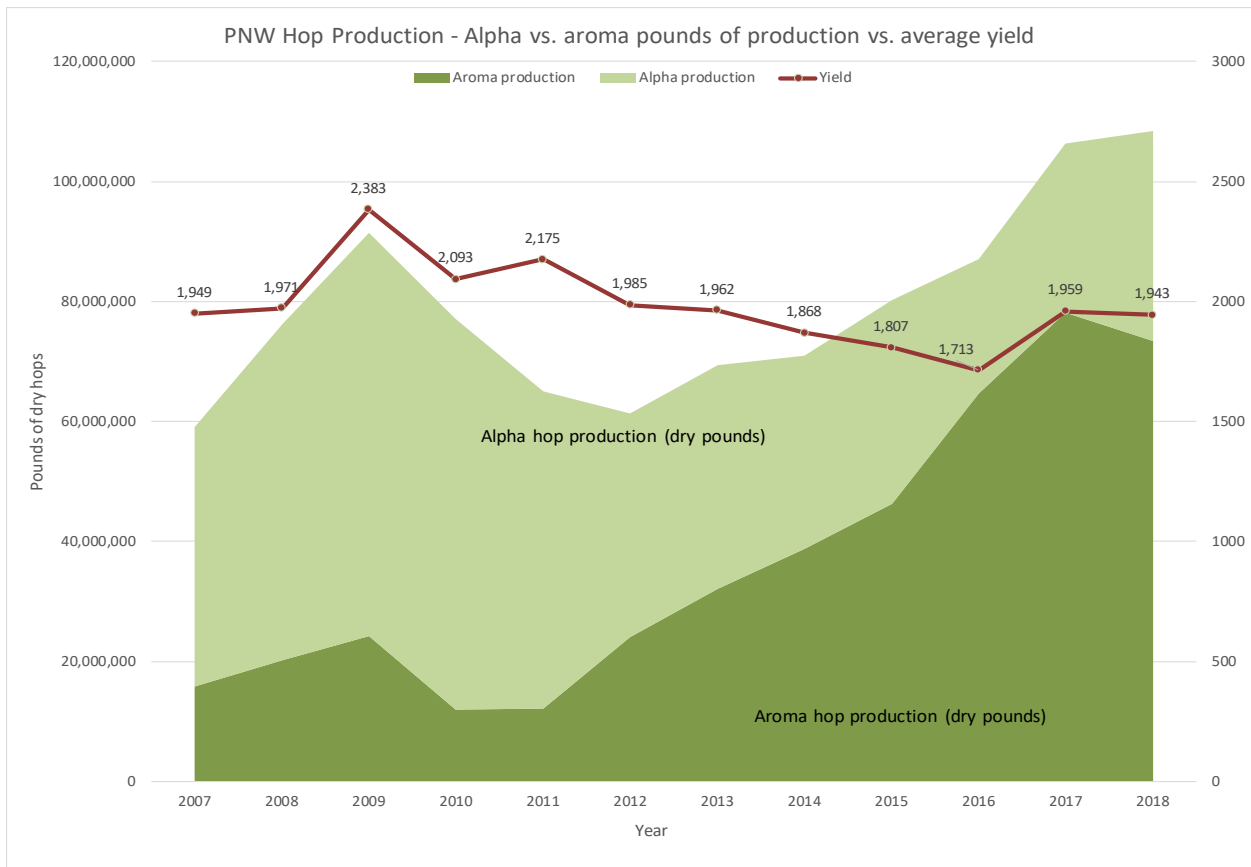
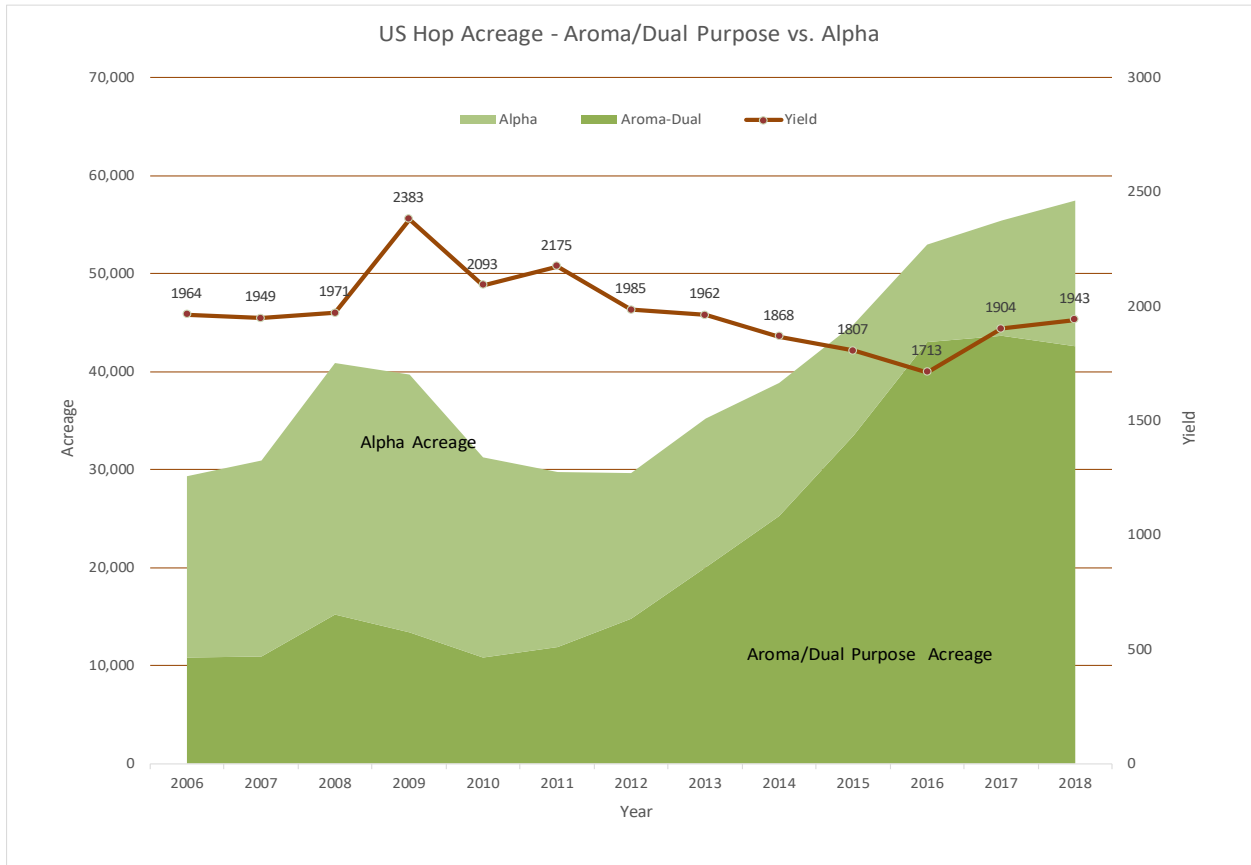
SOURCE: USDA-NASS. Prepared by HGA. "Other Varieties" includes data to avoid disclosure of individual operations.

¹ Production outside of PNW averaged at approximately 660 pounds per acre for acreage identified in June 2018.

MAJOR US HOP VARIETIES – 2018 (% of US Production)



SOURCE: USDA-NASS. Prepared by HGA.



PACIFIC NORTHWEST HOP ACREAGE BY STATE (10 YEARS - IN ACRES)

YEAR	ACREAGE HARVESTED			
	WASHINGTON	OREGON	IDAHO	TOTAL
2009	28,924	5,764	4,030	38,718
2010	24,336	4,622	2,331	31,289
2011	23,320	4,202	2,265	29,787
2012	22,696	4,391	2,596	29,683
2013	27,097	4,835	3,356	35,288
2014	28,858	5,410	3,743	38,011
2015	32,158	6,612	4,863	43,633
2016	37,444	7,765	5,648	50,857
2017	38,648	8,216	7,125	53,989
2018	39,170	7,725	8,140	55,035

SOURCE: USDA-NASS. Prepared by HGA.

PACIFIC NORTHWEST AVERAGE HOP YIELD (TEN YEARS)

YEAR	POUNDS PER ACRE			
	WASHINGTON	OREGON	IDAHO	TOTAL
2009	2,533	1,948	1,943	2,383
2010	2,147	1,791	2,129	2,093
2011	2,200	1,908	2,408	2,175
2012	2,047	1,746	1,841	1,985
2013	2,025	1,764	1,740	1,962
2014	1,936	1,520	1,847	1,868
2015	1,849	1,613	1,794	1,807
2016	1,748	1,596	1,646	1,713
2017	2,046	1,518	1,974	1,956
2018	1,984	1,675	1,995	1,943

SOURCE: USDA-NASS. Prepared by HGA.

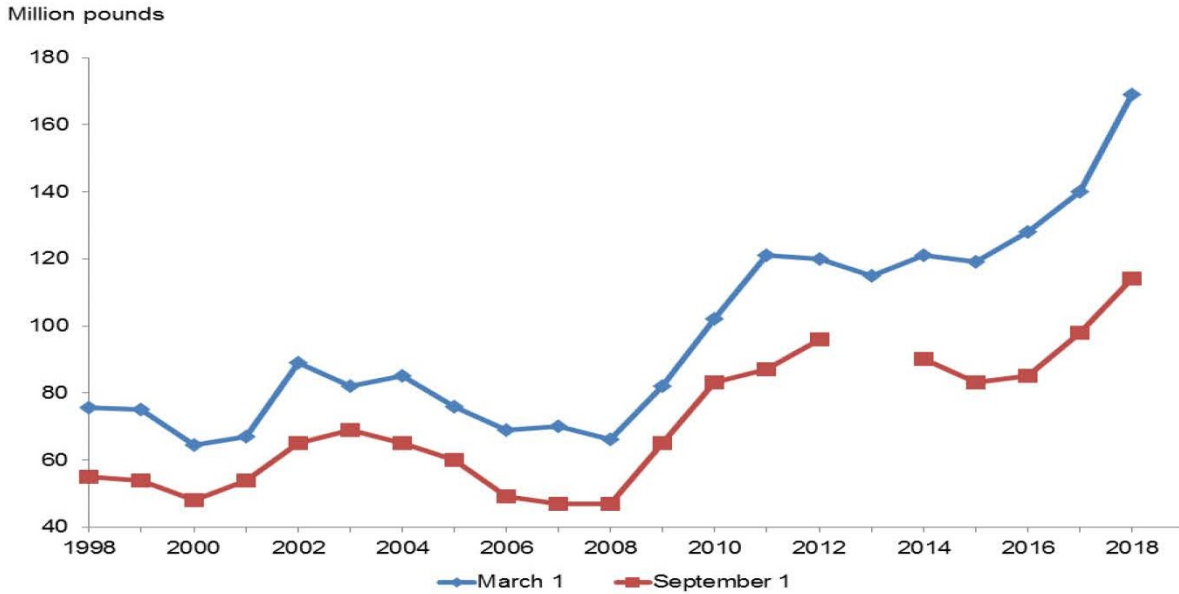
U.S. HOPS: SEASON AVERAGE PRICE & TOTAL CROP VALUE

Marketing Year	SEASON AVERAGE PRICE**				PNW	Total Crop
	Washington	Oregon	Idaho	U.S.	Production	Value
	----- (\$ / pound) -----				(Lbs. x 1,000)	(x 1,000)
2009	\$3.54	\$3.63	\$3.75	\$3.57	94,678	\$337,874
2010	\$3.11	\$3.96	\$3.89	\$3.28	65,493	\$214,589
2011	\$3.06	\$3.79	\$2.93	\$3.14	64,782	\$203,378
2012	\$3.10	\$3.91	\$2.69	\$3.17	58,911	\$186,876
2013	\$3.37	\$3.76	\$2.62	\$3.35	69,246	\$232,308
2014	\$3.73	\$4.07	\$2.72	\$3.67	70,995	\$260,627
2015	\$4.71	\$3.24	\$3.53	\$4.38	78,846	\$345,388
2016	\$5.84	\$5.25	\$5.50	\$5.72	87,140	\$498,420
2017	\$5.80	\$5.00	\$5.00	\$5.60	105,622	\$591,375
2018	\$5.50	\$5.40	\$5.30	\$5.46	106,907	\$583,444

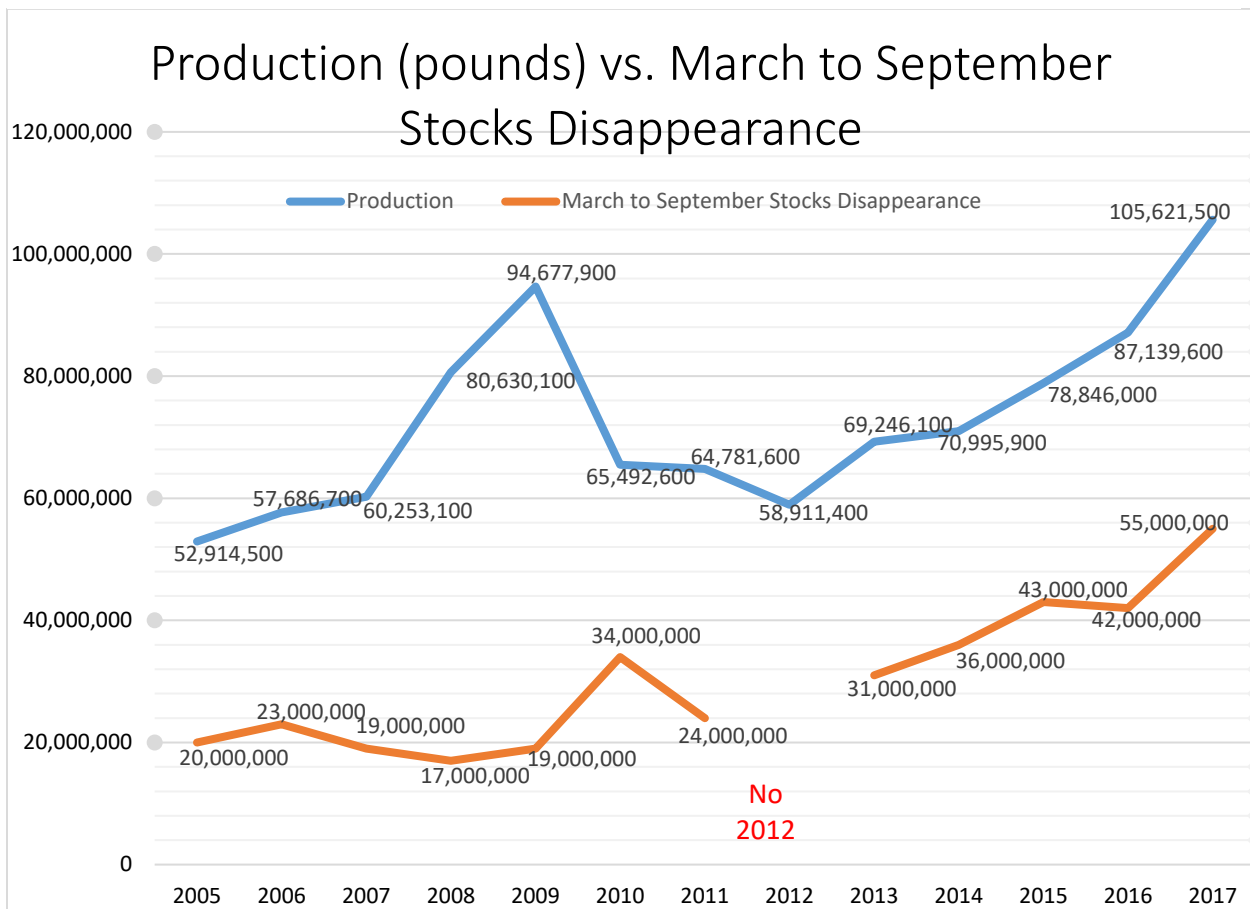
SOURCE: USDA-NASS. Prepared by HGA.

U.S. HOPS STOCKS

Hop Stocks – United States



SOURCE: USDA-NASS. Due to Federal funding cuts the September 2012 Hop Stocks survey was not conducted. All data is based in Pacific Northwest totals.



SOURCE: USDA-NASS. Prepared by NASS. Due to Federal funding cuts the September 2012 Hop Stocks survey was not conducted. All data is based on Pacific Northwest totals.

2018 HOP INSPECTION REPORT

YEAR	WASHINGTON	OREGON	IDAHO	TOTAL
2014	271,891	38,592	34,137	344,620
2015	284,461	47,202	42,301	373,964
2016	329,539	59,641	47,123	436,303
2017	397,491	61,652	66,328	525,471
2018	397,027	63,359	78,432	538,818

	0%	1%	2%	3%	4%	5%	6%	7%	TOTAL	AVERAGE
WA	277,101	101,295	13,975	2,403	1,186	811	252	4	397,027	0.37%
OR	54,616	7,766	538	439	0	0	0	0	63,359	0.16%
ID	31,483	35,887	8,480	1,802	670	110	0	0	78,432	0.78%
Total	363,200	144,948	22,993	4,644	1,856	921	252	4	538,818	0.41%
% of Total	67%	27%	4%	1%	0%	0%	0%	0%	100%	

	0%	1%	2%	3%	4%	5%	6%	7+%	TOTAL	AVERAGE
WA	304,820	61,536	18,292	6,175	1,588	1,882	1,220	1,514	397,027	0.38%
OR	35,803	9,811	7,060	3,979	2,028	1,837	980	1,687	63,185	1.12%
ID	67,223	4,650	1,415	789	755	0	1,045	2,555	78,432	0.47%
Total	407,846	75,997	26,767	10,943	4,371	3,719	3,245	5,756	538,644	0.48%
% of Total	68%	19%	6%	3%	1%	1%	1%	1%	100%	

SOURCE: State Hop Inspection Labs. Prepared by HGA.

U.S. HOP LEAF, STEM & SEED CONTENT PERCENTAGE (10 YEARS)

Year	WASHINGTON Leaf & Stem	OREGON Leaf & Stem	IDAHO Leaf & Stem	U.S. AVERAGE %	
				Leaf & Stem	Seed Content
2010	0.17	0.15	0.04	0.16	1.31
2011	0.14	0.09	0.02	0.12	1.34
2012	0.33	0.16	0.05	0.29	0.66
2013	0.28	0.34	0.23	0.28	0.68
2014	0.32	0.18	0.09/1.11	0.30	0.64
2015	0.42	0.51	0.32	0.42	0.78
2016	0.33	0.31	0.19	0.31	1.31
2017	0.26	0.50	0.46	0.32	0.87
2017	0.26	0.50	0.46	0.32	0.87
2018	0.37	0.16	0.78	0.41	0.48

SOURCE: State Hop Inspection Labs. Prepared by HGA.

2018 US-GROWN HOP VARIETY CODES

Brand/Variety	Code	Brand/Variety	Code
Ahtanum [®] , YCR 1	AHT	Medusa [™]	MED
Alpharoma	AAA	Meridian	MER
Amarillo [®] , VGXP01	VG1	Millennium	MLM
Apollo [™]	APO	Mosaic [®] , HBC 369	MOS
Aquila	AQU	Mt. Hood	MTH
Azacca [®] , ADHA-483	AZA	Mt. Rainier	MTR
Banner	BAN	Newport	NWP
Belma	BEL	Northern Brewer	NBR
Bitter Gold	BIG	Nugget	NUG
Bravo [™]	BRO	Olympic	OLC
Brewers Gold	BGO	Other	OTH
BRU-1	BR1	Pahto [™] , HBC 682	PAH
Bullion	BUL	Palisade [®] , YCR 4	PAL
Calypso [™]	CPO	Pekko [®] , ADHA-871	PEK
Cascade	CAS	Perle	PER
Cashmere	CMR	Saaz	SAZ
Centennial	CEN	Sabro [™] , HBC 438	SAB
Chelan	CHE	Santiam	SNT
Chinook	CHI	Satus [®] , YCR 7	SAT
Citra [®] , HBC 394	CIT	Serebrianka	SEK
Cluster	CLU	Simcoe [®] , YCR 14	SIM
Columbia	CBA	Sonnet [™]	SON
Columbus	CBS	Sorachi Ace	SOR
Comet	COM	Spalter	SPA
Crystal	CRY	Sterling	STR
Delta [™]	DEL	Strata [™] , OR91331	STT
06277 (formerly Denali [™])	277	Strissel Spalt	FSP
Ekuanot [®] , HBC 366	EKU	Summit [™]	SUM
El Dorado [®]	ELD	Super Galena [™]	SGA
Eroica	ERO	Tahoma	TAH
Eureka! [™]	EUE	Talisman	TLN
Experimental	EXP	Teamaker	TMK
Fuggle	FUG	Tettnanger	TET
Galena	GAL	Tillicum	TIL
Glacier	GLC	Tomahawk [®] , F10	TOM
Golding	GOL	Topaz	TOP
Hallertauer Mittelfruher	HAL	Triple Pearl	TRP
Hallertauer Magnum	HMG	Triumph	TRI
Horizon	HOR	Ultra	ULT
Idaho7 [™]	ID7	Vanguard	VAN
Jarrylo [®] , ADHA-881	JAR	Warrior [®] , YCR 5	WAR
Lemondrop [™]	LDP	Willamette	WIL
Liberty	LIB	Yakima Gold	YKG
Loral [®] , HBC 291	LOR	Zappa [™]	ZAP
		Zeus	ZEU

IHGC AROMA ACREAGE (FIVE YEARS)

COUNTRY	AROMA ACREAGE (IN ACRES)					2017-18
	2014	2015	2016	2017	2018	% +/-
Argentina				235	247	5.26%
Australia	158	217	247	1,102	1,184	7.40%
Austria	460	462	462	460	470	2.15%
Belgium	190	205	220	282	311	10.53%
Canada				541	541	
China	741	618	494	988	988	0.00%
Czech Rep.	9,902	10,253	10,826	11,325	11,562	2.09%
France	808	899	941	991	1,048	5.74%
Germany	22,732	23,908	24,867	25,927	26,742	3.15%
Japan				148	148	
New Zealand	712	811	877	917	917	0.00%
Poland	1,253	1,391	1,530	1,537	1,628	5.95%
Romania	156	156	168	180	180	0.00%
Russia	208	208	208	544	544	0.00%
Serbia	84	84	84	84	84	0.00%
Slovakia	339	339	339	339	339	0.00%
Slovenia	2,728	2,973	3,242	3,442	3,771	9.55%
South Africa	0	0	0	84	180	0.00%
Spain	0	0	0	0	0	0.00%
Ukraine	764	764	764	764	764	0.00%
UK - England	1,740	1,690	1,693	2,390	2,387	-0.10%
USA	24,711	33,738	43,000	43,904	42,639	-2.88%
IHGC Total	67,683	78,714	89,960	96,183	96,675	0.51%

SOURCE: IHGC Economic Commission November report. US hop acreage is updated to reflect the USDA-NASS 2018 National Hop Report, released in December 2018. Numbers may not total exactly due to rounding and standard/metric conversions.

IHGC ALPHA ACREAGE (FIVE YEARS)

COUNTRY	ALPHA ACREAGE (IN ACRES)					2017-18
	2014	2015	2016	2017	2018	% +/-
Argentina				161	148	-7.69%
Australia	850	988	1,100	247	376	52.00%
Austria	143	143	143	143	143	0.00%
Belgium	175	161	148	133	133	0.00%
Canada				494	494	0.00%
China	5,807	5,066	4,448	5,642	5,642	0.00%
Czech Rep.	116	106	114	114	111	-2.17%
France	131	121	82	89	96	8.33%
Germany	17,051	17,345	17,925	18,716	20,918	11.76%
Japan				148	148	0.00%
New Zealand	203	148	141	175	175	0.00%
Poland	1,972	1,940	2,039	2,093	2,268	8.38%
Romania	450	462	474	474	487	2.60%
Russia	133	133	133	494	494	0.00%
Serbia	82	82	82	82	82	0.00%
Slovakia	0	0	0	0	0	0.00%
Slovenia	89	62	57	52	52	0.00%
South Africa	1,038	1,038	1,038	964	875	-9.23%
Spain	1,285	1,320	1,325	1,327	1,327	0.00%
Ukraine	148	148	148	148	148	0.00%
UK - England	551	519	519	0	0	0.00%
USA	13,299	11,500	9,981	11,777	14,829	25.91%
IHGC Total	43,523	41,282	39,896	43,474	48,947	12.59%

SOURCE: IHGC Economic Commission November report. US hop acreage is updated to reflect the USDA-NASS 2018 National Hop Report, released in December 2018. Numbers may not total exactly due to rounding and standard/metric conversions.

IHGC TOTAL ACREAGE (FIVE YEARS)

COUNTRY	TOTAL ACREAGE (IN ACRES)					2017-18
	2014	2015	2016	2017	2018	% +/-
Argentina				395	395	0.00%
Australia	1,008	1,206	1,349	1,559	1,611	3.33%
Austria	603	605	615	618	623	0.80%
Belgium	366	366	368	445	452	1.67%
Canada				1,035	1,035	0.00%
China	6,548	5,684	4,942	6,630	6,630	0.00%
Czech Rep.	10,018	10,359	11,800	12,220	12,405	1.52%
France	939	1,021	1,134	1,189	1,226	3.12%
Germany	39,782	41,253	45,958	48,293	49,778	3.08%
Japan				297	297	0.00%
New Zealand	914	959	1,018	1,092	1,312	20.14%
Poland	3,225	3,329	3,645	3,894	3,894	0.00%
Romania	605	618	667	667	684	2.59%
Russia	341	341	1,038	1,161	1,161	0.00%
Serbia	166	166	195	195	195	0.00%
Slovakia	339	339	339	339	339	0.00%
Slovenia	2,817	3,035	3,667	3,929	4,119	4.84%
South Africa	1,038	1,038	1,021	1,048	1,055	0.71%
Spain	1,285	1,320	1,325	1,327	1,327	0.00%
Ukraine	912	912	912	912	912	0.00%
UK - England	2,291	2,209	2,271	2,390	2,387	-0.10%
USA	38,010	45,238	52,963	55,681	57,468	3.21%
IHGC Total	111,207	119,994	135,226	145,316	149,306	2.75%

SOURCE: IHGC Economic Commission November report. US hop acreage is updated to reflect the USDA-NASS 2018 National Hop Report., released in December 2018. IHGC Total Acreage includes baby acreage (not included in separate aroma and alpha tables). Numbers may not total exactly due to rounding and standard/metric conversions.

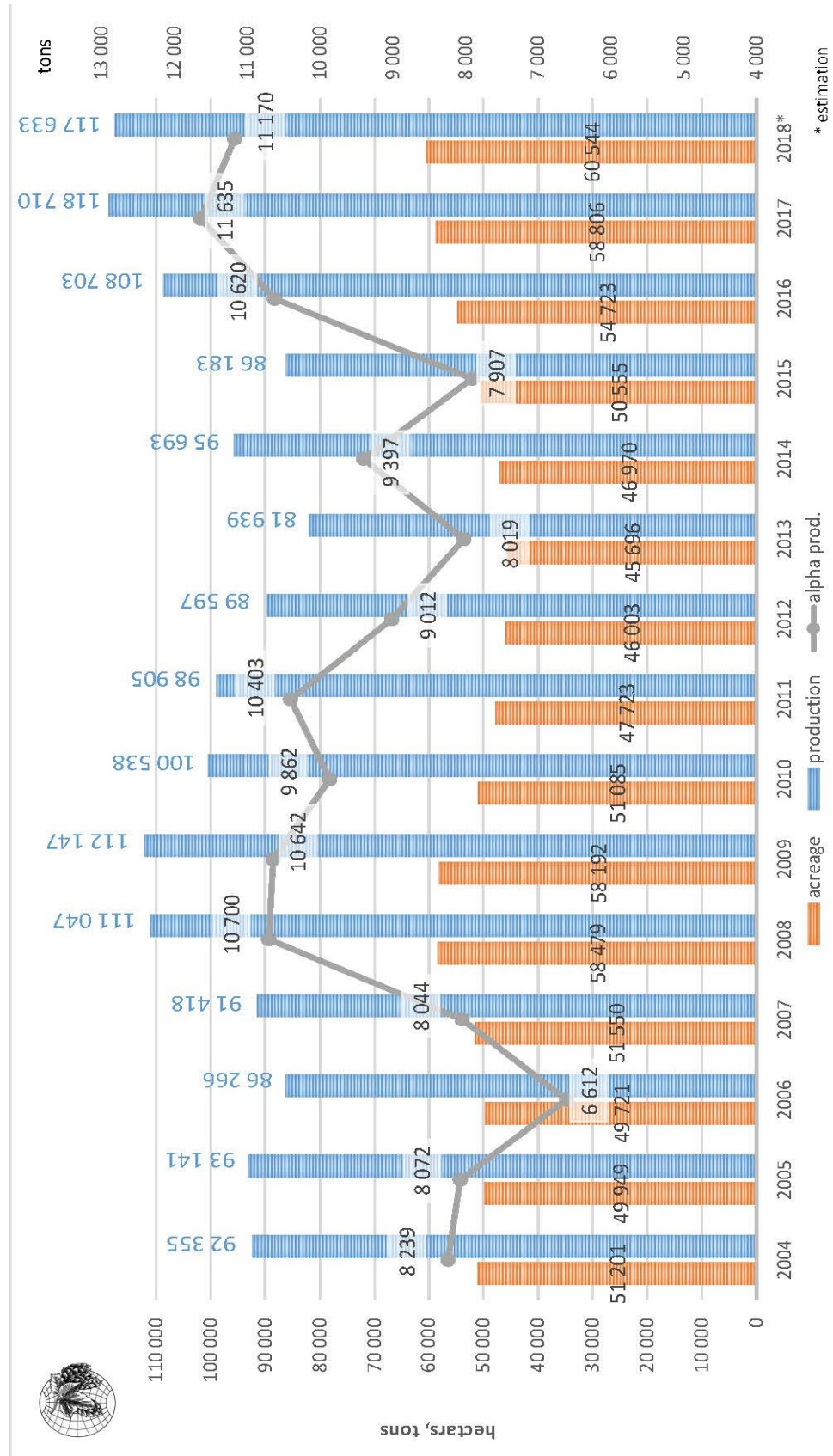
IHGC HOP ACREAGE AND PRODUCTION 2018

COUNTRY	2018 HOP ACREAGE (acres)				2018 HOP PRODUCTION (pounds)			
	AROMA	ALPHA	NEW	TOTAL	AROMA	ALPHA	TOTAL	Alpha MT.
Argentina	247	148	0	395	396,828	220,460	617,288	25
Australia	1,184	376	52	1,611	2,707,249	780,428	3,487,677	225
Austria	470	143	10	623	727,518	253,529	981,047	36
Belgium	311	133	7	452	293,212	268,961	562,173	14
Canada	541	494	0	1,035	725,313	661,380	1,386,693	63
China	988	5,642	0	6,630	1,199,302	14,329,900	15,529,202	600
Czech Rep.	11,562	111	731	12,405	11,045,046	198,414	11,243,460	185
France	1,048	96	82	1,226	1,708,565	196,209	1,904,774	36
Germany	26,742	20,918	2,118	49,778	44,092,000	47,839,820	91,931,820	3,920
Japan	148	148	0	297	286,598	315,258	601,856	30
New Zealand	917	175	220	1,312	1,322,760	268,961	1,591,721	65
Poland	1,628	2,268	0	3,897	1,829,818	3,747,820	5,577,638	205
Romania	180	487	17	684	176,368	297,621	473,989	21
Russia	544	494	124	1,161	551,150	551,150	1,102,300	40
Serbia	84	82	30	195	127,867	167,550	295,416	11
Slovakia	339	0	0	339	279,984	0	279,984	5
Slovenia	3,771	52	297	4,119	6,653,483	132,276	6,785,759	160
South Africa	180	875	0	1,055	169,754	1,492,514	1,662,268	75
Spain	0	1,327	15	1,342	0	2,116,416	2,116,416	109
Ukraine	764	148	0	912	881,840	176,368	1,058,208	30
UK - England	2,387	0	0	2,387	3,035,734	0	3,035,734	92
USA	42,639	14,829	0	57,468	73,351,800	35,054,900	108,406,700	5,223
IHGC Total	96,675	48,947	3,702	149,324	151,562,190	109,069,936	260,632,125	11,170

SOURCE: IHGC Economic Commission November report. US hop acreage and production are updated to reflect the USDA-NASS 2018 National Hop Report., released in December 2018. IHGC Total Acreage includes baby acreage (not included in separate aroma and alpha tables). Numbers may not total exactly due to rounding and standard/metric conversions.

COMPARISON OF IHGC CROPS 2002-2018

Figure 1: Comparison of IHGC crops 2004 - 2018* (acreage, production, alpha acids production)



Source: IHGC November 2018 Country Reports

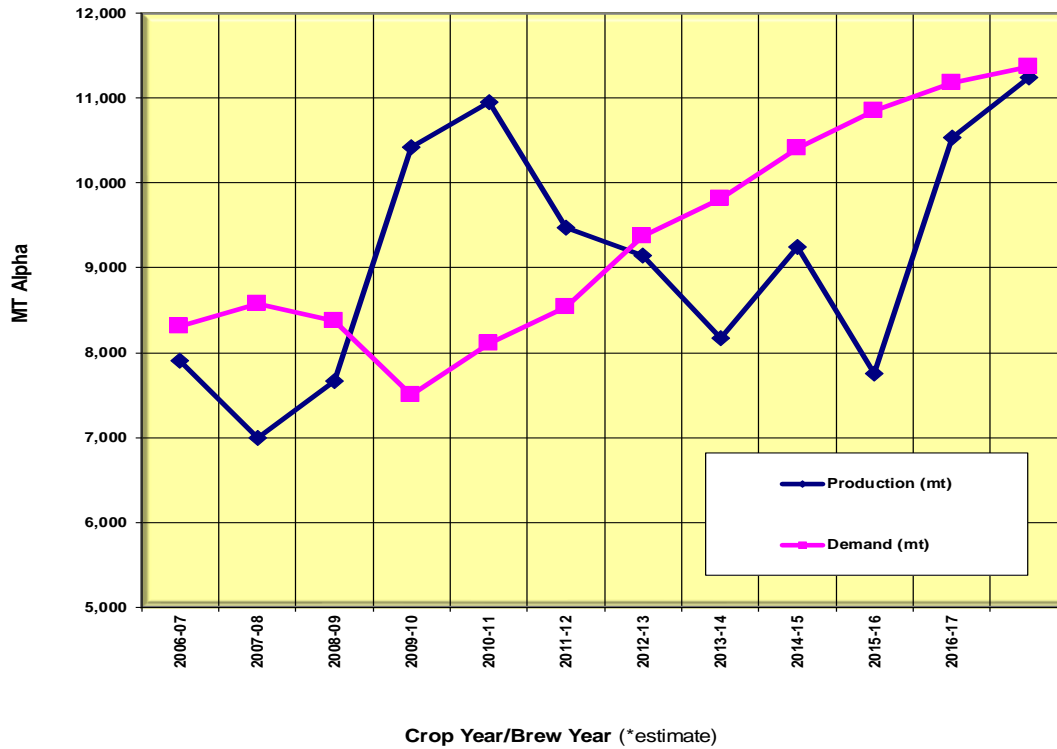
U.S. & GERMAN ALPHA ACID PRODUCTION (10 YEARS)

YEAR	UNITED STATES				GERMANY			
	Pounds of Hops (x 1,000)	MT Hops	MT Alpha	Avg. Alpha %*	Pounds of Hops (x 1,000)	MT Hops	MT Alpha	Avg. Alpha %*
2009	91,491	41,500	4,690	11.3%	87,104	39,510	3,520	8.9%
2010	64,954	29,463	3,517	11.9%	75,177	34,100	3,600	10.6%
2011	64,992	29,480	4,308	14.6%	82,673	37,500	4,400	11.7%
2012	61,249	27,782	3,500	12.6%	76,059	34,500	3,850	11.2%
2013	69,246	31,410	3,680	11.7%	60,746	27,554	2,680	9.7%
2014	70,996	32,204	3,541	11.0%	74,956	38,500	4,104	10.7%
2015	80,351	36,447	3,856	10.6%	62,170	28,200	2,700	9.6%
2016	88,640	40,207	4,082	10.2%	94,304	42,776	4,501	10.5%
2017	107,497	48,760	5,235	11.0%	91,614	41,556	4,265	10.3%
2018	108,407	49,173	5,223	10.6%	91,932	41,700	3,920	9.4%

SOURCE: Estimates from IHGC 2018 November Economic Commission report. US production figures are updated to include an estimate for non-PNW states, added to the Pacific Northwest production reported by USDA-NASS in the December National Hop Report. Prepared by HGA.

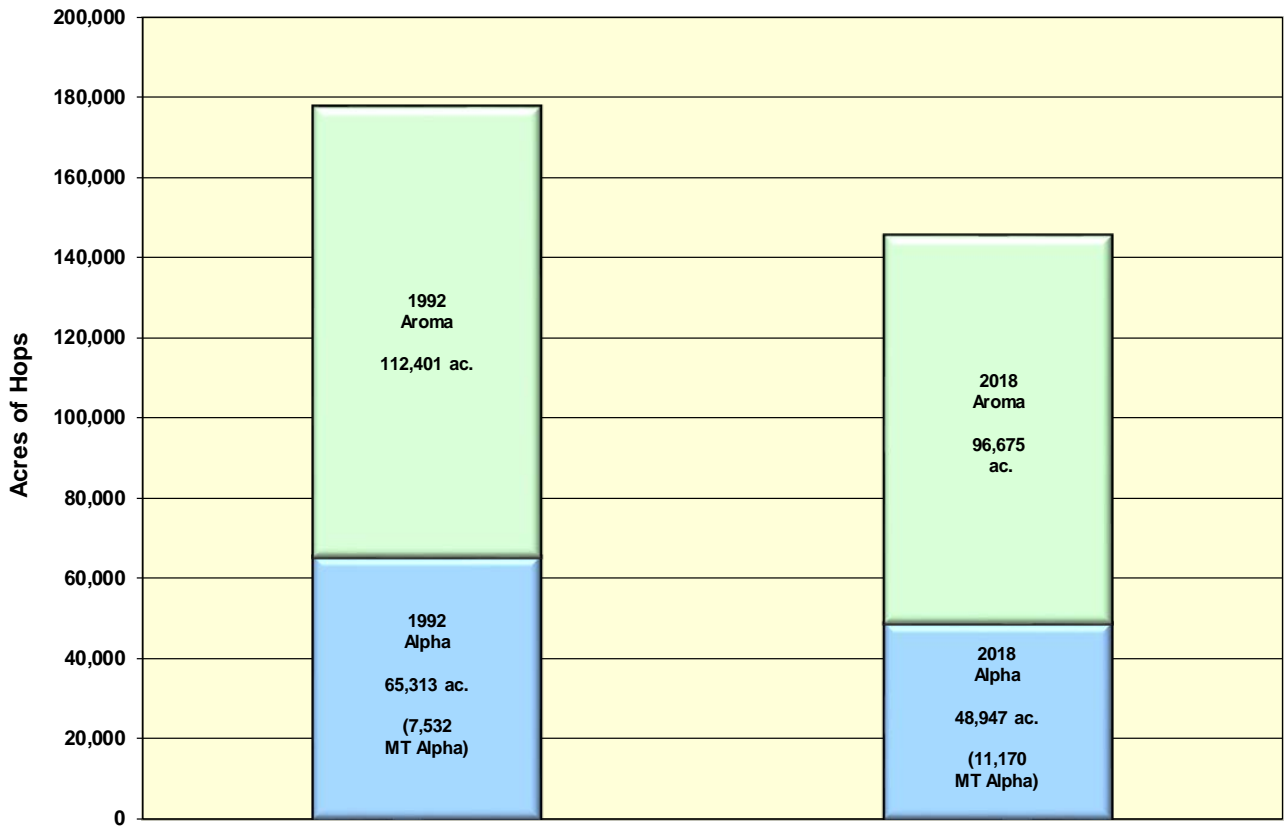
*Figures presented in the chart are the result of dividing the estimated MT Alpha by MT Hops for each year. This does not represent an estimate based on any type of analytical procedure.

WORLD ALPHA PRODUCTION & DEMAND



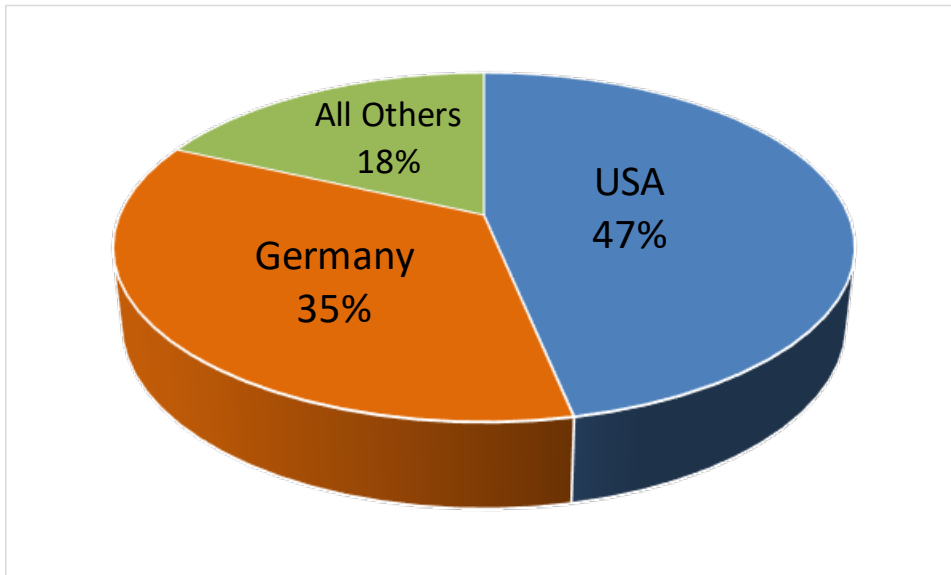
SOURCE: Barth Report. 2017-18. Prepared by HGA.

COMPOSITION OF WORLD HOP ACREAGE - 1992 VERSUS 2018



SOURCE: IHGC November Report and USDA NASS December National Hop Report. Prepared by HGA.

WORLD'S LARGEST ALPHA PRODUCERS – 2018



SOURCE: IHGC November Report. Prepared by HGA.

WORLD HOP ACREAGE & PERCENT SHARE (acres)

COUNTRY	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	43,902	44,749	43,818	40,887	38,895	39,782	41,253	45,958	48,293	49,778
	33%	36%	38%	37%	35%	34%	34%	34%	33%	33%
UK-England	2,669	2,669	2,750	2,597	2,597	2,291	2,209	2,212	2,390	2,387
	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Czech Rep.	12,479	12,398	10,952	10,564	10,178	10,018	10,359	11,800	12,220	12,405
	9%	10%	10%	10%	9%	9%	9%	9%	8%	8%
Europe (rest)	16,222	16,186	13,178	11,842	11,897	14,881	11,711	13,015	13,515	13,771
	12%	13%	12%	11%	11%	13%	10%	10%	9%	9%
USA	40,126	31,247	28,787	29,683	35,288	38,892	45,238	52,980	55,681	57,468
	30%	25%	25%	27%	32%	34%	38%	39%	38%	38%
China	14,322	14,322	11,016	9,961	7,413	6,548	5,684	4,942	6,630	6,630
	11%	11%	10%	9%	7%	6%	5%	4%	5%	4%
World (rest)	3,991	3,941	3,620	3,575	3,650	3,508	3,544	3,793	5,552	5,831
	3%	3%	3%	3%	3%	3%	3%	3%	4%	4%
World Totals	133,711	125,512	114,121	109,109	109,918	115,920	119,994	134,700	145,316	149,305

Europe (rest): Austria, Belgium, France, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Ukraine.

World (rest): Australia, New Zealand, Russia, South Africa, Argentina, Canada, Japan.

SOURCE: IHGC Economic Commission November 2018 report. US hop acreage updated to reflect USDA-NASS National Hop Report, released in December 2018.

WORLD HOP PRODUCTION & PERCENT SHARE (pounds x 1,000)

COUNTRY	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	68,894	75,177	82,673	76,059	60,746	84,657	62,170	94,136	91,614	91,932
	28%	34%	38%	39%	34%	41%	33%	40%	35%	35%
England	3,197	3,197	3,351	3,217	2,723	2,205	2,866	3,197	3,924	3,036
	1%	1%	2%	2%	2%	1%	2%	1%	1%	1%
Czech	14,109	16,204	13,779	9,480	11,750	13,007	10,582	15,653	14,985	11,243
	6%	7%	6%	5%	7%	6%	6%	7%	6%	4%
Europe (rest)	22,780	21,398	17,077	14,777	14,202	17,791	14,874	18,466	19,440	20,035
	9%	10%	8%	7%	8%	9%	8%	8%	7%	8%
USA	91,491	64,954	64,992	61,316	69,343	70,997	80,203	88,616	106,240	108,407
	38%	29%	30%	31%	39%	34%	42%	37%	41%	42%
China	35,494	35,494	29,982	26,334	13,228	13,228	13,228	9,921	15,529	15,529
	15%	16%	14%	13%	7%	6%	7%	4%	6%	6%
World (rest)	6,927	7,068	5,939	6,309	6,446	6,231	6,444	6,351	9,976	10,450
	3%	3%	3%	3%	4%	3%	3%	3%	4%	4%
World Totals	242,892	223,492	217,793	197,492	178,438	208,116	190,367	236,340	261,708	260,632

Europe (rest): Austria, Belgium, France, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Ukraine.

World (rest): Australia, New Zealand, Russia, South Africa, Argentina, Canada, Japan.

SOURCE: IHGC Economic Commission November 2018 report. Prepared by HGA.

U.S. HOP EXPORTS, TOP 40 COUNTRIES (2014 through 2018)*(In pounds; extract is converted to fresh hop equivalent at a ratio of 4:1)*

Rank	Country	2014	2015	2016	2017	2018
1	Brazil	3,976,037	3,579,425	3,568,843	3,956,416	9,312,010
2	United Kingdom	8,261,823	7,837,874	10,755,471	9,549,543	7,613,366
3	Belgium-Luxembourg	4,897,348	4,125,290	3,709,498	5,452,472	7,363,144
4	China	3,603,455	4,116,692	3,458,171	4,652,194	6,981,307
5	Germany	2,918,700	3,868,010	5,226,058	3,772,550	6,586,904
6	Mexico	6,605,269	10,188,001	8,038,715	5,528,311	5,259,294
7	Canada	2,434,785	2,685,451	3,186,561	3,369,986	4,033,095
8	Argentina	886,479	983,262	727,525	1,089,084	2,573,650
9	Australia	1,055,573	1,014,567	1,349,009	1,651,483	2,130,305
10	Colombia	2,520,986	1,776,044	1,972,696	2,127,902	2,095,913
11	Korea, South	1,644,869	1,460,121	2,089,982	1,553,818	1,699,967
12	Vietnam	377,431	513,457	840,843	1,043,889	1,654,111
13	Japan	1,603,642	2,133,193	1,970,492	1,788,169	1,207,459
14	Philippines	363,101	652,127	679,685	547,187	876,990
15	Peru	711,432	949,972	900,368	1,002,442	861,778
16	South Africa	369,495	591,721	591,721	1,023,827	848,330
17	Dominican Republic	890,006	574,084	925,060	1,083,572	809,970
18	Panama	161,158	111,554	102,294	294,978	544,316
19	Ecuador	523,377	424,831	337,969	346,346	495,594
20	Chile	459,443	368,392	419,760	309,749	417,772
21	Russia	445,554	365,085	742,958	798,073	414,906
22	Hong Kong	1,297,200	951,295	1,200,637	1,039,039	370,593
23	India	219,801	173,504	199,959	322,536	275,134
24	New Zealand	50,486	323,418	192,243	279,326	254,631
25	Honduras	67,902	78,044	114,861	140,655	244,049
26	Venezuela	1,950,650	1,486,797	923,957	183,866	240,742
27	Guatemala	166,229	242,729	441,586	455,255	196,871
28	Turkey	37,920	113,759	100,090	98,767	179,014
29	Indonesia	198,416	116,845	295,860	105,160	156,747
30	Cambodia	86,201	129,852	211,644	355,385	154,322
31	El Salvador	73,414	75,619	89,508	115,081	150,795
32	Malaysia	110,231	101,413	108,467	117,065	142,858
33	Nigeria	113,759	7,055	3,527	138,450	128,749
34	Ireland	17,857	184,086	402,564	497,804	104,719
35	Thailand	466,057	550,935	110,011	166,449	100,750
36	Singapore	55,997	130,514	75,839	142,860	85,538
37	Bolivia	162,040	154,103	68,343	129,191	69,445
38	Czech Republic	23,149	3,307	11,905	140,214	59,965
39	Uruguay	63,714	42,549	92,153	131,836	57,540
40	Netherlands	294,317	142,639	142,860	95,681	40,785
	All other countries	1,493,632	1,555,140	956,365	848,118	1,278,007
	Grand Total	51,658,935	54,882,754	57,336,058	56,444,729	68,071,434

Data Source: U.S. Census Bureau Trade Data. Compiled by HGA.

Original data in MTs converted to lbs. by multiplying by 2204.6225. Extract multiplied again by 4

U.S. HOP EXPORTS BY PRODUCT (TOP 40) – 2017-18

Rank	Country	Extract	Fresh/Dried	Ground	Pellets	Grand Total
1	Brazil	8,083,827	15,873	16,755	1,195,555	9,312,010
2	United Kingdom	2,659,629	2,047,412		2,906,324	7,613,366
3	Belgium-Luxembourg	3,843,059	531,529		2,988,556	7,363,144
4	China	5,910,974			1,070,333	6,981,307
5	Germany	3,850,113	464,730		2,272,061	6,586,904
6	Mexico	4,626,133		130,512	502,649	5,259,294
7	Canada	399,474	63,713	1,057,326	2,512,583	4,033,095
8	Argentina	1,147,274	106,703	18,519	1,301,155	2,573,650
9	Australia	682,544	339,729		1,108,032	2,130,305
10	Colombia	1,010,589			1,085,325	2,095,913
11	Korea, South	1,266,322	18,078		415,567	1,699,967
12	Vietnam	1,632,286			21,826	1,654,111
13	Japan	320,108	104,057		783,294	1,207,459
14	Philippines	621,697	18,519		236,774	876,990
15	Peru	402,119		1,102	458,557	861,778
16	South Africa	837,748			10,582	848,330
17	Dominican Republic	799,829		10,141		809,970
18	Panama	529,986		1,764	12,566	544,316
19	Ecuador	382,719	661		112,214	495,594
20	Chile	285,716	661	5,291	126,103	417,772
21	Russia	289,244			125,662	414,906
22	Hong Kong	259,261			111,332	370,593
23	India	131,394	25,794		117,946	275,134
24	New Zealand	83,775		6,173	164,684	254,631
25	Honduras	233,688	5,071	5,291		244,049
26	Venezuela	240,742				240,742
27	Angola	208,996				208,996
28	Guatemala	156,086	3,086	882	36,817	196,871
29	Turkey	162,259			16,755	179,014
30	Indonesia	156,086			661	156,747
31	Cambodia	154,322				154,322
32	El Salvador	129,630	1,764		19,400	150,795
33	Malaysia	142,858				142,858
34	Nigeria	128,749				128,749
35	Paraguay	119,930			4,850	124,780
36	Ireland	58,201	1,764		44,753	104,719
37	Thailand	97,884			2,866	100,750
38	Singapore	80,247	4,850		441	85,538
39	Taiwan	11,464			69,665	81,129
40	Burma	73,193			882	74,075
	All other countries	668,435	14,330	2,205	331,792	1,016,762
	Grand Total	42,878,588	3,768,323	1,255,961	20,168,563	68,071,434

Data Source: U.S. Census Bureau Trade Data. Compiled by HGA.

Original data in MTs converted to lbs. by multiplying by 2204.6225. Extract multiplied again by 4

U.S. IMPORTS OF HOPS (FIVE YEARS)*(In pounds; extract converted at 4:1 ratio)*

Rank	Country	2014	2015	2016	2017	2018
1	Germany	4,774,061	5,743,424	7,230,427	8,000,934	8,721,618
2	Australia	1,105,827	1,058,649	1,453,934	1,324,744	1,375,670
3	United Kingdom	1,150,140	2,366,197	2,131,628	1,170,202	1,097,009
4	New Zealand	934,089	807,545	676,592	678,135	889,556
5	Czech Republic	52,029	317,903	179,454	463,407	215,389
6	Slovenia	686,072	178,352	173,722	401,899	204,807
7	Canada	0	2,425	11,243	87,743	105,380
8	China	829,811	229,940	14,991	250,443	270,064
9	France	132,056	140,874	49,163	125,662	74,956
10	Italy	25,794	47,619	13,228	136,685	95,239
11	Hong Kong	0	0	0	0	89,066
12	South Africa	3,527	2,205	24,912	70,106	11,243
13	Argentina	0	3,748	0	0	2,205
14	Ethiopia	0	441	4,630	17,196	1,764
15	Belgium-Luxembourg	882	6,614	57,540	39,462	441
16	Spain	20,282	4,409	0	0	882
17	India	0	2,866	0	0	0
18	Latvia	0	0	6,614	0	0
19	Slovakia	0	31,746	0	9,921	0
20	Peru	3,086	0	0	0	0
21	Poland	7,496	5,952	7,937	0	0
	Grand Total	9,725,152	10,950,910	12,036,014	12,776,539	13,155,289

Data Source: U.S. Census Bureau Trade Data. Compiled by HGA.

Original data in MTs converted to lbs. by multiplying by 2204.6225. Extract multiplied again by 4□

WORLD BEER PRODUCTION BY BREWERY (TOP 10) – 2016-17 (MILLION HL)

Brewery	2016 Production	2016 % Share	2017 Production	2017 % Share
ABInBev	433.9	22.2%	612.5	31.4%
Heineken	200.1	10.2%	218.0	11.2%
China Res. Snow Breweries	118.8	6.1%	126.0	6.5%
Carlsberg	116.9	6.0%	113.4	5.8%
Molson-Coors	95.2	4.9%	99.6	5.1%
Tsingtao Brewery Group	79.2	4.0%	78.0	4.0%
Asahi	59.0	3.0%	58.2	3.0%
Yanjing	45.0	2.3%	43.0	2.2%
BGI/Groupe Castel	32.9	1.7%	38.8	2.0%
Kirin	42.5	2.2%	29.9	1.5%
Top 10 total	1,181.0	60.4%	1,387.5	71.2%

The top 3 brewing groups controlled 49.1% of the market share in 2017, up from 38.5% in 2016.

The top 40 brewing groups worldwide represented 88.3% market share in 2017.

Source: Barth Report 2017-18

FOR AN INTERESTING COMPARISON, HERE IS THE RANKING FOR WORLD BEER PRODUCTION BY BREWERY (TOP 10) FOR 1988 - 30 YEARS AGO (MILLION HL)

Brewery	1988 Production	1988 % Share
Anheuser-Busch	90	7%
Miller	47	4%
Heineken	43	3%
Kirin	30	2%
Bond	30	2%
Stroh	25	2%
Elders	21	2%
Kronenbourg	20	2%
Coors	20	2%
Brahma	18	1%
Top 10 total	344	26%

WORLD BEER PRODUCTION (FIVE YEARS - MILLION HL)

Country	2014	2015	2016	2017	2018*
Germany	95.6	95.7	95.3	93.0	93.5
Russia	76.6	73.0	86.2	74.5	75.0
Great Britain	41.2	44.1	42.4	43.3	43.0
Poland	39.2	39.8	41.5	40.5	41.0
Spain	33.5	34.8	36.3	37.2	37.8
Netherlands	23.7	23.7	24.2	24.8	24.8
Belgium	18.0	18.3	21.3	21.9	21.5
Czech Republic	19.7	20.1	20.6	20.3	20.5
France	18.8	20.5	21.3	21.3	21.5
Romania	16.5	16.1	18.3	16.8	17.0
Ukraine	24.5	19.4	17.5	17.8	18.2
Italy	13.0	15.4	14.5	15.6	15.8
Austria	9.2	9.3	9.5	9.7	9.6
Turkey	10.1	9.0	9.5	9.1	9.0
Ireland	8.0	7.3	7.9	7.8	8.0
Hungary	6.2	6.5	6.3	6.4	6.8
Other Europe	65.0	63.6	65.5	70.2	69.5
Total Europe	518.8	516.6	538.1	530.2	532.5
USA	225.9	225.0	200.6	217.8	215.0
Brazil	134.5	138.0	127.2	140.0	140.0
Mexico	82.0	90.0	109.8	110.0	111.0
Colombia	22.0	22.7	22.8	21.9	22.9
Canada	22.6	22.7	20.8	22.1	20.4
Argentina	16.3	18.1	18.0	18.9	18.7
Peru	13.5	13.7	13.9	14.4	14.7
Venezuela	22.4	21.0	12.9	7.2	6.8
Other Americas	34.9	41.2	42.8	42.5	44.4
Total Americas	574.1	592.4	568.8	594.8	593.9
P.R. China	493.0	471.6	485.1	440.0	435.0
Japan	53.9	53.8	54.3	51.6	53.5
Vietnam	35.4	39.3	40.6	46.1	46.3
India	20.0	20.5	27.4	22.5	23.0
Thailand	22.4	25.5	21.8	22.0	22.8
South Korea	20.8	18.8	20.6	21.3	21.1
Philippines	17.0	17.2	17.7	19.7	20.1
Other Asia	39.4	46.8	36.4	40.9	41.7
Total Asia	701.9	693.5	703.9	664.1	663.5
South Africa	31.5	32.1	31.6	32.3	32.6
Nigeria	27.0	27.0	15.6	17.0	17.4
Other Africa	82.6	85.0	81.6	85.7	92.1
Total Africa	141.1	144.1	128.8	135.0	142.1
Australia	16.9	16.2	16.7	16.3	16.6
New Zealand	2.8	2.8	2.8	2.9	2.9
Oceania	1.4	1.4	1.3	1.5	1.3
Total Australia	21.1	20.4	20.9	20.7	20.8
WORLD TOTALS	1,957.0	1,967.1	1,960.5	1,944.8	1,952.8
* Estimate					
Source: S.S. Steiner 2018 Guidelines for Hop Buying					