

2013
GUIDELINES
FOR HOP BUYING


COMMITTED TO THE BREWER.

	World Hop Acreage	World Hop Crop	World Beer Production	World Alpha Acids Production	World Alpha Acids Demand
	(ha)	(mt)	(Mio. hl)	(mt)	(mt)
2011	48,226 - 5.4 %	97,376 + 0.7	1,904.8 + 3.7 %	9,560 + 16.7	7,239 + 1.0 %
2012	46,577 - 3.4 %	86,696 - 11.0 %	1,930.6 + 1.4 %	7,955 - 16.8	7,338 + 1.4 %
2013	46,282 - 0.6 %	79,212* - 8.6*	1,964.1* + 1.7 %*	7,118* - 10.5*	7,463* + 1.7 %*
2014	— —	— —	1,999.4* + 1.8 %*	— —	7,596* + 1.8 %*

46,577 2012	46,282 2013	86,696 2012	79,212* 2013*	1,964.1 2012	1,999.4* 2013*	7,955 2012	7,118 2013*	7,463 2013*	7,596* 2014*

*Estimate

International Conversion Table

1 metr. ton (mt)	→ 1,000 kg	→ 2,204.6 lbs.
100 lbs.	→ 45.359 kg	
1 hectare (ha)	→ 2.471 acres	
1 acre	→ 0.405 hectare (ha)	
1 hectolitre (hl)	→ 100 litres (Ltr.)	→ 0.8523 bbl. [USA]
1 bbl. [USA]	→ 117.34 litres (Ltr.)	→ 1.1734 hectolitres (hl)
1 bbl. [Brit.]	→ 163.65 litres (Ltr.)	→ 0.6114 bbl. [Brit.]



Foreword

“ After several years of oversupply the hop market is moving back into balance brought on by this year's short crop in Germany, strong demand for all aroma hops and the shifting of hop acreage towards those aroma hops. This year's crop result has put the market into a theoretical alpha deficit for the first time in six years. Of particular interest will be the future sales trajectory of hop-forward craft beers and the resulting range of hop varieties and changes in hop acreage.

We are pleased to publish Guidelines for Hop Buying to assist in your decisions in the months and years to come. Our team is there for you as you work through the challenges of the hop market.

October 2013
S. S. Steiner, Inc.
Simon H. Steiner, Hopfen, GmbH
Steiner Hops Limited



- *Hallertauer Hopfenveredelungs-gesellschaft mbH
Au, Hallertau, Pelletwerk*

- *Hallertauer Hopfenveredelungs-gesellschaft mbH
Mainburg, Hallertau,
Ethanol- und CO₂-Extraktion*

- *Hops Extract Corporation
of America, Yakima, Washington,
CO₂-Extraktion*

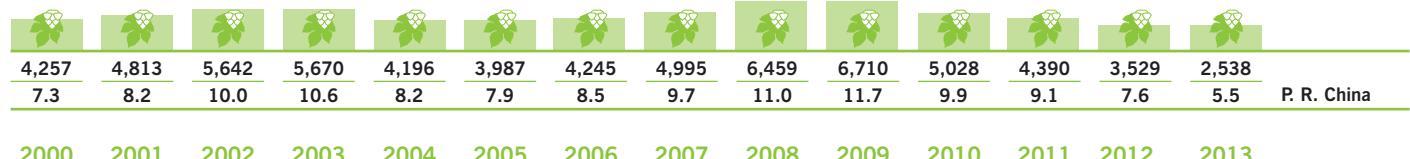
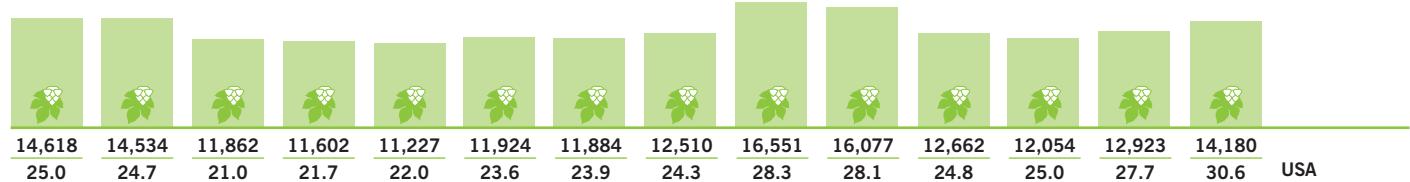
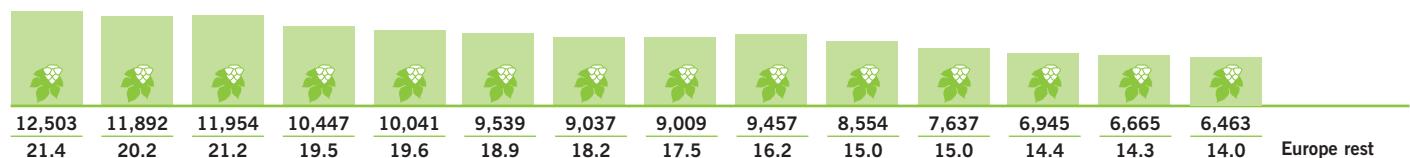
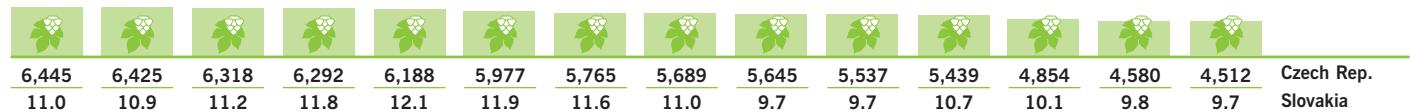
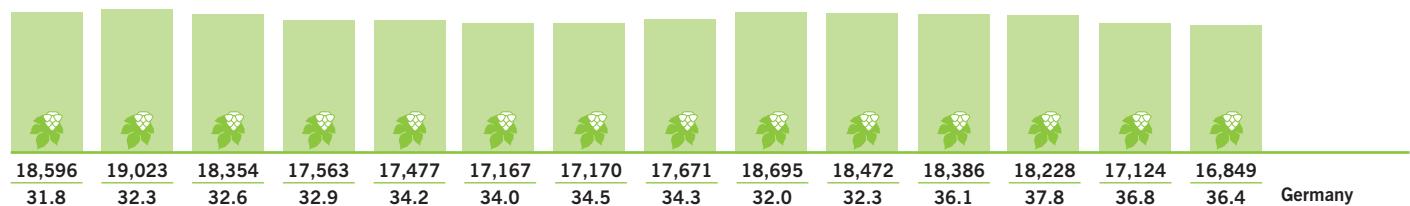
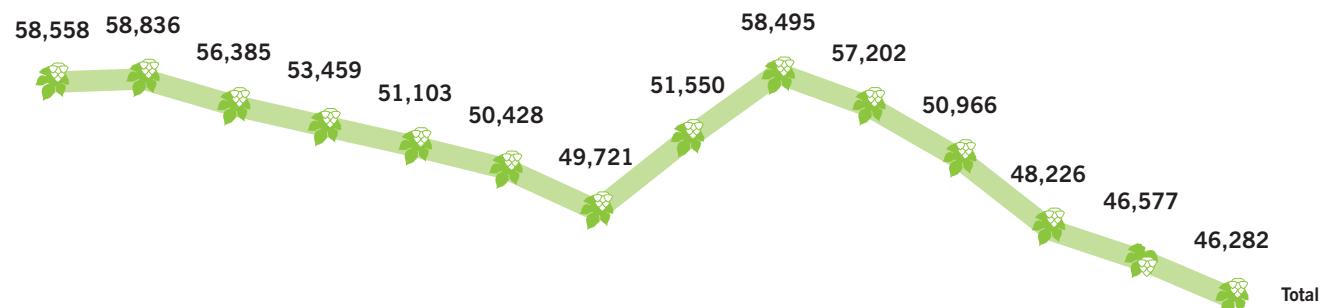
- *Golden Gate Hop Ranches Inc.
Yakima, Washington,
Hopfenanbaubetrieb*

Hop Acreage 2010 – 2013

	Acreage in ha				+/- %		
	2010	2011	2012	2013	10/11	11/12	12/13
Hallertauer	704	729	716	687	+ 3.6	- 1.8	- 4.1
Hersbrucker	755	773	782	843	+ 2.4	+ 1.2	+ 7.8
Perle	3,139	3,129	2,965	2,813	- 0.3	- 5.2	- 5.1
Spalter Select	690	614	448	408	- 11.0	- 27.0	- 8.9
Tradition	2,513	2,634	2,624	2,537	+ 4.8	- 0.4	- 3.3
Saphir	195	220	237	308	+ 12.8	+ 7.7	+ 30.0
Northern Brewer	248	220	190	184	- 11.3	- 13.6	- 3.2
Magnum	3,340	3,164	2,696	2,360	- 5.3	- 14.8	- 12.5
Nugget	236	213	179	156	- 9.7	- 16.0	- 12.8
Taurus	1,025	925	795	682	- 9.8	- 14.1	- 14.2
Herkules	2,350	2,422	2,457	2,869	+ 3.1	+ 1.4	+ 16.8
Rest	191	185	170	238	- 3.1	- 8.1	+ 40.0
Hallertau	15,386	15,229	14,258	14,086	- 1.0	- 6.4	- 1.2
Elbe-Saale	1,379	1,392	1,284	1,186	+ 0.9	- 7.8	- 7.6
Tettwang	1,226	1,222	1,215	1,208	- 0.3	- 0.6	- 0.6
Spalt	376	366	348	350	- 2.7	- 4.9	+ 0.6
Rest	20	20	20	20	+ 0.0	+ 0.0	+ 0.0
Germany total	18,386	18,228	17,124	16,849	- 0.9	- 6.1	- 1.6
Austria	233	239	239	246	+ 2.6	+ 0.0	+ 2.9
Belgium	183	189	189	158	+ 3.3	+ 0.0	- 16.4
Bulgaria	160	150	150	105	- 6.3	+ 0.0	- 30.0
Czech Rep.	5,210	4,632	4,366	4,339	- 11.1	- 5.7	- 0.6
England	1,069	1,113	1,051	1,051	+ 4.1	- 5.6	+ 0.0
France	580	492	439	439	- 15.2	- 10.8	+ 0.0
Poland	1,545	1,297	1,510	1,357	- 16.1	+ 16.4	- 10.1
Romania	247	241	245	250	- 2.4	+ 1.7	+ 2.0
Russia	220	158	158	158	- 28.2	+ 0.0	+ 0.0
Slovakia	229	222	214	173	- 3.1	- 3.6	- 19.2
Slovenia	1,391	1,376	1,160	1,166	- 1.1	- 15.7	+ 0.5
Spain	477	510	525	525	+ 6.9	+ 2.9	+ 0.0
Turkey	350	350	350	350	+ 0.0	+ 0.0	+ 0.0
Ukraine	995	646	465	477	- 35.1	- 28.0	+ 2.6
Rest	187	184	184	181	- 1.6	+ 0.0	- 1.6
Europe total	31,462	30,027	28,369	27,824	- 4.6	- 5.5	- 1.9
Apollo	335	358	354	394	+ 6.9	- 1.1	+ 11.3
Bravo	168	240	214	251	+ 42.9	- 10.8	+ 17.3
Cascade	748	960	1,230	2,157	+ 28.3	+ 28.1	+ 75.4
Centennial	144	259	682	877	+ 79.9	+ 163.3	+ 28.6
Chiinok	179	231	492	544	+ 29.1	+ 113.0	+ 10.6
Col. / Tom. / Zeus	3,173	2,876	2,337	2,556	- 9.4	- 18.7	+ 9.4
Galena	777	573	386	182	- 26.3	- 32.6	- 52.8
Nugget	884	930	1,009	828	+ 5.2	+ 8.5	- 17.9
Summit	1,295	1,002	850	1,166	- 22.6	- 15.2	+ 37.2
Super Galena	413	498	459	491	20.6	- 7.8	+ 7.0
Willamette	1,290	677	646	447	- 47.5	- 4.6	- 30.8
Rest	3,256	3,449	4,264	4,287	+ 5.9	+ 23.6	+ 0.5
USA total	12,662	12,054	12,923	14,180	- 4.8	+ 7.2	+ 9.7
Argentina	235	188	188	195	- 20.0	+ 0.0	+ 3.7
Australia	448	455	452	449	+ 1.6	- 0.7	- 0.7
Japan	190	180	179	179	- 5.3	- 0.6	+ 0.0
New Zealand	400	380	385	365	- 5.0	+ 1.3	- 5.2
P.R.China	5,028	4,390	3,529	2,538	- 12.7	- 19.6	- 28.1
South Africa	481	492	492	492	+ 2.3	+ 0.0	+ 0.0
Rest	60	60	60	60	+ 0.0	+ 0.0	+ 0.0
World total	50,966	48,226	46,577	46,282	- 5.4	- 3.4	- 0.6

Hop Acreage 2000 – 2013

(ha and % share)



2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

Crop Quantities and Average Yields 2010 – 2013

Crop Quantities in mt					+/- %			Ø Yields in mt / ha			
	2010	2011	2012	2013*	10/11	11/12	12/13*	2010	2011	2012	2013*
Hallertauer	1,048.7	823.9	948.2	699.9	- 21.4	+ 15.1	- 26.2	1.49	1.13	1.32	1.02
Hersbrucker	1,178.5	1,470.0	1,361.3	1,092.3	+ 24.7	- 7.4	- 19.8	1.56	1.90	1.74	1.30
Perle	5,464.3	6,492.8	5,536.0	3,380.2	+ 18.8	- 14.7	- 38.9	1.74	2.08	1.87	1.20
Spalter Select	1,287.1	1,376.9	883.0	638.1	+ 7.0	- 35.9	- 27.7	1.87	2.24	1.97	1.56
Tradition	4,253.9	5,386.6	4,868.8	3,322.2	+ 26.6	- 9.6	- 31.8	1.69	2.05	1.86	1.31
Saphir	372.9	464.4	474.1	359.0	+ 24.5	+ 2.1	- 24.3	1.91	2.11	2.00	1.17
Northern Brewer	414.1	362.6	346.8	204.7	- 12.4	- 4.4	- 41.0	1.67	1.65	1.83	1.11
Magnum	6,633.1	5,991.4	5,643.0	4,752.5	- 9.7	- 5.8	- 15.8	1.99	1.89	2.09	2.01
Nugget	495.1	511.8	421.2	284.7	+ 3.4	- 17.7	- 32.4	2.10	2.40	2.35	1.83
Taurus	1,763.1	2,012.1	1,587.1	1,087.6	+ 14.1	- 21.1	- 31.5	1.72	2.18	2.00	1.59
Herkules	5,895.1	7,543.9	7,442.3	6,340.1	+ 28.0	- 1.3	- 14.8	2.51	3.11	3.03	2.21
Others	323.8	321.1	282.2	756.9	- 0.8	- 12.1	+ 168.2	1.70	1.74	1.66	3.18
Hallertau	29,129.7	32,757.3	29,794.1	22,918.2	+ 12.5	- 9.0	- 23.1	1.89	2.15	2.09	1.63
Elbe-Saale	2,631.0	2,882.6	2,546.1	2,507.9	+ 9.6	- 11.7	- 1.5	1.91	2.07	1.98	2.11
Tettnang	1,798.9	1,783.5	1,607.4	1,404.6	- 0.9	- 9.9	- 12.6	1.47	1.46	1.32	1.16
Spalt	641.1	643.7	481.2	496.6	+ 0.4	- 25.2	+ 3.2	1.71	1.76	1.38	1.42
Rest	33.1	43.4	46.4	38.5	+ 31.1	+ 6.9	- 17.0	1.66	2.17	2.32	1.93
Germany total	34,233.8	38,110.6	34,475.2	27,365.8	+ 11.3	- 9.5	- 20.6	1.86	2.09	2.01	1.62
Austria	368.0	447.0	446.0	410.0	+ 21.5	- 0.2	- 8.1	1.58	1.87	1.87	1.67
Belgium	300.0	288.0	235.0	205.0	- 4.0	- 18.4	- 12.8	1.64	1.52	1.24	1.30
Bulgaria	183.0	183.0	183.0	180.0	+ 0.0	+ 0.0	- 1.6	1.14	1.22	1.22	1.71
Czech Rep.	7,772.0	6,087.9	4,338.1	4,700.0	- 21.7	- 28.7	+ 8.3	1.49	1.31	0.99	1.08
England	1,608.0	1,093.0	1,459.0	1,459.0	- 32.0	+ 33.5	+ 0.0	1.50	0.98	1.39	1.39
France	790.0	644.0	752.0	644.0	- 18.5	+ 16.8	- 14.4	1.36	1.31	1.71	1.47
Poland	2,668.0	2,267.8	1,818.2	2,078.7	- 15.0	- 19.8	+ 14.3	1.73	1.75	1.20	1.53
Romania	207.0	166.0	106.0	273.0	- 19.8	- 36.1	157.5	0.84	0.69	0.43	1.09
Russia	160.0	162.0	162.0	162.0	+ 1.3	+ 0.0	+ 0.0	0.73	1.03	1.03	1.03
Slovakia	205.0	272.0	203.0	175.0	32.7	- 25.4	- 13.8	0.90	1.23	0.95	1.01
Slovenia	2,400.0	2,470.0	1,560.0	1,600.0	+ 2.9	- 36.8	+ 2.6	1.73	1.80	1.34	1.37
Spain	1,037.0	936.0	1,028.0	1,000.0	- 9.7	+ 9.8	- 2.7	2.17	1.84	1.96	1.90
Turkey	390.0	390.0	390.0	390.0	+ 0.0	+ 0.0	+ 0.0	1.11	1.11	1.11	1.11
Ukraine	750.0	681.0	454.0	520.0	- 9.2	- 33.3	14.5	0.75	1.05	0.98	1.09
Rest	302.2	302.0	302.0	302.0	- 0.1	+ 0.0	+ 0.0	1.62	1.64	1.64	1.67
Europe total	53,374.0	54,500.3	47,911.5	41,464.5	+ 2.1	- 12.1	- 13.5	1.70	1.82	1.69	1.49
Apollo	1,042.0	1,106.9	1,052.6	1,043.0	+ 6.2	- 4.9	- 0.9	3.11	3.09	2.97	2.65
Bravo	481.9	701.8	633.9	620.0	+ 45.6	- 9.7	- 2.2	2.87	2.92	2.96	2.47
Cascade	1,586.0	2,062.2	2,547.6	3,833.0	+ 30.0	+ 23.5	+ 50.5	2.12	2.15	2.07	1.78
Centennial	290.0	408.0	1,075.5	1,380.0	+ 40.7	+ 163.6	+ 28.3	2.01	1.58	1.58	1.57
Chinook	394.4	445.8	936.6	1,035.0	+ 13.0	+ 110.1	+ 10.5	2.20	1.93	1.90	1.90
Col./Tom./Zeus	9,019.0	8,218.3	6,136.0	7,439.0	- 8.9	- 25.3	+ 21.2	2.84	2.86	2.63	2.91
Galena	1,576.0	1,168.6	753.9	363.0	- 25.9	- 35.5	- 51.9	2.03	2.04	1.95	1.99
Nugget	1,983.0	2,280.3	2,187.3	1,860.0	+ 15.0	- 4.1	- 15.0	2.24	2.45	2.17	2.25
Summit	3,116.0	3,040.2	3,175.2	3,266.0	- 2.4	+ 4.4	+ 2.9	2.41	3.03	3.74	2.80
Super Galena	1,201.0	1,613.0	1,369.9	1,542.0	+ 34.3	- 15.1	+ 12.6	2.91	3.24	2.98	3.14
Willamette	2,073.0	1,218.8	1,109.1	771.0	- 41.2	- 9.0	- 30.5	1.61	1.80	1.72	1.72
Rest	6,944.7	7,120.6	6,804.6	5,538.0	+ 2.5	- 4.4	- 18.6	2.13	2.06	1.60	1.29
USA total	29,707.0	29,384.5	27,782.2	28,690.0	- 1.1	- 5.5	+ 3.3	2.35	2.44	2.15	2.02
Argentina	185.0	226.1	280.5	300.0	+ 22.2	+ 24.1	+ 7.0	0.79	1.20	1.49	1.54
Australia	1,099.0	1,044.0	1,092.6	1,146.0	- 5.0	+ 4.7	+ 4.9	2.45	2.29	2.42	2.55
Japan	420.0	420.0	345.0	335.0	+ 0.0	- 17.9	- 2.9	2.21	2.33	1.93	1.87
New Zealand	793.0	575.0	694.0	703.0	- 27.5	+ 20.7	+ 1.3	1.98	1.51	1.80	1.93
P.R.China	10,150.0	10,230.0	7,548.0	5,620.0	+ 0.8	- 26.2	- 25.5	2.02	2.33	2.14	2.21
South Africa	913.0	956.0	1,002.7	913.0	+ 4.7	+ 4.9	- 8.9	1.90	1.94	2.04	1.86
Rest	40.0	40.0	40.0	40.0	+ 0.0	+ 0.0	+ 0.0	0.67	0.67	0.67	0.67
World total	96,680.0	97,375.8	86,696.4	79,211.5	+ 0.7	- 11.0	- 8.6	1.90	2.02	1.86	1.71

*Estimate

World Hop Crop 2000 – 2013

(1.000 mt and % share)



*Estimate

Hopsteiner Laboratory Values 2010 – 2013

Alpha Content in %					Alpha Content in %				
Aroma Varieties	2010	2011	2012	2013	Bitter Varieties	2010	2011	2012	2013
Hersbrucker	3.5	4.5	3.0	1.9	Northern Brewer	9.7	10.9	9.9	6.6
Perle	7.5	9.6	8.1	5.4	Herkules	16.1	17.2	17.1	16.5
Tradition	6.5	7.1	6.7	5.0	Magnum	13.3	14.9	14.3	12.6
Select	5.7	6.4	5.1	3.3	Taurus	16.3	17.4	17.0	15.9
Tettnang	4.0	5.1	4.3	2.6	US Super Galena	14.8	15.3	15.5	15.3
Spalt	3.7	4.8	4.1	2.8	US Bravo	16.3	16.0	16.1	15.8
Saaz	3.0	4.0	3.8	2.9	US Galena	12.5	12.5	12.5	13.5
Steirer Aurora	8.3	9.1	8.0	6.1	US Nugget	13.0	13.5	13.5	14.0
Steirer Golding	4.0	4.1	3.2	2.2	US Summit	16.5	16.5	16.5	17.0
US Willamette	5.2	5.5	4.6	5.0	US CTZ	15.0	15.5	15.5	15.8
Dual Purpose	2010	2011	2012	2013	Pride of Ringwood	9.5	9.3	8.8	9.1
US Centennial	10.7	11.5	10.5	10.3					

Worldwide use of Hops and Hop Products 2000 – 2013

	Hops total		Pellets total		Extract total			
	(mt)		(mt)		(% total)	(mt)		(% total)
2000	95,925		56,000		58.4	24,650		25.7
2001	96,959		52,900		54.6	28,800		29.7
2002	97,130		53,400		55.0	28,500		29.3
2003	85,520		49,600		58.0	28,000		32.7
2004	91,132		56,800		62.3	28,600		31.4
2005	93,448		61,582		65.9	28,595		30.6
2006	85,266		56,361		66.1	26,177		30.7
2007	91,418		59,513		65.1	29,345		32.1
2008	113,125		69,119		61.1	40,951		36.2
2009	111,386		65,161		58.5	43,997		39.5
2010	96,680		55,108		57.0	39,639		41.0
2011	97,376		54,531		56.0	41,482		42.6
2012	86,696		47,683		55.0	37,886		43.7
2013*	79,212		46,735		59.0	31,605		39.9

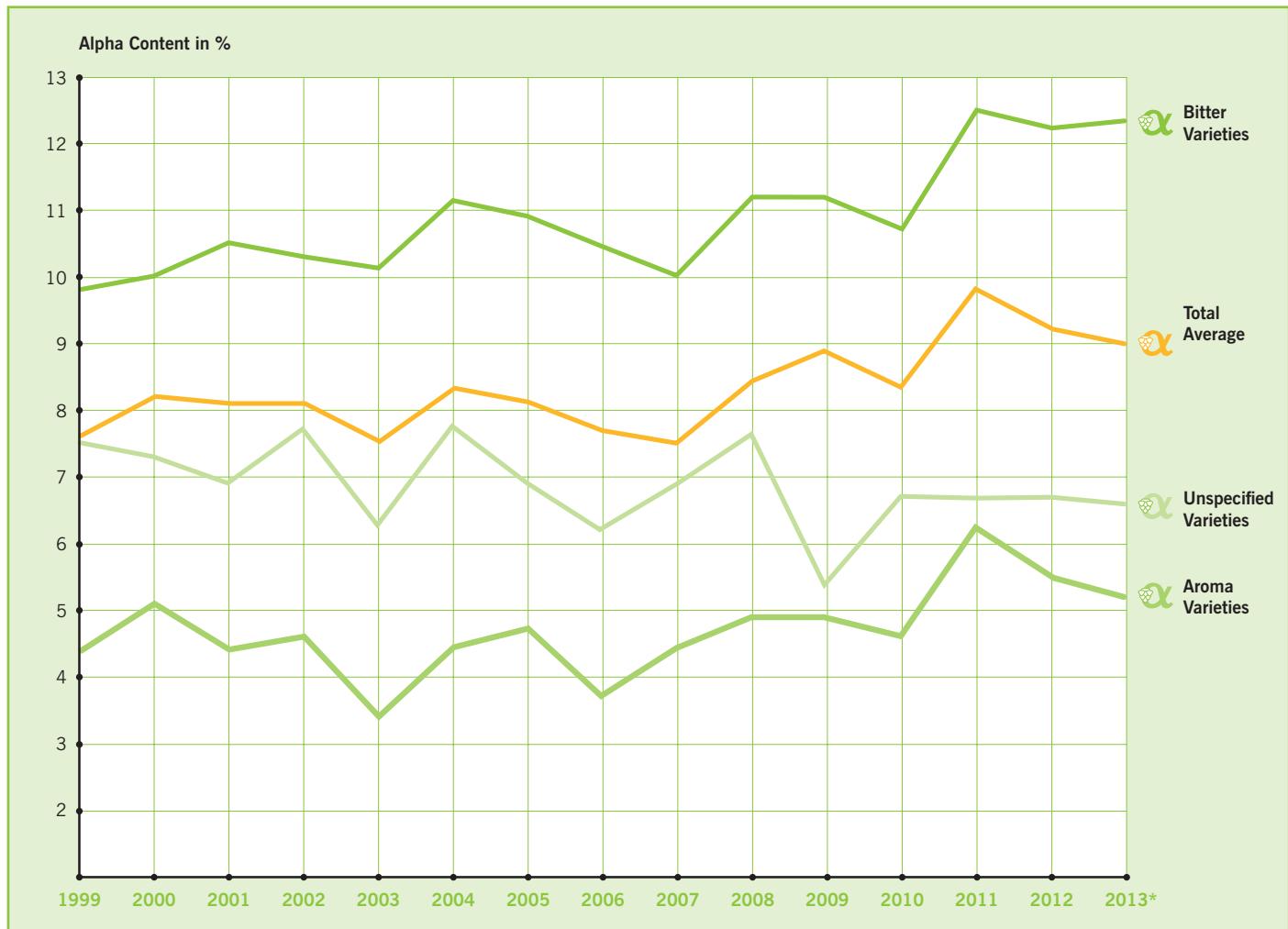
*Estimate

World Alpha Acids Productions 2010 – 2013

Total Crop Quantities in mt					% share			
	2010	2011	2012	2013*	2010	2011	2012	2013*
Aroma Varieties	36,965	41,424	39,143	36,960	38.2	42.5	45.1	46.7
Bitter Varieties	59,650	55,886	47,483	42,175	61.7	57.4	54.8	53.2
Rest	65	66	70	77	0.1	0.1	0.1	0.1
Total	96,680	97,376	86,696	79,212	100.0	100.0	100.0	100.0

Alpha Amount in kg					Alpha Content in %			
	2010	2011	2012	2013*	2010	2011	2012	2013*
Aroma Varieties	1,763,700	2,569,000	2,166,400	1,908,000	4.8	6.2	5.5	5.2
Bitter Varieties	6,424,000	6,986,400	5,784,300	5,205,400	10.8	12.5	12.2	12.3
Rest	4,500	4,500	4,700	5,000	6.8	6.7	6.7	6.6
Total	8,192,200	9,559,900	7,955,400	7,118,400	8.5	9.8	9.2	9.0

Alpha Values over time 1999 – 2013



*Estimate

World Beer Production 2010 – 2013

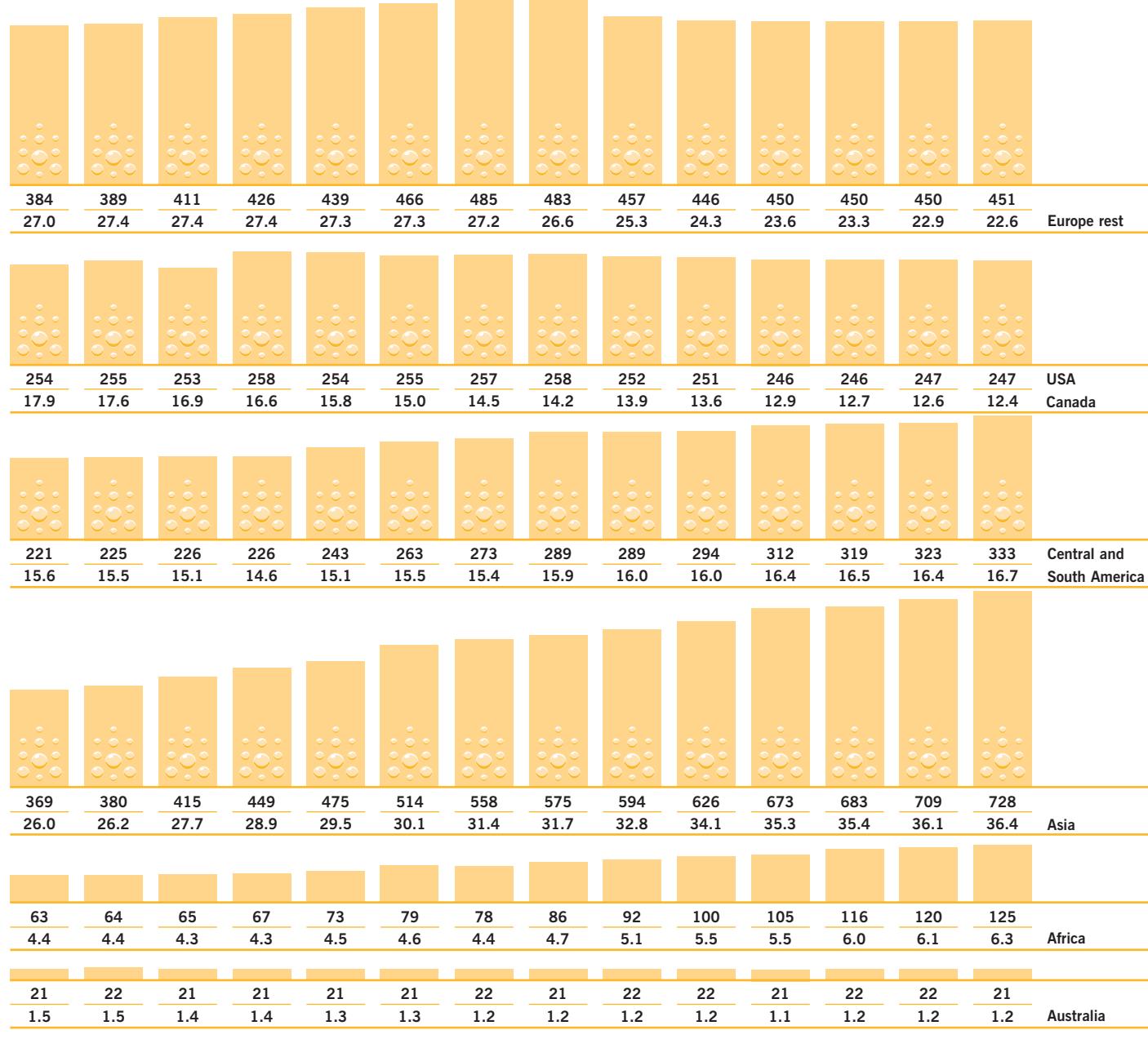
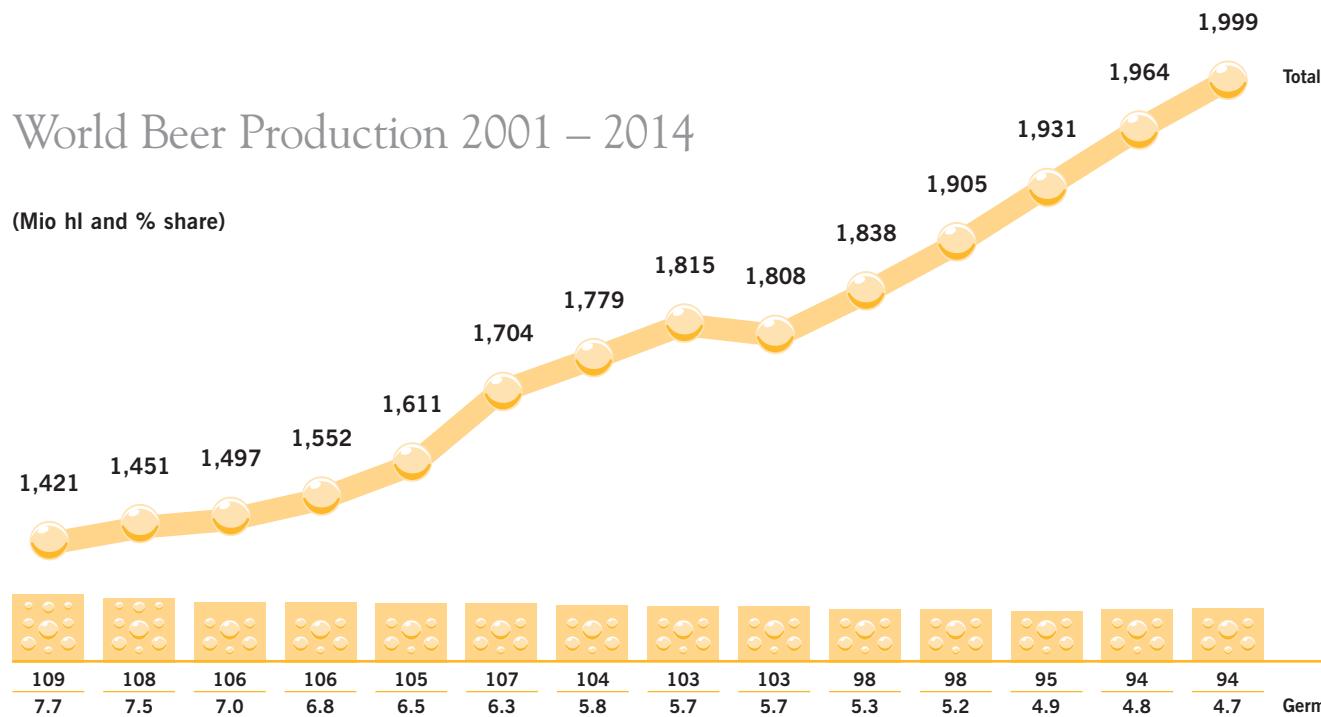
	Beer Production in Mio hl				+/- %		
	2010	2011	2012	2013*	10/11	11/12	12/13*
Russia	103.0	99.4	97.2	97.0	- 3.5	- 2.2	- 0.2
Germany	98.3	98.2	94.6	94.0	- 0.1	- 3.7	- 0.6
England	45.0	42.5	42.0	42.0	- 5.6	- 1.2	+ 0.0
Poland	33.5	37.9	37.8	37.1	+ 13.1	- 0.3	- 1.9
Spain	32.7	33.6	33.0	33.0	+ 2.8	- 1.8	+ 0.0
Ukraine	30.9	30.5	30.0	30.5	- 1.3	- 1.6	+ 1.7
Netherlands	24.0	23.6	24.3	23.6	- 1.7	+ 3.0	- 2.9
France	14.3	16.0	18.9	19.0	+ 11.9	+ 18.1	+ 0.5
Belgium	18.0	18.0	18.5	18.5	+ 0.0	+ 2.8	+ 0.0
Czech Rep.	17.0	18.3	18.3	18.4	+ 7.6	+ 0.0	+ 0.5
Romania	15.5	17.0	17.9	18.2	+ 9.7	+ 5.3	+ 1.7
Italy	12.3	13.4	12.7	13.1	+ 8.9	- 5.2	+ 3.1
Turkey	9.7	9.8	10.0	10.0	+ 1.0	+ 2.0	+ 0.0
Austria	9.0	8.9	8.9	9.0	- 1.1	+ 0.0	+ 1.1
Ireland	8.4	8.6	8.3	8.4	+ 2.4	- 3.5	+ 1.2
Portugal	8.3	8.3	7.6	7.8	+ 0.0	- 8.4	+ 2.6
Denmark	6.3	6.3	6.3	6.3	+ 0.0	+ 0.0	+ 0.0
Hungary	6.5	6.1	6.2	6.3	- 6.2	+ 1.6	+ 1.6
Bulgaria	5.0	4.9	5.0	5.1	- 2.0	+ 2.0	+ 2.0
Finland	4.3	4.2	4.2	4.0	- 2.3	+ 0.0	- 4.8
Sweden	3.7	3.8	3.8	3.8	+ 2.7	+ 0.0	+ 0.0
Switzerland	3.6	3.6	3.5	3.5	+ 0.0	- 2.8	+ 0.0
Croatia	3.5	3.5	3.5	3.4	+ 0.0	+ 0.0	- 2.9
Greece	4.1	3.7	3.4	3.3	- 9.8	- 8.1	- 2.9
Slovakia	3.4	3.2	3.3	3.4	- 5.9	+ 3.1	+ 3.0
Lithuania	3.0	3.0	3.0	3.0	+ 0.0	+ 0.0	+ 0.0
Norway	2.5	2.4	2.4	2.3	- 4.0	+ 0.0	- 4.2
Slovenia	1.8	1.9	1.9	1.8	+ 5.6	+ 0.0	- 5.3
Latvia	1.5	1.5	1.6	1.5	+ 0.0	+ 6.7	- 6.3
Estonia	1.1	1.4	1.2	1.4	+ 27.3	- 14.3	+ 16.7
Albania	0.5	0.6	0.5	0.6	+ 20.0	- 16.7	+ 20.0
Cyprus	0.3	0.3	0.3	0.3	+ 0.0	+ 0.0	+ 0.0
Luxembourg	0.3	0.3	0.3	0.3	+ 0.0	+ 0.0	+ 0.0
Malta	0.1	0.1	0.1	0.1	+ 0.0	+ 0.0	+ 0.0
Europe rest	12.9	13.2	14.0	14.0	+ 2.5	+ 5.9	+ 0.0
Europe total	544.3	548.0	544.5	544.0	+ 0.7	- 0.6	- 0.1
USA	228.4	226.0	226.5	226.9	- 1.1	+ 0.2	+ 0.2
Brazil	113.9	127.2	132.0	134.0	+ 11.7	+ 3.8	+ 1.5
Mexico	80.0	81.2	81.5	81.5	+ 1.5	+ 0.4	+ 0.0
Venezuela	22.0	23.2	21.7	22.2	+ 5.5	- 6.5	+ 2.3
Colombia	19.5	20.8	22.3	22.4	+ 6.7	+ 7.2	+ 0.4
Canada	22.4	19.8	19.5	19.7	- 11.6	- 1.5	+ 1.0
Argentina	17.0	17.3	16.8	16.8	+ 1.8	- 2.9	+ 0.0
Peru	11.0	11.5	13.0	13.2	+ 4.5	+ 13.0	+ 1.5
Equador	3.5	5.2	5.8	6.0	+ 48.6	+ 11.5	+ 3.4
Chile	5.8	5.0	5.7	5.8	- 13.8	+ 14.0	+ 1.8
Dominican Rep.	3.1	3.4	3.5	3.6	+ 9.7	+ 2.9	+ 2.9
Cuba	2.4	2.6	2.7	2.8	+ 8.3	+ 3.8	+ 3.7
Panama	1.9	1.9	1.9	2.0	+ 0.0	+ 0.0	+ 5.3
Costa Rica	1.7	1.6	1.6	1.6	- 5.9	+ 0.0	+ 0.0
Guatemala	1.7	1.6	1.6	1.5	- 5.9	+ 0.0	- 6.3
Paraguay	1.5	1.5	1.5	1.5	+ 0.0	+ 0.0	+ 0.0
Bolivia	1.9	1.3	1.3	1.4	- 31.6	+ 0.0	+ 7.7
Uruguay	0.9	0.9	1.0	1.0	+ 0.0	+ 11.1	+ 0.0
Jamaica	1.0	1.0	1.0	1.0	+ 0.0	+ 0.0	+ 0.0
Honduras	1.0	1.0	1.0	1.0	+ 0.0	+ 0.0	+ 0.0

→

*Estimate

	Beer Production in Mio hl				+/- %		
	2010	2011	2012	2013*	10/11	11/12	12/13*
→ Nicaragua	0.7	0.9	0.8	0.9	+ 28.6	- 11.1	+ 12.5
El Salvador	0.8	0.8	0.8	0.8	+ 0.0	+ 0.0	+ 0.0
Puerto Rico	0.7	0.7	0.6	0.7	+ 0.0	- 14.3	+ 16.7
Trinidad	0.4	0.4	0.4	0.4	+ 0.0	+ 0.0	+ 0.0
America rest	2.0	1.3	0.9	0.8	- 35.0	- 30.8	- 11.1
America total	545.2	558.1	565.4	569.5	+ 2.4	+ 1.3	+ 0.7
P.R.China	449.0	489.9	490.0	510.0	+ 9.1	+ 0.0	+ 4.1
Japan	57.0	56.0	55.3	55.9	- 1.8	- 1.3	+ 1.1
Vietnam	25.0	27.0	29.7	30.8	+ 8.0	+ 10.0	+ 3.7
Thailand	19.2	20.4	23.9	24.7	+ 6.2	+ 17.2	+ 3.3
India	14.8	18.3	19.2	19.8	+ 23.6	+ 4.9	+ 3.1
South Korea	18.5	18.8	19.0	19.5	+ 1.6	+ 1.1	+ 2.6
Philippines	15.2	15.7	15.8	16.0	+ 3.3	+ 0.6	+ 1.3
Taiwan	4.0	4.0	3.9	4.1	+ 0.0	- 2.5	+ 5.1
Cambodscha	2.1	1.9	3.5	4.0	- 9.5	+ 84.2	+ 14.3
Laos	2.7	2.4	3.0	3.4	- 11.1	+ 25.0	+ 13.3
Indonesia	2.4	2.3	2.6	2.9	- 4.2	+ 13.0	+ 11.5
Malaysia	1.9	2.3	2.2	2.2	+ 21.1	- 4.3	+ 0.0
Myanmar	1.2	1.1	1.3	1.5	- 8.3	+ 18.2	+ 15.4
Singapore	1.2	1.1	1.2	1.2	- 8.3	+ 9.1	+ 0.0
Israel	0.8	1.0	1.0	1.1	+ 25.0	+ 0.0	+ 10.0
Sri Lanka	0.7	0.8	0.8	0.9	+ 14.3	+ 0.0	+ 12.5
Jordan	0.7	0.1	0.8	0.8	- 85.7	+ 700.0	+ 0.0
Nepal	0.3	0.4	0.5	0.5	+ 33.3	+ 25.0	+ 0.0
Mongolia	0.2	0.5	0.5	0.5	+ 150.0	+ 0.0	+ 0.0
Lebanon	0.3	0.2	0.3	0.4	- 33.3	+ 50.0	+ 33.3
Syria	0.1	0.1	0.0	0.0	+ 0.0	- 100.0	+ 0.0
Africa rest	8.9	8.8	8.9	9.1	- 1.1	+ 1.1	+ 2.2
Asia total	626.2	673.1	683.4	709.3	+ 7.5	+ 1.5	+ 3.8
South Africa	29.5	30.0	31.3	31.6	+ 1.7	+ 4.3	+ 1.0
Nigeria	17.5	19.4	23.5	25.0	+ 10.9	+ 21.1	+ 6.4
Angola	7.5	8.1	9.4	9.8	+ 8.0	+ 16.0	+ 4.3
Cameroon	6.0	5.9	6.3	6.5	- 1.7	+ 6.8	+ 3.2
Kenya	5.6	5.2	5.4	5.6	- 7.1	+ 3.8	+ 3.7
Zaire	3.7	4.8	5.1	5.2	+ 29.7	+ 6.2	+ 2.0
Ethiopia	3.3	3.2	3.6	4.0	- 3.0	+ 12.5	+ 11.1
Tanzania	3.4	3.5	3.5	3.6	+ 2.9	+ 0.0	+ 2.9
Uganda	2.0	2.8	3.1	3.3	+ 40.0	+ 10.7	+ 6.5
Namibia	2.2	2.2	2.4	2.4	+ 0.0	+ 9.1	+ 0.0
Mosamibque	1.9	1.9	1.9	2.0	+ 0.0	+ 0.0	+ 5.3
Ghana	1.8	1.8	1.8	1.9	+ 0.0	+ 0.0	+ 5.6
Tunesien	1.3	1.4	1.6	1.6	+ 7.7	+ 14.3	+ 0.0
Ivory Coast	1.3	1.4	1.5	1.7	+ 7.7	+ 7.1	+ 13.3
Zimbabwe	0.5	0.8	1.0	1.2	+ 60.0	+ 25.0	+ 20.0
Egypt	1.2	1.1	1.0	1.1	- 8.3	- 9.1	+ 10.0
Madagaskar	0.7	1.1	0.9	1.0	+ 57.1	- 18.2	+ 11.1
Morocco	1.2	0.9	0.9	0.9	- 25.0	+ 0.0	+ 0.0
Zambia	0.7	0.9	0.8	0.9	+ 28.6	- 11.1	+ 12.5
Mauritius	0.5	0.4	0.5	0.5	- 20.0	+ 25.0	+ 0.0
Africa rest	8.4	7.7	10.2	10.1	- 8.3	+ 32.5	- 1.0
Africa total	100.2	104.5	115.7	119.9	+ 4.3	+ 10.7	+ 3.6
Australia	17.2	16.6	17.2	17.1	- 3.5	+ 3.6	- 0.6
New Zealand	3.2	3.3	3.2	3.2	+ 3.1	- 3.0	+ 0.0
Oceania	1.2	1.2	1.2	1.1	+ 0.0	0.0	- 8.3
Australia total	21.6	21.1	21.6	21.4	- 2.3	+ 2.4	- 0.9
World total	1,837.5	1,904.8	1,930.6	1,964.1	+ 3.7	+ 1.4	+ 1.7

*Estimate

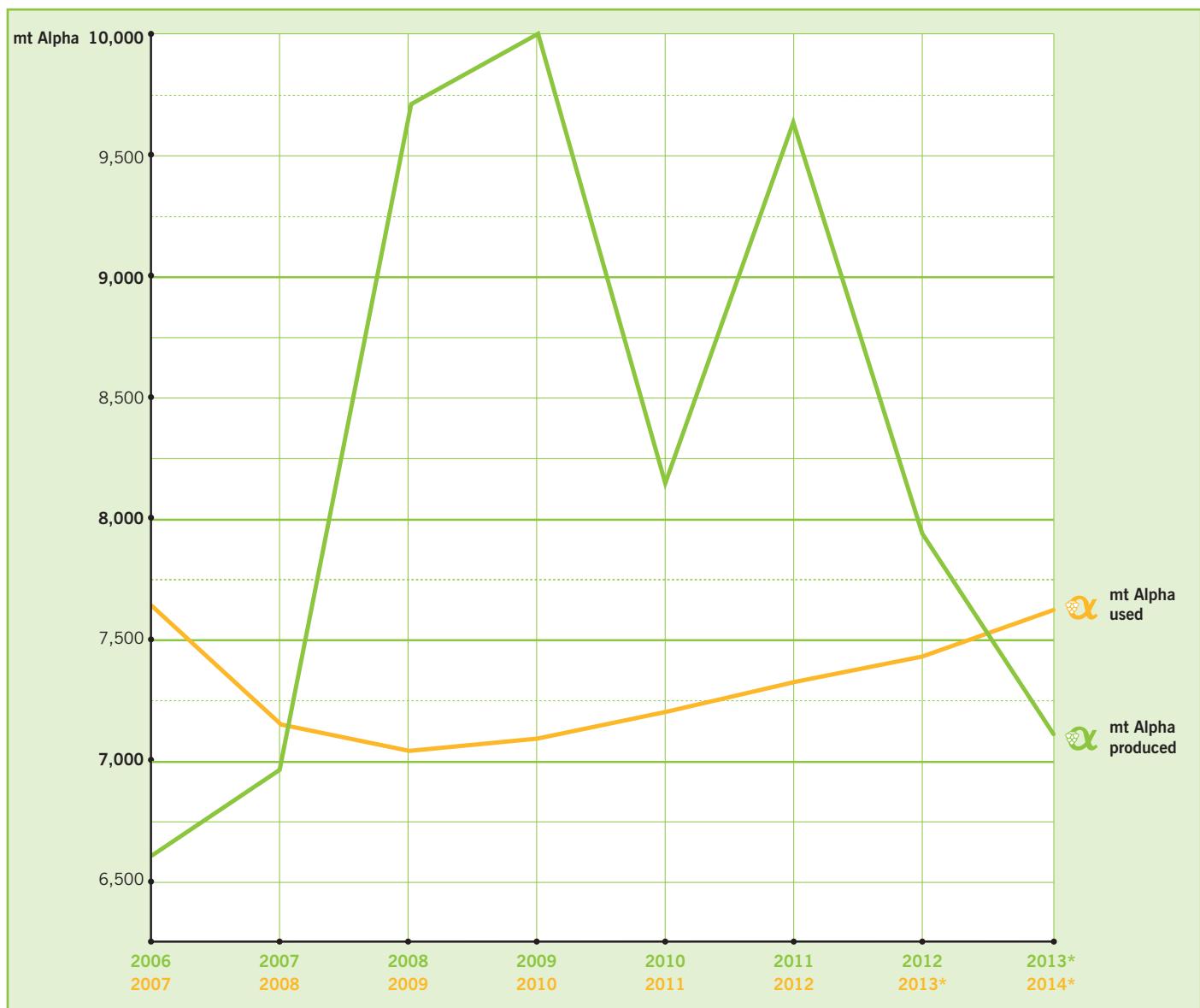


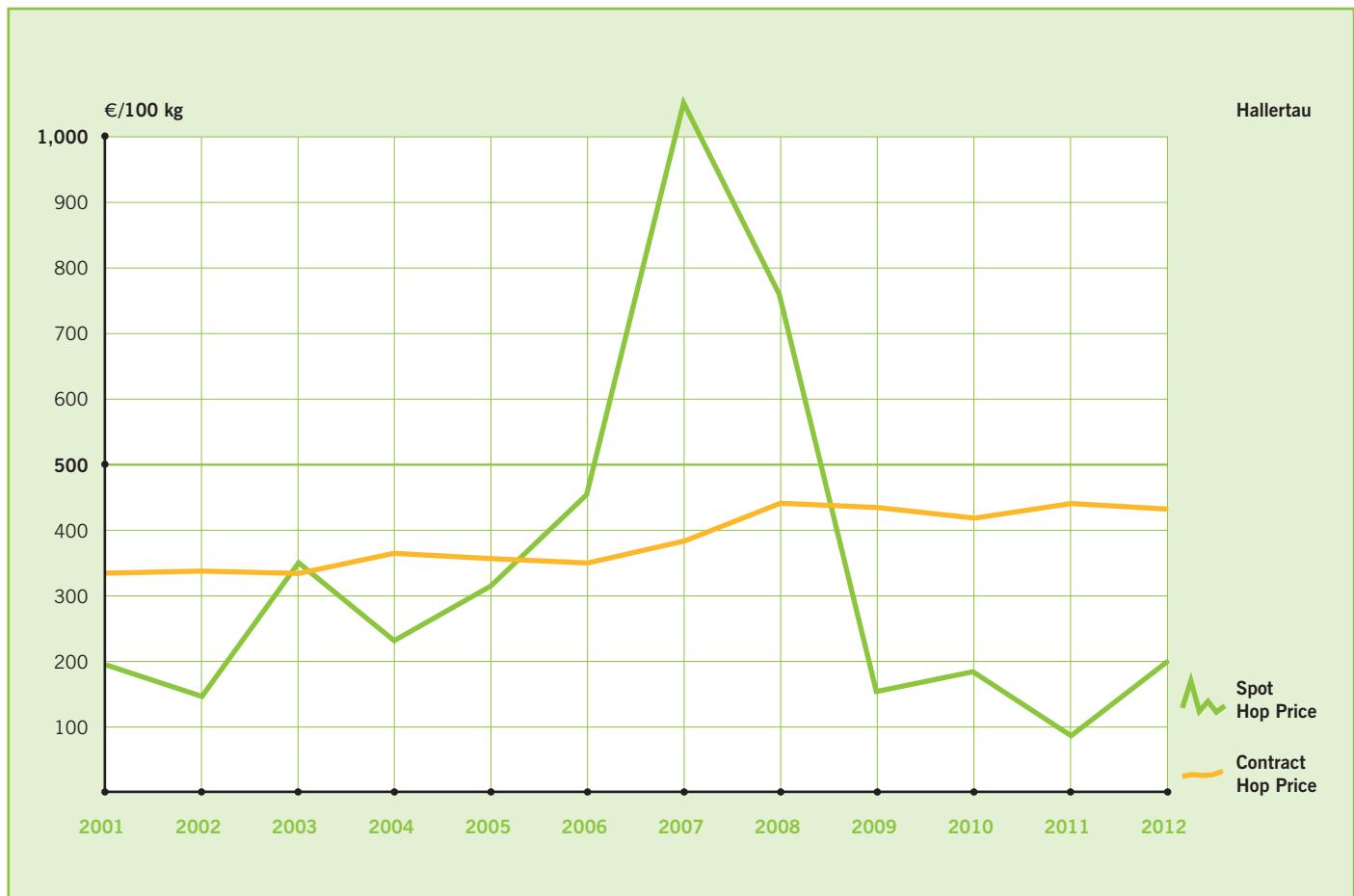
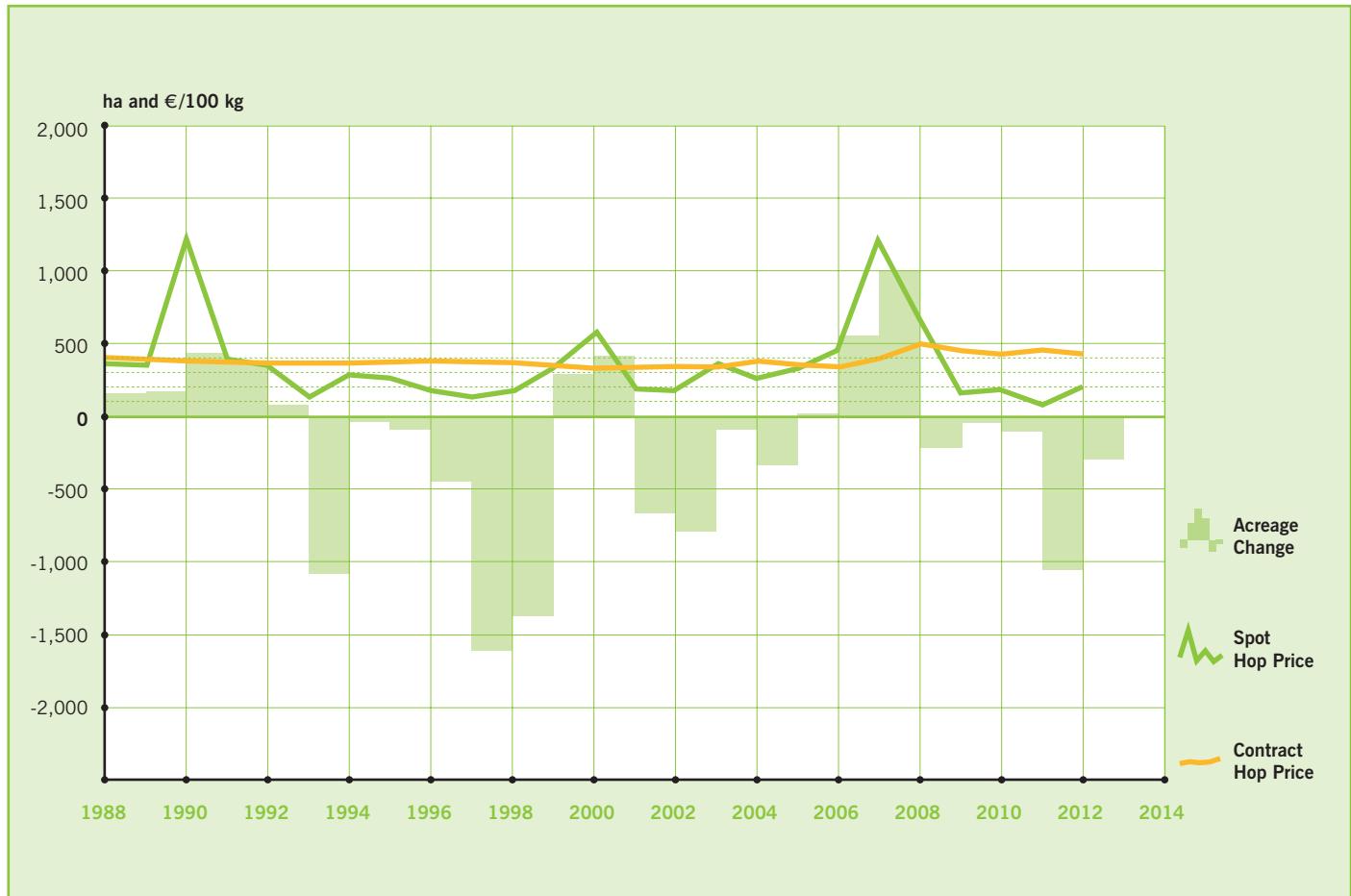
*Estimate

World Hop Acid Supply and Demand 2006 – 2013

	Production	Beer Production	Alpha Dosage	Alpha Usage	Annual Balance	
	(mt Alpha)	(Mio hl)	(g Alpha/hl)	(mt Alpha)	(mt Alpha)	
2006	6,570 ¹⁾	2007	1,779	4.3	7,650	- 1,080
2007	6,983	2008	1,815	4.0	7,260	- 277
2008	9,748	2009	1,808	3.9	7,051	2,697
2009	10,062	2010	1,838	3.9	7,166	2,896
2010	8,192	2011	1,905	3.8	7,239	953
2011	9,560	2012	1,931	3.8	7,338	2,222
2012	7,955	2013*	1,964	3.8	7,463	492
2013*	7,118	2014*	1,999	3.8	7,596	- 478

¹⁾ This figure takes into account the destruction of approx. 110 mt alpha acid in a warehouse fire in USA.





Hop Market Review and Outlook

In most of the world's hop growing areas crop 2012 was normal. The average alpha acid concentration was 9.2 % which was somewhat below the record 2011 crop of 9.8 %. The total crop of 86,696 metric tons raw hops represented 7,995 metric tons of alpha.

Based on an estimated world demand of 7,463 metric tons of Alpha Acid, crop 2012 resulted in a theoretical surplus of 492 metric tons of Alpha Acid.

This production was achieved despite an acreage reduction of 1,650 ha. Although this reduction reduced the oversupply, greater yields of new varieties somewhat offset the reduction.

As mentioned, the evolution of the range of hop varieties continues to play a role in alpha production. Whilst crop 2011 was comprised of 57.4 % bitter hops, these varieties' share of crop 2012 was reduced to 54.8 %. The converse was the case for aroma varieties, whose share went from 42.5 % in 2011 to 45.1 % in 2012. These changes were largely a result of acreage shifts in USA and further served to reduce the average alpha acid content produced as well as reduce the overall alpha surplus.

While the 2012 spot market for bitter hops was still affected by brewers' inventory of previous crops, varieties which are used by craft brewers were in tight supply. This was partly due to smaller crops, e.g. in the Czech Republic with a crop of only 4,338 metric tons in 2012 but mainly due to the growing popularity of US craft beers.

As a consequence of the strong spot market that was largely driven by craft brewery demand, the crop 2013 US acreage increased from 12,923 ha to 14,180 ha. This increase was overwhelmingly in favor of the aroma varieties that are in high demand from craft brewers. In all other major growing areas the acreage decreased. For 2013, the world's hop acreage reduced to 46,282 ha from 46,577 ha (-0.06 %). The largest reduction was in China (-28 %), which means that the PRC hop acreage is now close to half of its 2010 level.

In the European growing areas a long winter and cold, wet spring delayed the 2013 growing season. In most regions the crop was 14 days behind the usual timetable. In the Hallertau approximately 3,000 metric tons hops were destroyed by a June hailstorm. During July and August the weather in Germany, the Czech Republic and Slovenia turned dry, which further slowed the crop's development. Meaningful precipitation did not arrive until harvest was underway, which helped mid-to late-harvested varieties but was too late for the early varieties. The yields were well below the long term average but due to the precipitation the alpha acid concentration of bitter hop varieties were normal. Unfortunately, this was not true for the aroma varieties, which not only produced less but had also substantially lower alpha acid concentrations.

Worldwide, the 79,212 mt harvested in 2013 is approximately 7,500 metric tons less than crop 2012. This represents approximately 7,118 metric tons alpha. Please refer to the data tables later in this report for details.

We estimate that the world's 2013 beer production will be 1,964 million hl. We expect a slight increase in 2014 to 1,999 million hl. This growth will largely take place in Asia and Africa. Based upon these results and expected beer consumption, on paper we expect the 2013 hop crop to actually produce a supply deficit of 478 metric tons alpha.

After the short 2013 crop the market for German aroma hops firmed as any and all spot volumes were needed to fill contracts for which the „alpha clause“ was invoked by the low alpha levels of aroma hops earmarked for kg alpha commitments. All of this activity is still



ongoing as we go to press, but it is expected that all 2013 spot hops will find a buyer. Perhaps more significantly, the market for German bitter hops also rose modestly.

The US market continues to become more weighted to aroma hops. Spot hops are largely aroma varieties as bitter hops have for the most part become a contract-only segment.

In general adequate volumes of alpha are available. This will remain the case if the world's acreage remains unchanged for crop 2014 and the subsequent crop is normal.

In recent weeks there has been meaningful market activity for future crop European aroma hops at price levels well above heretofore existing contracts. Discussion has already started about whether this will lead to acreage increases for varieties like Perle and Tradition. This is quite a change from the overproduction that was lamented for many of the past few winters. It should be noted, however, that some of the price increases seen can be justified as growers experience higher energy, labor and pesticide costs.

There is also quite a bit of talk about demand outstripping the land and equipment available for hop production and conditioning in USA. It should be noted that as demand for craft beer continues to increase, hop prices and acreage are also increasing. Furthermore, with steadily increasing hop prices, brewers will inevitably seek to be more efficient in their processes, whether through the use of higher alpha hops, more efficient equipment, or other hop products. On the grower side a range of varieties is needed to best maintain an orderly harvest season and maintain quality. With ever-increasing demand, new acreage will ultimately require new infrastructure investment and prices will then reflect those costs. While this may mean price increases it will in the long run put a stronger industry in place to serve the needs of brewers worldwide.



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