

THE BARTH REPORT



HOPS 2014/2015

BARTH-HAASGROUP
FOR YOUR SUCCESS

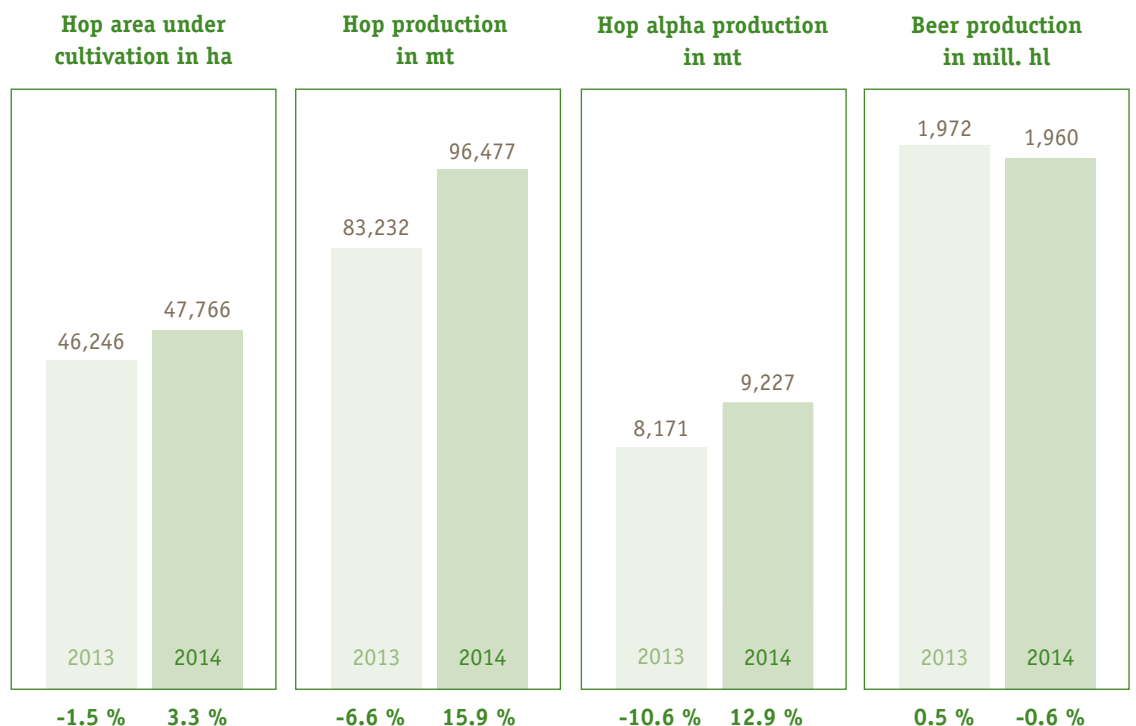


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WORLD MARKET KEY DATA





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Sustainability in the German hop industry

The subject of “sustainability” has become part of the daily business of any prestigious company today. In the brewing industry, this applies both to many well-known breweries and to the world’s four biggest brewing groups.

When, however, the entire industry of a country commits itself to this subject and within less than three years not only develops a concept, but also implements it with widespread participation, this can rightly be described as a remarkable achievement.

The German hop industry is conscious of its responsibility for nature and the environment, for managing its business in a way that provides a basis for prosperity and for a sustainable society. The system for sustainable hop production that it has developed is based on the guiding principle of the commission of enquiry set up by the German parliament entitled “Protection of People and the Environment”, according to which the three dimensions to be observed for the purpose of sustainable development are: an ecological, an economic and a social dimension.

At the suggestion of the hop marketers, a hop industry working group headed by the association Hopfenring e. V. began to develop the concept “Sustainability in German Hop Farming” at the beginning of 2013. The basis for the self-check for hop producers was provided

by the criteria contained in the checklist of the SAI Platform (SAI = Sustainable Agriculture Initiative). This platform is used today by many leading international groups in the food and beverages industries, including Unilever, Nestle, Coca Cola and Heineken.

After only one year, a pilot project was launched to check the feasibility of a farmer’s self-check, with interested hop producers taking part. From November 2014, hop growers had the opportunity to conduct this self-check via an internet platform. By May 2015, 376 farms had already registered, representing almost one third of Germany’s hop producers and roughly 45 % of total acreage (based on the figures for 2014). These growers committed themselves to producing their hops according to the rules for sustainable hop farming.

This sustainability concept will undoubtedly strengthen both the competitiveness and the future viability of the German hop industry. Moreover, it will make an important contribution to reducing the consumption of our planet’s resources.

Sustainability and qualitative growth have long been at the heart of the corporate actions of Joh. Barth & Sohn. We already presented our company’s first sustainability report in 2012.

Our thanks go to all those bodies and individuals who provide us with information and thus contribute to the success of the Barth Report.



POLITICAL SITUATION

The reporting period covering the past 12 months will probably go down in history as one of the most politically turbulent since the end of the Second World War.

According to the UNO relief agency UNHCR (report 2014), the wave of refugees reached a sorry record of nearly 60 million people. Not since the Second World War have there been so many refugees. The growing number of people who are leaving their homes because of their race, religion or nationality, or because they belong to a certain social group or have certain political convictions, are doing so mainly because fanatical terrorist groups are trying to extend their power with hitherto unheard-of brutality.

Several countries (Syria, Iraq, Libya, Yemen and Afghanistan) are in danger of collapse following the breakdown of public order.

The **Islamic State (IS)** is a jihadist-Salafist organisation and is one of the most barbaric terror groups. **IS** fighters initially conquered an area in the northwest of **Iraq** and in the east of **Syria**. The inner-Syrian conflict thus developed into a war with thousands of fronts and actors, threatening the stability of the entire region. Thousands of foreigners – Shiite jihadists from Lebanon, Iran, Iraq and even Afghanistan – are fighting on the side of the dictator **Bashar al-Assad**. The war in **Syria** began as long ago as March 2011.

In **Libya**, rival militias formed around two different governments in 2014, resulting in a new civil war with international involvement.

In **Yemen**, Houthi militias and terrorist groups from **al-Qaeda** and **IS** are waging a ruthless struggle for power in the country. In January 2015, the president **Abd Mansur Hadi** and the government resigned from office.

Boko Haram, another terror militia with Islamist orientation, operates in the northeast of **Nigeria**. It is known for mass abductions, abuse of women and children and the murder of Christians and Muslims. In April 2015, a democratic change of government took place for the first time in this, the most populous country in Africa. The ex-dictator **Muhammadu Buhari** was elected as the new president. He now has the difficult task of stabilising the economy, combating the terror of Boko Haram and pacifying the rebels in the Niger delta.

Another geopolitically significant trouble spot is to be found on the edge of Europe. The **Ukraine** conflict is leading to persistent tension between Russia and the West. In August 2014, President **Petro Poroshenko** dissolved the Ukrainian parliament by decree. The new elections took place on 26 October 2014. Exactly one year after the beginning of the protests in Maidan Square,

the pro-European parties agreed to a joint government declaration in November 2014. The Ukrainian parliament approved a special status for the embattled regions in East Ukraine whose population is predominantly Russian, thus fulfilling part of the peace treaty agreed with the separatists in February 2015.

Eurozone member **Greece** held an early general election in January 2015. The radical left-wing party Syriza formed a coalition with the right-wing populist party Independent Greeks (Anel). **Alexis Tsipras** became prime minister. It remains to be seen whether, in view of the new government's refusal to see reason and the country's empty coffers, the other EU countries will be prepared to make new, non-repayable funds available to Greece.

In **Thailand**, martial law was lifted after ten months in April 2015. However, the military government has retained its power virtually unchecked.

During the period under review, there were numerous other important elections, of which some are mentioned briefly below:

For the first time since the split between the **Palestinians** in 2007, a government of unity has been formed by Fatah and Hamas. In June 2014, President **Mahmoud Abbas** swore in the transitional government whose ministers belong to neither the moderate Fatah nor the radical Islamic Hamas.

In **Israel**, the Knesset elected the Likud politician **Reuven Rivlin** as the new president in June 2014. In December 2014 the parliament voted to dissolve itself for an early general election. In the early election in March 2015 the Likud bloc under Prime Minister **Benjamin Netanyahu** became the strongest group. In order to be able to govern, it formed a coalition with four other parties.

In August 2014 there was also an election in **Turkey**. **Recep Tayyip Erdogan** became president, and the new prime minister is **Ahmet Davutoglu**.

In **Brazil** the incumbent **Dilma Rousseff** was re-elected in a run-off for the presidency in October 2014.

In the US congressional elections in November 2014, the Republicans won the majority of the seats, thus bringing both chambers of government in the **USA** under conservative control.

In the **United Kingdom** the Conservatives (Tories) led by the incumbent prime minister **David Cameron** won an absolute majority in the election to the House of Commons. The new government will ask the electorate to vote on the United Kingdom's membership of the EU by 2017 at the latest.

In May 2015, **Andrzej Duda** of the national conservative Law and Justice party (PiS) surprisingly won the presidential election in **Poland**.



European Currency Union (ECU)

With the introduction of the euro in **Lithuania** on 1 January 2015, 19 of the 28 EU states now belong to the single economic and currency union (the "eurozone").

Personnel decisions

Having been newly constituted in May 2014, the European Parliament re-elected German SPD politician **Martin Schulz** President of the EU Parliament. The parliamentarians elected **Jean-Claude Juncker**, a member of the Christian Social People's party and former prime minister of Luxemburg, as President of the EU Commission. He succeeded **José Manuel Barroso** whose term in office expired on 31 October 2014.

Poland's **Donald Tusk** succeeded **Herman Van Rompuy** to become the new EU Council President. This was agreed by the 28 EU governments in August 2014, as was the appointment of the Italian **Federica Mogherini** as EU High Representative for Foreign Affairs.

Association agreements

The EU signed association agreements with Ukraine, Georgia and Moldova. The aim of this package is closer political relations and far-reaching reduction of trade restrictions. Before these agreements can come into effect, they have to be approved by the governments of all 28 EU member states.

The Common Agricultural Policy (CAP) – CAP reform after 2013

On 20 December 2013, the four basic regulations of the new CAP were published. These four legislative texts reflect the political agreement reached by the European Commission, the EU agriculture ministers assembled in the Council and the European Parliament.

Now that the new legislative texts have been passed, the overwhelming majority of legal provisions for the CAP are laid down in four consecutive regulations: Rural development: Regulation 1305/2013; "horizontal" issues, such as funding and controls: Regulation 1306/2013; direct payments to farmers: Regulation 1307/2013;

market measures: Regulation 1308/2013. In order to guarantee a smooth transition, Regulation No. 1310/2013 sets out certain transitional provisions for the application of the four basic regulations in 2014.

The European Commission adopted the first package of legal acts for implementation of the CAP reform on 11 March 2014. These legal acts are intended to augment the provisions of the above-mentioned basic regulations which are covered by political agreement. The Commission also passed a series of implementing provisions in 2014 in order to ensure that the legislation is applied consistently in all member states.

The objective that the European Commission had set itself with the reform was to simplify the CAP. The purpose of this simplification was to ensure that the political strategies, the implementation mechanisms and the necessary legal framework are not more complex than they need be for the intended goals to be achieved effectively.

Currently there are approx. 400 pending sets of rules in effect in the Common Market Order for agricultural produce (Regulation (EU) No. 1308/2013). The European Commission is endeavouring to reduce this number to a minimum for the purposes of simplification and debureaucratisation.

Effects on hops as a speciality crop

In the hop sector alone, there are five sets of rules in addition to the regulations contained in the Common Market Order mentioned above. These sets of rules deal with the issues of "Registration of contracts", "Certification of hops and hop products", "Importation of hops from third countries", "Recognition of producer groups" and "Support payments to producer groups".

A working party attached to the European Commission is now working out to what extent individual provisions can be dropped completely, shortened or combined with others in order to simplify and reduce the administrative burden in the hop sector.



Under the influence of multiple geopolitical crises, the world economy developed unevenly in 2014. While the **USA** acted as an economic driving force, growth in the **eurozone** as a whole was only moderate. **China** missed its own official growth target of 7.5 %.

Gross domestic product (GDP) worldwide grew by 3.4 % in 2014, compared with 3.0 % the year before. Of the world's biggest economies, the **USA** and **Germany** achieved growth year on year, whereas **China** and **Japan** both experienced setbacks (see table of key indicators).

ECONOMIC SITUATION

The **European Central Bank (ECB)** reduced its base interest rate by 0.10 % in both June and September 2014, taking it from 0.25 % to a new record low of 0.05 %. In order to further stimulate lending, the ECB introduced a penalty interest charge of 0.2 % on funds parked overnight at the ECB by financial institutions. In addition, since March 2015 the monetary authorities have been investing 60 billion euros per month in European government bonds as part of an economic stimulus programme. The programme is intended to stimulate the economy in the eurozone and lift inflation from its low level. The programme, which is due to run until September 2016, has a volume of 1.1 trillion euros.

The **US central bank (FED)** kept its prime rate at a range of zero to 0.25 %. The **People's Bank of China (PBC)**, on the other hand, reduced its base interest rate, which had stood at 6.0 % since July 2012, in three steps, the last of which was in May 2015, to 5.1 %. The **central bank of the Russian Federation (Bank Rossii)** raised its key interest rate by a massive 6.5 % to 17.0 % in December 2014. This step was in response to the crisis affecting the rouble which has dramatically fallen in value due to the low oil price and the western sanctions imposed during the Ukraine crisis. The exchange rate on 30 May 2014 was 47.31 roubles to the euro. At the peak of the crisis, the exchange rate fell to 87.17 roubles on 17 December 2014. On 29 May 2015 the rouble was trading at 57.46 to the euro. The base interest rate was

reduced by two percentage points in February 2015 and by a further percentage point in March to stand at 14.0 %.

The German stock market profited from the ECB's decision to buy bonds. The **German share index (DAX)** reached an all-time high of 12,374 points on 10 April 2015. On 30 May 2014 it had closed at 9,970. The **Dow Jones Industrial Average (DJIA)** rose at a similar rate to reach a new all-time high of 18,312 on 19 May 2015, compared with 15,115 points on 30 May 2014.

The exchange rate of the **euro** to the US dollar was influenced by the loose monetary policy of the European Central Bank. An additional reason for the weakness of the single currency is the uncertainty surrounding the economy in Greece. At the end of May 2014 the euro was trading at 1.36 USD, but by the end of May 2015 it had fallen to 1.10 USD.

Commodity prices slipped significantly in the course of 2014, thus dampening inflation. At the end of May 2014, the trading price for Dated Brent FOB Sul. V **crude oil** was 109.00 USD per barrel, whereas one year later it was only 64.60 USD.

The table below gives a more detailed picture of the development of the key indicators for the world's four largest economies in recent years.

KEY DATA

The figures for 2012 and 2013 have been revised according to the latest statistics

*) Interest rate for 10-year bonds. China: Lending rate for long-term loans.

		GDP growth (real)	Balance of payments in USD bn	Balance of trade in USD bn	Inflation rate %	Interest rate %*	Unemployment (as of 31.12.)
USA	2012	2.3 %	-460.7	-730.6	2.1 %	1.80 %	8.1 %
	2013	2.2 %	-400.3	-688.7	1.5 %	2.35 %	7.4 %
	2014	2.4 %	-411.4	-721.6	1.6 %	2.54 %	6.2 %
China	2012	7.7 %	215.4	230.7	2.6 %	6.78 %	4.1 %
	2013	7.7 %	182.8	259.2	2.6 %	6.55 %	4.1 %
	2014	7.4 %	213.8	382.5	2.0 %	6.48 %	4.1 %
Japan	2012	1.8 %	58.7	-87.0	0.0 %	0.84 %	4.4 %
	2013	1.6 %	33.1	-117.5	0.4 %	0.70 %	4.0 %
	2014	0.0 %	25.4	-121.1	2.7 %	0.53 %	3.6 %
Germany	2012	0.4 %	252.6	240.7	2.0 %	1.47 %	6.8 %
	2013	0.1 %	275.6	241.7	1.5 %	1.63 %	6.9 %
	2014	1.5 %	304.2	291.5	0.9 %	1.24 %	6.7 %

TOP 40 BREWERIES



Mergers & acquisitions

2014 was a relatively quiet year, as far as consolidation was concerned. Rumours circulated about ABI taking over SABMiller and SABMiller taking over Heineken, and there was also speculation concerning a merger between Diageo and SABMiller. In the end, none of these transactions actually took place.

ABI acquired two breweries that had already been on their shopping list in 2013: Oriental Breweries in South Korea (which InBev had previously owned, but divested) and the SiPing Ginsber Brewery in China. ABI has more recently contributed to the consolidation process in the

craft segment, buying three brewers in the USA, Blue Point Brewing, New York, 10 Barrel, Oregon, and Elysian, Washington, as well as Cervejaria Wäls in Brazil. Further acquisitions by ABI are expected in this growing market segment.

In 2015, Heineken acquired a majority share in the Slovenian group Pivovarna Lasko, thus gaining a dominant position in the Slovenian beer market. Diageo strengthened its presence in South Africa by acquiring the majority in United National Breweries, a producer of sorghum-based beer.

The world's 40 biggest brewery groups as at 31 December 2014

Ranking	Brewery	Country	Beer output 2014 in mill. hl	Share of world beer production
1	AB InBev	Belgium	411.5	21.0 %
2	SABMiller 1)	United Kingdom	187.8	9.6 %
3	Heineken	Netherlands	181.3	9.3 %
4	Carlsberg	Denmark	122.8	6.3 %
5	China Res. Snow Breweries	China	118.4	6.0 %
6	Tsingtao Brewery Group	China	76.2	3.9 %
7	Molson-Coors	USA/Canada	59.0	3.0 %
8	Yanjing	China	53.1	2.7 %
9	Kirin	Japan	46.6	2.4 %
10	BGI / Groupe Castel	France	31.7	1.6 %
11	Efes Group	Turkey	24.5	1.3 %
12	Petropolis	Brasil	21.8	1.1 %
13	Asahi	Japan	20.7	1.1 %
14	Gold Star	China	19.1	1.0 %
15	Polar	Venezuela	17.7	0.9 %
16	Diageo (Guinness)	Ireland	17.5	0.9 %
17	San Miguel Corporation	Philippines	16.7	0.9 %
18	Singha Corporation	Thailand	15.8	0.8 %
19	Saigon Beverage Corp. (SABECO)	Vietnam	13.0	0.7 %
20	Grupo Mahou - San Miguel	Spain	12.1	0.6 %
21	Radeberger Gruppe	Germany	11.7	0.6 %
22	Pearl River	China	11.7	0.6 %
23	CCU	Chile	10.9	0.6 %
24	United Brewery	India	10.4	0.5 %
25	Oettinger	Germany	9.3	0.5 %
26	Constellation Brands	USA	9.0	0.5 %
27	Damm	Spain	8.8	0.4 %
28	Suntory	Japan	8.3	0.4 %
29	TCB Beteiligungsgesellschaft mbH	Germany	7.5	0.4 %
30	Hite	South Korea	7.4	0.4 %
31	Obolon	Ukraine	7.4	0.4 %
32	Bitburger Braugruppe	Germany	7.2	0.4 %
33	Sapporo	Japan	6.7	0.3 %
34	Hanoi Beverage Corp. (HABECO)	Vietnam	6.4	0.3 %
35	Beer Thai (Chang)	Thailand	6.0	0.3 %
36	Bavaria N.V.	Netherlands	5.8	0.3 %
37	Krombacher	Germany	5.7	0.3 %
38	Brau Holding International	Germany	5.7	0.3 %
39	Lan Bei Beer Co., Ltd.	China	4.5	0.2 %
40	Yunnan Lancang River	China	4.4	0.2 %
TOTAL			1,622.1	82.8 %
World beer production 2014			1,960.0	100.0 %

The market share of the world's top 40 brewing groups has increased a little.

The data were taken from the brewers' own annual reports. In other cases, the production volume had to be estimated after different sources had reported differing figures, or where no figures were available.

1) Not including the 58.0m hl from the shareholding in China Resources Snow Breweries.

WORLD BEER PRODUCTION 2013/2014

figures in 1,000 hl

in italics: corrections for 2013
as stated in last year's report.

* estimate

** Ranking

Europe			
R**	Country	2013	2014
4	Germany	94,365	95,600
6	Russia	89,300	81,600
8	United Kingdom	41,956	41,204
9	Poland	39,560	39,870
11	Spain	32,692	33,535
14	Ukraine	27,100	24,200
15	Netherlands	23,636	23,696
21	Czech Republic	19,200	19,648
23	France	18,500	18,750 *
24	Belgium	18,069	18,000 *
28	Romania	16,110	14,900
29	Italy	12,688	12,968
32	Turkey	9,809	10,253
33	Austria	9,045	9,001
34	Ireland	8,008	8,000 *
36	Portugal	7,323	7,290
38	Hungary	5,978	6,239
39	Denmark	6,166	6,107
44	Bulgaria	5,112	4,873
45	Serbia	5,022	4,865
48	Sweden	4,619	4,614
49	Belarus/ White Russia	4,260	4,346
52	Finland	4,020	4,010
53	Greece	3,803	3,800 *
57	Switzerland	3,370	3,432
58	Kroatia	3,408	3,238 *
59	Lithuania	2,886	3,200
62	Slovakia	3,142	2,880
71	Norway	2,339	2,396
77	Slovenia	1,984	2,004
81	Estonia	1,465	1,600 *
95	Moldavia	1,100 *	1,150 *
98	Georgia	880 *	1,010 *
101	Latvia	1,467	968
106	Bosnia- Herzegovina	807	767 *
110	Macedonia	621	650 *
113	Albania	580 *	590 *
119	Montenegro	414	388
124	Cyprus	329	323
127	Luxembourg	281	274
131	Armenia	198	237
135	Iceland	200	202
141	Malta	143	151
	TOTAL	531,955	522,829

Australia/Oceania			
R**	Country	2013	2014
25	Australia	17,360	16,910
64	New Zealand	2,881	2,820
109	Papua New Guinea	840 *	700 *
134	Fiji Islands	190 *	205 *
139	Tahiti	187 *	190 *
146	New Caledonia	137 *	137 *
155	Solomon Islands	65 *	65 *
157	Samoa	61 *	60 *
168	Vanuatu	10 *	10 *
	TOTAL	21,731	21,097

America			
R**	Country	2013	2014
2	USA	225,270	225,947
3	Brasil	134,700	140,460
5	Mexico	82,000 *	82,000
18	Venezuela	22,420 *	20,650 *
19	Columbia	20,800 *	20,200
22	Canada	19,167	18,944
26	Argentina	18,600 *	16,500 *
30	Peru	13,080 *	12,960
37	Chile	6,200 *	7,000 *
41	Ecuador	6,480 *	5,804
55	Dominican Republic	3,500 *	3,500 *
69	Cuba	2,600 *	2,600 *
76	Panama	2,100 *	2,150 *
80	Costa Rica	1,700	1,700 *
84	Paraguay	1,500 *	1,450 *
85	Guatemala	1,450 *	1,450 *
88	Bolivia	1,300 *	1,320 *
91	El Salvador	1,200 *	1,200 *
97	Honduras	1,028	1,050 *
100	Uruguay	950 *	970 *
102	Nicaragua	1,000 *	950 *
103	Jamaica	950 *	950 *
108	Puerto Rico	700 *	750 *
118	Trinidad	430 *	430 *
123	Belize	330 *	330 *
128	Guyana	270 *	270 *
140	Haiti	180 *	190 *
143	Bahamas	145 *	150 *
144	Dutch Antilles	140 *	140 *
150	Suriname	90 *	90 *
152	Barbados	80 *	80 *
154	St. Lucia	70 *	75 *
158	Martinique	60 *	60 *
160	St. Vincent	45 *	45 *
162	Grenada	30 *	30 *
163	St. Kitts	23 *	23 *
164	Antigua	19 *	19 *
165	Aruba	16 *	16 *
167	Dominica	12 *	12 *
171	Cayman Islands	5 *	5 *
	TOTAL	570,640	572,470

Asia			
R**	Country	2013	2014
1	China	506,500 *	492,190
7	Japan	57,200	56,450
10	Vietnam	35,700	38,900
16	Thailand	23,100	22,350
17	South Korea	21,050	20,750
20	India	19,900 *	20,000
27	Philippines	14,600 *	15,000 *
43	Taiwan	5,163	5,275
46	Cambodia	4,400 *	4,800 *
47	Kazakhstan	4,500	4,716
61	Malaysia	2,990	2,950
63	Uzbekistan	2,650 *	2,850 *
65	Indonesia	2,800 *	2,800 *
66	Laos	2,662	2,800 *
68	Myanmar	2,500 *	2,700 *
78	Iran	1,980	1,980
89	Sri Lanka	1,250	1,250 *
92	Singapore	1,155 *	1,200 *
93	Israel	1,150 *	1,200 *
105	Mongolia	700 *	800 *
112	Nepal	551	600 *
115	Azerbaijan	521	524
116	Hong Kong	446	464
117	Turkmenistan	450 *	445 *
122	Tajikistan	350 *	355 *
126	Lebanon	200 *	275 *
129	Kirgistan	250 *	270 *
151	Jordan	90 *	90 *
153	Pakistan	75	80 *
166	Bangladesh	15 *	15 *
	TOTAL	714,898	704,079

Africa			
R**	Country	2013	2014
12	South Africa	31,500 *	31,500 *
13	Nigeria	26,500 *	27,000 *
31	Angola	10,500 *	11,000 *
35	Cameroon	7,500 *	7,800 *
40	Dem. Rep. of the Congo (Zaire)	6,000 *	6,000 *
42	Ethiopia	4,655	5,625
50	Kenya	5,075	4,300 *
51	Tanzania	4,000 *	4,300 *
54	Zambia	1,390	3,503
56	Uganda	3,150 *	3,470 *
60	Congo (Brazzaville)	3,000 *	3,000 *
67	Ghana	2,500 *	2,750 *
70	Namibia	2,500	2,500 *
72	Burundi	2,100	2,300 *
73	Ivory Coast	1,900	2,260
74	Mozambique	3,010	2,200 *
75	Zimbabwe	2,200 *	2,200 *
79	Tunisia	1,550	1,800
82	Burkina Faso	1,200	1,600
83	Gabon	1,250	1,500
86	Algeria	1,300 *	1,390
87	Botswana	653	1,372
90	Rwanda	1,200 *	1,200 *
94	Madagascar	1,120	1,200
96	Benin	930	1,100
99	Egypt	1,000 *	1,000 *
104	Malawi	210 *	830
107	Morocco	800	750
111	Chad	550	650
114	Togo	500	540
120	Lesotho	415	376
121	Mauritius	389	356
125	Guinea Conakry	245	300 *
130	Réunion	240 *	240 *
132	South Sudan	194	235
133	Swaziland	241	221
136	Eritrea	200 *	200 *
137	Sierra Leone	175	200 *
138	Central African Republic	120	200
142	Senegal	150	150
145	Mali	130	140
147	Liberia	160	126
148	Seychelles	102	110
149	Equatorial Guinea	200 *	100
156	Niger	60	65
159	Guinea Bissau	45 *	45 *
161	Gambia	40	40
169	Cape Verde	8 *	8 *
170	Palestine	0	8 *
	TOTAL	132,857	139,760

World total		
	2013	2014
TOTAL	1,972,081	1,960,235

BEER OUTPUT DEVELOPMENT



	2013 1,000 hl	2014 1,000 hl	2013 +/- % rel.	2014 +/- % rel.
European Union	382,547	383,505	-1.6 %	0.3 %
Rest of Europe	149,408	139,324	-8.0 %	-6.7 %
Europe total	531,955	522,829	-3.5 %	-1.7 %
North America	325,870	324,447	-1.9 %	-0.4 %
Central America/Caribbean	17,383	17,475	3.0 %	0.5 %
South America	227,387	230,548	1.9 %	1.4 %
America total	570,640	572,470	-0.3 %	0.3 %
Asia	714,898	704,079	3.3 %	-1.5 %
Africa	132,857	139,760	6.2 %	5.2 %
Australia/Oceania	21,731	21,097	0.6 %	-2.9 %
WORLD TOTAL	1,972,081	1,960,235	0.5 %	-0.6 %

The output volumes for 2013 quoted in last year's report have been revised in some cases.

As a result of the adjustments to the output figures for 2013, world beer output was in fact slightly lower than the volume stated in last year's report. However, these adjustments led to more considerable shifts within the continents themselves.

Beer production in 2014 fell by 11.8m hl, or -0.6 %, worldwide compared with output volume in 2013. This result was influenced by the growing number of sources of unrest worldwide, including the Ebola epidemic and exertion of political influence. Since records began, the only years in which there was a decline in world beer output were 1992 (-0.2 %) and 1984 (-0.4 %).

The list of the most important beer nations is led again this year by China, followed by the USA, Brazil and Germany. Russia had to cede fifth place to Mexico.

The decline in output of 9.1m hl in **Europe** was attributable to countries outside the European Union – principally Russia (-7.7m hl) and Ukraine (-2.9m hl).

On the **American continent**, output in South America in particular contributed to an increase of 1.8m hl.

Asia, the continent whose growth rates have been far above the average in recent years, saw its output fall by 10.8m hl.

Vietnam (+3.2m hl) prevented this decline, which was mainly due to the sharp fall in output in China (-14.3m hl), from being even more dramatic.

Growth in **Africa** remained robust, with an increase in output of 6.9m hl spread across many countries.

MARKET ANALYSIS



For the first time in four years, world hop acreage increased relative to the previous year. The increase was a moderate one of 1,500 ha (+3.3 %). The global crop yield of approx. 96,500 mt (+16 %) surpassed expectations. In Germany in particular, harvest volume was above average, which was accounted for principally by the main varieties Herkules and Perle. In total, the year-on-year increase worldwide amounted to 13,250 mt of hops and approx. 1,050 mt of alpha.

On the other hand, the crop yield in the USA, the second main pillar of the world hop market, seemed rather disappointing at first sight. An increase in hop-growing area of approx. 1,130 ha (+7.9 %) translated into production volume growth of only 2.4 %. The poor yields were caused on the one hand by the large proportion of new plantings (approx. 1,950 ha) and the

consequently lower yield of the young hops and above all, however, by unusually high temperatures during the vegetation period in July and early August.

Overall, with regard to the alpha balance, crop year 2014 clearly undersupplied the world market with hops for the second year in succession.

The high alpha/bitter hop category is no longer at such rock-bottom prices as it was in crop years 2009 to 2012, but this segment is still far from healthy. The world market is still depressed by considerable quantities that were largely sold to and have been stockpiled by breweries. Consequently, in view of the sizeable high alpha crop in Germany, it is hardly surprising that 2014 spot market prices slipped significantly below the forward contract levels paid prior to the harvest.

MARKET ANALYSIS

It is noticeable that over the past five years the growing of high alpha varieties in the USA has been reduced in favour of flavour hops which are not yet available in sufficient quantities for the US and world craft beer sectors. In this period, roughly 4,700 ha of high alpha varieties have been removed from hop farms. Producers in Germany increasingly regard the development in the rapidly changing farming structure in the USA as an opportunity and are in turn significantly expanding acreage of their high alpha variety Herkules.

Looking at the longer-term statistics, it is apparent that since 2006 high alpha acreage has been reduced worldwide by 11 %, while aroma hop acreage has been increased by only approx. 3 %. It is therefore hardly surprising that fine aroma and flavour hops harvested in 2014 are reported to be sold out. Only aroma varieties belonging to Group II (see below) are still on the market in small quantities.

The hop market is on the threshold of fundamental change. This is being driven by the internationally growing preference, particularly among young

consumers, for more intensely flavoured beers. This trend, which until recently had either remained unnoticed or been considered a potentially short-lived phenomenon, is irreversible. Consequently, the USA will soon overtake Germany as the world's biggest hop-growing nation in terms of acreage. At the same time, it will leave the field of high alpha hop farming to Germany largely without a fight, as the expansion of the acreage required to satisfy the growing appetite for US flavour hops is very expensive and the business of selling aroma and flavour hops is significantly more lucrative than high alpha hop growing. In addition, the low external value of the euro relative to the US dollar is causing sales to shift to the high alpha hops grown in Germany. If the double-digit growth rates of the US craft segment continue over the next five years and, at the same time, the global success story of India pale ale (IPA) goes on, the hop industry will be faced with huge investments. There is every indication that the brewing industry is being confronted with substantial changes in consumer behaviour. The brewing industry and with it the hop industry are in the midst of a process of realignment.

HOP FORWARD CONTRACT RATES

Forward contract rates (as per spring 2015)

Due to insufficient availability of official data, the forward contracting rates are based on estimates and have been calculated on the basis of the acreage expected for 2015 and the long-term average yield.

Country	2015	2016	2017	2018
Germany	85 %	85 %	80 %	75 %
USA	100 %	90 %	80 %	50 %
Czech Republic	95 %	95 %	95 %	90 %
Poland	80 %	75 %	75 %	70 %
Slovenia	75 %	65 %	55 %	35 %
England	85 %	80 %	70 %	60 %

HOP ALPHA ACID PRODUCTION

Alpha acid production world-wide has been divided into variety groups:

Varieties with a long-term average alpha of up to 4.5 %

Varieties with a long-term average alpha of over 4.5 %

GROUP I: Fine aroma hops	such as Hallertau Mittelfrueh, Hersbruck Spaet, Klon 18, Lubliner, Saazer, SA-1, Spalt, Savinjski Golding, Styrian Golding (Celeia), Strisselspalt, Tett nang.
GROUP II: Aroma hops	such as Aurora, Bobek, Cascade, Cluster, First Gold, Fuggles, Golding, Hallertau Tradition, Mount Hood, Opal, Perle, Saphir, Smaragd, Spalt Select, Sterling, Wakatu, Willamette.
GROUP III: Bitter hops/ High Alpha hops	such as Admiral, Chelan, Chinook, Columbus/Tomahawk/Zeus (CTZ), Galena, Hallertau Magnum, Hallertau Merkur, Hallertau Taurus, Herkules, Kirin Flower, Marco Polo, Marynka, Millennium, Northern Brewer, Nugget, NZ Pacific Gem, Phoenix, Pride of Ringwood, Super Pride, Target, Tsingtao Flower, Victoria, Warrior.

HOP ALPHA ACID PRODUCTION

The alpha acid production of the world hop crop, divided into the three groups below, was as follows:

Group	2013					2014				
	Crop share	Crop mt	Alpha Ø	Alpha mt	Alpha share	Crop share	Crop mt	Alpha Ø	Alpha mt	Alpha share
I	11.6 %	9,645	2.7 %	263	3.2 %	12.9 %	12,420	3.1 %	383	4.1 %
II	31.5 %	26,253	6.6 %	1,738	21.3 %	37.7 %	36,405	7.0 %	2,535	27.5 %
III	56.9 %	47,334	13.0 %	6,170	75.5 %	49.4 %	47,652	13.2 %	6,309	68.4 %
TOTAL	100.0 %	83,232	9.8 %	8,171	100.0 %	100.0 %	96,477	9.6 %	9,227	100.0 %

Group I - Fine aroma hops
Czech Republic 38.1 %
(previous year 44.7 %),
Germany 37.2 %
(previous year 30.7 %)

Group II - Aroma hops
Germany 37.7 %
(previous year 26.7 %),
USA 46.4 %
(previous year 56.2 %)

*Group III - Bitter hops/
high alpha hops*
Germany 44.6 %
(previous year 34.1 %),
USA 37.2 %
(previous year 46.6 %)

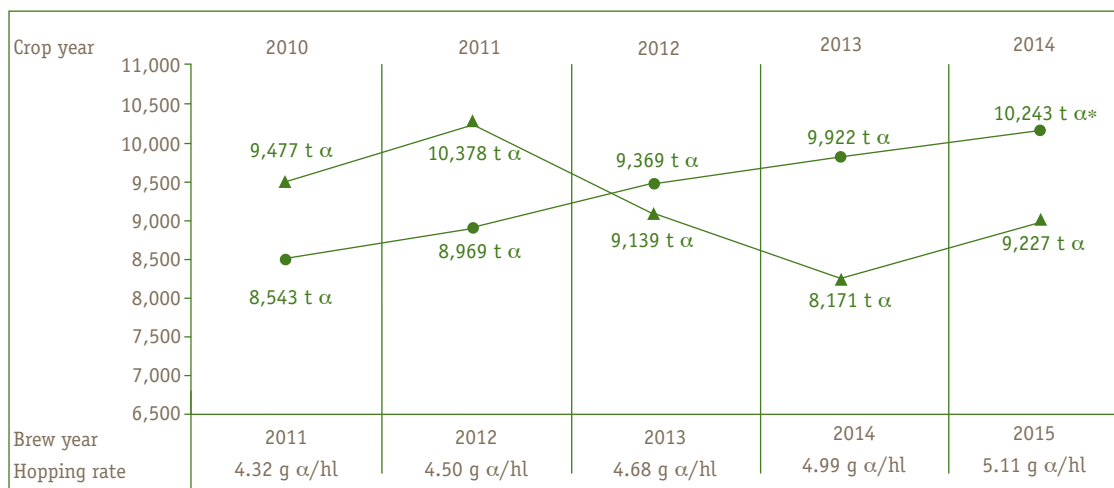
The very good yields per hectare and in some cases the above-average alpha acid content of German hops were responsible for significant growth in alpha acid production worldwide. The overall result was diminished somewhat by below-average yields per hectare and in some cases below-average alpha content in the USA. Alpha production increased year on year by slightly more than 1,000 mt worldwide.

The country with the largest share of world alpha production in 2014 was **Germany** with 42.4 % (2013: 32.4 %), followed by the **USA** with 38.4 % (2013: 47.3 %). The two countries have a combined share of 80.8 %, compared with 79.7 % in crop year 2013, and have thus further consolidated their dominance in hop production.

The alpha acid values upon which the calculations are based are recorded using the method of EBC analysis 7.4 % as is at the Time of Processing (ToP).

The trend towards increased planting of aroma varieties (Groups I and II) has accelerated significantly. Within five years the share of world crop volume belonging to bitter/high alpha varieties (Group III) has fallen by 15 %.

ALPHA ACID BALANCE



Alpha supply

Brew year	Surplus / Deficit
2011	+ 934 t α
2012	+1,409 t α
2013	- 230 t α
2014	- 1,751 t α
2015	- 1,016 t α

● Alpha demand (Brew year)
▲ Alpha production (Crop year)
* Estimated demand

Statistically speaking, due to the high hopping rate in the brewing of craft beers, the average hopping rate is rising, as is total demand for hops and the alpha acid contained in them. As in the 2014 brewing year (crop year 2013 for hops), there will be a deficit in the supply balance for the 2015 brewing year (crop year 2014). However, the persisting surpluses of high alpha hops from previous crop years continue to depress the market.

Demand for hops beyond the brewing industry has been taken into consideration in the alpha surplus/deficit calculation.

Estimated alpha demand for the 2015 brewing year is based on an increase in beer output volume of approx. 1.0 %.

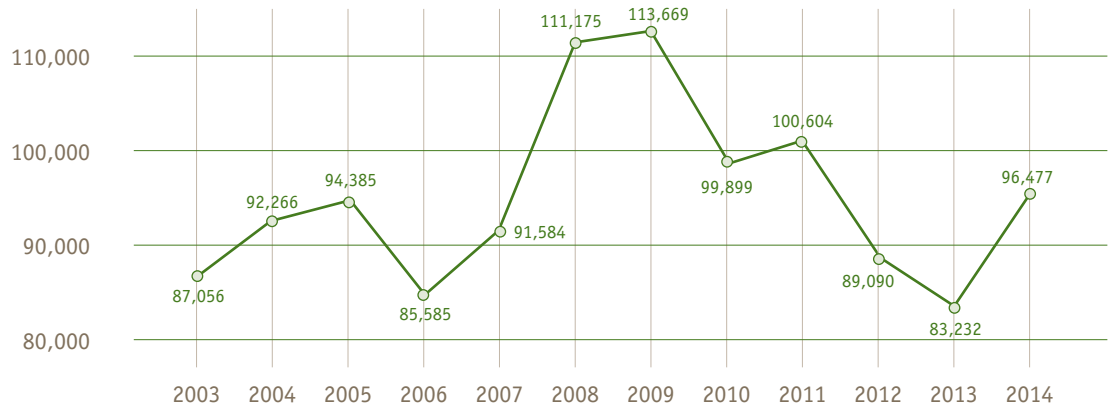


DEVELOPMENT 2003 - 2014

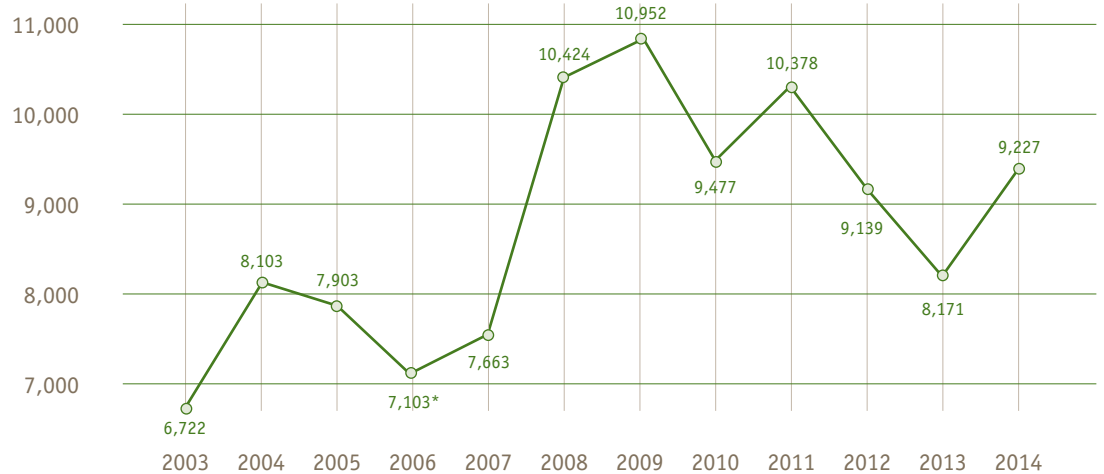
HOP AREA UNDER CULTIVATION IN HA



HOP PRODUCTION IN MT

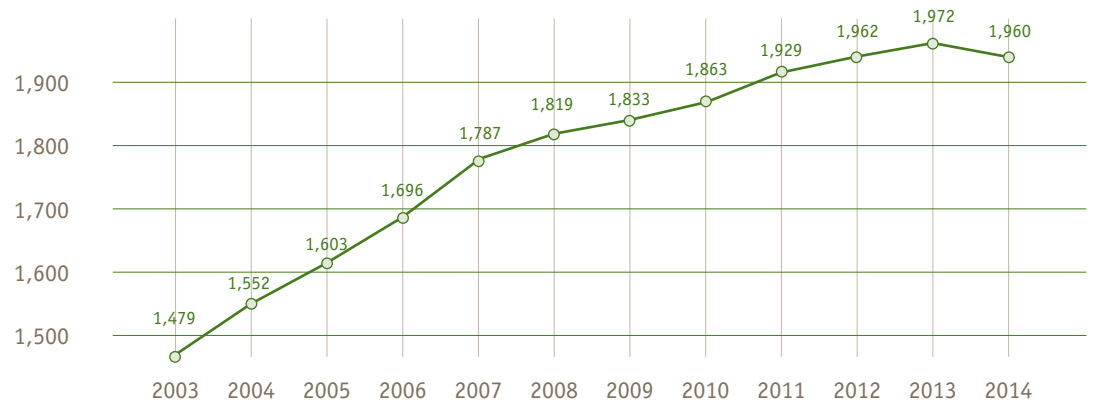


HOP ALPHA PRODUCTION IN MT



* not taking into consideration the quantities destroyed in warehouse fires

BEER PRODUCTION IN MILLION HL



WORLD HOP ACREAGE AND CROP



		2013				2014			
		Acreage ha	Production mt	Ø-Alpha %	Alpha mt	Acreage ha	Production mt	Ø-Alpha %	Alpha mt
Germany	Hallertau	14,086	23,077.7	9.8 %	2,264	14,467	33,173.1	10.5 %	3,468
	Elbe-Saale	1,186	2,508.6	11.6 %	292	1,265	2,567.9	10.6 %	273
	Tett nang	1,208	1,429.7	4.0 %	58	1,209	2,022.4	6.4 %	130
	Spalt	350	499.7	6.0 %	30	348	688.7	6.1 %	42
	Other	20	38.5	6.9 %	3	20	47.7	7.8 %	4
	Total	16,849	27,554.1	9.6 %	2,647	17,308	38,499.8	10.2 %	3,916
Czech Republic	Saaz	3,358	3,984.9	3.3 %	133	3,451	4,688.8	3.4 %	159
	Tirschitz	504	760.0	3.3 %	25	535	843.8	3.2 %	27
	Auscha	457	584.9	3.9 %	23	474	669.4	3.4 %	23
	Total	4,319	5,329.8	3.4 %	181	4,460	6,202.0	3.4 %	209
Poland		1,407	2,420.7	8.3 %	200	1,410	2,072.3	7.6 %	157
Slovenia		1,166	1,297.1	4.5 %	58	1,296	2,318.8	7.6 %	177
England		985	1,236.7	7.4 %	91	929	1,456.8	6.3 %	91
Spain		485	853.7	12.1 %	103	535	935.8	12.0 %	112
France		381	611.6	4.2 %	26	431	636.1	3.8 %	24
Romania		245	181.0	9.0 %	16	250	172.0	9.3 %	16
Austria		247	374.5	6.5 %	24	247	491.6	8.2 %	40
Belgium		148	212.6	8.8 %	19	143	186.6	9.4 %	18
Slovakia		174	193.0	3.9 %	7	134	178.0	3.2 %	6
Bulgaria		105*	130.0*	8.0 %	10	14*	30.0*	8.7 %	3
Portugal		12	16.2	10.5 %	2	12	18.6	10.5 %	2
Netherlands		4	3.3	8.6 %	0	4	3.6	11.2 %	0
European Union		26,527	40,414.3	8.4 %	3,384	27,173	53,202.0	9.0 %	4,771
Ukraine		380*	310.0*	6.6 %	20	380*	400.0*	6.5 %	26
Turkey		346	326.0	9.5 %	31	333	300.0	9.1 %	27
Russia		160*	120.0	4.8 %	6	160*	145.0*	5.0 %	7
Belarus/White Russia		53	52.0	10.0 %	5	53	52.0	9.6 %	5
Switzerland		17	27.5	7.6 %	2	17	31.6	10.5 %	3
Rest of Europe		956	835.5	7.7 %	64	943	928.6	7.3 %	68
EUROPE		27,483	41,249.8	8.4 %	3,448	28,116	54,130.6	8.9 %	4,839
USA	Washington	10,951	24,910.7	12.7 %	3,163	11,679	25,338.0	11.4 %	2,888
	Oregon	1,937	3,877.9	9.9 %	385	2,189	3,728.8	8.9 %	332
	Idaho	1,366	2,665.4	11.9 %	316	1,515	3,135.9	10.3 %	321
	Total	14,254	31,454.0	12.3 %	3,865	15,383	32,202.7	11.0 %	3,541
Argentina		178	252.9	9.4 %	24	182	226.1	7.4 %	17
Canada		80*	75.0*	8.5 %	6	85*	100.0*	9.0 %	9
AMERICA		14,512	31,781.9	12.3 %	3,895	15,650	32,528.8	11.0 %	3,567
China	Xinjiang	1,685	4,200.0	6.6 %	276	1,567	3,920.0	6.5 %	256
	Gansu	1,146	2,994.0	6.8 %	203	1,088	2,967.0	7.6 %	226
	Total	2,831	7,194.0	6.7 %	479	2,655	6,887.0	7.0 %	482
Japan		161	284.8	6.2 %	18	154	264.7	5.9 %	16
India		20	7.3	13.5 %	1	--	--	--	--
ASIA		3,012	7,486.1	6.7 %	498	2,809	7,151.7	7.0 %	498
South Africa		412	886.0	13.6 %	120	413	822.0	13.7 %	112
AFRICA		412	886.0	13.6 %	120	413	822.0	13.7 %	112
Australia		449	1,145.8	12.9 %	148	408	1,078.8	13.1 %	141
New Zealand		378	682.5	9.0 %	62	370	765.0	9.2 %	70
AUSTRALIA/OCEANIA		827	1,828.3	11.5 %	210	778	1,843.8	11.4 %	211
WORLD		46,246	83,232.1	9.8 %	8,171	47,766	96,476.9	9.6 %	9,227

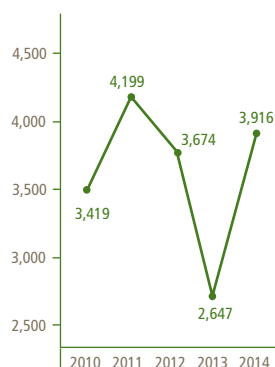
* estimate

Rounding differences of the acreage may cause differences in addition.

Hop farming in India was discontinued following the 2013 harvest.

GERMANY

Alpha production in mt



There may be differences in the sum totals due to acreage figures being rounded up or down.

Area	Variety	Development of acreage			Development of production			
		Acreage ha			Ø Yield mt/ha		Production mt	
		2013	+/-	2014	2013	2014	2013	2014
Hallertau	Perle	2,813	44	2,857	1.39	2.14	3,901.52	6,102.96
	Hallertau Tradition	2,537	159	2,696	1.32	2.05	3,353.93	5,521.44
	Hersbruck Spaet	843	76	919	1.32	2.07	1,112.77	1,900.59
	Hallertau Mittelfrueh	687	-64	623	1.02	1.65	699.86	1,026.73
	Spalt Select	408	26	434	1.57	2.21	638.54	957.30
	Saphir	308	52	360	1.17	2.04	359.71	734.29
	Other Aroma	120	178	298	1.08	1.33	129.78	397.13
	Total Aroma	7,716	472	8,188	1.32	2.03	10,196.11	16,640.44
	Northern Brewer	184	-11	173	1.13	2.02	208.02	349.68
	Brewers Gold	19	-2	17	1.58	2.60	30.02	44.21
	Total Bitter	203	-13	190	1.17	2.07	238.04	393.89
	Herkules	2,869	476	3,345	2.22	3.08	6,376.37	10,290.71
	Hallertau Magnum	2,360	-426	1,934	2.02	2.08	4,778.25	4,029.24
	Hallertau Taurus	682	-118	564	1.60	2.22	1,088.74	1,253.65
Nugget	156	-11	145	1.92	2.58	298.76	373.64	
Other High Alpha	70	5	75	1.02	2.20	71.43	165.32	
Total High Alpha	6,138	-75	6,063	2.05	2.66	12,613.55	16,112.56	
Other	29	-3	26	1.03	1.01	29.99	26.18	
Total Hallertau	14,086	381	14,467	1.64	2.29	23,077.69	33,173.07	
Elbe-Saale	Perle	136	63	199	1.91	1.70	260.02	338.30
	Hallertau Tradition	34	6	40	1.29	1.61	43.84	64.49
	Other Aroma	10	9	19	1.52	1.22	15.15	23.16
	Total Aroma	180	78	258	1.77	1.65	319.01	425.95
	Northern Brewer	96	-2	94	1.89	2.13	181.11	199.78
	Total Bitter	96	-2	94	1.89	2.13	181.11	199.78
	Hallertau Magnum	737	-33	704	2.10	2.02	1,548.44	1,425.40
	Herkules	115	34	149	3.05	2.70	350.22	402.69
	Other High Alpha	56	2	58	1.94	1.94	108.86	112.75
	Total High Alpha	908	3	911	2.21	2.13	2,007.52	1,940.84
Other	2	0	2	0.49	0.67	0.97	1.34	
Total Elbe-Saale	1,186	79	1,265	2.12	2.03	2,508.61	2,567.91	
Tettngang	Tettngang	787	-25	762	1.07	1.40	845.28	1,063.83
	Hallertau Mittelfrueh	189	-18	171	1.34	1.69	254.09	289.63
	Perle	67	0	67	1.53	2.54	102.46	170.49
	Other Aroma	86	20	106	1.55	1.95	133.05	206.92
	Total Aroma	1,129	-23	1,106	1.18	1.56	1,334.88	1,730.87
	High Alpha	78	25	103	1.21	2.79	94.71	287.67
	Other	0	0	0	0.00	0.00	0.11	3.82
Total Tettngang	1,208	1	1,209	1.18	1.67	1,429.70	2,022.36	
Spalt	Spalt	113	0	113	0.98	1.36	111.14	154.21
	Spalt Select	82	-2	80	1.66	2.29	136.43	183.31
	Hallertau Mittelfrueh	48	-5	43	1.06	1.57	50.83	67.56
	Other Aroma	68	5	73	1.68	2.33	114.24	170.28
	Total Aroma	311	-2	309	1.33	1.86	412.64	575.36
	High Alpha	39	-1	38	2.23	2.97	87.00	112.95
Other	1	0	1	0.00	0.00	0.01	0.41	
Total Spalt	350	-2	348	1.43	1.98	499.65	688.72	
Rhen.-P./	Aroma	16	-1	15	1.74	2.41	27.83	36.08
Bitburg	High Alpha	4	0	4	2.67	2.91	10.66	11.63
Total Rhen.-P./Bitburg	20	0	20	1.92	2.39	38.49	47.71	
Total Aroma	9,352	524	9,876	1.31	1.97	12,290.47	19,408.70	
Total Bitter	299	-15	284	1.40	2.09	419.15	593.67	
Total High Alpha	7,166	-47	7,119	2.07	2.59	14,813.44	18,465.65	
Total Other	31	-3	28	1.00	1.13	31.08	31.75	
GERMANY TOTAL	16,849	459	17,308	1.64	2.22	27,554.14	38,499.77	



Farm structure

Despite the rise in acreage, 39 farms withdrew from hop growing. This left 1,192 active hop farmers in crop year 2014. Of that number, 966 were in the Hallertau region, which means there was a year-on-year loss of 23 producers there.

The hop area cultivated per production entity in Germany rose to an average of 14.5 ha (2013: 13.7 ha). The average area cultivated by hop farms in the Hallertau region was 15.0 ha, compared with 14.2 ha in 2013.

Growth, crop estimate and weights

The winter of 2013/2014 began with a warm and dry December. The generally mild, dry weather conditions persisted throughout the months of January and February. As a result of the almost total absence of frost, there was no frost action to speak of in the soil. The below-average precipitation caused the soil to dry out quickly towards the end of the winter. Unlike the wintery conditions in March the previous year, March 2014 was characterised by mainly spring-like weather, with high pressure, plentiful sunshine, little rain and well-above-average temperatures. Consequently, the ground was very suitable for vehicles and all the spring work in the hop gardens could be completed in ideal conditions. The warm temperatures stimulated plant growth and most farms began training the hop shoots on around 18 April, which was approximately one week earlier than usual. As the night temperatures were relatively low and occasional light frosts occurred at this time, plant development was delayed and training was extended over a comparatively long period. In May, in some cases heavy rainfall brought a change in the weather.

In addition, cooler temperatures slowed plant growth once more, causing the early development gains to disappear towards the end of the month. The persistent overcast and damp weather in May and the virtually frost-free winter combined to promote the spread of powdery mildew. The first plants with in some cases considerable powdery mildew infestation were discovered as early as late May. With total rainfall amounting to only 50 mm, June was much drier than average. However, very rainy and somewhat too cool weather in July brought welcome relief. Conditions were therefore ideal for a long flowering period. In August, too, there was repeated plentiful rainfall, with the result that a sufficient supply of water was available during cone development and ripening of the hops. Due to these ideal growing conditions lasting until harvest time, high yields were produced by all varieties. The persistent damp weather conditions prior to the harvest also led to further spread of powdery mildew infestation, however, which led to losses in terms of yield and quality in hop gardens more seriously affected.

Harvesting began with the early-maturing varieties, such as Northern Brewer, in the last week of August, followed by the other varieties from the beginning of September, and was completed in normal conditions.

In all hop-growing regions the crop yield exceeded the yield estimated when picking began. Compared with the previous year's harvest, the crop yield was 10,946 mt, or 40 %, lower.

In the last five years the acreage developed as follows:

Variety	2010 ha	2011 ha	2012 ha	2013 ha	2014 ha
Perle	3,403	3,396	3,203	3,048	3,154
Hallertau Tradition	2,624	2,757	2,748	2,661	2,825
Hersbruck Spaet	758	776	785	847	924
Hallertau Mittelfrueh	1,069	1,065	1,012	925	838
Tettnang	772	776	790	787	762
Spalter Select	801	719	538	496	523
Saphir	196	225	253	324	381
Spalt	91	91	106	112	112
Other Aroma	87	89	96	152	355 ¹⁾
Total Aroma	9,800	9,895	9,530	9,352	9,876
Northern Brewer	375	345	296	281	267
Brewers Gold	27	25	22	19	17
Total Bitter	402	370	318	299	284
Herkules	2,542	2,614	2,642	3,086	3,622
Hallertau Magnum	4,202	4,039	3,509	3,102	2,642
Hallertau Taurus	1,054	953	821	709	594
Nugget	266	244	207	184	173
Other High Alpha	89	75	51	85	88 ²⁾
Total High Alpha	8,152	7,924	7,231	7,166	7,119
Other	33	39	49	31	28 ³⁾
GERMANY TOTAL	18,386	18,228	17,128	16,849	17,308

Share per variety group in 2014:

Aroma varieties 57 %

Bitter varieties 2 %

High alpha varieties 41 %

There may be differences in the sum totals due to figures being rounded up or down after the decimal point.

- 1) Other aroma varieties include: Cascade, Hallertau Blanc, Hersbruck Pure, Huell Melon, Mandarina Bavaria, Monroe, Opal, Saaz, Smaragd
- 2) Other high alpha varieties include: Comet, Hallertau Merkur, Polaris, Target
- 3) Others include: Record, others/selections

Acreage and variety development

After five years of declining acreage, crop year 2014 was the first in which an increase – in this case 2.7 % (+459 ha) – was registered. The area planted with aroma varieties was increased by 524 ha, whereas the area planted with bitter varieties and high alpha varieties was reduced by 15 ha and 47 ha respectively.

Changes in the varietal mix among high alpha hops continued. Plantings of **Hallertau Magnum** (-460 ha) and **Hallertau Taurus** (-115 ha) were cut back. On the other hand, plantings of the higher-yielding **Herkules** variety were increased significantly (+536 ha). As a result, **Herkules** was the most widely grown hop variety in Germany in crop year 2014, with an acreage share of 21 %, followed by the varieties **Perle**, with 18 %, and **Hallertau Tradition**, with 16 %. These three varieties have a combined share of 55 % of Germany's total acreage.

Contract market - main varieties

In June 2014 the forward contract price for **Hersbruck** hops from crop years 2014 and 2015 remained at 6.00 EUR/kg, while offers for the years 2016 to 2020

came in initially, but only briefly, at 5.20 EUR/kg before finally settling at 5.50 EUR/kg. The prices for high alpha hops trended steadily upwards from late May/early June onwards. The forward contract offers for the **Hallertau Magnum** variety, for example, climbed gradually from 3.50 EUR to 3.60 EUR, 3.70 EUR, 3.80 EUR, 3.90 EUR, 4.00 EUR and then to 4.20 EUR/kg before coming to a halt in July/August 2014 at 4.50 EUR/kg for the years 2014 to 2020. The prices for **Nugget** also rose successively to reach 4.50 EUR/kg for the same years.

While there had been scarcely any movement in forward contract offers for **Herkules** hops up to that point, in July and August prices began to climb steadily and relatively quickly, starting at 23.00 EUR and rising to 24.00 EUR, 25.00 EUR and up to 27.00 EUR/kg alpha. Around 20 August, in fact, hop marketers were even making purchases at 29.00 EUR/kg alpha for all crop years for a short time. The growers sold their non-contracted stocks quickly.

A high number of contracts were concluded for all varieties in the various price phases.

Forward contract offers for the main varieties in the Hallertau region – August 2014

Variety	Price basis	2014	2015	2016	2017	2018	2019	2020
HA	EUR/kg	--	7.50	7.50	7.50	7.50	7.50	7.50
HE	EUR/kg	6.00	6.00	5.60	5.60	5.60	5.60	5.60
PE+SE+HT	EUR/kg	5.30	5.30	5.30	5.30	5.30	5.30	5.30
SR	EUR/kg	5.50	5.50	5.50	5.50	5.50	5.50	5.50
NB	EUR/kg	--	5.00	5.00	5.00	5.00	5.00	5.00
NU	EUR/kg	4.50	4.50	4.50	4.50	4.50	4.50	4.50
HM	EUR/kg	4.50	4.50	4.50	4.50	4.50	4.50	4.50
HM	EUR/kg α	32.50	32.50	32.50	32.50	32.50	32.50	32.50
TU	EUR/kg α	28.00	28.00	28.00	29.50	29.50	29.50	29.50
HS	EUR/kg α	27.00	27.00	27.00	27.00	27.00	27.00	27.00

Variety names:

HA – Hallertau Mittelfrueh

HE – Hersbruck

PE – Perle

SE – Spalt Select

HT – Hallertau Tradition

SR – Saphir

NB – Northern Brewer

NU – Nugget

HM – Hallertau Magnum

TU – Hallertau Taurus

HS – Herkules

Calm returned to the forward contract market in the autumn. There were only occasional offers for **Hersbruck** at 6.20 EUR/kg and **Hallertau Mittelfrueh** at 7.50 EUR/kg.

It was not until March 2015 that the market returned to life, with contracts being offered for **Saphir** hops. The prices offered were 5.50 EUR/kg for crop year 2015 and 5.30 EUR/kg for the years 2016 to 2019. In the high alpha segment, producers received offers of 29.00 EUR/kg alpha for contract extensions on **Herkules** hops from crop year 2021. In April 2015 new offers were made for **Hallertau Mittelfrueh** hops of 7.70 EUR/kg for crop year 2015, 7.90 EUR/kg for crop year 2016, and 8.00 EUR/kg for crop years 2017 and 2018. There were also offers of 5.30 EUR/kg for **Saphir** hops from crop years 2015 to 2019 and of 5.20 EUR/kg for **Northern Brewer** hops from crop year 2015 to 2020.

New contracts in May led to price adjustments. The price paid for **Saphir** hops was 5.50 EUR/kg and the prices for

Herkules fell for the first crop years (2015: from 27.00 to 25.00 EUR/kg, 2016: from 27.00 to 26.00 EUR/kg, 2017: unchanged at 27.00 EUR/kg) and rose for the later years (2018: from 27.00 to 28.00 EUR/kg, 2019 following: from 27.00 to 29.00 EUR/kg).

In June 2014 forward contract prices also rose slightly in the Tett nang region for the **Tett nang** and **Hallertau Mittelfrueh** varieties. Marketers offered 8.00 EUR/kg for **Tett nang** and 7.00 EUR/kg for **Hallertau Mittelfrueh** for crop years 2014 to 2020. Shortly before picking began, prices for both varieties rose by a further 0.50 EUR/kg. While the contract prices offered for **Hallertau Mittelfrueh** hops for crop years 2015 to 2020 remained unchanged at 7.50 EUR/kg until the time of going to press, there were several price increases for the **Tett nang** variety. From the beginning of March the price was 9.50 EUR/kg.



Spot market crop 2014

The market prices for non-contracted hops remained very stable for most varieties. Prices fell in early September for only a small number of varieties as a result of the crop yields being well above average. In addition to the annual pools and purchasing initiatives from the marketers, most of the non-contracted hops were sold by the producers at the following fixed prices: **Hallertau Mittelfrueh** 7.00 EUR/kg (falling to 4.00 EUR), **Saphir** 5.50 EUR/kg, **Hersbruck** 6.00 EUR/kg, **Spalt Select** 5.00 EUR/kg, **Hallertau Tradition** and **Perle** 4.80 EUR/kg (falling to 4.70 EUR), **Northern Brewer** 4.50 EUR/kg (falling to 4.00 EUR), **Hallertau Magnum** 4.00 EUR/kg or 29.00 EUR/kg alpha, **Hallertau Taurus** 24.50 EUR/kg alpha and **Herkules** 24.00 EUR/kg alpha. The flavour varieties were highly sought after. The highest price paid here was 11.00 EUR/kg. The hop growers did not hesitate to sell their hops. The 2014 crop is considered to be sold out.

Even before the harvest was over, offers were made to the growers in the Tettngang region to consign their non-contracted hops to a hop pool, in certain cases with

prepayment prices of 7.00 EUR/kg for the **Hallertau Mittelfrueh** variety and 7.50 EUR/kg with price adjustment to 8.50 EUR/kg for the **Tettngang** variety. At the beginning of the harvest there was also a fixed price of 9.00 EUR/kg for **Tettngang** hops. Most of the available non-contracted hops were consigned to the pools or sold at fixed prices within only a few weeks.

Alpha acids

The alpha acid values for the 2014 harvest show a marked improvement across the board over the previous crop year. Among the aroma varieties, however, only the **Perle** variety in the Hallertau region and the **Tettngang** and **Hallertau Mittelfrueh** varieties in the Tettngang region produced values that were higher than the average for the last 5 to 10 years. Among the high alpha varieties, the figures for **Hallertau Taurus** and **Herkules** were well above the average.

The greater production volume and the higher alpha acid values led to an increase in alpha yield of 1,269 mt. The volume of alpha harvested was 3,916 mt, which represents a year-on-year increase of 48 %.

The main German hop varieties had the following alpha acid contents: alpha acid values as is, as per EBC 7.4, in **freshly harvested hops**. All other alpha acid values mentioned in the Barth Report were recorded on the basis of % as is, EBC 7.4 ToP (Time of Processing).

Area	Variety	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ø 5 Years	Ø 10 Years
Hallertau	Hallertau Mfr.	4.4	2.4	3.9	4.4	4.2	3.8	5.0	4.6	3.3	4.0	4.1	4.0
	Hersbruck Spaet	3.5	2.2	2.6	2.9	3.4	3.5	4.5	3.0	1.9	2.1	3.0	3.0
	Saphir	4.1	3.2	4.6	5.1	4.5	4.5	5.3	4.4	2.6	3.9	4.1	4.2
	Perle	7.8	6.2	7.9	8.5	9.2	7.5	9.6	8.1	5.4	8.0	7.7	7.8
	Spalter Select	5.2	4.3	4.7	5.4	5.7	5.7	6.4	5.1	3.3	4.7	5.0	5.1
	Hallertau Tradition	6.3	4.8	6.0	7.5	6.8	6.5	7.1	6.7	5.0	5.8	6.2	6.3
	Northern Brewer	9.8	6.4	9.1	10.5	10.4	9.7	10.9	9.9	6.6	9.7	9.4	9.3
	Hallertau Magnum	13.8	12.8	12.6	15.7	14.6	13.3	14.9	14.3	12.6	13.0	13.6	13.8
	Nugget	11.3	10.2	10.7	12.0	12.8	11.5	13.0	12.2	9.3	9.9	11.2	11.3
	Hallertau Taurus	16.2	15.1	16.1	17.9	17.1	16.3	17.4	17.0	15.9	17.4	16.8	16.6
Herkules	--	--	16.1	17.3	17.3	16.1	17.2	17.1	16.5	17.5	16.9	--	
Elbe-Saale	Hallertau Magnum	14.4	12.4	13.3	12.2	13.7	13.1	13.7	14.1	12.6	11.6	13.0	13.1
Tettngang	Tettngang	4.5	2.2	4.0	4.2	4.2	4.0	5.1	4.3	2.6	4.1	4.0	3.9
	Hallertau Mfr.	4.8	2.6	4.3	4.7	4.5	4.2	5.1	4.7	3.3	4.6	4.4	4.3
Spalt	Spalt	4.3	2.8	4.6	4.1	4.4	3.7	4.8	4.1	2.8	3.4	3.8	3.9

The 2014 harvest produced consistently good alpha acid values. Above-average yields were recorded for the Perle, Northern Brewer, Hallertau Taurus and Herkules varieties.

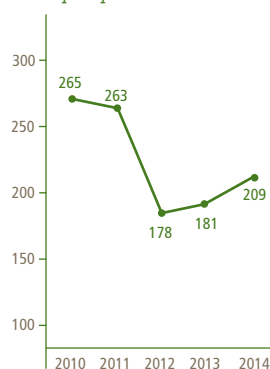
Values in %

The alpha acid table shows the average alpha acid values measured in freshly harvested hops by members of "Arbeitsgruppe Hopfenanalyse" (AHA) on the fixed date of 15 October. The members of AHA are the in-house laboratories of the German hop-processing plants, the Bavarian state institute of agriculture's hop department (Huell), BLQ Weihenstephan, VLB Berlin and Labor Veritas (Zurich).

These values constitute the basis for any adjustments of supply contracts containing "alpha clauses" between the brewing industry and the hop industry. The alpha clause was devised jointly by the German brewers' association and the hop industry association and was applied for the first time as a result of the 2003 harvest. It is a contractual provision used solely in forward contracts for aroma varieties. The average values serve as the basis for parties concluding new supply contracts containing an alpha clause.

CZECH REPUBLIC

Alpha production in mt



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2013	+/-	2014	2013	2014	2013	2014
Saaz	3,786	108	3,894	1.15	1.32	4,365.6	5,157.4
Sládek	240	30	270	1.95	2.01	467.5	542.3
Premiant	201	-14	187	1.78	1.89	357.0	353.9
Other Aroma	31	26	57	1.59	1.05	49.4	59.7
Total Aroma	4,258	150	4,408	1.23	1.39	5,239.5	6,113.3
Agnus	44	-4	40	1.82	1.96	79.9	78.4
Other High Alpha	4	-2	2	0.68	1.30	2.7	2.6
Total High Alpha	48	-6	42	1.72	1.93	82.6	81.0
Other	13	-3	10	0.59	0.77	7.7	7.7
CZECH REPUBLIC TOTAL	4,319	141	4,460	1.23	1.39	5,329.8	6,202.0

Farm structure

Although total acreage in the Czech Republic increased, four growers discontinued hop production in crop year 2014. On the remaining 115 farms, hops were grown on an average area of 39 ha, as opposed to 36 ha per farm in crop year 2013.

Acreage/production/alpha content

Since the last increase in hop-growing acreage in 2000 there had been a steady decline in acreage over the years from 6,108 ha to 4,319 ha in 2013, representing a decrease of 29 %. Crop year 2014 was the first in which acreage rose again. This increase in acreage applied to all three hop-growing regions in the Czech Republic.

The winter was unusually mild, without frost or snow. Consequently, the spring work had to be started earlier than usual. The second half of May was very cool for the time of year, with the result that the plants' early development was held back somewhat and a comparatively normal stage of growth was reached by the end of May. In June and July the weather was very changeable, both in terms of temperatures and with regard to precipitation. Thanks to warm summer temperatures and sufficient rainfall, the hop plants reached full maturity in August. Depending on precipitation volume, yields varied widely from region to region. In areas affected by the 2013 floods, those gardens with mainly old hop crowns produced disappointing yields. Overall, however, the yield of 1.39 mt/ha significantly exceeded the long-term average.

As in the previous year, the alpha contents, on the other hand, were below average (figures from crop year 2013 in brackets): **Saaz** 2.8 % (2.7 %), **Sládek** 5.2 % (5.6 %) and **Premiant** 7.0 % (7.2 %). The average alpha content for

all varieties was unchanged year on year at 3.4 %. The higher production volume in 2014 led to an increase of 15 % in alpha yield.

Market situation

At the beginning of the 2014 harvest, roughly 95 % of the production volume had already been contracted at prices ranging from 150 to 210 CZK/kg (5.40 to 7.60 EUR/kg) for **Saaz** hops and from 135 to 150 CZK/kg (4.90 to 5.40 EUR/kg) for **Premiant** and **Sládek** hops. There was brisk demand for the small quantities of non-contracted hops available. The market was cleared quickly, with prices rising. Growers were paid between 205 and 250 CZK/kg (7.40 to 9.00 EUR) for **Saaz** hops. Other varieties were virtually unobtainable. Demand for forward contracts for all varieties began already in October 2014. In view of the fact that contracting rates for the crop years up to 2017 were already very high, the new contracts were mainly confined to extensions of existing contracts to cover later years. Despite lucrative contract prices, acreage expansion in 2015 is expected to be very minor, at only 3.5 %. There is very little free acreage available and it is extremely difficult to obtain long-term tenancy agreements. Moreover, acreage expansion requires higher investments in harvesting equipment. What acreage expansion there is will be primarily for **Saaz** hops for which there is strong demand internationally. The forward contracting rates for Czech hops for the next several crop years are around 95 %.

The Czech hop growers' association is continuing to appeal to its members to replace old hop crowns with new plantings in order to achieve greater yield stability.

POLAND

Farm structure

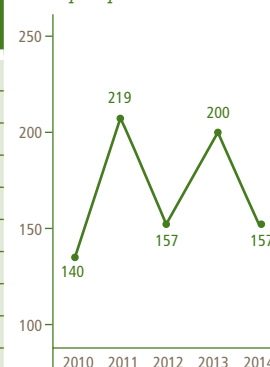
After 34 farms had given up hop growing the previous year, three growers returned to hop production in

2014. The average area planted with hops among the 634 farms remained at 2 ha per farm.



Variety	Development of acreage			Development of production			
	Acreage ha			Ø Yield mt/ha		Production mt	
	2013	+/-	2014	2013	2014	2013	2014
Lubelski	330	39	369	1.37	1.35	452.7	498.7
Hallertau Tradition	77	3	80	1.77	1.52	136.2	121.5
Sybilla	54	17	71	1.67	0.98	89.7	69.8
Perle	67	-5	62	1.61	1.46	108.1	90.8
Lomik	5	-1	4	1.42	0.83	6.5	3.3
Other Aroma	532	54	586	1.49	1.34	793.1	784.2
Hallertau Magnum	518	-12	506	2.02	1.66	1,047.6	841.1
Marynka	347	-45	302	1.65	1.45	570.9	438.3
Other Bitter/High Alpha	10	6	16	0.91	0.54	9.1	8.7
Total Bitter/High Alpha	875	-51	824	1.86	1.56	1,627.6	1,288.1
POLAND TOTAL	1,407	3	1,410	1.72	1.47	2,420.7	2,072.3

Alpha production in mt



Acreage/production/alpha content

Total acreage remained virtually unchanged. However, there were significant changes within the variety groups. Acreage increased by 10 % for aroma varieties, but decreased by 6 % for bitter/high alpha varieties. After a comparatively warm and relatively dry winter, the hops were strung around the middle of May. In the last week of May there was above-average rainfall. Due to the resulting rise in the ground water level, the hop gardens along the river Wisla (Vistula) were once again under water for six weeks, as they had been during the flood of the century in 2010. A large part of the crop was lost. In some gardens there was uncertainty as to whether new shoots would grow. Heavy rainfall returned at the end of June, with further damage being done to the hop plants by waterlogging. Those plants not affected by the flooding, on the other hand, benefitted from optimum growing conditions and displayed an excellent appearance and an abundant cone set. Although the yield per hectare was lower than in the previous year, it remained above the long-term average.

An extremely poor result of 2.2 % (2013: 4.0 %) was recorded for the alpha content of **Lubelski** hops. The figures for the **Marynka** and **Hallertau Magnum** varieties, on the other hand, with 7.5 % (2013: 7.6 %) and 11.3 % (11.3 %) respectively, were largely unchanged year on year. The lower production volume and the lower alpha content of the main aroma variety **Lubelski** resulted in a year-on-year decline in alpha yield amounting to 21 %.

Market situation

The share of the 2014 crop under contract is estimated to have been roughly 75 % to 80 % at the time of harvest. The contract prices ranged from 15.00 to 19.00 PLN/kg (3.55 to 4.50 EUR) for the **Lubelski** variety and between 12.00 and 14.00 PLN/kg (2.85 to 3.30 EUR) for most of the other varieties. For contracts based on supply agreements, producers received 18.00 to 20.00 PLN/kg (4.25 to 4.75 EUR) for the **Lubelski** variety and between 14.00 and

15.00 PLN/kg (3.30 to 3.55 EUR) on average for all the other varieties.

In recent years, demand for non-contracted Polish hops has been limited. 2014 was the first year in which demand was seen to be strengthening. After the harvest, all marketers made offers to the growers for their non-contracted hops. Over time, prices remained relatively stable. There was only a gradual and minor increase in the prices offered for **Lubelski** hops. The growers sold their entire crop and were paid the following prices: between 20.00 and 25.00 PLN/kg (4.75 to 5.90 EUR) for **Lubelski**, 15.00 PLN/kg (3.55 EUR) for the **Hallertau Tradition**, **Perle** and **Marynka** varieties and 14.00 to 15.00 PLN/kg (3.30 to 3.55 EUR) for **Hallertau Magnum**.

Offers for forward contracts were received at an early stage. Marketers were particularly interested in the aroma varieties **Lubelski** and **Sybilla** and in the high alpha varieties **Hallertau Magnum** and **Magnat**.

On the other hand, demand for contracts for the **Hallertau Tradition** and **Perle** varieties and for the traditional Polish variety **Marynka** has diminished considerably. Marketing these hops domestically is becoming more difficult and, due to their comparatively low alpha contents, they are not competitive on the international market.

Both the growers and the marketers are setting great store in the new Polish high alpha variety **Magnat**. Large numbers of young plants were delivered to hop farms for the first time in the spring of 2015. The potential of this variety will be seen in the field over the next two to three years.

Acreage is expected to rise by approx. 100 ha in crop year 2015. The resurgence in demand for Polish hops has put an end to a downward trend that had lasted since 2009. At the same time, the changes expected within the variety mix will lead to a higher proportion of young plants. Assuming an average yield, by the spring of 2015 roughly 80 % of the coming harvest volume had already been sold or committed through supply agreements.

The addition of rounded acreage figures leads to differences in totals in some cases.

SLOVENIA

Alpha production in mt



The addition of rounded production figures leads to differences in the total amount.

Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2013	+/-	2014	2013	2014	2013	2014
Aurora	583	-5	578	1.12	2.03	650.0	1,175.6
Celeia	313	90	403	1.18	1.70	369.2	683.5
Savinjski Golding	128	19	147	0.96	1.34	123.2	196.7
Bobek	90	14	104	1.24	1.75	111.9	182.0
Other Aroma	25	17	42	0.53	0.80	13.1	33.2
Total Aroma	1,139	135	1,274	1.11	1.78	1,267.4	2,271.0
Hallertau Magnum	17	-7	10	1.09	2.62	18.5	26.2
Other High Alpha	10	2	12	1.10	1.76	11.3	21.6
Total High Alpha	27	-5	22	1.09	2.14	29.8	47.8
SLOVENIA TOTAL	1,166	130	1,296	1.11	1.79	1,297.1	2,318.8

Farm structure

As in the previous year, 126 hop growers were officially registered in Slovenia. This figure includes farmers who own trellis systems, but no longer grow hops. Two growers discontinued hop production. Among the active producers, the average hop-growing area rose from 10 ha per farm in crop year 2013 to 12 ha per farm in crop year 2014.

Acreage/production/alpha content

Acreage increased by 11 %. The varieties most favoured for new planting were the especially sought-after fine aroma varieties such as **Celeia** and **Savinjski Golding**. The 2013/2014 winter season was free of frost and snow, which saw temperatures exceeding the long-term average by 4 % and rainfall exceeding it by as much as 350 %. Spring work began early thanks to the mild conditions in March. The cooler temperatures in May slowed the growth of the hop plants, bringing them back to a stage of development in line with the usual time frame. The weather in June, with somewhat cooler temperatures and sufficient rainfall, provided good growing conditions without any risk of early flowering for the susceptible variety **Savinjski Golding**. The summery temperatures and plentiful rainfall in July likewise brought excellent growing conditions for the hop plants. By July a better-than-average harvest was already foreseeable. Recurrent heavy rainfall in August, accompanied by relatively high temperatures, was ideal for plant development, but caused problems with regard to plant protection. Downy mildew infestation was very high among all varieties. In some gardens, plants were also affected by red spider mite infestation. The quality of the **Aurora** and **Celeia** varieties in particular was impaired by powdery mildew. The heavy rain softened the ground to such an extent that the trellis systems, weighed down by the heavy hop plants, reached the limits of their static stability. In mid-August a storm caused approx. 15 ha of trellises to collapse.

The yield of 1.79 mt/ha was 15 % higher than the long-term average. The extreme weather conditions and the very high disease pressure caused quality to fall below the level to which buyers are accustomed from Slovenian

hops, but this had no effect upon demand.

The alpha content was also far in excess of the long-term average. Never since records began, have such high levels been recorded (results for crop year 2013 in brackets): **Aurora** 10.0 % (6.2 %), **Celeia** 4.6 % (2.3 %), **Savinjski Golding** 4.4 % (2.1 %), **Bobek** 6.2 % (2.3 %). The above-average production volume and the high alpha contents led to an increase in alpha yield of 205 % compared with crop year 2013.

Market situation

The following forward contract rates have been estimated for hops harvested in 2014 (average prices in brackets): **Aurora** approx. 70 % (3.80 EUR/kg), **Celeia** approx. 85 % (4.20 EUR/kg), **Savinjski Golding** approx. 90 % (6.40 EUR/kg) and **Bobek** approx. 80 % (3.50 EUR/kg). Demand for the fine aroma varieties **Celeia** and **Savinjski Golding**, but also for **Bobek**, was also very strong before picking began. There was initial interest in the **Aurora** variety, too. However, once it became known that both the yield and the alpha content of this variety were expected to be at record levels, demand cooled on the part of the marketers. At the same time, interest in the fine aroma varieties increased partly due to the fact that the production volume of **Celeia** hops was lower than expected. The growers took advantage of the opportunity and only sold the less widely available fine aroma varieties in packages with larger quantities of non-contracted **Aurora** hops. The large number of trading companies and marketers known to operate in the Slovenian hop market vied with each other for the available non-contracted hops. The bid was won in each case by the highest bidder. This resulted in sales of various varieties at mixed prices of up to 8.00 or 9.00 EUR/kg. Virtually the entire market had been cleared by October.

Immediately following this, the growers received offers of forward contracts for fine aroma varieties with terms up to and including the 2021 harvest. Although there was no interest in **Aurora** hops, producers received offers for packages, as had been the case with non-contracted hops. No contracts were signed, however.

SLOVENIA



In January/February 2015, the prices offered rose by another 0.50 EUR/kg to 6.00 to 8.00 EUR, depending on the variety. Offers were also made to convert contracts from **Aurora** to fine aroma varieties which promise higher gross margins. However, the Slovenian producers expect prices to rise further and are fundamentally unwilling to conclude new contracts or accept contract conversions.

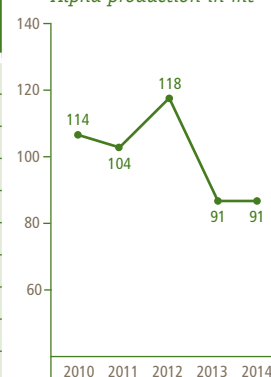
Acreage is expected to increase by approx. 110 ha in 2015, with a major part of the new plantings devoted to the **Celeia** variety. The forward contract rate for the coming harvest is estimated to be 70 %. The contract rates for **Savinjski Golding** and **Celeia** have already reached 90 % and 75 % of the expected production volume respectively.

ENGLAND



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2013	+/-	2014	2013	2014	2013	2014
Golding	162	-26	136	0.98	1.56	159.4	212.1
First Gold	116	-9	107	0.89	1.36	103.0	145.9
EK Golding	92	2	94	1.64	1.74	150.8	163.9
Fuggle	98	-14	84	1.27	1.55	124.5	129.8
Progress	54	5	59	1.06	1.69	57.1	99.8
Challenger	61	-4	57	1.56	1.84	95.1	105.0
Sovereign	52	5	57	0.81	1.36	42.0	77.3
Other Aroma	122	-10	112	1.51	1.53	183.8	171.3
Total Aroma	756	-51	705	1.21	1.57	915.7	1,105.1
Target	94	-8	86	1.36	1.75	128.2	150.7
Pilgrim	78	8	86	1.66	1.61	129.7	138.5
Other High Alpha	57	-5	52	1.11	1.20	63.1	62.5
Total High Alpha	229	-5	224	1.40	1.57	321.0	351.7
ENGLAND TOTAL	985	-56	929	1.26	1.57	1,236.7	1,456.8

Alpha production in mt



Farm structure

The number of hop farmers remained unchanged. As a result of a year-on-year reduction in total acreage, the average hop-growing area farmed by the 52 producers fell from 19 to 18 ha per farm.

Acreage/production/alpha content

The total hop acreage declined for the third year in succession. In this case, the year-on-year reduction amounted to 5.7 %.

In the hop-growing regions of East Kent, The Weald, East Essex and Surrey – all in the South-East of England – weather conditions were warm and mainly dry from April to late June. In July, too, there was a lack of rainfall and a rise in temperatures. It was not until early August that the summery temperatures were accompanied by the necessary rainfall, but this was too late for an above-average crop yield. In the western hop-growing areas of Herefordshire, Worcestershire and Shropshire, on the other hand, there was more precipitation throughout the growing period, which had a very positive effect on the yield. In general, production

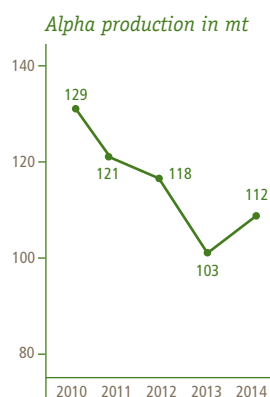
yields were above average for almost all varieties. The alpha acid contents, however, were significantly below the long-term averages. The results for the main varieties (2013 results in brackets): **Golding** 4.4 % (4.8 %), **First Gold** 6.8 % (8.2 %), **Fuggle** 4.5 % (4.8 %), **EK Golding** 4.7 % (5.4 %), **Target** 9.8 % (10.7 %). Nevertheless, thanks to the good harvest, the previous year's alpha yield was equalled.

Market situation

At the start of the 2014 harvest, around 80 % of the expected yield was under contract at prices averaging 7.00 GBP/kg (8.75 EUR) for aroma varieties and 5.00 GBP/kg (6.25 EUR) for high alpha varieties. The crop sold out completely. Spot hops fetched average prices of approx. 8.00 GBP/kg (10.00 EUR) for aroma varieties and approx. 2.00 GBP/kg (2.50 EUR) for bitter/alpha hops. In 2015, acreage is expected to increase by approx. 20 ha, with new plantings of **East Kent Goldings** and **Fuggles**, in addition to other aroma varieties. By April 2015, 85 % of the current crop was already under contract.

There may be differences in the sum totals due to acreage figures being rounded up or down.

SPAIN



Variety	Development of acreage Acreage ha			Development of production			
	2013	+/-	2014	Ø Yield mt/ha		Production mt	
Aroma	0	0	0	1.00	1.00	0.2	0.1
Nugget	432	51	483	1.79	1.75	772.3	846.5
Columbus	47	1	48	1.61	1.72	75.7	82.7
Hallertau Magnum	2	-1	1	1.17	1.69	2.1	2.2
Total High Alpha	481	51	532	1.77	1.75	850.1	931.4
Test Varieties	4	-1	3	0.97	1.65	3.4	4.3
SPAIN TOTAL	485	50	535	1.76	1.75	853.7	935.8

Farm structure

The number of growers in Spain has been declining since 2011. Only 218 growers remained in crop year 2014 – 10 fewer than in 2013. The average hop area cultivated per farm increased from 2.1 ha to 2.4 ha.

Acreage/production/alpha content

Acreage was increased by 10 ha. Virtually all the new plantings were of the **Nugget** variety. Following the reduction in acreage in 2013 due to farmland reallocation measures, new parcels of land were available to growers again. In addition, an initiative has been launched to introduce hop growing in new regions. This project is taking place in the province of Tarragona (Catalonia).

In January and February 2014 there were heavy rains, while in March weather conditions were warm and dry. As a result of further heavy rainfall, completion of spring work was considerably delayed. In the

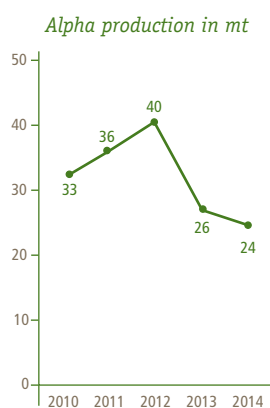
summer it was not as warm as usual, which led to later flowering than normal. The temperature in August was changeable, and therefore the cones ripened unevenly. The plants were unable to make up for the delay in flowering.

The average yield in Spain was similar to that of the previous year, thus remaining below the long-term average. The alpha acid content for the **Nugget** variety, on the other hand, was almost equal to the long-term average with 11.8 %, as it had been the previous year with 11.9 %. The year-on-year increase in alpha production of 8 % is ultimately due almost entirely to the increase in acreage.

Market situation

The growers were paid an average of 4.10 EUR/kg for their hops. The crop is sold out. Hop acreage is expected to remain unchanged in crop year 2015.

FRANCE



Area	Variety	Development of acreage Acreage ha			Development of production			
		2013	+/-	2014	Ø Yield mt/ha		Production mt	
Alsace	Strisselspalt	115	65	180	1.24	1.16	143.0	208.0
	Aramis	49	-2	47	1.86	2.03	91.0	95.6
	Hallertau Tradition	42	-7	35	1.83	1.95	77.0	68.2
	Other Aroma	105	-1	104	1.63	1.39	171.0	144.1
	Total Aroma	311	55	366	1.55	1.41	482.0	515.9
	Bitter/High Alpha	45	-6	39	2.18	2.32	98.0	90.6
	Total Alsace	356	49	405	1.63	1.50	580.0	606.5
North	Aroma	11	1	12	1.23	1.16	13.5	13.9
	Bitter/High Alpha	14	1	15	1.29	1.05	18.1	15.8
	Total North	25	1	26	1.26	1.14	31.6	29.7
FRANCE TOTAL		381	50	431	1.61	1.48	611.6	636.1

The addition of rounded acreage figures leads to differences in totals in some cases.

Farm structure

The withdrawal from hop farming by three producers in the Alsace region and one in the North region left 54 hop farms in operation in France in crop year 2014. At

the same time there was an increase in acreage. The area planted with hops grew from an average of 7 ha per farm in crop year 2013 to 8 ha per farm in 2014.



Acreage/production/alpha content

Hop acreage was expanded by 13 % in response to growing demand. This expansion was almost exclusively devoted to **Strisselspalt** hops, with new plantings of this variety accounting for 70 ha.

Temperatures and precipitation were comparable with those seen in Central Europe. To that extent, the hop plants had similar growing conditions to those in Germany. However, in France this led to only average yield per hectare and below-average alpha acid contents. The alpha value of the main variety **Strisselspalt** rose only slightly from 1.3 % in crop year 2013, to 1.6 % in 2014. The alpha yield for the entire crop was 7 % down year on year.

Market situation

At the time of picking, approx. 60 % of the 2014 harvest volume had already been sold under contract at an average price of 5.00 EUR/kg. The prices producers will receive from the growers' association for their non-contracted hops were not known at the time of going to press. Virtually the entire crop is sold out.

A slight increase in acreage amounting to 10 ha is expected for 2015. In the spring, the forward contract rate for 2015 was 65 %.

In the Alsace region, several new flavour hop varieties were planted on an area of 0.5 ha each for test purposes. The new flavour variety **Barbe Rouge** is already grown on 5 ha.



Farm structure

The number of growers (decision-making entities) in the Pacific Northwest states (PNW) has remained relatively constant. One new grower entered the industry for crop 2014, bringing the total to 72 growing entities. As acreage has steadily increased over the past years with essentially the same grower base, the average farm size continues to trend upwards, with an increase from 201 ha in 2013 to 214 ha in 2014.

To accommodate the significant growth in acreage in recent years, many PNW growers have invested heavily in harvesting infrastructure to increase harvesting capacities and efficiencies, as well as to improve hop quality. Some of the larger projects in this connection include the installation of new multi-million dollar picking and drying facilities. Several growers have also expanded acreage through land acquisitions, although the tightening availability of land is resulting in significant escalations of land prices. While most of the capital investment and attention up to now has been aimed at increasing production capacity, growers are also becoming increasingly concerned with the future availability of labour and the rising labour costs in the PNW states.

Acreage/production/alpha content

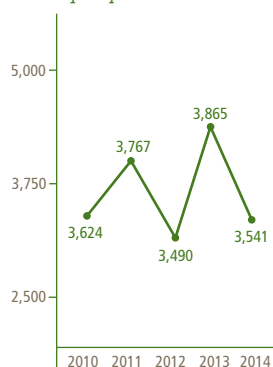
The US acreage continued an upward trend in 2014, with an expansion of 1,129 ha (8 %) in the PNW states, as reported in the annual crop survey conducted by the Department of Agriculture (USDA). This represents the third consecutive year of acreage expansion, bringing the total added since crop year 2011 to 3,328 ha (28 %). For crop year 2014, Oregon and Idaho expanded acreage by 13 % and 11 % respectively, while Washington expanded by 7 %, but remains the dominant hop-growing state with 76 % of the total US acreage. The expansion continues to be driven

primarily by strong demand from the US craft segment, which is also driving the shift away from high alpha varieties in favour of craft-oriented aroma/flavour hops. With crop 2014, the US shed 825 ha (12 %) of high alpha varieties, while adding 1,954 ha (28 %) of aroma/flavour varieties. While crop 2013 acreage was essentially a 50/50 split between high alpha and aroma/flavour varieties, the acreage balance shifted for crop 2014, with high alpha varieties dipping to a 41 % share relative to aroma/flavour acreage at 59 %. However, due to the greater yields generally produced by the high alpha varieties, the total production volume for crop 2014 of 32,202.7 mt was nearly an equal 50/50 split between high alphas and aroma/flavour varieties.

As in crop year 2013, the most significant reduction in high alpha acreage again came from the **Galena/Chelan/Super Galena** variety group which dropped by 295 ha, followed by reductions of 175 ha for **Nugget** and 151 ha for **Millennium**. Furthermore, **CTZ** and **Summit** acreage also contracted by 286 ha collectively. On the aroma/flavour side, the varieties seeing the largest acreage increases in 2014 were similar to the varieties expanded in 2013. **Cascade** led the way with an increase of 539 ha, surpassing **CTZ** in total acreage and becoming the most widely grown variety in the US with 17 % of the total acreage. It has been several decades since an aroma variety held this top position. Acreage expansion was also prevalent among other aroma/flavour varieties sought after by the craft brewing segment, including **Centennial** with 477 ha, **Simcoe**® with 236 ha, **Citra**® with 194 ha, and **Mosaic**® with 117 ha. Proprietary varieties developed by private breeding programmes continue to experience strong craft-driven demand and collectively accounted for 21 % of the total aroma/flavour acreage for crop 2014.

USA

Alpha production in mt



Due to the conversion of acres into ha and from lbs into mt, there may be minor statistical deviations and differences in the sum totals caused by figures being rounded up or down.

Area	Variety	Development of acreage			Development of production				
		Acreage ha			Ø Yield mt/ha		Production mt		
		2013	+/-	2014	2013	2014	2013	2014	
Washington	Cascade	1,715	243	1,958	1.93	2.04	3,311.4	4,001.9	
	Centennial	756	392	1,148	1.74	1.51	1,317.4	1,732.8	
	Simcoe®	525	211	736	1.89	1.73	990.3	1,272.3	
	Citra®	524	152	676	1.58	1.76	825.9	1,189.3	
	Amarillo®	332	8	340	2.25	2.09	745.8	709.1	
	Cluster	325	-30	295	2.18	2.05	708.6	602.6	
	Mosaic®	155	117	272	1.91	2.49	296.1	677.2	
	Willamette	211	30	241	1.39	1.27	293.0	305.0	
	Palisade®	53	37	90	3.15	2.77	167.0	249.7	
	Other Aroma	665	253	918	1.53	1.65	1,019.2	1,515.6	
	Total Aroma		5,261	1,411	6,672	1.84	1.84	9,674.7	12,255.5
	CTZ		2,272	-203	2,069	3.12	3.05	7,095.7	6,308.3
	Summit®		1,151	-130	1,021	2.10	2.36	2,416.2	2,408.0
	Chinook		573	-48	525	2.23	2.03	1,275.3	1,067.8
	Apollo		277	6	283	3.36	2.97	930.0	841.1
	Super Galena		315	-70	245	3.15	2.87	993.6	704.2
	Bravo		189	47	236	3.44	3.10	650.2	733.2
	Galena		178	-54	124	2.21	2.02	393.0	250.0
	Nugget		160	-53	107	2.16	1.77	346.0	190.3
	Warrior®		73	5	78	2.43	2.04	177.1	158.6
Millennium		170	-124	46	2.54	2.24	431.7	102.3	
Other High Alpha		332	-60	272	1.59	1.17	527.2	318.7	
Total High Alpha		5,690	-684	5,006	2.68	2.61	15,236.0	13,082.5	
Total Washington		10,951	728	11,679	2.27	2.17	24,910.7	25,338.0	
Oregon	Cascade	171	218	389	1.66	1.57	284.5	611.1	
	Willamette	224	4	228	1.67	1.63	374.0	371.7	
	Centennial	101	78	179	1.77	1.23	179.0	220.0	
	Mount Hood	89	20	109	1.77	1.63	157.1	176.9	
	Crystal	72	34	106	2.35	2.11	170.5	223.2	
	Golding	79	16	95	1.28	1.12	101.0	105.7	
	Sterling	49	4	53	1.83	1.60	89.7	83.9	
	Tettnang	50	-10	40	1.11	1.25	55.7	49.7	
	Perle	22	18	40	1.34	1.12	29.4	45.4	
	Other Aroma	255	-26	229	2.09	1.48	533.4	337.8	
	Total Aroma		1,112	356	1,468	1.78	1.52	1,974.3	2,225.4
	Nugget		675	-123	552	2.30	2.22	1,552.4	1,222.9
	Super Galena		63	-12	51	2.85	2.59	179.8	130.9
	Other High Alpha		87	32	119	1.97	1.26	171.4	149.6
	Total High Alpha		825	-103	722	2.31	2.08	1,903.6	1,503.4
Total Oregon		1,937	252	2,189	2.00	1.70	3,877.9	3,728.8	
Idaho*	Total Aroma	689	187	876	1.23	1.65	850.2	1,442.3	
	Total High Alpha	677	-38	639	2.68	2.65	1,815.2	1,693.6	
	Total Idaho	1,366	149	1,515	1.95	2.07	2,665.4	3,135.9	
Total Aroma		7,062	1,954	9,016	1.77	1.77	12,499.2	15,923.2	
Total High Alpha		7,192	-825	6,367	2.64	2.56	18,954.8	16,279.5	
USA TOTAL		14,254	1,129	15,383	2.21	2.09	31,454.0	32,202.7	

* As the growers in the Idaho region have only had to report their total acreage and total crop volume since 2002, the variety group distribution has been estimated.

Although the total US hop acreage in the Pacific Northwest states for crop 2014 increased by 8 % over the prior season, the total production volume increased by only 2 % over crop year 2013. The overall

average yield/ha was down 5 % from the previous season, which was partly due to the effect of first-year production on the new plantings ("babies"), but was also due to below-average yields of mature yards.



While growing conditions were favourable during the spring and early summer months, temperatures turned unseasonably warm in July and into early August, with many record high temperatures being set during this period. Although water supply remained sufficient, the hot summer negatively impacted late-season growth of several early-maturing aroma varieties and baby plantings, and to a lesser extent also affected yields of the later-maturing high alpha varieties. The heat resulted in lighter cone weights as well as in lower alpha acid content for most varieties relative to their long-term averages. Despite below-average yields, production of aroma/flavour varieties increased by 3,424 mt (27 %) due to the larger acreage, while production of high alpha varieties dropped by 2,675 mt (-14 %).

For the first time in decades, the high alpha varieties are no longer the variety group with the highest acreage.

The USA produced 3,541 mt of alpha: This represents a reduction of about 324 mt compared to crop year 2013, but is still slightly more than the volume of alpha produced by the poor-yielding 2012 crop. However, alpha production from the traditional high alpha varieties decreased by 525 mt from the previous year, whereas alpha from aroma/flavour varieties increased by about 201 mt. The alpha yield from aroma/flavour hops now represents approximately one-third of total US alpha production, although it is not utilised in the same manner as the alpha from the traditional high alpha varieties.

Acreage for the main varieties has developed as follows over the past five years:

Variety	2010 ha	2011 ha	2012 ha	2013 ha	2014 ha
Cascade	799	1,002	1,343	2,140	2,679
Centennial	177	308	720	880	1,357
Simcoe®	96	200	382	527	763
Citra®	46	97	218	533	727
Amarillo®	115	185	308	558	582
Willamette	1,349	677	646	435	469
Cluster	159	195	221	325	299
Mosaic®	-	-	36	155	272
Crystal	-	54	118	169	191
Mount Hood	101	125	140	157	170
Golding	93	94	111	121	133
Palisade®	151	129	111	57	90
Other Aroma	668	670	769	1,005	1,286
Total Aroma	3,754	3,736	5,123	7,062	9,016
Columbus-Tomahawk-Zeus (CTZ)	3,510	3,203	2,512	2,493	2,337
Summit®	1,261	1,004	1,102	1,151	1,021
Chinook	254	308	619	722	712
Nugget	1,003	999	1,009	834	659
Chelan / Super Galena	946	953	928	608	399
Apollo	334	463	445	404	399
Bravo	168	283	237	241	287
Galena	841	614	427	210	124
Magnum	-	26	23	77	115
Millennium	253	210	208	197	46
Other High Alpha	339	256	290	255	268
Total High Alpha	8,909	8,319	7,800	7,192	6,367
USA TOTAL	12,663	12,055	12,923	14,254	15,383

The acreage for individual varieties has in some cases been estimated due to the fact that only the total acreage is reported by Idaho.

There may be differences in the sum totals due to acreage figures being rounded up or down

Crop development

Washington: The PNW mountains experienced lower-than-normal precipitation during the early winter months. However, they quickly caught up to normal levels when above-average snowfall fell throughout January and February. Despite the late arrival of the winter snowfall, snowpack levels were sufficient to provide a full supply of water to the Yakima Valley

for the crop 2014 growing season. Weather conditions in early March were favourable and allowed root digging and planting activities to commence earlier than normal, providing growers with optimism for a good “baby” crop. Temperatures in May and June were slightly warmer than normal, which allowed for good crop development during the early growth stages.



However, once the bloom and cone development started in July, extremely high temperatures set in, which slowed further cone development and caused below-average yields for the state.

Oregon: The winter months in Oregon also brought less precipitation to the hop-growing region and temperatures were slightly above normal. These weather conditions persisted in the spring months and allowed growers to string the hops 7 to 10 days earlier than usual. As the spring remained relatively dry, many growers began irrigating the crop about three weeks earlier than normal. Nevertheless, water supply remained plentiful throughout the growing season. As in Washington, crop yields were below average due to the unseasonably warm conditions and record high temperatures that occurred from mid-July through early August.

Idaho: Winter snowpack levels provided sufficient water supply for the hop irrigation needs in Idaho. Weather conditions were favourable during the spring months, which allowed timely completion of trellis installations and planting of new fields. Yields were below average due to the unexpected heat wave that occurred in mid-summer, although

growers were able to keep insects and powdery mildew under control. In late August a severe windstorm downed 55 ha of trellis; however, it proved possible to harvest these hops with minimal loss of yield.

Quality: Despite the lower yields caused by the warm growing season, the summer heat did not appear to have any adverse effect on the quality of the crop other than reduced alpha contents. The heat increased spider mite infestation in Washington and Idaho. However, growers were able to keep this in check by means of additional controls. The visual quality of the crop was generally unaffected by disease and insect damage and was comparable on the whole to the previous crop. The average seed count dropped slightly to 0.64 % compared to 0.68 % in crop 2013. The average leaf-and-stem content was slightly higher at 0.30 %, compared to 0.28 % the previous season. Overall, the crop was harvested at appropriate dates depending on the individual varietal maturities. However, as the acreage expansion and varietal shift continues, growers will be challenged to provide an appropriate balance of harvest capacity and varietal mix to ensure the proper harvest timing for all varieties.

Alpha acid table

Variety	2010	2011	2012	2013	2014	Average
Willamette	4.8 %	5.6 %	4.9 %	4.8 %	4.9 %	5.0 %
Cascade	6.5 %	6.9 %	6.7 %	7.1 %	6.0 %	6.6 %
Cluster	6.8 %	7.3 %	6.7 %	7.0 %	6.5 %	6.9 %
Galena	11.5 %	12.5 %	12.6 %	13.0 %	12.8 %	12.5 %
Nugget	12.3 %	13.2 %	13.8 %	14.4 %	13.5 %	13.4 %
Columbus/Tomahawk/Zeus (CTZ)	14.1 %	14.7 %	15.3 %	15.5 %	14.5 %	14.8 %
Summit®	16.3 %	16.1 %	15.9 %	16.7 %	15.8 %	16.2 %
Bravo	15.0 %	15.0 %	15.0 %	15.2 %	14.6 %	15.0 %
Apollo	16.7 %	16.7 %	17.5 %	17.9 %	18.2 %	17.4 %

Contract market

The US contract market for crop 2014 and forward years quickly developed after completion of the crop 2013 harvest and remained active throughout most of 2014. Strong demand from the US craft segment continued to drive market activity which was heavily focused on aroma/flavour varieties including **Cascade**, **Centennial**, **Citra**®, **Simcoe**® and **Mosaic**®. This led to considerable acreage expansion of these varieties for crop 2014, with contracts going 3 – 5 years out. **Cascade** pricing held in the range of 9.90 – 10.50 USD/kg throughout most of the spring and summer months, while pricing was in the range of 11.00 – 13.20 USD/kg for the lower yielding **Centennial** variety. Additional contracts for aroma/flavour hops were written during 2014, including **Golding**, **Mt. Hood**, **Willamette**, **Crystal** and others, although generally for smaller quantities. Contract pricing for many of the public

aroma/flavour hops provided growers with returns ranging between 19,000 and 22,000 USD per ha. In comparison, pricing for the proprietary varieties in highest demand brought returns of 22,000 – 27,000 USD per ha, depending upon the variety, although many of these varieties were contracted under a pool or other non-traditional pricing arrangements. With many of the proprietary varieties gaining in popularity within the US craft segment, acreage for these varieties has grown to a 31 % share of the total US crop.

In contrast to the contracting activity for aroma/flavour hops, the alpha market remained fairly quiet throughout 2014, with very few alpha contracts being written. The small amount of alpha contracting was very sporadic, with no signs of any market momentum developing. Contract pricing for **CTZ** appeared to



fluctuate in the 44.00 – 53.00 USD/kg alpha range and contracts were generally signed for crop 2016 and beyond. Additionally, **Nugget** was also sold early in the year in the 6.60 – 7.50 USD/kg range for crop years 2014 to 2017, although pricing jumped to 9.25 – 9.60/kg later in the summer as supplies tightened.

Market activity for future crops slowed only briefly during the crop 2014 harvest and resumed shortly afterwards with a continued focus on aroma/flavour hops for crop year 2015 and beyond. **Centennial**, **Citra**®, **Simcoe**® and **Mosaic**®, and to a lesser extent **Cascade**, led most of the activity, with contract pricing generally remaining at pre-harvest levels for many of the public varieties. Pricing for several proprietary varieties increased to levels providing grower returns of approx. 27,000 – 30,000 USD/ha or more, depending upon the variety, supporting thus new acreages needed for crop 2015 and beyond. Other than some additional smaller quantities of **Nugget** contracted after the harvest, alpha market activity remained relatively quiet until the end of the year.

Spot market crop 2014

With nearly 100 % of crop 2014 having been contracted and the yield of the crop being below average, spot hop volumes were not in plentiful supply this season. Demand was high for **Centennial** spots with any existing quantities being quickly sold at pricing of 22.00 – 26.50 USD/kg, while small quantities of other aroma/flavour hops were sold at between 11.00 – 13.50 USD/kg. **Cascade** pricing initially started at 17.60 USD/kg, but dropped to about 13.20 USD/kg

as spot market activity for this variety slowed. High alpha spot hops were also in short supply. Some **CTZ** spot hops were sold at 44.00 USD/kg alpha. The pricing level for **Nugget** hops was in the 8.80 – 9.90 USD/kg range, although high alpha spots generally were slow to sell.

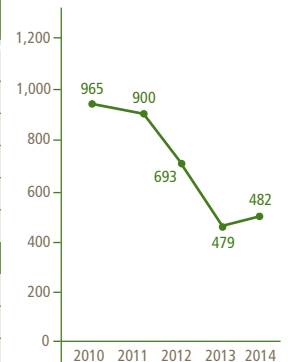
Outside the Pacific Northwest

As a result of the rise of the craft brewers across the US and their desire to source hops locally, the number of growers outside the Pacific Northwest (PNW) region has grown steadily and is now estimated to be well over 300. This figure includes farms ranging in size from significantly less than one hectare to 80 ha. Many of these growers are new to the industry, with less than five years’ experience in farming hops. Most of the production centres around are growing **aroma/flavour hops**, including **Cascade**, **Chinook**, and **Centennial**, with some **high alpha hops**, including **Nugget**. The majority of varieties grown are generally available (public) varieties from the PNW states. Increasingly, new breeding programmes are being initiated by universities. While there are no official figures available, it is estimated that the planted acreage for crop 2014 totalled approx. 500 ha, with perhaps as much as 75 % of that grown in the state of Michigan. Because hops grown outside the PNW region are almost exclusively destined for local breweries, this has allowed many of these new growers to enter the hop market with little infrastructure, mostly selling wet hops. However, investments have been and are currently being made in drying and even pelletizing facilities.



Area	Variety	Development of acreage			Development of production			
		Acreage ha			Ø Yield mt/ha		Production mt	
		2013	+/-	2014	2013	2014	2013	2014
Xinjiang	Tsingtao Flower	989	-66	923	2.59	2.38	2,560.0	2,195.0
	Marco Polo	247	0	247	3.00	3.00	740.0	740.0
	SA-1	200	0	200	2.50	2.50	500.0	500.0
	Kirin Flower	240	-67	173	1.65	2.49	395.0	430.0
	Other Aroma	9	15	24	0.56	2.29	5.0	55.0
	Total Xinjiang	1,685	-118	1,567	2.49	2.50	4,200.0	3,920.0
Gansu	Tsingtao Flower	852	-69	783	2.82	2.79	2,404.0	2,183.0
	Nugget	102	-12	90	1.19	1.52	121.0	137.0
	High Alpha	175	21	196	2.50	3.12	437.0	610.6
	Aroma	17	2	19	1.88	1.92	32.0	36.4
	Total Gansu	1,146	-58	1,088	2.61	2.73	2,994.0	2,967.0
	Total Aroma	226	17	243	2.38	2.43	537.0	591.4
	Total Bitter	2,081	-202	1,879	2.58	2.56	5,359.0	4,808.0
	Total High Alpha	524	9	533	2.48	2.79	1,298.0	1,487.6
	CHINA TOTAL	2,831	-176	2,655	2.54	2.59	7,194.0	6,887.0

Alpha production in mt





CHINA

There are no reliable statistics on acreage and production volume in China. The figures presented here which, due to the size of the Chinese hop-growing regions, are often based on estimates, have been gathered using our own sources.

Farm structure

In crop year 2014 there were 37 farms in China on which hops were grown. On average, each of these farms cultivated hops on an area of 72 ha. Due to the high proportion of manual work, labour costs in hop farming in China are higher than in any other country.

The linear distance between the two hop-growing regions **Xinjiang** and **Gansu** is 1,200 km. The two must therefore be considered separately.

The number of hop farms in the **Xinjiang** region remained unchanged. Due to the fall in acreage, the average hop-growing area on the 24 farms dropped from 70 ha per farm in crop year 2013 to 65 ha per farm in crop year 2014. In the **Gansu** region, three farms withdrew from hop production. The remaining 13 farms cultivated an average hop acreage of 84 ha per farm, up from 72 ha per farm in 2013.

Acreage/production/alpha content

China's hop-growing acreage decreased by 6 %. The reductions mostly affected the main variety **Tsingtao Flower** (-135 ha, or -7 %). This variety has seen its acreage halved since 2009. The steady increase in the use of picking machines is responsible for very high crop losses with this variety in particular. The **Kirin Flower** variety suffered an even greater decline in percentage terms, with 28 % (-67 ha). The acreage planted with this variety has shrunk by 65 % since 2009. The decline in acreage totalled 7 % in the **Xinjiang** hop region and 5 % in **Gansu**.

The climatic conditions in the **Xinjiang** region were very unfavourable for agricultural produce, including hops, in crop year 2014. The plants suffered frost damage in the spring and conditions were generally much too dry. As a result, irrigation capacity was used to the full. Nevertheless, plant development was held back considerably. The average yield of 2.50 mt/ha failed to equal the long-term average.

In the **Gansu** region, growing conditions for hops were good. Only the very low night-time temperatures in March and April had an adverse influence on growth. In the end, the overall yield of 2.73 mt/ha was slightly above the long-term average.

The low yield for the **Tsingtao Flower** variety in both growing regions is due to the increased use of picking machinery.

The hops harvested in 2014 produced an average alpha acid content of 7 %, slightly up year on year from 6.7 %. The average alpha acid content of **Tsingtao Flower** hops was 5.8 %, as opposed to 5.6 % in crop year 2013. The alpha yield rose from 479 mt in crop year 2013 to 482 mt in crop year 2014. As a result of acreage reduction, the rise in total yield was less than one per cent in spite of the higher alpha content and better average yield.

Market situation

In China there is nothing comparable to the forward contract market in Europe or the USA. Instead, it is customary for farms and buyers to conclude purchase agreements. These agreements only contain specifically defined quantities and qualities. The actual price is negotiated at a later date.

Xinjiang region: The share of hops sold at time of harvest on the basis of purchase agreements in crop year 2014 was 30 % of the production volume. The final settling price was 25.00 CNY/kg (3.25 EUR) on average. Around 10 % of the 2014 crop was reported to be unsold in April 2015. In addition, 1,000 mt from earlier harvests still remain unsold in various warehouses. Hops were harvested for the last time and hop growing was discontinued on at least three farms in 2014. Several other farms plan to reduce their hop-growing area in crop year 2015. The resulting total acreage reduction is estimated at between approx. 15 % and 20 %.

Gansu region: Some 85 % of production volume was sold on the basis of purchase agreements in crop year 2014. The farmers settled at average prices of 24.00 CNY/kg (3.15 EUR) for the **Tsingtao Flower** variety and 26.00 CNY/kg (3.40 EUR) for the other varieties. Residual stocks of approx. 10 % of production volume were available in April 2015, as were stocks of approx. 1,600 mt from the 2010 and 2011 harvests which are stored in the form of extract. Acreage is expected to remain stable up to the coming harvest.



CROP 2015: AUSTRALIA

Farm structure

The number of hop farmers remained unchanged for the sixth year in succession. As a result of an increase in acreage, the average hop-growing area per farm rose from 51 ha in crop year 2014 to 61 ha in crop year 2015.

Acreage/production/alpha content

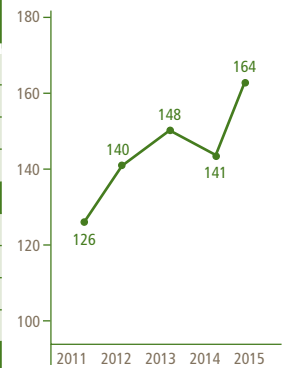
The greatest growth in acreage was registered among the new varieties **Galaxy™**, **Ella™**, **Summer™** and **Enigma™**. In total, acreage increased by 20 %. It was generally cooler and drier than usual in Australia

CROP 2015: AUSTRALIA

Area	Variety	Development of acreage			Development of production			
		Acreage ha			Ø Yield mt/ha		Production mt	
		2014	+/-	2015	2014	2015	2014	2015
Tasmania	Super Pride	48	2	50	2.23	2.27	106.9	113.6
	Pride of Ringwood	21	8	29	2.99	2.68	63.6	77.6
	Other	105	56	161	2.21	2.19	231.2	352.8
	Total Tasmania	174	66	240	2.31	2.27	401.7	544.0
Victoria	Super Pride	48	3	51	2.67	2.45	129.0	125.0
	Pride of Ringwood	47	0	47	2.02	2.02	95.0	95.0
	Topaz	47	-27	20	3.55	3.53	168.4	70.5
	Other	91	39	130	3.13	2.82	284.7	366.0
	Total Victoria	234	14	248	2.90	2.65	677.1	656.5
AUSTRALIA TOTAL		408	80	488	2.65	2.46	1,078.8	1,200.5



Alpha production in mt



during the 2015 growing season. In the Bushy Park Estates in Tasmania, the below-average temperatures in the spring benefited the more robust varieties mainly grown there.

The lack of sunshine led to significant delays in cone development. In the end, all varieties were harvested seven to ten days later than in previous years. The unsettled weather conditions were reflected in the variations in yield among the individual hop varieties. Further north, at Rostrevor Hop Gardens in Victoria, the first significant rainfall arrived late in the season. During the drought there was sufficient water available for irrigation purposes, however. Picking began, as expected, on 1 March. The slow picking rate and a sudden change in weather conditions towards the end of the harvest led to loss of yield.

The alpha content of most of the varieties in crop year 2015 lay within the long-term average (figures for previous year in brackets): **Pride of Ringwood** 9.0 % (8.9 %), **Super Pride** 14.1 % (13.9 %) and, above them, **Topaz** with 16.5 % (15.6 %). The alpha yield rose by 16 %.

Market situation

Roughly 85 % of the volume produced in crop year 2015 had been contracted by March. Major investments are being made to modernise hop farming equipment, increase the acreage for the **Galaxy™**, **Ella™**, **Vic Secret™** and **Enigma™** varieties and advance the breeding programme for additional new varieties. The contract rate for hops picked in crop year 2016 already stands at 80 %.

The addition of rounded acreage figures leads to differences in totals in some cases.

HOP PLANT DEVELOPMENT 2015



Germany

The winter of 2014/2015 was too mild. Precipitation levels, on the other hand, were well balanced. The spring work could begin under good conditions and all the spring work was completed according to schedule without any time pressure.

Most farms began training the hop shoots on around 27 April and were able to complete the work, with few exceptions, in the second week of May. Sufficient rainfall in late April / early May ensured normal plant growth and, as a result, plant development by the end of May was within the long-term average.

In the late afternoon of 29 May 2015 a thunder and hailstorm cut a swath across the central Hallertau region. Initial estimates put the area of hops affected to a greater or lesser extent at approx. 1,200 to 1,400 ha. The damage is very localised. The resulting shortfall in yield is difficult to estimate at the moment, as this will depend greatly on the weather and growth patterns during the course of the season.

USA

The winter of 2014/2015 proved to be one of the warmest and driest in the Pacific Northwest in some time. There was very little snowfall in the Cascade Mountain Range over the course of the winter, resulting in restricted water availability to some growers in the Yakima Valley for the 2015 crop growing season. Curtailment of supply during the cooler spring months will allow them access to water during the warmer late-summer months. Hop growers do not anticipate that the hop crop will suffer from lack of water. Growers in Oregon and Idaho will likely get through the summer with little or no impact from restricted water supply. The warm dry winter and spring allowed growers to erect new trellising almost uninterruptedly through that entire period. Continued favourable weather also allowed them to complete their spring work in good time. Potted plants are in, training is complete and the hops are growing slightly ahead of normal pace.

Germany

The number of farms growing hops for crop 2015 fell, with the departure of 21 growers, leaving a total of 1,171 hop farms in Germany. Hop acreage, on the other hand, increased once more. Total acreage increased by 539 ha, or 3 %, to 17,847 ha. The most significant changes concerned the **Herkules** variety which has seen its acreage grow by 530 ha (+15 %) and today accounts for 23.3 % of the total hop acreage in Germany, the **Hallertau Magnum** variety whose acreage continued the downward trend that began in crop year 2009 and shrank by a further 289 ha (-11 %) and **Mandarina Bavaria**, a flavour hop cultivar bred at the Huell research institute, whose acreage increased by 108 ha, thus doubling in size year on year.

USA

As reported by the US Department of Agriculture (USDA), the total hop acreage in the USA for crop 2015 increased by 2,418 ha to 17,801 ha. This represents an increase of 16 %. Aroma/flavour acreage increased by 3,153 ha (35 %) and now stands at 12,170 ha, which represents nearly 70 % of the total US hop acreage. Conversely, high alpha varieties continued to lose ground, dropping by 735 ha (-12 %) for crop 2015, which reduces this once-dominant segment to a share

of only 30 % of total US acreage today. The varieties seeing the largest increases for crop 2015 are **Simcoe**® at +559 ha (73 %), followed closely by **Centennial** at +551 ha (41 %), **Mosaic**® at +453 ha (167 %), and **Citra**® at +442 ha (61 %). The high alpha varieties in greatest decline were **Summit**® at -338 ha (-33 %), **CTZ** -181 ha (-8 %) and **Super Galena**® at -155 ha (-43 %). The **Cascade** variety has retained its relatively new position as the lead variety in the USA, although its acreage only expanded by 3 %.

World

World hop acreage in 2015 amounts to approx. 50,900 ha, which represents an acreage increase of 3,145 ha, or 6.6 %, over the previous year. In the past 26 years, only in 2008 did a greater year-on-year expansion of acreage take place. The share of aroma/flavour varieties is growing significantly, leading to a further decline in the bitter and high alpha variety group. However, demand from the craft and creative brewers for special hop varieties with intense flavours and aromas will probably not be met in all cases by the hops harvested in 2015, but the diversity of varieties and the available volume is set to increase from year to year.

Currency exchange rates

1 EUR equals (reference by ECB):

	on 30 May 2014	on 29 May 2015		on 30 May 2014	on 29 May 2015
USA	1.3607 USD	1.0970 USD	Canada	1.4745 CAD	1.3650 CAD
Australia	1.4635 AUD	1.4338 AUD	Poland	4.1411 PLN	4.1298 PLN
China	8.5025 CNY	6.7994 CNY	Switzerland	1.2204 CHF	1.0341 CHF
United Kingdom	0.8131 GBP	0.7190 GBP	Russia	47.3097 RUB	57.4638 RUB
Japan	138.3600 JPY	135.9500 JPY	Czech Republic	27.4710 CZK	27.4010 CZK

These exchange rates can only serve as an indication. They vary from bank to bank and are not binding.

Conversion table

Area:	Weight:
1 hectare (ha) = 10,000 m ² = 2.471 acres	1 metr. ton (mt) = 1,000 kg = 20 Ztr. (DE) = 2,204.6 lbs
1 acre = 0.4047 ha	1 Zentner Ztr. (DE) = 50 kg = 110.23 lbs = 1.102 cwt (US) = 110.23 lbs = 0.984 cwt (GB)
	1 hundredweight (cwt/USA) = 100 lbs = 45.36 kg = 0.9072 Ztr.
	1 hundredweight (cwt/GB) = 112 lbs = 50.800 kg = 1.0160 Ztr.
Volume:	1 centner (GB) = 100 lbs = 45.36 kg = 0.9072 Ztr.
1 hl = 100 l = 26.42 gall = 0.8523 bbl (USA)	1 kg = 2.20462 lbs
1 hl = 100 l = 22.01 gall = 0.6114 bbl (Brit.)	1 lb = 0.45359 kg
1 barrel (bbl/US) = 31 gall = 1,1734 hl	
1 barrel (bbl/GB) = 36 gall = 1,6365 hl	

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A FIREWORK OF HOP VARIETIES

From a state of insignificance in regard to taste and appreciated mostly for their bitterness, hops have worked their way to the gustatory core of most craft beer recipes. Today, brewers exchange opinions on the sensory impressions of a wide range of hop varieties in a depth and with emotions which until recently only wine connoisseurs were known. Demand for new hop varieties is showing no sign of abating and is inspiring hop breeders all over the world. Regardless of the time-consuming process of traditional hop breeding (8 - 10 years until a new variety is ready for the market), in the past five years, many new hop varieties have been brought to market at shorter intervals. A common feature of virtually all the new varieties is that they are able to offer particularly sought-after fruity notes. What often disappoints brewers, however, is the combination of small quantities and poor availability of these varieties. For a grower to decide to plant a new variety, however, there are several other factors in addition to demand that are extremely important, such as growing characteristics, yield and harvesting time.

Some 230 different hop varieties are currently grown around the world. The country with the greatest varietal diversity is the USA with 70 varieties. There are several breeding programmes in the United States, some of them state-sponsored, such as those of the University of Washington and the University of Oregon, while others are run by privately-owned companies. Even hop growers have begun to breed hops at their own expense. To illustrate this, here are some interesting hop varieties: **Azacca™** was brought to market by the American Dwarf Hop Association in 2014. It has an oil content of up to 2 ml/100 g and its aromas are reminiscent of mango, apple and pine nuts. Other newcomers are **Equinox™** from Select Botanicals, with lots of tropical aromas and an oil content of up to 4.5 ml/100g and **Cashmere** from Washington State University, with pineapple and citrus notes and up to 1.4 ml oil/100 g. Even though the currently available quantities of these varieties are small, this may change completely in just a few years.

Citra®, for example, was not even on the market in 2010, but 1,200 mt of this variety was produced in 2014! **Mosaic®**, also a variety bred by Select Botanicals, has only been on the market for three years and there is already 700 mt of it available. Other examples of varieties whose success will become apparent in the next few years are **Sorachi Ace**, **Crystal** and many, many more. These are not all new breeds; some of the “new” hop varieties have been with us for decades but have not been in demand until now.

As far as the varietal range is concerned, only Australia is able to match the dynamics concerning hop breeding

as in the USA. **Galaxy™**, a product of the Hop Products Australia breeding programme, is the rising star among Australian hops with its intense aromas of red berries and green fruits. Although this variety has been available for only about five years, 450 mt was harvested in the 2014 crop year. The new creations of the last two years are **Vic Secret** and **Enigma™**. These varieties are characterised by novel fruity notes of green and tropical fruits. Although production volume of **Vic Secret** has already reached 120 mt, the figure for **Enigma™** is only 6 mt.

Also well worth mentioning are the varieties **Kazbek**, **Saaz Late** and **Agnus** produced by the Czech breeding programme in Zatec. Availability here is also limited, with only 20 - 80 mt per variety. The aroma spectrum is not limited with aromas from multivitamin to orange and herbal to violet-like and yoghurt.

There are also new arrivals from the French breeding programme of the Comptoir Agricole. The aromas of their new varieties **Triskel** and **Boulier** are subtle, but feature very delicate fruity and floral notes. Here, too, availability is limited to 30 and 10 mt, respectively. The French team are also working on a new variety called **Barbe Rouge**.

In Germany, the new cultivars **Mandarina Bavaria**, **Hallertau Blanc** and **Huell Melon** from the Huell research institute are already well established. This can be seen from the production volumes, ranging from 50 to 140 mt per variety. Far and away the most important flavour hop is **Saphir**, with a production volume of 800 mt. More is happening in the German market with other new varieties being introduced like **Comet** and **Monroe**.

Comet is a product of the Washington State University breeding programme and was released in 1961. However, at that time it failed to establish itself in the USA. Today, this variety is grown in the Hallertau region, where its production volume amounts to around 4 mt. It has a truly unique aroma combining elderberry juice and lemongrass.

Monroe, on the other hand, is characterised by very different fruity aromas reminiscent of red berries and cherries. The latest German variety is a genuine insiders' tip. It is called **Relax** and has so far yielded only about 1,000 kg. Originally the variety was bred for use in tea production. This variety has a very low alpha acid content (0.25 %), and contains fascinating aromas from green tea and honeydew melon to very warm woody-aromatic notes.

In the years ahead, there will be plenty of interest and demand from brewers for hop varieties that add new aromas and flavours to beers. Therefore, many more new hop varieties can be expected to emerge from the various breeding programmes. Which of them can offer advantages to all sides – breeders, hop growers, hop marketers and brewers – and thus establish themselves in the long term, will not be apparent for some years to come.



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