BARTH-HAAS GROUP

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Press folder for the presentation of the
new BARTH REPORT Hops 2016/2017
in Mainburg on 25.07.2017

All the material is also available for downloading from our website at
http://www.barthhaasgroup.com/de/mediathek/reports

Heinrich Meier
Statement at trade press conference in Mainburg on 25 July 2017

Hop acreage grows for the third year in succession.

In 2016, hop acreage worldwide grew by about 9% over 2015 to stand at roughly 56,000 hectares. Following five years of decline, hop acreage has been on the rise again since 2014. According to our projections, 2017 will see a further increase to 59,000. Not since 1998 has world hop acreage been this high.

The biggest hop-growing countries in terms of planted area are the USA, Germany and the Czech Republic. In the USA, the aroma and flavour variety group accounts for almost 80% of the acreage. After seven years of decline, the acreage for high alpha varieties has risen again in 2017.

In Germany, aroma varieties are grown on just over half of the acreage. The leading varieties are Perle and Hallertau Tradition which together account for almost 30%. The high alpha varieties are dominated by the Herkules variety, which makes up 30% of Germany's total acreage.

Global crop yield up by 28%, alpha volume up by almost 36%

The yields in the USA in crop year 2016 remained below the long-term average. In contrast, above-average yields and alpha content were achieved in virtually all other hop-growing regions worldwide. The world crop volume rose by 28% year on year (24,000 mt) and the alpha volume grew by almost 36% (3,000 mt).

Germany and the USA account for a combined share of 74% of the hops harvested worldwide, with 38% of this accounted for by Germany. The two countries' share of the alpha volume is nearly 81%, with 43% of this coming from Germany. In Germany, the crop volume in 2016 was 50% higher than in 2015, while the alpha volume rose by as much as 87%.

There are therefore sufficient hops available for the 2017 brewing year, even though the alpha balance shows another shortfall for the fifth year in succession.

World beer market not declining as rapidly as thought

The development of beer output is somewhat surprising. The output volume for 2015 had to be subsequently corrected to 1,961m hl and was thus just 2m hl, or 0.1% less than the output in the 2014 brewing year.

The beer output for 2016 also remained at a relatively high level, totalling 1,957m hl. The year-on-year decline was only 3.5m hl, or 0.2 %, which was less sharp a fall than expected. Viewed retrospectively, beer output declined by only 5m hl in the period from 2012 to 2016.

The most important beer-producing nations are China (-11.6m hl), the USA (-2.8m hl), Brazil (-5.2m hl), Mexico (+7.9m hl) and Germany in fifth place (-670,000 hl). In terms of global beer output, the top five countries account for a combined share of 52%.

In terms of the alpha acid balance, that is the balance between alpha production and alpha demand, there was overproduction of almost 8,000 mt alpha in the 2009 to 2012 brewing years, while a deficit of 6,600 mt alpha has accumulated since 2013. The craft beer movement is causing further increases in hopping rates. While the rate was just 4.68 g alpha per hectolitre in 2013, this is expected to rise to 5.61 g alpha per hectolitre in 2017, based on current projections.

Top 40 breweries without SABMiller

The long-awaited takeover of brewing giant SABMiller by Anheuser-Busch InBev was also legally completed in September 2016. The resulting new group accounts for over a quarter of the beer produced worldwide. Unfortunately there was no data to show how much beer was produced by SABMiller before the takeover in September, which is why this figure is missing from the total amount. For this reason alone, the share of world beer production accounted for by the top 40 fell year on year from 83.5% to 78.7%.

There are also eight German breweries among the world's top 40 breweries: The Radeberger group (20), Oettinger (27), TCB Beteiligungsgesellschaft mbh (29), the Bitburger brewing group (31), Krombacher (35), the Paulaner brewing group (36), Warsteiner (38) and – a new entry – the Karlsberg Brewery (40).

Stephan Barth
Statement at the trade press conference in Mainburg on 25 July 2017

The BARTH-HAAS GROUP: 700 – 1,000 employees, turnover of more than €300 million

First, a few figures for the BARTH-HAAS GROUP, a medium-size group of companies of which Joh. Barth & Sohn is an integral part:

- Depending on the season, we have a workforce of between 700 and 1,000 employees The reason the numbers vary so widely is that we employ a great many seasonal workers, especially during the harvest.

- Our fiscal year ends on 31 July and therefore we naturally have no figures for the current year. We expect to generate a turnover of more than €300 million – an increase compared to previous years. This increase is due to volume and price effects.

More than 260 hop varieties worldwide grown in 27 countries

The crucial role now played by hops in the brewing industry is also evident from the fact that the number of hop varieties is rising constantly. In the 27 countries in which hops are grown, we now count 262 different hop varieties, of which around 150 are aroma varieties and around 110 bitter/high are alpha varieties.

The widest range of varieties can now be found in the USA, with just under 90 varieties, followed by England (almost 40 varieties) and Germany (more than 30 varieties). The varieties grown in most countries are Cascade (14 countries), followed by Hallertau Magnum and Perle, which are each grown in 11 countries.

Brisk hop trade between Germany and the USA

Even though the calculation periods are different, it can generally be observed that the USA and Germany exported almost the same amount of hops in 2016, with around 26,000 metric tons each.

The main export countries for the USA were the United Kingdom, Mexico and Germany, with around 2,400 metric tons. Conversely, the largest export market for hops from Germany was the USA, with around 3,200 metric tons of hops, followed by Russia and Japan.

In light of the changes in hop growing in the USA, it is likely that exports from the USA to Germany will decline, while exports to the USA will increase.

2017 hop harvest in Germany:
The great unknown with potentially dramatic consequences

While the previous figures were relatively reliable, I now have to engage in a little speculation. What will the 2017 hop harvest be like, especially in Germany? Frankly speaking, I can't read this harvest yet. The only thing we know is that once again the acreage has risen –by 945 hectares in Germany, representing an increase of five per cent. Judging by the weather conditions in Germany, there are certainly indications that the 2017 harvest could be arduous for all concerned. We are of course familiar with the press release from the German Hop Growers' Association forecasting a year-on-year decline in crop volume of 23 per cent. In our opinion, however, it is still too soon for such forecasts. It is well known that the decisive months for the harvest are July and, above all, August. In other words, we sincerely hope the clerk of the weather is on our side.

Typical hop expertise for the BARTH-HAAS GROUP

We now come to the more pleasant side of hops. I can still remember how some regarded us with derision when we developed the first ideas for a hop aroma compendium back in 2010. Describing hop aromas – how will that work? There have now been three volumes of the Hop Aroma Compendium; there is sustained demand; and I can see that we will soon have to get to work on planning a fourth volume.

What is particularly important for the industry, however, is a common language used to describe hops that can be understood by all. To this end, we have developed HOPSESSED, a tasting scheme that is specially designed to be used for hops and hop-intensive beers. Developed together with perfumers and sommeliers, HOPSESSED consists of 12 categories that are then sub-divided into specific aroma impressions. This results in comparable aroma profiles for the respective hop variety or beer. HOPSESSED makes it easier to present comparisons of hop varieties and hop-intensive beers.

Of course, there are also many other activities in which the BARTH-HAAS GROUP demonstrates its hop expertise, starting with the Hops Academy and the "Hopfen-Akademie" – the former being more for brewers and the latter more for growers – and then with its sponsorship of the European Beer Star and the World Beer Cup. Our goal, which we are working on daily, is to be an expert provider of hop-related services and at the same time to arouse enthusiasm for the endless potential uses of hops.

The craft beer movement has been very good for hops – and for us

I don't think we would have come as far as we have without the impetus from the craft beer movement. Craft beers in Germany are not actually yet at a stage where we can talk about market share. Unless, that is, you believe that 0.2% of the market is a noteworthy market share.

And yet craft beer has been more than good for hops, as it has suddenly given hops a completely new status in brewing. Craft beer has been good for beer, making it a topic in the media that no longer just focuses on the price or various promotions in the retail market. And of course, craft beer has also been good for the hop trade. We have significantly expanded our portfolio and gained many new customers, and I am confident with regard to our further development – even if the weather for the 2017 harvest thwarts our plans.

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Press release

World beer production virtually unchanged in 2016

- **Decline of 0.2 per cent to 1.96 billion hectolitres**
- **Slight decrease in beer production in Germany in 2016**
- **Germany number 5 in international rankings with 95 million hectolitres**

Nuremberg, 25 July 2017. 1.96 billion hectolitres of beer were brewed worldwide in 2016. This can be read in the new BARTH REPORT, Hops 2016/2017. Presenting the report, Stephan Barth, managing partner of Joh. Barth & Sohn, pointed out that output had remained virtually unchanged since 2014. The world's most important beer nation is still China, with an output of 460 million hectolitres, followed by the USA (221m), Brazil (133m), Mexico (105m) and Germany (95m). The combined market share of these five countries is roughly 52 per cent.

The rankings of the world's biggest brewers continue to be led by AB InBev, with 434 million hectolitres. This figure takes into account the merger of AB InBev with SABMiller and the divestment of individual parts of the group that followed. Second place is now taken by Heineken, followed by China Res. Snow Breweries, Carlsberg and Molson-Coors. These five brewers have a combined world market share of just under 50 per cent.

There are now altogether eight German brewers or brewing groups among the world's TOP 40: the Radeberger Group in 20th place, Oettinger in 27th place, TCB Beteiligungsgesellschaft in 29th place, the Bitburger brewing group in 31st place, Krombacher (35), the Paulaner brewing group (36), Warsteiner (38) and – a new entry – Karlsberg (40). Together, these eight German brewers have a world market share of 2.8 per cent.

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Press release

World hop market

- **Above-average yields and alpha content in 2016**
- **Alpha demand continues to rise**
- **USA indisputably the world's leading hop grower**

Nuremberg, 26 July 2017. "Hops never cease to surprise us." This is how Stephan Barth, managing partner of Joh. Barth & Sohn, describes the results of the 2016 world hop harvest. According to Barth, on the one hand, crop year 2016 brought above-average yields and alpha content in virtually all hop-growing regions. However, he added that the volume of alpha is not sufficient to meet brewers' requirements in 2017. "For the fifth year in succession we have recorded an alpha acid supply shortfall for the brewing industry – in this case amounting to 469mt." (Barth) The surpluses from the harvests up to 2011 are thus likely to have been used up.

Barth pointed to different developments in the world beer market that have had a conflicting influence on hop demand: On the one hand, consumption of "mainstream" beers has declined in the main beer nations such as China, the USA and Brazil, and has stagnated in Russia. On the other hand, because of the continuing growth of the craft beer segment, alpha acid demand has risen by roughly 44 per cent since 2008.

Barth also noted that the leading role of the craft beer scene in the USA, which now comprises more than 5,000 breweries, is increasingly influencing the global hop market. From 2012 to 2017, acreage increased by almost 70 per cent in Washington, Oregon and Idaho alone. "Since 2015 the USA has been indisputably the world's biggest hop-growing nation." (Barth) During this period, however, American hop growers have greatly reduced their acreage of high alpha hops – a trend from which German hop growers have been able to profit.

"At the present time, it is difficult to make any predictions regarding the expected crop volume in 2017." (Barth)

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Key figures for the hop industry

	2015	2016	Change
Beer output			
Worldwide	1,961m hl.	1,957m hl.	-0.2%
Germany	95.6m hl	95.0m hl	-0.7%
Hop acreage			
Worldwide	51,512 hectares	56,141 hectares	+ 9.0%
Germany	17,855 hectares	18,598 hectares	+ 4.2%
Hop production			
Worldwide	87,415 mt	111,911 mt	+ 28.0 %
Germany	28,337 mt	42,766 mt	+ 50.9%
Alpha acid production			
Worldwide	7,760 mt	10,524 mt	+ 35.6%
Germany	2,405 mt	4,501 mt	+ 87.2%

Source: BARTH REPORT Hops 2016/2017

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The world's top 40 brewing groups as of 31 December 2016

In 2016 the long-announced brewing giant takeover of SABMiller (SABM) by Anheuser-Busch InBev (ABI) finally came about. ABI now produces a good 25 % of the beer produced worldwide. The output volume of 433.9m hl quoted in the list of the top 40 brewers is taken from ABI's 2016 annual report and only contains the consolidated volumes from September 2016. The output for the full year was probably just below 500m hl.

In order to obtain approval for the takeover from the competition authorities, ABI was required to sell significant parts of the SABM group: in China, the shares in China Res. Snow Breweries held by SABM were sold to the Chinese state; the shares in the US joint venture MillerCoors went to Molson-Coors; and all the European breweries, with the exception of Compañía Cervecera de Canarias (CCC) on the Canary Isles, were sold to the Japanese brewing group Asahi, which thus moves up from number 13 to number 7, almost trebling its output in the process. Now that the rankings no longer include the SABM group, Germany's Karlsberg Brewery in Homburg enters at number 40.

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

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Die 40 größten Brauereigruppen der Welt zum 31. Dezember 2016

Rang	Brauerei	Land	Bierausstoß 2016 in Mio. hl	Anteil an der Welt-Bierproduktion
1	AB InBev	Belgien	433,9	22,2%
2	Heineken	Niederlande	200,1	10,2%
3	China Res. Snow Breweries	China	118,8	6,1%
4	Carlsberg	Dänemark	116,9	6,0%
5	Molson-Coors	USA/Kanada	95,2	4,9%
6	Tsingtao Brewery Group	China	79,2	4,0%
7	Asahi	Japan	59,0	3,0%
8	Yanjing	China	45,0	2,3%
9	Kirin	Japan	42,5	2,2%
10	BGI / Groupe Castel	Frankreich	32,9	1,7%
11	Petropolis	Brasilien	21,4	1,1%
12	Constellation Brands	USA	21,0	1,1%
13	Efes Group	Türkei	19,5	1,0%
14	Gold Star	China	18,0	0,9%
15	San Miguel Corporation	Philippinen	16,3	0,8%
16	Saigon Beverage Corp. (SABECO)	Vietnam	16,0	0,8%
17	Diageo (Guinness)	Irland	15,0	0,8%
18	Singha Corporation	Thailand	13,7	0,7%
19	Grupo Mahou - San Miguel	Spanien	12,5	0,6%
20	Radeberger Gruppe	Deutschland	11,9	0,6%
21	Pearl River	China	11,6	0,6%
22	United Brewery	Indien	11,0	0,6%
23	CCU	Chile	10,9	0,6%
24	Beer Thai (Chang)	Thailand	10,6	0,5%
25	Polar	Venezuela	9,5	0,5%
26	Damm	Spanien	9,5	0,5%
27	Oettinger	Deutschland	9,2	0,5%
28	Sapporo	Japan	8,6	0,4%
29	TCB Beteiligungsgesellschaft mbH	Deutschland	8,5	0,4%
30	Suntory	Japan	8,3	0,4%
31	Bitburger Braugruppe	Deutschland	7,0	0,4%
32	Bavaria N.V.	Niederlande	6,9	0,4%
33	HiteJinro	Südkorea	6,8	0,3%
34	Hanoi Beverage Corp. (HABECO)	Vietnam	6,5	0,3%
35	Krombacher	Deutschland	5,9	0,3%
36	Paulaner Brauerei Gruppe	Deutschland	5,7	0,3%
37	Obolon	Ukraine	5,0	0,3%
38	Warsteiner	Deutschland	4,0	0,2%
39	Yunnan Lancang River	China	3,5	0,2%
40	Karlsberg Brauerei	Deutschland	2,9	0,1%
Gesamt			1.540,7	78,7%
Welt-Bierproduktion 2016			1.957,5	100,0%

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Press release

The BARTH-HAAS GROUP: A generations-old passion for hops and beer

Nuremberg, 25 July 2017. The BARTH-HAAS GROUP is and will remain the world's leading provider of hop-related services. These were the words of Stephan Barth, Managing Partner at Joh. Barth & Sohn, at the presentation of the new Barth Report, Hops 2016/2017. "For 140 years now, we have been publishing this reference work containing data on the situation in the brewing and hop industries worldwide." (Barth)

According to Barth, is vital for the group not simply to grow, process and market hops. "For generations the companies in our group have shared the common bond of boundless passion for hops and beer," said Barth, who explained that this was why the group supported numerous initiatives related to hops and beer worldwide. "We were the first to "dare" to develop a book devoted to hop aromas in which far in excess of 100 hop varieties and their aromas are described." Now, with HOPSESSED, the group has laid the foundations for a standardised grading system for hops. "Our aim is to have a common language for people talking about hops worldwide." (Barth)

The group mainly consists of family-owned companies in Australia, China, Germany, Great Britain and the USA. The number of employees fluctuates between 700 and 1,000; turnover in the 2016/2017 fiscal year is expected to amount to more than 300 million euros.

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The BARTH-HAAS GROUP – the hop experts for the best beers worldwide

The BARTH-HAAS GROUP, a global amalgamation of privately-owned family companies, forms a powerful and innovative network that operates in all continents. The group is the world's largest supplier of hop-related products and services. It is a world leader not only in the areas of hop breeding, growing and processing, but also in marketing hops and hop products. The group's extensive portfolio also includes storage and logistics services, hop-related research and development and application technologies for the brewing industry and other sectors. The group's goal is to extract the maximum potential from the hop as a raw material, thus ensuring the best possible use and presentation of the hop components.

The BARTH-HAAS GROUP focuses all its activities on its customers' needs in order to offer them the best service. Its aim is to be the supplier with the greatest added value for its customers. Therefore, professional advice is combined imaginatively, competently and reliably with the most attractive hop portfolio.

For generations now, the outstanding feature of the companies in the group has been their boundless passion for hops and beer. The BARTH-HAAS GROUP consists of the following companies:

Joh. Barth & Sohn GmbH & Co. KG

Founded in 1794, Joh. Barth & Sohn today is the market leader in hop trading, marketing and processing in Germany. Originally, the company's business activities focused "only" on hop trading, but since the 1960s hop processing has become the company's second main business field.

John I. Haas, Inc.

Founded in 1914, John I. Haas, Inc. owns and operates its own hop farms, warehouses and pelletisation, extraction and isomerisation facilities in the Northwest of the USA. The company is a leader in research and development in the field of processed hop products.

Hop Products Australia

Hop Products Australia in Hobart/Tasmania grows and processes hops for the domestic and world markets. The company runs an intensive research programme with a focus on breeding new aroma and alpha varieties.

BARTH-HAAS UK Ltd.

BARTH-HAAS UK is the group's centre of competence for hop oils and hop aroma products. In addition, the company manufactures the entire range of "Advanced Products" for the other companies in the group.

BetaTec Hop Products, Inc.

BetaTec has been involved in research and development since 1997. Its core competency relates to possible uses of hop products outside the brewing industry. BetaTec is a wholly-owned subsidiary of John I. Haas Inc.

BARTH-HAAS (Beijing) Trade Co. Ltd.

BARTH-HAAS (Peking) Trade Co. Ltd. supplies hops and hop products imported from all over world for the Chinese market. The company also collaborates with Gansu Tianma Hops Co. Ltd. to market domestically grown hops.

Simply Hops Ltd.

Simply Hops Ltd. is the supplier of choice for smaller breweries, as it efficiently provides them with high-quality hop products. Through its online shop the company offers a selection from the renowned BARTH product range to even the smallest of customers.

Barth Innovations Ltd.

Barth Innovations Ltd. is the innovation and service centre for the R&D requirements of the European companies belonging to the BARTH-HAAS GROUP. Its goals are to develop innovative hop-based products for the brewing industry and to successfully place them on the market.

Hopfenveredlung St. Johann GmbH

Hopfenveredlung St. Johann operates two plants: one with its own research brewery and cold storage facilities, as well as the world's largest hop pelletisation facility for pellet types 45 and 90. The other plant is the world's largest production facility for hop extracts and natural substances extracted using CO_2 as a solvent. 40% of the shares in the company are held by Hopfenverwertungsgenossenschaft Hallertau (HVG).

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