THE BARTH REPORT

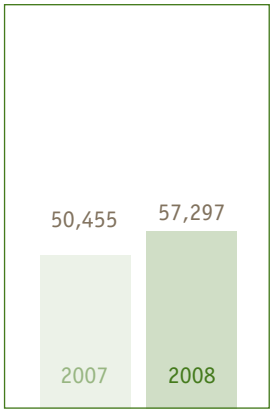
HOPS 2008/2009

BARTH-HAAS GROUP

CONTENTS

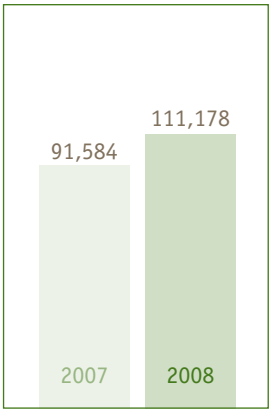
WORLD MARKET KEY DATA

Area under cultivation ha



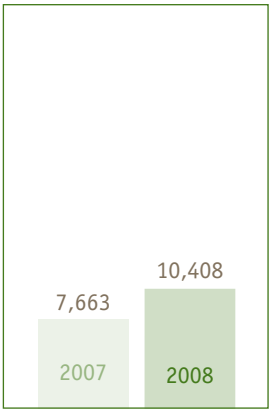
2.0% **13.6%**

Hop production mt



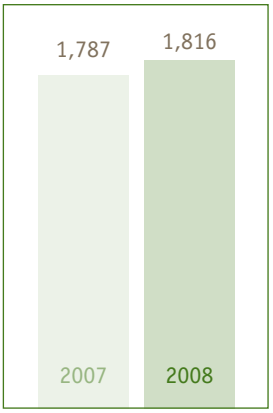
7.0% **21.4%**

Alpha production mt



7.9% **35.8%**

Beer production mill. hl



5.3% **1.6%**

COVER PICTURE

The cover picture illustrates the dependency between hop production and the needs of the brewing industry. The chart shows global demand for alpha acid for beer production in the years 1993 to 2008, which reached its preliminary peak in the 2007 brewing year with a requirement of 8,578 metric tons of alpha.

Stephan J. Barth | Regine Barth | Alexander W. Barth

The annual report of Joh. Barth & Sohn of 6 July 1932 contained the following: "With the mounting crisis, a more or less sharp decline in beer consumption has occurred in nearly all countries". The writer is referring to the world economic crisis that began with the Stock Market Crash of October 1929 and its effects on beer consumption. It must be taken into account that at that time beer had become significantly more expensive in many countries due to an increase in beer taxes, which also had an adverse effect on beer sales.

After the First World War, economic recovery was accompanied by annually rising beer production which reached a peak of 204.2 million hectolitres worldwide in 1929. During the Great Depression, beer production volume fell to 156.7 mill. hl within a space of three years. On 7 April 1933, the United States Congress voted to abolish Prohibition which had been in effect since January 1920. In that period the production and sale of alcoholic beverages for human consumption had been prohibited in the USA. Since the end of the Second World War, apart from a minor standstill between 1984 and 1992, beer production has risen constantly.

Compilation of beer production volumes in 2008 resulted in a total figure showing below-average growth. Despite good results at the beginning of the year, the final growth figure was a mere 1.6 %. In the preceding five years (2003 to 2007), average growth had amounted to 4.8 %. With the quarterly figures and forecasts from the brewing groups for 2009 clearly pointing in one direction, it is probable that the world economic crisis that began in 2008 will have a negative impact upon beer consumption. This would verify the statement made in the Barth Report of 19 June 1937: "If beer consumption is regarded as one of the yardsticks of a country's economic situation, this view is frequently confirmed, as the purchasing power of the population is reflected in its beer consumption."

What use can we draw from this knowledge with regard to hop production?

If one considers the development of hop farming around the world, there have been major changes in recent years. As a result of inadequate hop prices, there was a reduction in acreage, from about 92,000 ha to less than 50,000 ha, over a long period from 1992 to 2006. Because the yields produced in crop years 2003 to 2007 were insufficient to satisfy demand for hops from existing production capacity and the stocks held by the brewing industry were exhausted, prices for hops from the 2006 and 2007 crops exploded. After the harvest in 2007 acreage was increased by approx. 7,000 ha.

After years of large deficits, this year's alpha acid balance shows a record surplus. This was possible due to an increase in world acreage, a record harvest in Germany and cut-backs in hop consumption for economic reasons on the part of the brewing industry. Following its experiences in 2006 and 2007, the brewing industry has concluded forward contracts on a large scale and is well supplied with hops. Rising hop requirements based on expected growth in output were often factored into the quantities contracted forward. These will probably now prove to be over-optimistic.

The hop industry can be the master of its own fate through acreage restructuring and storage practices. The painful truth is that due to the changes in the world economic environment, a large part of the additional acreage planted after the 2007 harvest is no longer required.

POLITICAL SITUATION

As usual, all eyes were on the **Middle East**. However, the troubled political situation in Asia is also increasingly attracting international attention.

In November 2008, the 47-year-old Democrat Barack Obama won the presidential election in the **USA** by a clear majority over the Republican John McCain. Obama was sworn in as the 44th President of the United States on 20 January 2009.

In December 2008, after weeks of provocation by Hamas, with attacks on civilian targets in **Israel**, the Israeli government responded with intensive bombing of the Gaza Strip which was then invaded by Israeli troops. Further escalation was stopped provisionally by a temporary ceasefire. The Conservative Benjamin Netanjahu has been in office as prime minister since May 2009.

In **Asia**, the destabilisation of **Pakistan** continues. Pakistan's new President, Asif Ali Zardari, who was elected to office in September 2008, finds his country increasingly exposed to terrorist attacks by the militant Taliban. The civilian government has lost control of large parts of the country to the Taliban. In neighbouring **Afghanistan**, the spiral of violence and counter–violence is increasing in the face of a weak government led by Prime Minister Hamid Karzai. This continues to put the reconstruction of the country at risk and leaves the international troop contingent increasingly embroiled in military combat with the Taliban.

In **Thailand** three prime ministers were elected in a space of only four months. The country's political instability was expressed by repeated mass protests against each of the governments in office.

The rulers of the People's Republic of **North Korea** continued to unsettle the international community by testing rockets and an atomic device.

When **Georgia** tried to take the disputed neighbouring province of South Ossetia in early August 2008, Russian troops invaded and advanced into the heartland of Georgian territory. The war ended after only a few days, with the defeated Georgian troops retreating. Russia immediately recognised South Ossetia and Abkhasia as independent states. Russia's active role in the region was also seen in its gas supply policy towards states in its former sphere of influence, i. e. suspended gas deliveries.

In **Zimbabwe**, the heads of the three main parties agreed in September 2008 to form a government of national unity. Robert Mugabe remains state president. Morgan Tsvangirai, the chairman of the party Movement for Democratic Change (MDC), was appointed prime minister.

The parliament of **South Africa** elected the chairman of the ruling ANC party, Jacob Zuma, as the new head of state in May 2009.

Since 1 April 2009, **Nato** has had two new members, with Croatia and Albania joining the western military alliance.

EUROPEAN UNION (EU)

EU reform treaty

On 13 December 2007 the heads of state and government of the EU signed the **Treaty of Lisbon**. This treaty sets the European Union on a new basis. It is intended to make decision-making within the EU simpler, more democratic and more transparent. The reforms can only take effect, however, after all 27 members of the EU have ratified the Treaty. With the rejection of the Treaty by the Irish in a referendum in June 2008, it is currently unclear when the Treaty will be able to take effect. A second referendum is planned to take place in **Ireland** in the second half of 2009. All the other EU countries have already ratified the Treaty. In Poland, Germany and the Czech Republic, all that is still required is the president's signature.

EU currency union

Slovakia introduced the euro as legal tender on 1 January 2009. This makes the euro the common official currency in 22 European states. 16 of these states belong to the EU. They are: **Austria**, **Belgium**, **Cyprus**, **Finland**, **France**, **Germany**, **Greece**, **Ireland**, **Italy**, **Luxembourg**, **Malta**, **the Netherlands**, **Portugal**, **Slovakia**, **Slovenia** and **Spain**. The other countries are Andorra, Kosovo, Monaco, Montenegro, San Marino and the Vatican City State.

Reform of the Common Agricultural Policy – The Health Check

Since 1 July 2008, the Common Market Organisation (CMO) for Hops (Regulation (EC) No. 1952/2005) has been superseded by the CMO for the Agricultural Markets (Regulation (EC) No. 1234/2007). This regulation created a single CMO for all agricultural products. It contains rules with particular regard to hop certification, growers' associations, hop imports and the registration of contracts.

Two further regulations have come into effect for the hop sector: Regulation (EC) No. 753/2008 on the recognition of growers' associations in the hop sector and Regulation (EC) No. 1295/2008 on imports of hops from third countries. The hop sector is affected by the reform of the Common Agricultural Policy (CAP) to the extent that it has been included in the single – farm payment scheme by most hop-producing member states since 1 January 2005. This allows the support payments to be completely decoupled from production, with the result that the producer can switch to other produce, but still continue to receive a stable income. As far as complete decoupling is concerned, some flexibility has been allowed at national level up until now. In order to allow for regional differences in production, the hop-growing member states can decide not to decouple part of the support payments (up to a maximum of 25 %) and to pay this directly to the hop growers or the growers' associations. The growers' associations are permitted to use these funds, in accordance with requirements, for varietal change, market support measures, research, sales promotion measures or investments in equipment.

Within the context of the CAP Health Check, the Commission then put forward a proposal to reform Regulation (EC) No. 1782/2003 concerning the common rules for direct payments in which it demanded that these partly coupled payments in the hop sector be completely decoupled by 2010 and included in the single-farm payment scheme. In Germany's case, this would have meant that after the year-end of 2009 EU funds could no longer be paid directly to the HVG growers' associations. Following intervention by the German government, it was agreed, however, that although the single area payments for hops would be completely decoupled, as required in the Commission's proposal, a special provision for growers' associations in the hop sector would be added to Regulation (EC) No. 1234/2007 at the same time. This establishes that as of 1 January 2011 the recognised growers' associations in Germany will receive 2,277,000 EUR from the EU each year to finance their objectives. The Commission has to issue directives to this effect. The agricultural ministers of the EU reached political agreement on the CAP Health Check on 20 November 2008. The new measures are intended to further modernise and simplify the CAP and free it from unnecessary ballast and any remaining restrictions, so that farmers will be able to react better to signals from the market and be better equipped to meet new challenges. The Council's Regulations regarding the CAP Health Check were published in the European Union Gazette on 31 January 2009.

Far-reaching new rules in the EU's plant protection policy affect hop production and hop marketing in Europe

Since EU Regulation (EC) No. 396/2005 became effective on 1 September 2008, harmonised maximum residue levels apply for active ingredients in plant protection products in all plant produce. This has led to significant simplification of hop marketing among the 27 member states of the EU. On 13 January 2009, the European Parliament finally adopted the "plant protection package". The rules concerning the marketing and the sustained use of plant protection products had been the subject of a controversial three-way debate involving the EU Parliament, the Commission and the Council of Ministers. From the perspective of the hop producers and hop traders, the effects of the compromise package now adopted have been significantly neutralised in comparison with the plans originally discussed. The zonal authorisation in particular, to the extent that it provides for the availability of a sufficient range of plant protection products and comparable competitive conditions across the European hop-growing regions, should be considered positive. It will simplify and accelerate the reciprocal recognition of authorisations of plant protection products in the respective zone. Germany is in the "middle" zone, together with the hop-producing countries of the Czech Republic, Slovakia, Slovenia, Poland and England. At the present moment it is impossible to judge conclusively to what extent the tightened evaluation criteria for active ingredients in plant protection products will have a negative effect on the availability of plant protectives in European hop farming in the medium to long term.

ECONOMIC SITUATION

In 2008, the **gross domestic product (GDP)** of the world economy fell to 2.2% from 3.7% the previous year. In the final quarter of 2008 in particular, growth was negative in most national economies. GDP weakened year on year also in Asia, Latin America and Africa. Growth in the European states remained below 1%.

The policy of easy money under Alan Greenspan (Chairman of the Federal Reserve 1983 – 2003) and the lack of international state supervision of the finance sector are seen as being mainly responsible for creating the preconditions for the events affecting the world economy since 2007. America's generous monetary policy led to distortions which took many forms, too numerous to list here. The collapse of the international financial system, from the sub-prime crisis in 2007 to the insolvency of the US bank Lehman Brothers (15 September 2008), increasingly infected the real economy and in turn forced governments around the world to put together huge rescue programmes, incurring debts which will have to be repaid by future generations.
In order to prevent deflation on the scale of the world economic crisis of 1929/31, all the world's leading central banks set themselves the goal of supplying the financial systems with sufficient and cheap money in order thus to restore the functionality of the financial sector. At the time of this report's going to press, this goal has only succeeded in part.
The **US central bank (FED)** reduced the prime rate in three stages from 2% in April 2008 to the historic level of 0% in December 2008. In a subsequent effort to counter the recession, the FED announced that in 2009 it would purchase mortgage-backed securities and government bonds to the value of more than one trillion US dollars in order to improve the conditions on and the liquidity of the credit markets. The **European Central Bank (ECB)** cut its base rate eight times in succession. In June 2008 it was still 4%, but by May 2009 it had fallen to only 1% and thus to a historic low.
The world economic crisis has not been without consequences for euro-dollar relations. While the highest exchange rate recorded for the euro during the period of this report (mid-July 2008 to May 2009) was 1.6031 USD on 16 July 2008, as the crisis worsened the euro weakened and fell to its lowest level of 1.2338 USD on 28 October 2008.
Stock markets around the world reacted to the financial and economic crisis with dramatic falls in share prices. On 6 March 2009, the **Dow Jones Index** fell to 6,470 points, its lowest level for 12 years. The difference between the highest and lowest levels on the **Dow Jones** and Germany's **Dax** index during the period of this report was 45% and 46% respectively.

In addition to causing unemployment to increase, the difficult economic situation also led to lower commodity prices. Due to falling demand, the price for a barrel of crude oil (Brent), for example, fell from 144.95 USD in the summer of 2008 to a five-year low of 34.24 USD by the end of the year. However, by May 2009 it had bounced back to more than 60.00 USD. A similar decline in prices for many important strategic commodities could be observed around the world.

KEY DATA

USA, JAPAN, GERMANY AND CHINA

The figures for 2006 and 2007 have been revised according to the latest statistics

**) Interest rate for 10-year bonds. China: interest for long-term credits.*

		GPD growth (real) in %	Balance of Payments in USD bn	Balance of Trade in USD bn	Inflation Rate Ø in %	Interest Rate Ø in %*)	Unemployment (as of 31.12.) in %
USA	2006	2.8%	-788.1	-817.3	3.2%	4.79%	4.6%
	2007	2.0%	-731.2	-794.4	2.9%	4.63%	4.6%
	2008	1.1%	-673.3	-963.3	3.8%	3.67%	5.8%
Japan	2006	2.1%	170.6	67.9	0.2%	1.73%	4.1%
	2007	2.4%	210.5	91.7	0.1%	1.65%	3.8%
	2008	-0.7%	157.5	20.0	1.4%	1.48%	4.0%
Germany	2006	3.2%	189.3	199.5	1.6%	3.76%	10.8%
	2007	2.6%	261.8	267.4	2.3%	4.22%	9.0%
	2008	1.0%	241.3	261.2	2.6%	3.98%	7.8%
China	2006	11.6%	253.3	142.2	1.5%	6.51%	4.1%
	2007	13.0%	372.0	225.6	4.8%	7.38%	4.0%
	2008	9.0%	400.0	252.0	5.9%	7.57%	4.0%

WORLD BEER PRODUCTION 2007/2008

Europe

Country	2007	2008
Russia	*115,000*	114,000
Germany	*103,970*	102,860
United Kingdom	*51,341*	49,469
Poland	35,500	35,600
Spain	34,350	33,400
Ukraine	31,561	32,030
Netherlands	27,259	26,500*
Romania	19,422	20,774
Czech Republic	19,897	19,806
Belgium	18,565	17,796*
France	15,096	14,430
Italy	13,520	13,212
Turkey	9,205	9,900
Austria	9,044	8,937
Ireland	9,270	8,846
Portugal	8,191	8,208
Denmark	8,042	7,870
Hungary	*7,550*	7,049
Serbia	6,067	6,366
Bulgaria	5,686	5,770
Greece	*4,531*	4,600*
Finland	4,547	4,470
Croatia	3,380	3,926
Sweden	3,773	3,749
Switzerland	3,508	3,625
Slovakia	3,683	3,558
Belarus/White Russia	3,550	3,400
Latvia	3,066	2,960
Norway	2,552	2,580
Slovenia	1,905	1,940
Lithuania	*1,340*	1,240
Estonia	1,280	1,190
Bosnia-Herzegowina	961	999
Moldavia	933	900*
Albania	755	755
Macedonia	695	718
Montenegro	585	560
Georgia	600	500*
Cyprus	398	409
Armenia	350	332*
Luxembourg	322	312
Iceland	*177*	175
Malta	110	112*
TOTAL	591,537	585,833

Australia/Oceania

Country	2007	2008
Australia	16,770	17,080
New Zealand	*3,119*	3,225
Papua-New Guinea	600	650
Tahiti	185*	187*
Fiji Islands	155*	157*
New Caledonia	133*	130*
Samoa	80*	83*
Solomon Islands	58	60*
Tonga	8*	8*
Vanuatu	7*	7*
TOTAL	21,115	21,587

America

Country	2007	2008
USA	*232,839*	231,772
Brazil	96,000*	106,300*
Mexico	81,000	82,343
Venezuela	26,249	24,905
Canada	*23,920*	23,662
Columbia	19,000*	19,000*
Argentina	14,500*	15,500*
Peru	9,236	10,800
Chile	5,680	5,870
Ecuador	3,600*	3,500*
Dominican Republic	3,000*	3,000*
Cuba	2,504	2,400*
Panama	1,800*	2,000*
Costa Rica	1,600*	1,800*
Guatemala	1,600*	1,600*
Bolivia	1,500*	1,500*
Paraguay	1,500*	1,500*
Honduras	950*	950*
Jamaica	950*	900*
Uruguay	900*	900*
El Salvador	800*	800*
Puerto Rico	700*	700*
Nicaragua	700*	650*
Trinidad	350*	400*
Guyana	300*	250*
Belize	250*	250*
Bahamas	140*	140*
Dutch Antilles	140*	140*
Surinam	95*	90*
Barbados	80*	80*
Haiti	80*	70*
St. Lucia	70*	70*
Martinique	60*	60*
St. Vincent	48	49
Grenada	37*	35*
Antigua	26	26
St. Kitts	20*	20*
Aruba	16*	16*
Dominica	14	16
Cayman Islands	4*	4*
TOTAL	532,258	544,068

Asia

Country	2007	2008
China	393,137	410,301
Japan	62,804	61,111
Thailand	21,700	20,725
South Korea	17,886	18,615
Vietnam	18,000	18,499
Philippines	13,600*	13,300
India	9,000*	9,950*
Taiwan	*3,870*	3,752
Kazakhstan	4,090	3,620
Indonesia	*2,040**	2,100
Malaysia	1,800*	1,650*
Uzbekistan	1,600	1,500
Laos	1,279	1,320*
Singapore	1,140	1,200
Israel	825	900*
Myanmar (Burma)	*713**	830*
Cambodia	700*	750*
Sri Lanka	468	574
Aserbaidjan	550	522
Nepal	277	250*
Tadschikistan	250	237*
Lebanon	199	209
Mongolia	*184*	199
Kirgisistan	250	150
Syria	*107*	109
Turkmenistan	100	95*
Jordania	87	89
Pakistan	30*	28*
Hongkong	170	0
TOTAL	556,856	572,585

Africa

Country	2007	2008
South Africa	26,530	25,900
Nigeria	13,500	15,400
Angola	3,958	5,325
Kenya	4,500	5,300
Cameroon	4,580	5,100
Tanzania	3,500	3,900
Dem. Rep. Congo (Zaire)	3,027	3,474
Ethiopia	2,560	2,654
Ghana	1,806	1,920
Uganda	1,725	1,904
Namibia	*1,750*	1,850*
Mozambique	1,318	1,449
Burundi	1,281	1,371
Congo (Brazzaville)	1,128	1,322
Ivory Coast	1,350	1,300
Tunesia	1,100	1,205
Egypt	1,050	1,155
Gabon	990	1,100
Morocco	1,000	1,050
Algeria	710	930
Madagascar	823	834
Rwanda	710	829
Burkina Faso	680	700
Benin	505	600
Sambia	561	594
Botswana	452	550
Zimbabwe	1,119	515
Togo	420	480
Mauritius	345	345
Lesotho	310	328
Chad	270	320
Réunion	221	218
Swaziland	196	207
Senegal	195	200
Malawi	190*	190*
Guinea (Conakry)	160	180
Equatorial Guinea	0	180
Central African Republic	136	155
Liberia	111	120
Mali	86	90
Sierra Leone	90	81
Niger	61	70
Seychelles	60	60
Guinea-Bissau	45*	45*
Gambia	37	30
Cape Verde	12*	10*
Eritrea	223	3
TOTAL	85,381	91,543

World total

	2007	2008
TOTAL	1,787,147	1,815,616

figures in 1,000 hl

in italics:
corrections for 2007 as stated in last year's report.

** estimate*

A list of the "Top 40 Countries" according to ranking can be found in the Market Leaders Report.

OUTPUT DEVELOPMENT

The output figures for some countries have had to be revised since last year's report was published.

	2007 1,000 hl	2008 1,000 hl	2007 +/- % rel.	2008 +/- % rel.
European Union	411,658	405,067	6.6%	-1.6%
Rest of Europe	179,879	180,766	-1.4%	0.5%
Europe total	**591,537**	**585,833**	**4.0%**	**-1.0%**
North America	256,759	255,434	0.8%	-0.5%
Central America/Caribbean	97,239	98,769	3.8%	1.6%
South America	178,260	189,865	4.2%	6.5%
America total	**532,258**	**544,068**	**2.4%**	**2.2%**
Asia	**556,856**	**572,585**	**9.9%**	**2.8%**
Africa	**85,381**	**91,543**	**7.1%**	**7.2%**
Australia/Oceania	**21,115**	**21,587**	**-4.0%**	**2.2%**
WORLD TOTAL	1,787,147	1,815,616	5.3%	1.6%

World beer output has risen by an average of 2.5 % per year in the last 30 years. In the years 2004 to 2007 above-average growth rates of 4.9 %, 3.2 %, 5.9 % and 5.4 % were achieved. The year 2008 closed with an increase of 1.6 %, or 28.5 mill. hl.

Comparing the year 2008 with 2007, of the world's 169 beer-producing countries 83 recorded an increase in production and 26 countries reported an unchanged level of output, while output fell in the remaining 60 countries.

China is not only the world's biggest beer producer, but also recorded the world's biggest growth in output in 2008, with an increase of 17.2 mill. hl. It was followed by Brazil, with 10.3 mill. hl, now ranked fourth among the leading beer nations, behind the USA and Russia.

Europe saw its output decrease by 5.7 mill. hl, which was mainly a consequence of the decline in the UK (-1.9 mill. hl), Germany (-1.1 mill. hl), Russia and Spain (each -1.0 mill. hl). The result for **America**, with an increase of 11.8 mill. hl, is influenced by Brazil (+10.3 mill. hl), Peru (+1.6 mill. hl), Mexico (+1.3 mill. hl) and Argentina (+1.0 mill. hl), but also by Venezuela (-1.3 mill. hl) and the USA (-1.1 mill. hl). In **Asia** the results in China (+17.2 mill. hl)and India (+1.0 mill. hl) on the one hand and Japan (-1.7 mill. hl) and Thailand (-1.0 mill. hl) on the other producedan overall growth figure of 15.7 mill. hl. Growth of 6.2 mill. hl in **Africa**, was accounted for primarily by Nigeria (+1.9 mill. hl) and Angola (+1.4 mill. hl).

MARKET ANALYSIS

The market in crop year 2008 was marked by extremes:

2007/2008 world-wide	Difference absolute	Difference in percent
Acreage	6,842 ha	13.6%
Crop volume	19,595 mt	21.4%
Average alpha	1.0%	11.8%
Alpha production	2,745 mt	35.8%
World beer output	28.5 mill. hl	1.6%

Against the backdrop of a very pronounced financial and economic crisis on a global scale, world hop production volume in 2008 reached an all-time record level in tonnes of alpha acids.

The high volume of alpha acid produced in Germany played a significant part in this development. The hop supply crisis that had affected the brewing industry since crop year 2006 thus came to an end and the latterly completely overheated market settled down again. The price boom that had persisted since the summer of 2006 due to the supply shortage in the hop market finally ended in January 2009. The short duration of the spot market in Germany was unusual, but also understandable in view of the growing world economic crisis. This was despite the fact that hardly any market formed in the USA for lack of available hops. Farm-gate purchasing began in late September and finished only three weeks later. In view of the high spot prices, particularly for high alpha varieties, reaching a peak of 10.50 EUR/kg in Germany, all the trading companies very quickly abandoned their spot purchasing activities as they were afraid that they would be left holding large and expensive stocks at the end of the marketing campaign.

While the hop traders' behaviour was characterised by nervousness and uncertainty concerning global economic developments and their possible adverse effects on the brewing industry, there was a constant mood of

euphoria on the part of growers everywhere, accompanied by considerable anticipation with regard to the prices to be obtained on the open market.
In many Eastern European hop-growing regions this led to a misjudgement of the marketing opportunities, from which almost exclusively the growers in Germany – in particular those in the Hallertau region – were to profit. While many producers in Eastern Europe refused to deliver, demanding improvements to existing contracts, and did not even consider offering their hops on the spot market, the German growers were able to take advantage of the resulting gaps in the market to sell their hops. The result was a splendid year for German growers which was only made possible by the collective misjudgement on the part of the market participants in the other hop-growing countries. Record yields in 2008, high open market prices and good forward contract rates left the Hallertau region in a strong position, while in the Eastern European hop regions in the late spring the warehouses of traders and growers alike still held large stocks of unsold hops whose value was falling by the day.
After crop year 2007 the brewing industry for its part reacted to what seemed to be a lasting hop shortage and to the high prices in recent years by reducing their hopping rates and extensively adapting their recipes to more economical isomerised hop products. The combined effect on the market of

- the global economic crisis, with reduced beer consumption,
- acreage expansion which, however, is secured by legally binding contracts with the brewing industry and
- hop-saving measures on the part of the brewing industry

is sobering for the hop industry. All the assumptions made a year ago regarding beer consumption and hop demand are now unfounded. A large part of the acreage expansion carried out in 2008 in the USA in particular in response to demand from the brewing industry is now no longer needed.
The process of adjustment to the new realities is likely to be a difficult and painful one for all sides. One thing should not be forgotten, however. As a natural product, the hop is also subject to the effects of the weather – especially during this period of climate change.

FORWARD CONTRACT RATES

Forward contract rates (as per spring 2009)

Country	2009	2010	2011	2012
Germany	95%	90%	85%	80%
USA	100%	95%	85%	80%
Czech Republic	100%	95%	70%	60%
Poland	35%	35%	35%	35%
Slovenia	60%	55%	20%	20%
England	82%	70%	50%	25%

The contract figures were calculated on the basis of the acreage expected to be farmed in 2009 and a long-term average yield.

The forward contract rates stated in this report are partly based on estimates, as reliable data is not always available – especially from Eastern European states.
The faithfulness to contractual obligations on the part of the growers in Germany and the USA in particular in the last three crop years has been rewarded with good prices in forward contracts. The forward contract rates for the next years are consistently high. The relatively low forward contract rates in Poland and Slovenia, on the other hand, can be explained by the unsatisfactory fulfillment of contracts for the 2006 and 2007 crops by growers there.

ALPHA ACID PRODUCTION

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

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

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

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

ALPHA ACID PRODUCTION

With the world hop crop divided into these groups, alpha acid production was as follows:

	2007					2008				
Group	Crop share	Crop mt	Alpha Ø	Alpha mt	Alpha share	Crop share	Crop mt	Alpha Ø	Alpha mt	Alpha share
I	14.8%	13,574	3.0%	410	5.4%	14.5%	16,110	3.4%	551	5.3%
II	30.2%	27,668	5.9%	1,637	21.4%	27.8%	30,943	6.5%	2,002	19.2%
III	55.0%	50,342	11.2%	5,616	73.2%	57.7%	64,125	12.2%	7,855	75.5%
TOTAL	100.0%	91,584	8.4%	7,663	100.0%	100.0%	111,178	9.4%	10,408	100.0%

Alpha group I *– fine aroma hops: Germany 39.9 % (previous year: 40.0 %), Czech Republic 34.3 % (previous year: 30.1 %).*

Alpha group II *– aroma hops: Germany 55.1 % (previous year: 54.3 %), USA 25.1 % (previous year: 24.9 %).*

Alpha group III *– bitter hops/high alpha hops: USA 46.6 % (previous year: 45.0 %), Germany 33.9 % (previous year: 30.5 %).*

Due to the reclassification of the varieties **Saphir** (from Group I to II) and **Cluster** (from Group III to II), there were shifts within the variety groups compared with the previous year's report. In addition, minor corrections have been made regarding crop and alpha volume in 2007.

As a result of a significant increase in hop acreage and favourable climatic conditions for plant growth, alpha acid production in crop year 2008 exceeded the volume recorded in crop year 2007 by **2,745 mt**.

The alpha yield per hectare rose from 0.15 mt in 2007 to 0.18 mt in 2008.

With regard to alpha production in the individual countries, the dominant position of the USA and Germany is clearly apparent. Between them, these two countries produced 78.3 % of total world alpha (previous year: 74.4 %).

The **USA**, with a world market share of 40.0 % (previous year: 38.3 %), held its own as the biggest alpha producer. **Germany** also increased its share significantly, from 36.1 % to 38.3 %, but remained in second position, however. **China** came third, with 6.9 % (previous year: 8.1 %).

The alpha acid values are based on % as is, according to EBC analysis 7.4 ToP (Time of Processing).

ALPHA ACID BALANCE

Alpha supply

Brew year	Surplus/Deficit
2005	+90 mt α
2006	-410 mt α
2007	-1,585 mt α
2008	-689 mt α
2009*	+2,757 mt α

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

The volume of alpha required for brewing in 2008 was 117 mt lower than anticipated in last year's report. The estimate of the alpha volume was based on the average growth rate of 3 % recorded for world beer production in the last 10 years. In fact, growth amounted to only 1.6 %. In addition, the figure for alpha acid production in crop year 2007 required a minor correction.

Due to acreage expansion, a higher average yield and significantly higher average alpha levels worldwide, the volume of alpha acid produced worldwide in 2008 was 35.8 %, or 2,745 mt, higher than in 2007.

Following a series of years in which alpha acid production was unable to meet demand, the hop and brewing industries are now well stocked as a result of this alpha surplus.

Our calculation of brewing requirements for 2009 is based upon an estimated decline in world beer production of 2 %.

These statistics do not take into account the approx. 200 mt of alpha required for use outside the brewing industry or the alpha degradation occurring naturally during the time between the processing of the hops and their use in the brewing industry.

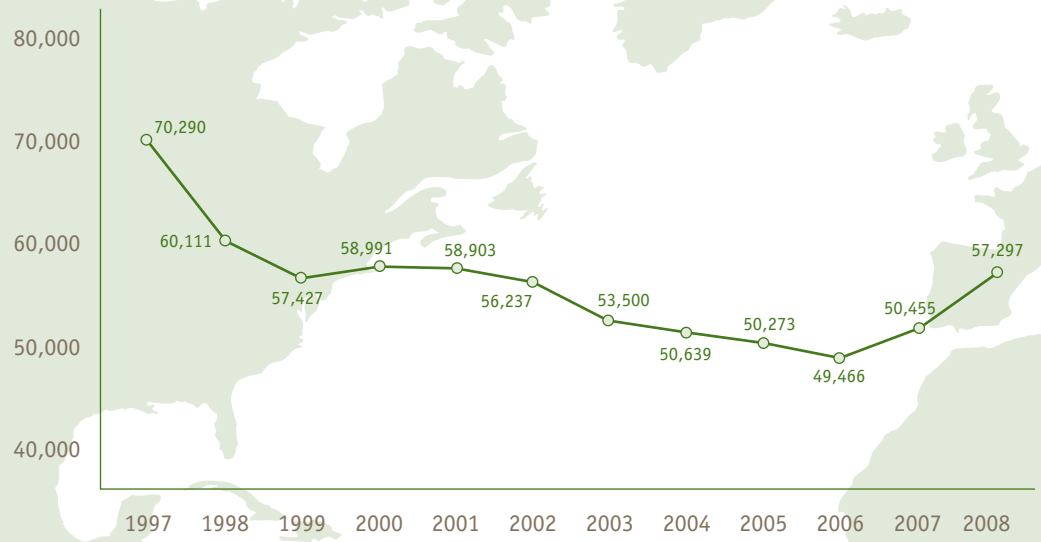
HOP ACREAGE AND PRODUCTION

		2007				2008			
		Acreage ha	Production mt	Ø-Alpha %	Alpha mt	Acreage ha	Production mt	Ø-Alpha %	Alpha mt
Germany	Hallertau	14,754	27,200.8	8.6%	2,347	15,678	34,331.7	10.3%	3,552
	Elbe-Saale	1,321	2,698,3	11.8%	319	1,383	2,830.1	11.1%	315
	Tettnang	1,193	1,613.7	4.3%	69	1,233	1,835.9	4.6%	84
	Spalt	384	588.2	4.7%	28	382	641.6	4.8%	31
	Others	19	38.0	6.6%	3	19	37.2	6.5%	2
	Total	**17,671**	**32,138.9**	**8.6%**	**2,766**	**18,695**	**39,676.5**	**10.0%**	**3,984**
Czech Republic	Saaz	4,006	3,891.8	3.6%	139	3,953	4,576.5	4.1%	189
	Tirschitz	702	1,025.6	3.8%	38	719	1,215.9	4.6%	55
	Auscha	681	713.2	3.1%	22	663	960.4	4.1%	39
	Total	**5,389**	**5,630.6**	**3.5%**	**199**	**5,335**	**6,752.8**	**4.2%**	**283**
Poland		2,179	3,256.1	6.8%	221	2,233	3,445.9	7.4%	256
Slovenia		1,570	1,987.0	5.7%	113	1,577	2,359.3	7.0%	166
England		1,063	1,473.0	7.2%	107	1,071	1,409.1	6.6%	93
France		796	1,480.4	3.2%	47	801	1,469.1	2.5%	36
Spain		497	936.7	12.1%	113	465	812.3	12.6%	102
Romania		*225*	196.0	7.6%	15	278	246.0	6.9%	17
Slovakia		300	294.0	3.7%	11	261	328.0	3.9%	13
Bulgaria		221	227.3	8.1%	18	221	342.0	9.5%	33
Austria		206	349.9	6.3%	22	213	386.3	8.0%	31
Belgium		176	320.0	9.9%	32	186	325.0	8.3%	27
Hungary		18	18.8	10.5%	2	23	34.7	9.4%	3
Portugal		21	27.0	11.0%	3	21	26.5	10.6%	3
European Union		***30,332***	**48,335.7**	**7.6%**	**3,669**	**31,380**	**57,613.5**	**8.8%**	**5,047**
Ukraine		1,145	700.0	5.4%	38	1,149	900.0	5.5%	50
Russia		228	158.0	4.5%	7	420	296.0	4.6%	13
Turkey		331	280.0	9.3%	26	308	368.7	9.9%	36
Serbia		67	111.0	7.9%	9	59	98.0	7.7%	8
Belarus/White Russia		30	30.0	9.0%	3	30	30.0	9.0%	3
Switzerland		18	36.5	8.8%	3	18	35.5*	9.1%	3
Croatia		16	24.0	5.5%	1	16	29.0	8.2%	2
Rest of Europe		**1,835**	**1,339.5**	**6.5%**	**87**	**2,000**	**1,757.2**	**6.5%**	**115**
EUROPE		*32,167*	49,675.2	7.6%	3,756	33,380	59,370.7	8.7%	5,162
USA	Washington	9,205	*21,140.0*	*11.3%*	*2,395*	12,381	28,754.6	12.0%	3,447
	Oregon	2,133	*4,328.5*	*8.6%*	*372*	2,578	4,534.8	8.4%	381
	Idaho	1,172	*1,862.0*	*9.0%*	*167*	1,592	3,284.1	10.2%	336
	Total	**12,510**	***27,330.5***	***10.7%***	***2,934***	**16,551**	**36,573.5**	**11.4%**	**4,164**
Argentina		167	240.0	8.0%	19	129	212.6	8.2%	17
AMERICA		12,677	27,570.5	10.7%	*2,953*	16,680	36,786.1	11.4%	4,181
China	Xinjiang	2,101	5,827.0	6.0%	347	3,641	6,522.0	5.9%	385
	Gansu	2,005	5,568.0	4.9%	270	2,042	5,476.0	6.0%	331
	Total	**4,106**	**11,395.0**	**5.4%**	**617**	**5,683**	**11,998.0**	**6.0%**	**716**
Japan		214	410.2	6.5%	27	206	446.4	6.6%	29
India		62	42.5	11.1%	5	60	41.8	9.8%	4
ASIA		4,382	11,847.7	5.5%	649	5,949	12,486.2	6.0%	749
South Africa		434	900.2	13.0%	117	444	628.0	13.8%	87
AFRICA		434	900.2	13.0%	117	444	628.0	13.8%	87
Australia		441	890.0	*13.3%*	*118*	484	1,189.2	13.0%	154
New Zealand		354	700.1	10.0%	70	360	718.0	10.4%	75
AUSTRALIA/OCEANIA		795	1,590.1	11.8%	188	844	1,907.2	12.0%	229
WORLD		***50,455***	***91,583.7***	***8.4%***	***7,663***	**57,297**	**111,178.2**	**9.4%**	**10,408**

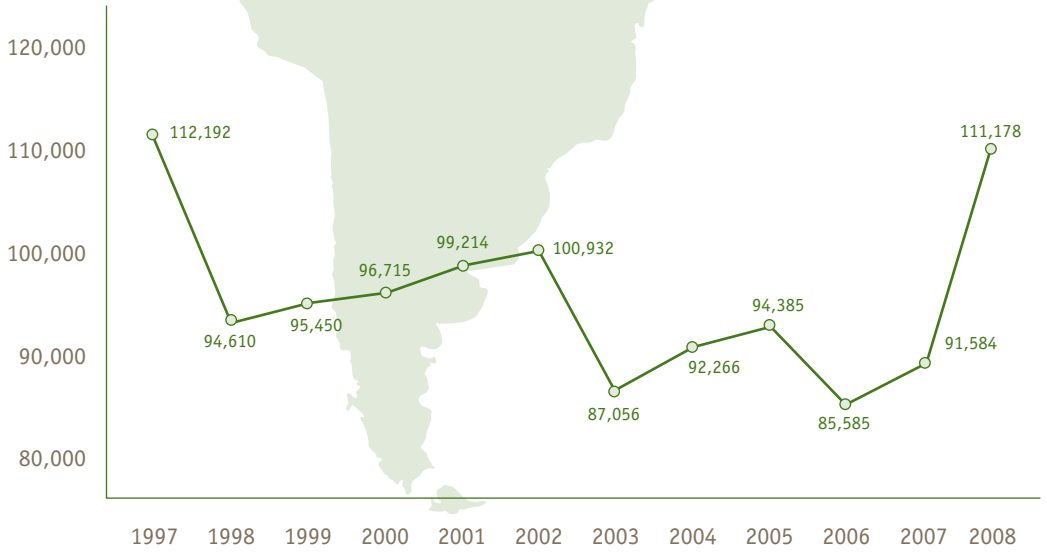
in italics:
corrections for 2007 as stated in last year's report.

** estimate*

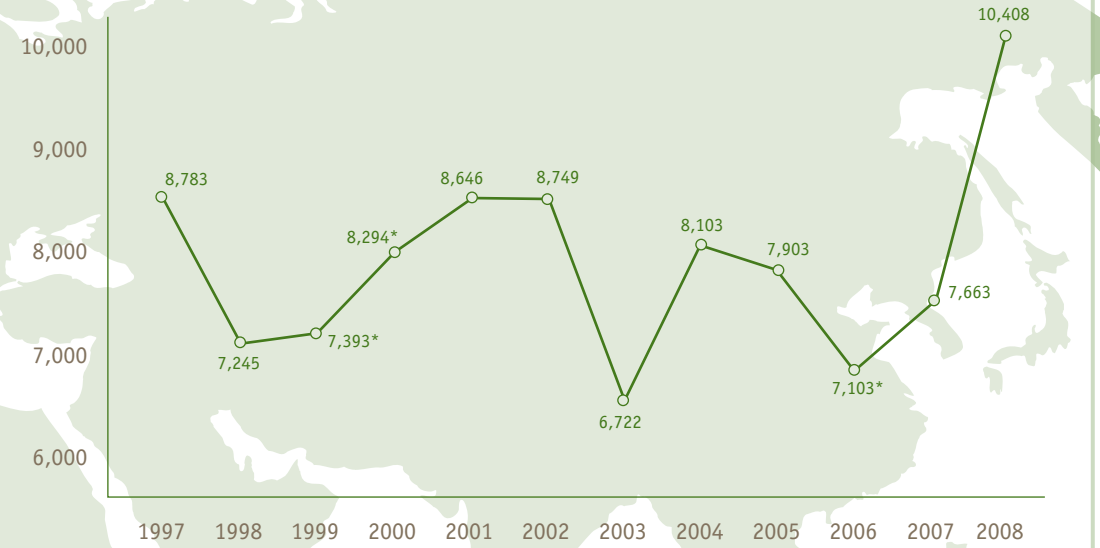
AREA UNDER CULTIVATION HA



HOP PRODUCTION MT

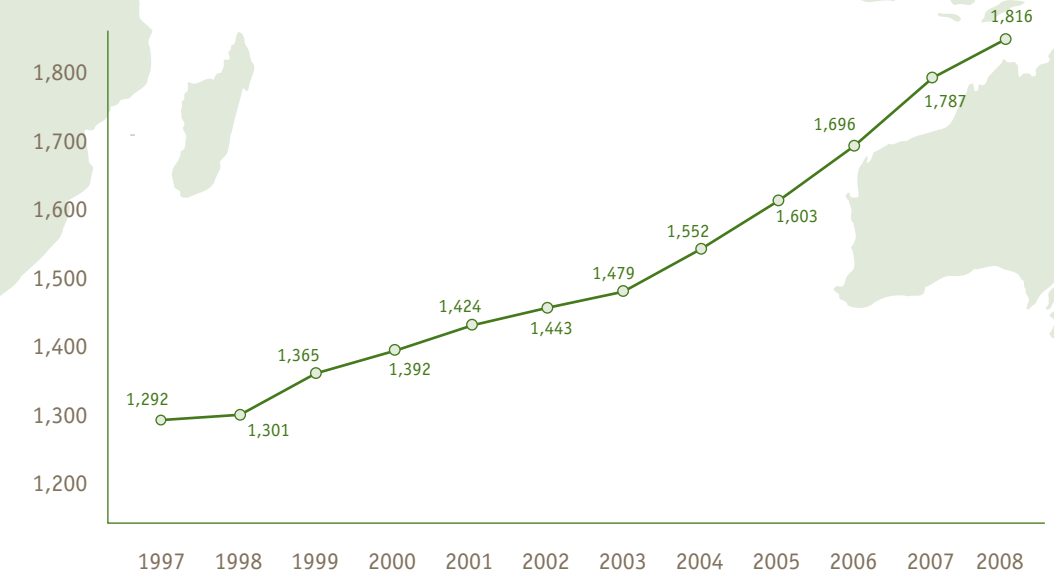


ALPHA PRODUCTION MT



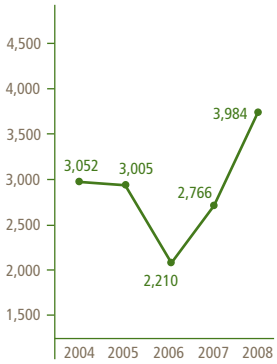
** not taking into consideration the quantities destroyed in warehouse fires*

BEER PRODUCTION IN MILL. HL



GERMANY

Alpha production in mt



Rounding differences of the acreage may cause differences in addition.

Area	Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
		2007	+/-	2008	2007	2008	2007	2008
Hallertau	Perle	3,034	26	3,060	1.98	2.25	6,010.80	6,880.33
	Hallertau Tradition	2,358	43	2,401	2.01	2.25	4,749.15	5,398.75
	Hallertau Mittelfrueh	1,594	-37	1,557	1.07	1.74	1,708.73	2,706.98
	Spalt Select	733	2	735	2.26	2.27	1,654.48	1,668.99
	Hersbruck Spaet	741	-6	735	1.99	2.00	1,471.62	1,471.80
	Saphir	186	1	187	2.48	2.56	461.51	478.22
	Other Aroma	57	17	74	1.74	1.58	99.27	116.60
	Total Aroma	**8,703**	**46**	**8,749**	**1.86**	**2.14**	**16,155.56**	**18,721.67**
	Northern Brewer	334	-28	306	1.70	1.80	569.06	550.74
	Other Bitter	31	2	33	2.43	2.34	75.32	77.22
	Total Bitter	**365**	**-26**	**339**	**1.77**	**1.85**	**644.38**	**627.96**
	Hallertau Magnum	3,429	-1	3,428	1.84	2.47	6,308.16	8,465.04
	Herkules	775	924	1,699	1.27	1.91	981.00	3,237.04
	Hallertau Taurus	1,117	-8	1,109	2.07	2.16	2,307.93	2,394.24
	Nugget	251	0	251	2.39	2.60	598.77	653.40
	Hallertau Merkur	83	-10	73	1.86	2.38	154.35	173.44
	Other High Alpha	9	1	10	1.86	1.74	16.74	17.36
	Total High Alpha	**5,666**	**904**	**6,570**	**1.83**	**2.27**	**10,366.95**	**14,940.52**
	Other	**20**	**0**	**20**	**1.69**	**2.08**	**33.87**	**41.58**
	Total Hallertau	14,754	924	15,678	1.84	2.19	27,200.76	34,331.73
Elbe-Saale	Perle	132	15	147	1.91	1.67	251.96	245.84
	Hallertau Tradition	38	-4	34	1.13	1.65	42.95	56.25
	Other Aroma	0	7	7	0.00	0.40	0.37	2.78
	Total Aroma	**170**	**18**	**188**	**1.74**	**1.62**	**295.28**	**304.87**
	Northern Brewer	137	-5	132	1.92	1.65	263.70	217.30
	Total Bitter	**137**	**-5**	**132**	**1.92**	**1.65**	**263.70**	**217.30**
	Hallertau Magnum	827	15	842	2.21	2.25	1,830.85	1,895.20
	Herkules	84	49	133	1.06	1.84	89.42	244.56
	Other High Alpha	95	-15	80	2.15	2.03	204.08	162.58
	Total High Alpha	**1,006**	**49**	**1,055**	**2.11**	**2.18**	**2,124.35**	**2,302.34**
	Other	**8**	**0**	**8**	**1.87**	**0.70**	**14.96**	**5.56**
	Total Elbe-Saale	1,321	62	1,383	2.04	2.05	2,698.29	2,830.07
Tettnang	Tettnang	725	6	731	1.30	1.42	945.16	1,041.44
	Hallertau Mittelfrueh	378	-9	369	1.32	1.48	497.99	545.78
	Perle	46	13	59	2.05	2.19	94.11	129.16
	Other Aroma	32	5	37	1.81	2.01	57.87	74.29
	Total Aroma	**1,181**	**15**	**1,196**	**1.35**	**1.50**	**1,595.13**	**1,790.67**
	High Alpha	**12**	**25**	**37**	**1.55**	**1.22**	**18,56**	**45.18**
	Total Tettnang	1,193	40	1,233	1.35	1.49	1,613.69	1,835.85
Spalt	Spalt Select	111	-5	106	1.99	2.06	220.75	217.88
	Hallertau Mittelfrueh	109	-3	106	1.32	1.40	143.73	148.66
	Spalt	91	-5	86	1.16	1.35	105.95	116.22
	Other Aroma	57	-2	55	1.67	2.12	95.04	116.54
	Total Aroma	**366**	**-13**	**353**	**1.55**	**1.70**	**565.47**	**599.30**
	High Alpha	**18**	**11**	**29**	**1.26**	**1.46**	**22.69**	**42.33**
	Total Spalt	384	-2	382	1.53	1.68	588.16	641.63
Rheinpf./ Hochdorf	**Aroma**	**16**	**0**	**16**	**1.89**	**1.93**	**30.17**	**30.89**
	High Alpha	**3**	**0**	**3**	**2.60**	**2.10**	**7.80**	**6.30**
	Total Rheinpf./Hoch.	19	0	19	2.00	1.96	37.97	37.19
Total Aroma		**10,437**	**65**	**10,502**	**1.79**	**2.04**	**18,641.61**	**21,447.40**
Total Bitter		**502**	**-31**	**471**	**1.81**	**1.79**	**908.08**	**845.26**
Total High Alpha		**6,704**	**990**	**7,694**	**1.87**	**2.25**	**12,540.35**	**17,336.67**
Total Others		**28**	**0**	**28**	**1.74**	**1.68**	**48.83**	**47.14**
GERMANY TOTAL		17,671	1,024	18,695	1.82	2.12	32,138.87	39,676.47

Farm Structure

Structural change continued in 2008, although less markedly than in the past. The number of hop farms fell by 13 to 1,497 producers. At the same time, hop acreage increased. The average hop-growing acreage per farm increased from 11.7 ha to 12.5 ha.

Growth, crop estimate and weights

There was abundant precipitation in the winter of 2007/2008 and like the previous winter it was again comparatively mild. Apart from a few days of frost in the middle of February, the temperature rarely fell below freezing point. This caused a slight delay in the normal winter and spring work as the ground conditions were not always suitable for vehicles. Nevertheless, most of the hop plants were cut in good time. This did not reveal any overwintering damage at all, even in the case of the most susceptible varieties, such as **Hallertau Taurus**. It was only in mid-March that the temperatures fell below the long-term average. This resulted in the vegetation falling slightly behind the long-term average, which nevertheless did not prove to have a detrimental effect. It remained unusually cool with plentiful precipitation until the beginning of May. Just as training began, warm, dry, high-pressure weather set in, providing the plants with ideal growing conditions. As the temperatures dropped again repeatedly during the second half of May and also in June, it was the middle of June before the first stands of the **Spalt Select** and **Saphir** varieties reached trellis height in the main growing area in Hallertau. The remaining varieties completed their length growth in the following two weeks, roughly corresponding to the long-term mean. At this point, the hops displayed very uniform development, especially in the Hallertau region. In addition, it was noticeable that all varieties had already developed unusually prolific side-branching. The first signs of flowering appeared at the beginning of July in the **Northern Brewer** and **Hallertau Mittelfrueh** varieties. The water supply was very good, especially in June and July, due to numerous thundery showers. Optimum growing conditions continued. It was only in the northern part of Hallertau and in Tettnang that rainfall during the summer months was not quite adequate. At the beginning of August, around 200 ha of trelliswork was destroyed by a storm and surrounding stands were affected by wind and hail. However, due to the excellent weather conditions up until harvest, all varieties were able to develop extremely well.

Record yields, with equally record-breaking alpha acid values, were registered in almost all the German growing regions, particularly for the most important high alpha variety, **Hallertau Magnum**. The new high alpha variety **Herkules** also far exceeded expectations as regards yield and alpha acid content. The aroma varieties, especially the **Hallertau Mittelfrueh**, also produced satisfactory results during the course of the harvest. Only in the Elbe – Saale growing region were the alpha acid levels across all cultivated varieties merely average in 2008.

Area	Estimate (mt) August 2008	Weight (mt) 31 March 2009	Difference
Hallertau	32,000.00	34,331.73	7.3%
Elbe-Saale	2,488.50	2,830.07	13.7%
Tettnang	1,715.00	1,835.85	7.0%
Spalt	600.00	641.63	6.9%
Rheinpfalz/Hochdorf	37.25	37.19	-0.2%
TOTAL	36,840.75	39,676.47	7.7%

The official weight result for the 2008 harvest of 39,676.47 mt exceeded the previous year's figure by 23.5 % and the official crop estimate at the beginning of the harvest by 7.7 %. It is fitting to call this a record harvest, not least because of the excellent alpha production which had increased by 44 % in comparison with the previous year.

Acreage and Variety Development

Hop acreage in Germany has increased further. 1,024 ha, in other words nearly 6 % more, was farmed in crop year 2008 compared with 2007. This significant increase is due to the expansion of the acreage planted with the **Herkules** variety. The proportion of high alpha varieties thus increased by 3 %. Although the group of aroma varieties underwent an expansion in area, its share amongst the variety groups fell by 3 %.

GERMANY

Over the last five years the acreage developed as follows:

Variety	2004 ha	2005 ha	2006 ha	2007 ha	2008 ha
Perle	2,839	2,947	3,112	3,246	3,297
Hallertau Tradition	1,958	2,173	2,322	2,457	2,503
Hallertau Mittelfrueh	1,970	2,019	2,036	2,082	2,034
Spalt Select	850	850	854	846	842
Hersbruck Spaet	1,196	1,050	871	747	740
Tettnang	790	767	752	725	731
Saphir	183	188	191	186	187
Spalt	101	99	98	92	90
Other Aroma	2	39	47	56	78
Total Aroma	**9,889**	**10,132**	**10,283**	**10,437**	**10,502**
Northern Brewer	665	612	550	471	438
Other Bitter	40	39	32	31	33
Total Bitter	**705**	**651**	**582**	**502**	**471**
Hallertau Magnum	4,870	4,526	4,387	4,263	4,277
Herkules			214	868	1,868
Hallertau Taurus	1,272	1,215	1,178	1,146	1,140
Nugget	450	380	331	290	281
Other High Alpha	246	228	176	137	128
Total High Alpha	**6,838**	**6,349**	**6,286**	**6,704**	**7,694**
Other	**44**	**29**	**19**	**28**	**28**
GERMANY TOTAL	17,476	17,161	17,170	17,671	18,695

Share per variety group in 2008:
Aroma varieties 56 %
Bitter varieties 3 %
High alpha varieties 41 %

Amongst the aroma varieties, while the acreage of **Hallertau Mittelfrueh** was reduced (-48 ha), an increase was recorded, on the other hand, for the varieties **Perle** (+51 ha) and **Hallertau Tradition** (+46 ha). As a result, the aroma varieties increased by 65 ha. The bitter varieties followed the downward trend of recent years (-31 ha). The group of high alpha varieties is dominated by the increase in the **Herkules** variety whose acreage rose by 1,000 ha. There were only minor changes for all the other high alpha varieties. The acreage of high alpha varieties increased by 990 ha in total.

Market Development

During the harvest, the market for non-contracted hops did not register any purchasing activity. Only on 26 September, when the very good alpha acid results, with values far above the long-term average, became clear and were confirmed, did a spot market at fixed prices become established for all varieties beside the growers' association's (HVG) hop pool. As a consequence of the opening of the hop pool by the growers' association, the other hop trading companies engaged in hop purchasing initiatives in addition to the spot market purchasing described above.
Unlike the previous years, the market was not affected by price movements in crop year 2008. With relatively stable high prices, large quantities of spot hops were sold by growers at fixed prices, until the hop market, and with it all purchasing activity, finally came to an abrupt halt on the second weekend in October.
Up until mid-October, considerable quantities were sold to traders. The variety **Hallertau Magnum** sold mainly for 9.00 EUR/kg and **Hallertau Taurus** and **Herkules** for 10.50 EUR/kg. Interest on the part of traders in aroma varieties was more restrained. Nevertheless, **Perle** sold at 7.00 EUR/kg, **Hallertau Tradition** at 6.00 EUR/kg and all other aroma varieties in the range from 4.50 to 6.00 EUR/kg. The growers who had banked on higher prices at a later selling date were unable to sell their hops for months on end. Only in mid-March 2009 did some traders buy residual quantities of **Hallertau Magnum** at 4.00 EUR/kg and **Herkules** and **Hallertau Taurus** at 4.50 EUR/kg. From mid-October 2008 there were no more offers for aroma varieties, which is why in spring 2009 there were still small stocks – mostly of aroma hops harvested in 2008 – in the hands of the growers. These producers received offers from some traders to take over the marketing of the remaining unsold hops of all varieties with no price guarantee.
The very good yields and the good prices for the 2008 crop led to excellent profits for the German growers.

In addition, the three major trading companies rewarded their German hop growers for supplying first-class quality hops according to contract and announced payment of a premium to every supplier for the hops supplied in crop year 2007.

The growers were offered forward contracts by traders until the beginning of August 2008. For the high alpha variety **Herkules**, contracts were concluded at 4.40 EUR/kg for any quantities of the 2011 crop still available, at 4.20 EUR/kg for 2012 and 2013 and

finally at 4.00 EUR/kg for the years 2014 to 2018. From 2012 up to and including 2018, contract extensions were signed for the variety **Hallertau Magnum** at 4.20 EUR/kg, corresponding to a purchase price of just over 30.00 EUR per kg alpha. For contract extensions for aroma hops up to and including 2015, growers were able to obtain up to 5.00 EUR/kg for **Perle** and 4.50 EUR/kg for **Hallertau Tradition**.
After August 2008 the forward contract market ground to a complete halt in view of the increasingly obvious development of the world economic crisis. Nevertheless, German growers have a good foundation of forward contracts at good prices, particularly up until crop year 2012. However, this stock of forward contracts only guarantees a secure future as long as the brewing trade for its part adheres to the contracts agreed with the traders.

To reduce its contract volume of the **Hallertau Mittelfrueh** variety for crop years 2009, 2010 and 2011, one international brewing group has offered the affected growers a cancellation payment of the order of 4.00 EUR/kg for the contractual volume not supplied. The originally planned reduction amounted to approx. 700 ha.

The German hop growers cooperative association HVG (Hopfenverwertungsgenossenschaft e.G.) has resolved that, for clearance of the **Hallertau Mittelfrueh** variety, an additional payment would be made if the acreage in question was not replanted with other hop varieties. The growers participating in this programme will receive exceptional support to the amount of 1,000 EUR per hectare per year for the years 2009 to 2011. The application deadline passed on 15 May 2009. Applications were made for only 416 ha.

Alpha Acids

The hop and brewing industries enjoyed almost unbelievable alpha acid results from the 2008 crop. The average values of both the last 10 years and the last five years were far exceeded. For some varieties, the average alpha levels recorded were beyond anything reached previously.

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

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	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Ø 5 Jahre	Ø 10 Jahre
Hallertau	Hallertau	4.1	4.9	4.6	4.6	3.1	4.3	4.4	2.4	3.9	4.4	3.9	4.1
	Hersbruck	2.1	4.9	3.0	3.2	2.1	3.0	3.5	2.2	2.6	2.9	2.8	3.0
	Saphir	–	–	–	–	–	3.4	4.1	3.2	4.6	5.1	4.1	–
	Opal	–	–	–	–	–	–	–	–	7.4	9.4	8.4	–
	Smaragd	–	–	–	–	–	–	–	–	6.1	6.7	6.4	–
	Perle	7.0	8.1	7.0	8.6	3.9	6.4	7.8	6.2	7.9	8.5	7.4	7.1
	Spalt Select	4.5	6.4	4.8	6.0	3.2	4.9	5.2	4.3	4.7	5.4	4.9	4.9
	Hallertau Tradition	6.0	7.1	6.3	7.2	4.1	6.3	6.3	4.8	6.0	7.5	6.2	6.2
	Northern Brewer	9.0	10.1	9.6	10.1	6.0	9.8	9.8	6.4	9.1	10.5	9.1	9.0
	Hallertau Magnum	13.4	14.4	13.9	14.6	11.7	14.8	13.8	12.8	12.6	15.7	13.9	13.8
	Nugget	10.0	12.9	11.9	12.4	8.5	10.6	11.3	10.2	10.7	12.0	11.0	11.1
	Hallertau Taurus	15.9	15.6	15.7	16.5	12.3	16.5	16.2	15.1	16.1	17.9	16.4	15.8
	Hallertau Merkur	–	–	–	–	–	13.5	13.3	10.3	13.0	15.0	13.0	–
	Herkules	–	–	–	–	–	–	–	–	16.1	17.3	16.7	–
Elbe-Saale	Hallertau Magnum	12.2	14.0	13.9	13.9	10.2	14.0	14.4	12.4	13.3	12.2	13.3	13.1
Tettnang	Tettnang	3.8	4.9	4.4	4.6	2.6	4.7	4.5	2.2	4.0	4.2	3.9	4.0
	Hallertau	4.2	4.8	4.5	4.8	3.1	5.0	4.8	2.6	4.3	4.7	4.3	4.3
Spalt	Spalt	3.8	4.0	4.4	4.6	3.1	4.4	4.3	2.8	4.6	4.1	4.0	4.0

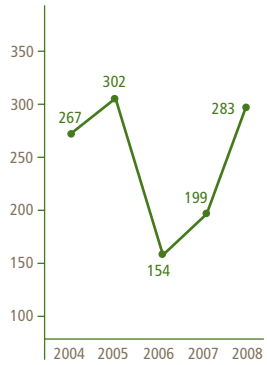
Significantly above-average alpha acid values for 2008, in some cases with results breaking all previous records.

If the figures for the years 2004 to 2008 are not complete, the 5-year average refers to the average figure for the years available.

Figures in %

CZECH REPUBLIC

Alpha production in mt



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Development of production Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Saaz	4,840	-102	4,738	0.94	1.17	4,563.4	5,563.2
Premiant	249	18	267	1.70	1.79	424.4	479.0
Sládek	215	24	239	2.27	2.30	488.2	548.6
Bor	10	3	13	0.52	0.82	5.2	10.6
Total Aroma	**5,314**	**-57**	**5,257**	**1.03**	**1.26**	**5,481.2**	**6,601.4**
Agnus	51	1	52	2.35	2.19	119.7	114.1
Magnum	10	0	10	1.54	2.18	15.4	21.8
Total High Alpha	**61**	**1**	**62**	**2.21**	**2.19**	**135.1**	**135.9**
Other	**14**	**2**	**16**	**1.02**	**0.97**	**14.3**	**15.5**
CZECH REPUBLIC TOTAL	5,389	-54	5,335	1.04	1.27	5,630.6	6,752.8

Farm Structure

The number of hop growers has declined yet again. 131 farms were recorded at the time of the 2008 harvest, eight fewer than in 2007. Despite an accompanying reduction in acreage, the average hop-growing area per farm increased by two hectares to 40.7 ha.

Acreage/Production/Alpha Content

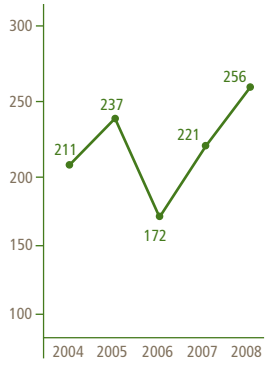
The ongoing drop in acreage in the Czech Republic continued. Whilst hop acreage increased by 17 ha in the Tirschitz growing region, reductions in acreage of 53 ha and 18 ha were recorded in Saaz and Auscha respectively. Areas with old plants of the **Saaz** variety were partially replaced with **Sládek** and **Premiant**. There were ideal weather conditions for hops during the growth period. The crop yield per hectare for all varieties was well above the usual yearly average, but did not reach the outstanding levels of 2005. The alpha yield was also considerably above the long-term average. The results for the main varieties (2007 results in brackets): **Saaz** 3.4% (2.7%), **Sládek** 6.0% (5.6%) and **Premiant** 8.7% (8.0%). The alpha production in tonnes rose by 42% in comparison with the previous year.

Market Situation

As the Czech hop growers had sold more than the average yield of a crop year under forward contract, there was only limited availability of spot market hops despite the very good 2008 production figures. Nevertheless, in March 2009 there were still approx. 250 mt of unsold stocks remaining from the 2008 harvest.
The forward contract rate for the 2009 crop is already 100%. The acreage will be slightly smaller once more.

POLAND

Alpha production in mt



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Development of production Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Lubelski	639	-48	591	1.18	1.43	752.2	848.0
Perle	86	16	102	1.03	1.31	88.2	133.3
Hallertau Tradition	30	16	46	0.85	1.37	25.4	63.1
Lomik	30	1	31	1.76	1.35	52.9	41.7
Other Aroma	1	0	1	1.60	0.70	1.6	0.7
Total Aroma	**786**	**-15**	**771**	**1.17**	**1.41**	**920.3**	**1,086.8**
Marynka	958	-8	950	1.75	1.59	1,679.5	1,512.2
Other Bitter	63	16	79	0.96	1.33	60.5	105.0
Total Bitter	**1,021**	**8**	**1,029**	**1.70**	**1.57**	**1,740.0**	**1,617.2**
Magnum	372	61	433	1.60	1.71	595.8	741.9
Total High Alpha	**372**	**61**	**433**	**1.60**	**1.71**	**595.8**	**741.9**
POLAND TOTAL	2,179	54	2,233	1.49	1.54	3,256.1	3,445.9

Farm Structure

There were 1,061 Polish producers involved in hop growing in the 2008 crop year. The number of farms thus decreased by five in comparison with the previous year. The average acreage planted with hops per farm increased slightly from 2.0 to 2.1 ha.

POLAND

Acreage/Production/Alpha Content

The acreage of the aroma variety **Lubelski** was reduced further, while the area of the high alpha variety **Magnum** increased by 16 %. Comparing the harvest years of 2007 and 2008, there was an overall increase in area of 2.5 %. The rain around the end of July 2008 came just at the right time to ensure plentiful flowering. While the aroma variety **Lomik** and the bitter variety **Marynka** remained below the previous year's yields, the **Lubelski** and **Magnum** varieties achieved very good results. The above-average yield in the 2007 harvest year was again exceeded by the overall figure for 2008. The alpha content also showed very good results: aroma varieties 3.9 % (2007: 3.0 %), bitter/high alpha varieties 9.0 % (2007: 8.3 %). As a result, the alpha production was 16 % higher than the previous year.

Market Situation

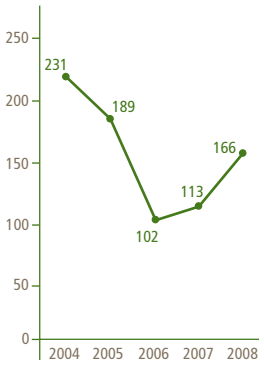
In a repeat of the events following the 2007 harvest, the Polish hop growers demanded that existing contracts for the 2008 crop be renegotiated. The price increases offered by the buyers were rejected by the suppliers at first. The 2008 hops were not delivered until the buyers responded to the non-delivery by announcing the cancellation of the existing forward contracts for future crop years and market demand fell. Due to this conduct on the part of the growers, at least 15 % of the harvest volume still remained unsold in spring 2009.

Approx. 35 % of the 2009 crop is under contract. Little change is expected in the acreage.

SLOVENIA

Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Aurora	992	-7	985	1.21	1.45	1,205.0	1,423.5
Savinjski Golding	186	0	186	0.96	1.29	178.8	239.1
Bobek	158	2	160	1.56	1.80	246.5	288.1
Styrian Golding (Celeia)	105	16	121	2.35	2.28	246.9	275.9
Other Aroma	22	0	22	1.00	1.02	22.1	22.5
Total Aroma	**1,463**	**11**	**1,474**	**1.30**	**1.53**	**1,899.3**	**2,249.1**
Magnum	76	-14	62	1.11	1.61	84.0	100.0
Other High Alpha	31	10	41	0.12	0.25	3.7	10.2
Total High Alpha	**107**	**-4**	**103**	**0.82**	**1.07**	**87.7**	**110.2**
SLOVENIA TOTAL	1,570	7	1,577	1.27	1.50	1,987.0	2,359.3

Alpha production in mt



Farm Structure

As in the previous year, 140 growers were involved in hop cultivation in Slovenia. The average acreage under hops also remained virtually unchanged at 11 ha per farm.

Acreage/Production/Alpha Content

There were only very slight changes in acreage. In line with a change in the seal regulations, a distinction was made in the variety known previously as **Styrian Golding** into **Savinjski Golding** and **Styrian Golding (Celeia)**. Growth conditions for hops were excellent in 2008, resulting in slightly above-average to average yields for all varieties. On 23 August, shortly before the start of the harvest, a localised storm with wind and hail caused yield reductions, but this had only a negligible effect on the overall volume.

After two years with below-average yields, the alpha content of the 2008 crop equalled long-term average values (previous year's figures in brackets): **Savinjsky Golding** 3.2 % (2.9 %), **Styrian Golding (Celeia)** 4.0 % (3.5 %), **Bobek** 5.2 % (4.0 %), **Aurora** 8.4 % (6.5 %).

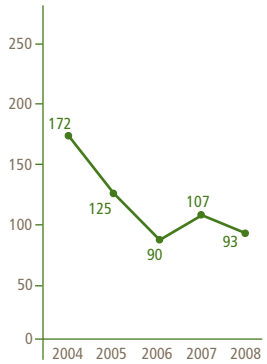
Market Situation

Prior to the 2008 harvest, over half of the hops harvested were under contract. According to estimates, at least 300 – 400 mt of hops, mostly of the **Aurora** variety, remained unsold in April 2009. On the basis of average production volume, approx. 65 % of the 2009 crop is under forward contract. Acreage is likely to be approx. 50 ha higher. The main variety planted was **Aurora**.

The future prospects for the Slovenian hop-growing sector are considerably strained due to a low forward contract rate and the caution displayed by buyers of Slovenian hops due to negative experiences with contract loyalty in recent years. Despite these unfavourable factors and the unsold volume from the 2008 harvest, a large number of farms are investing in trellis replacement and production technologies for hop growing. There appears to be no consideration given to the changed market situation. Income from the two previous crop years 2006 and 2007 is what makes this possible. There will be three additional farms in 2009 which are converting from dairy farming to hop growing.

ENGLAND

Alpha production in mt



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Golding	275	5	280	1.44	1.39	394.9	389.5
First Gold	173	-19	154	0.95	0.95	164.1	146.4
Fuggles	140	-20	120	1.52	1.47	212.1	176.3
Challenger	85	-3	82	1.55	1.51	131.9	124.2
Other Aroma	148	34	182	1.28	1.18	189.3	215.4
Total Aroma	**821**	**-3**	**818**	**1.33**	**1.29**	**1,092.3**	**1,051.8**
Target	121	-3	118	1.55	1.48	188.1	174.9
Other High Alpha	121	14	135	1.59	1.35	192.6	182.4
Total High Alpha	**242**	**11**	**253**	**1.57**	**1.41**	**380.7**	**357.3**
ENGLAND TOTAL	1,063	8	1,071	1.39	1.32	1,473.0	1,409.1

Farm Structure

After four years with no change, the number of hop growers declined by two farms for the 2008 crop year. The remaining 58 producers cultivated an average of 18.5 ha of hop fields per farm.

Acreage/Production/Alpha Content

Only a small increase in acreage was recorded. However, changes took place amongst the different varieties. In place of the aroma varieties **Fuggles** and **First Gold** which had been cleared, **Sovereign**, **Progress** and **Boadicea** varieties were planted. The expansion in the acreage of varieties in the high alpha hop group was primarily accounted for by **Pilgrim**.

2008 will be remembered by the growers for the heavy rainfall which occurred in the summer months and during the harvest. Once again, the progress of the harvest showed the fundamental differences in the weather conditions in the English hop-growing areas compared to the continental Central European climate. The lack of sunshine during the growth period led to below-average yields per hectare, particularly in the main varieties **Golding** and **Target**. The alpha percentages likewise remained below the long-term average and also below the previous year's values (results for 2007 in brackets): **Golding** 4.5% (4.9%), **First Gold** 7.5% (8.1%), **Fuggles** 4.0% (4.7%), **Challenger** 6.9% (7.0%), **Target** 9.7% (10.8%). As a result, alpha acid production by weight in 2008 was 12% below that of the previous year.

Market Situation

The proportion of forward contracts for the 2008 crop was above 80% at the time of harvest. The remaining spot market hops were all sold.

In April, the forward contract rate for the 2009 crop was 82%. Acreage is expected to remain stable.

FRANCE

Alpha production in mt

Area	Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
		2007	+/-	2008	2007	2008	2007	2008
Alsace	Strisselspalt	622	-9	613	1.93	1.90	1,198.1	1,167.7
	Other Aroma	126	10	136	1.74	1.63	219.4	221.1
	Total Aroma	**748**	**1**	**749**	**1.90**	**1.85**	**1,417.5**	**1,388.8**
	Bitter	3	1	4	0.67	1.63	2.0	6.5
	High Alpha	17	3	20	1.32	1.89	22.5	37.8
	Total Alsace	768	5	773	1.88	1.85	1,442.0	1,433.1
Nord	Aroma	2	0	2	1.55	1.55	3.1	3.1
	Bitter	4	0	4	1.53	1.50	6.1	6.0
	High Alpha	22	0	22	1.33	1.22	29.2	26.9
	Total Nord	28	0	28	1.37	1.29	38.4	36.0
FRANCE TOTAL		796	5	801	1.86	1.83	1,480.4	1,469.1

FRANCE

Farm Structure

The number of hop producers decreased by four year on year to stand at 86. The average area used for hop production increased from 8.8 ha to 9.3 ha per farm.

Acreage/Production/Alpha Content

In the Alsace growing region further replanting took place on a small scale within the aroma varieties, while the acreage of bitter and high alpha hops was increased slightly. In northern France, on the other hand, hop production remained unchanged. The growing conditions for hops were rather unfavourable over a prolonged period: an early and serious attack of powdery mildew, widespread damage due to thunderstorms at the end of May and a lack of moisture in July. The situation only changed with the rainfall at the beginning of August and favourable weather conditions which assisted flowering and cone development in the hops. The **Strisselspalt** variety achieved a below-average alpha content of 1.7 % in 2008, in contrast to a significantly above-average level of 2.8 % the previous year. Despite almost equal production volumes, the alpha acid yield therefore dropped by 23 %.

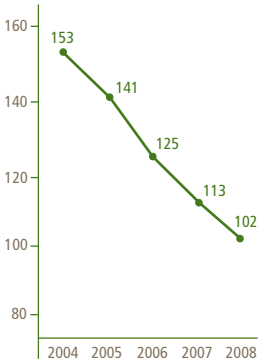
Market Situation

The entire 2008 hop crop was under forward contract based on the long-term average yield. Due to the good harvest, a quantity of spot hops became available which could not all be sold on the spot market. In April 2009, 70 mt of aroma hops remained unsold.
France is also affected by restructuring on the part of a large brewing group with regard to the **Strisselspalt** variety. As a result of contract cancellations with accompanying compensation, some of the **Strisselspalt** hops affected have been cleared and in some cases replaced with other hop varieties.
The acreage planted with hops in 2009 will be approx. 280 ha smaller than in 2008. However, due to further replanting of areas cleared of **Strisselspalt** with **Golding**, **Fuggles** and other varieties, for example, the acreage should increase again for the 2010 harvest. The forward contract rate for the 2009 hop crop this spring was 90 %.

SPAIN

Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Development of production Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Aroma	**1**	**0**	**1**	**0.50**	**0.30**	**0.5**	**0.3**
Nugget	487	-33	454	1.88	1.74	915.3	792.1
Columbus	5	1	6	2.68	2.25	13.4	13.5
Magnum	4	0	4	1.88	1.60	7.5	6.4
Total High Alpha	**496**	**-32**	**464**	**1.89**	**1.75**	**936.2**	**812.0**
SPAIN TOTAL	497	-32	465	1.88	1.75	936.7	812.3

Alpha production in mt



Farm Structure

As happened for the first time in 2007, in 2008 a survey on hop growing was carried out directly among the growers. According to its findings, hops are grown in 39 villages in the region around Leon, with 6 villages accounting for 60 % of the volume. Several small farms have stopped growing hops. The average area under hops is a little over 2 ha per farm.

Acreage/Production/Alpha Content

The acreage declined by 6 %, almost exclusively affecting the main variety **Nugget**. Weather conditions were unfavourable. The autumn and winter were too dry. In spring and summer there was adequate rainfall, but it was often too cold. In July and August conditions were warmer, but this was insufficient to compensate for the retarded growth. The yield per hectare in 2008 was a further 7 % below the below-average result for 2007. The alpha acid content of the **Nugget** variety, on the other hand, was gratifying. At 12.5 % it exceeded the above-average level of 12 % recorded in 2007. In total, the alpha yield in tonnes remained 10 % below the previous year.

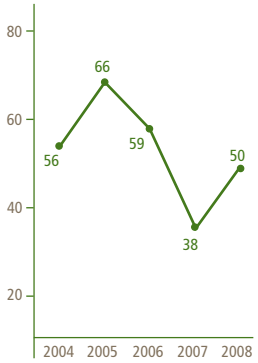
Market Situation

The 2008 crop which, as is the case every year, was purchased in full by the domestic brewing industry, only meets approx. 50 – 55 % of the needs of the Spanish brewing industry for the 2009 brewing year. Acreage will increase very slightly in 2009.

UKRAINE

Variety Group	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Development of production Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Aroma	720	115	835	0.58	0.69	420.0	580.0
Bitter	425	-111	314	0.66	1.02	280.0	320.0
UKRAINE TOTAL	1,145	4	1,149	0.61	0.78	700.0	900.0

Alpha production in mt



Farm Structure

There is unfortunately no current information on the number of hop farms. In 2007, hops were produced by approx. 70 farms on roughly the same acreage.

Acreage/Production/Alpha Content

There were major changes amongst the different varieties. Cultivation of what had previously been the main Ukrainian variety, **Clon-18** (aroma), was considerably reduced. The most widely grown variety in 2008 is called **Zagrava**, also an aroma variety. The acreage of bitter varieties was reduced in favour of aroma varieties. But there were also changes within this group of varieties, from which the **Promin** variety profited most. The crop yield improved in comparison with the previous year by 30%, but was nevertheless significantly below the international mean. The average alpha acid content for 2008 ranged around the previous year's level: aroma varieties 4.5% (4.0%), bitter varieties 7.3% (7.5%). Alpha production rose by 31%.

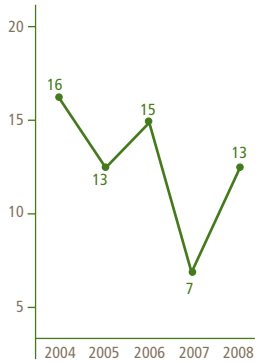
Market Situation

According to official announcements, the area for the 2009 crop has increased by approx. 200 ha. However, on account of the existence of considerable stocks from the 2008 crop, this is rather doubtful.

RUSSIA

Variety Group	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Development of production Production mt	
	2007	+/-	2008	2007	2008	2007	2008
Aroma	160	186	346	0.70	0.72	112.0	249.0
Bitter	68	6	74	0.68	0.64	46.0	47.0
RUSSIA TOTAL	228	192	420	0.69	0.70	158.0	296.0

Alpha production in mt



Farm Structure

The number of hop growers declined by 17 farms in comparison with 2007. Six farms merged and 11 farms were forced to discontinue production due to insolvency. The acreage thus made available was taken over by other farms. Twenty one growers remained in 2008, cultivating a hop acreage averaging 20 ha per farm.

Acreage/Production/Alpha Content

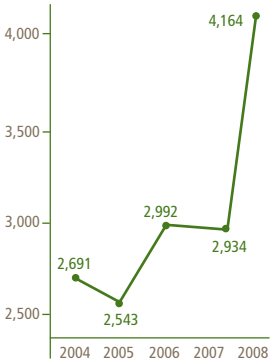
The Russian growers replaced the bitter hops they had cleared after the 2006 harvest with the aroma variety **Ranny**. This means that from 2006 to 2008 exactly the same acreage was under hops. However, in the acreage figures announced for 2007, the newly planted young hops were not taken into account. In 2008 the proportion of aroma hops was 82% of the entire acreage, in comparison with 46% in 2006. Whilst the 2008 crop yield for aroma hops was slightly above the long-term national average, it remained slightly below for the bitter varieties. As in the previous year, the aroma variety **Ranny** once more achieved an alpha acid content of 4.2%, which is unusually good by Russian standards. The bitter varieties also produced a considerably above-average result with 6.4% (previous year: 5.3%) Very good alpha acid values and the increase in acreage together resulted in an 89% rise in alpha production in comparison with the previous year.

Market Situation

At the start of picking in 2008, 40% of the crop volume was under contract. In April 2009, 15 mt of unsold hops remained in storage. In spring of this year, the forward contract rate for the 2009 crop was around 10%. No great changes are expected in acreage.

Area	Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
		2007	+/-	2008	2007	2008	2007	2008
Washington	Willamette	1,806	81	1,887	1.48	1.51	2,667.5	2,858.1
	Cascade	527	312	839	2.28	2.00	1,200.4	1,674.7
	Cluster	148	22	170	2.28	2.28	337.0	388.3
	Palisade	37	87	124	2.81	2.35	104.0	291.2
	Centennial	*86*	16	102	*1.48*	1.63	*126.9*	166.7
	Golding	21	-6	15	1.69	1.55	35.4	23.9
	Mount Hood	17	-5	12	*1.48*	1.76	25.7	20.7
	Other Aroma	*433*	-138	295	*1.47*	1.35	*636.0*	396.8
	Total Aroma	***3,075***	**370**	**3,445**	***1.67***	**1.69**	***5,132.9***	**5,820.4**
	CTZ	3,270	1,453	4,723	*3.04*	2.92	*9,939.9*	13,785.0
	Galena	1,226	-180	1,046	1.99	2.05	2,440.9	2,140.2
	Summit	256	716	972	2.04	1.86	522.3	1,803.9
	Chelan/Tillicum	*244*	397	641	*2.61*	2.39	*636.7*	1,532.3
	Nugget	442	-3	439	2.14	2.32	946.4	1,018.7
	Millenium	295	-5	290	2.63	2.73	776.0	792.4
	Warrior	137	22	159	2.14	2.07	292.7	329.9
	Chinook	126	-11	115	2.04	2.00	256.5	229.5
	Other High Alpha	*134*	416	550	*1.46*	2.37	*195.8*	1,302.3
	Total High Alpha	***6,130***	**2,806**	**8,936**	***2.61***	**2.57**	***16,007.1***	**22,934.2**
	Total Washington	9,205	3,176	12,381	2.30	2.32	21,140.0	28,754.6
Oregon	Willamette	970	79	1,049	1.77	1.73	1,713.9	1,809.7
	Mount Hood	72	3	75	1.84	1.75	132.5	130.9
	Golding	47	8	55	1.56	1.45	73.2	80.0
	Cascade	25	6	31	*1.82*	1.19	*45.4*	36.8
	Other Aroma	*223*	81	304	*1.61*	1.03	*358.4*	313.5
	Total Aroma	***1,336***	**178**	**1,514**	***1.74***	**1.57**	***2,323.4***	**2,370.9**
	Nugget	678	186	864	*2.50*	1.97	*1,695.3*	1,702.4
	Millennium	119	20	139	2.60	2.44	309.8	339.0
	Other High Alpha	*0*	61	61	*0.00*	2.01	*0.0*	122.5
	Total High Alpha	***797***	**267**	**1,064**	***2.52***	**2.03**	***2,005.1***	**2,163.9**
	Total Oregon	2,133	445	2,578	2.03	1.76	4,328.5	4,534.8
Idaho*	**Total Aroma***	***730***	**52**	**782**	***1.10***	**1.53**	***805.4***	**1,192.9**
	Total High Alpha*	***442***	**367**	**809**	***2.39***	**2.58**	***1,056.6***	**2,091.2**
	Total Idaho	1,172	420	1,592	1.59	2.06	1,862.0	3,284.1
Total Aroma*		***5,141***	**601**	**5,742**	***1.61***	**1.63**	***8,261.7***	**9,384.2**
Total High Alpha*		***7,369***	**3,440**	**10,809**	***2.59***	**2.52**	***19,068.8***	**27,189.3**
USA TOTAL		12,510	4,041	16,551	2.18	2.21	27,330.5	36,573.5

Alpha production in mt



Minor statistical deviations may result from conversion of acres into hectares and pounds into metric tons.

** As growers in Idaho have only indicated total acreage and production figures since 2002, the figures for the individual variety groups are estimates.*

in italics: corrections for 2007 as stated in last year's report.

US hop production once again provided impressive evidence of its first-class productivity. No other hop-growing country in the world has so far managed to achieve an increase in area of more than 4,000 ha, i.e. an expansion of its acreage by a third, within one year. Besides access to bank loans arranged through contracts agreed on the basis of trust between the growers and traders on the one hand and the traders and brewers on the other, the Yakima Valley in particular, where 3/4 of the new hop yards are located, is clearly favoured by nature. The combination of the hot dry climate in summer and artificial irrigation enables the farmers there to harvest around 80 % of a normal crop already in the first year – something unique in hop farming – depending on the weather and variety, and therefore to react more quickly to market demand than any other growing regions, as long as the price is right.

Farm Structure

For the second year in a row, the number of US hop growers increased, underscoring the markedly changed

economic environment of the hop industry. 12 small growers with an average 18.3 ha per entity entered the industry in 2008 and brought the total number of growers (decision making entities) to 74. Because of the significant acreage expansion, the average farm size also rose, from 200 ha in 2007 to 224 ha in 2008.

Acreage/Production/Alpha Content

According to the USDA, acreage strung for harvest of crop 2008 increased by 32 % or 4,041 ha to 16,551 ha compared to the previous year. Almost all of the new hop yards were planted to high alpha varieties. The variety complex of **Columbus/Tomahawk/Zeus (CTZ)** expanded by approx. 51 % or 1,765 ha (incl. estimated acreage for Idaho) to 5,213 ha; **Summit** more than tripled from the previous year to 972 ha; **Bravo** and **Apollo** were reported for the first time and were grown on 372 ha. The varieties **Chelan** and **Super Galena** also added acreage. **Galena** was the one alpha variety that lost ground again this year with a reduction in excess of 200 ha. Aroma varieties also increased, with **Cascade** expanding by 332 ha and **Willamette** by 161 ha. The balance of the aroma hops varieties was relatively unchanged.

Variety Development

The acreage of the main varieties in the US growing regions developed as follows:

As growers in Idaho have only indicated total acreage since 2002, the figures for the individual variety are estimates.

** rounding difference*

Variety	2004 ha	2005 ha	2006 ha	2007 ha	2008 ha
Willamette	2,362	2,645	2,823	2,824	2,985
Cascade	619	505	484	559	891
Cluster	244	250	146	152	174
Palisade	–	22	22	37	126
Centennial	–	45	86	86	102
Mount Hood	103	109	64	89	87
Other Aroma	1,226	1,266	1,309	1,394	1,377
Total Aroma	**4,554**	**4,842**	**4,934**	**5,141**	**5,742**
Columbus-Tomahawk-Zeus (CTZ)	2,679	2,911	2,911	3,448	5,213
Nugget	869	1,004	1,067	1,135	1,318
Galena	1,638	1,849	1,733	1,418	1,207
Summit	–	–	27	256	972
Chelan/Tillicum	159	140	259	244	641
Millenium	562	571	473	414	429
Chinook	252	251	174	153	167
Warrior	326	241	175	137	159
Other High Alpha	98	115	131	165	702
Total High Alpha	**6,583**	**7,082**	**6,950**	**7,369***	**10,809***
USA TOTAL	11,137	11,924	11,884	12,510	16,551

The record acreage expansion of crop 2008 required growers to reactivate all idled hop acreages and harvesting capacities as well as add new acreages by converting fields of other crops to hops and construct new harvesting facilities that could handle these additional volumes. In all, it is estimated that the industry spent approx. 130 million USD to lease and buy new lands, install new machinery and upgrade rolling stock as well as new warehouses and increased processing capacities.

At times during the spring of 2008, it appeared that the acreage expansion was limited by the supply of poles, as the industry desperately tried to secure an estimated 600 thousand hop poles, a figure that is seven times greater than its normal usage. A further limiting factor was the availability of land. Competing crops, in the midst of the agricultural commodity boom, continued to drive up land values and restricted easy access to land. Only when prices for alpha reached a level that surpassed economic returns of other high value crops, did enough land become available to satisfy the demand of alpha that was expressed in the long term brewery contracts.

The total US crop production grew a record 9,243 mt in volume or 34 % compared to 2007 and was in line with acreage expansion. Because most of the additional production in 2008 came from high alpha varieties, the total alpha production increased by approx. 1,200 mt or 42 % more than the previous year. Despite this significant increase in total alpha, the alpha contents of the **CTZ** variety complex did not perform to historical levels. Similarly to last year, **CTZ** produced an average alpha content that was more than one percentage point (absolute) lower than its long term average, with some lots lower by as much as three percentage points. Other high alpha varieties came in at or slightly higher than their long term averages.

Alpha Acid Table

Variety	2004	2005	2006	2007	2008	Average
Willamette	4.2%	4.2%	4.6%	4.5%	4.7%	4.4%
Mount Hood	4.3%	4.4%	4.6%	4.4%	4.9%	4.5%
Cascade	5.5%	5.8%	6.1%	5.7%	6.2%	5.9%
Cluster	6.4%	6.0%	7.0%	6.5%	6.4%	6.5%
Galena	11.9%	12.1%	12.1%	11.6%	11.9%	11.9%
Nugget	12.7%	12.3%	13.2%	12.3%	12.3%	12.6%
Chinook	12.9%	11.5%	12.2%	11.6%	11.8%	12.0%
Super-High Alpha	14.3%	14.4%	15.2%	13.2%	13.3%	14.1%

Crop Development

Washington: Mountain snow pack accumulation during the winter months was sufficient to assure uninterrupted irrigation water supply throughout the growing season. Colder than normal temperatures during spring held back growth of especially newly planted acreages raising concerns that the US industry would fall short of its contracted alpha supply. Also, the cooler temperatures resulted in an abnormally long bloom period which is likely to have contributed to the unusually high seed count experienced in crop 2008.

Plant growth by August in mature fields caught up to normal levels and only fields planted after mid May still lagged behind. As the year before, light rains at the end of August covered most of the Washington growing districts. Whether as a result of these light rains or due to some other cause, many of the **CTZ** fields showed cone discoloration as of mid September. This condition became more severe as harvest progressed. Harvest was finally complete by October 10, making it one of the longest harvests on record.

Oregon: The winter season was much cooler than normal with above average snow pack in the Cascade Mountains. In the spring and early summer temperatures fluctuated from extreme lows to extreme highs, which held back normal plant development in some varieties. Also in this state, an abnormally long bloom period from mid July through early August shortened the time for cones to mature and likely led to a lower alpha content and to lower yields than normal. Growers also had to be very diligent in their downy mildew control during this extended bloom period.

Quality: With harvest stretching into well into the first week of October for most growers, not every field was harvested within optimal maturity. Particularly, the variety complex of **CTZ** was not only affected by a harvest that was too long but also by a powdery mildew induced cone discoloration as of mid September.

The US seed count was not up to expectations this year with the overall seed contents increasing to 1.85% compared to 0.83% in 2007. Approx. 20% of the entire crop had a seed count of 4% or higher. The content of extraneous matter (leaf and stem) also rose slightly from 0.19% in 2007 to 0.31% in 2008. Control of insects, such as aphids and mites was effective throughout the growing season and little to no damage was observed at harvest.

Contract Market

Alpha varieties: Against a backdrop of depleted hop inventories, two successively very mediocre poor world crops and a brewing industry growing at above average rates, demand for alpha with immediate delivery from crop 2008 was relentless. When demand for more alpha by February 2008 did not subside and growers were no longer willing to expand their acreage even further at prices of 132 USD, 66 USD, 44 USD, 35 USD and 31 USD per kg of alpha for a 5 year contract from 2008 through 2012, prices ultimately jumped to 220 USD, 132 USD, 66 USD, 44 USD and 38 USD or a sum of 500 USD per kg alpha for all crop years combined from 2008 – 2012. At this level, growers were able to enter into five year leases (as much as 2,500 USD/ha/year) or make outright land purchases and invest in expanded harvesting capacities.

By June 2008, market activities came to a halt as all hops that could physically be planted had been planted and all growers who were willing to sell had sold. Only few growers held back some volumes but only to assure fulfillment of their contracts.

Aroma varieties: As in 2007, the 2008 aroma market was again dominated by the revenue expectations from the alpha varieties. As a result, **Willamette** was sold for more than 45 USD per kg in 2008 and varying prices for the remaining crop years 2009 through 2012. In April, a few **Cascade** sold at 37.50 USD, 15.50 USD, 13 USD, 11 USD and 11 USD per kg for 2008 – 2012 crops.

Spot Market Crop 2008

As the harvest neared its end, it became clear that the US crop 2008 and especially its main alpha producer (**CTZ**) again fell short of expectation. At the same time, reports from Germany indicated that this country was

USA

harvesting its best crop ever which eased fears that the world hop industry produced yet another crop that fell short of demand. Still, the contract short deliveries in the US on alpha varieties resulted in a spot market that began at prices of 110 USD per kg alpha and then increased to about 132 USD per kg alpha as a reflection of the little available spot volume. However, with prices for alpha in the US exceeding those in Germany, the last few hops were sold at about 77 USD per kg alpha at the end of December.

Willamette was one of the first hops to come on the spot market but was met with little interest. There were some sales at 6.50 USD per kg but most **Willamette** spots remained unsold for the season. A few **Cascade** spot hops that sold started in mid October at 17.50 USD per kg but also this market eased back to about 11 USD per kg.

Further Market Development

With a lackluster spot market and the recognition that the world hop industry had produced considerably more alpha than originally anticipated at the same time that the brewing industry was negatively impacted by the world economic recession, market activities turned from selling alpha hops to restructuring existing future contracts.

On the aroma front, a large brewer financially accommodated growers of **Willamette** to voluntarily reduce their volume commitments for crops 2009 and 2010. While some of the removed Willamette acreage will be planted to other varieties, most of this acreage will represent an overall acreage reduction for the industry.

CHINA

Alpha production in mt

Area	Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
		2007	+/-	2008	2007	2008	2007	2008
Xinjiang	Tsingdao Flower	932	1,203	2,135	3.01	1.60	2,801.0	3,420.0
	SA-1	533	0	533	1.88	1.88	1,000.0	1,000.0
	Kirin Flower	204	296	500	3.18	1.40	648.0	701.0
	Marco Polo	353	0	353	3.40	3.40	1,200.0	1,200.0
	Other Aroma	79	41	120	2.25	1.68	178.0	201.0
	Total Xinjiang	2,101	1,540	3,641	2.77	1.79	5,827.0	6,522.0
Gansu	Tsingdao Flower	1,460	0	1,460	3.32	3.22	4,853.0	4,700.0
	Nugget	344	0	344	0.78	0.86	269.0	296.0
	Kirin Flower	13	0	13	3.85	3.85	50.0	50.0
	Other High Alpha	106	37	143	2.32	2.03	246.0	290.0
	Other Aroma	82	0	82	1.83	1.71	150.0	140.0
	Total Gansu	2,005	37	2,042	2.78	2.68	5,568.0	5,476.0
Total Aroma		**694**	**41**	**735**	**1.91**	**1.82**	**1,328.0**	**1,341.0**
Total Bitter		**2,609**	**1,499**	**4,108**	**3.20**	**2.16**	**8,352.0**	**8,871.0**
Total High Alpha		**803**	**37**	**840**	**2.14**	**2.13**	**1,715.0**	**1,786.0**
CHINA TOTAL		4,106	1,577	5,683	2.78	2.11	11,395.0	11,998.0

Farm Structure

After four farms in the Yumen area in Gansu were merged, 22 hop farms remained in that region. In Xinjiang, the number of farms involved in hop growing remained constant at 37. Taking all of China's 59 hop farms into account, an average area of 96 ha per farm was under hops in 2008, compared with 66 ha in the previous year.

Acreage/Production/Alpha Content

The excellent income for farms from hops in crop year 2007 led to a greater expansion in acreage in 2008 than expected. The increase in the Xinjiang growing region was 73 %, with the greatest changes in area recorded for the main variety **Tsingdao Flower** (+130 %) and **Kirin Flower** (+145 %). Acreage increased only slightly in the Gansu growing region.

The growing conditions were unfavourable in both growing regions due to the generally hot and dry weather. The crop yield and the quality of the hops were also impaired by frequent pest infestation and strong winds.

Although the **Tsingdao Flower** variety achieved a better result than in 2007, with an average alpha content of 5.7 %, it still remained somewhat below the long-term average. In comparison with the previous year there was a 16 % increase in alpha acid yield.

CHINA

Market Situation

China's beer output fell short of expectations. In addition, the breweries were once again able to reduce the already low hopping rate by a large factor. This significantly reduced the quantity of hops required. At the same time, the hops planted in 2006 and 2007 came into full bearing.

In September 2008, under intense purchasing competition, hop traders bought the high-quality hops of the main variety **Tsingdao Flower** subject to purchase agreements at prices of 55 to 60 CNY (5.80 to 6.30 EUR) per kg from the growers and supplied these to the breweries. Although purchase agreements existed with the breweries, they were largely without fixed prices. It was only in March 2009 that some of the purchasers were prepared to settle at 40 to 45 CNY (4.20 to 4.75 EUR) per kg for the hops, i.e. at significantly lower prices than the traders had paid, with a trend towards further falling prices for the remaining stocks. The resulting losses on the part of the hop traders must have been stunningly high.

Hops remained unsold in both growing regions, with half held by the traders and half by the farms. The quantity involved was estimated in April 2009 to be a total of 3,500 metric tons, mostly consisting of lots with low alpha acid contents.

In order to protect themselves financially from a substantial downward price trend in hop growing, some growers in the Xinjiang growing region have also planted other crops in their hop yards for crop year 2009, which will result in a lower hop yield. The acreage in Xinjiang in 2009 is likely to be 15 – 20 % smaller than in 2008, based on normal cultivation levels. In the Gansu growing region, on the other hand, there will be a slight increase.

Purchase agreements with farmers for hops from the 2009 crop are likely to account for approx. 75 % of the expected harvest yield, as in the previous year. In China, the forward contract market exists only in the form of purchase agreements containing corresponding variety and quality definitions, but no price specifications. If beer production in 2009 does not necessitate a significantly higher hop supply, it is likely that, as for the 2008 crop, the volume contracts already agreed by the breweries will not be taken up completely. Hard times lie ahead for the Chinese hop industry.

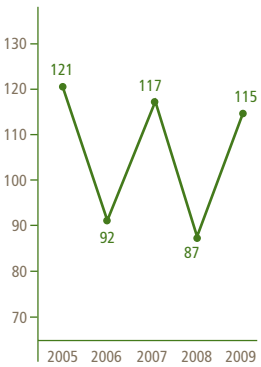
Hop Statistics

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.

CROP 2009: SOUTH AFRICA

Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
	2008	+/-	2009	2008	2009	2008	2009
Southern Star	294	3	297	1.40	1.79	412.0	533.0
Southern Promise	111	40	151	1.54	1.48	171.0	223.0
Outeniqua	22	7	29	1.41	1.14	31.0	33.0
Other	17	-13	4	0.82	2.25	14.0	9.0
SOUTH AFRICA TOTAL	444	37	481	1.41	1.66	628.0	798.0

Alpha production in mt



Farm Structure

The number of farms growing hops remains unchanged at 15. In addition to the 11 private producers, there are 3 commercial farms and one research establishment. In crop year 2009, the average hop-growing area per farm was 32 ha in comparison with 30 ha the previous year.

Acreage/Production/Alpha Content

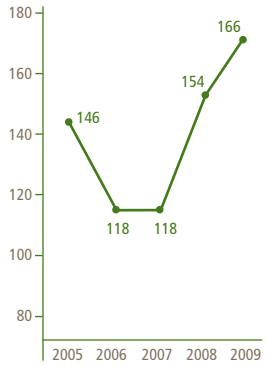
The acreage for 2009 increased by 8 % in comparison with 2008. The hops harvested in February and March were 7 % below the average yield. A heat wave and lack of rain during the growing period had a detrimental effect on hop production. Irrigation by the farmers was unable to compensate for the deficit in rainfall in the period from November 2008 until the harvest. Production was 18 % above the hectare yield of the previous year and was much better than had been expected due to the drought. The alpha content figures for 2009 exceeded the values from the previous year (in brackets) which were already above the average. **Southern Promise** 12.3 % (12.2 %), **Outeniqua** 14.9 % (14.2 %), **Southern Star** 15.3 % (14.6 %). The alpha yield improved by 32 % in comparison with 2008.

Market Situation

The hops were produced for and purchased by the domestic brewing industry.

CROP 2009: AUSTRALIA

Alpha production in mt



Area	Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Development of production Production mt	
		2008	+/-	2009	2008	2009	2008	2009
Tasmania	Super Pride	104	2	106	2.29	2.35	237.7	248.2
	Pride of Ringwood	89	0	89	2.71	3.09	239.8	276.6
	Millennium	47	13	60	2.10	2.43	99.5	146.3
	Victoria	12	1	13	3.18	3.21	39.4	40.1
	Cluster	9	0	9	2.51	2.30	22.3	20.5
	Other	31	-8	23	1.51	1.82	46.4	42.0
	Total Tasmania	292	8	300	2.35	2.58	685.1	773.7
Victoria	Super Pride	71	12	83	1.83	2.39	129.9	198.6
	Topaz	76	0	76	3.58	3.43	271.0	261.4
	Pride of Ringwood	20	5	25	2.00	1.80	40.0	45.0
	Victoria	13	0	13	2.54	2.74	33.5	36.2
	Cluster	10	3	13	2.00	1.31	20.0	17.3
	Other	2	2	4	4.05	3.35	9.7	10.7
	Total Victoria	192	22	214	2.62	2.66	504.1	569.2
Total Bitter		**128**	**8**	**136**	**2.52**	**2.63**	**322.1**	**359.4**
Total High Alpha		**323**	**28**	**351**	**2.51**	**2.65**	**811.0**	**930.8**
Total Other		**33**	**-6**	**27**	**1.70**	**2.00**	**56.1**	**52.7**
AUSTRALIA TOTAL		484	30	514	2.46	2.61	1,189.2	1,342.9

Farm Structure

In crop year 2009, hops were grown on nine farms, which is one more than the previous year. Although the acreage was larger, the average hop-growing area per farm fell from 60 ha to 57 ha.

Acreage/Production/Alpha Content

The acreage increased by 6%. While farmers in the Tasmania growing region primarily increased the acreage of the high alpha variety **Millennium**, expansion in the Victoria growing region mainly centred on the high alpha variety **Super Pride**.

Once again, growing conditions were very different in the two Australian growing regions.

In Tasmania, the warm weather at the beginning of spring led to lush growth at first. Due to the subsequent onset of cool weather, the hops only grew slowly thereafter. Temperatures remained unusually low, so that the hops had only reached half trellis height by Christmas. In normal years at this time most varieties would have reached full trellis height. The weather in early summer encouraged further development up to the onset of flowering. Due to the long period of cool weather during vegetative growth, the hop plants had distinctly less foliage than usual. This encouraged flowering right down to the lower part of the vines and was also of benefit for ripening the cones. As a result of below-average temperatures, the hops only ripened slowly. The below-average alpha acid level in the high alpha varieties was more than compensated for by a crop yield per hectare which exceeded expectations.

In Victoria, hop development was generally good until the temperatures in January and the following months reached 40° C and above. Not even copious irrigation was able to compensate for the adverse effects of the high temperatures. Although there was plentiful coning, the cone weight and alpha yield were nevertheless much lower than expected. Alpha content in the main varieties for the 2009 crop in comparison with the previous year's results: **Pride of Ringwood** 9.5% (8.7%), **Super Pride** 12.9% (13.9%), **Millennium** 13.2% (13.9%), **Topaz** 15.5% (17.1%). Year on year, the total alpha yield from the 2009 crop rose by 8%.

Market Situation

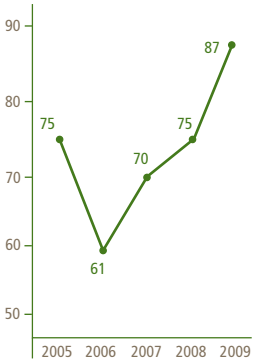
After all contractual obligations had been met, there were no hops available for the spot market from the 2009 crop. The forward contract rate for the next two crop years is above 90%.

In response to the demand for new varieties, Hop Products Australia (HPA) has already produced a number of varieties from its own hop breeding programme. The high alpha variety **Galaxy** and the aroma varieties **Summer Saaz** and **Southern Hallertau** are particularly noteworthy. There are also some interesting varieties which are sure to offer the brewers attractive new hop properties over the coming years.

CROP 2009: NEW ZEALAND

Variety Group	Development of acreage Acreage ha			Development of production Ø Yield mt/ha		Production mt	
	2008	+/-	2009	2008	2009	2008	2009
Aroma	226	9	235	1.71	1.89	387.0	445.0
High Alpha	134	32	166	2.47	2.33	331.0	387.0
NEW ZEALAND TOTAL	360	41	401	1.99	2.07	718.0	832.0

Alpha production in mt



Farm Structure

One new farm joined the 17 already growing hops in crop year 2008. Taking into account the increase in hop acreage, the average area devoted to hop growing in 2009 was 22 ha per farm, compared with 21 ha in the previous year.

Acreage/Production/Alpha Content

The acreage expanded by 11%, with by far the larger part attributable to high alpha varieties. The growing period was marked by a good balance between regular rainfall and adequate sunshine. The aroma varieties, which had had slightly below-average yields in 2008, produced a good average yield in 2009. In contrast, the high alpha varieties were unable to repeat the greatly above-average results of 2008, but nevertheless remained above the long-term average. The alpha-acid content of the main varieties also showed slightly above-average results: **NZ Hallertau Aroma** 2009: 7.6% (2008: 7.0%), **NZ Pacific Gem** 2009: 15.1% (2008: 16.0%). The alpha yield increased by 17% year on year.

Market Situation

There was a high forward contract rate for the 2009 crop. The good per-hectare and alpha yields, however, enabled spot hops to be offered. The hops were grown without the use of pesticides and certified accordingly. The areas where hops are grown organically are expanding.

The next years' crops are largely under contract. Several newly developed aroma varieties have been planted as part of New Zealand's hop research programme.

PLANT DEVELOPMENT 2009

Germany

The winter of 2008/2009 was unusually cold, with comparatively plentiful snow in the Hallertau region. Night frost was recorded almost continually from the turn of the year to the end of March, which led to an improvement in the soil structure due to favourable frost action. For this reason, the hop plants had no difficulty in sprouting in the spring. The start of April was accompanied by the sudden arrival of warm temperatures, and ground conditions in the hop gardens were constantly suitable for vehicles for the spring work until early May. Due to the warmest month of April since weather records were started, the hops in all the German growing regions got off to an excellent start in crop year 2009. This meant that, in spite of the the remarkably severe winter, in some cases training was completed in April – in other words, before it would normally begin. As the month of May brought average temperatures and a good supply of water, the hops maintained their lead in development compared with the long-term average until early June, by which time they had reached approx. 70% of trellis height.

On the evening of 26 May, there was an abrupt fall in temperature, combined with unusually widespread thunderstorms and hail in the South of Germany.

According to the latest estimates, this hailstorm has adversely affected, and in some cases totally destroyed, approx. 20 to 25% of hop acreage in the Hallertau growing region and approx. 60% of acreage in the Tettnang region.

USA

Winter precipitation in all three hop-growing regions was normal to above average. It is expected that the hop fields will receive an adequate supply of irrigation water from the thaw of the snowpack in the Cascade Mountains during the growing period. Temperatures in spring and early summer are within normal ranges, although a colder period in spring slightly delayed plant development. By June, however, plant growth had fully caught up with normal levels.

Germany

According to the provisional results of the acreage survey for crop year 2009, hops are grown on an area of 18,473 ha. This means that acreage has decreased year on year by 222 ha. However, there has been a major shift with regard to the planting of aroma and high alpha varieties. The acreage planted with aroma varieties has been reduced by 641 ha, but at the same time it has increased by 458 ha for high alpha varieties. There has been an increase of 520 ha for the super high alpha variety Herkules alone. This means that in Germany an area of 2,388 ha is planted with this variety in 2009.

USA

According to the findings of the official hop acreage survey published by the US Department of Agriculture (USDA) on 1 June 2009, total acreage in the USA has decreased by 313 ha. As expected, the greatest reduction was shown for the aroma variety Willamette (-708 ha).

The acreage of the high alpha varieties CTZ, Warrior and Millennium has decreased by 372 ha.
There has been an increase, however, of 165 ha for Apollo® and Bravo® and 537 ha for the "Other varieties", of which the high alpha variety Summit® makes up slightly more than half.

World

Contrary to expectations, growers have already reacted to the changing market situation by reducing their hop acreage. This was particularly apparent in China and in countries in the European Union. A further reduction in acreage will probably be required world-wide in order to adjust hop and alpha production to the changed requirements of the brewing industry.
The decisive factor will be the extent to which the changes in the world economy affect beer consumption and therefore the raw materials requirements of the brewing industry. In addition, as every year, much will depend on the effects of climatic conditions on the hop crop.

Currency Exchange Rates

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

1 EUR equals (reference by ECB):

	on 2 June 2008	on 1 June 2009		on 2 June 2008	on 1 June 2009
USA	1.5521 USD	1.4220 USD	Canada	1.5460 CAD	1.5397 CAD
Australia	1.6243 AUD	1.7552 AUD	Poland	3.3809 PLN	4.4620 PLN
China	10.7607 CNY	9.7073 CNY	Switzerland	1,.6182 CHF	1.5140 CHF
United Kingdom	0.7915 GBP	0.8680 GBP	Russia	36.8485 RUB	43.5185 RUB
Japan	162.6400 JPY	134.8900 JPY	Czech Republic	25.0300 CZK	26.7830 CZK

Conversion Table

Area:	
1 hectare (ha) = 10,000 m²	= 2.934 Bavarian „Tagwerk"
1 hectare (ha) = 10,000 m²	= 2.471 acres
1 Bavarian „Tagwerk"	= 0.341 ha
1 acre	= 0.4047 ha

Length:	
1 yard	= 3 feet = 36 inches = 91.44 cm
1 mile	= 1.609 km

Volume:	
1 hl = 100 l	= 26.42 gall = 0.8523 bbl (USA)
1 hl = 100 l	= 22.01 gall = 0.6114 bbl (Brit.)
1 barrel (bbl/USA)	= 31 gall = 1,1734 hl
1 barrel (bbl/GB)	= 36 gall = 1,6365 hl

Weight:	
1 metr. ton (mt) = 1,000 kg	= 20 cwt (D) = 2,204.6 lbs
1 Zentner cwt (D) = 50 kg	= 110.23 lbs = 1.102 cwt (USA)
	= 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.
1 centner (GB)	= 100 lbs = 45.36 kg
	= 0.9072 Ztr.
1 kg	= 2.20462 lbs
1 lb	= 0.45359 kg

Pressure:	
1 bar = 14.5038 psi	1 psi = 0.06895 bar

$86^\circ F = \frac{(86 - 32) \times 5}{9} = 30^\circ C$ $\quad 30^\circ C = \frac{30 \times 9}{5} + 32 = 86^\circ F$

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PUBLISHING DETAILS

Publisher: Joh. Barth & Sohn GmbH & Co KG.
Freiligrathstrasse 7/9, 90482 Nuremberg
Project responsibility: Stephan Barth,
managing partner, Nuremberg
Editor: Heinrich Meier, Georgensgmuend

Layout: Lingner Marketing GmbH, Fuerth
Cover: Lingner Marketing GmbH, Fuerth
Printing: COS Druck & Verlag GmbH, Hersbruck

Nuremberg, July 2009

Source material from all over the world was required to produce this report.
We would like to thank all those who provided us with information.

THE HOP – A VERSATILE PLANT

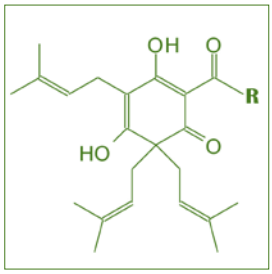
When it comes to hop acids, the beta acids have always been overshadowed by the alpha acids. The beta acids, or lupulones, are mainly known for their antibacterial effect which improves microbiological safety in the brewing process. As they have low solubility in their native form and are largely discharged after the hot phase in the brewery, they have scarcely been studied in brewing science until now. The most recent findings have shown that beta acids in the form of reaction products (such as cohulupone, for example) also contribute to the bitterness in beer.

It was not until the 90s that research began into the potential possessed by beta acids for applications outside the brewing industry. Even in tiny concentrations (ppm range), they display an antibacterial effect against gram-positive bacteria. Beta acids are highly effective against food spoilers such as *Lactobacillus sp.*, *Pediococcus sp.*, *Bacillus sp.*, *Streptococcus sp.*, and *Clostridium sp.*, but also against pathogens, such as *Staphylococcus aureus*, *Heliobacter pylori*, *Mycobacterium tuberculosis* and *Listeria monocytogenes*.

Gram staining is a method of differentiating bacterial species by colour analysis.

Their effect against gram-positive bacteria is of particular interest in the food sector when it is intended to inhibit unwanted germs without doing any damage to the beneficial organism at the same time. For example in beer and spirits production, but also in the baking of bread, what is often called baker's yeast, i.e. *Saccharomyces cerevisiae*, it is responsible for the fermentation process and contributes decisively to the production of the foodstuff.

By using beta acids as processing aids in these fermentations it is possible to selectively inhibit the growth of unwanted contaminating germs without doing any damage to the fermentation organism.



The structural formula of the beta acids.

Due to their antibacterial effect, beta acids can be considered for many different applications. In the food processing sector, beta acids have for years been used successfully in the sugar beet and cane sugar industries as a natural substitute for chemicals that are detrimental to health. In the meantime, beta acids have also become established in other industrial applications involving food and in the agrochemical industry. They are used in the feedstuffs industry and are also used to a minor extent alongside alpha acids in the production of bioethanol.

The potential of beta acids is by no means exhausted there either, and research and development are being conducted around the world into further areas of application in the food industry and the packaging industry, as well as in the production of hygiene products, cleansing agents and cosmetics.

When used in greater concentrations, beta acids have an inhibitory effect upon a wide range of microorganisms, but also upon parasitic protozoa and even upon mites and other arachnids. This makes them interesting for applications in plant protection, where, as a natural product, they can help to reduce the use of pesticides and insecticides.

However, applications for beta acids in human medicine are also well within the bounds of the conceivable. Recent research findings indicate that in the context of intestinal cancer treatment beta acids not only suppress metastasis but may also have an inhibitory effect on unwanted blood vessel formation. It was also possible to prove that beta acids have neurophysiological effects and to show that beta acids can have activity-stimulating and antidepressant effects. Used in combination with other antibiotic effective agents, such as Polymyxin B Sulfate, Tobramycin, etc., they were even shown to have an antibacterial effect against gram-negative bacteria.

The example of beta acids shows again and again the versatility with which nature has endowed the hop plant.

The table showing the 40 largest brewing groups published here in previous issues can now be found in the Market Leaders Report.