

THE BARTH REPORT



HOPS 2009/2010

BARTH-HAASGROUP

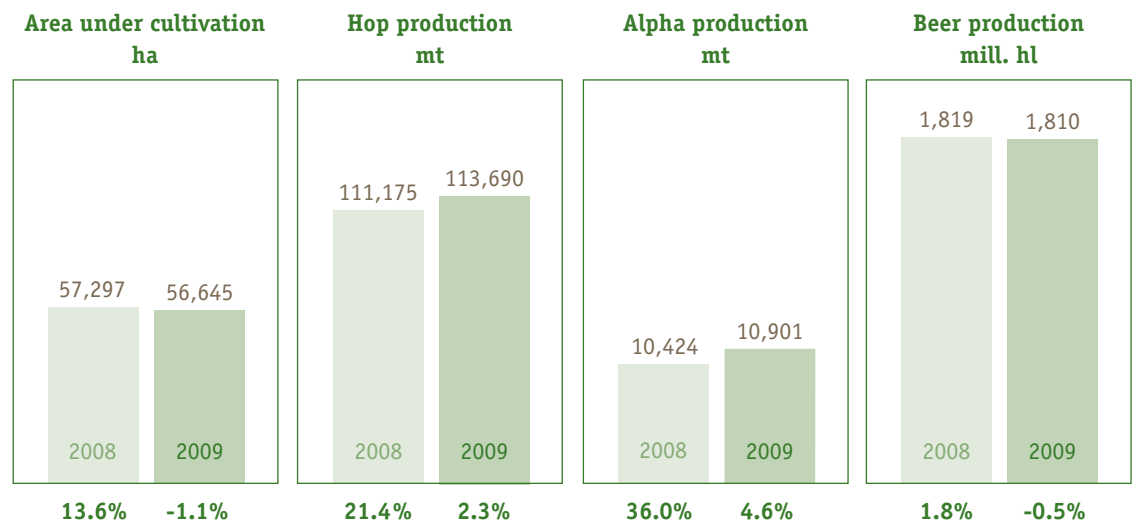


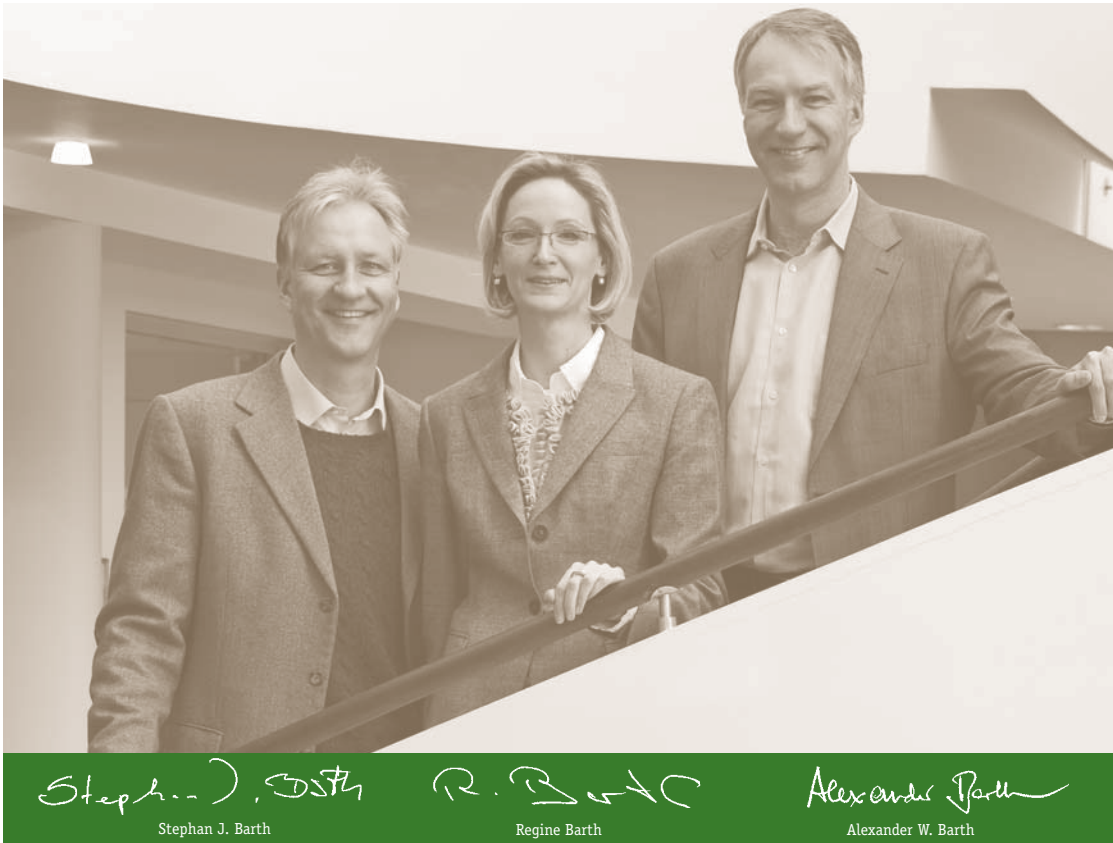
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WORLD MARKET KEY DATA





Event with far-reaching consequences

Researchers at NASA have discovered that the earth's axis has shifted as a result of the earthquake in Chile in February of this year. The earthquake has given the planet a spin - and it is now revolving somewhat faster than before. According to the geophysicists' calculations, the length of a day is now 1.26 millionths of a second shorter.

The hop industry has experienced its own form of earthquake, but the effects are more immediately noticeable. The shifting of the hop world's axis has resulted in a near seizure of the hop market.

Following the 2007 harvest, encouraged by the prospect of long-term contracts, the additional acreage demanded by the brewing industry was planted. Just when crop volume in 2008 suggested that the global supply shortage on the hop market had been eradicated, the world economic crisis and the new market situation made the hop world quake. The quantity of alpha acid now required is significantly lower than the figure calculated by the brewing industry only three years ago, and the crop 2009 will present the hop and brewing industries with further supplies of alpha acid that are surplus to requirements.

Creativity and flexibility are called for

The earthquake is a thing of the past; its effects are well-known. What is necessary now is to restore meaningful order, which means reducing acreage to the required proportions. At the same time, contracts between the brewing industry, hop trading companies and hop growers are in immediate need of adjustment. There is no point in producing alpha acid that is not needed and, consequently, will not be paid for.

If the market is to return to health, unconventional steps are called for which will require flexibility from all the market partners. Acreage adjustment will cost money - a lot of money. In this connection the hop industry cannot afford to free the brewing industry from the responsibility of its commitments in the form of multi-year supply contracts. Sustainable solutions are overdue.



POLITICAL SITUATION

World events were dominated both by the battle against militant Islamism in **Afghanistan** and neighbouring **Pakistan** and by the situation in **Iran** and **Iraq**.

Following a recount, the incumbent president **Hamid Karzai** was declared the winner of the **Afghan presidential elections** of August 2009. He thus assumes for the second time governmental responsibility of this hitherto unpacified country that is caught between the troops of the Afghan government and the UN on the one side and the Taliban on the other in a near state of war.

In **Pakistan**, too, acts of terrorism against the civilian population and the military continued unabated. In October 2009 the Pakistani army launched an offensive against the Taliban in the area bordering Afghanistan.

In **Iran**, the reappointment of incumbent president **Mahmoud Ahmadinejad** was confirmed by the Guardian Council after a disputed election in June 2009. This triggered unrest and street protests which were suppressed by force. The country's nuclear policy led to considerable tension, particularly in its relations with Western nations. The negotiations continue.

Iraq was repeatedly shaken by series of attacks, mostly committed by suicide bombers, which caused many fatalities. In March 2010, the parliamentary elections were won by the Sunni-Shiite alliance Irakiya, led by former prime minister **Iyad Allawi**.

The **settlement construction plans** of Israel's prime minister **Binyamin Netanyahu** in East Jerusalem and the occupied West Bank are blocking the peace process between **Israel** and **Palestine**.

Following the dissolution of parliament in **Japan**, new elections were held on 30 August 2009. They were won convincingly by the opposition Democratic party DPJ, thus bringing more than 50 years of virtually

uninterrupted government rule by the Liberal Democratic Party (LDP) to an end. The new government leader, **Yukio Hatoyama**, resigned after only nine months in office, however. He was succeeded by **Naoto Kan** who took over the leadership of the DPJ at the same time.

In the general election in **Germany** in September 2009, the Christian Democratic Party and the Free Democratic Party together gained the necessary majority to form the coalition that both sides had campaigned for. **Angela Merkel** was returned to office as Chancellor.

In May 2010, the **United Kingdom** elected a new parliament. The leader of the Conservative Party, **David Cameron**, formed an alliance with the Liberal Democrats, thus ousting the incumbent prime minister **Gordon Brown** of the Labour Party from office.

Political life in the kingdom of **Thailand** was subjected to a serious test of endurance. For months, demonstrations by government opponents ("red shirts") which had begun peacefully increasingly got out of control and were put down by the military in May 2010.

In the **USA** the Senate and the House of Representatives voted in favour of President **Barack Obama's health reform** in March 2010. Although all citizens are now entitled to health insurance for the first time, this is likely to increase the budget deficit considerably. In April 2010 the presidents of the **USA** and **Russia** signed a new comprehensive treaty to limit the two countries' atomic arsenals.

Bad weather conditions were responsible for a plane crash in which **Poland's** president **Lech Kaczynski** and dozens of other Polish dignitaries were tragically killed in April 2010.



EUROPEAN UNION (EU)

European elections

In July 2009 the elections for the 7th legislative period of the European Parliament were held. There was a turn-out of 43 %. Conservatives and Eurosceptics emerged strengthened from the European elections. The largest parliamentary party is that of the Christian Democrats (European People's Party, EPP) with 265 seats, followed by that of the Progressive Alliance of Socialists and Democrats (S&D) with 184 seats and the Alliance of Liberals and Democrats for Europe (ALDE) with 84 seats. There are 736 seats in total in the European Parliament. The members of parliament elected a Pole, **Jerzy Buzek**, as their new president.

EU reform treaty

The ratification process of the **Treaty of Lisbon** has been completed. The Treaty of Lisbon, which was

signed by the EU heads of government and state on 13 December 2007, came into effect on 1 December 2009 after having been ratified by all 27 member states. The aim of the reform is to make the EU not only more efficient but also more democratic.

EU Commission President **José Barroso** was reelected by the European parliament for another five years. In addition, in accordance with the reform treaty, two important new positions had to be filled. **Hermann Van Rompuy** of Belgium was elected EU Council President, while **Catherine Ashton** of the UK was elected High Representative for Foreign and Security Policy. In February 2010 the members of the European parliament approved the appointment of the 26 commission members who had been proposed.



EU enlargement

Iceland is officially applying to join the European Union. In addition, **Croatia** is the only current accession candidate in the view of the EU Commission.

EU currency union

As a result of two years of economic crisis, the public debts of the EU member states have reached perilous heights. Expensive stimulus programmes were launched by all the countries in order to revive their economies. The catastrophic extent of public debt in Greece in particular, which will amount to approx. 120 % of gross domestic product (GDP) by the end of 2010, called for concerted action by the leading EU member states.

Led by France and Germany, the EU states and the International Monetary Fund (IMF) jointly committed themselves to providing loans totalling 110bn euros. These emergency measures were needed by Greece in order to avoid imminent state bankruptcy and to service and refinance its existing state debt. The member states of the EU were more or less forced to support Greece, as the consequences of Greece declaring state bankruptcy would have entailed immense risks for the stability and standing of the euro as an international reserve currency.

In the course of the spring of 2010, as a consequence of the Greek debt crisis increasingly serious concerns were raised as to the creditworthiness of other states – in particular Spain, Portugal and Italy – and the euro depreciated sharply. As a result, the EU member states, together once again with the IMF, agreed an unprecedented aid package containing loan commitments of up to 750 bn euros. This package was put together for those member states which can show that they are no longer able to refinance sovereign debt with conventional instruments at reasonable terms. In return, the governments of Greece, Spain, Portugal and Italy, as well as all other major economies, introduced extensive, yet unpopular, austerity programmes. Time will tell if they have the power to enforce them and what impact they will have on the euro.

Reform of the Common Agricultural Policy (CAP) – Import of hops from non-EU countries, Transparency Initiative, Protected Geographical Indication (PGI), evaluation of agricultural policy measures

Commission Regulation (EC) No. 267/2009 amending the regulation concerning the **import of hops from non-EU countries** was adopted on 1 April 2009. Croatia and Serbia had undertaken to meet the prescribed conditions for the marketing of hops and hop products and each country authorised an agency to issue attestations of equivalence.

The **Transparency Initiative** represents an attempt by the European Union to ensure that political decisionmaking processes are more transparent, the use of financial resources are more understandable to EU citizens and thus, among other things, the demands of the Budget Control Committee of the European parliament are met. Within the framework of this transparency initiative, from 2009 onwards the member states have to comply with the new regulations of the EU requiring them to publish on 30 April each year a retrospective list of the recipients of budget funds from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD). The details of this publication are laid down in a Commission implementing regulation (Regulation (EC) No. 259/2008).

The EU Commission has approved the application for entry of “Hopfen aus der Hallertau” (Hops from Hallertau) and “Tettninger Hopfen” (Tettning Hops) in the list of protected designations of origin and protected geographical indications. The Official Journal of the European Union announced the registration of “Hopfen aus der Hallertau” and “Tettninger Hopfen” as **protected geographical indications** on 7 May 2010 (Regulation (EC) No. 390/2010) and 13 May 2010 (Regulation (EC) No. 415/2010) respectively.

The EU Commission is having economic analyses conducted in order to aid decision-making and further develop the Common Agricultural Policy. The **evaluations** commissioned by the European Commission’s Directorate General for Agriculture and Rural Development, examines in particular the effects of **agricultural policy measures** on market stability, agricultural incomes, production structures, the environment and rural development. The final report on the assessment of the effects of agricultural policy measures on the hop sector was submitted in December 2009. This report contains the following recommendations and assessments: The decoupled direct payment scheme, according to which aid is no longer linked to production, should be maintained, as this is more efficient in the hop sector than the previous coupling of aid to production and facilitates better investment decision-making. The hop industry should develop instruments to encourage investment and innovation that would increase competitiveness and productivity. The EU and its member states should persevere in their efforts to reduce the costs of administration connected with CAP measures in all hop-producing countries.

ECONOMIC SITUATION

According to figures published by the IMF (International Monetary Fund), the **gross domestic product (GDP)** of the world economy declined by 0.6 % in 2009, after having risen by 1.7 % the previous year. **China** was alone among the world's 10 leading economies in achieving growth. The economy of the **European Union** contracted by 4 %, having grown by 1 % in 2008.

World trade declined more sharply in 2009 than at any time since 1945. **China** was the world's biggest exporting nation in 2009. From 2003 to 2008 the world leader had been **Germany**. According to the World Trade Organisation (WTO), global trade in goods and services decreased by 12 %, primarily as a consequence of the economic crisis in the industrialised countries. "Ailing" banks were forced to close, merge or seek financial injections and guarantees from the state in order to survive. In cases where banks were "systemically important", nationalisation returned as a legitimate means by which to exert political influence on the market economy.

As a result of low interest rates and unprecedentedly extensive economic stimulus programmes by governments in Asia, the USA and Europe to stabilise national economies, world trade began to recover as of the third quarter of 2009. However, a general mood of uncertainty remained.

Due to the state support measures, the sovereign debts of many countries have risen to levels that are untenable in the long term. In addition, a number of states, led by the **USA**, ran up **record deficits** in the 2009 budget year. In the **EU**, the average budget

deficit of the member states was 6.3 %, far in excess of the self-imposed Maastricht limit of 3 %. It is necessary for many states around the world to bring their budgets under control by means of austerity measures. The **US central bank (Fed)** has kept its Federal Funds Rate unchanged at 0 % since December 2008. However, on 18 February 2010 it surprisingly raised its Discount Rate by 0.5 % to 0.75 %. This move briefly caused turbulence on stock exchanges and in currency markets. The **European Central Bank (ECB)** did not alter its base rate from the 1 % at which it was set in May 2009.

The **euro** reached a peak of 1.51 USD in November 2009. The decision of the eurozone countries to assume liability for the sovereign debt of Greece and other member countries contrary to existing agreements propelled the common currency downwards. At the end of May the euro was quoted at 1.23 USD.

In the reporting period from July 2009 to May 2010 international **stock markets** registered an upward trend. Both the **Dow Jones** and the **Dax** indices rose by around 38 %. From the beginning of May 2010 to the time of going to press, investor uncertainty in the face of wildly fluctuating share prices was clearly noticeable.

After slipping temporarily to 58.69 USD per barrel in July 2009, the **price of crude oil** (Brent) rose with gathering pace to stand at 86.98 USD at the end of April 2010. From that point a sharp downward trend set in. At the time of going to press (end of May) the price was around 70 USD.

KEY DATA

USA, JAPAN, GERMANY AND CHINA

		GDP growth (real) in %	Balance of Payments in USD bn	Balance of Trade in USD bn	Inflation Rate \emptyset in %	Interest Rate \emptyset in %*)	Unemployment (as of 31.12.) in %
USA	2007	2.1%	-726.6	-808.8	2.9%	4.63%	4.6%
	2008	0.4%	-706.1	-816.2	3.8%	3.67%	5.8%
	2009	-2.4%	-419.9	-501.3	-0.4%	3.30%	9.3%
Japan	2007	2.4%	210.5	91.7	0.1%	1.65%	3.8%
	2008	-0.7%	158.4	20.0	1.4%	1.45%	4.0%
	2009	-5.3%	142.0	28.5	-1.4%	1.34%	5.1%
Germany	2007	2.6%	253.4	267.4	2.3%	4.22%	9.0%
	2008	1.0%	244.3	260.9	2.6%	3.98%	7.8%
	2009	-4.9%	165.7	189.1	0.3%	3.20%	8.2%
China	2007	13.0%	372.0	261.5	4.8%	3.33%	4.0%
	2008	9.6%	426.1	297.0	5.9%	3.95%	4.2%
	2009	8.7%	242.4	197.6	-0.7%	3.96%	4.4%

The figures for 2007 and 2008 have been revised according to the latest statistics

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

WORLD BEER PRODUCTION 2008/2009



Europe

Country	2008	2009
Russia	114,000	108,500
Germany	102,911	99,984
United Kingdom	49,611	45,141
Spain	33,400	33,800
Poland	35,600	32,200
Ukraine	32,030	30,500
Netherlands	27,181	25,377
Czech Republic	19,806	18,800
Belgium	18,044	18,009
Romania	20,200	17,600
France	14,430	14,314
Italy	13,212	12,409
Turkey	9,900	9,500
Austria	8,937	8,728
Ireland	8,846	8,041
Portugal	8,208	7,832
Hungary	7,049	6,194
Denmark	6,474	6,046
Serbia	6,366	5,682
Bulgaria	5,770	5,255
Finland	4,470	4,491
Greece	4,600*	4,450
Sweden	3,749	3,740
Croatia	3,926	3,721
Switzerland	3,625	3,555
Belarus/White Russia	3,400	3,366
Slovakia	3,558	3,300
Lithuania	2,960	2,794
Norway	2,580	2,517
Slovenia	1,940	1,953
Latvia	1,240	1,120*
Estonia	1,190	1,070*
Moldavia	900*	900*
Bosnia-Herzegovina	997	891
Albania	755	680
Macedonia	718	636
Montenegro	560	501
Georgia	500*	450*
Cyprus	409	361
Luxembourg	312	308
Iceland	175	160*
Malta	129	127
Armenia	100	108
TOTAL	584,768	555,111

Australia/Oceania

Country	2008	2009
Australia	17,080	17,200
New Zealand	3,225	3,151
Papua-New Guinea	650	600
Tahiti	187*	187*
Fiji Islands	157*	157*
New Caledonia	130*	128*
Samoa	81	61
Solomon Islands	60	58
Tonga	8*	8*
Vanuatu	7*	7*
TOTAL	21,585	21,557

America

Country	2008	2009
USA	230,618	229,926
Brazil	106,300*	107,000*
Mexico	82,343	82,325
Venezuela	24,905	23,141
Canada	23,662	22,394
Columbia	19,000*	20,140
Argentina	15,500*	17,000*
Peru	10,800	10,900
Chile	5,970	5,923
Dominican Republic	3,000*	3,100*
Ecuador	3,500*	3,000*
Cuba	2,508	2,400*
Panama	2,000*	1,800*
Costa Rica	1,800*	1,500*
Guatemala	1,600*	1,500*
Paraguay	1,500*	1,400*
Bolivia	1,500*	1,300*
Honduras	950*	950*
Nicaragua	650*	950*
Jamaica	900*	900*
Uruguay	900*	900*
El Salvador	800*	780*
Puerto Rico	700*	600*
Trinidad	400*	410*
Belize	250*	260*
Guyana	250*	240*
Bahamas	140*	140*
Dutch Antilles	140*	140*
Suriname	90*	90*
Barbados	80*	80*
St. Lucia	70*	70*
Martinique	60*	60*
Haiti	70*	50*
St. Vincent	49	42
Grenada	35*	30*
St. Kitts	20*	23*
Antigua	26	22
Aruba	16*	16*
Dominica	16	13
Cayman Islands	4*	4*
TOTAL	543,122	541,519

Asia

Country	2008	2009
China	410,301	423,638
Japan	61,111	59,820
Vietnam	18,499	23,000
Thailand	21,350*	19,450*
South Korea	18,615	17,995
India	13,800*	15,500*
Philippines	13,300	14,600
Taiwan	3,743	3,806
Kazakhstan	3,620	3,600
Uzbekistan	2,300	2,466
Indonesia	2,100	2,100
Malaysia	1,650*	1,600*
Laos	1,320*	1,500
Singapore	1,200	1,000
Israel	900	900*
Iran	300*	900*
Myanmar (Burma)	830*	865*
Cambodia	750*	710*
Sri Lanka	574	555
Aserbaidjan	522	466
Hongkong	0	450
Mongolia	199	324
Nepal	259	279
Tadschikistan	237*	200*
Lebanon	209	200
Kirgisistan	150	100*
Syria	109	99
Jordania	89	89*
Turkmenistan	95*	80*
Pakistan	50	52
TOTAL	578,182	596,344

Africa

Country	2008	2009
South Africa	25,900	25,640
Nigeria	15,400	16,000
Angola	5,325	6,869
Cameroon	5,100	6,200
Kenya	5,300	5,300
Dem. Rep. Congo (Zaire)	3,474	3,700
Tanzania	3,900	3,381
Ethiopia	2,654	2,678
Namibia	1,850*	2,200
Uganda	1,904	1,910
Ghana	1,920	1,768
Congo (Brazzaville)	1,322	1,600
Mozambique	1,449	1,448
Burundi	1,371	1,400
Ivory Coast	1,300	1,300
Tunesia	1,205	1,250
Egypt	1,155	1,123
Gabon	1,100	1,100
Morocco	1,050	1,015
Algeria	930	950
Madagascar	834	921
Rwanda	829	800
Burkina Faso	700	750
Benin	600	620
Botswana	550	601
Sambia	594	598
Zimbabwe	515	541
Togo	480	500
Mauritius	345	400
Chad	320	340
Lesotho	328	328
Swaziland	207	207
Réunion	218	200
Malawi	190*	200*
Senegal	200	170
Guinea (Conakry)	180	170
Equatorial Guinea	180	165
Eritrea	3	159
Central African Republic	155	150
Liberia	120	122
Sierra Leone	81	100
Mali	90	95
Niger	70	70
Guinea-Bissau	45*	45*
Seychelles	30	30
Gambia	30	30
Cape Verde	10*	8*
TOTAL	91,513	95,152

World total

	2008	2009
TOTAL	1,819,170	1,809,683

figures in 1,000 hl

in italics:
corrections for 2008 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 volumes for 2008 quoted in last year's report have been revised in some cases.

	2008 1,000 hl	2009 1,000 hl	2008 +/- % rel.	2009 +/- % rel.
European Union	404,236	383,444	-1.8%	-5.1%
Rest of Europe	180,532	171,667	0.4%	-4.9%
Europe total	584,768	555,111	-1.1%	-5.1%
North America	336,623	334,645	-0.3%	-0.6%
Central America/Caribbean	15,884	15,430	1.9%	-2.9%
South America	190,615	191,444	6.5%	0.4%
America total	543,122	541,519	2.0%	-0.3%
Asia	578,182	596,344	3.8%	3.1%
Africa	91,513	95,152	7.2%	4.0%
Australia/Oceania	21,585	21,557	2.2%	-0.1%
WORLD TOTAL	1,819,170	1,809,683	1.8%	-0.5%

After years of uninterrupted growth, the global beer output statistics for 2009 show that production declined year on year by 0.5 % (-9.5m hl). The last negative figure was recorded in 1992, with output falling by 2m hl.

Nearly all western industrial countries reported a drop in production. Of the 170 beer-producing countries worldwide, 90 registered a fall in production, 28 maintained the same level of output and only 52 reported that production had increased. China remains by far the biggest beer producer, followed by the USA, Russia, Brazil and Germany. Output in **Europe** decreased by nearly 30m hl, which considerably affected the world total. As the beers

brewed in Europe are the most highly bittered beers in the world, this development is a painful one for the hop industry. In eight European countries the fall in output amounted to more than 1m hl. The biggest losers were Russia (-5.5m hl), the UK (-4.5m hl.) and Poland (-3.4m hl). The figure of -1.6m hl for **America** as a whole represents only a minor change year on year, with South America in fact achieving positive growth. The actual winners were countries in **Asia**. They are China (+13.3m hl), Vietnam (+4.5m hl), India (+1.7m hl) and the Philippines (+1.3m hl). In total, **Asia** shows an increase of 18.2m hl. **Africa** also achieved positive growth, with output there rising by 3.6m hl, in particular due to Angola (+1.5m hl) and Cameroon (+1.1m hl).



MARKET ANALYSIS

For the world hop industry the period since 2006 has resembled a ride on a **roller-coaster**. First, the 2006 and 2007 crops provided an unparalleled boom. In response to this, the brewing industry placed long-term forward contracts that were based on expectations of strong growth and yet failed to take into account their own efforts to reduce their hop requirements. The hop growers reacted to these requirements of the brewing industry with an unprecedented series of investments into new trellises and hop fields. Then came the global economic crisis, which in 2009 led to a slight contraction of the beer market instead of the expected growth. The shift in beer consumption towards the lightly-hopped Asian beers also played a certain part with regard to the average hopping rate. The structural supply deficit in the hop market thus swung to the **opposite** extreme in record time.

There was already a supply surplus of alpha acid in the world hop market before the 2009 harvest began. Unsold stocks from the record crop of 2008, as well as hop products that had been sold, but had not yet been called off by the brewers, weighed the market down. Compounding this problem, hop production reached new record levels in crop year 2009. The following key figures underline this development:

Positive:

Highest alpha volume:	10,901 mt alpha
Highest Ø alpha content:	9.6 %
Highest alpha production per hectare:	192.4 kg α/ha
Highest Ø yield per hectare:	2.01 mt/ha

Negative:

Highest alpha surplus:	3,481 mt alpha
Lowest hopping rate:	4.1 g α/hl

Good alpha values in German hops and excellent prospects for the coming US harvest provided indications in August 2009 that the world hop crop would be an above-average one. This impression was confirmed by November 2009 at the latest. In view of the renewed decline in hopping rates worldwide, market participants had to prepare themselves for a market surplus of nearly **3,500 mt alpha = 47 %** of annual world requirements. It was therefore no surprise that spot market transactions, if they took place at all, did so at low prices. Stocks from previous crop years exerted additional pressure on the market as a whole.

European growers in particular – above all, the growers and organisations closely associated with them

MARKET ANALYSIS



in Hallertau – had difficulty in the early phase of the 2009 campaign to recognise the extent of the surplus and to draw appropriate conclusions. Their high and seemingly comfortable reserve of forward contracts still blurred their view of the harsh realities of a hop market that was spinning out of control.

In the **USA**, in some cases the response to the looming surplus came while the 2009 harvest was still in progress. Some US growers only picked hops that were under contract and left potential spot hops unharvested in their hop yards. Those hops that were nevertheless picked for the spot market essentially remained unmarketable.

In **Eastern Europe**, where hop-producing countries are traditionally orientated more towards the spot market, the market for most varieties collapsed, leaving growers holding high stocks of unsold and partly unsalable hops.

The situation in **China** was even more difficult. Hops from the very large 2009 crop are either still stored unsold on the farms or have been passed on to breweries or to investors outside the industry at undisclosed prices.

Against this background it is gratifying to see the basic willingness of brewers worldwide to recognise their contractual obligations. Regardless of this fact, the hop and brewing industries are called upon to work out solutions as soon as possible in order to adjust the legally valid forward contracts concluded in the past to the lower actual requirements of the present. The consequence for the hop industry, irrespective of the existing contract volume, is the grim prospect of thousands of hectares of hop land having to be taken out of production in order that the market may recover.

FORWARD CONTRACT RATES



Forward contract rates (as per spring 2010)

Country	2010	2011	2012	2013
Germany	85%	80%	75%	65%
USA	100%	90%	90%	40%
Czech Republic	100%	72%	61%	55%
Poland	45%	45%	45%	45%
Slovenia	55%	25%	25%	
England	80%	70%	45%	20%

Due to insufficient availability of official data, the forward contracting rates are based on estimates and have been calculated on the basis of the acreage expected for 2010 and the long-term average yield.

In the two most important hop-growing countries, the **USA** and **Germany**, in which more than 65 % of the hops produced worldwide in 2009 were grown, the forward contracting rates for the coming years are comparatively high. It should be noted, however, that the brewing industry worldwide has secured forward contracts for quantities exceeding requirements. Due to the current market situation, producers in countries with low forward contracting rates are faced with serious problems. The revenues from the forward contracts alone are often insufficient to allow them to

cover the costs of growing the hops. Opportunities to conclude new contracts are virtually non-existent and it will only be possible to sell hops on the spot market at low prices.

The forward contracting rates for Germany quoted in last year's report have had to be revised downwards. Contrary to expectations, acreage cleared due to cancellations of contracts for the **Hallertau Mittelfrueh** variety was often replanted with new varieties, without the prospect of new contracts being secured.

ALPHA ACID PRODUCTION



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

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

Group I – Fine aroma hops

Czech Republic 41.7 %
(previous year 34.5 %),
Germany 27.2 %
(previous year 40.1 %)

Group II – Aroma hops

Germany 47.1 % (previous
year 55.0 %), USA 27.2 %
(previous year 25.0 %)

Group III – Bitter hops/ high-alpha hops USA

51.3 % (previous year
46.7 %), Germany 26.4 %
(previous year 33.8 %)

Minor corrections have been
made to the 2008 figures for
crop and alpha volume quoted
in last year's report.

Group	2008					2009				
	Crop share	Crop mt	Alpha Ø	Alpha mt	Alpha share	Crop share	Crop mt	Alpha Ø	Alpha mt	Alpha share
I	14.5%	16,078	3.4%	548	5.3%	11.1%	12,672	3.7%	469	4.3%
II	27.9%	30,979	6.5%	2,006	19.2%	24.4%	27,743	6.3%	1,738	15.9%
III	57.6%	64,118	12.3%	7,870	75.5%	64.5%	73,275	11.9%	8,694	79.8%
TOTAL	100.0%	111,175	9.4%	10,424	100.0%	100.0%	113,690	9.6%	10,901	100.0%

Three factors had a decisive influence on alpha production in 2009:

1. A substantial crop failure in **Germany** due to the storm of 26 May 2009. 2. The unusually high production yields in the **USA**. 3. The expansion of acreage in **China**, combined with significantly increased yields per hectare compared with 2008. This brought about an increase in alpha production of 477 mt (+4,6 %) in 2009 compared with crop year 2008 in spite of a reduction in acreage of 652 ha.

The world market share of alpha production of the **USA** rose from 40.1 % in crop year 2008 to 45.2 % in 2009.

Germany's share on the other hand fell from 38.2 % in 2008 to 29.8 % in 2009. **China** increased its share from 6.9 % to 9.2 %.

The decline in crop share in Group I is primarily a consequence of the reduction in acreage planted with the varieties **Hallertau Mittelfrueh** in Germany and **Strisselspalt** in France. The decrease in Group II is influenced in part by the reduction in the acreage planted with **Willamette** hops in the USA.

The alpha acid values which form the basis for the above calculations are based on % as is, according to EBC analysis 7.4, at time of processing (ToP).

ALPHA ACID BALANCE

Alpha supply

Brew year	Surplus/Deficit
2006	-410 t α
2007	-1,585 t α
2008	-705 t α
2009	+2,642 t α
2010*	+3,481 t α

● Alpha demand (Brew year)

▲ Alpha production (Crop year)

* Estimated demand



The volume of alpha required in the 2009 brewing year was larger than assumed in the 2008/2009 Barth report due to the fact that the drop in global beer production was not as sharp as had been forecast. In addition, production volume figures were revised in several countries, which meant that the actual output volume was 3.6m hl higher than the figure quoted in last year's report.

According to the results recorded for the 2009 crop, the alpha acid balance once again showed a clear surplus. The brewing industry therefore has at its

disposal a wide range of hop products with which to build up a healthy level of stocks.

The calculation of hop requirements for the 2010 brewing year is based on beer output stagnating. The hopping rate was lowered to 4.1 g α/hl.

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

HOP ACREAGE AND CROP



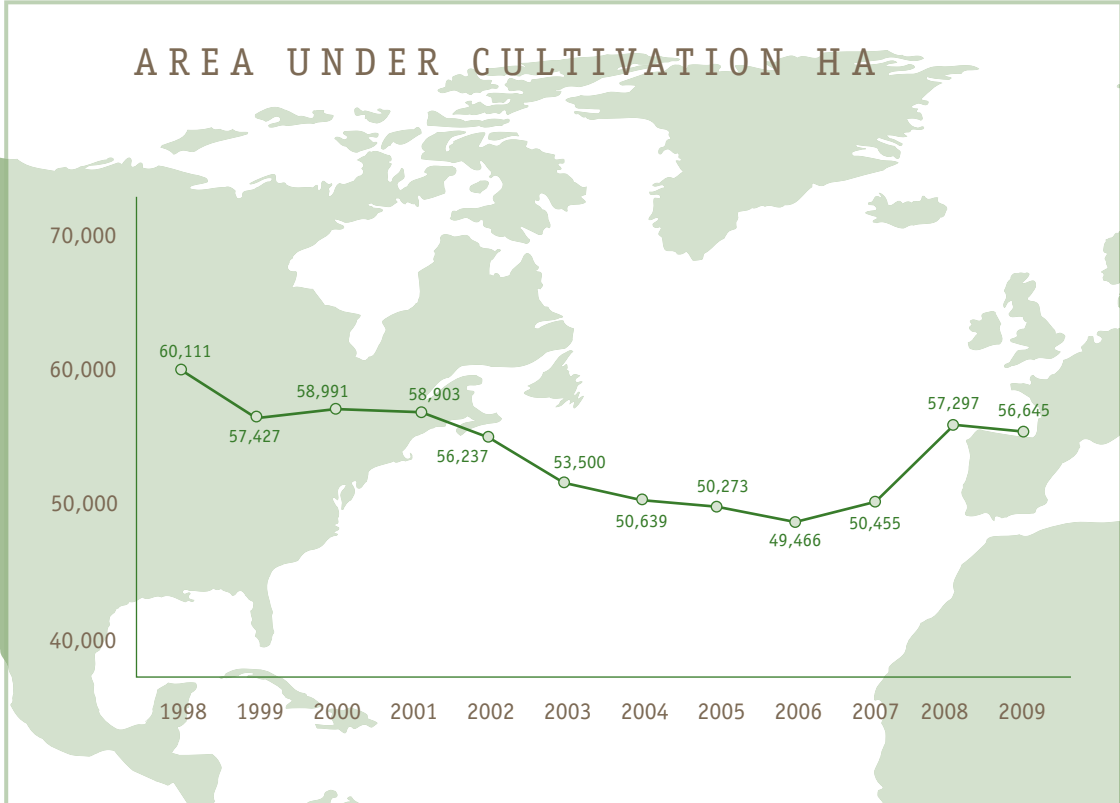
		2008				2009			
		Acreage ha	Production mt	Ø-Alpha %	Alpha mt	Acreage ha	Production mt	Ø-Alpha %	Alpha mt
Germany	Hallertau	15,666	34,331.7	10.3%	3,552	15,473	26,422.8	10.7%	2,815
	Elbe-Saale	1,383	2,830.1	11.1%	315	1,387	2,663.0	11.7%	313
	Tett nang	1,233	1,835.9	4.6%	84	1,221	1,611.2	5.0%	80
	Spalt	394	641.6	4.8%	31	373	610.4	5.6%	34
	Others	19	37.2	6.5%	2	19	36.2	6.8%	2
	Total	18,695	39,676.5	10.0%	3,984	18,472	31,343.7	10.3%	3,244
Czech Republic	Saaz	3,953	4,576.5	4.1%	189	3,899	4,612.9	4.6%	210
	Tirschitz	719	1,215.9	4.6%	55	737	1,168.1	4.5%	53
	Auscha	663	960.4	4.1%	39	671	834.6	4.4%	37
	Total	5,335	6,752.8	4.2%	283	5,307	6,615.7	4.5%	300
Poland		2,233	3,445.9	7.4%	256	2,167	3,691.2	8.5%	312
Slovenia		1,577	2,359.3	7.0%	166	1,579	2,499.6	6.9%	173
England		1,071	1,409.1	6.6%	93	1,081	1,444.4	7.9%	114
France		801	1,469.1	2.5%	36	533	817.8	3.4%	27
Spain		465	812.3	12.6%	102	469	1,019.3	11.9%	122
Romania		278	246.0	6.9%	17	237	210.0*	7.0%	15
Austria		213	386.3	8.0%	31	231	341.4	8.3%	28
Slovakia		261	328.0	3.9%	13	208	245.0	4.6%	11
Belgium		186	325.0	8.3%	27	187	336.1	9.5%	32
Bulgaria		221	342.0	9.5%	33	160	183.0	9.8%	18
Hungary		23	34.7	9.4%	3	24	21.0	12.0%	3
Portugal		21	26.5	10.6%	3	21	28.6	9.5%	3
	European Union	31,380	57,613.5	8.8%	5,047	30,676	48,796.8	9.0%	4,402
Ukraine		1,149	900.0	5.5%	50	1,247	1,335.0	6.0%	80
Turkey		308	368.7	9.9%	36	336	389.4	9.4%	37
Russia		420	296.0	4.6%	13	270	200.0	5.8%	12
Serbia		59	98.0	7.7%	8	79	134.0	7.8%	10
Belarus/White Russia		30	30.0	9.0%	3	50	50.0	8.5%	4
Switzerland		18	32.6*	8.6%	3	18	35.4*	8.4%	3
Croatia		16	29.0	8.2%	2	16	24.0	8.9%	2
	Rest of Europe	2,000	1,754.3	6.5%	115	2,016	2,167.8	6.8%	148
	EUROPE	33,380	59,367.8	8.7%	5,162	32,692	50,964.6	8.9%	4,550
USA	Washington	12,381	28,754.6	12.0%	3,447	11,974	33,997.7	12.0%	4,095
	Oregon	2,578	4,534.8	8.7%	396	2,472	5,396.2	8.6%	463
	Idaho	1,592	3,284.1	10.3%	337	1,631	3,551.3	10.6%	375
		Total	16,551	36,573.5	11.4%	4,180	16,077	42,945.2	11.5%
Argentina		129	212.6	8.2%	17	197	320.3	7.6%	24
	AMERICA	16,680	36,786.1	11.4%	4,197	16,274	43,265.5	11.5%	4,957
China	Xinjiang	3,641	6,522.0	5.9%	385	3,605	9,885.0	6.1%	602
	Gansu	2,042	5,476.0	6.0%	331	2,418	6,251.0	6.4%	399
	Total	5,683	11,998.0	6.0%	716	6,023	16,136.0	6.2%	1,001
Japan		206	446.4	6.6%	29	200	303.2	6.7%	20
India		60	41.8	9.8%	4	60	47.3	11.4%	5
	ASIA	5,949	12,486.2	6.0%	749	6,283	16,486.5	6.2%	1,026
South Africa		444	628.0	13.8%	87	481	798.0	14.4%	115
	AFRICA	444	628.0	13.8%	87	481	798.0	14.4%	115
Australia		484	1,189.2	13.0%	154	514	1,342.9	12.4%	166
New Zealand		360	718.0	10.4%	75	401	832.0	10.5%	87
	AUSTRALIA/OCEANIA	844	1,907.2	12.0%	229	915	2,174.9	11.6%	253
	WORLD	57,297	111,175.3	9.4%	10,424	56,645	113,689.5	9.6%	10,901

*in italics:
corrections for 2008 as stated
in last year's report.*

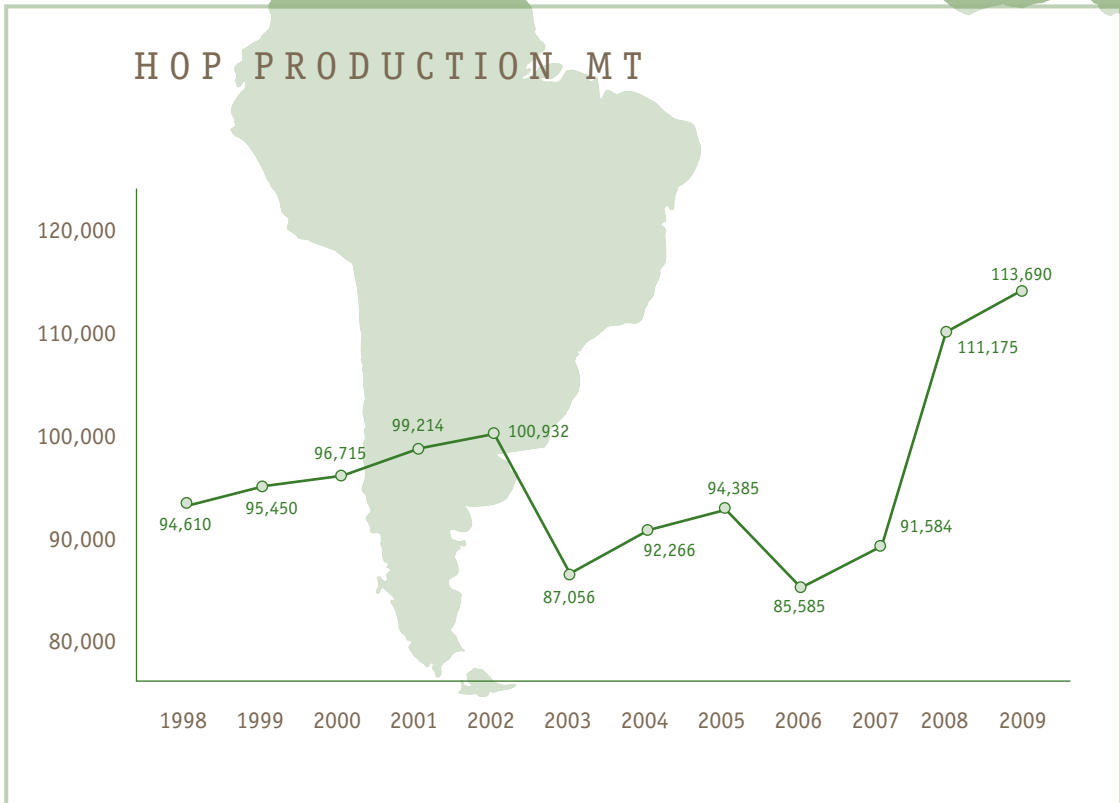
** estimate*

*Rounding differences of the
acreage may cause differences
in addition.*

AREA UNDER CULTIVATION HA

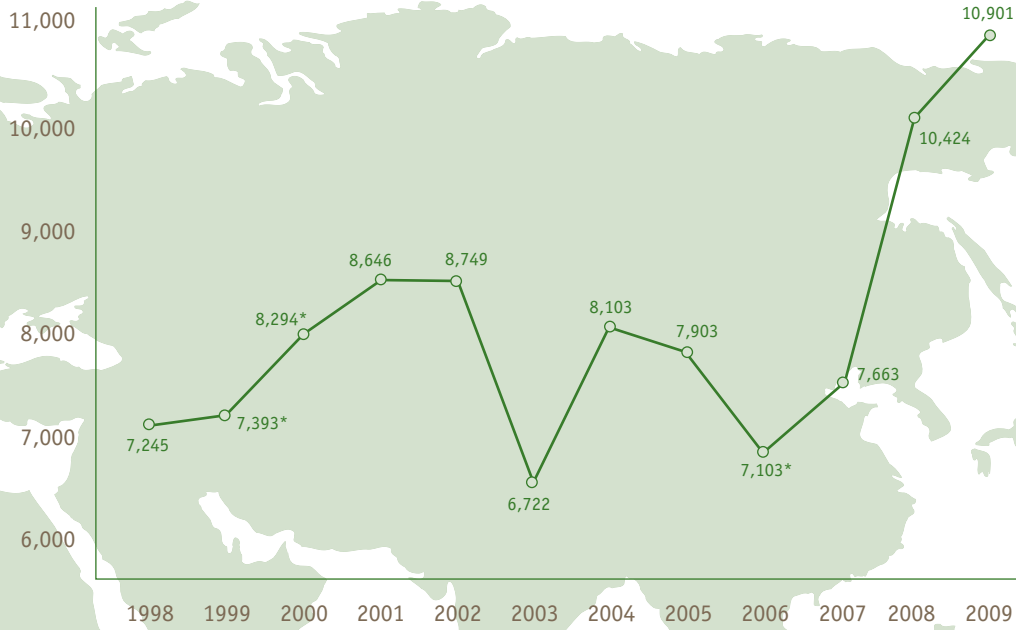


HOP PRODUCTION MT



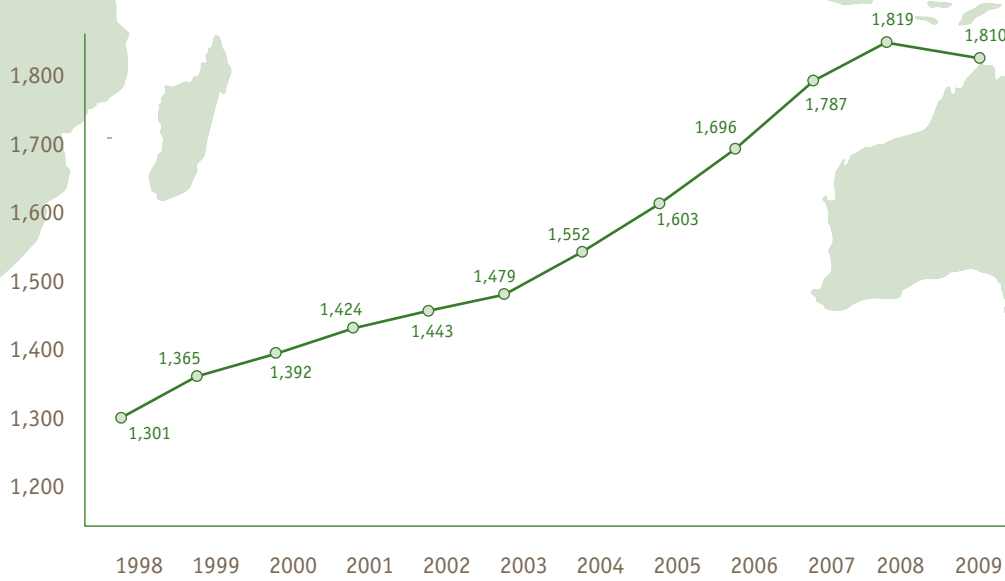


ALPHA PRODUCTION MT



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

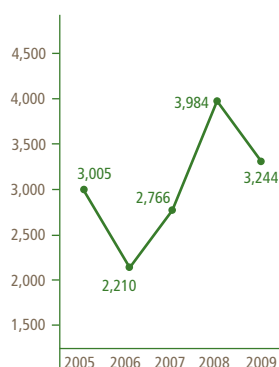
BEER PRODUCTION IN MILL. HL





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			
		2008	+/-	2009	2008	2009	2008	2009
Hallertau	Perle	3,058	68	3,126	2.25	1.52	6,880.33	4,738.08
	Hallertau Tradition	2,400	92	2,492	2.25	1.71	5,398.75	4,273.41
	Hersbruck Spaet	735	31	766	2.00	1.74	1,471.80	1,331.21
	Hallertau Mittelfrueh	1,557	-796	761	1.74	1.05	2,706.98	801.37
	Spalt Select	730	-3	727	2.29	1.92	1,668.99	1,393.75
	Saphir	187	-2	185	2.56	1.86	478.22	344.48
	Other Aroma	71	4	75	1.64	1.16	116.60	87.00
	Total Aroma	8,738	-606	8,132	2.14	1.59	18,721.67	12,969.30
	Northern Brewer	306	-38	268	1.80	1.26	550.74	336.73
	Other Bitter	33	-6	27	2.34	1.67	77.22	45.20
	Total Bitter	339	-44	295	1.85	1.29	627.96	381.93
	Hallertau Magnum	3,428	-13	3,415	2.47	1.59	8,465.04	5,422.86
	Herkules	1,698	509	2,207	1.91	2.33	3,237.04	5,136.75
	Hallertau Taurus	1,109	-32	1,077	2.16	1.76	2,394.24	1,896.20
	Nugget	251	-2	249	2.60	1.97	653.40	490.37
	Hallertau Merkur	73	-5	68	2.38	1.43	173.44	97.02
Other High Alpha	10	-3	7	1.74	1.73	17.36	12.09	
Total High Alpha	6,569	454	7,023	2.27	1.86	14,940.52	13,055.29	
Other	20	3	23	2.08	0.71	41.58	16.29	
Total Hallertau	15,666	-193	15,473	2.19	1.71	34,331.73	26,422.81	
Elbe-Saale	Perle	147	3	150	1.67	1.92	245.84	287.54
	Hallertau Tradition	34	-1	33	1.65	1.70	56.25	56.18
	Other Aroma	7	1	8	0.40	0.38	2.78	3.03
	Total Aroma	188	3	191	1.62	1.82	304.87	346.75
	Northern Brewer	132	0	132	1.65	1.52	217.30	200.39
	Total Bitter	132	0	132	1.65	1.52	217.30	200.39
	Hallertau Magnum	842	2	844	2.25	1.84	1,895.20	1,550.36
	Herkules	133	1	134	1.84	3.03	244.56	405.79
	Other High Alpha	80	-4	76	2.03	1.98	162.58	150.60
	Total High Alpha	1,055	-1	1,054	2.18	2.00	2,302.34	2,106.75
Other	8	0	8	0.70	1.14	5.56	9.11	
Total Elbe-Saale	1,383	4	1,387	2.05	1.92	2,830.07	2,663.00	
Tettngang	Tettngang	731	34	765	1.42	1.17	1,041.44	893.33
	Hallertau Mittelfrueh	369	-67	302	1.48	1.29	545.78	390.18
	Perle	59	11	70	2.19	1.99	129.16	139.51
	Other Aroma	37	10	47	1.94	1.87	71.64	87.81
	Total Aroma	1,196	-12	1,184	1.50	1.28	1,788.02	1,510.83
	High Alpha	28	3	31	1.59	2.86	44.48	88.68
	Other	9	-3	6	0.37	1.95	3.35	11.69
Total Tettngang	1,233	-12	1,221	1.49	1.32	1,835.85	1,611.20	
Spalt	Spalt Select	111	-3	108	1.96	2.03	217.88	219.25
	Hallertau Mittelfrueh	106	-20	86	1.40	1.38	148.66	118.40
	Spalt	89	-5	84	1.31	1.09	116.22	91.55
	Other Aroma	58	3	61	2.01	1.91	116.54	116.36
	Total Aroma	364	-25	339	1.65	1.61	599.30	545.56
High Alpha	30	5	35	1.41	1.85	42.33	64.86	
Total Spalt	394	-21	373	1.63	1.64	641.63	610.42	
Rheinpf./Hochdorf	Aroma	16	0	16	1.93	1.92	30.89	30.79
	High Alpha	3	0	3	2.10	1.82	6.30	5.45
	Total Rheinpf./Hoch.	19	0	19	1.96	1.91	37.19	36.24
Total Aroma	10,502	-641	9,861	2.04	1.56	21,444.75	15,403.23	
Total Bitter	471	-44	427	1.79	1.36	845.26	582.32	
Total High Alpha	7,686	460	8,146	2.26	1.88	17,335.97	15,321.03	
Total Others	37	1	38	1.36	0.98	50.49	37.09	
GERMANY TOTAL	18,695	-223	18,472	2.12	1.70	39,676.47	31,343.67	



Farm Structure

The number of hop growers in Germany continues to decline. After the 2008 harvest 24 farms stopped growing hops. This left 1,473 active hop growers in 2009. As acreage decreased at the same time, the average acreage planted with hops remained unchanged at 12.5 ha per farm.

Growth, Crop Estimate and Weights

The winter of 2008/2009 was unusually cold with a comparatively large amount of snow. From the turn of the year to late March there were almost continually night frosts. The very good resulting frost action greatly improved the soil structure.

Spring began in 2009 with the warmest April since weather records began. The ground conditions in the hop gardens were soon suitable for spring work and the plants in all the German hop-growing regions grew quickly. As a result, in spite of the remarkably severe winter, training was in some cases completed before the end of April, i.e. earlier than usual.

In the evening of 26 May the temperature cooled abruptly and a devastating storm came in from the west, bringing heavy hail showers. The hail showers first struck the Tett nang region near Lake Constance

with hailstones the size of golfballs. Around 700 to 800 ha of hop acreage (approx. 60 % of the hop-growing area) suffered varying degrees of serious damage. There was a total loss of the crop on an area of approx. 30 to 50 ha. The storm moved on along a wide front, more or less destroying approx. 3,500 to 4,000 ha of hops (approx. 22 to 25 % of the planted acreage) in the southern Hallertau region. Approx. 1,600 ha of hops were destroyed completely. The total loss of crop yield in the Hallertau region was estimated to be approx. 5,000 mt.

In May and June, the temperatures were in keeping with the long-term average and the water supply was sufficient. Those hop plants which had not been damaged by hail had reached trellis height by around 20 June, which meant that they were about one week ahead in terms of growth. The warmest summer month was not, as is usual, July, but August. The pace of growth slowed and picking began as usual around 20 August, starting with the early-maturing varieties. Thanks to dry weather conditions, the hops harvested were of good quality. The ground conditions in the hop gardens were ideal for the autumn work due to the continuing dry weather conditions.

Area	Estimate (mt) August 2009	Weight (mt) 31 March 2010	Difference
Hallertau	28,750.00	26,422.81	-8.1%
Elbe-Saale	2,573.80	2,663.00	3.5%
Tett nang	1,640.00	1,611.20	-1.8%
Spalt	630.00	610.42	-3.1%
Rheinpfalz/Hochdorf	39.45	36.24	-8.1%
TOTAL	33,633.25	31,343.67	-6.8%

The official final total volume recorded for crop year 2009 was significantly lower than the very good result for 2008 by a difference of 8,332.8 mt, or 21 %. The final crop volume in Germany was 6.8 % below the official estimate. In the crop estimate announced in August 2009 the yield of the hops of the **Perle** variety in the Hallertau region had clearly been overestimated. The alpha yield was 19 % below the volume produced one year earlier.

Acreage and Variety Development

In comparison with crop year 2008, planted acreage was down by 223 ha (1.2 %) in 2009. Two varieties in particular influenced this result. In response to falling demand, acreage of the aroma variety **Hallertau Mittelfrueh** was cut back by 884 ha (43.5 %). Acreage of the high alpha variety **Herkules**, on the other hand, increased by 520 ha (27.8 %). Changes within the variety groups: aroma -641 ha (6.1 %), bitter -44 ha (9.3 %), high alpha +460 ha (6 %).



GERMANY

In the last five years the acreage developed as follows:

Variety	2005 ha	2006 ha	2007 ha	2008 ha	2009 ha
Perle	2,947	3,112	3,246	3,297	3,380
Hallertau Tradition	2,173	2,322	2,457	2,503	2,605
Hallertau Mittelfrueh	2,019	2,036	2,082	2,034	1,150
Spalt Select	850	854	846	842	836
Hersbruck Spaet	1,050	871	747	740	768
Tettnang	767	752	725	731	765
Saphir	188	191	186	187	185
Spalt	99	98	92	90	85
Other Aroma	39	47	56	77	86 ¹⁾
Total Aroma	10,132	10,283	10,437	10,502	9,861
Northern Brewer	612	550	471	438	401
Other Bitter	39	32	31	32	27 ²⁾
Total Bitter	651	582	502	471	427
Hallertau Magnum	4,526	4,387	4,263	4,277	4,267
Herkules		214	868	1,868	2,388
Hallertau Taurus	1,215	1,178	1,146	1,140	1,106
Nugget	380	331	290	281	279
Other High Alpha	228	176	137	120	106 ³⁾
Total High Alpha	6,349	6,286	6,704	7,686	8,146
Other	29	19	28	37	38 ⁴⁾
GERMANY TOTAL	17,161	17,170	17,671	18,695	18,472

Share per variety group in 2009:

Aroma varieties 53 %

Bitter varieties 2 %

High alpha varieties 44 %

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

1) Other Aroma hops include:

Huell, Opal, Saaz, Smaragd

2) Other Bitter include:

Brewers Gold

3) Other High Alpha hops

include: Hallertau Merkur,

Target, Zeus

4) Others include: Record,

others/selections

Market Development

In January 2009 an international brewing group announced that it was changing its portfolio of hop varieties. As a consequence, existing forward contracts for the variety **Hallertau Mittelfrueh** were to be cancelled. The terms of the cancellation offer for the existing contracts that was made to the German growers concerned was not only extensive but unprecedented in its magnitude. The brewer's aim was to reduce the contracted volume of **Hallertau Mittelfrueh** by about 1,000 mt, which is equivalent to an area of 700 to 800 ha. The period of the contracts included the years 2009, 2010 and 2011. The cancellation offer of 4,00 EUR/kg of raw hops for the "non-production" of **Hallertau Mittelfrueh** hops was universally recognised by the growers as a fair offer and was accordingly widely accepted and taken up.

The devastating hailstorm in the southern Hallertau region in May 2009 also left its mark on the hop market. In particular minor hop trading companies whose hop purchasing activities were mainly restricted to the severely affected hop districts of Au and Nandlstadt soon realised that they would not be able to obtain a large share of the volume they had bought by contract for this crop year. Under the circumstances, temporary demand also arose for

certain niche varieties, with the result that residual quantities of the **Hallertau Mittelfrueh** variety from crop year 2009 that had only just been cut back due to the cancellation offer were purchased in September for 7.00 EUR/kg. The extremely large quantities of hops destroyed in the hail incident encouraged some growers who had been spared the worst of the storm to hope immediately afterwards for brisk demand for spot hops with high and stable prices on the 2009 spot market.

While picking was still in progress, those trading companies most seriously affected by supply shortages caused by the hailstorm in Hallertau began to make covering purchases, offering minimum prices of between 2.50 and 2.80 EUR/kg for raw hops of the most common varieties. After some initial hesitation, these offers were quickly accepted by the growers, however. Growers in the **Tettnang** region also received purchase offers. The prices paid were 6.00 EUR/kg for Tettnang and 4.00 EUR/kg for **Hallertau Mittelfrueh**.

After the harvest, due to the need for covering purchases, strong demand emerged for niche varieties, with **Saphir** selling at 4.00 EUR/kg, **Northern Brewer** at 3.50 EUR/kg and **Nugget** at 2.50 EUR/kg.



No widespread demand worth mentioning was noted for the other varieties, however. Another factor counteracting any sustained revival of the spot market was the recurrence of a relatively high alpha content across the entire varietal spectrum in crop year 2009, which considerably limited the extent of the necessary covering purchases.

On 8 October 2009 the growers' producer group opened what has meanwhile become their obligatory hop pool for all varieties. This was followed immediately by the announcement by the other trading companies of hop purchasing initiatives and the accompanying minimum advance payment prices. To the disappointment of many growers, the growers' producer group initially gave them no minimum price commitment for pool hops. At the end of October 2009, both the hop marketing cooperative's hop pool and the trading companies' purchasing initiatives were discontinued. At the end of February 2010 the growers' producer group informed their growers what prices they were paying for the hops supplied to their pool.

It was not until December that fixed price offers were recorded across the board for high alpha hops on the spot market. The prices offered were 1.50 EUR/kg for **Herkules** and **Hallertau Taurus**, 1.20 EUR/kg for **Hallertau Magnum** and **Hallertau Merkur** and 1.00 EUR/kg for **Nugget**. By spring 2010, the quantities

of hops from the 2009 crop available on the open market were very limited. On the other hand, there are probably sizeable stocks of unsold 2009 hops held by the hop marketing cooperative and growers' association and by some trading companies.

Alpha Acids

The alpha acid contents in the hops harvested in 2009 were without exception above the 10 and 5-year averages and in some cases above even the very good values seen in crop 2008.

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 (Hüll) 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	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Ø 5 Years	Ø 10 Years
Hallertau	Hallertau	4.9	4.6	4.6	3.1	4.3	4.4	2.4	3.9	4.4	4.2	3.9	4.1
	Hersbruck	4.9	3.0	3.2	2.1	3.0	3.5	2.2	2.6	2.9	3.4	2.9	3.1
	Saphir	-	-	-	-	3.4	4.1	3.2	4.6	5.1	4.5	4.3	-
	Opal	-	-	-	-	-	-	-	7.4	9.4	9.0	8.6	-
	Smaragd	-	-	-	-	-	-	-	6.1	6.7	6.4	6.4	-
	Perle	8.1	7.0	8.6	3.9	6.4	7.8	6.2	7.9	8.5	9.2	7.9	7.4
	Spalt Select	6.4	4.8	6.0	3.2	4.9	5.2	4.3	4.7	5.4	5.7	5.1	5.1
	Hallertau Tradition	7.1	6.3	7.2	4.1	6.3	6.3	4.8	6.0	7.5	6.8	6.3	6.2
	Northern Brewer	10.1	9.6	10.1	6.0	9.8	9.8	6.4	9.1	10.5	10.4	9.2	9.2
	Hallertau Magnum	14.4	13.9	14.6	11.7	14.8	13.8	12.8	12.6	15.7	14.6	13.9	13.9
Elbe-Saale	Nugget	12.9	11.9	12.4	8.5	10.6	11.3	10.2	10.7	12.0	12.8	11.4	11.3
	Hallertau Taurus	15.6	15.7	16.5	12.3	16.5	16.2	15.1	16.1	17.9	17.1	16.5	15.9
	Hallertau Merkur	-	-	-	-	13.5	13.3	10.3	13.0	15.0	14.8	13.3	-
	Herkules	-	-	-	-	-	-	-	16.1	17.3	17.3	16.9	-
Tettngang	Hallertau Magnum	14.0	13.9	13.9	10.2	14.0	14.4	12.4	13.3	12.2	13.7	13.2	13.2
	Tettngang	4.9	4.4	4.6	2.6	4.7	4.5	2.2	4.0	4.2	4.2	3.8	4.0
Spalt	Hallertau	4.8	4.5	4.8	3.1	5.0	4.8	2.6	4.3	4.7	4.5	4.2	4.3
	Spalt	4.0	4.4	4.6	3.1	4.4	4.3	2.8	4.6	4.1	4.4	4.0	4.1

2009 alpha acid values very good and mostly well above the long-term average.

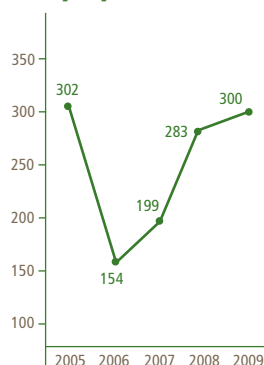
If the figures for the years 2005 to 2009 are not complete, the 5-year average refers to the average figure for the years available.

values in %



CZECH REPUBLIC

Alpha production in mt



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2008	+/-	2009	2008	2009	2008	2009
Saaz	4,738	-111	4,627	1.17	1.17	5,563.2	5,395.3
Premiant	267	26	293	1.79	1.65	479.0	483.9
Sládek	239	38	277	2.30	2.05	548.6	567.9
Bor	13	0	13	0.82	0.51	10.6	6.7
Total Aroma	5,257	-47	5,210	1.26	1.24	6,601.4	6,453.8
Agnus	52	6	58	2.19	2.13	114.1	123.8
Magnum	10	0	10	2.18	1.35	21.8	13.5
Fuggle	5	0	5	1.26	1.54	6.3	7.7
Total High Alpha	67	6	73	2.12	1.99	142.2	145.0
Other	11	13	24	0.84	0.70	9.2	16.9
CZECH REPUBLIC TOTAL	5,335	-28	5,307	1.27	1.25	6,752.8	6,615.7

Farm Structure

As a result of farms being broken up, the number of hop-growing entities increased by 4 compared with 2008 to stand at 135 hop farms. The average planted acreage per farm in crop year 2009 was 39.3 ha, as opposed to 40.7 ha the previous year.

Acreage/Production/Alpha Content

Once again, a reduction in planted hop acreage was recorded in the Czech Republic. However, developments varied from one growing region to another. In the **Zatec region**, planted acreage decreased by 54 ha. The two smaller hop-growing regions reported a slight increase in planted acreage. As in the previous year, the crop yield per hectare was well above the long-term average despite the effects of a hailstorm in the **Zatec region** in May and a hurricane in the **Zatec** and **Auscha regions** in late July which caused significant damage in some places. Thanks to high alpha acid content, alpha production increased year on year by 6 %. Alpha content of the main varieties (results for crop year 2008 in

brackets): **Saaz** 3.6 % (3.4 %), **Sládek** 7.2 % (6.0 %) and **Premiant** 9.4 % (8.7 %).

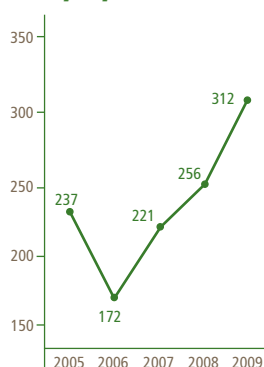
Market Situation

Despite the very good crop yield, the volume of spot hops from the 2009 crop was limited because the hop growers had sold more than the average yield of a regular crop on the basis of forward contracts. Nearly all the hops produced in 2009 have been marketed. However, trading companies are still awaiting delivery call-offs from the brewing industry. The marketability of Czech hops increasingly appears to be reaching its limits. This is particularly noticeable in the contract market for 2011 and the subsequent crop years. This development has been a sobering experience for the growers, particularly because the national growers' cooperative had for a long time stated quite the opposite, making too optimistic marketing forecasts. In the spring of 2010 the trading cooperative approached growers with an offer to buy out existing contracts for the varieties **Premiant** and **Sládek**. Acreage is expected to decrease by 70 ha in the current crop year.



POLAND

Alpha production in mt



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2008	+/-	2009	2008	2009	2008	2009
Lubelski	591	-77	514	1.43	1.29	848.0	663.0
Perle	102	5	107	1.31	1.66	133.3	178.0
Hallertau Tradition	46	14	60	1.37	1.70	63.1	102.0
Other Aroma	32	-9	23	1.33	1.28	42.4	29.0
Total Aroma	771	-67	704	1.41	1.38	1,086.8	972.0
Marynka	950	-60	890	1.59	1.89	1,512.2	1,681.0
Other Bitter	41	10	51	1.31	1.44	53.7	73.2
Total Bitter	991	-50	941	1.58	1.86	1,565.9	1,754.2
Magnum	433	47	480	1.71	1.90	741.9	912.0
Other High Alpha	38	5	43	1.35	1.24	51.3	53.0
Total High Alpha	471	52	523	1.68	1.85	793.2	965.0
POLAND TOTAL	2,233	-66	2,167	1.54	1.70	3,445.9	3,691.2



Farm structure

51 of the producers who had farmed hops the previous year gave up hop farming. The remaining 1,010 producers farmed an average hop acreage of 2.1 ha. Due to the fact that acreage decreased in the reporting period, the average acreage planted with hops per farm remained unchanged.

Acreage/Production/Alpha Content

Acreage decreased by 3 %. While the acreage planted with aroma and bitter varieties was cut back, high-alpha varieties increased in acreage.

The weather conditions were not always ideal for the hop plants. Nevertheless, with the exception of the aroma varieties **Lubelski** and **Lomik**, all varieties produced above-average yields. Alpha contents in 2009 were consistently above the already high levels recorded the year before (results for 2008 in brackets): **aroma varieties** 4.8 % (3.9 %), **bitter/high-alpha varieties** 9.8 % (9.0 %).

As a result of expansion of acreage of the high-alpha variety **Magnum** in recent years and very good alpha content, the alpha yield rose again by 22 %.

bitter/high alpha varieties. Those growers who were able to sell any hops whatsoever on the spot market received approx. 3.00 PLN/kg (approx. 0.75 EUR/kg). This price was much too low to cover their production costs. In April 2010 approx. 1,000 mt of crop 2009 remained unsold.

The hop market in Poland is suffering the consequences of decisions made by the majority of market participants in crop years 2006 and 2007. At that time, everything was staked on the booming spot market, while the need for long-term business security was completely neglected. As a consequence of this, among other things, a significant volume of the 2008 crop failed to sell on the spot market.

Due to the deterioration of the Polish hop market, the insolvency of Poland's largest trading company and the low contracting rate, Polish hop growers demonstrated in order to draw attention to the threat posed to their existence by the situation. The growers subsequently resolved to establish a Polish hop growers' association in May 2010. In addition, the hop producers have until the end of July 2010 to submit applications for state aid.

Market situation

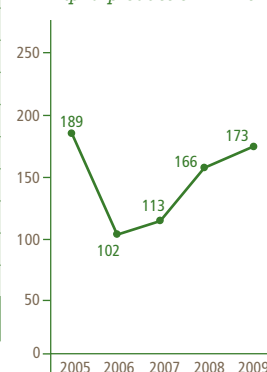
In crop year 2009 only about half of the volume produced was under contract. The average prices paid were 11.24 PLN/kg (approx. 2.70 EUR/kg) for aroma hops and 11.87 PLN/kg (approx. 2.85 EUR/kg) for

A reduction in acreage is expected. However, due to the general uncertainty of the situation and in the absence of official figures, the extent of the reduction cannot be estimated. By April, approx. 1,560 mt of crop 2010 was under forward contract.



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2008	+/-	2009	2008	2009	2008	2009
Aurora	985	0	985	1.45	1.61	1,423.5	1,581.9
Savinjski Golding	186	0	186	1.29	1.06	239.1	197.8
Bobek	160	0	160	1.80	2.08	288.1	333.1
Styrian Golding (Celeia)	121	16	137	2.28	1.94	275.9	265.6
Other Aroma	22	17	39	1.02	0.92	22.5	36.0
Total Aroma	1,474	33	1,507	1.53	1.60	2,249.1	2,414.4
Magnum	62	2	64	1.61	1.07	100.0	68.3
Other High Alpha	41	-33	8	0.25	2.11	10.2	16.9
Total High Alpha	103	-31	72	1.07	1.18	110.2	85.2
SLOVENIA TOTAL	1,577	2	1,579	1.50	1.58	2,359.3	2,499.6

Alpha production in mt



Farm Structure

The number of hop growers in Slovenia decreased by 7 to 133 producers in 2009. The average acreage under hops on each farm was 11.9 ha compared with 11.3 ha the previous year.

Acreage/Production/Alpha Content

The main varieties remained unchanged in terms of acreage. There was also very little change to the overall extent of hop cultivation in Slovenia. The reason for the uneven development of the hop crop in 2009 lay in the weather conditions, with temperatures some 1.3 °C higher than usual over the course of the growing period.



SLOVENIA

While the yields recorded for the **Aurora** and **Bobek** varieties were above average, yields for the varieties **Savinjsky Golding**, **Styrian Golding (Celeia)** and **Magnum** remained below long-term average. A hailstorm on 22 May caused significant damage to around 80 ha of hops; however, despite this, the Slovenian crop yield of 1.58 mt/ha was still above the average recorded over the past five years.

Even with a relatively low production volume, the **Savinjsky Golding** variety exhibited above-average alpha content of 3.8 % in 2009 (2008: 3.2 %). With an alpha content of 4.0 %, **Styrian Golding (Celeia)** matched the previous year's value. In contrast, varieties with high per-hectare yields had relatively low alpha content: **Bobek** 4.7 % (2008: 5.2 %), **Aurora** 8.0 % (2008: 8.4 %). Overall, the alpha content was some 5 % higher than the figure for 2008.

Market Situation

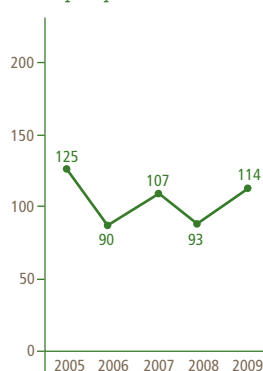
The development of the Slovenian hop market was badly affected by the insolvency of the country's largest hop merchant at the beginning of 2009. This

insolvency led to the loss of many forward contracts, which meant that at the beginning of crop year 2009 no more than half of the production volume had been sold under forward contract. This left growers exposed to highly volatile spot market prices. The development of the spot market in hops remained slow, with the following prices being paid: **Savinjsky Golding** 5.00 EUR/kg, **Styrian Golding (Celeia)** 4.30 EUR/kg, **Magnum** 1.30 EUR/kg, **Bobek** 2.20 EUR/kg. There was no demand for the **Aurora** variety until February 2010, while the price offered in March was 1.30 EUR/kg. At the time of writing this report in April, the unsold volume from 2009 amounted to less than about 200 mt of hops, mostly of the **Aurora** variety. Our assumption is that there will be a reduction in acreage of at least 10% in crop year 2010. The situation in which Slovenian hop growers find themselves remains difficult. Many farms have invested in hop growing in recent years. However, much of the 2009 crop achieved only very low prices on the spot market or remained unsold. In addition, the current low forward contract rate does not provide a solid foundation for future years.



ENGLAND

Alpha production in mt



Variety	Development of acreage			Development of production			
	Acreage ha			Ø Yield mt/ha		Production mt	
	2008	+/-	2009	2008	2009	2008	2009
Golding	280	-5	275	1.39	1.49	389.5	409.0
First Gold	154	13	167	0.95	0.75	146.4	124.5
Fuggles	120	-17	103	1.47	1.66	176.3	170.5
Challenger	82	-1	81	1.51	1.49	124.2	121.0
Other Aroma	182	21	203	1.18	1.14	215.4	231.0
Total Aroma	818	11	829	1.29	1.27	1,051.8	1,056.0
Target	118	-7	111	1.48	1.62	174.9	180.3
Other High Alpha	135	6	141	1.35	1.48	182.4	208.1
Total High Alpha	253	-1	252	1.41	1.54	357.3	388.4
ENGLAND TOTAL	1,071	10	1,081	1.32	1.34	1,409.1	1,444.4

Farm Structure

In 2009, 57 farmers, i.e. one fewer than in the previous crop year, were actively engaged in hop growing. The average planted acreage per farm was 19 ha, as opposed to 18.5 ha in crop year 2008.

Acreage/Production/Alpha Content

In addition to various changes in the variety mix, there was a slight increase in total acreage. New plantings, mainly of the aroma varieties **Boadicea** and **First Gold**, more than made up for the acreage lost through **Fuggle** growing being reduced. The acreage planted with **Pilgrim**, a high alpha variety, also increased. The **Target** variety, on the other hand, lost ground for the third

year in succession. The weather conditions were favourable throughout the entire growing season. While the high alpha varieties produced very good results compared with the long-term average, the most widely grown aroma varieties **Golding** and **First Gold** in particular fell below it. Alpha content, however, increased significantly year on year and also surpassed the average of the past five crop years (2008 values in brackets): **Golding** 5.8 % (4.5 %), **First Gold** 8.3 % (7.5 %), **Fuggle** 4.6 % (4.0 %), **Challenger** 7.5 % (6.9 %), **Target** 11.3 % (9.7 %). Although there was virtually no year-on-year increase in production volume, the alpha yield rose by 22 %.

ENGLAND



Market Situation

At the time of harvest, more than 80 % of the 2009 crop had been sold by forward contract at average prices of approx. 7.80 EUR/kg for aroma hops and approx. 33.50 EUR/kg for high alpha hops. In the meantime, the entire crop has been sold at prices

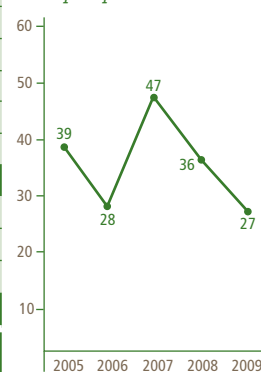
similar to those for contract hops. This spring, the forward contract volume for crop year 2010 was equivalent to about 80 % of average crop yield. Acreage is expected to remain stable in 2010, with only a slight shift away from high alpha varieties in favour of aroma varieties.

FRANCE



Area	Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
		2008	+/-	2009	2008	2009	2008	2009
Alsace	Strisselspalt	613	-325	288	1.90	1.78	1,167.7	511.6
	Other Aroma	136	58	194	1.63	1.16	221.1	224.4
	Total Aroma	749	-267	482	1.85	1.53	1,388.8	736.0
	Bitter	4	0	4	1.47	2.44	6.5	8.8
	High Alpha	20	-3	17	1.90	1.83	37.8	31.5
	Total Alsace	773	-270	502	1.85	1.55	1,433.1	776.3
Nord	Aroma	2	10	12	1.55	1.28	3.1	15.4
	Bitter	4	0	4	1.36	1.43	6.0	6.3
	High Alpha	22	-8	14	1.24	1.39	26.9	19.8
	Total Nord	28	2	31	1.29	1.34	36.0	41.5
FRANCE TOTAL		801	-268	533	1.83	1.53	1,469.1	817.8

Alpha production in mt



Rounding differences of the acreage may cause differences in addition.

Farm Structure

Despite extensive reduction of hop acreage, the number of hop growers remained constant at 86. As a result, the average planted acreage per farm decreased from 9.3 ha to 6.2 ha.

The alpha content of the aroma variety **Strisselspalt** equalled its long-term average value of 2.0 % compared with 1.7 % the previous year. Compared with 2008, the alpha yield fell by 24 %, not least due to the lower planted acreage.

Acreage/Production/Alpha Content

Hop acreage declined sharply, as expected. Due to weakening demand, the **Strisselspalt** variety has been cut back by more than 50 % in the Alsace growing region. In some cases, the aroma varieties **Hallertau Tradition**, **Fuggie** and **Golding** were planted in its place. New plantings in Northern France were mostly made up of one variety, **Challenger**. Weather conditions from mid-August were favourable for cone ripening, which had a positive effect on the expected production volume. The average yields per hectare were influenced, however, by young hop plants not yet yielding to the full.

Market Situation

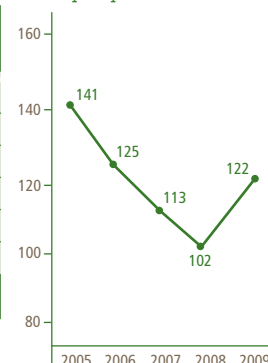
By the time of harvest most of the volume produced in 2009 had been sold by forward contract. The prices for aroma hops averaged 4.50 EUR/kg. In April 2010 the quantity of unsold hops was approx. 100 mt, most of them aroma hops. Assuming that the 2010 crop achieves an average yield, the entire production volume had already been contracted in the spring. In the Alsace growing region, there are plans to switch customers who are interested to **Fuggie**, **Golding**, **Columbus**, **Nugget** and **Brewers Gold**. Acreage will increase only marginally in 2010.

SPAIN



Variety	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2008	+/-	2009	2008	2009	2008	2009
Aroma	1	0	1	0.30	0.35	0.3	0.3
Nugget	454	3	457	1.74	2.18	792.1	996.7
Columbus	6	1	7	2.25	2.33	13.5	16.3
Magnum	4	0	4	1.60	1.50	6.4	6.0
Total High Alpha	464	4	468	1.75	2.18	812.0	1,019.0
SPAIN TOTAL	465	4	469	1.75	2.17	812.3	1,019.3

Alpha production in mt



SPAIN

Farm Structure

The number of hop farms increased slightly year on year. The hop gardens belonging to the 223 hop-growing families are located in the León region. The average acreage planted with hops was 2.1 ha per farm.

Acreage/Production/Alpha Content

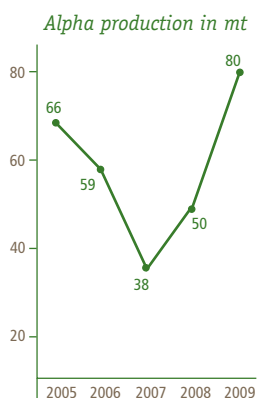
Following several years of acreage reduction, there was a slight increase in 2009. In contrast to the very unfavourable weather conditions and a very poor crop in 2008, the situation in 2009 was completely different. The growing conditions were favourable and in July 2009 the crop was expected to be normal. In fact, the weather conditions remained good while the hops

ripened, producing an excellent crop. The yield per hectare was up by about 24 % year on year and was also above the long-term average. Although the alpha content of 11.9 % recorded for the **Nugget** variety fell short of the unusually high level of 12.5 % recorded the previous year, it was still higher than the long-term average. The alpha yield rose in volume by 20 %.

Market Situation

The total volume produced was purchased by the domestic brewing industry at prices ranging between 4.50 and 4.70 EUR/kg (raw hop basis). Acreage is expected to increase by 25 to 50 ha in 2010.

UKRAINE



Variety Group	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2008	+/-	2009	2008	2009	2008	2009
Aroma	835	25	860	0.69	1.16	580.00	995.00
Bitter	314	73	387	1.02	0.88	320.00	340.00
UKRAINE TOTAL	1,149	98	1,247	0.78	1.07	900.00	1,335.00

Farm Structure

Unfortunately no figures are available.

Acreage/Production/Alpha Content

The only official data on hop growing in Ukraine are supplied by the International Hop Growers' Convention (IHGC) whose conference took place in Paris in April 2010.

According to their figures, the planted acreage increased by slightly less than 9 %, with the main growth coming from additional planting of bitter varieties. Although the average yield per hectare improved by 37 %, it was still significantly below the international mean. The alpha content recorded in 2009 compared with the previous year as follows: **Aroma varieties**

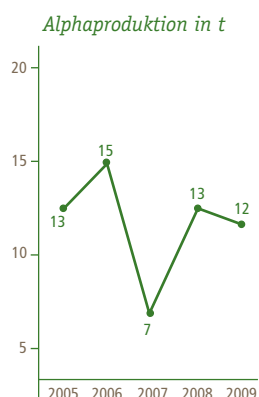
5.5 %, up from 4.5 %, **Bitter varieties** 7.4 %, up from 7.3 %. The increase in volume and alpha content resulted in alpha yield rising by 60 %.

Market Situation

According to the IHGC report, the growers received an average price of 3.30 EUR/kg for aroma hops and 3.50 EUR/kg for bitter hops. The report also forecasts an increase in acreage for 2010 amounting to just below 100 ha.

These figures are called into question within the hop industry, however.

RUSSIA



Variety Group	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2008	+/-	2009	2008	2009	2008	2009
Aroma	346	-226	120	0.72	0.67	249.00	80.00
Bitter	74	76	150	0.64	0.80	47.00	120.00
RUSSIA TOTAL	420	-150	270	0.70	0.74	296.00	200.00

Farm structure

With producers continuing to merge and some farms ceasing hop production completely, 15 hop-growing entities remained in crop year 2009. There were

therefore six hop farms fewer than in crop year 2008. The average acreage planted with hops was 18 ha per farm, compared with 20 ha the year before.



Acreege/Production/Alpha Content

There was a sharp reduction in aroma hop acreage. Part of this acreage was replanted with bitter varieties. In total, acreage decreased by 36 %. A dry summer adversely affected production volumes. The average yield of the aroma varieties **Ranny**, **Moskovsky** and **Istrinsky** was slightly below the average of the last five years. The bitter and high alpha varieties **Podvyaznum** and **Magnum**, on the other hand, achieved a better result by comparison, but still fell short of expectations. The alpha content of 4.2 % recorded for the aroma varieties was the same average value as in crop

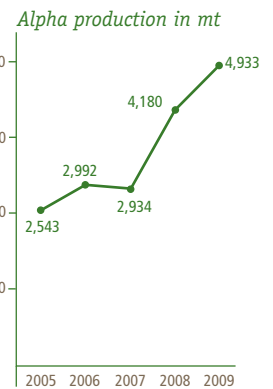
year 2008. The bitter/high alpha varieties, with 6.8 %, exceeded the previous year's level of 6.4 %. Total alpha production fell by 14 %.

Market situation

Some 60 % of production volume was sold by forward contract. In May, approx. 40 mt of hops remained unsold. In the spring, 20 % of the 2010 crop was under contract. A slight reduction in planted acreage seems inevitable.



Area	Variety	Development of acreage			Development of production			
		Acreage ha			Ø Yield mt/ha		Production mt	
		2008	+/-	2009	2008	2009	2008	2009
Washington	Willamette	1,887	-787	1,100	1.51	1.63	2,858.1	1,794.5
	Cascade	839	-22	817	2.00	2.38	1,674.7	1,941.5
	Cluster	170	33	203	2.28	2.65	388.3	538.6
	Palisade	124	18	142	2.35	3.09	291.2	438.8
	Centennial	102	19	121	1.63	1.66	166.7	201.4
	Mount Hood	12	27	39	1.76	1.75	20.7	68.4
	Golding	15	2	17	1.55	0.92	23.9	15.7
	Other Aroma	295	81	376	1.35	1.85	396.8	696.0
	Total Aroma	3,445	-630	2,815	1.69	2.02	5,820.4	5,694.9
	CTZ	4,723	-109	4,614	2.92	3.51	13,785.0	16,201.6
	Summit	972	338	1,310	1.86	3.01	1,803.9	3,946.5
	Galena	1,046	-70	976	2.05	2.08	2,140.2	2,026.2
	Chelan/Tillicum/SGalena	641	7	648	2.39	3.30	1,532.3	2,138.8
	Nugget	439	-23	416	2.32	2.31	1,018.7	960.6
	Millenium	290	-65	225	2.73	2.77	792.4	622.8
	Chinook	115	40	155	2.00	2.04	229.5	316.8
	Warrior	159	-37	122	2.07	2.36	329.9	288.1
	Other High Alpha	550	142	692	2.37	2.60	1,302.3	1,801.4
	Total High Alpha	8,936	223	9,159	2.57	3.09	22,934.2	28,302.8
Total Washington	12,381	-407	11,974	2.32	2.84	28,754.6	33,997.7	
Oregon	Willamette	1,049	-50	999	1.73	1.75	1,809.7	1,748.1
	Mount Hood	75	-11	64	1.75	1.87	130.9	119.7
	Cascade	31	31	62	1.19	1.94	36.8	120.0
	Golding	55	0	55	1.45	1.56	80.0	85.7
	Other Aroma	304	0	304	1.03	1.76	313.5	533.7
	Total Aroma	1,514	-31	1,483	1.57	1.76	2,370.9	2,607.2
	Nugget	864	-146	718	1.97	2.85	1,702.4	2,048.9
	Millennium	139	0	139	2.44	2.86	339.0	398.2
	Chelan/Tillicum/SGalena	0	72	72	0.00	2.86	0.0	205.8
	Other High Alpha	61	0	61	2.01	2.23	122.5	136.1
Total High Alpha	1,064	-75	989	2.03	2.82	2,163.9	2,789.0	
Summe Oregon	2,578	-106	2,472	1.76	2.18	4,534.8	5,396.2	
Idaho*	Total Aroma*	782	-50	732	1.53	1.52	1,192.9	1,114.9
	Total High Alpha*	809	90	899	2.58	2.71	2,091.2	2,436.4
	Total Idaho	1,592	39	1,631	2.06	2.18	3,284.1	3,551.3
Total Aroma*	5,742	-712	5,030	1.63	1.87	9,384.2	9,417.0	
Total High Alpha*	10,809	238	11,047	2.52	3.04	27,189.3	33,528.2	
USA TOTAL	16,551	-474	16,077	2.21	2.67	36,573.5	42,945.2	



Due to the conversion of acres into hectares (ha) and lbs into metric tons (mt) there are slight statistical deviations or rounding differences in the sum totals.

* As of 2002 the growers in the Idaho region have only had to report total acreage and total production volume. Therefore variety group distribution has been estimated.



Farm Structure

The number of growers (decision-making entities) for crop 2009 remained unchanged compared to the previous year with an estimated 74 entities. Because the overall acreage decreased slightly, the average calculated farm size dropped from 224 ha to 217 ha.

Acreage/Production/Alpha Content

The USDA acreage survey for 2009 showed a decrease of 474 ha or 2.9 % less versus the 2008 crop. In an unprecedented event in the history of US hop growing, growers left an additional estimated 400 ha unpicked during harvest. This decision was due to unusually high yields and the fact that the spot market had almost completely failed to materialise.

An analysis of the acreage strung for harvest shows a rapid conversion from older generations of high alpha varieties in favour of recently bred and released varieties. The acreage of the most widely planted alpha variety, the variety complex **Columbus-Tomahawk-Zeus (CTZ)** introduced in the 1990s, dropped by 209 ha. This was followed by **Nugget**, **Galena**, **Millennium** and **Warrior**[®]. In total, these older-generation varieties, incl. **CTZ**, declined by 618 ha. The new high alpha releases such as **Summit**, **Apollo**, **Bravo** and **Super Galena**, in contrast, increased by a total of approx. 545 ha. As a consequence, the overall acreage of all high alpha varieties for crop 2009 actually increased by 238 ha (2.2 %) compared to crop 2008.

Variety Development

In the last five years the acreage of the main varieties developed as follows:

Variety	2005 ha	2006 ha	2007 ha	2008 ha	2009 ha
Willamette	2,645	2,823	2,824	2,985	2,100
Cascade	505	484	559	891	900
Cluster	250	146	152	174	207
Palisade	22	22	37	126	142
Centennial	45	86	86	102	121
Mount Hood	109	64	89	87	103
Other Aroma	1,266	1,309	1,394	1,377	1,458
Total Aroma	4,842	4,934	5,141	5,742	5,030
Columbus-Tomahawk-Zeus (CTZ)	2,911	2,911	3,448	5,213	5,004
Summit		27	256	972	1,310
Nugget	1,004	1,067	1,135	1,318	1,134
Galena	1,849	1,733	1,418	1,207	1,083
Chelan/Tillicum/SGalena	140	259	244	641	887
Millenium	571	473	414	429	365
Chinook	251	174	153	167	245
Warrior	241	175	137	159	122
Other High Alpha	115	131	165	702	898
Total High Alpha	7,082	6,950	7,369	10,809	11,047
USA TOTAL	11,924	11,884	12,510	16,551	16,077

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

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

Because of unusually high yields from crop 2009, US growers harvested the largest crop on record with 42,945 mt, well surpassing the previous year's record of 36,573 mt by 6,371.7 mt (17.4 %). Had growers not left some of their hops unharvested, crop 2009 could have increased by another approx. 1,500 mt.

Despite the **CTZ** variety complex again disappointing this year in terms of alpha performance, and alpha acid content as a whole, with the exception of the aroma varieties **Cluster** and **Mount Hood**, being below the long-term average, the overall alpha production of crop 2009 still reached a record with 4,933 mt. This represents an increase of 753 mt (18 %) over crop 2008.



Alpha Acid Table

Variety	2005	2006	2007	2008	2009	Average
Willamette	4.2%	4.6%	4.5%	4.7%	4.3%	4.5%
Mount Hood	4.4%	4.6%	4.4%	4.9%	4.5%	4.6%
Cascade	5.8%	6.1%	5.7%	6.2%	5.6%	5.9%
Palisade	5.9%	5.9%	7.7%	6.7%	6.8%	6.6%
Cluster	6.0%	7.0%	6.5%	6.4%	7.0%	6.6%
Centennial	9.5%	9.5%	8.7%	9.0%	8.1%	9.0%
Galena	12.1%	12.1%	11.6%	11.9%	11.6%	11.9%
Nugget	12.3%	13.2%	12.3%	12.3%	12.2%	12.5%
Chinook	11.5%	12.2%	11.6%	11.8%	11.0%	11.6%
Super-High Alpha	14.4%	15.2%	13.2%	13.3%	13.5%	13.9%
Summit	-	-	15.7%	15.8%	14.8%	15.4%

Crop Development

Washington: The winter months brought enough snow to the mountain ranges to guarantee a full water supply throughout the growing season. In April and May daytime high temperatures were cooler than normal, which resulted in delayed plant growth. However, by June and July, temperatures had risen to above normal and plant growth was able to catch up. Moderate temperatures through August and September, interrupted by only short periods of high heat resulted in a strong bloom transforming into an excellent cone set. Near-perfect temperatures during harvest allowed cones to adequately size and gain weight, resulting in a record volume crop.

Oregon: Winter temperatures were slightly cooler than normal with below-average precipitation in the growing region. However, sufficient snow pack in the Cascades mountains provided plenty of water for irrigation. Above-average temperatures in May put the Oregon crop on a fast track of plant development. June and July included short periods of high temperatures and longer spans of moderate temperatures, which allowed for ideal plant growth. Although the last half of July was hot, plant growth, bloom, and cone set continued at an excellent rate through mid-August. Also in this state, the crop responded well to this year's growing season conditions with above-average yields.

Quality: Prior to the start of the growing season, there was a strong push by merchants and processors to improve the overall quality of the crop. As the US had rapidly expanded in recent years, it became evident that the harvesting capacities were not able to bring in the additional volume within suitable maturity time frames, resulting in overripe cones.

Further investments in picking and drying capacities, as well as contract restructuring, greatly enhanced growers' ability to harvest the crop in time and therefore improved the colour of crop 2009.

The industry also focused on improving the seed contents of the crop. Growers significantly stepped up the programmes on removing male plants from their fields with good results in reducing the seed counts. The average seed content dropped from 1.85 % in 2008 to 0.82 % in crop 2009. The leaf and stem content also improved from 0.31 % in 2008 to 0.14 % in 2009.

Contract Market

Beginning with autumn of 2008, the contract market activities switched from buying hops to restructuring existing contracts. One international brewing group launched a programme for voluntary or partial cancellation of existing Willamette contracts from crop 2008 to crop 2010 with corresponding compensation payments.

It should be noted that while there have been widespread calls for an industry-wide restructuring of hop volumes, the validity of the underlying binding hop contracts has never been called into question, nor has the fact that they can only be amended by mutual agreement.

This is due to recognition of the fact that the US growers have been exemplary in adhering to their contracts during the recent hop shortage, no matter what the contract price was. The contract renegotiations now taking place will strengthen the value of contracts as the basis of business in the future, whereby the type of restructuring may have many variants and will be orientated towards the respective circumstances.

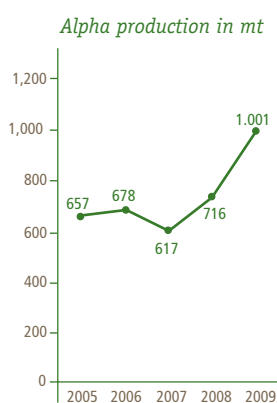
Spot Market Crop 2009

With early harvest reports of very high yields in aroma varieties, the industry prepared itself for a larger-than-expected crop. In absence of any marketing possibilities, growers were quickly faced with the decision whether to harvest hops above contracted volumes or cut them down in the fields. While many growers opted to harvest only to contract, it proved to be more difficult than thought to halt the harvesting machinery at the right moment in some of the very large US hop-growing operations. As a result, certain aroma varieties, such as **Willamette** and **Cascade** were harvested above contracts. Some of these quantities were subsequently put into warehouses for spot storage, but others were returned from the kiln floor to the field or later dumped as bales into compost piles.

By the time the alpha crop was being harvested, growers were better prepared in making harvesting decisions. As a result, most alpha growers harvested only enough of their **CTZs** to fill their contracts and left the balance unharvested. As always, a few growers harvested everything and processed their hops into extract.

In the absence of a market for 2009 crop spots, it is expected that these hops will remain in the hands of their owners for some time to come. However, it needs to be pointed out that US hop growers have financially recovered from the mid-2000s and therefore have the capacity to hold on to these inventories for a long time.

CHINA



Area	Variety	Development of acreage			Development of production			
		Acreage ha			Ø Yield mt/ha		Production mt	
		2008	+/-	2009	2008	2009	2008	2009
Xinjiang	Tsingdao Flower	2,135	34	2,169	1.60	2.75	3,420.0	5,970.0
	Kirin Flower	500	3	503	1.40	3.24	701.0	1,632.0
	Marco Polo	353	100	453	3.40	2.65	1,200.0	1,200.0
	SA-1	533	-173	360	1.88	1.94	1,000.0	700.0
	Other Aroma	120	0	120	1.68	3.19	201.0	383.0
	Total Xinjiang	3,641	-36	3,605	1.79	2.74	6,522.0	9,885.0
Gansu	Tsingdao Flower	1,460	223	1,683	3.22	3.07	4,700.0	5,161.0
	Nugget	344	-84	260	0.86	1.41	296.0	366.0
	Kirin Flower	13	-13	0	3.85	0.00	50.0	0.0
	Other High Alpha	143	284	427	2.03	1.44	290.0	614.0
	Other Aroma	82	-34	48	1.71	2.29	140.0	110.0
	Total Gansu	2,042	376	2,418	2.68	2.59	5,476.0	6,251.0
	Total Aroma	735	-207	528	1.82	2.26	1,341.0	1,193.0
	Total Bitter	4,108	247	4,355	2.16	2.93	8,871.0	12,763.0
	Total High Alpha	840	300	1,140	2.13	1.91	1,786.0	2,180.0
	CHINA TOTAL	5,683	340	6,023	2.11	2.68	11,998.0	16,136.0

Farm structure

Hops are grown on 60 farms in China. 37 of them are in the Xinjiang growing region and 23 in Gansu. The average planted acreage per farm rose from 96 ha in crop year 2008 to 100 ha in 2009.

Acreage/Production/Alpha Content

While planted acreage was reduced marginally in the **Xinjiang** growing region, it was expanded by 18 % in the **Gansu** region. Taken as a whole, the acreage planted with hops in China increased by 6 %. This was the result of an increase in planting of the bitter variety **Tsingdao Flower** and, in particular, the high-alpha variety **Marco Polo** which offset the significant reduction in the acreage planted with the aroma

variety SA-1.

The weather conditions in the two growing regions during the growing season differed markedly.

Xinjiang: The average temperatures were slightly above those recorded in recent years. The amount of precipitation was spread unevenly over the season. The crop yield was slightly above the long-term average.

Gansu: High above-average temperatures dominated the weather conditions in the period March to May. From June to August there was light rainfall on many days. At the time of picking, the region experienced a protracted period of heavy rain that increasingly caused damage due to disease and pests, which ultimately had an adverse effect on both the quality and the quantity of the crop.



The alpha content of the main variety **Tsingdao Flower** in 2009 equalled the long-term average level in the **Gansu** growing region, but produced disappointing results in **Xinjiang**. For the country as a whole, this variety produced an average alpha content of 5.5 % recorded according to EBC analysis 7.4 at time of processing, which was a lower level than the 5.7 % recorded in crop year 2008. Due to the higher production volume and the generally higher alpha acid content, the alpha yield increased by 40 % year on year.

Market situation

In the period 2006 to 2009 the acreage planted with hops expanded by 70 %. This led to surplus yield of a magnitude for which there was no market. Although hop supply contracts had again been concluded between the market participants in China for the 2009 crop, these are merely purchasing agreements with defined quantity and quality figures, but without

any fixed prices. In May 2010 approx. 4,000 mt of hops were still held mainly by trading companies awaiting delivery and resale to breweries. In addition, at the time of going to press there was no sign of any willingness on the part of the breweries to settle up for the hops from the 2009 crop delivered on the basis of the purchasing agreements. This means that producers have not yet received any money for their hops from the 2009 crop, which in many cases is causing them significant problems in financing their expenditure for the new season. A reduction in acreage in both growing regions is therefore to be expected for 2010.

Hop statistics

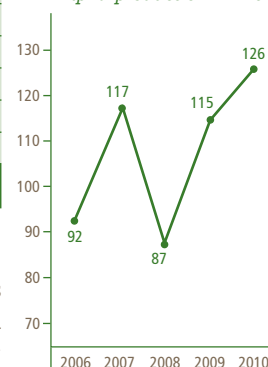
There are no reliable statistics on acreage and production volume in China. Due to the size of the Chinese hop-growing regions, the figures presented here are often based on estimates and have therefore been gathered using our own sources.

CROP 2010: SOUTH AFRICA



Variety	Development of acreage			Development of production			
	Acreage ha			Ø Yield mt/ha		Production mt	
	2009	+/-	2010	2009	2010	2009	2010
Southern Star	297	9	306	1.79	1.95	533.0	596.0
Southern Promise	151	-21	130	1.48	1.70	223.0	221.0
Southern Dawn		17	17		2.47		42.0
Outeniqua	29	-13	16	1.14	1.50	33.0	24.0
Other	4	19	23	2.25	1.30	9.0	30.0
SOUTH AFRICA TOTAL	481	11	492	1.66	1.86	798.0	913.0

Alpha production in mt



Farm Structure

Hops are grown on 15 farms. 11 of these farms are privately owned, 3 are operated directly by breweries and one is run for the purpose of hop research. On average, 32.8 ha are planted with hops on each farm.

Acreage/Production/Alpha Content

Hop acreage increased slightly in the reporting period. Part of the acreage on which **Outeniqua** hops had been grown was replanted with the new variety **Southern Dawn**. **Southern Dawn** has an expected alpha acid content of 11.5-12.5 % and, as an early-maturing variety, it enables growers to spread the hop harvest over a longer period of time. This leads to an improvement in quality, because the individual varieties can be picked at the corresponding time of ripening.

The farmers experienced the worst drought in the history of South African hop growing. It became

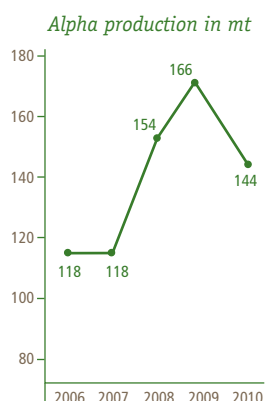
necessary to sink additional wells and to use pumps to fill the irrigation reservoirs with water, which ultimately led to production costs reaching exceptionally high levels. The production volume recorded was very good, however, with average yield amounting to 1.86 mt/ha.

While the alpha content of the **Southern Promise** variety was slightly below the long-term average at 11.0 % (compared with 12.3 % the previous year), the level of 15.2% recorded for the hops of the **Southern Star** variety was well above the average, as in the previous year (15.3 %). The average value recorded for the **Southern Dawn** variety was 12.3 %. Combined with the good production volume, the alpha yield rose by 10 %.

Market Situation

The hops farmed in South Africa are grown exclusively for the domestic brewing industry.

CROP 2010: AUSTRALIA



Area	Variety	Development of acreage			Development of production			
		Acreage ha			Ø Yield mt/ha		Production mt	
		2009	+/-	2010	2009	2010	2009	2010
Tasmania	Super Pride	106	-38	68	2.35	2.22	248.2	151.2
	Pride of Ringwood	89	-26	63	3.09	2.90	276.6	183.2
	Millennium	60	-1	59	2.43	2.07	146.3	122.1
	Victoria	13	-1	12	3.21	2.99	40.1	36.2
	Cluster	9	-5	4	2.30	2.26	20.5	8.6
	Other	23	-7	16	1.82	1.35	42.0	21.6
	Total Tasmania	300	-78	222	2.58	2.36	773.7	522.9
Victoria	Topaz	76	23	99	3.43	2.99	261.4	296.5
	Super Pride	83	-20	63	2.39	2.22	198.6	140.4
	Pride of Ringwood	25	7	32	1.80	2.19	45.0	70.0
	Cluster	13	3	16	1.31	1.93	17.3	31.3
	Victoria	13	-6	7	2.74	2.91	36.2	20.4
	Other	4	5	9	3.35	1.93	10.7	17.2
	Total Victoria	214	12	226	2.66	2.54	569.2	575.8
	Total Aroma	22	18	40	1.72	1.65	37.8	66.4
	Total Bitter	114	-19	95	2.82	2.66	321.6	253.2
	Total High Alpha	351	-41	310	2.65	2.49	930.8	771.4
	Total Other	27	-24	3	1.95	2.57	52.7	7.7
	AUSTRALIA TOTAL	514	-66	448	2.61	2.45	1,342.9	1,098.7

Farm structure

One Tasmanian farm discontinued its hop-growing activities, thus leaving eight farms growing hops in Australia in crop year 2010. With acreage also decreasing, the average planted acreage per farm remained virtually unchanged, declining only slightly from 57 ha to 56 ha.

Acreage/Production/Alpha Content

Although planted acreage decreased by 13 % in national terms, it increased slightly in the state of Victoria.

Tasmania: The winter was very wet, with precipitation 50 % above the long-term average. This led to delays in training. From October to March, the main growing period for the hops, precipitation was 50 % below the long-term average. January remained dry throughout. Even though the farms mostly have sufficient water for irrigation purposes, this is no substitute for the effect of a healthy volume of rainfall.

Victoria: The season began with unusually hot weather and temperatures far above the long-term average. By the time training began, temperatures had returned to normal. There was regular rainfall during the subsequent growing period. In view of the very varied climatic conditions, it was interesting to note that some hop varieties developed equally badly

in both areas, while others in contrast developed very well. All in all, this year's production volume turned out to be lower than expected - particularly among the high alpha varieties **Millennium** and **Super Pride**. The alpha content, which was above the long-term average, made up in part for this reduced yield. The main varieties compared with the alpha results of crop 2009 as follows: **Pride of Ringwood** 9.6 % (9.5 %), **Super Pride** 14.7 % (12.9 %), **Millennium** 15.0 % (13.2 %), **Topaz** 15.5 % (15.5 %). However, the alpha yield fell by 13 % year on year.

Market situation

The entire 2010 crop was under contract. The hop farmers obtained the following average prices per kilo of alpha: **Pride of Ringwood** 75.00 AUD (approx. 53.00 EUR), **Super Pride** 52.00 AUD (approx. 37.00 EUR), **Topaz** 35.00 AUD (approx. 25.00 EUR). The contract rate for crop 2011 already stands at 93 % on the basis of average production volume. Although Australia is not traditionally known for growing aroma hops, breweries have already taken out contracts on the greater part of the future aroma crop. As demand still greatly exceeds supply, there are plans to further expand the planted acreage and even to introduce some new varieties. On the other hand, the production of bitter hops, which are traditionally exported, is to be reduced further.

CROP 2010: NEW ZEALAND

Variety Group	Development of acreage Acreage ha			Development of production Ø Yield mt/ha Production mt			
	2009	+/-	2010	2009	2010	2009	2010
Aroma	235	-10	225	1.89	1.92	445.0	432.0
High Alpha	166	-12	154	2.33	2.34	387.0	361.0
NEW ZEALAND TOTAL	401	-22	379	2.07	2.09	832.0	793.0

Farm structure

The number of farms engaged in hop growing in the reporting period rose to 19. The average acreage planted with hops declined from 22 ha per farm in crop year 2009 to 20 ha in 2010.

Acreage/Production/Alpha Content

Both aroma and bitter hops were taken out of production. Acreage declined by 5.5 % nationwide. Cool weather conditions at the beginning of the growing season retarded the development of the hop plants. A warm summer with ample rainfall provided conditions for improved development in terms of growth and yield. The alpha contents produced in 2010 were above the long-term average (with 2009 levels shown in brackets): **NZ Hallertau Aroma** 8.0 % (7.6 %), **NZ Pacific Gem** 16.0 % (15.1 %). The alpha yield in crop year 2010 fell by 4 % compared with 2009, however.

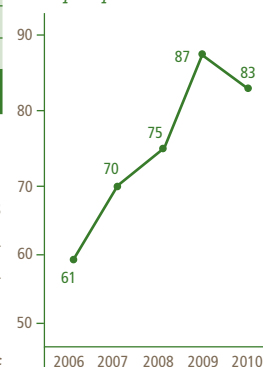
Market situation

The 2010 crop was not fully contracted. Some varieties were reported to be sold out, but various high alpha varieties, as well as quantities of NZ Hallertau Aroma hops, were available on the spot market following the harvest.

On the basis of average production volume, 70 % of the 2011 crop has already been bought up by forward contract. The proportion of high alpha hops has decreased slightly as a result of increasing interest in aroma varieties on the part of the breweries. The product range is set to grow with the introduction of the varieties **Motueka** and **Riwaka**. New Zealand's research programme continues to focus on breeding special varieties to meet the needs of the brewing industry.



Alpha production in mt



PLANT DEVELOPMENT 2010



Germany

In all the German hop-growing regions there were long periods of permanent frost. In most areas, the snow cover remained unbroken until mid-March. April was an unusually dry month, whereas May was rainy almost throughout and was significantly cooler than the long-term average. Both sprouting and growth of the hop plants were slightly delayed. There was heavy rainfall, especially in Hallertau, on an almost daily basis until early June. Summery to very summery weather in the second week of June made up for the retarded development of the hop plants.

In addition to stormy showers throughout May, a severe hailstorm, accompanied in places by intense rainfall, crossed central and northern Hallertau on 25 and 26 May. Yield loss is expected over a planted area of approx. 2,000 ha.

Further storm damage

In the **Czech Republic** a hailstorm struck the hop region of Zatec on the evening of 24 May. Hop plants were damaged to varying degrees over a planted area of about 150 ha.

In **Poland**, the hop-growing areas along the River Weichsel were twice affected by flooding, at the end of May and at the beginning of June. One quarter of the planted area in Poland (approx. 450 ha) was flooded. The entire crop is expected to fail in many of the hop gardens affected.

USA

There was sufficient precipitation during the winter in all three hop-producing regions to ensure that enough water will be available for the coming season. In the spring, temperatures were within the normal range while rainfall was above average. The additional rainfall made it difficult for growers to maintain constant monitoring of fungal diseases. Plant growth is slightly below average, but this delay should be recovered as high summer temperatures are to be expected.



Germany

Planted acreage has not yet been adjusted to the changed market conditions. The combined effect of the expansion of planted acreage after the 2006 and 2007 harvests and the planting new high-yield varieties is that average hop yields have increased significantly, while there has been a significant rise in average alpha yield at the same time.

USA

According to the official report of the US Department of Agriculture (USDA) published on 10 June 2010, planted acreage in the USA has been reduced by 3,430 ha, which constitutes the largest reduction within one year in US history.

The high alpha varieties CTZ, Nugget and Galena accounted for nearly 60 % of the reduction, or 1,955 ha, while the aroma varieties Willamette and Cascade contributed slightly more than 20 % to the cutback in planted acreage, or 775 ha.

World

A first step has been taken, but it is not enough. Since 2007, despite rising beer output the brewing industry's alpha requirements have fallen by 13.5 %. At the same time, yield per hectare has been increased as a result of mainly high alpha varieties being planted. Therefore, further action is necessary to bring hop production into line with actual requirements.

Currency Exchange Rates

1 EUR equals (reference by ECB):

	on 1 June 2009	on 1 June 2010		on 1 June 2009	on 1 June 2010
USA	1.4220 USD	1.2155 USD	Canada	1.5397 CAD	1.2766 CAD
Australia	1.7552 AUD	1.4595 AUD	Poland	4.4620 PLN	4.1140 PLN
China	9.7073 CNY	8.3021 CNY	Switzerland	1.5140 CHF	1.4183 CHF
United Kingdom	0.8680 GBP	0.8347 GBP	Russia	43.5185 RUB	38.0290 RUB
Japan	134.8900 JPY	110.6500 JPY	Czech Republic	26.7830 CZK	25.6280 CZK

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

Conversion Table

Area:		Weight:	
1 hectare (ha) = 10,000 m ²	= 2.934 Bavarian „Tagwerk“	1 metr. ton (mt) = 1,000 kg	= 20 cwt (D) = 2,204.6 lbs
1 hectare (ha) = 10,000 m ²	= 2.471 acres	1 Zentner cwt (D) = 50 kg	= 110.23 lbs = 1.102 cwt (USA)
1 Bavarian „Tagwerk“	= 0.341 ha		= 110.23 lbs = 0.984 cwt (GB)
1 acre	= 0.4047 ha	1 hundredweight (cwt/USA)	= 100 lbs = 45.36 kg
			= 0.9072 Ztr.
Length:		1 hundredweight (cwt/GB)	= 112 lbs = 50.800 kg
1 yard	= 3 feet = 36 inches = 91.44 cm		= 1.0160 Ztr.
1 mile	= 1.609 km	1 centner (GB)	= 100 lbs = 45.36 kg
			= 0.9072 Ztr.
Volume:		1 kg	= 2.20462 lbs
1 hl = 100 l	= 26.42 gall = 0.8523 bbl (USA)	1 lb	= 0.45359 kg
1 hl = 100 l	= 22.01 gall = 0.6114 bbl (Brit.)		
1 barrel (bbl/USA)	= 31 gall = 1,1734 hl	Pressure:	
1 barrel (bbl/GB)	= 36 gall = 1,6365 hl	1 bar = 14.5038 psi	1 psi = 0.06895 bar
		$86^{\circ} F = \frac{(86 - 32) \times 5}{9} = 30^{\circ} C$	$30^{\circ} C = \frac{30 \times 9}{5} + 32 = 86^{\circ} F$

MEMBERS OF BARTH-HAAS GROUP



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THE WIZARD OF HOPS



Can hops grow in Brazil? Does the Australian-grown Hallertau Mittelfrüh taste exactly the same as the Bavarian? What was that about the solubility limit of iso-alpha acids, and do polyphenols really have anything to do with beer bittering? Do hops have a soporific* effect? How do I obtain the best beer aroma? Why should I use hops for brewing beer?

Don't you know all the answers? No problem – we have an expert who can answer all your questions about hops: **The Wizard of Hops**. Our expert knows (almost) everything about hops, because hops are his world. And he really is a specialist, because he can answer questions like these:

A European brewer would like to brew a series of special beers that are hopped using different hop varieties. **Only one hop variety** is to be used for each beer. The Wizard of Hops gives tips on which hop varieties are best suited for realising this project.

An American farmer is looking for certain **root-stock** to start growing different hop varieties, but he doesn't know where he can get them. The Wizard of Hops can supply the appropriate addresses.

A British brewer would like to use our **product Aromahop OE**, but needs more information about the way the product affects the flavour and the aroma, depending on the dosage. The Wizard of Hops can provide the brewer with the corresponding information.

* *soporific* = tiring

An American brewer would like to use **CO₂-extract instead of pellets** for brewing, but wants to keep the same flavour and level of bitterness. No problem for the Wizard of Hops – he knows how the brewer can manage this.

An Asian brewer needs help in characterising the bitterness of **hop polyphenols** and is therefore looking for relevant individual bitter-tasting substances. Here too, the Wizard of Hops was able to provide the right answer quickly.

And then there was the research laboratory that wanted to establish an **HPLC analysis method** for determining reduced iso-alpha acids and was looking for useful empirical findings. Not even this was too much to ask of the Wizard of Hops.

As you see, **the range of questions about hops is large**. If the Wizard of Hops does not know the answer right away, he will conduct research worldwide in order to be able to answer your question.

Put him to the test and write to thewizardofhops@barthhaasgroup.com or click on the button on the Barth-Haas Group website www.barthhaasgroup.com.

Please note our report
„Market Leaders and their Challengers in the Top 40 Countries“
with the table of the 40 biggest brewing groups worldwide.