

The Barth Report

Hops

2000/2001



Joh. Barth & Sohn

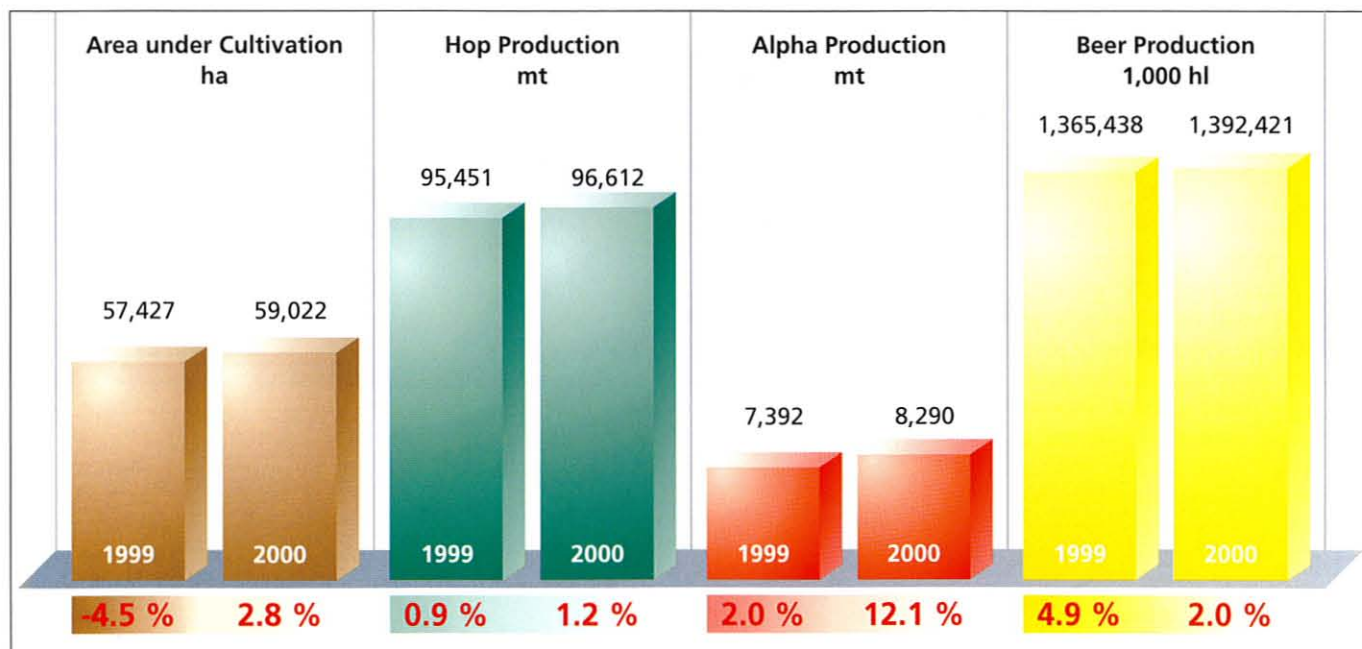
hops are our world

Nuremberg

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World Market Key Data



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www.johbarth.com

Joh. Barth & Sohn GmbH & Co. KG
Freiligrathstrasse 7/9
90482 Nuremberg, Germany
P. O. Box 1227
90002 Nuremberg, Germany

Telephone: + 49/911/54 89-0
Telefax: + 49/911/54 89-330
E-Mail: info@johbarth.de

Nuremberg, August 2001



Foreword



Dr. Adrian Forster, Managing Director
Nateco2, Wolnzach, Hopfenveredlung, St. Johann



Mick Dudgeon, Managing Director
Australian Hop Marketers



Helga Alberti, Sales Director
Joh. Barth & Sohn, Nürnberg



Jean-Paul Feldmann, Managing Director
Hopfrance, Brumath, France



Heinrich von Eichel, President & CEO
John I. Haas, USA



André Feldmann, Director China Operations
Joh. Barth & Sohn, Nürnberg



Dr. Ray Marriott, Chief Executive & R&D Director
Botanix, Great Britain

Dear Reader,

A considerable degree of consolidation has taken place in the international brewing industry in the last ten years. This process is by no means complete. Taking other consumer goods industries as an example, one can envisage that within the next few years ten global players will control more than seventy percent of world beer output. In spite of this concentration, we believe that there are many countries and regions around the world in which successful, focused small and, in some cases, larger breweries will continue to survive.

In order to meet the needs of this constantly changing market, we have decided to integrate our associated companies, which in the past operated relatively independently outside Joh. Barth & Sohn GmbH & Co. KG, in a more closely-knit network headed by the Barth-Haas Group, and to strengthen our alliances. In doing so we intend to

optimise the key competencies of the individual companies to a greater extent than before, and thus better fulfil our customers' greater requirements.

The merger of Joh. Barth & Sohn GmbH & Co. KG with Hopunion Raiser, Scharrer KG provided the opportunity to redistribute responsibilities within the Barth-Haas Group. The Barth-Haas Group is made up of a number of joint ventures operating either with strategic investors or with growers' organisations. The hub of this network is Joh. Barth & Sohn GmbH & Co. KG, Germany, a private company belonging to the Barth and Raiser families. It goes without saying that a corporate network with such a geographical spread can only be successful if the quality of management is correspondingly high.

The people pictured here and the companies they run form the backbone of the Barth-Haas Group. Our management team stands for technical expertise and personal integrity and has strong links – some going back for decades – with the hop and brewing industries. They are supported by a well-qualified, talented new generation, thus guaranteeing continuity in the management during the generation changes taking place within the Barth-Haas-Group.

Joh. Barth & Sohn



Political Situation

A visit by the Israeli opposition leader, Ariel Sharon, to Temple Mount in Jerusalem in September 2000 triggered off a wave of bloodshed between Palestinians and Israelis, bringing the peace process to a virtual standstill. Following Ehud Barak's resignation in December 2000, Ariel Sharon was elected as the new prime minister by a large majority. As a result, the conflict between the two sides further intensified.

On 5 October 2000, opponents of the regime and other demonstrators stormed the Yugoslavian parliament building and the television headquarters in Belgrade. Opposition leader Vojislav Kostunica assumed the office of President of Yugoslavia. The overthrown president, Slobodan Milosevic, acknowledged his defeat and resigned. At the beginning of July 2001, Milosevic was extradited to the Inter-

national Criminal Tribunal in The Hague to stand trial for war crimes.

The near state of civil war in Macedonia, where government troops and the Albanian UÇK (National Liberation Army) have been waging bloody battles throughout the year, highlights the fact that the situation in the territory of former Yugoslavia is as explosive as ever.

After several recounts and court judgments over a period of five weeks, the official election result was announced on 14 December 2000: George W. Bush was to be the 43rd President of the United States. On 20 January 2001 Gloria Arroya was sworn in as the new president of the Philippines. Her predecessor, Josef Estrada, had been forced to leave office and now has to answer corruption charges in court. In Japan there was a change of prime mini-

ster on 26 April 2001. Junichiro Koizumi, a reform-minded member of the ruling LDP, succeeded Yoshiro Mori in office.

In Italy, a general election in mid-May brought about a change of government by a comfortable majority. The new Italian government, a centre-right coalition led by Silvio Berlusconi, is Italy's 59th government since the war.

In the UK general election in July 2001 Tony Blair's governing Labour Party was re-elected for a second term in office.

In Iran, President Mohammad Khatami was re-elected in June for a second period of four years in office.

After two polls, victory went to Alejandro Toledo who was announced as Peru's new president in June 2001. His predecessor, Alberto Fujimori, had fled the country in November 2000 to avoid impeachment and subsequent trial.

Economic Situation

Although world growth in gross domestic product of 4.2 % year on year for 2000 constituted a superficially excellent result, growth in the world's key economies slowed markedly from the 4th quarter onwards.

The sharp weakening of the US economy had a particularly negative effect on the traditionally export-oriented Japanese economy, driving it to the brink of renewed recession by the middle of 2001. In order to boost business activity in the US again, the American Federal Reserve lowered the prime rate in several stages from 5.98 % to 3.97 % between January and June 2001. Despite latent risks, the developing coun-

tries of East Asia were able to increase the growth of their gross national products in 2000 to 7.4 % (previous year: 6.4 %). Unresolved structural and finance market problems still remain, however, and the effects of the flagging US economy were also noticeable here in the first quarters of 2001.

In the eurozone, the business cycle has increasingly lost momentum since the 4th quarter of 2000. The dramatic rise in oil and energy costs and the relatively sharp rise in prices have subdued demand in the single European market. The economic situation in Germany in particular has deteriorated

since 2000. Not even the tax reform forced through by the Schröder government and effective as of 2001 has had any effect in the face of a weak world economy and inflationary tendencies.

The development of the Euro, particularly against the US dollar, has been disappointing. On 6 July 2001 the Euro fell to a record low of US \$ 0.83731 to the Euro. This represents a devaluation of 13.8 % year on year. 1 January 2002 is the starting date for the physical exchange of national currencies for the new Euro notes and coins.

Key Data of the USA, Japan and Germany

		GDP growth (real) in %	Balance of Payments in USD bn	Balance of Trade in USD bn	Inflation Rate Ø in %	Interest Rate Ø in %*	Unemployment (as of 31.12.) in %
USA	1998	3.9 %	-220.6	-164.3	1.6 %	5.51 %	4.5 %
	1999	4.2 %	-338.9	-267.8	2.2 %	5.64 %	4.1 %
	2000	5.0 %	-419.5	-367.4	3.4 %	6.03 %	4.0 %
Japan	1998	-2.8 %	120.0	125.0	0.6 %	1.51 %	4.1 %
	1999	0.3 %	141.2	114.5	-0.2 %	1.76 %	4.8 %
	2000	1.7 %	128.3	99.8	-0.6 %	1.76 %	4.7 %
Germany	1998	2.8 %	-10.6	75.9	1.0 %	4.61 %	11.1 %
	1999	1.5 %	-20.8	68.9	0.6 %	4.52 %	10.3 %
	2000	3.8 %	-21.3	48.6	2.1 %	5.30 %	9.6 %

* Interest rate: public bonds (10-year term)



World Beer Production 1999/2000

Figures in 1.000 hl

Europe		
Country	1999	2000
Germany	112,800	110,429
Great Britain	57,854	55,279
Russia (CIS)	44,900	54,900
Spain	25,852	26,400
Netherlands	24,502	25,072
Poland	22,500	24,000
France	19,866	18,926
Czech Republic	17,946	17,916
Belgium	14,105*	14,733
Italy	12,179	12,575
Romania	11,117	12,097
Ukraine (CIS)	8,500*	10,270
Austria	8,869	8,750
Ireland	8,648	8,710
Denmark	8,024	7,460
Hungary	6,944	7,300
Turkey	6,695	6,903
Portugal	6,758	6,451
Yugoslavia	7,915	5,750
Finland	4,695	4,610*
Slovak Republic	4,473	4,520
Sweden	4,673	4,495
Bulgaria	3,988	4,115
Croatia	3,701	3,857
Greece	4,220	3,800
Switzerland	3,599	3,631
Slovenia	2,300	2,500
Belorussia (CIS)	2,724	2,370
Norway	2,300	2,250
Lithuania	1,763	2,146
Bosnia-Herzegovina	900*	1,100
Estonia	892	958
Latvia	829	854
Macedonia	652	660
Luxembourg	450	450
Cyprus	366	450
Armenia	187*	400*
Other CIS-countries	270*	250
Moldova	200*	220*
Iceland	97	106
Malta	131*	91
Azerbaijan (CIS)	15*	60
Albania	831	46
Total	470,230	477,859

Australia/Oceania		
Country	1999	2000
Australia	17,550	17,150
New Zealand	3,147	2,980
Papua New Guinea	372	350*
Fiji Islands	170*	180
Tahiti	167	170*
New Caledonia	127	125*
Samoa	50*	50*
Solomon Islands	35	30
Tonga	8	8
Vanuatu	7	7
Total	21,633	21,050

America		
Country	1999	2000
USA	232,559	232,500*
Brazil	80,401	82,000
Mexico	57,256	60,253
Canada	22,949	23,074
Colombia	16,000	16,000
Venezuela	17,000	15,000
Argentina	13,050	12,700
Peru	6,169	5,400
Chile	5,400	5,400
Dominican Republic	3,100	3,200
Cuba	2,100	2,200
Ecuador	2,000	2,000
Bolivia	1,800	1,800
Paraguay	1,300	1,300
Panama	1,260	1,300
Guatemala	1,400	1,200
Costa Rica	1,200	1,200
Honduras	1,079	1,000
El Salvador	900	900
Uruguay	900	900
Jamaica	800	900
Guyana	400	400
Puerto Rico	350	350
Nicaragua	350	330
Trinidad	300	300
Haiti	200	200
Bahamas	140	140
Dutch Islands	127	127
Surinam	97	97
Belize	60	75
Barbados	76	70
Martinique	70	70
St. Lucia	76	60
St. Vincent	39	38
Grenada	35	35
Antigua	27	18
St. Kitts	18	18
Dominica	15	14
Aruba	12	12
Cayman Islands	4	4
Total	471,019	472,585

Asia		
Country	1999	2000
China	205,000	220,000
Japan	71,510	70,998
South Korea	16,692	18,568
Philippines	12,400	12,200
Thailand	10,499	11,543
Vietnam	7,500*	7,430*
India	4,900*	5,500
Taiwan	4,500*	3,966
Indonesia	1,511	1,711
Kazakhstan (CIS)	800	1,364
Malaysia	1,295	1,300*
Singapore	768	780*
Georgia (CIS)	545	700*
Uzbekistan (CIS)	825	660
Israel	870*	658
Hong Kong	504	480
Sri Lanka	419	420
Nepal	219	210*
Cambodia	180*	180*
Iran	150*	150*
Lebanon	113	100*
Mongolia	100*	100*
Syria	97	99
Myanmar (Burma)	60*	60*
Irak	50*	50*
Laos	36	50
Jordan	55	46
Pakistan	25*	30*
Total	341,623	359,352

Africa		
Country	1999	2000
South Africa	25,700	24,500
Nigeria	5,500	6,300
Cameroon	3,630	3,674
Kenya	2,818	2,410
Dem. Rep. Kongo (Zaire)	1,448	1,907
Tanzania	1,995	1,866
Uganda	1,200	1,375
Ethiopia	1,000	1,305
Zimbabwe	1,412	1,243
Angola	1,084	1,232
Namibia	1,070	1,088
Egypt	900	1,080
Tunesia	850	1,068
Ivory Coast	1,240	1,053
Mozambique	860	1,026
Burundi	995	995
Ghana	900	900
Gabon	780	805
Morocco	765*	781
Madagascar	610	680
Zambia	527	550
Congo	485	533
Ruanda	520	520
Burkina Faso (Upper Volta)	514	497
Botswana	512	492
Algeria	426*	485
Mauritius	369	388
Benin	345	387
Lesotho	376	336
Togo	290	248
Eritrea	240	200
Réunion	200	200
Swaziland	190	199
Malawi	190*	192
Central African Republic	190	177
Senegal	171	175
Chad	128	133
Guinea	150	130
Sierra Leone	0	89
Niger	69	71
Seychelles	69	69
Mali	66	69
Cape Verde Islands	49	50
Liberia	45	42
Guinea Bissau	30*	30
Gambia	25	25
Total	60,933	61,575

WORLD TOTAL	
1999	2000
1,365,438	1,392,421

In italics: corrections for 1999 as stated in last year's report; these figures became available after going to press.

* estimate



Output Development

	1999 1,000 hl	2000 1,000 hl	1999 +/- % rel.	2000 +/- % rel.
European Union	313,495	308,140	1,4 %	-1,7 %
Rest of Europe	156,735	169,719	14,5 %	8,3 %
Europe total	470,230	477,859	5,4 %	1,6 %
North America	255,508	255,574	-0,1 %	0,0 %
Central America/Caribbean	71,391	73,815	5,0 %	3,4 %
South America	144,120	143,196	-2,1 %	-0,6 %
America total	471,019	472,585	0,0 %	0,3 %
Asia	341,623	359,352	12,8 %	5,7 %
Africa	60,933	61,575	2,0 %	1,1 %
Australia/Oceania	21,633	21,050	-0,3 %	-2,7 %
WORLD TOTAL	1,365,438	1,392,421	4,9 %	2,0 %

The change in growth rates from the 1999/2000 report is due to the adjustment of the beer output figures for 1999, in italics: corrections for 1999 as stated in last year's report.

In the year 2000 annual growth in beer output was 2.0 %. Without the continuing strong growth in beer consumption in China and Russia, however, the increase would only have been 0.3 %.

The figures in the output statistics for 1999 have been revised on the basis of recent findings. Output in China has been corrected from 185m hl to 205m hl. This means that growth in beer output in 1999 exceeded the 3.4 % stated in the 1999 / 2000 Barth Report and was in fact 4,9 %.

Market Analysis

Spot market activity began as early as mid-August, especially in Germany. This was because the 1998 and 1999 crops had both produced alpha deficits of approx. 500 mt and the international brewing industry subsequently decided to reduce its stockpiles rather than pay the higher prices demanded for these crops. This unusually early start of spot market activity before the harvest had actually begun was basically due to the following factors:

- sustained, disproportionately large increases in output in Eastern Europe which affected hop demand, particularly for German varieties
- the historically low rate of forward buying by the international brewing industry, which – despite the risks involved - has shifted its hop purchasing activities to the spot market mainly for budget reasons
- extreme conditions for farming (heat, drought) in a number of Eastern European countries (Slovenia, Czech Republic, Slovakia, Bulgaria, Yugoslavia), severely affecting hop production
- the euro / US\$ exchange rate, which fell from 0.94160 to 0.85420 between January and July, thus giving European, and above all German, high-alpha hops a competitive advantage over US high-alpha hops for the first time.

In addition, the policy of clearing hop yards around the world in the past has led to a return to a balance of supply and demand for some time now. These fundamental data were accompanied by psychological and financial components. Urgent appeals to their members by various growers' organisations in the main production areas, particularly by the American Hop Producers Alliance, prior to the 2000 harvest not to sell their hops below production cost but to consider an appropriate return on capital

led to consolidation on the market and greater confidence on the part of growers in demanding better prices. This went hand in hand with urgent warnings from lenders that the erosion of capital resources represented a serious threat to the survival of many growers.

From the opening of the spot market in almost all the main European hop-producing countries, but especially in the Hallertau, there was fierce purchasing competition among the three remaining major hop-trading companies. As in the previous year, hops were repurchased from overstocked breweries or contracts reallocated. The destruction of 270 mt of alpha in two large warehouse fires in Yakima, USA at the end of September 2000 caused a further sharp rise in prices for raw hops in Germany. Now the spot market activity began in the USA too. Prices were paid that had not been seen since 1990 (in Germany the highest price paid for high-alpha hops was DM 780/ztr and in the USA US\$ 220/ztr). In view of the low number of forward contracts, this provided many German and American growers with a marked improvement in income compared with the previous years. By the beginning of December the world's main hop-producing regions were sold out.

The international brewing industry reacted to the events in the global hop market, in particular to the higher prices, by abstaining

from purchasing, trying as far as possible to meet annual requirements in stages and further reducing strategic stocks. Nevertheless, trading volumes up to December 2000 were high. After that, volume by weight of alpha fell below the levels of the previous years. In addition, it became obvious during the first half of 2001 that beer output in Eastern Europe had suffered from the unfavourable weather conditions and that hopping rates had been reduced considerably due to modernisation of the local brewing industry.

Conclusions regarding crop 2000:

- Currency relations between US\$ and Euro are having a decisive influence on hop trade flows.
- Crop 2000, with its above-average alpha yield in Germany in particular, produced a total world yield of 8,290 metric tons of alpha. From a purely arithmetical point of view, even allowing for the destruction of 270 tons of alpha by fire, the market therefore had a surplus of 209 tons of alpha.
- In view of the above-mentioned purchasing restraint on the part of many breweries in crop year 2000, the actual stock situation of the international brewing industry would appear to be varied. This makes it difficult to make any conclusive statements on the fundamental state of the market. However, what we do see is that in many cases stocks and precautionary contract buying are at historically low levels.

Forward contract rates in % (as per spring 2001)

Country	2001	2002	2003	2004	2005
Germany	63%	59%	49%	36%	28%
USA	71%	44%	35%	23%	4%
Czech Republic	100%	85%	51%	38%	5%
England	64%	45%	36%	32%	8%
Slovenia	75%	60%	50%	40%	30%

Hop Acreage and Production 1999/2000

		1999				2000			
		Acreage ha	Production mt	Ø-Alpha %	Alpha mt	Acreage ha	Production mt	Ø-Alpha %	Alpha mt
Germany	Hallertau	14,652	22,887.6	7.2	1,648	15,065	25,301.3	8.6	2,181
	Tettngang	1,613	2,280.3	3.3	75	1,577	1,289.5	4.3	55
	Elbe-Saale	1,419	1,940.2	9.4	182	1,368	2,048.7	11.0	224
	Spalt	504	709.6	3.4	24	476	497.5	4.8	24
	Hersbruck	94	110.4	4.7	5	91	121.0	4.5	5
	Others	17	26.7	6.0	2	17	28.4	5.0	1
Total		18,299	27,954.8	6.9	1,936	18,594	29,286.4	8.5	2,490
England		2,174	3,007.7	7.9	238	1,975	2,799.4	8.8	246
Spain		800	1,565.4	9.6	150	817	1,412.6	11.1	157
France		814	1,316.3	1.9	25	816	1,682.8	3.7	63
Belgium		252	453.2	8.7	39	244	481.0	10.7	51
Austria		226	316.3	6.7	21	217	289.3	6.6	19
Portugal		55	59.0	9.8	6	42	42.0	10.5	4
Ireland		6	8.4	9.2	1	3	2.7	11.0	0
European Union		22,626	34,681.1	7.0	2,416	22,708	35,996.2	8.4	3,031
Czech Republic	Zatec (Saaz)	4,570	4,792.6	3,1	149	4,617	3,494.1	4.1	143
	Ustek (Auscha)	785	920.9	2.8	26	824	773.8	3.7	28
	Trstice (Tirschtitz)	621	722.6	2.8	20	654	596.9	4.4	26
	Others	15	16.4	2.8	0	13	21.6	5.0	1
Total		5,991	6,452.5	3.0	195	6,108	4,886.4	4.1	198
Poland		2,200	2,650.0	5.5	146	2,250	3,060.0	6.4	196
Slovenia		1,737	2,638.0	7.3	193	1,623	1,761.0	7.2	127
Ukraine		1,000*	830.0*	5.0	42	1,572*	687.5*	5.0	34
Russia		1,640	1,052.0	4.5	47	1,523	823.6	4.1	34
Yugoslavia		451	797.7	5.9	47	447	528.6	6.1	32
Slovak Republic		360	360.0	4.0	14	320	140.0	4.1	6
Bulgaria		320	280.0	8.6	24	320	230.0	9.7	22
Turkey		285	218.8	8.6	19	286*	150.7*	6.1	9
Romania		300*	150.0*	6.0	9	100	60.0	6.0	4
Switzerland		22	46.4	7.5	3	22	49.9	7.3	4
Hungary		8	8.0*	7.0	1	22	17.8*	7.7	1
Rest of Europe		14,314	15,483.4	4.8	740	14,593	12,395.5	5.4	667
EUROPE		36,940	50,164.5	6.3	3,156	37,301	48,391.7	7.6	3,698
USA	Washington	10,156	22,520.7	11.0	2,477	10,929	23,705.1	11.4	2,695
	Oregon	2,358	4,568.7	9.0	411	2,352	4,711.8	8.8	414
	Idaho	1,361	2,147.3	7.0	150	1,346	2,236.3	8.5	189
	Total	13,875	29,236.7	10.4	3,038	14,627	30,653.2	10.8	3,298
Argentina		152	193.0	6.0	12	100	128.0	6.5	8
AMERICA		14,027	29,429.6	10.4	3,050	14,727	30,781.1	10.7	3,306
South Africa		491	821.0	10.0	82	500	766.0	11.8	90
AFRICA		491	821.0	10.0	82	500	766.0	11.7	90
China		4,385	11,300.0	6.3	712	4,930	13,000.0	6.1	793
Japan		341	720.9	6.4	46	329	692.4	5.6	39
India		40 ³⁾	35.0	6.0	2	40	36.0	9.0	3
South Korea		1	0.9	3.0	0	1	0.4	3.0	0
ASIA		4,767	12,056.8	6.3	760	5,300	13,728.8	6.1	835
Australia		842	2,237.9	11.4	255	813	2,115.8	12.2	257
New Zealand		360	740.5	12.2	90	381	828.2	12.7	105
AUSTRALIA/OCEANIA		1,202	2,978.4	11.6	345	1,194	2,944.0	12.3	362
WORLD		57,427	95,450.3	7.7	7,393¹⁾	59,022	96,611.6	8.6	8,291²⁾

1) Around 75 mt of alpha was destroyed in a warehouse fire in the USA and approx. 28 mt of alpha in a warehouse fire in Slovenia, which left only approx. 7,290 mt of alpha available worldwide. This lower quantity is also used in the alpha acid balance on page 8.

2) Around 270 mt of alpha was destroyed in a warehouse fire in the USA, which left only approx. 8,020 mt of alpha available worldwide. This lower quantity is also used in the alpha acid balance on page 8.

3) 1999: Figure amended from 127 ha to 40 ha

*) estimate

Any differences to the table on page 8 are rounding differences.



Alpha Acid Production

Alpha acid production worldwide was recorded according to the following groups of varieties:

Group A:	Finest aroma hops, such as: Saaz, Tett nang, Spalt
Group B:	Aroma hops, such as: Hallertau, Hersbruck, Perle, Spalt Select, Hallertau Tradition, Golding, aroma hops from USA, England, etc.
Group C:	Hops without significance for the world market (both aroma and bitter)
Group D:	Bitter hops, such as Northern Brewer, Brewers Gold, Cluster, Pride of Ringwood, high alpha hops from USA, England, Australia and Germany, etc.

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

Group	Crop Share	Crop mt	1999			2000				
			Alpha Ø	Alpha mt	Alpha Share	Crop Share	Crop mt	Alpha Ø	Alpha mt	Alpha Share
A	10.3%	9,801	3.1%	304	4.1%	7.0%	6,813	4.2%	286	3.5%
B	29.3%	28,011	4.8%	1,345	18.2%	28.8%	27,829	5.7%	1,587	19.1%
C	21.4%	20,437	6.8%	1,390	18.8%	23.9%	23,063	6.7%	1,546	18.6%
D	39.0%	37,202	11.7%	4,353	58.9%	40.3%	38,904	12.5%	4,871	58.8%
Total	100.0%	95,451	7.7%	7,392	100.0%	100.0%	96,609	8.6%	8,290	100.0%

All alpha acid values were recorded on the basis of % as is, EBC Analytica 7.4. Any differences to the table on page 7 are rounding differences.

Around 270 mt of alpha was destroyed in a warehouse fire in the USA, which left only approx. 8,020 mt of alpha available worldwide. This lower quantity is also used in the alpha acid balance below.

In 2000, hop acreage increased year on year by 2.8 %, hop production (in metric tons) by 1.2 % and alpha production by 12.1 %.

Some 270 tons of alpha was destroyed in two warehouse fires in the USA, leaving only 8,020 tons of alpha actually still available for the market.

The growers in the USA, Germany and China together produced 79.4 % of world alpha. The excellent alpha content of all the German varieties resulted in Germany's share of world alpha production increasing significantly. It rose to 30 % compared with 26.1 % in the previous year. As in the years

before, the USA was the world leader, with a share of 39.8 % (previous year: 41 %).

The share of total world production from the USA and Germany rose by 2.7 % to stand now at 69.8 %. Hop production in these two countries is thus coming to determine to an ever-greater extent the market developments in the hop industry world-wide.

In Group A, the Czech Republic increased its market share to 70.1 % (previous year: 62.0 %). Germany fell back from 32.3 % to 27.9 %.

The far above-average alpha levels in Germany resulted in an increase in Germany's market share in Group B to 57.6 %, compared with 47.3 % in 1999. The USA dropped back from 23.1 % to 16.7 %.

As in the year before, Group C was led by China with a share of 51.4 %.

In Group D, significant growth, amounting to 530 tons, was registered in world alpha volume in 2000. The major share in Group D is produced by the USA with 59.9 % (previous year: 62.1 %). Germany's share increased year on year from 27.4 % to 30.6%.

Alpha Acid Balance

Calendar year	Alpha demand		Alpha Production		Alpha supply	
	Hopping rate	Demand	Crop year	Production	Surplus	Deficit
1997	6.1 g α/hl	7.882 mt α	1996	9.300 mt α	1.418 mt α	---
1998	5.8 g α/hl	7.549 mt α	1997	8.783 mt α	1.234 mt α	---
1999	5.7 g α/hl	7.783 mt α	1998	7.245 mt α	---	538 mt α
2000	5.6 g α/hl	7.798 mt α	1999	7.290 mt α	---	508 mt α
2001*	5.5 g α/hl	7.811 mt α	2000	8.020 mt α	209 mt α	---

* Estimated demand

Due to above-average alpha yields in Germany in particular, world production in 2000 amounted to a total yield of 8,290 metric tons of alpha. As far as the figures

go, there was therefore a surplus supply of 209 metric tons of alpha, even after taking into account the 270 tons lost due to the fires described in the Market Analysis.

We must point out, however, that decomposition of alpha between processing and actual use in the brewery is not included in these calculations.



European Community

On 26 February 2001 the foreign ministers of the fifteen EU member states signed the Treaty of Nice. This treaty constitutes an amendment to the Community's existing treaties and was agreed by the heads of state and heads of government at the Nice summit (7 – 9 December 2000). The treaty now has still to go through the ratification procedures provided for by the respective constitutions – if need be, with a referendum – in all member states, which is expected to take until mid-2002. The treaty was intended to create the institutionally necessary prerequisites for incorporating another twelve members from Eastern Europe and the Mediterranean into the EU. These countries are not expected to accede until the end of 2004 at the earliest. Malta, Poland, Slovenia, the Czech Republic and Hungary are considered to be potential first candidates. However, there are probably a number of obstacles still to be overcome along the way to eastward enlargement, as the example of Ireland shows. A majority of the

voters there rejected the Treaty of Nice in a referendum in June 2001.

The hop industry has succeeded in securing an extension of the subsidy regulation (Council Directive (EEC) No. 1696/71 of 26

amounting to 25,504 ha, totals EUR 12.2m per annum.

The individual member states received the following subsidies in 2000:

Country	Production area	Set-aside area	Clearing area	Total area	Total subsidy (EURO)
Germany	18,594	1,064	1,506	21,164	10,158,720
Great Britain	1,975	29	131	2,135	1,024,800
France	816	0	0	816	391,680
Spain	817	0	0	817	392,160
Belgium	244	7	14	265	127,200
Austria	217	9	10	236	113,280
Portugal	42	18	4	64	30,720
Ireland	3	2	2	7	3,360
Total	22,708	1,129	1,667	25,504	12,241,920

July 1971, supplemented by Commission Directive (EC) No. 609/1999 of 19 March 1999) from the EU Commission. The flat-rate producer subsidy of EUR 480/ha for all varieties has been allowed once again for the years 2001 to 2003 inclusive (adopted on 19/07/01) and thus, with acreage

Total hop acreage in the candidate countries for the first stage of enlargement is approx. 10,000 ha, which would require additional subsidies of about EUR 4.8m.

Conversion Table

Area:

1 hektare (ha) = 10,000 m ²	= 2.934 bayerische Tagwerk
1 hektare (ha) = 10,000 m ²	= 2.471 acres
1 bayerisches Tagwerk	= 0.341 ha
1 acre	= 0.405 ha

Length:

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

Volume:

1 hl = 100 l	= 26.42 gall = 0.8523 bbl (USA)
1 hl = 100 l	= 22.01 gall = 0.6114 bbl (GB)
1 barrel (bbl/USA)	= 31 gall = 1.1734 hl
1 barrel (bbl/GB)	= 36 gall = 1.6365 hl

Weight:

1 metr. ton (mt) = 1,000 kg	= 20 Ztr. = 2,204.6 lbs
1 Zentner (Ztr.) = 50 kg	= 110.23 lbs = 1.102 cwt (USA)
	= 110.23 lbs = 0.984 cwt (GB)
1 hundredweight (cwt/USA)	= 100 lbs = 45.359 kg
	= 0.9072 Ztr.
1 hundredweight (cwt/GB)	= 112 lbs = 50.800kg
	= 1.0160 Ztr.
1 cental (GB)	= 100 lbs = 45.359 kg
	= 0.9072 Ztr.
1 kg	= 2.20462 lbs
1 lb	= 0.45359 kg

Temperature:

from Fahrenheit into Celsius	from Celsius into Fahrenheit
$86^{\circ}\text{F} = \frac{(86 - 32) \times 5}{9} = 30^{\circ}\text{C}$	$30^{\circ}\text{C} = \frac{30 \times 9}{5} + 32 = 86^{\circ}\text{F}$

Pressure:

1 bar = 14.5038 psi	1 psi = 0.06895 bar
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Currencies of the European Monetary Union

1 EUR equals: (on 1 January 1999)

Belgium	40.3399	BEF
Germany	1.95583	DEM
Finland	5.94573	FIM
France	6.55957	FRF
Ireland	0.787564	IEP
Italy	1.936.27	LIT
Luxemburg	40.3399	LUX
Netherlands	2.20371	NLG
Austria	13.7603	ATS
Portugal	200.482	PTE
Spain	166.386	ESP

Currency Exchange Rates

1 EUR equals (reference rates by ECB):

	(on 1 June 2000)	(on 1 June 2001)
USA *	0.9330 USD	0,8480 USD
Australia *	1.6306 AUD	1,6727 AUD
Denmark	7.4638 DKK	7,4556 DKK
Great Britain*	0.6240 GBP	0,5973 GBP
Japan	101.4100 JPY	101,0000 JPY
Canada *	1.3958 CAD	1,3146 CAD
New Zealand*	2.0358 NZD	2,0628 NZD
Norway	8.3210 NOK	7,9300 NOK
Poland	4.0707 PLN	3,3930 PLN
Sweden	8.3560 SEK	9,1250 SEK
Switzerland	1.5740 CHF	1,5210 CHF
Czech Republic	36.0930 CZK	34,1950 CZK

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

* = 1 unit all others = 100 units



Germany

Area	Variety	Development of Acreage			Development of Production			
		1999	+/- Acreage ha	2000	1999 Ø-Yield mt/ha	2000	1999 Production mt	2000
Hallertau	Perle	3,090	108	3,198	1.60	1.80	4,949.25	5,769.15
	Hersbruck	1,955	- 102	1,853	1.58	1.72	3,087.30	3,194.80
	Hallertau Tradition	1,683	40	1,723	1.74	1.86	2,926.40	3,199.50
	Spalt Select	968	- 28	940	1.79	2.03	1,733.90	1,904.50
	Hallertau	663	50	713	1.18	0.90	782.40	641.95
	Huell	18	- 5	13	1.43	1.59	25.80	20.70
	Spalt	3	2	5	0.23	0.45	0.70	2.25
	Total Aroma	8,380	65	8,445	1.61	1.74	13,505.75	14,732.85
	Northern Brewer	1,511	- 95	1,416	1.43	1.42	2,161.25	2,010.72
	Brewers Gold	156	- 15	141	2.16	2.42	336.65	340.52
	Orion	16	- 9	7	1.70	2.13	27.15	14.91
	Total Bitter	1,683	- 119	1,564	1.50	1.51	2,525.05	2,366.15
	Hallertau Magnum	3,185	382	3,567	1.44	1.50	4,600.30	5,350.50
	Hallertau Taurus	795	100	895	1.53	1.76	1,220.05	1,575.20
	Nugget	511	- 22	489	1.66	2.23	848.40	1,090.47
	Target	58	- 1	57	2.08	2.01	120.45	114.57
	Total High Alpha	4,549	459	5,008	1.49	1.62	6,789.20	8,130.74
	Record	30	- 3	27	1.68	1.76	50.45	47.60
	Others	13	8	21	1.37	1.14	17.85	23.93
TOTAL HALLERTAU	14,655	410	15,065	1.56	1.68	22,888.30	25,301.27	
Tettngang	Tettngang	1,060	- 33	1,027	1.27	0.80	1,344.50	818.80
	Hallertau	553	- 3	550	1.69	0.86	935.80	470.75
	TOTAL TETTNGANG	1,613	- 36	1,577	1.41	0.82	2,280.30	1,289.55
Elbe-Saale	Perle	122	12	134	1.46	1.31	177.95	175.40
	Hallertau Tradition	13	- 5	8	1.41	1.55	18.30	12.36
	Other Aroma	6	- 6	0	1.31	0.00	7.90	0.00
	Total Aroma	141	1	142	1.45	1.32	204.15	187.76
	Northern Brewer	498	- 56	442	1.19	1.38	592.70	609.10
	Other Bitter	1	0	1	2.90	2.65	2.90	2.65
	Total Bitter	499	- 56	443	1.19	1.38	595.60	611.75
	Hallertau Magnum	577	28	605	1.53	1.59	882.85	962.85
	Nugget	100	- 11	89	1.41	2.17	140.70	193.25
	Hallertau Taurus	95	- 13	82	1.09	0.97	103.20	79.35
	Other High Alpha	7	0	7	1.96	1.96	13.70	13.70
	Total High Alpha	779	4	783	1.46	1.60	1,140.45	1,249.15
	TOTAL ELBE SAALE	1,419	- 51	1,368	1.37	1.50	1,940.20	2,048.66
Spalt	Spalt	177	- 12	165	1.15	0.68	203.40	112.20
	Hallertau	151	- 7	144	1.34	0.87	201.80	125.28
	Spalt Select	115	0	115	1.86	1.69	213.55	193.95
	Hersbruck	35	- 11	24	1.39	1.21	48.80	28.92
	Perle	15	2	17	1.63	1.29	24.40	21.85
	Hallertau Tradition	10	- 1	9	1.62	1.65	16.15	14.81
	Total Aroma	503	- 29	474	1.41	1.05	708.10	497.01
	Bitter	1	1	2	1.50	0.25	1.50	0.50
	TOTAL SPALT	504	- 28	476	1.41	1.05	709.60	497.51
	Hersbruck	Hallertau	29	- 1	28	0.96	0.82	27.80
Spalt Select		22	0	22	1.48	1.78	32.65	39.10
Perle		17	0	17	1.22	1.44	20.75	24.40
Hersbruck		13	- 2	11	1.02	1.34	13.20	14.70
Other Aroma		6	0	6	1.42	1.50	8.50	9.00
Total Aroma		87	- 3	84	1.18	1.31	102.90	110.20
Bitter		3	0	3	1.37	1.97	4.10	5.90
High Alpha	4	0	4	0.85	1.23	3.40	4.90	
TOTAL HERSBRUCK	94	- 3	91	1.17	1.33	110.40	121.00	
Baden/	Aroma	13	0	13	1.40	1.63	18.15	21.15
Bitburg/	Bitter	1	- 1	0	2.95	0.00	2.95	0.00
Rhineland-Pal.	High Alpha	3	2	5	1.87	2.42	5.60	7.25
TOTAL BADEN/B./RH.	17	1	18	1.57	1.67	26.70	28.40	
Total Aroma	10,737	- 2	10,735	1.57	1.57	16,819.35	16,838.52	
Total Bitter	2,187	- 174	2,013	1.43	1.48	3,129.20	2,984.30	
Total High Alpha	5,335	463	5,798	1.49	1.62	7,938.65	9,392.04	
Total Others	43	5	48	1.59	1.49	68.30	71.53	
GERMANY TOTAL	18,302	292	18,594	1.53	1.58	27,955.50	29,286.39	



Growth, Estimate and Weight

Rainfall in autumn and winter 1999 was far below the long-term average. As a result, growers were able to carry out intensive hoeing in the relatively dry hop yards in the autumn with an absolute minimum of structural damage. The relatively mild winter ended very early with heavy rainfall in January and February. Spring work was delayed slightly due to waterlogging and had to be done in less than ideal ground conditions. Spring began early and thanks to favourable weather conditions the hop plants developed rapidly. With high temperatures in May plant growth was even more rapid, compensating to a large extent for the damage suffered by hop yards due to severe hail earlier in the same month.

After the experience of serious mildew infection in 1999 awareness among growers was so great that the first large-scale crop protection measures in 2000 were carried out at a much earlier stage than before. The pesticides available were sufficient to combat the other usual diseases without any further problems.

Area	Estimate 08/2000 mt	Weight 31.03.01 mt
Hallertau	24,366	25,307
Tettngang	1,600	1,290
Elbe-Saale	1,856	2,053
Spalt	490	497
Hersbruck	106	122
Baden/Rhineland-Palatinate/Bitburg	27	28
TOTAL	28,445	29,297

Most of the plants had already reached trellis height by mid-June. This one-week lead in terms of growth was cancelled out by the cold nights in late June and early July, with the result that by mid-July plant development had returned to normal. Conditions were therefore ideal for optimum further development of the hop plants.

After several years of virtual irrelevance, aphids returned in great numbers due to a protracted migration period and to the clearly declining effectiveness of the approved pesticides. Additional insecticide spraying was therefore necessary to prevent financial losses. The warm weather in August, accompanied by well distributed rainfall, promoted good cone growth and

yield development. The harvest began several days earlier than usual, particularly among the early-maturing varieties.

In the Tettngang region there were severe thunderstorms in early July causing serious hail damage to approximately half the crop acreage. This resulted in production volume in this area falling by more than 40 % year on year.

The actual weight exceeded the estimate by approx. 3 % (879 mt). While Tettngang fell far short of expectations, the volume produced in the Hallertau and Elbe-Saale regions significantly exceeded the August estimates.

Acreage increased year on year by about 298 ha to approx. 18,597 ha.

Variety Development

Over the last five years the acreage of the main varieties in the German regions developed as follows:

Variety	1996 ha	1997 ha	1998 ha	1999 ha	2000 ha
Perle	3,889	3,985	3,623	3,251	3,373
Hersbruck	4,104	3,104	2,408	2,003	1,888
Hallertau Tradition	1,629	2,004	2,017	1,712	1,746
Hallertau	1,312	1,390	1,381	1,398	1,437
Spalter Select	1,433	1,436	1,326	1,107	1,079
Tettngang	1,094	1,102	1,070	1,060	1,027
Spalt	168	186	190	180	170
Total main Aroma	13,629	13,207	12,015	10,711	10,720
Northern Brewer	3,588	2,962	2,286	2,009	1,858
Brewers Gold	823	505	236	162	145
Total main Bitter	4,411	3,467	2,522	2,171	2,003
Hallertau Magnum	2,379	2,984	3,388	3,768	4,179
Hallertau Taurus	216	608	845	891	980
Nugget	724	776	699	611	578
Target	95	101	78	65	64
Total main High Alpha	3,414	4,469	5,010	5,335	5,801

Alpha acid table

Variety		1996	1997	1998	1999	2000	Average
Hallertau	Hersbruck	4.2%	4.3%	3.5%	1.6%	4.3%	3.6%
Hallertau	Perle	7.8%	8.5%	6.2%	6.2%	7.4%	7.2%
Hallertau	Spalt Select	5.5%	6.2%	5.3%	4.0%	5.8%	5.4%
Hallertau	Hallertau Tradition	6.5%	6.4%	5.2%	5.5%	6.5%	6.0%
Hallertau	Hallertau	5.3%	5.1%	4.6%	3.7%	4.2%	4.6%
Hallertau	Northern Brewer	9.8%	9.9%	8.4%	8.1%	9.2%	9.1%
Hallertau	Brewers Gold	7.1%	8.4%	7.0%	5.6%	7.0%	7.0%
Hallertau	Hallertau Magnum	14.0%	15.7%	13.1%	12.3%	13.2%	13.7%
Hallertau	Nugget	10.1%	12.5%	10.6%	9.3%	11.3%	10.8%
Hallertau	Target	11.7%	12.5%	11.2%	9.2%	11.5%	11.2%
Hallertau	Taurus	-	15.6%	13.4%	14.0%	14.6%	14.4%
Elbe-Saale	Northern Brewer	8.6%	8.9%	7.9%	7.0%	8.8%	8.2%
Elbe-Saale	Hallertau Magnum	14.3%	13.9%	12.5%	11.2%	12.8%	12.9%
Spalt	Spalt	5.4%	5.2%	4.1%	3.4%	4.2%	4.5%
Tettnang	Tettnang	4.6%	5.0%	3.8%	3.3%	4.2%	4.2%

All data in % as is, in accordance with EBC-Analytika 7.4. The values were measured in Oct./Nov. after the harvest. Appropriate deductions should be taken into account later in the course of season.

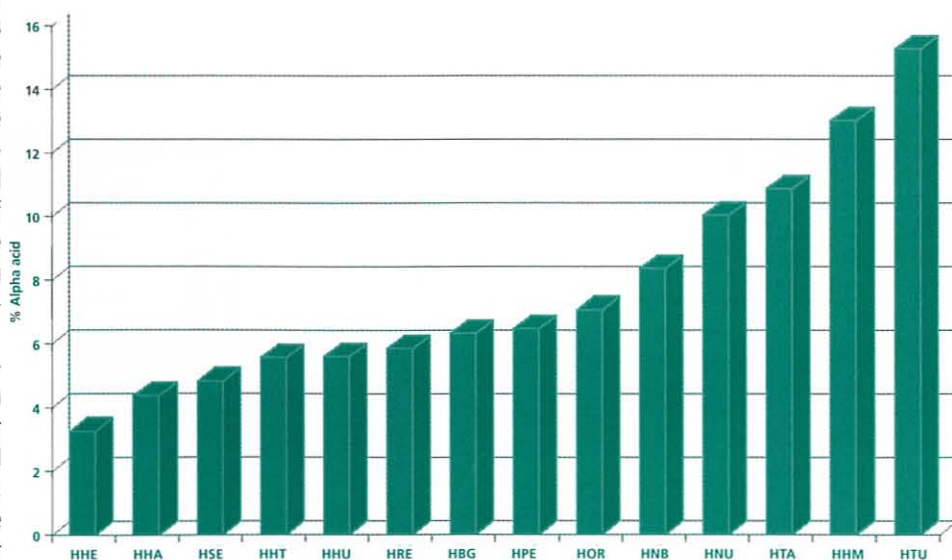
Market Development

Contract market activity gave way to the spot market in mid-August without a break. As interest was focused particularly on hops with high alpha content, growers received offers orientated towards the alpha content in the respective lots. Price setting on both the spot market and the contract market often ignored the evaluations determined on the basis of the neutral quality assessment. The wide range of purchasing variants and terms offered gave further indication of the strong purchasing competition between the various hop-trading companies.

Warehouse fires in the USA and the resulting destruction of approx. 270 mt alpha caused a sharp rise in purchase prices for hops in Hallertau and heavy buying by all market participants in late September. Prices remained at this high level until the beginning of December. By early December the market in Hallertau was sold out.

As in the three previous years, the hop growers association (HVG) opened a pool for all hop varieties. Although the hop pool was presented to the growers as a market-stabilising instrument when it was first introduced, it has developed over the years into an indispensable purchasing instrument for HVG Hallertau. However, at the time of going to press HVG Hallertau had

Average alpha acid contents of Hallertau hop varieties



been unable to set final settlement prices, so the pool has only settled on a minimum-price basis.

In crop year 2000 the hop pool additionally stimulated what was already an overheated market. Joh. Barth & Sohn therefore repeated the purchasing campaign that had proved so successful in previous years, in addition to offering growers other purcha-

sing models. This made the increased competition on the spot market very clear. In addition to an attractive minimum-price guarantee, the advance payments offered were higher than those offered by the HVG pool. The final settlement price was linked to marketing success and the growers had received their final payments in full by the beginning of May 2001.

Purchase prices at producer level in DEM per 50 kg in farmers' bales

Area/Variety	Sep 2000	Oct 2000	Nov 2000	Dec 2000
Hallertau Hersbruck	300	300	up to 300	up to 280
Hallertau Perle	450/630	630	up to 640	up to 560
Hallertau Hallertau Tradition	380/510	510	up to 500	up to 420
Hallertau Spalt Select	340/410	420	up to 420	up to 410
Hallertau Northern Brewer	470/620	610	up to 630	up to 560
Hallertau Hallertau Magnum	720	720	up to 750	up to 720
Hallertau Nugget	490/630	640	up to 650	up to 570
Hallertau Taurus	580/750	770	up to 770	up to 750

Development of Rectangular Bale Usage

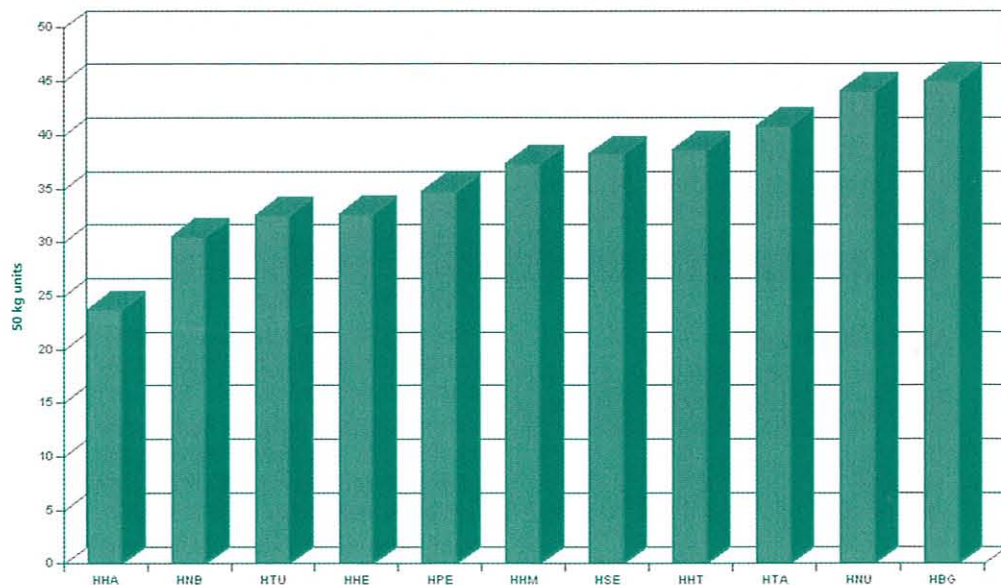
The move from farmers' bales to rectangular bales continues to make rapid progress. Whereas 44% of the hops purchased by Joh. Barth & Sohn in 1999 were delivered packed in the new future-oriented rectangular bales, the figure for crop year 2000 was approx. 55 %. With the growers' association supporting the purchase of rectangular bale presses, the proportion of rectangular bales will continue to rise. This constitutes the basis for an effective form of cold storage that preserves value and quality and is only possible with hops packed in standardised rectangular bales.

In spring 2001 an additional cold storage facility was completed at Hopfenveredlung St. Johann, more than doubling cold storage capacity for raw hops in Germany to nearly 150,000 ztr.

Number and Structure of Hop Farms

As in previous years, the number of German hop farms continued to fall in the year 2000. While there were still 2,324 farms growing hops in 1999, the figure fell by 127 to 2,197 farms in 2000. Average hop acreage is now more than 8.5 hectares per farm. Despite the slight rise in hop revenues, this development will continue steadily in the years to come.

10-year average yields of Hallertau hop varieties (in 50 kg units per ha)



1 Zentner = 50 kg

England

Variety	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Goldings	438	-67	371	1.36	1.69	594.8	626.5
Fuggles	313	-42	271	1.16	1.26	363.0	340.4
First Gold	129	35	164	1.04	1.01	134.5	165.6
Challenger	183	-30	153	1.42	1.46	259.7	223.6
Phoenix	140	-3	137	1.20	1.30	167.4	178.8
W.G.V.	86	-7	79	1.23	1.25	105.9	98.2
Progress	83	-31	52	1.31	1.28	108.4	67.1
Bramling Cross	25	-4	21	1.16	1.04	29.1	21.9
Total Aroma	1,397	-149	1,248	1.26	1.38	1,762.8	1,722.2
Northdown	140	-42	98	1.52	1.58	213.4	155.1
Total Bitter	140	-42	98	1.52	1.58	213.4	155.1
Target	542	-39	503	1.73	1.63	937.7	822.6
Herald	55	1	56	0.95	0.53	52.1	29.4
Admiral	26	20	46	1.23	1.04	32.1	47.9
Total High Alpha	623	-18	605	1.64	1.49	1,021.9	899.9
Others	14	9	23	0.68	0.99	9.6	22.3
ENGLAND TOTAL	2,174	-200	1,974	1.38	1.42	3,007.7	2,799.5

Growth and Quality

Climatic conditions were unusual once again. In April and May there was heavy rainfall, which caused major training problems and made conditions difficult for spraying. As a result there were serious cases of downy mildew, which were successfully brought under control, however. The month of June was very dry, while in July there were prevailing cold north-easterly winds – anything but ideal conditions for hop growing. In early August, however, it was warm and humid with sufficient rainfall, which contributed to strong growth. Crop 2000 – in particular the aroma varieties – was largely unaffected by diseases and pests. Only a small quantity of late-har-

vested alpha varieties showed signs of downy and powdery mildew and aphid infestation.

On the whole, the alpha content of crop 2000 was satisfactorily high (with the exception of one variety, **Bramling Cross**).

Hop Research

Results from farm trials of the new selection **P38** were very encouraging. This conventional-height bitter variety produced an average alpha-acid yield 15 % greater than crops of **Wye Target**. **P38** has very strong resistance to wilt disease, greater resistance to downy mildew and considerably improved storage stability of the alpha acid compared to **Wye Target**. The National Hop Association of England (NHA) has approved the application for plant variety rights for this selection under the name **Pilgrim**.

As intimated in the last Barth Report, three further selections, **P6** (a bitter variety for conventional trelliswork), **S24** and **S26** (dwarf types), have now been established on farms in trial areas. Following the NHA policy of completing selection procedures on farms rather than at the research institute, three more dwarf varieties have been chosen for propagation and offered to growers for farm trials.

Market Situation

Despite the low number of forward contracts, crop 2000 was sold almost entirely to the brewing industry.

The average farm-gate prices paid were as follows:

Contract market

Aroma	5.20 GBP/kg (3.12 EUR)
"Dual Purpose"	4.62 GBP/kg (2.80 EUR)
High-alpha	22.50 GBP/kg Alpha (13.50 EUR)

Spot market

Aroma	3.00 GBP/kg (1.80 EUR)
"Dual Purpose"	3.18 GBP/kg (1.92 EUR)
High-alpha	23 GBP/kg Alpha (14 EUR)

Hop acreage in England, especially acreage planted with aroma and so-called "dual-purpose" varieties, continues to decrease. This is largely due to the lack of forward buying on the part of the British brewing industry. The domestic brewing industry is still considered to be overstocked with English hops. There are fears that by the time this excess stock has been exhausted in one or two years there will no longer be any English hop farming worth mentioning. In view of these depressing prospects, more and more hop farmers are beginning to fear for their livelihood. English aroma hop farming in particular is caught in a severe crisis, which can be seen from the rapid decline in aroma hop acreage.

Alpha Acid Table

Variety	1999	2000
Goldings	5.2%	6.0%
Fuggles	4.7%	5.1%
Challenger	6.7%	8.1%
First Gold	7.9%	8.4%
Phoenix	10.9%	12.2%
Progress	5.8%	7.2%
W.G.V.	5.9%	7.2%
Bramling Cross	6.0%	5.8%
Northdown	7.7%	8.2%
Target	10.7%	11.9%
Herald	12.5%	12.8%
Admiral	13.8%	14.9%



France

Area	Variety	Development of Acreage			Development of Production			
		1999	+/-	2000	1999	2000	1999	2000
		Acreage ha			Ø-Yield mt/ha		Production mt	
Alsace	Aroma	749	2	751	1.61	2.08	1,204.5	1,559.9
	Bitter	14	3	17	2.63	2.04	36.8	35.5
	High Alpha	21	-5	16	1.68	2.32	35.3	36.7
	Total Alsace	784	0	784	1.63	2.08	1,276.6	1,632.1
Nord	Aroma	11	1	12	1.23	1.35	13.5	16.4
	Bitter	9	1	10	1.14	1.64	10.3	16.0
	High Alpha	10	0	10	1.59	1.84	15.9	18.3
	Total Nord	30	2	32	1.32	1.59	39.7	50.7
FRANCE TOTAL		814	2	816	1.62	2.06	1,316.3	1,682.8

In Alsace acreage remained unchanged for the first time after several years of steady slight growth. In Northern France, on the other hand, there was a slight increase in acreage.

Growth and Quality

Many people have positive memories of crop year 2000. Greatly fluctuating weather conditions led to expectations of a normal

harvest. In July and August, however, it was warm and wet, with the result that the hops grew more dynamically than they had for decades. Cone growth promised an exceptionally good crop.

Disease and pest infestation were kept at bay, although not always easily. Weather conditions during harvest time were normal; organoleptic quality, volume and alpha acid levels, however, were above average.

The volume of **Strisselspalter** harvested

was 351.5 mt, an increase on 1999. In addition, alpha levels were more than twice as high as in previous years (in Alsace 3.21% and in Northern France 4.1 % (EBC 7.4).

Market Situation

The 2000 crop has already been sold completely. Forward contracts have been closed for 85 % of the next crop.

Spain

Variety	Development of Acreage			Development of Production				
	1999	+/-	2000	1999	2000	1999	2000	
		Acreage ha			Ø-Yield mt/ha		Production mt	
H-3 Leonés	343	-16	327	1.22	0.65	418.1	211.9	
Total Bitter	343	-16	327	1.22	0.65	418.1	211.9	
Nugget	446	34	480	2.55	2.48	1,135.6	1,188.7	
Magnum	10	-3	7	1.03	1.37	10.3	9.6	
Total High Apha	456	31	487	2.51	2.46	1,145.9	1,198.3	
Others	1	2	3	1.40	0.80	1.4	2.4	
SPAIN TOTAL		800	17	817	1.96	1.73	1,565.4	1,412.6

The decline in acreage observed over a period of 10 years was interrupted for the first time by a slight rise in acreage amounting to 17 ha. This acreage is expected to be sustainable in the years to come. The growth can be attributed mainly to one variety, **Nugget** (increase in acreage of 7 % over 1999).

In view of the future substitution of the bitter variety **H-3** (obligatory for crop year

2002), new varieties have already been planned in the main production area this year.

Growth and Quality

Despite a lower yield than in 1999, this year's crop is termed good. Favourable weather conditions with sufficient rainfall had a positive influence on growth. There was hardly any incidence of disease or pest infestation. Year-on-year, the average alpha

acid levels (EBC 7.4) were higher (**H-3** 8.3 %, **Nugget** 11.6 %, **Magnum** 12.1 %).

Market Situation

As in the past, the entire crop was processed into Type 90 pellets. A small quantity of pellets was further processed into 170 mt of CO2 extract. On average, growers were paid EUR 2.52 / kg for **H-3** and EUR 3.06 / kg for **Nugget**.

Belgium

Variety Group	Acreage ha	Ø-Yield mt/ha	Production mt
Aroma	67	1.56	104.7
Bitter/High Alpha	177	2.13	376.3
BELGIUM TOTAL	244	1.97	481.0

The declining trend in terms of acreage continued in the year 2000.

Quality

Rainfall levels in spring were high and the summer months were not particularly warm. At harvest time in September the weather was sunny and dry. Average yields

and alpha levels were consequently very high. The alpha content of the main variety **Target** was 11.3 % (EBC 7.4). The high-alpha variety **Magnum** had an average alpha acid content of 14.2 %. The levels recorded for the aroma varieties **Challenger** and **Hallertau** were 7.6 % and 5.1 % respectively.

Market Situation

Of the total volume produced approx. 19 mt of **Challenger** remained unsold. The average prices paid to growers for their produce on the spot market were twice as high as in the previous year:

Contract market

Aroma	5.65 EUR/kg
Bitter/high alpha	3.12 EUR/kg

Spot market

Aroma	4.22 EUR/kg
Bitter/high alpha	4.47 EUR/kg

Crop year 2001 is expected to produce a volume similar to 2000 on approximately the same acreage.

Austria

Area	Acreage ha	Ø-Yield mt/ha	Production mt
Mühlviertel	110	1.35	149.0
Leutschach	86	1.33	114.3
Waldviertel	21	1.26	26.0
AUSTRIA TOTAL	217	1.34	289.3

Mühlviertel/Upper Austria

Having again reduced their hop acreage slightly, the 47 hop farms in Mühlviertel produced a poor average yield with unusually good quality in terms of aroma and alpha content (e.g. 8.7 % for the **Malling** variety, which accounts for 43 % of total acreage). Severe hail damage caused a sharp reduction in production volume. The

entire crop was sold at an average price of EUR 4.43/kg.

Leutschach/Styria

Despite a slight reduction in acreage, a higher overall volume was produced thanks mainly to the **Cicero** and **Celeja** varieties which tolerated the dry summer better than others. The yield per hectare of the main variety **Golding** was far below the long-

term average, which was also the case for **Aurora**. There was a low incidence of infection: almost 97% of the total crop was classified as quality grade I. The entire crop was sold at an average price of EUR 4.73 /kg.

Waldviertel/Lower Austria

This region continues to grow the **Perle** variety. Due to the extremely dry weather in April the 2000 crop was worse than the previous year's. The alpha content of approx. 8.9 % (EBC 7.4) was slightly lower than in 1999. The crop was completely sold out, selling at prices between 4.36 and 4.72 EUR/kg. Approx. 70 % of the 2001 crop is expected to be sold on a forward-contract basis.

Slovak Republic

Variety	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Saaz	360	-40	320	1.00	0.44	360.0	140.0
SLOVAK REPUBLIC TOTAL	360	-40	320	1.00	0.44	360.0	140.0

Acreage was down by a further 11 %. This year's yield was only about half the 10-year average.

Growth and Quality

Weather conditions were similar to those in the Czech Republic, with high temperatures and lack of precipitation causing the lower

average yields per ha. The alpha acid levels averaging 4.0 % (EBC 7.4) were exactly the same as in the previous year. Approx. 10 – 15 % of acreage was affected by peronospora. The plants were affected to greatly varying degrees, up to 40 % of the plants in the respective areas were destroyed by the disease.

Market Situation

Both the 2000 and 2001 crops are already sold out. The average prices for forward contracts were EUR 2.43/kg for crop year 2000, EUR 2.31/kg for crop year 2001 and EUR 2.45/kg for crop year 2002.



Portugal

The decline in acreage continues. In the year 2000 an area of only 42 ha was farmed (down 23.6 %), producing a yield of 1 mt/ha. The alpha content of **Nugget**,

the only variety grown, was comparatively high, however, at 10.5 % (EBC 7.4). The entire crop was sold to the domestic brewing industry – as usual – by forward contract.

The growers were paid the same price per kilo of alpha acid as the year before (EUR 30.68). The production volume expected for 2001 remains unchanged year-on-year.

Czech Republic

Area	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Zatec (Saaz)	4,570	47	4,617	1.05	0.76	4,792.6	3,494.1
Ustek (Auscha)	785	39	824	1.17	0.94	920.9	773.8
Trsice (Tirschitz)	621	33	654	1.16	0.91	722.6	596.9
Others	15	-2	13	1.09	1.66	16.4	21.6
CZECH REPUBLIC TOTAL	5,991	117	6,108	1.08	0.80	6,452.5	4,886.4

In 2000 acreage was increased for the second time in succession. Mainly due to the weather conditions, however, yields were below the ten-year average at 0.80 mt/ha. 191 hop farmers were registered in the Czech Republic in the reporting period.

Growth and Quality

The main reason for the worst crop in 50 years (the production volume was approx. 25 % down on 1999) was the weather.

During the months of April and May conditions were almost Mediterranean, with high temperatures and hardly any rainfall. The entire growing period was characterised by extraordinarily dry weather. These conditions accelerated vegetation to such an extent that the harvest began as early as 15th August by temperatures of around 33°C. As the plants had reached different degrees of maturity, losses were higher than usual.

The average alpha content (EBC 7.4) was very high, with 4.1 % in the Saaz region, 3.7 % in Auscha and 4.4 % in Tirschitz.

Market Situation

Due to the poor yield in this and the last crop year, both the 2000 and the 2001 crops are completely sold out. The average prices for contracted hops for the 2001 – 2005 crops are EUR 3.84/kg (for the years 2001 – 2004) and EUR 2.59 (for 2005).

Polen

Variety Group	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Aroma	1,500	-150	1,350	1.07	1.20	1,600.0	1,620.0
Bitter	700	200	900	1.50	1.60	1,050.0	1,440.0
POLAND TOTAL	2,200	50	2,250	1.20	1.36	2,650.0	3,060.0

There was a slight year-on-year increase in acreage. Bitter varieties are still in demand in Poland and sell at a good price on the spot market. As a result, there has been an increase in the acreage of certain bitter varieties (**Marynka**, **Magnum**) and a further reduction in acreage of aroma varieties.

Growth and Quality

Weather conditions were such that spring work could be carried out without any particular difficulties. In April and May temperatures were higher and rainfall lower than

the long-term average. In late June and July rainfall was significantly higher and temperatures lower than average.

A high incidence of disease was reported, with wet conditions making pest control difficult. Nevertheless, the organoleptic quality of the hops was considered better than in the previous year. The average alpha acid contents (EBC 7.4) were 4.5 – 5.0 % for the aroma varieties (**Lubelski**) and 8.5 – 9.5 % and 12.5 – 13.5 % for the bitter varieties **Marynka** and **Magnum** respectively.

Market Situation

The market situation, and above all the yield situation, for the growers further stabilised itself, with the result that growers were able to sell their entire production by November 2000. Forward contracts already account for 100 % of the bitter varieties in crop 2001. The average price is approx. 3.30/kg.

Slovenia

Variety	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Aurora	1,101	-5	1,096	1.67	1.10	1,837.0	1,203.0
Steirer Golding	412	-110	302	1.13	0.90	466.0	273.0
Bobek	100	-17	83	1.75	1.28	175.0	106.0
Magnum	30	27	57	1.40	1.18	42.0	67.0
Others	94	-9	85	1.26	1.32	118.0	112.0
SLOVENIA TOTAL	1,737	-114	1,623	1.52	1.09	2,638.0	1,761.0

Acreage decreased by another 6.5 % year-on-year, while the number of hop growers fell by 47 to 198. The acreage on which **Magnum** is grown, first planted in 1999, increased yet again - this time almost two-fold - to 57 ha.

Growth and Quality

Weather conditions in 2000 were characterised by very high average temperatures and very little rainfall. Artificial irrigation was required for all medium-late and late varieties from mid-August onwards. The average alpha acid levels (EBC 7.4) were approximately the same as in the previous year, 8.3 % for **Super Styrian (Aurora)**, 4.0 % for **Styrian Golding**, 5.5 % for **Bobek** and 13.0 % for **Magnum**.

Market Situation

Due to the fire in crop year 1999, in which more than 400 mt of Slovenian hops were destroyed, and the relatively poor harvest in 2000, the forward contract rate of 83 % was significantly higher than in the previous year (58 %). The 2000 crop is completely sold out. The forward contract rate for crop year 2001 is already between 65 and 75 %.

Yugoslavia

Variety Group	Acreage ha	Ø-Yield mt/ha	Production mt
Aroma	29	1.00	29.0
Bitter	364	1.15	418.6
Others	54	1.50	81.0
YUGOSLAVIA TOTAL	447	1.18	528.6

Growth and Quality

As in other Eastern European countries, crop year 2000 was extremely dry (145.4 mm rainfall compared with 444.7 mm in the

previous year). As a result the crop volume amounted to only 60 – 70 % of the volume harvested in 1999. There was hardly any incidence of pests or diseases. Alpha levels were marginally up on the previous year,

with alpha contents (EBC 7.4) of 1.4 % for the aroma variety **Bačka**, 6.3 % for the bitter variety **Brewers Gold** and only 6.5 % for the new variety **Aroma**.

Market Situation

No forward contracts were closed. Prices paid to growers on the spot market were approx. EUR 5.11/kg, considerably more than in previous years, which can be attributed to the low volume. At the time of going to press approx. 45 mt was still available on the free market.

Bulgaria

Variety Group	Acreage ha	Ø-Yield mt/ha	Production mt
Aroma	70	0.86	60.0
Bitter	250	0.68	170.0
BULGARIA TOTAL	320	0.72	230.0

Acreage remained unchanged this year. Due to dry weather conditions average yield was so low – especially among the bit-

ter varieties – that this year's harvest produced only 230 mt. For the first time, **Brewers Gold** was not grown.

The average alpha acid content (EBC 7.4) was again higher than in previous years, registering 6.2 % for the aroma varieties and 11 % for the bitter. The entire crop sold well.

Better yields are anticipated for crop year 2001. No forward contracts had been concluded by spring 2001.



Turkey

Variety Group	Acreage ha	Ø-Yield mt/ha	Production mt
Aroma	92	0.79	72.6
Bitter	191	0.39	74.2
High Alpha	3	1.30	3.9
TURKEY TOTAL	286	0.53	150.7

Both the acreage (285 ha) and the number of growers (1077) remained constant this year. The yield from the **Efes Aroma** variety decreased by 47.3 % year-on-year, which can probably be attributed to weather conditions.

The high precipitation levels in the spring were followed by hot and dry weather conditions, which probably led to the lower alpha levels. The alpha acid content in the

new high-alpha variety **Erciyas** was 10.5 % (1999: 12.5 %), the alpha content in **Brewers Gold** was 4.9 % (1999: 7.9 %), and therefore below that of **Efes Aroma** (7.1 %) for the second year.

As in previous years, the entire volume produced was sold to the Turkish brewing industry through forward contracts. The price was once again EUR 4.60 – 5.10/kg of pellets.

Switzerland

Hop acreage in Switzerland has remained unchanged at 22 ha since 1996. Year-on-year production volume was up 7.5 % to 49.85 mt (of which 1.6 mt were organic hops). The yield of 2.23 mt/ha was above the long-term average and can be described as high in international terms. Compared to the previous year, the organic hops were affected less by pests and fungal attack.

The varieties grown in Switzerland are **Hallertau**, **Perle** and **Magnum**, the entire production of which was purchased by the Swiss brewing industry. The alpha levels were within the usual range.

Russia

Variety Group	Acreage ha	Ø-Yield mt/ha	Production mt
Aroma	1,086	0.53	570.2
Bitter	437	0.58	253.4
RUSSIA TOTAL	1,523	0.54	823.6

In Russia hop growers are switching from aroma to bitter varieties. Only one aroma variety, **Ranny**, was grown, as opposed to three bitter varieties, **Smolisty**, **Podzvyanzny** and **Istrinsky**. The average alpha acid content of the aroma variety (EBC 7.4) was 3.5 %, while that of the bitter varieties was 5.0 %.

The winter was mild with frequent rainfall. Due to the occurrence of frost in late

spring, vegetation was delayed by about two weeks. Warm weather and sufficient humidity provided favourable growing conditions. The summer brought mixed weather and was followed by a wet autumn. However, both yield and alpha acid content turned out lower than expected. Approximately 200 ha was destroyed by hail. Prices were at a similar level to the previous year's.

Romania

The return of state-owned hop acreage to the private sector - begun in January 2000 - has continued, resulting in a further reduction from approx. 300 ha in 1999 to about 100 ha in 2000.

The reasons for this development were stated in our last report. There was a slight increase in yield from 0.50 mt/ha to 0.60 mt/ha. Despite extremely low land prices, it remains to be seen to what extent private entrepreneurs will be willing to commit themselves, as it will be necessary not only to produce raw hops but also to re-condition the harvested crop in order to achieve profitability.

Ukraine

Variety Group	Acreage ha	Ø-Yield mt/ha	Production mt
Aroma	1,106	0.46	512.5
Bitter	466	0.38	175.0
UKRAINE TOTAL	1,572	0.44	687.5

513 mt of aroma hops and 175 mt of bitter hops were harvested on an acreage of nearly 1,600 ha (900 ha of which was planted with the aroma variety **Klon-18** and 210 ha with the bitter variety **Poliski**).

The average alpha contents (EBC 7.4) of the two main varieties were 3.5 % (**Klon-18**) and 7.6 % (**Poliski**). Acreage is expected to increase by nearly 20 % in the next crop year.

Hungary

Acreage has increased from 8 ha to 22 ha, with aroma varieties accounting for 18 ha and high alpha varieties for 4 ha. Acreage is also expected to increase next year by approx. 75 %. The varieties grown here were **Magnum**, **Taurus**, **Aurora**, **Celeja** and **Bobek**. The average yield per hectare was 0.82 mt. As in the previous year, the entire crop was sold to one Hungarian brewery (100 % on the spot market).

Area	Variety	Development of Acreage			Development of Production			
		1999	+/- Acreage ha	2000	1999 Ø-Yield mt/ha	2000	1999 Production mt	2000
Washington	Willamette	1,362	81	1,443	1.61	1.54	2,197.3	2,217.4
	Cascade	367	36	403	2.25	2.02	826.1	816.0
	Horizon	109	19	128	1.38	1.40	150.8	179.2
	Mount Hood	156	-7	149	1.24	1.28	193.3	190.9
	Perle	111	0	111	1.19	0.88	132.5	98.0
	Tettnang	52	-52	0	1.13	0.00	58.5	0.0
	Golding	14	1	15	1.67	1.19	23.4	17.9
	Total Aroma	2,171	78	2,249	1.65	1.56	3,581.8	3,519.4
	Cluster	535	-155	380	2.15	2.24	1,150.5	850.6
	Total Bitter	535	-155	380	2.15	2.24	1,150.5	850.6
	Galena	2,139	-96	2,043	2.25	2.12	4,815.3	4,326.5
	Columbus/Tomahawk	1,771	90	1,861	2.72	2.87	4,821.2	5,342.5
	Zeus	616	192	808	2.56	3.02	1,578.9	2,441.2
	Nugget	1,699	163	1,862	2.32	2.08	3,938.9	3,865.7
	Chinook	320	-49	271	2.24	2.19	717.6	594.8
	Magnum	40	-10	30	1.68	1.78	67.4	53.5
	Other High Alpha	369	545	914	2.29	1.98	846.2	1,813.3
	Total High Alpha	6,954	835	7,789	2.41	2.37	16,785.5	18,437.5
	Others	495	16	511	2.03	1.76	1,003.0	897.6
	TOTAL WASHINGTON	10,155	774	10,929	2.22	2.17	22,520.7	23,705.1
Oregon	Willamette	940	-72	868	1.58	1.73	1,489.7	1,505.1
	Perle	164	-1	163	1.50	1.26	245.9	206.1
	Mount Hood	102	-1	101	2.05	2.01	209.5	203.0
	Santiam	0	7	7	0.00	1.46	0.0	10.2
	Sterling	0	25	25	0.00	1.92	0.0	48.0
	Golding	45	2	47	1.55	1.30	69.7	61.1
	Fuggle	40	-14	26	1.20	1.17	47.8	30.5
	Tettnang	36	-36	0	1.36	0.00	48.9	0.0
	Total Aroma	1,327	-90	1,237	1.59	1.67	2,111.4	2,064.0
	Nugget	872	63	935	2.51	2.42	2,187.6	2,263.2
	Total High Alpha	872	63	935	2.51	2.42	2,187.6	2,263.2
	Others	121	59	180	2.23	2.14	269.8	384.6
	TOTAL OREGON	2,320	32	2,352	1.97	2.00	4,568.7	4,711.8
Idaho	Willamette	100	-21	79	1.51	1.71	151.1	135.0
	Total Aroma	100	-21	79	1.51	1.71	151.1	135.0
	Cluster	169	-89	80	1.86	2.18	315.1	174.5
	Total Bitter	169	-89	80	1.86	2.18	315.1	174.5
	Galena	253	-36	217	1.88	2.03	476.0	440.5
	Chinook	82	-13	69	2.12	2.23	174.2	154.2
	Mount Hood	13	8	21	0.80	2.29	10.4	48.1
	Nugget	36	-8	28	1.92	2.20	69.2	61.7
	Zeus	81	82	163	2.22	2.29	180.1	374.0
	Total High Alpha	465	33	498	1.96	2.17	909.8	1,078.5
	Others	627	62	689	1.23	1.23	771.5	848.3
TOTAL IDAHO	1,361	6	1,346	1.58	1.66	2,147.3	2,236.3	
Total Aroma	3,598	-33	3,565	1.62	1.60	5,844.2	5,718.4	
Total Bitter	704	-244	460	2.08	2.23	1,465.5	1,025.1	
Total High Alpha	8,291	931	9,222	2.40	2.36	19,882.8	21,779.2	
Total Others	1,243	137	1,380	1.64	1.54	2,044.2	2,130.5	
USA TOTAL	13,836	791	14,627	2.11	2.10	29,236.7	30,653.2	

Minor statistical deviations may result from conversion of acres into ha and lbs into metric tons.



Variety Development

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

Variety	1996 ha	1997 ha	1998 ha	1999 ha	2000 ha
Willamette	2.746	3.082	2.605	2.401	2.309
Cascade	423	420	401	367	403
Perle	167	237	276	275	274
Mount Hood	483	319	241	271	271
Total main Aroma	3.819	4.058	3.523	3.314	3.257
Cluster	2.295	1.795	1.320	703	460
Total main Bitter	2.295	1.795	1.320	703	460
Nugget	3.499	3.638	2.956	2.605	2.822
Galena	3.497	3.098	2.635	2.391	2.257
Super-High Alpha	805	1.677	1.907	2.850	3.580
Total main High Alpha	7.801	8.413	7.498	7.846	8.659

Demand / Supply

Willamette

This variety is grown almost exclusively for one important brewer and its licensees. The acreage / production is in balance with demand.

Cascade

A variety much in demand by specialty and microbrewers, is almost in short supply.

Perle

This variety is grown almost exclusively for one U.S. brewer and is in balance.

Mt. Hood

Grown mostly for North America brewers, it is now in balance or short supply.

Cluster

After the significant acreage reduction over the last years, this variety is in balance.

Nugget

The acreage and production has been brought closer into balance. In spite of the reduction of acreage, supply exceeds demand. This excess supply is still used as generic alpha. Acreage will probably be reduced even further in the future.

Galena

Significant reductions of acreage puts this variety into a balanced position. Whether the breweries are willing to pay the necessary high price in future or if they switch over to other super-high varieties remains to be seen.

Super High Alpha

The acreage of the generic alpha is more or less in balance with demand. Nonetheless, the varieties Nugget and Galena with a lower yield / ha are still being used for the production of generic alpha.

Growth

Washington – The winter was mild in the hop-growing region of Washington. The coldest temperature recorded was 18°F (-7.8°C). With the moderate temperatures, the hop-growing community expected to see powdery mildew early in the growing season. By late March, the first powdery mildew flag shoots had been found in a super high alpha variety. All growers were informed that strong early powdery mildew control now would give much help later in the season, when hops are very susceptible to powdery mildew. By mid-April, growers started reporting secondary infection of powdery mildew in the super high alpha varieties. This reporting was one month earlier than last year.

In late April, the weather turned cool and delayed growth and training dates which affected some late-trained varieties throughout the season. Even though some of the late training occurred because of the cool weather, a few growers intentionally postponed training to shorten the growing season in an effort to reduce the cost of powdery mildew control. An alternative tried was to discontinue applying powdery mildew sprays when temperatures reached 90°F (32.2°C) or above. This, however, did not work well and resulted in lost yields.

Even growers who continually kept their fields as clean as possible from powdery mildew had some difficulty late in the season. On September 24th, a killing frost (28°F/-2.2°C) reduced yields and affected the quality of the late-picked hops, consisting mostly of **Columbus** or **Zeus**.

Despite all the problems, super high alpha varieties yielded strongly in both volume and in alpha. Total per-acre production of super high alpha rose by 35 % to 490 kg alpha per ha versus 360 kg alpha per ha in 1999.

Oregon – Fall and winter months experienced warm temperatures and nearly average precipitation throughout the Willamette valley growing region. In spring frequent but light rainfall alternated with periods of low humidity and warm temperatures. Growers were able to complete cultural farm practices on schedule. Downey mildew infections were light and easily controlled. Powdery mildew became slightly more prevalent in **Perle** and **Willamette** varieties since the disease's first showing in Oregon the previous year.

The crop developed at a normal pace throughout the summer months. The weather continued to be warmer and drier than normal. The **Nugget** variety again produced yields nearly equal to the long-term average, as did the **Mount Hoods**. **Willamettes** yielded well above average (+9 %), but developed a non-typical coloration problem at harvest. **Perle** was adversely affected by the warm and dry growing season and powdery mildew infection, yielding (15 %) below average. Similarly, **Golding** yields were also down by (16 %).

Quality

The visual quality of the 2000 crop was inconsistent throughout all varieties. Because of the different levels of powdery mildew control applied by growers, some super high alpha varieties had distorted, irregular and dull cones. Even with these imperfections, the super high alpha varieties produced an abundance of alpha. Although the growers discussed seed control this year, it had little effect, and there was a slight increase in seed from 1.15 % to 1.18 %. Of the total production, approximately 1,869 mt had a seed content of 4 % and higher, which was down slightly from the 1999 crop. The alpha level increased in the super high alpha, although there was powdery mildew and frost damage.

Alpha Acid Table

Sorte	1996	1997	1998	1999	2000	Durchschnitt
Willamette	3,8%	3,8%	4,2%	4,5%	4,3%	4,1%
Tettnang	3,8%	3,8%	3,4%	3,9%	4,5%	3,9%
Mount Hood	3,9%	4,3%	4,0%	4,3%	4,6%	4,2%
Cascade	5,4%	5,0%	4,9%	5,4%	5,1%	5,1%
Cluster	6,3%	6,4%	6,5%	6,8%	7,1%	6,6%
Galena	11,4%	10,6%	11,7%	12,1%	12,5%	11,7%
Nugget	12,6%	12,0%	12,3%	12,9%	13,3%	12,6%
Chinook	11,0%	10,3%	11,0%	11,2%	11,0%	10,9%
Super-High Alpha	14,4%	14,2%	14,0%	13,1%	13,5%	13,8%

All data were converted from ASBC spectrophotometric (at time of harvest) into % according to EBC-Analytic 7.4 (Oct./Nov. after the harvest) to ensure comparability within this report.

The alpha for **Columbus** rose from 13.1 % in 1999 to 14.0 %. Total alpha production for the US crop amounted to 3,283 mt, which was ultimately reduced by 270 mt to 3,013 mt due to two large warehouse fires. Without the warehouse fires, there would have been an increase of 245 mt of alpha over the 1999 alpha production.

Spot Market

During winter 2000 growers began to fully realize the financial impact of selling hops below the cost of production. They held meetings throughout the winter to strengthen grower solidarity, with the purpose of increasing hop prices. A group was formed, called the American Hop Producers Alliance (AHPA), to give growers a platform for marketing their spot and, potentially, contract hops to the trade. The AHPA researched

and published the actual cost of growing hops and told the growers not to sell unless the purchase price was higher than the cost of production. The actual cost of growing was determined to be approximately \$4,000 per acre. The grower's alliance had some success but, even with this strategy, some growers sold hops below cost of production.

Crop 2000 **Cascade**, **Chinook**, **Galena**, and **Nugget** all sold for \$1.50 per pound in February to May. The super high alpha varieties sold for \$1.35 to \$1.40 per pound for this same period of time. The **Willamette** selling price was between \$2.10 and \$2.20 per pound.

Activity for Crop 2000 only really began in September after two large warehouse fires. These fires destroyed approximately 3.9 million pounds (1,769 mt) of hops and approx-

imately 600,000 lbs. (270 mt) of alpha. As a consequence, the spot market for alpha hops rose from \$1.90 per pound of hops or approximately \$13.50 per pound alpha to \$20.00 per pound alpha. Depending on the alpha content in the varieties, the price of \$20.00 per pound of alpha was the equivalent of \$2.60 to \$3.20 per pound.

Contract Market

The contract market was virtually non-existent in 2000. With growers unwilling to sell at prices below the cost of production and the contract market not moving above the cost of production, there was very little activity in the general market. Most contracting activity focused on Willamette. Growers sold at \$2.65 and \$2.80 per pound offered for crop years 2002 and 2003, respectively.

Quantities Contracted Forward (in mt)

Report as of spring	same Crop Year	Years forward ...				
		1 Year	2 Years	3 Years	4 Years	5 Years
2001	21,883	13,610	10,595	7,465	1,229	0
2000	27,539	19,719	13,312	9,735	3,655	2,588
1999	24,117	18,551	12,651	9,698	2,958	2,451
1998	27,844	19,237	15,896	9,172	2,915	1,767
1997	31,343	28,395	20,321	16,511	5,171	4,581

Degree of Forward Contracting (in %)

	same Crop Year	Years forward ...				
		1 Year	2 Years	3 Years	4 Years	5 Years
2001	71%	44%	35%	23%	4%	0%
Ø 1996-2000	85%	64%	47%	34%	10%	7%



Variety Development

The US industry is still working towards a high alpha variety that will be more resistant to, or at least tolerant of, powdery mildew than the current alpha varieties **Columbus**, **Tomahawk™** and **Zeus** (CTZ). The industry is now looking hopefully toward the **Millennium** and **Warrior™**

varieties. More acreage of these two varieties is being planted. So far, **Millennium** is resistant to powdery mildew, while **Warrior™** shows tolerance. The yield per acre for both varieties is not as high as the **CTZ** family but the growing cost per acre is lower.

The settlement of all lawsuits between Hopunion, John I. Haas and Yakima Chief has resulted in plans to merge all their respective USA plant breeding operations, which should invigorate the breeding efforts and offer benefits to growers and brewers.

Estimate Revenue per Hectare (in USD)						
	1996	1997	1998	1999	2000	Average
Washington	7,323	7,100	6,664	7,877	8,711	7,535
Oregon	6,181	6,735	7,301	8,721	9,660	7,720
Idaho *	6,644	6,177	4,632	6,683	8,304	6,488
USA TOTAL	7,052	6,837	6,620	7,963	8,405	7,375

* excludes revenue for "other aroma varieties" mostly grown in Northern Idaho

Average Prices per kg (in USD)						
	1996	1997	1998	1999	2000	Average
Washington	3.59	3.53	3.53	3.55	4.01	3.64
Oregon	3.99	3.70	3.92	4.50	4.83	4.19
Idaho	3.28	3.10	3.35	3.57	3.92	3.44
USA TOTAL	3.63	3.53	3.57	3.70	4.12	3.71

China

Variety	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Qingdao Flower 641	3,900	200	4,100	2.59	2.74	10,100.0	11,250.0
Kirin Flower	225	195	420	2.67	1.79	600.0	750.0
Aroma	130	80	210	2.31	3.33	300.0	700.0
Others	130	70	200	2.31	1.50	300.0	300.0
CHINA TOTAL	4,385	545	4,930	2.58	2.64	11,300.0	13,000.0

Growth and Quality

As in the previous year, the weather conditions during the growing period were very unfavourable. This resulted in poor quality, low yields and a late harvest.

The ageing of the plants is steadily becoming a major problem for the Chinese hop industry, causing crop failures in Xinjiang, and in the North of Xinjiang in particular. The average alpha content of the main variety **Qingdao Flower 641** was 6 % (EBC 7.4).

Market Situation

90 % of the crop volume had already been sold only a short time after the harvest. Unlike the year before, many Chinese traders purchased at an early stage. The entire crop was not bought up virtually by one buyer as in the previous year, but was divided among several traders. Although the overall yield was higher year-on-year, so was the demand due to the growth in the Chinese brewing industry. With demand keeping pace with supply,

prices remained high from the start to the finish of the harvest. In order to improve the Chinese hop industry's performance and renew the plant base, experimental growing of aroma and high-alpha varieties is being continued in crop year 2001. It will not be until crop year 2002/2003, however, that they affect alpha production.

Japan

Brewing Group	Development of Acreage			Development of Production			
	1999	+/-	2000	1999	2000	1999	2000
	Acreage ha			Ø-Yield mt/ha		Production mt	
Kirin	216	-9	207	2.05	2.10	442.5	435.1
Sapporo	99	0	99	2.25	2.10	222.3	207.7
Asahi	23	-2	21	2.23	2.26	51.3	47.4
Suntory	3	-1	2	1.60	1.39	4.8	2.2
JAPAN TOTAL	341	-12	329	2.11	2.11	720.9	692.4

The number of hop farms declined year-on-year by a further 5 % to 524, while acreage decreased by 3.5 %.

Growth and Quality

In spite of slow growth in May and strong winds in July, weather conditions during the growing period were largely ideal for hop growth, with sufficient rainfall and sunshine.

The average yield of 2.11 was exactly the same as in 1999.

The average alpha acid content (converted to EBC 7.4) was lower than in previous years, with approx. 5.2 % for the **Shinsyu Wase** variety and a significantly lower approx. 3.1 % for **Furano Ace** (1999: 4,1 %).

Market Situation

97,8 % of production was classed once again as quality grade one. The purchase price was unchanged year-on-year at JPY 2,067/kg (EUR 20.88) plus a trading commission of JPY 100 /kg.

2001 Crop

New Zealand

Variety	Development of Acreage			Development of Production			
	2000	+/-	2001	2000	2001	2000	2001
	Acreage ha			Ø-Yield mt/ha		Production mt	
NZ Hallertau Aroma	131	6	137	2.03	1.67	266.2	227.3
NZ Pacific Hallertau	40	1	41	1.66	1.35	66.5	55.7
NZ Saaz Triploid	2	-2	0	1.70	0.00	3.4	0.0
Total Aroma	173	5	178	1.94	1.59	336.1	283.0
NZ Super Alpha	88	-4	84	2.34	1.94	206.1	163.4
NZ Pacific Gem	72	2	74	2.62	2.28	188.5	168.0
NZ Green Bullet	27	-1	26	2.04	1.93	55.2	51.0
NZ Sticklebract	7	-2	6	2.10	1.73	14.7	9.5
NZ Southern Cross	9	0	9	2.07	1.96	18.6	17.4
NZ Nelson Sauvain	.	.	7	.	1.45	.	10.3
Total High Alpha	203	3	206	2.38	1.99	483.1	409.3
Trial Varieties	5	3	8	1.88	1.53	9.4	12.4**
NEW ZEALAND TOTAL	381	11	392	2.17	1.80	828.6	704.7

* included in Trial Varieties (129 kgs)
** including 3mts Pacific Sunrise

In order to extend the varietal range in New Zealand, two new varieties from the New Zealand hop breeding programme have been selected and approved for planting. Both are characterised by high alpha acid content (EBC 7.4): **Nelson Sauvain** (13.8%) and **Pacific Sunrise** (15.2 %).

Growth and Quality

A cold, wet spring was followed by a hot, windy and very dry summer, which resulted

in a reduced yield from the 2001 crop. The region is now in need of heavy rainfall in the autumn to bring the rivers and the ground water back to their normal levels. Despite the reduced yield the quality of the 2001 crop is described as being "very good".

The average alpha acid levels (EBC 7.4, at the time of harvest) were marginally below the record levels of the previous year:

NZ Hallertau Aroma	8.9 %
NZ Pacific Hallertau	6.6 %
NZ Super Alpha	14.1 %
NZ Pacific Gem	16.0 %
NZ Green Bullet	14.0 %

Market Situation

At the time of harvest about 95 % of the hops had been sold (2000: 80 %).



Australia

Area	Variety	Development of Acreage			Development of Production			
		2000	+/-	2001	2000	2001	2000	2001
		Acreage ha			Ø-Yield mt/ha		Production mt	
Tasmania	Aroma	4	-1	3	1.65	1.17	6.6	3.5
	Pride of Ringwood (Bitter)	210	-27	183	3.07	3.01	644.0	550.0
	Victoria	149	-9	140	2.77	3.27	412.0	457.5
	Nugget	74	1	75	2.55	2.58	188.6	193.6
	Super Pride	71	9	80	0.45	2.15	32.0	172.3
	Opal	58	-6	52	2.62	2.61	151.9	135.9
	Other High Alpha	21	40	61	0.48	2.30	10.0	140.4
	Total High Alpha	373	35	408	2.13	2.70	794.5	1,099.7
	Others	21	-21	0	1.24	0.00	26.0	0.0
	Total Tasmania	608	-14	594	2.42	2.78	1,471.1	1,653.2
Victoria	Pride of Ringwood	62	-22	40	3.14	2.58	194.4	103.1
	Cluster	16	-1	15	1.66	1.24	26.5	18.6
	Total Bitter	78	-23	55	2.83	2.21	220.9	121.7
	Victoria	93	-9	84	3.48	3.20	324.0	268.9
	Super Pride	8	5	13	2.73	1.76	21.8	22.9
	Other High Alpha	26	10	36	3.00	3.17	78.0	114.2
	Total High Alpha	127	6	133	3.34	3.05	423.8	406.0
	Total Victoria	205	-17	188	3.14	2.81	644.7	527.7
	Total Aroma	4	-1	3	1.65	1.17	6.6	3.5
	Total Bitter	288	-50	238	3.00	2.82	864.9	671.7
	Total High Alpha	500	41	541	2.44	2.78	1,218.3	1,505.7
	Total Others	21	-21	0	1.24	0.00	26.0	0.0
	AUSTRALIA TOTAL	813	-31	782	2.60	2.79	2,115.8	2,180.9

Acreage was reduced again this year by approx. 4 %. The number of hop farms rose by one to 17.

Growth and Quality

It was a hot, dry summer in Australia's hop-growing areas.

In Tasmania once again precipitation levels were low, which made constant irrigation necessary throughout the summer. By the end of the season the reservoirs were nearly empty. The alpha levels and production volumes in Tasmania were around the long-term average.

In the Victoria region, the average highest temperature for January was 33 °C, i.e. 3°C above the mean. The high temperatures resulted in below-average alpha levels, particularly for **Pride of Ringwood**, which

only reached 9.2 %. In general, yields were also below average.

Alpha Acid Table

Variety	1999	2000
Pride of Ringwood	11.0%	10.0%
Cluster	5.9%	7.5%
Victoria	14.0%	14.0%
Nugget	12.6%	12.5%
Opal	11.7%	12.0%
Super Pride	14.5%	14.5%

The new variety, **Super Pride**, which has been planted both in Tasmania and in Victoria, produced average alpha levels of 14.5 %. The production volume, however, was slightly lower than expected.

Water has become an important issue in the North-East of Tasmania and Victoria.

The authorities have underlined their commitment to higher, more environmentally compatible water levels in the rivers by limiting by law the quantity of river water that may be drawn off. For the hop growers this means that if they are to be non-reliant on river water, dams will have to be built, which would lead to a considerable increase in their costs.

Market Situation

Due to rising hop prices on the world market and the weak Australian dollar, the hop growers in Australia were able to market their hops at internationally attractive prices.

For the coming year, yields are expected to rise in Australia by approx. 5 %, mainly due to the new high-yield varieties.

Argentina

Variety	Acreage ha	Ø-Yield mt/ha	Production mt
Cascade	116	1.07	124.2
Others	4	0.96	3.8
ARGENTINA TOTAL	120	1.07	128.0

Hop acreage increased by 20 ha this year. The increase in acreage was due to the fact that the economic situation (low prices, financial problems) had improved.

Growth and Quality

Weather conditions during the growth phase were normal. The average alpha con-

tent of the aroma variety **Cascade** of 7.4 % (EBC 7.4) was significantly higher than in the previous year, but the yield in kg/ha was lower.

Market Situation

As in previous years, the entire production volume was sold through forward contracts to domestic breweries.



South Africa

Variety	Acreage ha	Ø-Yield mt/ha	Production mt
Southern Brewer	300	1.42	426.0
Outeniqua	135	1.59	215.0
Southern Promise	50	2.04	102.0
Others	15	1.53	23.0
SOUTH AFRICA TOTAL	500	1.53	766.0

The shift away from the bitter variety **Southern Brewer** to the higher-yielding high alpha varieties **Outeniqua** and **Southern Promise** continued as anticipated. In the process, the total acreage increased to 500 ha (2000: 469 ha).

Growth and Quality

The weather conditions were unfavourably cool, which led to a significantly lower yield than expected. The alpha acid content, however, was consequently higher. The

alpha levels (EBC 7.4) were 10.3 % for **Southern Brewer**, 14.3 % for **Outeniqua** and 12.3 % for **Southern Promise**.

Market Situation

The entire volume produced was sold to the domestic brewing industry through forward contracts. The price paid for all varieties was 23.00 Rand/kg (EUR 3.35).

Plant development 2001

Germany

The volume of precipitation in the autumn and winter months of 2000 was in the region of the long-term average. The winter was very mild, however, and having set in relatively late, eventually came to an end in March with heavy rainfall. Spring work was greatly delayed due to the waterlogged soil. Early development of the plants was uneven and delayed due to late pruning and cold, damp weather conditions. Training began a good week later than in previous years. By the end of June nearly all plants had reached trellis height.

At the end of May hop yards in Tettngang were ravaged once again by heavy hail showers resulting again in considerable damage.

This year's pest control measures focused mainly on the aphid. In June aphid control

measures were carried out in all hop yards. In early July the plants were for the most part in line with normal conditions, indicating good prospects of optimum further development.

Acreage has increased year-on-year by about 434 ha, or 2.3 %, to approx. 19,034 ha. Young hop acreage accounts for 1,142 ha, i.e. approximately 6 %.

USA

Winter precipitation has been much lower than normal, resulting in one of the lowest projections of available irrigation water for the Yakima valley water districts in decades. The Roza water district, the most junior of all districts, had been estimated to receive less than 30% of its normal water deliveries. In an effort to stretch the water supplies for the season, the Roza districts

ceased water deliveries for three weeks in May. Although the overall water availability had since improved, doubts still linger whether the sufficient water supplies will be available throughout harvest.

Crop development has been above average in most areas, although a freak hailstorm toward the end of June damaged approx. 809 ha in varying degrees. Approx. 400-500 tons of hops are believed to have been lost.

In June, the USDA released its annual acreage survey and reported that the US production had slightly decreased by 167 ha to 14,450. Based on the previous four years average yields, the US production is estimated at 29,920 mt of hops containing approx. 3,265 mt of alpha, or approx. the same amount than was produced the year before.

Outlook 2001

There has been a year-on-year increase in acreage of about 271 ha (approx. 0.81 %) in Germany and the USA, the world's main hop-growing countries. In the USA, a net total of 151 ha has been cleared, whereas

in Germany 423 ha has been newly planted. On account of growing conditions in Germany, the effects of this new acreage will not be felt at all in crop 2001 and will only be felt in full from crop 2003 onwards.

On the demand side, global beer output rose slightly in the first half of the year in spite of world-wide recession.



Turning two into one

Or: The long journey of two companies towards a common image

Following the merger of Joh. Barth & Sohn with Hopunion Raiser, Scharrer KG, the Würzburg-based marketing agency Weigang Marketing Partner (WMP) – which had already successfully organised the national merger press conference – was commissioned to develop a new logo. Birgit Zugelder, head of the creative team at WMP, describes the decision-making process, which centred less on the appearance of the logo than on the 'self-orientation' of the company and the partners.

"A merger is a difficult process. In this case, it also coincided with a generation change. At the same time as the two companies merged, management responsibility passed to the next generation. As a rule, the latter alone provides sufficient potential for conflict", stresses Zugelder. The new management team did not want to decide over the heads of the senior partners, however, but to reach a consensus with them – as an acknowledgement of their decades of commitment. As a result, the senior partners who had moved to the advisory board were involved in every step of the decision-making process. "That didn't necessarily make things easier", says Zugelder with a smile, "as there were quite some differences of opinion. However, although the discussions of the issues were often tough, the atmosphere was always friendly and informal, which I found both unusual and pleasant."

The process of finally deciding on the new logo dragged on from early July 2000 to the end of March 2001 and included seven different presentation meetings – quite an endurance test for all involved.

"The internal conflicts we witnessed on this project were typical. When two strong companies merge, neither wants to be completely absorbed into the other and lose its own identity. The discussion about the logo is only the superficial issue. Basically it's all about identity, integration and leadership. And the discussions brought these central issues to the surface.

Merging is a process - not something that can be imposed by decree. Once that process was complete, agreement on the logo took no time at all!"

Time and effort have paid off. The resulting constellation, of which the logo is merely a

symbol, is one that the senior partners, the management team and the employees today are very happy with.

Joh. Barth & Sohn 



HOPUNION
RAISER, SCHARRER KG.

A merger of two companies steeped in tradition and successful in the market for seven generations ...



Joh. Barth
Hopfen ist unsere Welt

JOH. BARTH & SOHN
hops are our world



The merger process is accompanied by controversial discussions reflected in the countless different logo variants. Here are only two examples out of dozens ...



Joh. Barth & Sohn
hops are our world

The new logo bears no signs of the long, hard discussions that preceded it. Only insiders know the full story ... But the main thing is this: All's well that ends well!

**Source material from all over the world was required to publish this report.
We would like to thank all those who supported us with their information.**

The Chinese Beer and Hop Market

The meteoric rise of China as a beer producer and the development of beer as a national drink can be seen from the following output figures: 0.5m hl in 1960, 1.2m hl in 1970, 6.0m hl in 1980, 70m hl in 1990, 220m hl in 2000. During the last 20 years in particular great efforts have been made to build up brewing capacity, which should result in the world's most populous country heading the world rankings as a beer producer (currently USA) by the year 2003.

There is hardly a major world brewer that is not among the large number of foreign companies that have invested capital and know-how in the up-and-coming Chinese brewing industry. However, the number of foreign shareholdings has decreased as some international brewing groups have withdrawn from the difficult Chinese beer market for economic reasons. In addition, the market is in the throes of consolidation characterised by the formation of several national brewing groups. By 2000 China's ten largest brewing groups already controlled 36 % of output. They are ranked as in the table on the right.

The trend towards consolidation of the Chinese brewing industry is clearly being centrally co-ordinated, which means that economic considerations are in some cases of secondary importance. The political motive is probably of foremost importance. The necessary funds can obviously be raised through the Chinese banking system and the Chinese capital markets. Growth rates of around 6% p.a. can be expected for Chinese beer output in the foreseeable future. With per-capita consumption standing at approx. 18.45 litre per annum, further growth potential is probably inevitable. Chinese hop production has been orientated toward supplying the Chinese beer market from the start. The hop acreage built up by agricultural communes and

military farms far inland in the north-west provinces of Xinjiang and Gansu have developed in line with the growing demand. Although hop supplies in China are still at an early stage of the transition from raw hops to more lasting and convenient hop products, considerable processing capacity for simply ground and pressed pellets and also extract have already been established. This can probably be seen as an attempt to secure market share by investing in processing. The resulting competition to purchase hops gives the growers the wrong impression, however, and contains the risk of excessive expansion of hop acreage. This is especially the case now that other varieties are being introduced as an alternative to **Tsingdao Flower**, the most commonly planted variety up to now. The international hop industry will certainly have to watch future developments in China very closely.

Rank	Name	Output (m hl)
1	Qingdao Group	18.60
2	China Resources Brewery Group	14.30
3	YanJing Group	14.10
4	ZhuJiang Group	7.39
5	JinXing Group	5.18
6	Harbin Group	4.70
7	LanJian Group	4.67
8	ChongChing Group	4.06
9	JinLongQuan	3.81
10	HuiQuan	3.16
	Total	79.97



Joh. Barth & Sohn

hops are our world

Nuremberg