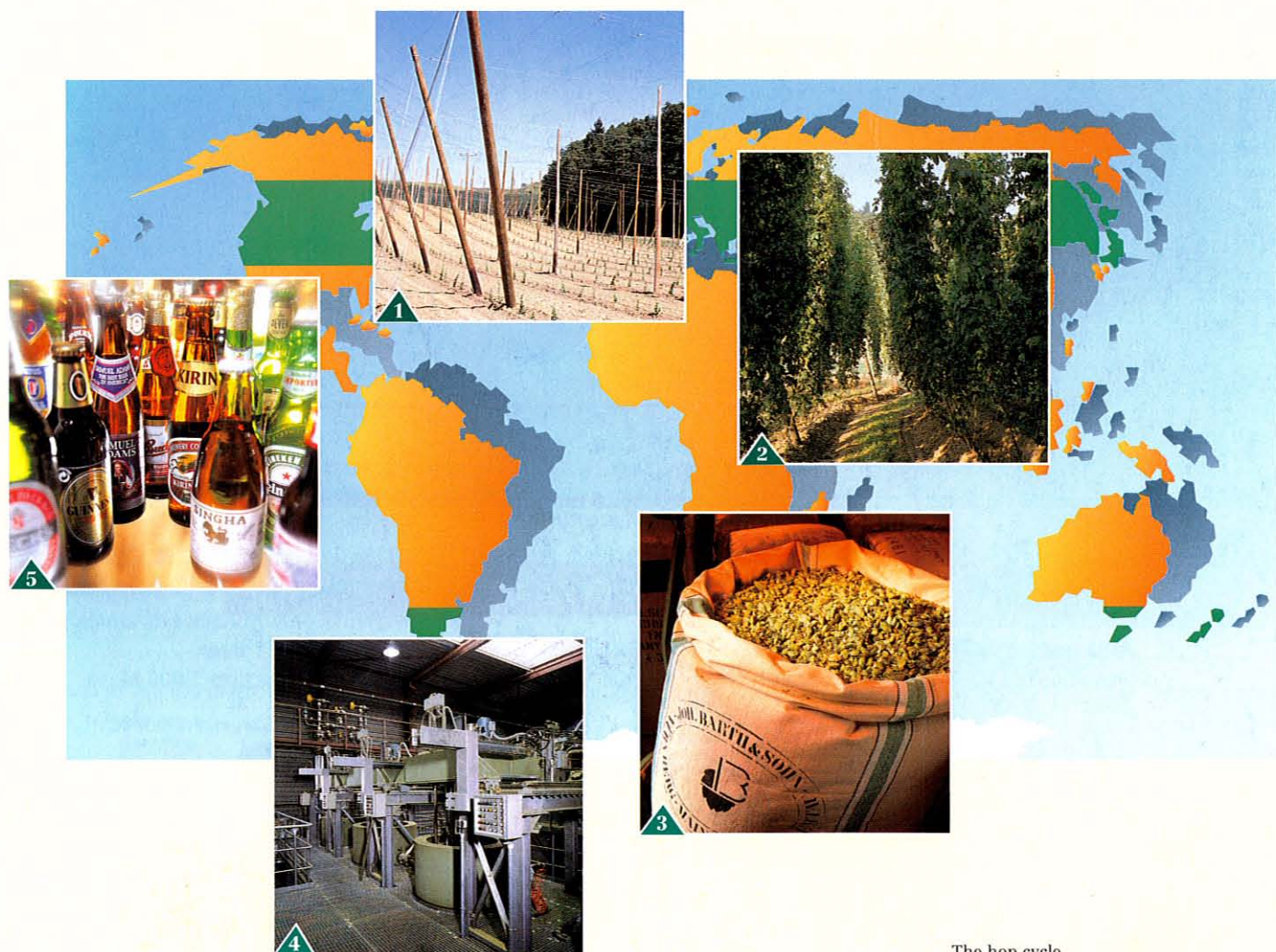


# THE BARTH REPORT

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## HOPS 1997/98



### The hop cycle

- 1 Trellis system in spring
- 2 Hop yard just before harvest
- 3 Hop warehouse
- 4 Hop processing
- 5 Fine hops - good beers

Joh. Barth & Sohn

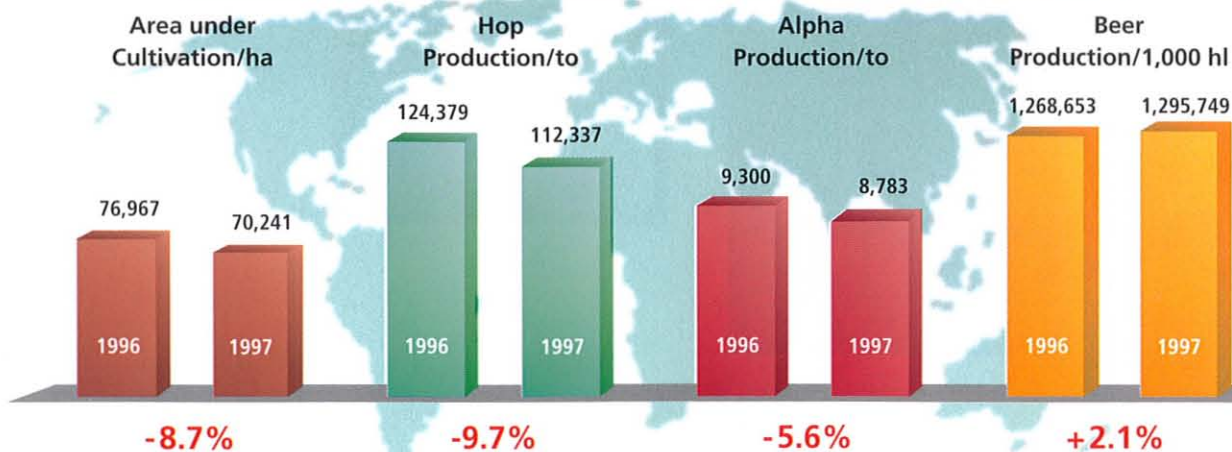


Nuremberg

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World Market Key Data



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# FOREWORD

## Dear Reader,

The Barth Report has been published almost annually since 1877. Although the world has changed significantly since then, one thing that has remained unchanged for the generations of authors of the Barth Report is their endeavour to provide objective reporting on the events in the hop market at the end of each respective crop year.

In future, in addition to statistical information of the highest possible accuracy, well-founded market observations and country-by-country reports, we will also be including a foreword reporting on new developments within the Barth group.

Founded in 1794 and owned exclusively by the Barth family ever since, the Barth group took on the form of a limited partnership as of 1 January 1997. The partners, who are at the same time the proprietors, are Heinrich J. Barth, Peter Barth, Michael Barth, Stephan J. Barth and Alexander Barth.

They see themselves - as did all the generations of Barths before them - as a group sharing common interests and risks. Careful consideration of the risks and opportunities presented by entrepreneurial action in the world hop market has determined the actions of the Barth family and the Barth company for over 200 years.

The Barth group is represented either directly or through subsidiaries and associated companies in the hop sectors of Germany, Switzerland, Great Britain, the Czech Republic, USA, Australia and China with its own branch offices, processing plants and hop growing activities.

Each of the Barth group's customers around the world is visited at least once a year. In order to strengthen our links with our customers and document the influence of our product range on the final product, beer, the company Hopfenveredlung HVG Barth, Raiser & Co., of which Barth is the majority shareholder, has built a 200-liter research brewery and adjoining visitor centre. The main objective of this pilot brewery will be to stimulate the brewing industry's interest in hops as a raw material. The wide range of new hop varieties and products provides ample reason for this. We are sure that the future findings of the pilot brewery will serve to enhance the opportunities for our customers in the marketplace.

JOH. BARTH & SOHN

*H. Barth*    *Peter Barth*    *Michael Barth*  
*Stephan J. Barth*    *Alexander Barth*



*Heinrich J. Barth*



*Peter Barth*



*Michael Barth*



*Stephan J. Barth*



*Alexander W. Barth*

## POLITICAL SITUATION

A series of tense local conflicts required the attention of the international community and, above all, of the United States.

In South-East Asia, the economic problems affecting many countries led to political unrest. In Indonesia, increasing pressure forced President Suharto to resign in May 1998.

On 30 June 1998, in accordance with the terms of the lease, Hong Kong was returned to the People's Republic of China after 156 years of British rule.

In May 1998, ignoring the general moratorium on atomic testing, the rival neighbouring states India and Pakistan exploded five and six nuclear warheads respectively.

In Bosnia-Herzegovina, the political situation is only slowly making progress and stability is maintained mainly by the 34,000-strong UN peace-keeping force.

'Reprisals' by Serbian militia in Yugoslavia's Kosovo region caused casualties mainly among the Albanian civilian population. Both the UNO and NATO are trying to bring pressure to bear in order to achieve a peaceful solution.

Iraq's refusal to allow UN weapons inspectors free access to all of its sensitive military installations took it to the brink of renewed military conflict with the USA. It was only thanks to last-minute intervention by UN secretary

general Annan in February 1998 that Iraq was persuaded to give way.

An event of historic importance was the ratification of the applications for membership of NATO from Hungary, Poland and the Czech Republic, thus initiating the admission procedure for these three countries as new members of NATO.

Also of historic significance was the referendum carried out simultaneously in the Irish Republic and in Northern Ireland on 22 May 1998 in which a large majority of the populations on both sides of the border voted to accept the peace plan initiated by the British government.

## ECONOMIC SITUATION

Since May 1997 the world economy has presented a varying picture. In Asia an economic and financial drama has been acted out. The crisis began in Thailand. The private sector's disproportionately large short-term debt in foreign currencies, followed by speculation against the baht, forced the Thai central bank to allow their currency to float against the US dollar in July 1997. What followed was a domino effect from which hardly any South-East Asian economies were spared. Intervention by the Internatio-

nal Monetary Fund prevented total collapse in Thailand, Malaysia, Indonesia and South Korea, but it imposed harsh conditions for the reform of these countries' economic and financial policies.

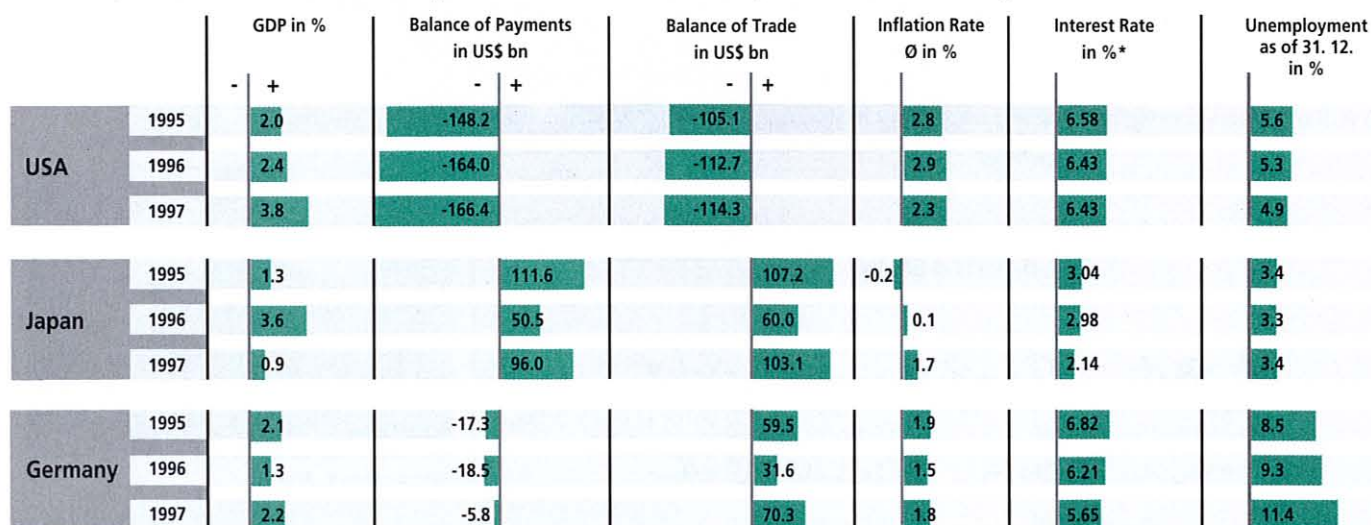
The economic problems were prevented from spreading to other regions beyond Asia by the sustained growth of the American economy and the upturn in continental Europe.

In Europe, the changeover to a common currency is proceeding according to plan. In May a large-scale currency

union comprising eleven states (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain) was decided. A Dutchman, William F. Duisenberg, was elected as the first President of the European Central Bank and the bilateral conversion ratios (preliminary fixing) of the participating countries' exchange rates as of 1 January 1999 were announced.

In Eastern Europe gradual economic recovery is continuing.

### Key Data of the USA, Japan and Germany



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



# WORLD BEER PRODUCTION 1996/97

Figures in 1,000 hl

Europe		
Country	1996	1997
Germany	114,237	114,800
Great Britain	58,448	59,139
Fed. of Russia (CIS)	20,629	25,249
Spain	24,716	24,879
Netherlands	23,494	24,701
France	20,441	19,483
Poland	16,528	18,800
Czech Republic	18,242	18,649
Belgium	14,180	14,168
Italy	11,117	11,455
Austria	9,547	9,366
Denmark	9,591	9,180
Ireland	7,763	8,152
Romania	8,235	7,506
Turkey	7,382	7,448
Hungary	7,259	7,168
Portugal	6,713	6,623
Yugoslavia	5,987	6,106
Ukraine (CIS)	5,500	6,090
Sweden	4,805	4,810
Finland	4,670	4,793
Slovak Republic	4,700	4,394
Greece	3,885	3,945
Croatia	3,292	3,607
Switzerland	3,596	3,563
Bulgaria	4,268	3,004
Norway	2,230	2,298
Slovenia	2,150	2,123
Lithuania	1,125	1,356
Belorussia (CIS)	1,400*	1,200*
Kazakhstan (CIS) <sup>2)</sup>	250	730
Latvia	646	687
Bosnia-Herzegovina	480	620
Macedonia	622	600
Estonia	452	585
Uzbekistan (CIS)	600	500
Luxemburg	484	481
Georgia (CIS)	200	450
Other CIS-countries <sup>1)</sup>	300*	400
Cyprus	320	320
Albania	110*	152
Malta	156	132*
Armenia	37	52
Iceland	54	51
Azerbaijan (CIS)	13	15
<b>Total</b>	<b>430,854</b>	<b>439,830</b>

Australia/Oceania		
Country	1996	1997
Australia	17,424	17,349
New Zealand	3,435	3,214
Papua New Guinea	375	390
Fiji Islands	160	161
Tahiti	154	146
New Caledonia	112	125
Samoa	58	45
Solomon Islands	28	19
Tonga	8	8
Vanuatu	6	6
<b>Total</b>	<b>21,760</b>	<b>21,463</b>

America		
Country	1996	1997
USA	235,986	236,430
Brazil	88,540	88,200
Mexico	47,179	51,949
Canada	22,517	22,355
Colombia	18,500	20,000
Venezuela	15,000	17,232
Argentina	11,523	12,063
Peru	8,500	8,500
Chile	3,879	3,900
Dominican Republic	2,200	2,400
Ecuador	2,600	2,270
Bolivia	1,705	1,800
Paraguay	1,591	1,600
Cuba	1,500	1,500*
Panama	1,229	1,350
Costa Rica	1,200	1,200
Honduras	973	1,184
Guatemala	1,000	1,000
Uruguay	780	800
El Salvador	687	700
Jamaica	690	574
Nicaragua	350	400
Trinidad	334	320
Puerto Rico	357	314
Guyana	129	180
Haiti	120	140
Bahamas	135	139
Dutch Islands	136	135
Barbados	130	112
Surinam	80	89
Belize	50	70
Martinique	65*	70*
St. Lucia	78	49
St. Vincent	32	35
Grenada	37	34
Antigua	21	22
St. Kitts	18	18
Dominica	17	12
<b>Total</b>	<b>469,868</b>	<b>479,146</b>

Asia		
Country	1996	1997
China	163,176	170,000*
Japan	68,702	67,695
South Korea	16,827	16,740
Philippines	13,210	13,475*
Thailand	7,841	8,360
Vietnam	5,770*	5,638
India	3,700*	4,250
Taiwan	3,756	3,900
Indonesia	1,678	1,722
Malaysia	964	1,477
Hong Kong	1,233	890
Singapore	1,026	804
Israel	850*	800*
Nepal	350*	350
Laos	240	286
Sri Lanka	239	266
Cambodia	150	175*
Lebanon	180	126
Syria	103	102
Mongolia	100*	100*
Myanmar (Burma)	60*	60*
Jordan	56	56
Iraq	50*	50*
Pakistan	19	20
<b>Total</b>	<b>290,280</b>	<b>297,342</b>

Africa		
Country	1996	1997
South Africa	24,812	25,000
Nigeria	4,200	4,300
Cameroon	3,000	3,253
Kenya	2,700	3,000
Zimbabwe	1,400	1,649
Tanzania	1,377	1,615
Zaire	1,510	1,525
Ivory Coast	1,300	1,240
Burundi	1,204	1,161
Angola	687	980
Ethiopia	998	956
Namibia	736	888
Uganda	623	830
Ruanda	597	808
Gabon	850	801
Morocco	700	800
Tunesia	650	780
Ghana	876	773
Malawi	758	760*
Mozambique	393	698
Zambia	628	558
Burkina Faso (Upper Volta)	500	458
Botswana	400	419
Egypt	400	400*
Lesotho	400	398
Benin	400	358
Algeria	500	350
Madagascar	348	350*
Congo	471	347
Mauritius	346	347
Swaziland	300	294
Togo	320	292
Réunion	224	239
Eritrea	250	218
Central African Republic	200	207
Senegal	150	162
Chad	112	157
Guinea	105	131
Sierra Leone	51	100
Niger	100	72
Seychelles	63	70
Mali	100	65
Liberia	55	60
Cape Verde Islands	54	54*
Guinea Bissau	25*	25*
Gambia	18	20
<b>Total</b>	<b>55,891</b>	<b>57,968</b>

1) Kirgizstan, Moldova, Tajikistan, Turkmenistan, (although geographically belonging mainly to Asia, the entire CIS is listed under Europe for the time being for reasons of comparability).

2) Other sources: 635 for 1996, 690 for 1997

\*) estimate

*In italics:* corrections for 1996 as stated in last year's report; these figures became available after going to press

WORLD TOTAL	
1996	1997
<b>1,268,653</b>	<b>1,295,749</b>



# OUTPUT DEVELOPMENT

	1996	1997	1996	1997
	1,000 hl	1,000 hl	+/- % rel.	+/- % rel
European Union	314,091	315,975	-1.2%	0.6%
Rest of Europe	116,763	123,855	3.5%	6.1%
<b>Europa total</b>	<b>430,854</b>	<b>439,830</b>	<b>0.0%</b>	<b>2.1%</b>
North America	258,503	258,785	0.8%	0.1%
Central America/Caribbean	58,538	63,727	5.8%	8.9%
South America	152,827	156,634	3.4%	2.5%
<b>America total</b>	<b>469,868</b>	<b>479,146</b>	<b>2.2%</b>	<b>2.0%</b>
<b>Africa</b>	<b>55,891</b>	<b>57,968</b>	<b>2.4%</b>	<b>3.7%</b>
<b>Asia</b>	<b>290,280</b>	<b>297,342</b>	<b>3.2%</b>	<b>2.4%</b>
<b>Australia/Oceania</b>	<b>21,760</b>	<b>21,463</b>	<b>-2.5%</b>	<b>-1.4%</b>
<b>WORLD TOTAL</b>	<b>1,268,653</b>	<b>1,295,749</b>	<b>1.6%</b>	<b>2.1%</b>

The change in growth rates from the 1996/97 report is due to the adjustment of the beer output figures for 1996.

In 1997 world beer production increased somewhat more strongly than in the previous year.

In Europe, growth was registered, reversing the negative trend in production in recent years.

Stagnating production in North America once again stands in sharp contrast to the high growth rates seen in Central America and the Caribbean.

In Asia, growth in beer production was significantly lower than in recent years.

## MARKET ANALYSIS

The 1997 crop year - like the year before - was characterized by world-wide overproduction, originating mainly in the major hop-producing countries of Germany and the USA. The total collapse of the market, which had been feared prior to harvest, failed to occur, however, since powdery mildew infestation in the USA made a quantity of approx. 3,600 tons of hops (12% of production estimates for America) unusable, thus preventing yet another record crop. Nevertheless, although alpha production exceeded demand by 'only' 13% instead of the anticipated 20%, this was still too much for a market whose price structure reacts very sensitively to fluctuations in volume of 5 - 10%.

The world hop market is in the grip of a severe structural overproduction crisis.

- Yields per hectare have risen world-wide due to variety conversion programmes.
- It has been possible to increase the average alpha yield per variety, particularly in the aroma spectrum, in Germany by up to 50%.
- New breeds in the bitter and high-bitter segment in Europe display greatly improved aroma structures analytically. They offer added value to brewers on the one hand, at the expense of aroma hop usage, and to growers on the other as a result of significantly improved yields in comparison with conventional aroma hop growing.

For years now, demand for cone hops has been falling by at least 3 - 5% per year for the following reasons:

- The trend towards milder beers is continuing around the world.
- Beer output is growing almost exclusively in countries with traditionally low hopping rates.
- The increasing use of highly efficient downstream products in brewing is becoming more and more widespread.

This is exacerbated by predatory competition between the growers in Germany and the USA, which is taking on the character of mortal combat. Although all involved in the market presumably recognize the need for wide-ranging reduction in acreage as a prerequisite for the recovery of the market, no voluntary joint action is being taken. As a result of overproduction in 1997, the producers in virtually every hop-growing country in the world had to sell their spot hops - if they were able to sell them at all - at prices far below production costs. In many places the spot prices did not even cover their variable costs.

The continuing structural surplus on the market and the low level of spot hop prices in recent years increasingly calls into question the necessity for long-term contracts to secure hop supplies. As a result, the futures market in Germany and the USA in spring 1998 was at prices below growers' long-term production costs. This made a nonsense of the whole point of the forward contract market, which was supposed to represent economic security for all market participants.

The difficult situation in the hop market has cost three major hop trading companies their independence in the last two years. As the stocks held by a number of breweries have increased due to stockpiling at low prices in recent years, the full effects of falling demand will only really be felt by growers and traders with the coming crop.

Against this background and under the pressure of extreme cost-consciousness on the part of the international brewing industry, further consolidation is necessary at all levels - as is a reduction in hop acreage.

### Forward contract rates in % (as per spring 1998)

Country	1998	1999	2000	2001	2002
Germany	65	45	40	35	25
USA	89	61	51	29	9
Czech Republic	80	65	45	15	10
England	58	52	40	18	15
Slovenia	60	30	30	10	10



# HOP ACREAGE AND PRODUCTION 1996/97

		Acreage ha	1996 Ø-Yield to/ha	Production to	Acreage ha	1997 Ø-Yield to/ha	Production to
Germany	Hallertau	17,837	1.88	33,499.2	17,440	1.64	28,675.9
	Tettngang	1,653	1.46	2,406.5	1,666	1.56	2,600.4
	Elbe-Saale	1,551	1.53	2,374.7	1,526	1.18	1,802.8
	Spalt	646	1.62	1,045.4	627	1.32	829.6
	Hersbruck	109	1.40	152.3	106	1.38	146.2
	Baden/Eifel/Rhine-Pal.	17	1.95	33.1	16	1.74	27.9
<b>Total</b>		<b>21,813</b>	<b>1.81</b>	<b>39,511.2</b>	<b>21,381</b>	<b>1.59</b>	<b>34,082.8</b>
England		3,111	1.65	5,145.5	3,067	1.46	4,474.1
Spain		915	1.30	1,190.2	847	1.37	1,157.6
France		711	1.61	1,144.7	774	1.48	1,148.9
Belgium		341	1.71	583.8	304	1.81	549.5
Austria		246	1.38	339.5	247	1.53	376.7
Portugal		121	1.38	167.2	128	0.78	100.0
Ireland		6	1.38	8.3	6	1.47	8.8
<b>EUROPEAN UNION</b>		<b>27,264</b>	<b>1.76</b>	<b>48,090.4</b>	<b>26,754</b>	<b>1.57</b>	<b>41,898.4</b>
Czech Republic	Zatec (Saaz)	6,936	1.02	7,089.0	5,640	0.92	5,202.0
	Ustek (Auscha)	1,441	1.30	1,876.6	936	1.27	1,185.0
	Tršice (Tirschitz)	978	1.19	1,160.3	875	1.15	1,010.0
	Others	0	0.00	0.0	15	0.93	14.0
<b>Total</b>		<b>9,355</b>	<b>1.08</b>	<b>10,125.9</b>	<b>7,466</b>	<b>0.99</b>	<b>7,411.0</b>
Poland		2,480	1.37	3,400.0	2,480	1.28	3,175.0
Slovenia		2,226	1.60	3,556.0	2,326	1.80	4,194.0
Ukraine		3,545	0.41	1,453.5	1,900*	0.39	740.0*
Federation of Russia		2,700*	0.69	1,850.0*	1,697*	0.50	847.0*
Slovak Republic		1,082	0.76	824.0	777	0.99	772.0
Romania		1,597	0.94	1,500.0*	713	0.87	622.0
Yugoslavia (Serbia/Montenegro)		584	1.14	667.8	589	1.58	930.0
Bulgaria		505	0.82	414.5	385	0.81	312.0
Turkey		334	0.91	304.0	297	0.98	292.0
Switzerland		22	2.40	52.8	22	2.03	44.7
Hungary <sup>1)</sup>		20	2.29	45.7	0	0.00	0.0
<b>REST OF EUROPE</b>		<b>24,450</b>	<b>0.99</b>	<b>24,194.2</b>	<b>18,652</b>	<b>1.04</b>	<b>19,339.7</b>
<b>EUROPE</b>		<b>51,714</b>	<b>1.40</b>	<b>72,284.6</b>	<b>45,406</b>	<b>1.35</b>	<b>61,238.1</b>
USA	Washington	12,828	2.04	26,145.3	12,587	2.01	25,318.1
	Oregon	3,436	1.55	5,322.7	3,382	1.82	6,156.4
	Idaho	1,619	1.57	2,538.3	1,568	1.59	2,487.6
<b>Total</b>		<b>17,883</b>	<b>1.90</b>	<b>34,006.3</b>	<b>17,537</b>	<b>1.94</b>	<b>33,962.1</b>
Argentina		262	0.94	246.7	212	0.92	196.0
Canada		146	0.93	136.0	125	0.75	94.0
<b>AMERICA</b>		<b>18,291</b>	<b>1.88</b>	<b>34,389.0</b>	<b>17,874</b>	<b>1.92</b>	<b>34,252.1</b>
South Africa		656	1.54	1,007.9	651	1.51	985.0
Zimbabwe		35	1.20	42.0	0	0.00	0.0
<b>AFRICA</b>		<b>691</b>	<b>1.52</b>	<b>1,049.9</b>	<b>651</b>	<b>1.51</b>	<b>985.0</b>
China		4,400*	2.73	12,000.0*	4,392*	2.67	11,746.0*
Japan		433	1.99	861.9	398	1.92	762.4
India		65	0.54	35.0	108	0.32	35.0
South Korea		5	1.00	5.0	5	0.88	4.4
<b>ASIA</b>		<b>4,903</b>	<b>2.63</b>	<b>12,901.9</b>	<b>4,903</b>	<b>2.56</b>	<b>12,547.8</b>
Australia		1,014	2.88	2,919.9	1,053	2.42	2,545.0
New Zealand		354	2.35	833.4	354	2.17	769.0
<b>AUSTRALIA/OCEANIA</b>		<b>1,368</b>	<b>2.74</b>	<b>3,753.3</b>	<b>1,407</b>	<b>2.36</b>	<b>3,314.0</b>
<b>WORLD</b>		<b>76,967</b>	<b>1.62</b>	<b>124,378.7</b>	<b>70,241</b>	<b>1.60</b>	<b>112,337.0</b>

1) According to the Hungarian Ministry of Agriculture and the Brewers Association, hop growing has ceased. Only approx. 0.5 ha for experimental purposes.

\*) estimate

*In italics:* corrections for 1996 as stated in last year's report; these figures became available after going to press



# ALPHA ACID PRODUCTION

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

<b>Group A:</b>	Finest aroma hops, such as: Saaz, Tettnang, Spalt
<b>Group B:</b>	Aroma hops, such as: Hallertau, Hersbruck, Perle, Spalt Select, Hallertau Tradition, Golding, aroma hops from USA, England, etc.
<b>Group C:</b>	Hops without significance for the world market (both aroma and bitter)
<b>Group D:</b>	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	1996					1997				
	Crop Share	Crop to	Alpha Ø	Alpha to	Alpha Share	Crop Share	Crop to	Alpha Ø	Alpha to	Alpha Share
A	11.3%	13,999	4.0%	560	6.0%	10.0%	11,188	4.1%	459	5.2%
B	32.3%	40,146	5.6%	2,248	24.2%	32.9%	37,016	5.9%	2,147	24.4%
C	20.0%	24,963	6.6%	1,648	17.7%	21.3%	23,954	7.0%	1,677	19.1%
D	36.4%	45,271	10.7%	4,844	52.1%	35.8%	40,179	11.3%	4,500	51.3%
<b>Total</b>	<b>100.0%</b>	<b>124,379</b>	<b>7.5%</b>	<b>9,300</b>	<b>100.0%</b>	<b>100.0%</b>	<b>112,337</b>	<b>7.9%</b>	<b>8,783</b>	<b>100.0%</b>

All alpha acid values were recorded on the basis of % as is, EBC-Analytica 7.4.

In comparison with the 1996 crop, the production volume in 1997 fell by 9.7%, whereas the volume of alpha acids fell by only 5.6%. The trend towards higher alpha yields per hectare therefore continued. Although acreage worldwide has been reduced by 20,883 ha (22.9%) since 1993, world alpha production has remained constant at approx. 9,000 tons per year.

By focusing on breeding and growing high-yield, high-alpha aroma and bitter varieties, the main producers, the USA and Germany, have set an

avalanche in motion. The world market is thus caught up in a cycle of structural excess inventories.

With predatory competition among producers on a global scale, growers in the USA and Germany secured market shares of 34.3% (1996: 32.4%) and 33.1% (32.5%) respectively at the expense of other countries. Together, these two countries satisfied 67.4% of world alpha demand - an (absolute) increase of 7.0% in the last two years.

In group A, Germany increased its market share from 25.7% to 34.2%

while the Czech Republic lost from 69.1% to 59.7%.

Group D was dominated by the USA (54.8%) and Germany (34.0%) with a combined share of 88.8%.

As a whole, the market shares of the different variety groups changed only slightly among themselves. What is noticeable, however, is the shift in market share among the countries. They underline the severity of the present predatory competition.

## ALPHA ACID BALANCE

Calendar year	Alpha demand		Alpha production		Alpha supply	
	Hopping rate	Demand	Crop year	Production	Surplus	Deficit
1994	6.6 g α/hl	8,015.2 to α	1993	9,099.0 to α	1,083.8 to α	---
1995	6.3 g α/hl	7,865.5 to α	1994	6,907.0 to α	---	958.5 to α
1996	6.2 g α/hl	7,865.6 to α	1995	7,831.0 to α	---	34.6 to α
1997	6.1 g α/hl	7,901.0 to α	1996	9,300.0 to α	1,395.9 to α	---
1998*	6.0 g α/hl	7,849.2 to α	1997	8,783.0 to α	930.8 to α	---

\* Estimated demand      The change in alpha supply from the 1996/97 report is due to the adjustment of the beer output figures for 1996.

In the 1997 crop, alpha acid production by far exceeded the international brewing industry's requirements yet again. For the third time in five years, there was an alpha acid surplus of

some 1,000 tons. The reasons for this surplus are attributable to factors both in hop growing and in beer production (Market Analysis, page 6).

Year-on-year, the forward contract rate fell further in the main producer countries (see page 6), which clearly illustrates the growing extent of the marketing difficulties.





# EUROPEAN UNION

## Reform of the hop market regulations

As already anticipated in last year's report, the EU Commission's proposal regarding a common market organization for hops was adopted in directive No. 1554/97 in July 1997. The Commission's proposal was adopted almost in its entirety.

According to the directive, growers' associations which do not market their members' total production volume are obliged to withhold 20% of the producer subsidies and use it for certain measures conforming to the market regulations, e.g. for variety conversion.

Growers' associations which market their members' total production volume are also permitted to withhold 20% of the producer subsidies. The original demand that a mandatory 5% of the producer subsidies be used for variety conversion was waived.

Withholding of producer subsidies can be accumulated over a maximum period of 5 years.

## Producer subsidies

Directive (EC) No. 1554/97 also did away with the distinction between subsidies according to variety groups. A standard subsidy per hectare is thus paid for all variety groups. This was set at 480 ecu per hectare for five years as of crop year 1996. In future, producer subsidies are to be paid a short time after the harvest or at the latest by 31 December of the respective crop year.

## Set-aside

In May 1998 the EU Commission's proposal for a set-aside and clearing programme was passed by the Council of Ministers with directive (EC) No. 1098/98. This provides producers who temporarily set aside or permanently clear their hop yards with compensation equal to the producer subsidy for a maximum of five years as of the 1998 crop year.

To qualify for this subsidy, producers must fulfil the following preconditions:

- In cases of temporary set-aside, the hops are to be cleared but the trellis systems maintained.
- In cases of total clearance, the trellis systems are to be removed.
- In cases of temporary set-aside, yards are not to be left fallow, but should be planted on a permanent basis for soil improvement.
- The applicant must not expand hop growing on other areas of his farm as long as subsidies are being claimed.

The areas in question must be registered with the authorities responsible by 31 May of the respective crop year. The minimum area for which application may be made is 0.3 ha.

### Conversion Table

<b>Area:</b>	
1 hectare (ha) = 10,000 m <sup>2</sup>	= 2.934 bayerische Tagwerk
1 hectare (ha) = 10,000 m <sup>2</sup>	= 2.471 acres
1 bayerisches Tagwerk	= 0.341 ha
1 acre	= 0.405 ha
<b>Length:</b>	
1 yard	= 3 feet = 36 inches = 91.44 cm
1 mile	= 1.609 km
<b>Volume:</b>	
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
<b>Weight:</b>	
1 metr. ton (to) = 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 = 50.800 kg = 1.0160 Ztr.
1 cental (GB)	= 100 lbs = 45.359 kg = 0.9072 Ztr.
1 kg	= 2.20462 lbs
1 lb	= 0.45359 kg
<b>Temperatures:</b>	
from Fahrenheit into Celsius	from Celsius into Fahrenheit
$86^{\circ}\text{F} = \frac{(86 - 32) \times 5}{9} = 30^{\circ}\text{C}$	$30^{\circ}\text{C} = \frac{30 \times 9}{5} + 32 = 86^{\circ}\text{F}$
<b>Pressure:</b>	
1 bar = 14.5038 psi	1 psi = 0.06895 bar

### Currency Exchange Rates

Conversion in DM as of May 31st

Düsseldorf Foreign Exchange Market	Buy 1997	Spot Market 1998	Sell 1997	1998
USA <sup>1)</sup>	1.696	1.778	1.704	1.786
Great Britain <sup>1)</sup>	2.780	2.900	2.794	2.914
Canada <sup>1)</sup>	1.225	1.224	1.233	1.232
Netherlands	88.779	88.617	88.999	88.837
Switzerland	120.380	120.287	120.580	120.487
Belgium	4.834	4.838	4.854	4.858
France	29.527	29.761	29.647	29.881
Denmark	26.200	26.189	26.320	26.309
Norway	23.909	23.564	24.029	23.684
Sweden	22.025	22.675	22.145	22.795
Italy <sup>2)</sup>	1.003	1.011	1.011	1.019
Austria	14.188	14.192	14.228	14.232
Spain	1.178	1.173	1.186	1.181
Portugal	0.985	0.973	0.991	0.979
Japan	1.460	1.283	1.463	1.286
Finland	33.110	32.823	33.270	32.983
Ireland	2.564	2.514	2.578	2.528

### Free Market Exchange Rates

Australia <sup>1)</sup>	1.288	1.112	1.296	1.120
Mexico	21.400	21.169	21.540	21.206
New Zealand <sup>1)</sup>	1.174	0.952	1.178	0.956
Poland	53.400	51.192	53.710	51.208
Czech Republic	5.244	5.396	5.256	5.408

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

1) = 1 unit      2) = 1,000 units      all others = 100 units



## GERMANY

## Acreage and Production

Area	Variety	Development of Acreage			Development of Production			
		1996	+/-	1997	1996	1997	1996	1997
		Acreage ha			Ø-Yield to/ha		Production to	
Hallertau	Perle	3,733	82	3,815	1.95	1.68	7,278.30	6,397.00
	Hersbruck	3,973	-962	3,011	1.87	1.61	7,415.70	4,835.20
	Hallertau Tradition	1,600	366	1,966	1.59	1.61	2,537.85	3,163.95
	Spalt Select	1,247	10	1,257	2.10	1.88	2,614.10	2,368.05
	Hallertau	540	72	612	0.79	1.17	424.35	716.35
	Huell	171	-78	93	1.71	1.53	293.20	142.55
	<b>Total Aroma</b>	<b>11,264</b>	<b>-510</b>	<b>10,754</b>	<b>1.83</b>	<b>1.64</b>	<b>20,563.50</b>	<b>17,623.10</b>
	Northern Brewer	2,744	-463	2,281	1.83	1.54	5,030.15	3,516.50
	Brewers Gold	812	-316	496	2.60	2.13	2,110.65	1,055.40
	Orion	84	-29	55	2.23	1.73	187.40	95.15
	<b>Total Bitter</b>	<b>3,640</b>	<b>-808</b>	<b>2,832</b>	<b>2.01</b>	<b>1.65</b>	<b>7,328.20</b>	<b>4,667.05</b>
	Hallertau Magnum	1,938	538	2,476	1.94	1.73	3,764.85	4,287.60
	Nugget	610	53	663	2.43	2.21	1,483.60	1,467.75
	Target	87	7	94	2.31	2.13	201.40	200.60
	<b>Total High Alpha</b>	<b>2,635</b>	<b>598</b>	<b>3,233</b>	<b>2.07</b>	<b>1.84</b>	<b>5,449.85</b>	<b>5,955.95</b>
	Record	66	-4	62	1.85	1.66	122.35	102.70
	Others	232	327	559	0.15	0.59	35.30	327.10
<b>Total Hallertau</b>	<b>17,837</b>	<b>-397</b>	<b>17,440</b>	<b>1.88</b>	<b>1.64</b>	<b>33,499.20</b>	<b>28,675.90</b>	
Tettngang	Tettngang	1,093	9	1,102	1.29	1.40	1,413.70	1,547.80
	Hallertau	557	6	563	1.77	1.86	988.55	1,049.50
	Hersbruck	3	-2	1	1.42	3.10	4.25	3.10
	<b>Total Tettngang</b>	<b>1,653</b>	<b>13</b>	<b>1,666</b>	<b>1.46</b>	<b>1.56</b>	<b>2,406.50</b>	<b>2,600.40</b>
Elbe-Saale	Perle	107	19	126	1.21	1.06	129.30	134.05
	Saaz	9	0	9	1.29	0.93	11.65	8.35
	Other Aroma	17	1	18	0.78	1.39	13.25	25.05
	<b>Total Aroma</b>	<b>133</b>	<b>20</b>	<b>153</b>	<b>1.16</b>	<b>1.09</b>	<b>154.20</b>	<b>167.45</b>
	Northern Brewer	841	-163	678	1.61	1.05	1,350.40	710.10
	Other Bitter	15	-6	9	1.82	1.58	27.25	14.25
	<b>Total Bitter</b>	<b>856</b>	<b>-169</b>	<b>687</b>	<b>1.61</b>	<b>1.05</b>	<b>1,377.65</b>	<b>724.35</b>
	Hallertau Magnum	437	66	503	1.45	1.38	631.65	694.10
	Nugget	114	-1	113	1.78	1.68	203.35	190.20
	Other High Alpha	10	59	69	0.72	0.38	7.15	26.00
<b>Total High Alpha</b>	<b>561</b>	<b>124</b>	<b>685</b>	<b>1.50</b>	<b>1.33</b>	<b>842.15</b>	<b>910.30</b>	
Others	1	0	1	0.65	0.70	0.65	0.70	
<b>Total Elbe-Saale</b>	<b>1,551</b>	<b>-25</b>	<b>1,526</b>	<b>1.53</b>	<b>1.18</b>	<b>2,374.65</b>	<b>1,802.80</b>	
Spalt	Hallertau	182	1	183	1.35	1.16	246.45	212.00
	Spalt	161	19	180	1.31	1.01	210.55	182.65
	Spalt Select	153	-3	150	2.08	1.82	318.35	273.00
	Hersbruck	107	-32	75	1.73	1.47	185.45	110.05
	Perle	25	-4	21	2.15	1.48	53.65	31.15
	Hallertau Tradition	13	2	15	1.53	1.20	19.90	18.05
	<b>Total Aroma</b>	<b>641</b>	<b>-17</b>	<b>624</b>	<b>1.61</b>	<b>1.33</b>	<b>1,034.35</b>	<b>826.90</b>
	<b>Bitter</b>	<b>4</b>	<b>-1</b>	<b>3</b>	<b>2.06</b>	<b>0.90</b>	<b>8.25</b>	<b>2.70</b>
	<b>High Alpha</b>	<b>1</b>	<b>-1</b>	<b>0</b>	<b>2.80</b>	<b>0.00</b>	<b>2.80</b>	<b>0.00</b>
	<b>Total Spalt</b>	<b>646</b>	<b>-19</b>	<b>627</b>	<b>1.62</b>	<b>1.32</b>	<b>1,045.40</b>	<b>829.60</b>
Hersbruck	Hallertau	28	0	28	0.83	1.00	23.35	27.95
	Spalt Select	27	0	27	1.85	1.78	49.90	48.10
	Hersbruck	21	-4	17	1.43	1.24	30.10	21.05
	Other Aroma	25	1	26	1.35	1.45	33.80	37.70
	<b>Total Aroma</b>	<b>101</b>	<b>-3</b>	<b>98</b>	<b>1.36</b>	<b>1.38</b>	<b>137.15</b>	<b>134.80</b>
	<b>Bitter</b>	<b>6</b>	<b>-1</b>	<b>5</b>	<b>1.96</b>	<b>1.65</b>	<b>11.75</b>	<b>8.25</b>
	<b>High Alpha</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1.85</b>	<b>1.05</b>	<b>1.85</b>	<b>2.10</b>
	<b>Others</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1.55</b>	<b>1.00</b>	<b>1.55</b>	<b>1.00</b>
<b>Total Hersbruck</b>	<b>109</b>	<b>-3</b>	<b>106</b>	<b>1.40</b>	<b>1.38</b>	<b>152.30</b>	<b>146.15</b>	
Baden/ Eifel/ Rhineland- Palatinate	<b>Aroma</b>	<b>11</b>	<b>-1</b>	<b>10</b>	<b>1.89</b>	<b>1.55</b>	<b>20.80</b>	<b>15.50</b>
	<b>Bitter</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>2.92</b>	<b>2.55</b>	<b>8.75</b>	<b>7.65</b>
	<b>High Alpha</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>1.20</b>	<b>1.60</b>	<b>3.60</b>	<b>4.80</b>
	<b>Total Baden/Ei./Rh.-P.</b>	<b>17</b>	<b>-1</b>	<b>16</b>	<b>1.95</b>	<b>1.75</b>	<b>33.15</b>	<b>27.95</b>
<b>Total Aroma</b>	<b>13,803</b>	<b>-498</b>	<b>13,305</b>	<b>1.76</b>	<b>1.61</b>	<b>24,316.50</b>	<b>21,368.15</b>	
<b>Total Bitter</b>	<b>4,509</b>	<b>-979</b>	<b>3,530</b>	<b>1.94</b>	<b>1.53</b>	<b>8,734.60</b>	<b>5,410.00</b>	
<b>Total High Alpha</b>	<b>3,201</b>	<b>722</b>	<b>3,923</b>	<b>1.97</b>	<b>1.75</b>	<b>6,300.25</b>	<b>6,873.15</b>	
<b>Total Others</b>	<b>300</b>	<b>323</b>	<b>623</b>	<b>0.53</b>	<b>0.69</b>	<b>159.85</b>	<b>431.50</b>	
<b>GERMANY TOTAL</b>	<b>21,813</b>	<b>-432</b>	<b>21,381</b>	<b>1.81</b>	<b>1.59</b>	<b>39,511.20</b>	<b>34,082.80</b>	



## Growth, crop estimate and weights

In comparison with the previous year, not only the winter months but also the spring of 1997 were exceptionally dry. The volume of rainfall from October 1996 to May 1997 was 214 mm/m<sup>2</sup>. That is barely 50% of the 50-year average for this period. After the very cold months of December and January, temperatures in February and March 1997 were up to 4°C above the long-term average. The weather in April was too cold for the time of year. Night frosts occurred, delaying the start of growth and resulting in a setback of two weeks.

Due to the continued lack of rainfall and an only gradual rise in temperatures in May, it was not possible to make up for this delay in growth. Rainfall volume did not equal the long-term average until June. The above-average number of days of rain indicates good distribution of precipitation. As a result there was no flooding, and most of the volume of water was therefore available to the plants. Despite these favourable conditions, the delay in growth could no longer be fully made up for. Both the early and late maturing varieties began to flower at the normal vegetation time.

In July, the weather conditions were generally favourable to the further development of the hops in the generative growth phase with average tempera-

Area	Estimate 08/1997 to	Weight 31.03.1998 to
Hallertau	31,300	28,676
Tett nang	2,565	2,600
Elbe-Saale	2,350	1,803
Spalt	930	830
Hersbruck	145	146
Baden/Eifel/Rhineland-Palatinate	29	28
<b>Total</b>	<b>37,319</b>	<b>34,083</b>

tures and above-average precipitation.

Daytime temperatures of around 25°C, low rainfall and relative humidity in the range of 70 - 80% in August and up to the time of harvest also created ideal conditions for development of powdery mildew. The quality of the 1997 crop, particularly in the main Hallertau region, suffered considerably from mildew infestation. Moreover, this disease, combined with the above-mentioned growth deficit, presumably caused the eventual crop to be far below the 37,300 tons of hops originally estimated for Germany.

The actual volume weighed was approx. 9% below expectations. Only the Tett nang region slightly exceeded estimates. In fact, Tett nang achieved a record result with a crop of roughly 2,600 tons of hops. After the initial disappointment with the low average volume, the alpha values of the 1997 crop were surprisingly positive. They were even higher than the previous year's above-average values. As a re-

sult, crop production in Germany measured in alpha acid once again totalled approx. 3,000 to alpha.

## Market situation

The very high crop estimate and the excellent bittering values based on initial analyses led to expectations of an extremely high alpha supply from the 1997 crop. The market also expected a record crop in the USA. Consequently, and also in view of the stockpiles from 1996, the purchasing behaviour of the brewing industry was reticent.

It was not until 17 September that the first bids for bitter varieties as well as for **Hersbruck** and **Perle** were received from some trading companies. Prices were at a very low level: **Hersbruck** 80 DM per ztr. **Perle** 150, **Northern Brewer** 150, **Brewers Gold** 90, **Hallertau Magnum** 200, **Nugget** 150 and **Hallertau Taurus** 250. Nevertheless no sales were registered. Up to early October therefore,

continued on page 12

## Alpha Acid Table

Variety	1993	1994	1995	1996	1997	Average
Hallertau Hersbruck	3.4%	1.3%	2.1%	4.2%	4.3%	3.1%
Hallertau Perle	7.0%	3.3%	4.9%	7.8%	8.5%	6.3%
Hallertau Spalt Select	5.1%	2.2%	3.5%	5.5%	6.2%	4.5%
Hallertau Hallertau Tradition	5.7%	3.7%	4.5%	6.5%	6.4%	5.4%
Hallertau Hallertau	4.2%	2.6%	3.3%	5.3%	5.1%	4.1%
Hallertau Northern Brewer	8.4%	5.3%	7.1%	9.8%	9.9%	8.1%
Hallertau Brewers Gold	6.5%	3.7%	4.5%	7.1%	8.4%	6.0%
Hallertau Hallertau Magnum	12.6%	9.6%	11.1%	14.0%	15.7%	12.6%
Hallertau Nugget	10.9%	8.8%	8.8%	10.1%	12.5%	10.2%
Hallertau Target	10.6%	8.6%	9.9%	11.7%	12.5%	10.7%
Hallertau Taurus	-	-	-	-	15.6%	15.6%
Elbe-Saale Northern Brewer	7.5%	4.5%	6.1%	8.6%	8.9%	7.1%
Elbe-Saale Hallertau Magnum	11.7%	9.2%	11.0%	14.3%	13.9%	12.0%
Spalt Spalt	4.1%	2.8%	3.3%	5.4%	5.2%	4.2%
Tett nang Tett nang	4.0%	2.9%	2.6%	4.6%	5.0%	3.8%

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

## Variety Development

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

Variety	1993	1994	1995	1996	1997
Perle	3,397	3,591	3,705	3,889	3,985
Hersbruck	6,509	5,485	4,956	4,104	3,104
Hallertau Tradition	551	859	1,133	1,629	2,004
Spalt Select	963	1,253	1,367	1,433	1,436
Hallertau	1,053	926	1,055	1,312	1,390
Tettnang	1,021	1,057	1,061	1,094	1,102
Spalter	210	183	165	168	186
<b>Total main Aroma</b>	<b>13,704</b>	<b>13,354</b>	<b>13,442</b>	<b>13,629</b>	<b>13,207</b>
Northern Brewer	5,670	4,821	4,313	3,588	2,962
Brewers Gold	1,556	1,316	1,140	823	505
<b>Total main Bitter</b>	<b>7,226</b>	<b>6,137</b>	<b>5,453</b>	<b>4,411</b>	<b>3,467</b>
Hallertau Magnum	918	1,317	1,850	2,379	2,984
Nugget	365	503	668	724	776
Target	92	91	101	95	101
<b>Total main High Alpha</b>	<b>1,375</b>	<b>1,911</b>	<b>2,619</b>	<b>3,198</b>	<b>3,861</b>

prices fell further with low order volumes. There was hardly any demand for the varieties **Hallertau Tradition** and **Spalt Select**. The crop appeared not to be marketable.

The announcements by the Hallertau growers' association and the hop growers' associations of Elbe-Saale and Spalt that they would create a pool of unsold spot hops, failed to stimulate demand. Prices bottomed out at the end of October.

In order to concentrate the supply and stabilize the market, the Hallertau

growers association offered to take growers' hops to form a pool of spot hops for a limited period up to 30 October. This offer applied to the following varieties: **Northern Brewer, Hallertau Magnum, Perle, Hallertau Tradition, Spalt Select, Hallertau Taurus, Hallertau Mittelfrueh** and **Nugget**. On signing a delivery agreement, the growers had to transfer decision-making authority over the marketing of their hops to the growers' association. No price guarantee was assumed on the part of the gro-

wers' association. The pool closed on 31 October with approx. 2,400 tons of hops. This quantity was well below expectations.

In the meantime, it became apparent that production was substantially below the crop estimate. Supplies, especially of bitter varieties, had become scarce. This led to higher bidding. The hops in the pool sold quickly, after which the small quantities remaining in growers' hands were cleared by Christmas at steadily rising prices.

## Purchase prices at producer level in net DM per 50 kg in farmer's bales:

Area/Variety	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98
Hallertau Hersbruck	80	60/50	50/80/100	100/120/80	80/100
Hallertau Perle	150/120	100/50	50/80/100/120	150/170/195	195/150
Hallertau Hallertau Tradition	-	-	80/100/ up to 120	up to 120	115
Hallertau Spalt Select	-	-	60/80	80	-
Hallertau Northern Brewer	150/100	100	100/120/150/160	up to 200/220	200/210
Hallertau Brewers Gold	90	70/50	50/80/100	110/150/115	115/150
Hallertau Hallertau Magnum	200/180	170/150	150/170/200/220	250/300/255	255/295
Hallertau Nugget	150/120	100	100/120/150	150/200	200
Hallertau Taurus	250	180	170/200/220	250/300/200	200
Spalt Spalt	310	310	310	300	-
Spalt Hallertau	-	230	230	200	-
Tettnang Tettnang	300	300/250	250/200	-	-
Tettnang Hallertau	250	250/200	200	150	150

# ENGLAND

## Acreage and Production

Variety	Development of Acreage			Development of Production			
	1996	+/- Acreage ha	1997	1996 Ø-Yield	1997 to/ha	1996 Production to	1997
Goldings	450	35	485	1.50	1.36	672.8	660.8
Fuggles	305	11	316	1.53	1.27	468.0	401.1
Challenger	309	-21	288	1.77	1.43	545.8	412.7
Progress	181	1	182	1.44	1.69	261.3	308.1
Phoenix	108	71	179	0.55	0.85	58.9	151.7
W.G.V.	141	23	164	1.19	1.42	168.3	232.7
First Gold	96	65	161	0.41	0.96	39.8	154.5
Bramling Cross	53	-3	50	1.46	1.65	77.5	82.4
<b>Total Aroma</b>	<b>1,643</b>	<b>182</b>	<b>1,825</b>	<b>1.40</b>	<b>1.32</b>	<b>2,292.4</b>	<b>2,404.0</b>
Northdown	323	-11	312	1.87	1.46	603.4	454.0
<b>Total Bitter</b>	<b>323</b>	<b>-11</b>	<b>312</b>	<b>1.87</b>	<b>1.46</b>	<b>603.4</b>	<b>454.0</b>
Target	1,095	-231	864	2.01	1.83	2,197.2	1,578.9
Yeoman	25	-14	11	1.14	1.11	28.4	12.2
<b>Total High Alpha</b>	<b>1,120</b>	<b>-245</b>	<b>875</b>	<b>1.99</b>	<b>1.82</b>	<b>2,225.6</b>	<b>1,591.1</b>
Others	25	30	55	0.96	0.45	24.1	25.0
<b>ENGLAND TOTAL</b>	<b>3,111</b>	<b>-44</b>	<b>3,067</b>	<b>1.65</b>	<b>1.46</b>	<b>5,145.5</b>	<b>4,474.1</b>

The decline of **Target** continues, with acreage falling below 1,000 ha for the first time in 1997. Likewise the trend observed for several years away from bitter and high-alpha varieties to aroma varieties progressed further.

Acreage is expected to be reduced significantly to only approx. 2,600 ha in 1998 due mainly to the general decline in aroma varieties with the exception of **Fuggles** and **Goldings**.

### Growth and quality

Winter and spring were cold but exceptionally dry. Plant growth was premature, with the result that training was completed two weeks earlier than usual. Cold and night frost in the second half of May caused some damage, making plants look yellow and sickly. The first half of June was predominantly sunny and dry with cool northeasterly winds and some thunderstorms. From late June it was warm with ample rainfall, and the good growing conditions continued in July and August.

### Alpha acid table

Comparison of alpha acid values of important English varieties:

Variety	1996	1997
Goldings	5.7%	5.9%
Fuggles	4.8%	4.9%
Progress	7.1%	6.2%
W.G.V.	7.2%	6.4%
Bramling Cross	6.5%	7.1%
Challenger	8.4%	7.5%
Northdown	9.0%	8.6%
Phoenix	11.7%	10.8%
First Gold	9.0%	8.9%
Target	11.5%	11.4%
Yeoman	11.3%	10.3%

All data in % as is, in accordance with EBC-Analytica 7.4. The values were measured in October/November after the harvest.

Appropriate deductions should be taken into account for deliveries later in the course of season.

### Hop research

Farm trials of a bitter dwarf variety with the code name **93/50** produced very good results in 1997 attracting interest from merchants and brewers alike. Despite being in only its planting year, it produced similar yields to mature hops of other dwarf varieties. Brewing trials at Brewing Research

Foundation International showed that in terms of quality and aroma **93/50** is entirely suitable for brewing both ales and lager beers.

**P38**, a variety for conventional trellis height, was allocated under licence to five farms in 1998. Trials at Horticulture Research International have shown that this variety is extremely resistant to wilt disease and produces good yields with a high alpha acid content.

### Market development

76% of production was sold by forward contract. Of the remaining volume, around 350 to, consisting equally of aroma and bitter/high-alpha varieties, seemed to be unsold at the time of going to press.

The following prices were paid for the crop:

Average price (contract and spot)	
Aroma	£ 250 per 50 kgs
Bitter/High Alpha	£ 14 per kg alpha
Spot market	
Aroma	£ 60 - 100 per 50 kgs
Bitter/High Alpha	£ 8 per kg alpha

## FRANCE

## Acreage and Production

Area	Variety Group	Development of Acreage			Development of Production			
		1996	+/-	1997	1996	1997	1996	1997
		Acreage ha			Ø-Yield to/ha		Production to	
Alsace	Aroma	626	70	696	1.58	1.47	986.8	1,020.0
	Bitter	14	-1	13	3.10	2.07	43.4	26.9
	High Alpha	30	-3	27	2.09	1.90	62.8	51.4
	<b>Total Alsace</b>	<b>670</b>	<b>66</b>	<b>736</b>	<b>1.63</b>	<b>1.49</b>	<b>1,093.0</b>	<b>1,098.3</b>
North	Aroma	9	3	12	0.84	0.75	7.6	9.0
	Bitter	14	-1	13	1.40	1.48	19.6	19.2
	High Alpha	18	-5	13	1.36	1.72	24.5	22.4
	<b>Total North</b>	<b>41</b>	<b>-3</b>	<b>38</b>	<b>1.26</b>	<b>1.33</b>	<b>51.7</b>	<b>50.6</b>
<b>FRANCE TOTAL</b>		<b>711</b>	<b>63</b>	<b>774</b>	<b>1.61</b>	<b>1.48</b>	<b>1,144.7</b>	<b>1,148.9</b>

In 1997, the trend towards increased acreage for aroma hops continued in Alsace and Northern France. A slight decrease in acreage was registered for the other varieties.

## Growth and quality

Frost, winds, hail and storms made for difficult growing conditions in Alsace. Repeated cases of disease required increased efforts on the part of the growers. Yields were also affected by high temperatures in August.

In Alsace, the hops were harvested in good conditions and in good quality.

In Northern France, growers were also under pressure due to disease, but were able to overcome these difficulties. The crop there is described as satisfactory.

In Alsace, the bittering values for **Strisselspalt** rose above the previous year's to 2.8% (EBC 7.4). In Northern France, on the other hand, the alpha values fell by 0.3% to 3.3%.

## Market situation

By spring 1998, the 1997 crop had not been completely sold. Stocks of **Tradition**, **Nugget**, **Target** and **Brewers Gold** remained in small quantities.

For 1998, the 115 growers have already signed contracts for 95% of the crop.

## SPAIN

## Acreage and Production 1997

Variety	Acreage ha	Ø-Yield to/ha	Production to
H-3 Leonés	529	1.22	643.4
<b>Total Bitter</b>	<b>529</b>	<b>1.22</b>	<b>643.4</b>
Nugget	308	1.64	504.4
Magnum	9	1.09	9.8
<b>Total High Alpha</b>	<b>317</b>	<b>1.62</b>	<b>514.2</b>
Others	1	0.00	0.0
<b>SPAIN TOTAL</b>	<b>847</b>	<b>1.37</b>	<b>1,157.6</b>

According to unofficial sources, the actual acreage of approx. 810 ha in total was below the official figures listed above and thus substantially lower than the level of crop year 1996.

The low yield of the **H-3** variety in comparison with previous years was caused by two factors in particular: the scant formation of cone substance due

to the weather conditions and the damage caused by mildew.

## Growth and quality

As in the previous year, the growing season in León, in contrast to La Rioja, was characterized by exceptionally changeable weather, which was favourable to infestation by pests. How-

ever, it was still possible to achieve optically good quality through the use of pesticides.

The average alpha acid content (EBC 7.4) as shown below was considerably higher than in previous years:

<b>H-3</b>	7.7 %
<b>Nugget</b>	11.5 %
<b>Magnum</b>	13.0 %

## Market situation

The total crop was sold through forward contracts for which, as in the previous year, the growers received the following prices:

<b>H-3</b>	420 Pts/kg
<b>Nugget/Magnum</b>	550 Pts/kg



## BELGIUM

### Acreage and Production 1997

Variety Group	Acreage ha	Ø-Yield to/ha	Production to
Aroma	90	1.04	93.3
Bitter/High Alpha	214	2.13	456.3
<b>BELGIUM TOTAL</b>	<b>304</b>	<b>1.81</b>	<b>549.5</b>

The trend of acreage reduction observed for several years now continued in 1997.

#### Quality

The average alpha acid values (EBC 7.4) were 5.2% for aroma varieties and 10.8% for bitter and high-alpha varieties.

#### Market development

The bitter and high-alpha hops sold well, with only small quantities remaining unsold. However, approx. 27 to (i.e. 29%) of the aroma hops harvested had not been sold by spring 1998.

The growers received the following average prices:

Contract market	
<b>Aroma</b>	393 DM/50 kgs
<b>Bitter/High Alpha</b>	326 DM/50 kgs
Spot market	
<b>Aroma</b>	78 DM/50 kgs
<b>Bitter/High Alpha</b>	102 DM/50 kgs

At the time of going to press, 63 to hops from the 1998 crop and 26 to of the 1999 crop had been sold by forward contract.

## AUSTRIA

### Acreage and Production 1997

Variety Group	Acreage ha	Ø-Yield to/ha	Production to
Mühlviertel	122	1.56	190.0
Leutschach	103	1.57	161.7
Waldviertel	22	1.14	25.0
<b>AUSTRIA TOTAL</b>	<b>247</b>	<b>1.53</b>	<b>376.7</b>

#### Mühlviertel/Upper Austria

Good growing conditions ensured above-average lupulin formation. Aroma development was also intensive. The average alpha acid content of 8% (EBC 7.4) was a good 10% higher than in the previous year.

The entire crop produced by the 49 growers in this region was sold to the domestic brewing industry at an average

price of 67 ATS/kg. No expansion of acreage is planned for 1998.

#### Leutschach/Styria

The hop-growing area in Leutschach was expanded by 4 ha. There was no infection in the early vegetation period, with only slight disease being recorded shortly before the harvest began.

High precipitation provided for a good crop despite the few days of sunshine. The prices quoted were 67 ATS/kg for **Aurora** and 75 ATS/kg for **Golding** (in each case quality grade I).

The total crop was sold through forward contracts.

#### Waldviertel/Lower Austria

The unchanged acreage (22 ha) was strung without exception with **Zwettler Perle** hops. Due to favourable climatic conditions, the nine growers in this region brought in a very good crop.

18 to of the crop was sold to the local brewery at a price of 71 ATS/kg. By mid-May, 7 to of the 1997 crop was still unsold.

## PORTUGAL

The previous year's acreage of 128 ha remained unchanged in 1997. 100 to of **Nugget** was harvested with an alpha content of 11.5%.

Although there were no contracts for the 1997 crop, the entire crop was sold on the spot market. The growers received an average equivalent of

4 DM/kg for their hops.

The crop volume for 1998 is estimated at 120 to.

## REST OF EUROPE

## CZECH REPUBLIC

## Acreage and Production

Area	Development of Acreage			Development of Production			
	1996	+/-	1997	1996	1997	1996	1997
	Acreage ha			Ø-Yield to/ha		Production to	
Zatec (Saaz)	6,936	-1,296	5,640	1.02	0.92	7,089.0	5,202.0
Ustek (Auscha)	1,441	-505	936	1.30	1.27	1,876.6	1,185.0
Tršice (Tirschitz)	978	-103	875	1.19	1.15	1,160.3	1,010.0
Others	0	15	15	0.00	0.93	0.0	14.0
<b>CZECH REP. TOTAL</b>	<b>9,355</b>	<b>-1,889</b>	<b>7,466</b>	<b>1.08</b>	<b>0.99</b>	<b>10,125.9</b>	<b>7,411.0</b>

Acreage continued to be reduced in 1997. Over the last three crop years, it has decreased by 26% due to lack of demand. This trend will probably continue in the foreseeable future with the acreage for 1998 being estimated at a total of 6,500 ha.

## Growth and Quality

In May, hop development was accelerated by warm, dry weather and was accompanied by red spider mite infestation. Continuous rainfall in early July flooded approx. 50 ha of hop yards in the Tirschitz region. In addition, there was downy mildew infestation in August. Nevertheless, the quality of the hops turned out to be average.

In the Saaz region, the average alpha content (EBC 7.4) was 3.7%, in the Auscha region 3.8% and in the Tirschitz region 3.4%.

## Market situation

The 1997 crop was far from being sold out. At the time of going to press, there are still approx. 668 to in growers' hands and a further 370 to held by trading companies. The Czech Republic's state fund for agricultural market regulation intends to buy up these quantities for which the growers are to receive 40,000 CZK/to. The hops will be stored by the growers until October 1998 by which time they will probably be worthless. In cases where

Czech trading companies had contracted to buy hops from the 1997 crop from growers but failed to take or pay for them, a special regulation applies: the state subsidy of 40,000 CZK/to must be paid to the grower by the trading company. The trading companies may only have access to the hops paid for by the state if they export them to countries other than Germany, the Netherlands, Belgium and Japan.

For pellet products and hops from the 1995 and 1996 crops the growers are to receive 30,000 CZK/to on condition that they destroy them.

80% of the 1998 crop has been sold by future contract.

## POLAND

## Acreage and Production

Variety Group	Development of Acreage			Development of Production			
	1996	+/-	1997	1996	1997	1996	1997
	Acreage ha			Ø-Yield to/ha		Production to	
Aroma	1,980	-100	1,880	1.34	1.20	2,650.0	2,250.0
Bitter	500	100	600	1.50	1.54	750.0	925.0
<b>POLAND TOTAL</b>	<b>2,480</b>	<b>0</b>	<b>2,480</b>	<b>1.37</b>	<b>1.28</b>	<b>3,400.0</b>	<b>3,175.0</b>

## Growth and Quality

Precipitation was higher than usual in the period January to April. From May to July there was less rain than in previous years, and in August and September the weather was average for recent years.

In 1997, the aroma varieties **Lublin** and **Lomik** and the bitter varieties **Marynka** and **Northern Brewer** were grown on a total of 2,480 ha. There

was no reduction in acreage, but instead there was a shift from aroma to bitter varieties.

The aroma varieties yielded an average alpha acid content (EBC 7.4) of 5.1% while the bitter hops produced 9.5%.

## Market Situation

At the end of May, the unsold stocks of aroma hops from the 1997 crop

were estimated at approx. 350 to. The 1997 crop of bitter hops is completely sold out. Prices on the free market for hops fell during the course of the marketing campaign from 5.00 DM/kg to 2.20 DM/kg.

The forward contract rate for 1998 is estimated at 15% - 20%. Due to difficult marketing conditions a reduction in acreage is expected.





# SLOVENIA

## Acreage and Production

Variety	Development of Acreage			Development of Production			
	1996	+/-	1997	1996	1997	1996	1997
	Acreage ha			Ø-Yield to/ha		Production to	
Aurora	1,034	196	1,230	1.92	2.07	1,990.0	2,542.0
Styrian Golding	652	-91	561	1.28	1.44	836.0	809.0
Bobek	356	-39	317	1.33	1.62	473.0	513.0
Others	184	34	218	1.40	1.51	257.0	330.0
<b>SLOVENIA TOTAL</b>	<b>2,226</b>	<b>100</b>	<b>2,326</b>	<b>1.60</b>	<b>1.80</b>	<b>3,556.0</b>	<b>4,194.0</b>

At present there are 341 hop growers in Slovenia. With marketing problems now becoming noticeable there too, the acreage for the 1998 crop will probably be reduced by approx. 8-10%.

### Growth and Quality

Both temperatures and precipitation were within the long-term average during the growing season. The vol-

ume of rainfall was spread out favourably for hop growing over this period, making irrigation unnecessary.

Cone development and maturing were regular and normal for all varieties. The following average alpha acid values were measured (EBC 7.4): **Golding** 4.4%, **Bobek** 6.1% and **Aurora** (Super Styrian) 8.8%.

### Market Situation

Only about 65% of production was sold by forward contract. The rest was placed on the spot market - but at very low prices. The volume unsold by spring 1998 was estimated at 97 to. The breweries purchased the hops at prices of between 3.00 DM/kg and 7.00 DM/kg.

The share of the 1998 crop sold by future contract is estimated at 60%.

# SLOVAK REPUBLIC

## Acreage and Production

Variety	Development of Acreage			Development of Production			
	1996	+/-	1997	1996	1997	1996	1997
	Acreage ha			Ø-Yield to/ha		Production to	
Saaz	1,082	-305	777	0.76	0.99	824.0	772.0
<b>SLOVAK REP. TOTAL</b>	<b>1,082</b>	<b>-305</b>	<b>777</b>	<b>0.76</b>	<b>0.99</b>	<b>824.0</b>	<b>772.0</b>

### Growth and Quality

Thanks to favourable weather conditions, the quality of the hops was very good. There were no major problems regarding pests and disease. The harvest produced what can be described as the best crop in the past

five years. The average alpha content (EBC 7.4) came to 3.6%.

### Market Situation

Acreage was reduced by 28%; yield rose, due to the good harvest, by approx. 30%. In May 1998, ap-

prox. 200 to of the crop was still held unsold by growers and processing companies. Due to the market situation, these quantities are probably unsaleable at any price.

An estimated 75% of the 1998 crop has been sold by future contract.

# YUGOSLAVIA (SERBIA AND MONTENEGRO)

## Acreage and Production 1997

Variety Group	Acreage ha	Ø-Yield to/ha	Production ha
Aroma	133	1.35	180.0
Bitter	429	1.66	710.0
Others	27	1.48	40.0
<b>YUGOSLAVIA TOTAL</b>	<b>589</b>	<b>1.58</b>	<b>930.0</b>

### Growth and Quality

Dry and unusually hot weather conditions in May had a negative effect on hop growth.

The alpha acid content (EBC 7.4) of the aroma variety **Bačka** was 2.0%, whereas the bitter varieties achieved 5.6%.

### Market Situation

There are conflicting data on both the forward contract rate and the spot market. It is probable that only 20% of the expected 1997 production was sold to the Yugoslav brewing industry by forward contract at a price of between 3.50 and 5.00 DM/kg.

15% of the 1998 crop has been sold by future contract.

## BULGARIA

### Acreage and Production 1997

Variety	Acreage ha	Ø-Yield to/ha	Production to
Aroma	105	0.68	71.0
Bitter	280	0.86	241.0
<b>BULGARIA TOTAL</b>	<b>385</b>	<b>0.81</b>	<b>312.0</b>

Acreage was reduced by roughly 24% from the 1996 level. The yield decreased by 0.01 to/ha compared to the previous year and remains at a very low level despite relatively good weather conditions.

There was also a downwards trend

in average alpha content which was 5.3% for aroma and 7.7% for bitter varieties.

A small part of the total crop is still available on the spot market. No forward contracts have been concluded for 1998.

## TURKEY

### Acreage and Production 1997

Variety	Acreage ha	Ø-Yield to/ha	Production to
Aroma	83	1.70	141.0
Bitter	214	0.71	151.0
<b>TURKEY TOTAL</b>	<b>297</b>	<b>0.98</b>	<b>292.0</b>

Bitter hop growing was characterized by a reduction in acreage of 36 ha, as the growing of **Late Cluster** has all but ceased. Among aroma varieties, on the other hand, average yields rose sharply. Alpha values continued to increase, rising to an average of 9 - 10% (EBC 7.4) in 1997.

As in the previous year, the total production volume was sold to the domestic brewing industry at prices of 5.00 - 6.00 DM/kg.

The 1998 crop has already been sold completely through future contracts.

## SWITZERLAND

In the reporting period, Swiss hops were grown on an area totalling 22 ha. The 44.7 to harvested signifies a year-on-year decrease of 15%. Although the yield of 2.03 to/ha did not meet expectations for the crop, it

corresponded to the average of recent years.

The quality of the hops was judged to be good. The alpha acid content of all varieties was significantly higher than in the previous year.

## HUNGARY

According to information from the Hungarian Ministry of Agriculture and the Association of the Hungarian Brewers, hop growing in Hungary has ceased. Only 0.5 ha was planted for experimental purposes.

## RUSSIAN FEDERATION / UKRAINE

For Russia, acreage was reported at 1,697 ha with a production volume of 847 to, which signifies a considerable year-on-year decrease.

Acreage in Ukraine is estimated at approx. 1,900 ha and production vol-

ume at 740 to. Here, too, a considerable year-on-year decrease can be observed.

Apart from these figures from the International Hop Growing Commission, no further information is avail-

able. If any of our readers has access to more detailed information on these countries we would be grateful to hear from them.

As predicted, a drastic reduction in acreage occurred in 1997. Acreage was reduced from 1,597 ha in 1996 to 713 ha in 1997. In other words, 884 ha (55%) was taken out of production. The reason for this drastic reduction in acreage above all was marketing difficulties. Nearly all the major breweries mainly use standardized hop products which are supplied to these brewing companies by their foreign majority shareholders. Further causes were the ending of state subsidies, a 24% fall in beer output, and insufficient, obsolete machinery and conditioning equipment which impair the quality of the hops.

Production decreased by 878 to in comparison with the previous year to only 622 to. The crop was made up of the following varieties: **North-ern Brewer** 295 to, **Huell Bitter** 170 to, **Brewers Gold** 137 to and **Record** 20 to.

In the future, hop growing will probably be concentrated around the traditional hop region of Sighisoara and its environs with an area of approx. 300 ha.

# AMERICA

## USA

### Acreage and Production

Area	Variety	Development of Acreage			Development of Production			
		1996	+/-	1997	1996	1997	1996	1997
		Acreage ha			Ø-Yield to/ ha		Production to	
Washington	Willamette	1,426	314	1,740	1.48	1.69	2,107.6	2,943.2
	Tettnang	806	-173	633	1.31	1.38	1,056.7	872.6
	Cascade	423	-3	420	2.26	2.20	957.5	921.9
	Mount Hood	387	-168	219	1.50	1.48	580.5	323.3
	Perle	94	10	104	1.42	1.44	133.2	149.8
	Liberty	38	*	*	1.12	*	42.6	*
	Golding	35	30	65	1.23	1.54	43.0	100.1
	Other Aroma*	66	19	85	1.43	1.66	94.3	140.8
	<b>Total Aroma</b>	<b>3,275</b>	<b>-9</b>	<b>3,266</b>	<b>1.53</b>	<b>1.67</b>	<b>5,015.4</b>	<b>5,451.7</b>
	Cluster	1,965	-497	1,468	2.09	2.11	4,116.4	3,091.3
	Other Bitter *	75	60	135	2.27	1.62	170.1	219.1
	<b>Total Bitter</b>	<b>2,040</b>	<b>-437</b>	<b>1,603</b>	<b>2.10</b>	<b>2.07</b>	<b>4,286.5</b>	<b>3,310.4</b>
	Galena	3,234	-415	2,819	2.31	2.05	7,460.3	5,777.4
	Nugget	2,243	-19	2,224	2.08	2.30	4,673.2	5,106.9
	Chinook	905	-220	685	2.13	2.04	1,925.3	1,396.8
	Eroica	74	*	*	2.33	*	172.6	*
	Olympic	51	0	51	2.21	2.22	112.6	113.2
	Other High Alpha *	806	650	1,456	2.63	2.21	2,118.8	3,220.5
	<b>Total High Alpha</b>	<b>7,313</b>	<b>-78</b>	<b>7,235</b>	<b>2.25</b>	<b>2.16</b>	<b>16,462.8</b>	<b>15,614.8</b>
	Others *	200	283	483	1.90	1.95	380.6	941.2
<b>Total Washington</b>	<b>12,828</b>	<b>-241</b>	<b>12,587</b>	<b>2.04</b>	<b>2.01</b>	<b>26,145.3</b>	<b>25,318.1</b>	
Oregon	Willamette	1,320	-77	1,243	1.29	1.64	1,703.7	2,043.5
	Tettnang	322	-59	263	1.19	1.00	382.7	262.0
	Fuggle	195	-24	171	1.60	1.04	312.0	177.5
	Perle	73	60	133	1.99	1.58	145.3	209.7
	Golding	*	*	99	*	1.06	*	104.5
	Mount Hood	96	0	96	1.90	1.85	182.4	177.6
	<b>Total Aroma</b>	<b>2,006</b>	<b>-1</b>	<b>2,005</b>	<b>1.36</b>	<b>1.48</b>	<b>2,726.1</b>	<b>2,974.8</b>
	Nugget	1,256	-15	1,241	1.86	2.40	2,342.0	2,980.2
	<b>Total High Alpha</b>	<b>1,256</b>	<b>-15</b>	<b>1,241</b>	<b>1.86</b>	<b>2.40</b>	<b>2,342.0</b>	<b>2,980.2</b>
	Others *	174	-38	136	1.46	1.48	254.6	201.4
<b>Total Oregon</b>	<b>3,436</b>	<b>-54</b>	<b>3,382</b>	<b>1.55</b>	<b>1.82</b>	<b>5,322.7</b>	<b>6,156.4</b>	
Idaho	Cluster	330	-7	323	2.25	2.20	743.8	710.7
	<b>Total Bitter</b>	<b>330</b>	<b>-7</b>	<b>323</b>	<b>2.25</b>	<b>2.20</b>	<b>743.8</b>	<b>710.7</b>
	Galena	263	7	270	1.85	1.76	486.6	476.3
	Chinook	139	0	139	1.86	2.00	259.2	277.6
	<b>Total High Alpha</b>	<b>402</b>	<b>7</b>	<b>409</b>	<b>1.86</b>	<b>1.84</b>	<b>745.8</b>	<b>753.9</b>
Others *	887	-51	836	1.18	1.22	1,048.7	1,023.0	
<b>Total Idaho</b>	<b>1,619</b>	<b>-51</b>	<b>1,568</b>	<b>1.57</b>	<b>1.59</b>	<b>2,538.3</b>	<b>2,487.6</b>	
<b>Total Aroma</b>	<b>5,281</b>	<b>-10</b>	<b>5,271</b>	<b>1.47</b>	<b>1.60</b>	<b>7,741.5</b>	<b>8,426.5</b>	
<b>Total Bitter</b>	<b>2,370</b>	<b>-444</b>	<b>1,926</b>	<b>2.12</b>	<b>2.09</b>	<b>5,030.3</b>	<b>4,021.1</b>	
<b>Total High Alpha</b>	<b>8,971</b>	<b>-86</b>	<b>8,885</b>	<b>2.18</b>	<b>2.18</b>	<b>19,550.6</b>	<b>19,348.9</b>	
<b>Total Others</b>	<b>1,261</b>	<b>194</b>	<b>1,455</b>	<b>1.34</b>	<b>1.49</b>	<b>1,683.9</b>	<b>2,165.6</b>	
<b>USA TOTAL</b>	<b>17,883</b>	<b>-346</b>	<b>17,537</b>	<b>1.90</b>	<b>1.94</b>	<b>34,006.3</b>	<b>33,962.1</b>	

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

\* Others include: **Washington:** Aquila, Banner, Columbus, Fuggle, Northern Brewer; 1997 also: Liberty, Eroica;

**Oregon:** Aquila, Banner, Cascade, Chinook, Cluster, Eroica, Galena, 1996 also: Golding;

**Idaho:** Banner, Cascade, Mount Hood, Nugget, Olympic, Perle, Tettnang, Willamette;

Source: HGA Report

## Variety Development

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

Variety	1993 ha	1994 ha	1995 ha	1996 ha	1997 ha
Willamette	2,561	2,568	2,453	2,746	3,082
Tettnang	1,108	1,139	1,318	1,128	908
Cascade	553	540	457	423	420
Mount Hood	837	837	568	483	319
<b>Total main Aroma</b>	<b>5,059</b>	<b>5,084</b>	<b>4,796</b>	<b>4,780</b>	<b>4,729</b>
Cluster	2,704	2,480	2,418	2,295	1,795
<b>Total main Bitter</b>	<b>2,704</b>	<b>2,480</b>	<b>2,418</b>	<b>2,295</b>	<b>1,795</b>
Nugget	2,636	2,830	3,310	3,499	3,638
Galena	3,719	3,621	3,631	3,497	3,098
Chinook	1,112	1,075	1,084	1,044	816
<b>Total main High Alpha</b>	<b>7,467</b>	<b>7,526</b>	<b>8,025</b>	<b>8,040</b>	<b>7,552</b>

### Growth

**Washington** – The winter of 1996/97 produced record snowfalls in the Yakima Valley, covering fields through the end of February with a protective blanket of snow. The record volume of snow even caused the collapse of many storage buildings and hop kilns. When the snow finally melted in March, soils remained saturated for some time, delaying spring work and creating an abnormally high relative humidity that ultimately favored the growth of fungal diseases.

The subsequent cooler than normal temperatures did not significantly delay plant development during the early part of the season, allowing for an average crop to be produced. However, on June 20, the fungal disease powdery mildew was discovered for the first time in a commercial hop field in the Pacific Northwest. Although the disease was originally thought to do little damage to the crop and seemed to be restricted to only one of the three Washington growing districts, the absence of appropriate fungicides, the lack of knowledge about the disease and the unexpectedly high proportion of susceptible varieties resulted in a very rapid spread of the disease. Even though Washington received a crisis exemption for the fungicide Rubigan (fenamirrol) by mid July, application of this chemical only slightly dampened the destructive powers of powdery mildew. By late July, the fungus had already in-

festated some yards to such an extent that they had to be taken down and the infected vines burned on the ground.

In total, about 600 ha were not harvested at all and another 800 to 1,000 ha were harvested pre-maturely. Powdery mildew is estimated to have reduced the Washington crop by approximately 3,600 tons of hops or 12% of the anticipated state production. Varieties most affected in yield were **Symphony**, **Galena** and **Cluster**, while **Willamette** and **Chinook** were affected in quality. **Nugget**, **Columbus** and **Mt. Hood** remained resistant to the disease.

**Oregon** – The winter and early spring generated record rainfalls, but did not result in the same severe and damaging floods as the previous two years. Except in some low lying areas, growers were able to complete spring work on time and apply preventative downy mildew sprays, allowing plants to develop adequately. While some aroma varieties, especially **Fuggle**, bloomed early, growth in **Nugget** throughout the remainder of the season was normal to above normal.

The proximity to the Yakima Valley and the active travel between the two growing states raised the possibility of powdery mildew transmission. However, precautionary measures adopted by both growing communities were sufficient to prevent the disease from entering the state during crop 1997.

**Idaho** – Sufficient precipitation in the mountains provided adequate irrigation water throughout the growing season. Temperatures remained average throughout the summer months, allowing for normal plant development. Also in this state, powdery mildew was not found in crop 1997.

### Quality

While both Oregon and Idaho hops were of overall good appearance, having record low leaf and stem contents of 0.64% and 0.69%, respectively, Washington hops were most inconsistent in quality. In this state, the presence of the powdery mildew fungus on cones caused large numbers of lots to be rejected. Further rejections were the result of uncharacteristically high seed content especially in the variety Cluster. Sporadic but severe spider mite damage also occurred.

Aside from the appearance defects caused by powdery mildew, the disease depressed alpha values in susceptible varieties either by preventing cones from developing normally or by making the growers harvest prematurely. It is estimated that approximately 15% of the anticipated alpha was lost and that total alpha production was close to 3,100 tons of alpha instead of the 3,650 tons originally anticipated.



## Alpha acid table

Alpha acid contents of the main American varieties from 1993 - 1997:

Variety	1993	1994	1995	1996	1997	Average
Willamette	4.5%	3.6%	4.0%	3.8%	3.8%	3.9%
Tettnang	4.6%	3.1%	3.2%	3.8%	3.8%	3.7%
Mount Hood	4.5%	3.4%	3.2%	3.9%	4.3%	3.9%
Cascade	5.7%	4.1%	3.8%	5.4%	5.0%	4.8%
Cluster	7.4%	6.4%	6.2%	6.3%	6.4%	6.5%
Galena	12.4%	11.3%	11.0%	11.1%	10.6%	11.3%
Nugget	12.6%	12.4%	11.7%	12.2%	12.0%	12.2%
Chinook	11.7%	10.4%	10.4%	11.0%	10.3%	10.8%

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

### Spot Market

By the time the acreage survey was released in early June, the industry realized that crop 1997 could potentially be the largest alpha crop in history, possibly topping the previous year's alpha output by another 10%. However, already by late July, when the first fields were destroyed by powdery mildew, discussions turned from the industry not being able to market the expected alpha at any price to the industry needing to cover shortfalls at prices above \$1.40/lb.

As harvest commenced, small quantities of **Nugget** and **Galena** sold at \$1.50/lb but prices dropped quickly to \$1.25/lb, again for small quantities. Toward the end of September, it became clear that powdery mildew had

not reduced the crop by 20% or even 30%, as some reports had suggested, but only by 10% and that the total alpha production was still roughly equal to 1996. The fact that the US had produced a large alpha crop and that Germany had exceeded the previous year's record crop, halted any market activity. Only by late November did the alpha market pick up again with **Nugget** spots in Oregon selling initially at \$0.65/lb and then \$0.75/lb. However, this market was also short-lived and it is estimated that less than 50% of the total 2,500 tons on the high alpha spot market was sold, leaving a calculated 300 tons of alpha still in grower's hands. Most of this quantity and the remaining unsold alpha from the 1996 crop, estimated in excess of 50 tons of

hops, has been processed into pellets or extract and is likely to be held until prices exceed production costs.

Shortly before harvest, a large domestic brewer indicated that it would not renew contracts for **Cluster**, **Cascade** and **Tettnang** in the future, affecting approximately 1000 ha. This news depressed the **Cluster** and aroma spot market. While some **Cluster** spots sold for \$1.00/lb, **Tettnang** did not sell at any price. **Cascade** spots sold but at \$1.20 and \$1.35/lb. As powdery mildew reduced the Washington **Willamette** crop in terms of both size and quality, all Oregon spot quantities were purchased, at prices of \$1.85 to \$2.00/lb.

### Contract Market

As in the year before, no futures market developed after lackluster spot market. The presence of large inventories in grower's hands from crops 1996 and 1997, the very low prices in Europe and the record acreage levels

in the US have held back interest. As a matter of fact, the forward contracted quantities for 1998 and beyond remained virtually unchanged compared to the same years 12 months ago.

Based on a projected crop of 31,300 tons for 1998 and subsequent years,

US growers have pre-sold only their 1998 crop in line with normal patterns. For crop 1999, the contracting rate is substantially less than at any time in recent history, having sold only 61% compared the average of 84%, and

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### Quantities Contracted Forward (in to)

Report as of Spring	same Crop Year	Years forward				
		1 Years	2 Years	3 Years	4 Years	5 Years
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
1996	30,073	28,486	22,498	13,653	9,117	3,765
1995	30,844	27,034	18,552	15,150	6,713	4,581
1994	33,022	30,935	21,274	17,146	14,560	7,756
1993	29,166	28,032	22,407	9,163	4,944	3,992

### Degree of Forward Contracting (in %)

1998	89%	61%	51%	29%	9%	6%
Ø 1993-97	90%	84%	61%	42%	23%	14%

points toward further large scale acreage removal, unless renewed interest in future contracts can be generated.

The few future contracts entered into mostly satisfied specific varietal demand. In January, **Mt. Hood** sold at \$1.85/lb plus premiums starting in 1998 and extending through the year

2000. In spring, a short-lived **Galena** market developed for 1998 only, commanding prices of \$1.25 to \$1.50/lb plus premiums. Subsequent longer-term contracts through 2002 for **Galena** and **Nugget** coupled with a super high alpha variety saw prices beginning in 1998 at \$1.15 and ending at

\$1.35/lb plus premiums. Contracts for the super high alpha variety were written at \$1.05/lb plus premiums for 1999. Quantities involved in all transactions were relatively minor, as the pricing levels were at or below the grower's production costs.

### Financial Aspects of the Industry

Crop 1997 placed a financial burden on US growers. Not only was the average contract price the lowest in the last six years, but growers also lost revenue due to rejected hops or destroyed

yards. This was especially difficult, since powdery mildew control measures increased the costs of operating by an estimated 10% or approximately \$650 per ha. In all three states, the average revenue per acre was close to the estimated average production costs

of \$6,600 per ha, indicating that only the most efficient operations made any profits or positive cash flow. Coupled with the extremely low and unevenly distributed forward contracting rate, a further reduction of the number of growers appears likely.

Estimate Revenue per Hectare (in US\$)							
	1992	1993	1994	1995	1996	1997	Ø
Washington	7,988	8,000	7,867	8,007	7,323	6,722	7,651
Oregon	6,793	7,222	8,299	7,481	6,316	6,546	7,110
Idaho *	7,640	7,790	8,760	6,941	6,644	6,112	7,315
<b>USA TOTAL</b>	<b>7,731</b>	<b>7,844</b>	<b>8,007</b>	<b>7,830</b>	<b>7,052</b>	<b>6,668</b>	<b>7,522</b>

Average Prices per kg (in US\$)							
	1992	1993	1994	1995	1996	1997	Ø
Washington	3.79	3.79	3.90	3.70	3.59	3.46	3.71
Oregon	4.10	4.30	4.32	4.19	4.08	3.59	4.10
Idaho	3.73	3.90	3.95	3.55	3.26	3.28	3.61
<b>USA TOTAL</b>	<b>3.84</b>	<b>3.88</b>	<b>3.99</b>	<b>3.77</b>	<b>3.64</b>	<b>3.48</b>	<b>3.77</b>

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

### New Hop Varieties

Crop 1997 saw the continued rapid expansion of proprietary super high alpha varieties (varieties producing

400 to 550 kg alpha per ha). While **Columbus**, **Tomahawk** and **Zeus** among others appeared to be resistant to powdery mildew for crop 1997, the

variety **Symphony** was not. Consequently, all **Symphony** rootstock was removed after harvest.

## CANADA

The 1997 growing season in British Columbia started with wet conditions but turned normal during the summer growing period. However, production was below average because the cones did not achieve their normal size.

The aroma varieties **Bramling**, **BC Kent Golding** and **Willamette** were grown on an area of approx. 125 ha. The total production was 94 to. Both quality of the crop and alpha content were average.

1997 was the last year in which hops were grown on the British Columbia farms. Since these farms were the only hop farms in the country, Canada will no longer be a hop growing nation.



# ASIA

## CHINA

### Acreege and Production 1997

Area	Acreege ha	Ø-Yield to/ha	Production to
Xinjiang	2,500	2.70	6,750.0
Gansu	1,742	2.67	4,646.0
Ningxia	50	2.40	120.0
Others	100	2.30	230.0
<b>CHINA TOTAL</b>	<b>4,392</b>	<b>2.67</b>	<b>11,746.0</b>

#### Xinjiang

The crop estimate of 6,750 to contrasts with the production volume of 4,700 to published by the farms. This difference can be explained partly by the need of the farms for various reasons to keep their published production artificially low.

**Tsingdao Flower 641** accounted for 90% of the acreege in Xinjiang and had an average alpha content (EBC 7.4) of 6.0%. The **Kilin Fenglu** variety had a share of total acreege of 5% and an average alpha content of 8.0%.

**Zha Yi**, formerly known as Xinjiang Saaz, accounted for 2% of total acreege. Its average alpha content was 3.0%. The remaining varieties made up 3% of total acreege. Viewed as a whole, alpha acid content in Xinjiang in 1997 was low.

#### Gansu

In Gansu Province, the acreege on which hops were grown by 26 farms was 5% lower than in the previous year.

As already mentioned in the 1996/97 Barth Report, the reliability of the figures given is extremely questionable.

#### Market development

Prices reached historically high levels in Xinjiang in 1997. A top price of 14,400 RMB/to (3,200 DM/to) was paid for hops with an alpha content of 6.5% - 7.0%. The reasons for this were the low production volume, of which a high proportion was of poor quality, the high purchase price paid by one particular trading company with a dominant market position and direct purchases from the farms by many breweries.

Despite the poor harvest, approx. 700 to of the crop remained unsold in May 1998.

## JAPAN

### Acreege and Production 1997

Brewing Group	Acreege ha	Ø-Yield to/ha	Production to
Kirin	257	1.79	460.0
Sapporo	104	2.21	229.6
Asahi	34	1.99	67.7
Suntory	3	1.70	5.1
<b>JAPAN TOTAL</b>	<b>398</b>	<b>1.92</b>	<b>762.4</b>

Acreege in Japan was reduced by a further 35 ha in 1997.

#### Growth and Quality

1997 was a bad crop year for Japan. One tenth of the cone hops was rendered useless for brewing purposes by severe rainfall from late May to mid-June and by three typhoons between late June and late July. In some

regions, powdery and downy mildew developed as a result of the heavy rainfall during the growth phase.

The average alpha acid content (converted to EBC 7.4) was 6.3% for **Shin-syu Wase** and 5.6% for **Furano Ace**.

#### Market Situation

In the Japanese hop market, hops are grown only by farms which have

three to five-year contracts with various breweries. The 1997 crop was sold in its entirety. As in the previous year, 99% of the crop was classed as quality grade I.

The purchasing prices paid by the breweries were the same as those of the previous year at 2,170 JPY/kg (quality grade I), 2,063 JPY/kg (quality grade II) and 1,552 JPY/kg (quality grade III). The price difference over the previous year is accounted for by the sales tax increase from 3% to 5%.

The 1998 crop has already been sold by contract to various breweries.

## 1998 CROP

## AMERICA

## ARGENTINA

## Acreage and Production 1998

Area	Variety	Acreage ha	Ø-Yield to/ha	Production to
Bolsón	Cascade	124	1.23	153.0
	Andere	7	0.86	6.0
	<b>Total Bolsón</b>	<b>131</b>	<b>1.21</b>	<b>159.0</b>
Alto Valle	Mapuche	10	1.30	13.0
	Traful	3	1.67	5.0
	Andere	23	0.74	17.0
	<b>Total Alto Valle</b>	<b>36</b>	<b>0.97</b>	<b>35.0</b>
<b>ARGENTINIA TOTAL</b>		<b>167</b>	<b>1.16</b>	<b>194.0</b>

In the Río Negro valley (Alto Valle hop region) the alpha acid content was lower than usual, unlike the Bolsón region where content was average. The aroma variety **Cascade** is still the predominant variety in Argentina although imports of European and North American high-alpha varieties as well as proprietary breeds are gradually extending the variety range.

## Growth and Quality

The growing season was characterized by cool, wet weather in the majority of hop-growing districts. Both the

low temperatures and the high humidity brought about below-average yields in both regions.

## AFRICA

## SOUTH AFRICA

## Acreage and Production

Variety	Development of Acreage			Development of Production			
	1997	+/-	1998	1997	1998	1997	1998
	Acreage ha			Ø-Yield to/ha		Production to	
Southern Brewer	626	-73	553	1.51	1.64	947.0	907.0
Outeniqua	16	22	38	1.50	0.87	24.0	33.0
Southern Promise	9	1	10	1.56	1.50	14.0	15.0
<b>SOUTH AFRICA TOTAL</b>	<b>651</b>	<b>-50</b>	<b>601</b>	<b>1.51</b>	<b>1.59</b>	<b>985.0</b>	<b>955.0</b>

## Growth and Quality

Conditions for hop growing were favourable, with a cold winter followed by a warm spring with sufficient precipitation. The final crop was diminished by an excessively cold summer.

The alpha acid contents (EBC 7.4) were as follows: **Southern Brewer**

10.4%, **Outeniqua** 13.6% and **Southern Promise** 10.8%.

## Market situation

The crop was sold in its entirety to South African breweries through forward contracts at an average price of 12 DM/kg for Type 90 pellets.

## ZIMBABWE

Despite plans to resume hop growing in 1998, no hops were planted this year.





# AUSTRALIA – OCEANIA

## AUSTRALIA

### Acreage and Production

Area	Variety	Development of Acreage			Development of Production			
		1997	+/-	1998	1997	1998	1997	1998
		Acreage ha			Ø-Yield to/ha		Production to	
Tasmania	<b>Aroma</b>	47	-13	34	1.36	1.09	64.0	37.0
	Cluster	3	*	*	2.00	*	6.0	*
	Pride of Ringwood	434	-167	267	2.67	2.81	1,160.0	750.0
	<b>Total Bitter</b>	<b>437</b>	<b>-170</b>	<b>267</b>	<b>2.67</b>	<b>2.81</b>	<b>1,166.0</b>	<b>750.0</b>
	Nugget	92	-36	56	1.93	2.91	178.0	163.0
	Victoria	137	137	50	2.47	2.76	339.0	138.0
	Opal	38	38	38	2.58	3.03	98.0	115.0
	<b>Total High Alpha</b>	<b>267</b>	<b>-123</b>	<b>144</b>	<b>2.30</b>	<b>2.89</b>	<b>615.0</b>	<b>416.0</b>
	<b>Others</b>	<b>24</b>	<b>-7</b>	<b>17</b>	<b>1.83</b>	<b>1.59</b>	<b>44.0</b>	<b>27.0</b>
	<b>Total Tasmania</b>	<b>775</b>	<b>-313</b>	<b>462</b>	<b>2.44</b>	<b>2.66</b>	<b>1,889.0</b>	<b>1,230.0</b>
Victoria	Cluster	18	-4	14	1.11	1.86	20.0	26.0
	Pride of Ringwood	155	-87	68	1.89	2.65	293.0	180.0
	<b>Total Bitter</b>	<b>173</b>	<b>-91</b>	<b>82</b>	<b>1.81</b>	<b>2.51</b>	<b>313.0</b>	<b>206.0</b>
	<b>Victoria</b>	<b>105</b>	<b>-71</b>	<b>34</b>	<b>3.27</b>	<b>3.21</b>	<b>343.0</b>	<b>109.0</b>
	<b>Others</b>	<b>0</b>	<b>26</b>	<b>26</b>	<b>0.00</b>	<b>0.46</b>	<b>0.0</b>	<b>12.0</b>
	<b>Total Victoria</b>	<b>278</b>	<b>-136</b>	<b>142</b>	<b>2.36</b>	<b>2.30</b>	<b>656.0</b>	<b>327.0</b>
<b>Total Aroma</b>	<b>47</b>	<b>-13</b>	<b>34</b>	<b>1.36</b>	<b>1.09</b>	<b>64.0</b>	<b>37.0</b>	
<b>Total Bitter</b>	<b>610</b>	<b>-261</b>	<b>349</b>	<b>2.42</b>	<b>2.74</b>	<b>1,479.0</b>	<b>956.0</b>	
<b>Total High Alpha</b>	<b>372</b>	<b>-194</b>	<b>178</b>	<b>2.58</b>	<b>2.95</b>	<b>958.0</b>	<b>525.0</b>	
<b>Total Others</b>	<b>24</b>	<b>19</b>	<b>43</b>	<b>1.83</b>	<b>0.91</b>	<b>44.0</b>	<b>39.0</b>	
<b>AUSTRALIA TOTAL</b>	<b>1,053</b>	<b>-449</b>	<b>604</b>	<b>2.42</b>	<b>2.58</b>	<b>2,545.0</b>	<b>1,557.0</b>	

\* Included in "Others".

Due to acreage reduction, production fell year-on-year by 50% in Victoria and 35% in Tasmania.

### Growth and Quality

In Victoria the summer was dry with temperatures around 35°C at times. El Niño was considered responsible for this. Most growers had to provide irrigation for a prolonged period. The situation continued until early February when 30 mm of rainfall brought relief.

In Tasmania the summer was equally dry. Hop growth in Northwest Tasma-

nia was satisfactory, although growing conditions were troubled by strong winds in the southern and north-eastern regions of the state in December. All the hopyards had to be irrigated for a prolonged period.

Due to climatic conditions, alpha acid content of all varieties, except for the variety Victoria from the Victoria region, was 1% - 2% lower than usual.

### New variety

**T7**, a triploid variety bred from Pride of Ringwood, continues to fulfil the ex-

pectations placed in it. This variety was harvested on 5.5 ha in 1998 producing an average yield of 3 to/ha in its second year. Its alpha content reached 13.5%, and over 14% is expected. A cohumulone content of 27% and a pleasant aroma make this an interesting variety.

### Market situation

By the end of May there were still 250 to of hops from the 1998 crop available on the spot market.

The Australian growers will be following market developments for this year's crop in the northern hemisphere very closely before they decide on the acreage of hops to be strung for their next crop.

As there are no fungal diseases in Australia, areas can be idled at minimal expense; the vines simply lie on the ground. The hops idled in 1998 were not dug out and can therefore be strung again and brought back into production with good yields in 1999.

### Alpha Acid Table

Variety (in form of pellets)	1997	1998
Pride of Ringwood - Tasmania	11.2%	9.5%
Pride of Ringwood - Victoria	9.0%	8.3%
Cluster	6.0%	5.5%
Nugget	12.0%	11.5%
Victoria	13.2%	13.5%
Opal	13.5%	12.5%
Tett nang/Hallertau	*	5.0%-6.0%
Willamette	7.7%	*

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

# NEW ZEALAND

## Production

Variety	1997/to	1998/to
NZ Hallertau Aroma	180.3	206.4
NZ Pacific Hallertau	11.9	24.6
<b>Total Aroma</b>	<b>192.2</b>	<b>231.0</b>
NZ Super Alpha	240.3	186.2
NZ Pacific Gem	191.8	145.8
NZ Green Bullet	95.9	56.0
NZ Sticklebract	31.3	9.9
NZ Southern Cross	15.7	13.4
<b>Total High Alpha</b>	<b>575.0</b>	<b>411.3</b>
Trial Varieties	1.8	2.1
<b>NEW ZEALAND TOTAL</b>	<b>769.0</b>	<b>644.4</b>

### Growth and quality

In New Zealand the reduction in acreage recorded was 6 ha compared to the previous year. Acreage in 1998 totalled 349 ha, of which 139 ha was for aroma hops.

The dry weather conditions in the

southern hemisphere caused by El Niño and the dry summer and strong winds in particular reduced production volume by approx. 15% per ha. The quality of the hops was considered very good and the alpha acid content was average for the various varieties.

The alpha acid content (EBC 7.4) was as follows:

NZ Hallertau Aroma	8.8 %
NZ Pacific Hallertau	6.3 %
NZ Super Alpha	13.8 %
NZ Pacific Gem	15.9 %
NZ Green Bullet	14.9 %
NZ Sticklebract	14.0 %
NZ Southern Cross	14.1 %

### Market situation

80% of the crop volume of 644.4 to was sold by forward contract. In May, less than 50 to of the 1998 crop remained unsold, but supplies of aroma hops had run out.

## PLANT DEVELOPMENT 1998

### Germany

In the winter and spring months, as in recent years, precipitation was significantly below the long-term mean. Unlike the previous year, however, temperatures in December and January were well above the average. In neither month did the average temperature fall below zero degrees. As a result, it was possible to begin spring work early, which had positive effect on crop development.

Thanks to ample rainfall in June the hops will continue to develop well in the coming weeks, although primarily the months of July and August are crucial for quality and volume.

The occasional incidence of pests and diseases is under control and no major problems are anticipated either.

Acreage in Germany has been significantly, if not sufficiently, reduced by approx. 1,500 ha (= 7%) and will therefore be approx. 20,000 ha this year.

### USA

A few cold spells interrupted an otherwise mild winter that was accompanied by sufficient precipitation to replenish mountain irrigation reservoirs. Much of the spring work focused on controlling the primary and secondary infection of powdery mildew in the state of Washington. Using frequent regional meetings as well as constant information exchanges on the Hopnet, the industry's electronic bulletin board, growers have been able to disseminate experiences effectively and implement new control measures quickly. In ad-

dition, the industry was able to obtain several fungicides on an emergency basis. However, whether growers will be able to successfully contain powdery mildew remains to be seen.

The total US growing area is projected to be reduced by 3,271 ha (= 18%) compared to 1997. Because of the inability to control powdery mildew adequately in unstrung yards, most of the idle acreage will be physically removed, which will slow the rate of potential expansion in future years. Nevertheless, the total alpha production at this time is estimated not to be significantly less than last year because of the increased plantings of super high alpha varieties.

## OUTLOOK 1998

While acreage in the USA is being reduced by about 18%, it is decreasing only by approx. 9% in Germany. Due to the shift in the variety range from aroma to high-alpha varieties, there

will probably be no major change in alpha acid production in these two countries.

In the Czech Republic acreage continues to be reduced sharply due to

persisting competitive pressure.

As a result of stockpiling on the part of the brewing industry there is no prospect of a recovery in the market in 1998.



# THE SALES TEAM AT JOH. BARTH & SOHN



*Back row, from left: Heinz Mayer, Hermann Freitag, Hans Wassmer,  
Rainer Krauß, Wolfgang Franz;  
Front row, from left: Dana Storck, Helga Alberti, Paul Judt, Adolfo Schott Steinberg*

The picture you see here has rarity value!  
The sales team at JOH. BARTH & SOHN is rarely gathered like this, since our sales territory is the world of breweries in the north, south, east and west.

Our sales representatives are always on the spot, be it at the equator, like **Hans Wassmer**, in Siberia, like **Paul Judt**, or, like **Adolfo Schott Steinberg**, in the Andes. **Wolfgang Franz** is to be found in the land of the rising sun, **Hermann Freitag** in the Puszta and **Dana Storck** by the Moldau.

While **Rainer Krauß** is on the road in Saxony, **Heinz Mayer** holds the fort in the Nuremberg office.

And finally, **Helga Alberti** is to be found wherever a troubleshooter is needed: one day by the Black Sea, the next in Colorado - basically, everywhere at the same time.

When it comes to hops, we speak your language!  
You can take our word for it - literally. Our team can provide you with expert advice in the following languages:

- English
  - French
  - Spanish
  - Russian
  - Czech
  - Polish
  - Croat
  - Serbian
  - Mandarin
  - Cantonese
- and, of course, German

But don't just take our word for it - see for yourself! We're pleased to be of assistance - any time and any place.



# THE MODERN HOP TRADE

The character of the modern hop trade has its origins in the long tradition of dealing with that very particular product called hops.

The establishment of central commodities exchanges for hops in the mid-nineteenth century in Nuremberg, London, Saaz and New York, stimulated by the railways and by rapidly rising beer consumption, revolutionized the international hop trade. These factors established the stock exchange character of a thrusting raw materials industry and created the conditions for the emergence of financially powerful trading companies with global business relations. These companies organized purchasing, sales and transport, frequently with long-term commodity financing, thus contributing to the advent of hops as an international trading commodity.

The international hop market today is supplied by an internationally integrated hop trade. The modern hop market is a global industry with few participants. The remaining hop companies - formerly service companies in the traditional sense of buyers and sellers of commodities - have expanded in the course of the last decades to form vertically integrated economic units with an international presence. Many hop trading companies today have their own hop farms in various producer countries as well as state-of-the-art processing plants where the

hops are processed into a wide range of products. Global purchasing, variety research, cultivation consulting, wide-ranging expertise in questions of analysis, industrial know-how, research and development in the field of new hop products and processing technology, and experience in advising customers are the most important functions in which a modern hop company has to excel in order to survive in a highly competitive environment.

An important part of the modern hop business is the long-term contract system introduced in Europe in 1958. It transformed the character of what until then had been a speculative business culture orientated solely towards the spot market. Thereafter, both growers and brewers were prepared to enter into supply contracts with the hop trade with a duration of several - mostly three to five - years on defined conditions (variety, quantity, crop year, quality, price). The aim of introducing long-term hop contracts was to stabilize the market and restrict the extreme price swings to the relatively small volume of the spot market. The long-term supply contracts guaranteed the hop growers their sales at cost-covering prices, while the brewing industry obtained its hops at fixed, calculable prices and with a previously defined quality.

The marketing system in the hop industry is unique among agricultural

products and requires the companies involved to have a strong capital base and be industrially organized but at the same time totally customer-orientated in order to be able both to finance the annual requirements of hops as a raw material and to give the otherwise unelastic market a certain mobility.

Another factor in the hop business which, although underestimated by all market participants, is becoming increasingly important is technological development. Due to the introduction of new (mostly patented) enhanced hop products with application-specific advantages for the final product of beer, modern hop provision is in the midst of fundamental change. It is no longer the source material hops that constitutes the main cost factor in the product but the factors research and development, manufacturing, financing and distribution.

By developing products with high value-added potential for the brewing industry, a small number of companies in today's hop industry have left the traditional domain of pure hop trading and draw their inspiration from the foodstuffs and flavouring industries. At the same time they have realized that hops contain substances which not only can be used in the brewing industry but also have a wider range of potential applications.

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.

