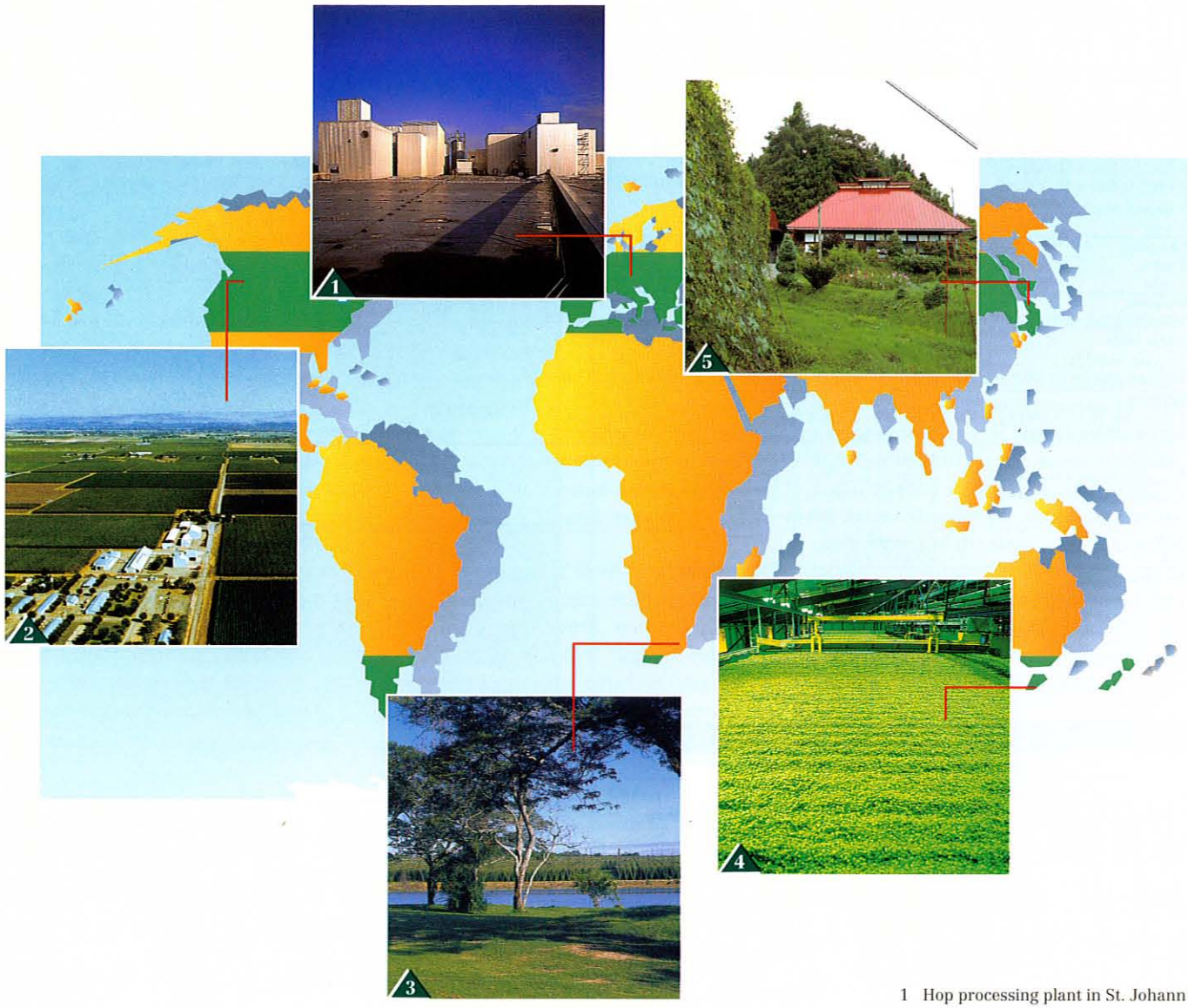
THE BARTH REPORT

HOPS 1995/96



1 Hop processing plant in St. Johann
Hallertau, Bavaria/Germany

2 Hop farm in Yakima Valley
Washington State/USA

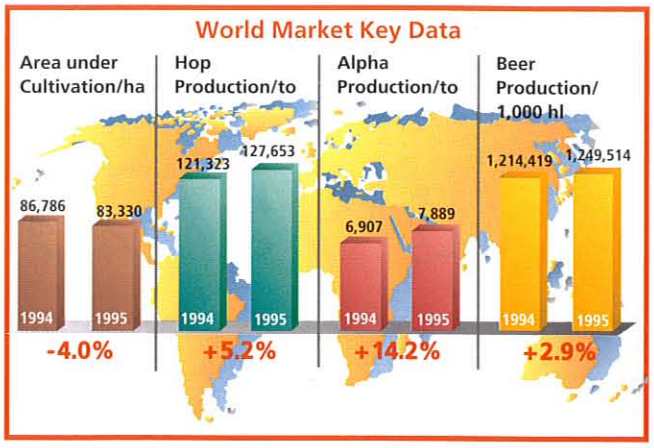
3 Hop yard near Marondera
Zimbabwe

4 Hop kiln at Bushy Park
Tasmania/Australia

5 Traditional hop farm
Iwate/Japan

Joh. Barth&Sohn

Nuremberg



Conversion Table

Area:

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

Length:

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

Volume:

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

Weight:

1 metr. ton (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

Temperatures:

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

Pressure:

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 1995	Buy 1996	Spot Market Sell 1995	Sell 1996
USA[1]	1.385	1.530	1.393	1.538
Great Britain[1]	2.220	2.354	2.234	2.368
Canada[1]	1.008	1.114	1.016	1.122
Netherlands	89.221	89.233	89.441	89.453
Switzerland	121.150	121.670	121.350	121.870
Belgium	4.859	4.856	4.879	4.876
France	28.340	29.483	28.460	29.603
Denmark	25.532	25.835	25.652	25.955
Norway	22.412	23.335	22.532	23.455
Sweden	19.100	22.650	19.220	22.770
Italy[2]	0.855	0.986	0.863	0.994
Austria	14.201	14.192	14.241	14.232
Spain	1.145	1.186	1.153	1.194
Portugal	0.945	0.969	0.951	0.975
Japan	1.675	1.414	1.678	1.417
Finland	32.310	32.330	32.470	32.490
Ireland	2.275	2.414	2.289	2.428
Free Market Exchange Rates				
Australia[1]	0.994	1.226	1.002	1.234
Mexico	20.010	20.450	--	21.250
New Zealand[1]	0.924	1.048	0.928	1.052
Poland	59.840	57.130	--	57.430
Czech Republic[2]	5.362	5.523	5.377	5.538

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

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Nuremberg, July 1996

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Political Situation

In mid-1995, the situation in Bosnia-Herzegovina began to worsen. In July, Bosnian Serbs once again challenged the authority of the UNO peace-keeping troops by illegally occupying Muslim safe areas and enclaves. In August, the Croatian army recaptured the entire area of Serbian-occupied Krajina. The bombardment of defenceless civilians in Sarajevo by Serbian artillery was the last straw for the international community. With active participation of the USA, air attacks were carried out on Serbian targets by NATO forces, which finally forced all sides to participate in a peace conference under US auspices in Dayton, Ohio. The peace treaty negotiated there was signed in Paris by the heads of state of Bosnia, Croatia and Yugoslavia on December 14, 1995. Despite the presence of 60,000 NATO troops the situation remains unstable.

A further step towards peace in the Middle East was taken by Isreal and the PLO in September 1995 by signing a treaty to extend the autonomy of the West Bank. Acts of terrorism and extremism on both sides are making it difficult for moderate elements to pursue the path of peaceful reconciliation. On November 4, 1995 the Israeli Prime Minister, Yitzhak Rabin, was assassinated. At the end of May 1996, the conservative politician Binjamin Nethanyahu took over as Israel's prime minister after a narrow election victory.

In Russia it was decided by a run-off in early July that Boris Jelzin will lead the country as president for the next four years. In the Caucasian region of Chechnya, despite several cease-fires the Russian army has so far failed to achieve its goal of putting down the uprising.

Economic Situation

The world economy was generally characterized by moderate growth and relatively stable exchange rates.

In this favourable climate, the economies of South-East Asia continue to top the economic growth league. On the American continent, the USA experienced untroubled, healthy economic development. The economies of the major industrial nations of Europe continue to stagnate.

At a meeting of the 15 member countries of the European Union in December 1995

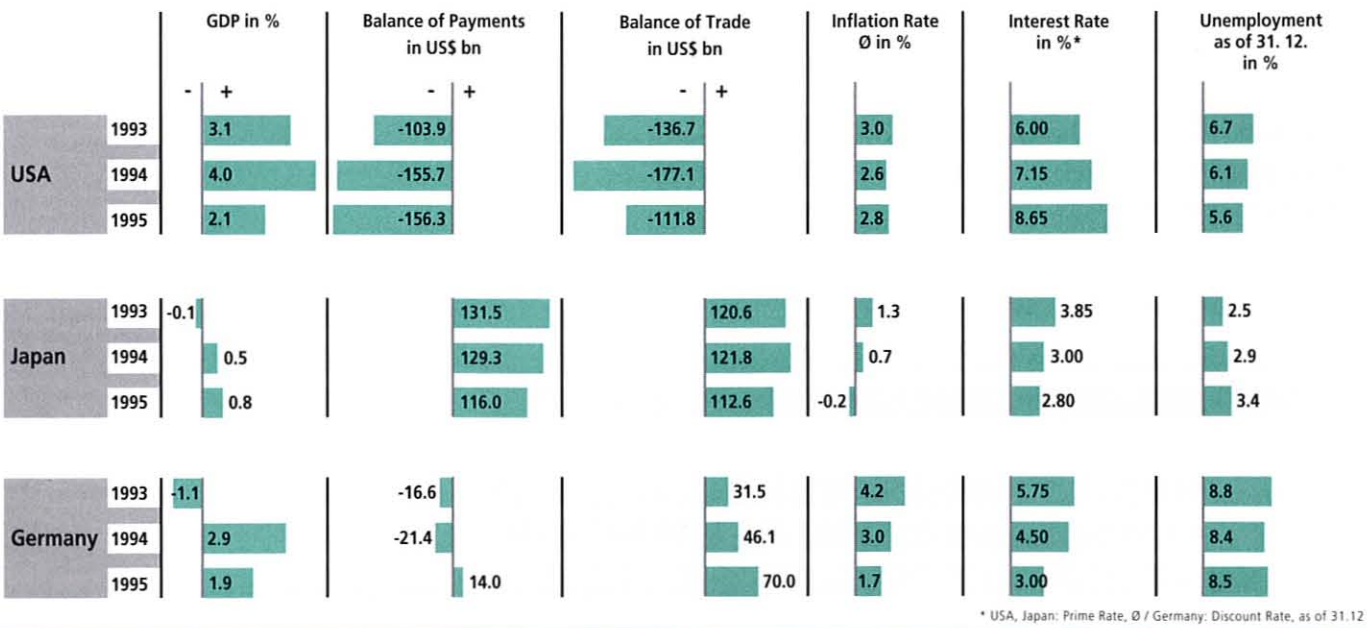
- it was decided that the "EURO" would be the future single currency unit (see page 24);
- the timetable for monetary union was reaffirmed;
- another 11 countries in Eastern and Southern Europe were promised the possibility of candidature, provided that political and economic conditions allow.

In the spring of 1998, therefore, it will be determined which countries fulfill the convergence criteria, entitling them to take part in the first stage of monetary union. A positive effect of this is the efforts of governments in Europe towards greater monetary and fiscal discipline.

In Germany, there are unmistakeable signs of recession accompanied by high unemployment. It is becoming increasingly apparent that the economy there, overburdened with levies and taxes, is no longer capable of sustaining the social burdens of the state in their present form.

Global transfer and exchange of information via worldwide data networks are beginning to exert an extraordinary influence on all spheres of human activity.

Key Data of the USA, Japan and Germany



* USA, Japan: Prime Rate, Ø / Germany: Discount Rate, as of 31.12

World Beer Production 1994/95

Figures in 1,000 hl

Europe

Country	1994	1995
Germany	118,577	117,403
Great Britain	*58,357*	58,849
Spain	25,024	25,313
Netherlands	22,175	23,118
France	17,677	18,311
Czech Republic	*18,114*	17,839
Fed. of Russia (CIS)	*20,700* [3]	17,760
Poland	*14,019*	15,158
Belgium	*14,743*	14,833
Italy	12,098	11,990
Denmark	9,410	10,058
Austria [1]	*10,144*	9,662
Romania	9.066	8,558
Hungary	8,264	7,806
Ireland	7,186	7,402
Turkey	6,019	6,946
Portugal	6,637	6,928
Ukraine (CIS)	9,058	5,750
Yugoslavia	4,678	5,448
Sweden [1]	5,430	5,309
Finland [1]	*4,538*	4,823
Bulgaria	*4,792*	4,737
Slovak Republic	4,494	4,399
Greece	4,250	4,085
Switzerland	3,891	3,763
Croatia	3,089	3,167
Norway	*2,175*	2,256
Slovenia	2,100	2,100
Belorus (CIS)	1,490	1,500
Lithuania	1,350	1,080
Kazakhstan (CIS)	*1,290*	830
Macedonia	*725*	620
Latvia	*611*	613
Uzbekistan (CIS)	*620**	600 *
Luxemburg	531	518
Other CIS-countries [2]	*600**	500 *
Estonia	474	481
Cyprus	360	340
Bosnia-Herzegovina	*130**	180
Malta	185	160
Albania	72	109
Georgia (CIS)	10	90
Iceland	71	82
Total	**435,224**	**431,474**

Australia/Oceania

Country	1994	1995
Australia	17,522	17,876
New Zealand	3,579	3,551
Papua-New Guinea	404	397
Fiji Islands	161	156
Tahiti	140	140
New Caledonia	60	110
Samoa	55	52
Solomon Islands	20	22
Tonga	*7*	6
Vanuatu	*6*	5
Total	**21,954**	**22,315**

America

Country	1994	1995
USA	*237,073*	233,659
Brazil	62,500	84,000
Mexico	45,168	44,487
Canada	22,991	22,824
Colombia	*15,700*	17,800
Venezuela	15,423	15,876
Argentina	11,306	10,423
Peru	*7,720*	8,560
Chile	3,960	4,120
Ecuador	1,800	2,500
Dominican Republic	2,100	2,229
Bolivia	*1,409*	1,571
Paraguay	1,750	1,500
Cuba	*1,000**	1,163 *
Costa Rica	*1,030*	1,155
Panama	1,291	1,080
Honduras	952	1,022
Guatemala	1,200	1,000
Uruguay	850	850
El Salvador	750	748
Jamaica	770	662
Puerto Rico	434	400
Trinidad	360	332
Nicaragua	500	280
Dutch Islands	140	140
Bahamas	110*	138
Haiti	120	136
Guyana	110*	120 *
St. Lucia	95	85 *
Barbados	120*	75 *
Surinam	*69*	66
Martinique	60	60 *
Belize	70	40
St. Vincent	28	30
Grenada	33	25 *
Antigua	14	17
St. Kitts	17	17 *
Dominica	0	2
Guadeloupe	30	0
Total	**439,053**	**459,192**

Asia

Country	1994	1995
China	139,536	154,600
Japan	*71,350*	67,235
South Korea	17,121	17,734
Philippines	14,713	13,990
Thailand	5,170	6,574
Vietnam	3,130	4,500
Taiwan	4,890	4,322
India	3,647	4,293 *
Indonesia	1,540	1,785
Hong Kong	1,731	1,750 *
Singapore	692	1,057
North Korea	1,000*	1,000 *
Malaysia	859	942
Israel	532	700
Nepal	200*	330 *
Jordan	50	180
Laos	102	151
Sri Lanka	120	132
Mongolia	100*	100 *
Lebanon	90	90
Syria	90	90 *
Myanmar (Burma)	60*	60 *
Iraq	90*	50 *
Pakistan	*15*	12
Cambodia	10*	10 *
Yemen	5	0
Total	**266,843**	**281,687**

Africa

Country	1994	1995
South Africa	23,700	24,500
Nigeria	5,300	4,500
Cameroon	3,300	3,244
Kenya	2,720	3,200
Burundi	1,356	1,726
Zaire	977	1,679
Zambia	698	1,100
Ivory Coast	699	1,077
Zimbabwe	1,200	1,071
Tanzania	450	990
Ethiopia	895	954
Gabon	801	820
Ghana	638	759
Tunesia	*550*	672
Namibia	588	628
Morocco	597	620
Uganda	308	555
Egypt	400	550
Ruanda	524	529
Congo	285	478
Algeria	985	450
Botswana	431	397
Lesotho	345	389
Burkina Faso (Upper Volta)	300	362
Mauritius	340	333
Benin	264	322
Madagascar	219	319
Swaziland	277	318
Angola	95	312
Malawi	280*	280 *
Togo	313	269
Mozambique	155	244
Eritrea	170	221
Réunion	174	209
Senegal	130	142
Chad	111	93
Guinea	82	80
Niger	90	80
Liberia	66	62
Seychelles	57	61
Cape Verde Islands	37	60
Mali	45	54
Sierra Leone	36	38
Sao Tomé	30	35
Central African Republic	280	27
Guinea Bissau	27	24
Gambia	20	13
Total	**51,345**	**54,846**

1) as of January 1995 member state of EU
2) Armenia, Azerbaijan, Kyrgystan, Moldova, Taijkistan, Turkmenistan
(although belonging mainly to Asia geographically, the entire CIS will be listed under Europe for the time being for reasons of comparibility)

3) Other Sources: 17,350 for 1994

* estimated

italics: corrections of 1994 figures contained in last year's report; these figures were not available until after the time of going to press.

	1994	1995
WORLD TOTAL	**1,214,419**	**1,249,514**

Output Development

Beer production in the different continents developed as follows:

	1994 1,000 hl	1995 1,000 hl	1995 +/- 1,000 hl	1995 +/- % rel.	1994 +/- % rel
European Union*	298,379	318,602	20,223	6.8%	2.6%
Rest of Europe	136,845	112,872	-23,973	-17.5%	-8.2%
Europe total	**435,224**	**431,474**	**-3,750**	**-0.9%**	**-1.1%**
North America	260,064	256,483	-3,581	-1.4%	-0.1%
Centr.America/Caribbean	56,392	55,323	-1,069	-1.9%	2.7%
South America	122,597	147,386	24,789	20.2%	5.8%
America total	**439,053**	**459,192**	**20,139**	**4.6%**	**1.9%**
Africa	**51,345**	**54,846**	**3,501**	**6.8%**	**-4.8%**
Asia	**266,843**	**281,687**	**14,844**	**5.6%**	**11.1%**
Australia/Oceania	**21,954**	**22,315**	**361**	**1.6%**	**-2.4%**
WORLD TOTAL	**1,214,419**	**1,249,514**	**35,095**	**2.9%**	**2.3%**

* 1995 incl. Finland, Austria, Sweden

The positive development in beer production in 1995 can be attributed above all to Brazil and China. Brazil proved to be the driving force of the growing South American brewing industry, while China consolidated its position as the world's second-largest beer producer. The major changes in Europe are also the result of the expansion of the European Union in 1995. Had it not been for this expansion, the increase among the EU countries in 1995 would actually have been only 0.58 %, and the decrease in the other European states - 4.71 %. Africa appears to have got over the worst and achieved growth for the first time since 1990.

Market Analysis

The 1995 harvest proceeded similarly to that of the previous year. Although specialists' expectations for the crop in the world's major hop-growing regions, Germany and the USA, ranged from average to good, it became apparent once the hops had been harvested that the **dryness and heat wave** that had prevailed in Central Europe in the summer of 1995 had had negative effects on the alpha acid values.

On the **spot market for German hops,** initial reserve on the part of buyers due to the good volume harvested brought about a fall in prices. In late September, once the extent of the problem of low alpha values became clear, prices rose noticeably. On the other hand, **US spot hops** profited from the alpha weakness in Europe as in the previous year, as the world's brewing industry fell back on lower cost raw materials from the USA to cover their additional requirements of bitter varieties. This strengthened quotations for US hops and caused all available stocks to be cleared quickly.

German growers once again were made to see that growing old varieties **(Hersbrucker, Northern Brewer, Brewers Gold)**, which still make up roughly 50 % of hop acreage, has become questionable for reasons of yield and price. Their sensitivity to extreme climatic conditions – partly on account of the age of the plants – is a clear sign of the need to accelerate the process of variety conversion. Such programmes are particularly necessary to reinforce international faith in the performance of the German hop-growing industry.

While many hop-growing countries of Western Europe were not very pleased with the market performance of the 1995 crop, it proved even more difficult for the producers in the Czech and Slovak Republics, Russia, the Ukraine, Romania and Bulgaria, revealing serious structural problems in marketing and growing hops. Despite the poor alpha values in Central Europe, there was hardly any major movement in prices on the world market, as the international brewing industry has become flexible with regard to the **interchangeability of hop varieties.** Within the context of budget-oriented purchasing, varieties are being defined not only in terms of chemical and organoleptic characteristics, but also particularly in terms of their price-alpha ratio. Purchasing behaviour is also influenced by the product life cycles of the major international beer brands. New beers with new hopping recipes are being created at an ever-accelerating pace. This can lead to new demand, but also to the neglect of special hop varieties. As far as the hop market is concerned, this situation encourages sub-markets to form in the same growing regions with differences in price development. As long-term purchasing planning is becoming increasingly difficult for the brewing industry, greater flexibility is going to be required of all involved in the hop market. **The ability to recognise coming variety trends and to react accordingly will be the key to survival for hop growers and growing regions alike.**

Our estimate of the contract quota (in %) for the main hop-growing countries in the coming years on the basis of present acreage is as follows:

Country	1996	1997	1998	1999	2000
Germany	78	70	57	41	29
USA	87	82	65	39	26
Czech Republic	65 - 70	50	40	30	20
England	70	60	37	35	30
Slovenia	78	56	< 30	< 30	< 30

Hop Acreage and Production 1994/95

		1994 Acreage ha	1994 Ø-Yield to/ha	1994 Production to	1995 Acreage ha	1995 Ø-Yield to/ha	1995 Production to
Germany	Hallertau	17,858	1.35	24,118.0	17,873	1.62	28,921.7
	Tettnang	1,595	1.36	2,170.4	1,611	1.21	1,941.9
	Elbe-Saale	1,649	0.84	1,386.3	1,607	1.38	2,225.4
	Spalt	699	1.34	933.5	667	1.31	873.8
	Hersbruck	106	1.11	117.3	110	1.20	131.7
	Baden/Rhine-P./Bitb.	23	1.26	29.0	17	1.55	26.4
	Total	**21,930**	**1.31**	**28,754.5**	**21,885**	**1.56**	**34,120.9**
Belgium		384	1.46	561.4	374	1.61	603.5
England		3,136	1.41	4,412.5	2,855	1.43	4,078.1
France		670	1.65	1,104.9	670	1.65	1,108.4
Ireland		12	1.38	16.5	6	1.72	10.3
Austria [2]		231	1.35	312.6	233	1.44	335.0
Portugal		117	0.83	97.0	112	1.14	128.0
Spain		1,115	1.86	2,071.3	1,105	1.56	1,724.5
EUROPEAN UNION		**27,595**	**1.35**	**37,330.7**	**27,240**	**1.55**	**42,108.7**
Bulgaria		645	0.81	521.5	460	0.78	360.0
Yugoslavia (Serbia/Montenegro)		576	1.22	704.4	615	1.31	808.3
Poland		2,341	1.03	2,400.0	2,401	1.36	3,264.5
Romania		2,169	0.80	1,727.0	2,030	0.74	1,500.0
Federation of Russia [1]		3,510	0.45	1,570.0	2,800*	0.89	2,500.0*
Switzerland		21	1.84	38.6	21	2.28	47.9
Slovak Republic		1,050	0.86	900.0	1,100	0.94	1,035.0
Slovenia		2,419	1.46	3,541.0	2,370	1.67	3,967.4
Czech Republic	Zatec (Saaz)	7,306	0.90	6,549.3	7,307	0.94	6,879.0
	Ustek (Auscha)	1,784	0.90	1,599.2	1,660	1.05	1,742.0
	Tršice (Tirschitz)	1,110	0.97	1,071.7	1,107	1.16	1,289.0
	Total	**10,200**	**0.90**	**9,220.2**	**10,074**	**0.98**	**9,910.0**
Turkey		323	0.73	237.0	334	0.90	300.0
Ukraine		5,903	0.61	3,592.5	4,330	0.59	2,565.0
Hungary		23	1.74	40.0	17	2.16	36.8
REST OF EUROPE		**29,180**	**0.84**	**24,492.2**	**26,552**	**0.99**	**26,294.9**
EUROPE		**56,775**	**1.09**	**61,822.9**	**53,792**	**1.27**	**68,403.6**
USA	Washington	12,302	2.02	24,800.2	12,401	2.16	26,808.2
	Oregon	3,239	1.92	6,223.4	3,498	1.79	6,251.8
	Idaho	1,635	1.71	2,796.2	1,591	1.70	2,707.5
	Total	**17,176**	**1.97**	**33,819.8**	**17,490**	**2.05**	**35,767.5**
Argentina		461	0.92	425.0	461	0.81	375.0
Canada		328	0.78	256.6	220	0.75	165.0
AMERICA		**17,965**	**1.92**	**34,501.4**	**18,171**	**2.00**	**36,307.5**
Zimbabwe		148	1.64	242.5	48	1.01	48.4
South Africa		720	1.83	1,321.0	640	1.89	1,209.0
AFRICA		**868**	**1.80**	**1,563.5**	**688**	**1.83**	**1,257.4**
China		6,920*	2.53	17,500.0*	6,550*	2.44	16,005.0*
India		200	0.66	131.0	195	1.03	200.0
Japan		565	1.95	1,104.0	520	1.84	955.5
North Korea		2,000*	0.60	1,200.0*	2,000*	0.60	1,200.0*
South Korea		17	1.64	27.8	5	1.84	9.2
ASIA		**9,702**	**2.06**	**19,962.8**	**9,270**	**1.98**	**18,369.7**
Australia		1,131	2.40	2,707.0	1,054	2.43	2,558.5
New Zealand		345	2.22	765.5	355	2.13	756.5
AUSTRALIA/OCEANIA		**1,476**	**2.35**	**3,472.5**	**1,409**	**2.35**	**3,315.0**
WORLD		**86,786**	**1.40**	**121,323.0**	**83,330**	**1.53**	**127,653.2**

1) including scattered hop farming

2) as of January 1, 1995 member state of EU, treated as already belonging to EU for 1994 crop

*) estimated

Alpha Acid Production

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

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

With world hop volume divided into these groups, alpha acid production in 1995 compared with the previous year was as follows:

	1994					1995				
Group	**Crop Share**	**Crop to**	**Alpha Ø**	**Alpha to**	**Alpha Share**	**Crop Share**	**Crop to**	**Alpha Ø**	**Alpha to**	**Alpha Share**
A	10.7%	12,994	2.6%	338	4.9%	10.6%	13,462	2.9%	390	4.9%
B	27.5%	33,371	2.9%	968	14.0%	29.5%	37,653	3.8%	1,431	18.1%
C	27.4%	33,185	5.8%	1,925	27.9%	25.9%	33,132	6.0%	1,988	25.2%
D	34.4%	41,773	8.8%	3,676	53.2%	34.0%	43,406	9.4%	4,080	51.7%
Total	**100.0%**	**121,323**	**5.7%**	**6,907**	**100.0%**	**100.0%**	**127,653**	**6.2%**	**7,889**	**100.0%**

All alpha acid values were recorded on the basis of % as is, EBC-Analytica 7.3.2.

The 1995 world crop was 5.2 % greater in volume than 1994's and produced a 14.2 % greater alpha acid volume. In many European growing areas, however, especially in Germany, alpha acid values were below the long-term average, in some cases considerably so.

Group C's 25.2 % share of world alpha production remains too high. The high level of stocks of some of the 1995 crop and from previous years is proof that some countries in this group have been producing in excess of market requirements for years.

The USA had no difficulty in defending their world market leadership as an alpha supplier. 37.8 % of world alpha volume is produced in the USA and 22.2 % in Germany. In the bitter and high-alpha hop group (Group D), the USA dominates the market with a share of 60.7 %, compared with Germany's 24.4 %. In the aroma groups, A and B, on the other hand, Germany leads the field with 40.8 %, ahead of the USA with 17.3 %.

Alpha Acid Balance

	Alpha demand		Alpha production		Alpha supply	
Calendar year	**Hopping rate**	**Demand**	**Crop year**	**Production**	**Surplus**	**Deficit**
1992	6.8 g α/hl	7,909.9 to α	1991	8,612.0 to α	702.1 to α	– –
1993	6.7 g α/hl	7,984.7 to α	1992	7,537.0 to α	– –	447.7 to α
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	7,871.9 to α	1994	6,907.0 to α	– –	964.9 to α
1996*	6.2 g α/hl	7,863.2 to α	1995	7,889.0 to α	25.8 to α	– –

* Estimated demand

Although some major international brewing groups have raised the bittering values of their beers, the amount of alpha acid added by the breweries also declined slightly last year as the trend towards using isomerized hop products continues. Strictly speaking, the 1995 crop produced a supply deficit of at least 100 to, if the considerable hop volume in Group C – which was produced without regard for sales potential – is deducted from the arithmetical surplus. The spot market prices reacted accordingly when it became apparent that there would be a shorter supply than expected.

EUROPEAN UNION

Producer Subsidies 1994

In accordance with (EC) Directive No. 2284/95 of Sept. 25, 1995, producer subsidies for the 1994 crop were allocated as follows:

Variety group	Subsidy per ha
Aroma hops	495 ECU = 937 DM
Bitter hops	532 ECU = 1.007 DM
Other + experimental hops	368 ECU = 696 DM

Hop Marketing/ Marketing Concept

As described in last year's report, a compromise solution applies for the 1995 and 1996 crops regarding the marketing of German hops (Directive (EEC) No. 3124/92 of Oct. 26, 1992). The existing hop market order must, however, be amended by the end of 1996 in order to ensure the preservation of producer subsidies to German growers. In accordance with current law, it is required that 100 % of the crop is marketed by the growers' association. In conjunction with the German hop growers and the state ministries the federal government is working on an amendment to this regulation. The following core points are envisaged for the future market order:

- The existing marketing concept with impartial quality control, reporting, registration and approval of all contracts and quality pool.
- The use of 20 % of the subsidy for a defined list of measures covering merchandising, market stabilization, quality control, production and marketing research, and licencing of pesticides.

Miscellaneous

With the Commission's decision of April 12, 1996 (96/270/EC), **Spain**'s application to amend the variety conversion programme under (EEC) Directive No. 2997/87 was approved.

Directive (EC) No. 675/96 of April 15, 1996 brought the following changes to the **list of variety groups** for hop growing in the Community:

- The new additions are the German bitter variety **Taurus** and the five new English varieties **First Gold, Phoenix, Pioneer** (aroma), **Admiral** and **Herald** (bitter).
- The aroma varieties **Fino Alsacia** and **Saxon** and the varieties **Hersbruck Pure** and **Kent** previously listed under "Other Varieties" have been removed from the list.

GERMANY

Growth, Crop Estimates and Weights

After a very warm winter, the temperatures in March, April and May 1995 were only slightly above the 50-year average. Precipitation in these months amounted to more than 300 mm/m², i.e. 100 mm/m² above the long-term average. Up to this point, hop growth was normal.

The cool and moist June weather then slowed plant growth considerably, with the result that hop development in late June and early July was roughly two weeks behind. This was made up for by the very warm July weather. The temperatures in early August were also well above the 50-year average. The hop harvest began punctually on August 24/25. The hot, dry weather in July and August prior to the harvest presumably had a negative influence on the biosynthesis of the alpha acids. The alpha values of most of the hop varieties were well below the average of the last ten years. In addition, an unusually rapid decomposition of the alpha acids was observed in many varieties. Only the new strains, **Hallertau Tradition** and **Hallertau Magnum** had stable alpha acid values.

Area	Estimate (08/1995 to)	Weight (03/31/1996 to)
Hallertau	29,500	28,922
Tettnang	2,150	1,942
Elbe-Saale	1,940	2,225
Spalt	940	874
Hersbruck	135	132
Baden/Rhine-P./Bitburg	24	26
Total	**34,689**	**34,121**

Alpha Acid Table

Alpha Acid content of the main German varieties from 1991 - 1995:

Sorte	1991	1992	1993	1994	1995	ø
Hallertau Hersbruck	3.6%	2.3%	3.4%	1.3%	2.1%	**2.5%**
Hallertau Perle	7.7%	5.0%	7.0%	3.3%	4.9%	**5.6%**
Hallertau Spalt Select	6.4%	3.6%	5.1%	2.2%	3.5%	**4.2%**
Hallertau Hallertau Tradition	6.5%	4.0%	5.7%	3.7%	4.5%	**4.9%**
Hallertau Huell	6.5%	4.8%	5.6%	4.0%	3.7%	**4.9%**
Hallertau Hallertau	5.0%	3.9%	4.2%	2.6%	3.3%	**3.8%**
Hallertau Northern Brewer	8.8%	7.3%	8.4%	5.3%	7.1%	**7.4%**
Hallertau Brewers Gold	6.8%	5.8%	6.5%	3.7%	4.5%	**5.5%**
Hallertau Orion	8.4%	5.8%	7.4%	4.3%	5.7%	**6.3%**
Hallertau Hallertau Magnum	15.1%	11.1%	12.6%	9.6%	11.1%	**11.9%**
Hallertau Nugget	-	-	10.9%	8.8%	8.8%	**9.5%**
Hallertau Target	-	-	10.6%	8.6%	9.9%	**9.7%**
Hallertau Record	6.4%	4.5%	6.1%	3.1%	4.3%	**4.9%**
Elbe-Saale Northern Brewer	7.1%	5.8%	7.5%	4.5%	6.1%	**6.2%**
Elbe-Saale Hallertau Magnum	-	-	11.7%	9.2%	11.0%	**10.6%**
Spalt Spalt	4.5%	3.5%	4.1%	2.8%	3.3%	**3.6%**
Tettnang Tettnang	4.6%	3.6%	4.0%	2.9%	2.6%	**3.5%**

All data in % as is, in accordance with EBC-Analytica 7.3.2. 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.

Acreage and Production

Area	Variety	Development of Acreage 1994	+/-	1995	Development of Production 1994 Ø-Yield to/ha	1995	1994 Production to	1995
		Acreage ha						
Hallertau	Hersbruck	5,302	-505	4,797	1.48	1.52	7,871.45	7,299.10
	Perle	3,500	80	3,580	1.19	1.71	4,162.40	6,121.35
	Spalt Select	1,085	102	1,187	1.18	1.58	1,278.45	1,872.65
	Hallertau Tradition	839	274	1,113	1.05	1.49	881.25	1,657.55
	Hallertau	162	124	286	0.96	0.70	155.70	201.40
	Huell	241	-32	209	1.38	1.51	331.65	315.90
	Total Aroma	**11,129**	**43**	**11,172**	**1.32**	**1.56**	**14,680.90**	**17,467.95**
	Northern Brewer	3,542	-401	3,141	1.09	1.66	3,848.35	5,202.90
	Brewers Gold	1,304	-175	1,129	2.12	2.21	2,768.45	2,492.40
	Orion	117	-7	110	1.33	1.82	155.85	199.65
	Total Bitter	**4,963**	**-583**	**4,380**	**1.36**	**1.80**	**6,772.65**	**7,894.95**
	Hallertau Magnum	1,129	420	1,549	1.44	1.43	1,621.70	2,208.15
	Nugget	433	138	571	1.66	1.74	718.95	992.20
	Target	89	7	96	2.05	2.11	182.35	202.10
	Total High Alpha	**1,651**	**565**	**2,216**	**1.53**	**1.54**	**2,523.00**	**3,402.45**
	Record	93	-14	79	1.11	1.46	103.60	115.45
	Others	22	4	26	1.72	1.57	37.85	40.90
	Total Hallertau	**17,858**	**15**	**17,873**	**1.35**	**1.62**	**24,118.00**	**28,921.70**
Tettnang	Tettnang	1,050	4	1,054	1.19	1.03	1,247.85	1,085.95
	Hallertau	542	12	554	1.69	1.54	917.30	852.50
	Hersbruck	3	0	3	1.75	1.15	5.25	3.45
	Total Tettnang	**1,595**	**16**	**1,611**	**1.36**	**1.21**	**2,170.40**	**1,941.90**
Elbe-Saale	Perle	40	36	76	0.56	0.82	22.55	62.60
	Saaz	9	0	9	0.85	0.81	7.65	7.25
	Other Aroma	11	-1	10	0.55	0.91	6.10	9.10
	Total Aroma	**60**	**35**	**95**	**0.61**	**0.83**	**36.30**	**78.95**
	Northern Brewer	1,275	-210	1,065	0.82	1.45	1,047.65	1,540.40
	Bullion	57	-10	47	1.92	2.18	109.20	102.35
	Brewers Gold	1	0	1	3.30	0.00	3.30	0.00
	Total Bitter	**1,333**	**-220**	**1,113**	**0.87**	**1.48**	**1,160.15**	**1,642.75**
	Hallertau Magnum	185	113	298	0.68	1.20	125.70	358.10
	Nugget	70	27	97	0.89	1.46	62.10	141.70
	Target	1	3	4	2.00	0.98	2.00	3.90
	Total High Alpha	**256**	**143**	**399**	**0.74**	**1.26**	**189.80**	**503.70**
	Total Elbe-Saale	**1,649**	**-42**	**1,607**	**0.84**	**1.38**	**1,386.25**	**2,225.40**
Spalt	Hallertau	196	-9	187	1.33	1.24	260.30	231.20
	Spalt	171	-11	160	1.18	1.05	201.25	167.20
	Spalt Select	138	10	148	1.37	1.55	188.90	229.40
	Hersbruck	142	-16	126	1.55	1.43	219.65	180.00
	Perle	33	-5	28	1.30	1.63	43.05	45.70
	Hallertau Tradition	13	-1	12	0.66	0.95	8.60	11.45
	Total Aroma	**693**	**-32**	**661**	**1.33**	**1.31**	**921.75**	**864.95**
	Bitter	**5**	**0**	**5**	**1.97**	**1.37**	**9.85**	**6.85**
	High Alpha	**1**	**0**	**1**	**1.90**	**2.00**	**1.90**	**2.00**
	Total Spalt	**699**	**-32**	**667**	**1.34**	**1,31**	**933.50**	**873.80**
Hersbruck	Hersbruck	35	-5	30	1.41	1.33	49.45	39.90
	Spalt Select	24	2	26	0.77	1.28	18.50	33.15
	Hallertau	23	2	25	1.05	1.00	24.10	24.90
	Other Aroma	16	5	21	0.87	1.00	13.95	21.10
	Total Aroma	**98**	**4**	**102**	**1.08**	**1.17**	**106.00**	**119.05**
	Bitter	**7**	**-1**	**6**	**1.54**	**1.82**	**10.80**	**10.90**
	High Alpha	**0**	**1**	**1**	**0.00**	**0.45**	**0.00**	**0.45**
	Others	**1**	**0**	**1**	**0.55**	**1.25**	**0.55**	**1.25**
	Total Hersbruck	**106**	**4**	**110**	**1.11**	**1.20**	**117.35**	**131.65**
Baden/ Bitburg/ Rhine-Pal.	Aroma	18	-7	11	1.10	1.44	19.85	15.80
	Bitter	3	1	4	2.40	1.95	7.20	7.80
	High Alpha	2	0	2	0.95	1.40	1.90	2.80
	Total Baden/B./Rh.	**23**	**-6**	**17**	**1.26**	**1.55**	**28.95**	**26.40**
Total Aroma		**13,593**	**59**	**13,652**	**1.32**	**1.50**	**17,935.20**	**20,488.60**
Total Bitter		**6,311**	**-803**	**5,508**	**1.26**	**1.74**	**7,960.65**	**9,563.25**
Total High Alpha		**1,910**	**709**	**2,619**	**1.42**	**1.49**	**2,716.60**	**3,911.40**
Total Others		**116**	**-10**	**106**	**1.22**	**1.49**	**142.00**	**157.60**
GERMANY TOTAL		**21,930**	**-45**	**21,885**	**1.31**	**1.56**	**28,754.45**	**34,120.85**

Hop Logistics

Having reformed the sales contracts for German Seal hops and introduced impartial quality control, the German hop industry has taken a further step towards boosting its international competitiveness:

Short-term cost savings are to be achieved through rationalization measures in hop certification and weighing, as well as in transport and storage at the first marketing stage. On the initiative of the Bavarian State Ministry for Food, Agriculture and Forestry, a working party on "hop logistics" has been formed comprising representatives from all sections of the hop industry. Its task is to introduce a suitable packaging form to facilitate rationalization of raw hop logistics. Although the working party has not yet come out clearly in favour of any one of the six different baling press systems it has compared, a preference is emerging for a rectangular bale with the dimensions 600 mm x 600 mm x 1200 mm. It is probable that much of the baling in the Hallertau region will be done in future by mobile presses operated by parties independent of the growers.

As in previous years, the number of hop farms in Germany continued to decline in 1995. The number of hop growers in the Federal Republic as a whole was 3,122 (of which 2,416 were in Hallertau). In 1994 there were still 2,529 growers in Hallertau and 3,282 in Germany as a whole. The average acreage per hop farm amounted to 7.01 ha (7.4 ha in Hallertau).

Variety Development

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

Variety	1991 ha	1992 ha	1993 ha	1994 ha	1995 ha
Hersbruck	7,297	7,049	6,509	5,485	4,956
Perle	2,966	3,237	3,397	3,591	3,705
Spalt Select	*	583	963	1,253	1,367
Hallertau Tradition	*	267	551	859	1,133
Hallertau	1,143	1,079	1,053	926	1,055
Spalt	234	224	210	183	165
Tettnang	1,040	1,050	1,021	1,057	1,061
Total main Aroma	**12,680**	**13,489**	**13,704**	**13,354**	**13,442**
Northern Brewer	6,586	6,323	5,670	4,821	4,313
Brewers Gold	1,740	1,656	1,556	1,316	1,140
Total main Bitter	**8,326**	**7,979**	**7,226**	**6,137**	**5,453**
Hallertau Magnum	*	341	918	1,317	1,850
Nugget	104	221	365	503	668
Target	57	77	92	91	101
Total main High Alpha	**161**	**639**	**1,375**	**1,911**	**2,619**

* Spalt Select, Hallertau Tradition and Hallertau Magnum were not recorded until 1992.

Market Development

The 1995 spot market was the first to be accompanied by regular publications by the registration office for hop contracts (German acronym: MEHOP). In weekly announcements MEHOP provided information on the weekly turnover and average prices and also on the total turnover and average price per variety in the German production areas.

On the basis of the crop estimate of 29,500 to and a contract volume of 23,700 to registered with MEHOP, there was a theoretical spot volume of 5,800 to of Hallertau hops. Brisk trading with high turnover was reported on the spot market before the harvest was even completed. More than 30 % of the theoretical volume of spot hops was sold within a period of 14 days. The above-average yields produced by **Northern Brewer** had raised the growers' expectations and had encouraged them to sell off the spot hops as quickly as possible. Due to the resulting short-term surplus, producer-level purchase prices fell for all varieties. It was not until the market settled that prices began to rise slowly but surely as of late September/early October. By that time, 70 % of the spot hop volume had been sold.

By the end of October fears were confirmed that the alpha acid content of the 1995 crop was not only below-average, but also subject to rapid decomposition. As a result, the hop trade once again found it difficult to fulfill its alpha acid contract obligations. The resulting additional purchases added upward impetus to the producer-level

purchase prices. The price of **Hersbruck** rose from an absolute low of DM 80 per 50 kg at the end of September to DM 300 per 50 kg in November. The spot market for the 1995 crop closed unusually early. By late November the market was cleared, apart from minor quantities still in the hands of a few holders.

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

Area/Variety	Sep. 95	Oct. 95	Nov. 95	Dec. 95	Jan. 96	Feb. 96	March 96
Hallertau Hersbruck	100/80	100/200	250/300	300	-	-	-
Hallertau Perle	350/320	350/400	400/430	430	-	-	-
Hallertau Spalt Select	330/300	320/350	370/400	-	-	-	-
Hallertau Hallertau Tradition	330/300	320/350	370/400	-	-	-	-
Hallertau Hallertau	550	520	520	-	-	-	-
Hallertau Northern Brewer	300/250	250	280/300	300	-	-	-
Hallertau Brewers Gold	100	200/150	150	-	-	-	-
Hallertau Hallertau Magnum	350/300	350	350	350	-	-	-
Hallertau Nugget	250	270/300	300	-	-	-	-
Spalt Spalt	550	550	-	-	-	-	-
Tettnang Tettnang	550	550	550	550	-	-	-

FRANCE

Acreage and Production

Area	Variety Group	Development of Acreage 1994	+/- Acreage ha	1995	Development of Production 1994 Ø-Yield to/ha	1995	1994 Production to	1995
Alsace	Aroma	574	-11	563	1.66	1.69	951.0	950.0
	Bitter	12	0	12	2.88	3.08	34.6	36.9
	High Alpha	30	-1	29	1.63	2.20	48.9	63.8
	Others	0	23	23	0.00	0.12	0.0	2.7
	Total Alsace	616	11	627	1.68	1.68	1,034.5	1,053.4
North	Aroma	12	-3	9	1.27	0.86	15.2	7.7
	Bitter	16	-10	6	1.48	1.33	23.7	8.0
	High Alpha	24	-9	15	1.16	1.35	27.9	20.2
	Others	0	13	13	0.00	1.47	0.0	19.1
	Total North	**52**	**-9**	**43**	**1.28**	**1.28**	**66.8**	**55.0**
Burgundy	**Bitter**	**2**	**-2**	**0**	**1.80**	**0.00**	**3.6**	**0.0**
FRANCE TOTAL		**670**	**0**	**670**	**1.65**	**1.65**	**1,104.9**	**1,108.4**

As of 1995, hops have been grown only in Alsace (128 growers) and in Northern France (12 growers). Hop growing in Burgundy has been abandoned.

Growth and Quality

As in most Central European regions, growth was also delayed in France by very cool and wet weather conditions in May and June. The growth period in 1995 was further characterised by high temperatures in July and August and heavy rainfall during the harvest in September.

Despite the weather conditions, there were only minor problems requiring plant protection. Only red spider mites had to be controlled in virtually all hop yards.

The volume and the organoleptic quality of the crop were good, but the alpha acid values of the **Strisselspalt** aroma variety, accounting for 86 % of the crop, remained at below 2 %, as in the previous years.

Market

In Alsace, 98 % of the crop was sold by contract, whereas in Northern France the figure was only just 50 %. The remaining volume was placed on the spot market. In total, 85 % of the French hop crop was exported.

Future contract sales are reported to have reached a level of 90 % for 1996.

ENGLAND

Acreage and Production

Variety	Development of Acreage			Development of Production			
	1994	+/-	1995	1994	1995	1994	1995
	Acreage ha			Ø-Yield to/ha		Production to	
Goldings	338	64	402	1.48	1.17	501.3	469.2
Fuggles	289	19	308	1.19	1.01	344.0	310.8
Progress	134	39	173	1.05	0.92	140.7	158.3
W.G.V.	71	35	106	1.18	0.93	84.1	99.0
Bramling Cross	43	3	46	1.47	0.97	63.0	44.4
Total Aroma	**875**	**160**	**1,035**	**1.29**	**1.05**	**1,133.1**	**1,081.7**
Challenger	363	-22	341	1.43	1.34	520.8	456.4
Northdown	375	-15	360	1.23	1.44	461.4	519.1
Total Bitter	**738**	**-37**	**701**	**1.33**	**1.39**	**982.2**	**975.5**
Target	1,410	-168	1,242	1.54	1.55	2,175.2	1,920.7
Yeoman	58	-14	44	1.45	1.13	84.3	49.5
Total High Alpha	**1,468**	**-182**	**1,286**	**1.54**	**1.53**	**2,259.5**	**1,970.2**
Others	55	17	72	0.69	0.70	37.7	50.7
ENGLAND TOTAL	**3,136**	**-42**	**3,094**	**1.41**	**1.32**	**4,412.5**	**4,078.1**

In England, hops are grown by roughly 240 farmers.

Growth and Quality

The winter of 1994/95 brought heavier rain and higher temperatures than in previous years, more than making up for the water shortage resulting from the 1994 drought. Up to the end of May, crop development in all the English hop regions pointed to a good harvest. This was followed, however, by the driest summer since 1976, with extremely high temperatures and only occasional rainfall, which led to wide fluctuations in yield in all areas. In addition, due to the mild winter, mildew caused stunted growth for **Bramling Cross** and **East Kent Goldings.**

Although production was down, the quality of the hops was generally considered good. This is in part due to the release of Admire, a pesticide to combat aphid infestation. In spite of the hot dry summer, hops which were not damaged by aphids appeared to be less susceptible to mildew. On the other hand, quality was partly affected by the red spider mite. The onset of rain in September meant that picking and drying had to be carried out in wet conditions, which impaired the appearance of some aroma varieties.

In view of the poor yields, the alpha acid values were surprisingly good.

Alpha Acid Table

Comparison of alpha acid values of important English varieties from 1994 and 1995:

Variety	1994	1995
Goldings	4.5%	5.2%
Fuggles	4.0%	4.4%
Progress	5.4%	6.0%
W.G.V.	5.9%	6.2%
Bramling Cross	5.9%	6.6%
Challenger	6.8%	7.6%
Northdown	7.2%	8.1%
Target	10.2%	11.1%
Yeoman	10.2%	10.9%

All data in % as is, in accordance with EBC-Analytica 7.3.2. 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.

New Varieties

While field tests have been concluded for the five new varieties bred by the Wye College research centre (the high-alpha **Admiral** and **Herald,** and the aroma varieties **Phoenix, Pioneer** and **First Gold**), brewing experiments are still in progress. The new varieties are categorized here in accordance with EC Directive No. 675/96 of April 15, 1996, thereby amending the details from last year's Barth Report in which the varieties **Phoenix, Pioneer** and **First Gold** were classified as bitter varieties according to the information given by the breeder. The new varieties are only being given to the English growers provisionally, as, legally speaking, the plant material belongs to Wye College, and agreement has not yet been reached on the licence fee. There is already an agreement, however, which allows other research institutes in the EU access to these varieties. As **Herald** and **Admiral** have met with little acceptance from the growers, two new high-alpha varieties are being released in their place for experimental planting this year: one dwarf variety and one for trellis systems of normal height.

Market Development

Only small quantities were available for the spot market, as contract sales accounted for by far the greater share of aroma and bitter hops. The short supply was exacerbated by the crop volume being lower than expected. The highest price paid on the spot market for **Target** was £25 per kg alpha acid. The prices for **Fuggles** and **Goldings** were above £300 per zentner. In early 1996, only small quantities of high-alpha hops in the form of extract remained unsold.

Although acreage in 1996 will remain unchanged at 3,094 ha, a further shift is reported in favour of aroma varieties.

SPAIN

Acreage and Production 1995

Variety	Acreage ha	Ø-Yield to/ha	Production to
H-3 Leonés	734	2.04	1,495.9
H-7 Leonés	311	0.66	205.2
Total Bitter	**1,045**	**1.63**	**1,701.1**
Nugget	51	0.39	20.0
Magnum	6	0.37	2.2
Total High Alpha	**57**	**0.39**	**22.2**
Others	3	0.40	1.2
SPAIN TOTAL	**1,105**	**1.56**	**1,724.5**

The main hop-growing area in Spain is Léon. Since 1994, however, hops have also been grown on a minor scale in the region of La Rioja. Its part in the 1995 crop came from 3.4 ha of **Magnum** and **Nugget,** producing 3,135 kg (included in table above). In total, there are 1,225 hop-growing farms in Spain.

Growth and Quality

Due to mild temperatures, the growth period began very early. Late frost in April and May caused damage in many hop yards, in particular those with the **H-7** and **Magnum** varieties. Low temperatures and lack of rainfall in June slowed the development of the hop plants.

From late June on, the situation improved with higher temperatures and sufficient precipitation. The hot, dry weather in August was also responsible to a major degree for production being 346.8 to down on the previous year with acreage virtually unchanged. The alpha acid values were as follows (analysis method EBC 7.3.2):

H-3	6.5 %	Nugget	10.2 %
H-7	6.8 %	Magnum	10.5 %

Market Situation

As a result of the high contract quota accompanied by the low crop, no spot market materialised. The following contract prices were paid for the main varieties:

Magnum/Nugget:	550 Pts/kg
H-3 Leonés:	420 Pts/kg

BELGIUM

Acreage and Production 1995

Variety Group	Acreage ha	Ø-Yield to/ha	Production to
Aroma	81	1.28	103.4
Bitter	291	1.71	497.9
Others	2	1.10	2.2
BELGIUM TOTAL	**374**	**1.61**	**603.5**

The yields of the bitter varieties were considerably higher than in 1994. As a result, the 79 hop growers posted an increase in production volume of 7 % despite a reduction in growing area of 10 ha.

Quality

In comparison with the previous year, somewhat higher alpha acid values were achieved in 1995. The bitter varieties were approximately 9.6 %, the aroma varieties approx. 3.5 %.

Market Development

Some 35 - 40 % of the crop was sold by forward contract. On average, the prices paid were as follows:

	Contract Market
Aroma	7,619 bfr / Ztr.
Bitter	6,640 bfr / Ztr.

	Spot Market
Aroma	4,528 bfr / Ztr.
Bitter	4,742 bfr / Ztr.
Others	3,863 bfr / Ztr.

AUSTRIA

Acreage and Production 1995

Area	Acreage ha	Ø-Yield to/ha	Production to
Mühlviertel	124	1.27	157.6
Leutschach	93	1.68	155.9
Waldviertel	16	1.34	21.5
AUSTRIA TOTAL	**233**	**1.44**	**335.0**

Mühlviertel/Upper Austria

The aroma varieties **Malling** (approx. 54 % of the acreage), **Perle, Aurora, Hersbruck** and **Golding** and several experimental varieties were grown by 52 farmers in this, the largest of the three main growing areas. The entire crop was sold to the Austrian brewing industry by future contracts at an average price of 71 schillings per kilo.

Leutschach/Styria

Hops were grown on 18 farms in this area. The prices paid for grade I **Golding** and **Aurora** was 79 schillings/kg and 71 schillings/kg respectively.

Waldviertel/Lower Austria

The 11 growers in this area harvested 21.5 to of the **Zwettl Perle** variety. The Zwettl brewery paid 75 schillings/kg for grade I (approx. 2/3 of the total volume) and 67.50 schillings/kg for grade II.

PORTUGAL

The expansion of acreage planned last year did not take place. On the contrary, the area strung by the 26 growers decreased from the 1994 level by 5 ha to 112 ha.

The variety conversion program has been completed, and now only the high-alpha variety, **Nugget,** is grown. Its average alpha content in 1995 was 9.6 % (EBC 7.3.2.).

2/3 of the crop of 128 to was sold by forward contract at an average price of DM 250. In early 1996, approx. 40 - 50 to were still available for purchase.

THE REST OF EUROPE

CZECH REPUBLIC

Acreage and Production

Area	Development of Acreage			Development of Production			
	1994	+/-	1995	1994	1995	1994	1995
	Acreage ha			Ø-Yield to/ha		Production to	
Zatec (Saaz)	7,306	1	7,307	0.90	0.94	6,549.3	6,879.0
Ustek (Auscha)	1,784	-124	1,660	0.90	1.05	1,599.2	1,742.0
Tršice (Tirschitz)	1,110	-3	1,107	0.97	1.16	1,071.7	1,289.0
CZECH REP. TOTAL	**10,200**	**-126**	**10,074**	**0.90**	**0.98**	**9,220.2**	**9,910.0**

Acreage continued to decrease in 1995, albeit to a lesser extent than in 1994 when it was reduced by 486 ha compared with the previous year. Due to the persistently difficult market conditions for Saaz hops, however, a further reduction of some 500 ha is anticipated for 1996.

Growth and Quality

Cold conditions in the months of April, May and June accompanied by above-average, heavy rainfall delayed growth. It was not until July that warmth and sufficient precipitation made up for this delay. Isolated cases of drought damage were reported in August. In 1995 once again, the alpha acid values of **Saaz,** the only variety grown, failed to come up to expectations, averaging only 2.6 %.

Market Development

The spot market was sluggish on account of low demand. Not all of the crop on the spot market could be sold, even at low prices, leaving approx. 400 to in the form of pellets unsold in early 1996.

POLAND

Acreage and Production

Variety Group	Development of Acreage			Development of Production			
	1994	+/-	1995	1994	1995	1994	1995
	Acreage ha			Ø-Yield to/ha		Production to	
Aroma	2,033	10	2,043	1.00	1.30	2,033.0	2,655.9
Bitter	308	50	358	1.19	1.70	367.0	608.6
POLAND TOTAL	**2,341**	**60**	**2,401**	**1.03**	**1.36**	**2,400.0**	**3,264.5**

Growth and Quality

A mild winter with little snow was followed by an excessively cold and wet spring and a long, hot, dry summer. In early September, strong winds and rain set in, but had little effect on the harvest. Some damage was caused by aphids, as Confidor pesticide has not yet received official approval in Poland. The average alpha content of **Lublin,** the main aroma variety, was 3.3 %.

Market Development

About 150 - 180 to mainly of aroma hops from the 1995 crop remained unsold in the spring of 1996. Approx. 50 % of the Polish crop was exported. Whether this quota can be maintained in the future will depend to a great extent on the reaction of the world hop trade to the unilateral decision of the Polish Agricultural Ministry to raise the import duty on foreign hops to 50 % of their value (for hops of EU origin) and 118.7 % (for hops originating in other countries). Only the Czech and Slovak Republics and Hungary are exempt from this duty.

A further increase in acreage to approx. 2,600 ha is envisaged for the 1996 crop. Approx. 70 - 75 % of the expected crop has already been sold in future contracts.

SLOVAK REPUBLIC

Acreage and Production

Variety	Development of Acreage 1994	+/- Acreage ha	1995	Development of Production 1994 Ø-Yield to/ha	1995	1994 Production to	1995
Saaz	1,050	50	1,100	0.86	0.94	900.0	1,035.0
SLOVAK REP. TOTAL	**1,050**	**50**	**1,100**	**0.86**	**0.94**	**900.0**	**1,035.0**

The Slovak Republic is also beset with marketing problems with the **Saaz** variety. As a result, a 100 ha reduction in acreage is expected for 1996.

Growth and Quality

An excessively cold and rainy spring was followed by a very hot and dry July, which had negative effects on bittering values. The average alpha acid content of approx. 2.3 % was only fractionally higher than in the previous year.

SLOVENIA

Acreage and Production

Variety	Development and Acreage 1994	+/- Acreage ha	1995	Development of Production 1994 Ø-Yield to/ha	1995	1994 Production to	1995
Styrian Golding	683	-53	630	1.28	1.39	873.0	876.7
Aurora	1,276	-21	1,255	1.57	1.80	2,005.0	2,262.3
Bobek	252	19	271	1.38	1.86	349.0	503.2
Others	208	6	214	1.51	1.52	314.0	325.2
SLOVENIA TOTAL	**2,419**	**-49**	**2,370**	**1.46**	**1.67**	**3,541.0**	**3,967.4**

Following an amendment to the EU variety list, **Aurora (Super Styrian),** which was previously classed as a bitter hop, now numbers among the aroma hops. In 1995, the 420 hop growers in Slovenia achieved a good yield on an acreage slightly reduced from the previous year.

Growth and Quality

The volume of rainfall in the growth period was more than 20 % below the 40-year average. Above all, in June and July it was predominantly dry, whereas in August above-average precipitation was registered. There were isolated cases of peronospora, but these were brought under control by means of pesticides. Due to the dry weather in June and July, the alpha acid values were only slightly above the low values of the previous year.

Market Development

About 85 % of the crop was sold by contract. In the spring of 1996 approx. 40 to of **Styrian Golding** remained unsold. Around 90 % of the export volume was marketed by the Hmezad Export and Import Cooperative. The envisaged conversion of the cooperative into a public corporation has not yet taken place.

A slight reduction in acreage to 2,330 ha is expected for 1996.

YUGOSLAVIA (SERBIA AND MONTENEGRO)

Acreage and Production 1995

Variety Group	Acreage ha	Ø-Yield to/ha	Production ha
Bačka (Aroma)	**190**	**0.85**	**161.5**
Brewers Gold	364	1.53	557.3
Blisk	36	1.79	64.5
Total Bitter	**400**	**1.55**	**621.8**
Others	25	1.00	25.0
YUGOSLAVIA TOTAL	**615**	**1.31**	**808.3**

The growing area in the Bačka region was increased by 39 ha over 1994. There was also a rise in the average yield per hectare over the previous year.

Quality

The alpha acid content of the main varieties were as follows (EBC 7.3.2.): Bačka 1.5 %, Brewers Gold 5 %, Blisk 6 %.

Market Situation

In November 1995 the United Nations trade embargo against Yugoslavia was lifted. Despite the renewed export opportunities, the entire crop was sold to domestic breweries, 50 % of it by forward contract.

BULGARIA

The total acreage of hop yards in Bulgaria is 625 of which, however, one third was idle at the time of the 1995 harvest. The area cultivated was only 460 ha on which 360 to were harvested.

The alpha acid content averaged approx. 5.2 % (1994: 4.8 %) among the aroma varieties and approx. 7.5 % (1994: 7.2 %) among the bitter varieties. The entire crop was sold to the domestic brewing industry.

TURKEY

Acreage and Production 1995

Variety Group	Acreage ha	Ø-Yield to/ha	Production to
Aroma	**84**	**1.06**	**89.0**
Brewers Gold	199	0.85	170.0
Late Cluster	51	0.80	41.0
Total Bitter	**250**	**0.84**	**211.0**
TURKEY TOTAL	**334**	**0.90**	**300.0**

In Turkey, hops are grown by 1,080 farmers, i.e. the average acreage per grower is only 0.3 ha.

A good crop result was achieved on an area 11 ha larger than in the previous year, in particular with aroma hops.

The alpha acid content of the aroma hops, with an average of 6.5 %, was above that of the bitter varieties (4.7 - 6.4 %). The crop has been sold in its entirety to the domestic brewing industry, half of it in the form of raw hops and half in the form of Type 90 pellets.

FEDERATION OF RUSSIA

The acreage planted in the Russian Federation seems to have been reduced from that of the previous year to approx. 2,800 ha (although the information available is contradictory). The volume produced amounted to roughly 2,500 to. A particular feature of Russia is the large number of private farmers who grow hops on extremely small areas (0.1 - 0.3 ha), partly for brewing their own beer.

As far as the varieties of hops grown are concerned, we need to make the following correction to the 1994/95 Barth Report: roughly 75 % of the acreage is devoted to aroma varieties and roughly 25% to bitter varieties.

Hop growing in Russia has to contend with great financial difficulties. At the beginning of 1996 approx. 1,000 to of the crop remained unsold.

UKRAINE

The reduction in acreage in the Ukraine as a result of persisting marketing problems continued in 1995. Total acreage was down to 4,330 ha, of which 4,030 ha was planted with the aroma variety **Klon 18.** The total production volume came to 2,565 to, with an average alpha content of 2.9 % (EBC 7.3.2.).

HUNGARY

The largest area of the remaining hop-growing land in Hungary is an area of 17 ha in Boly, near the town of Pécs. Here, 36.8 to of **Brewers Gold** with an alpha content of approx. 5.4 % (EBC 7.3.2.) was harvested by a cooperative. Because of continuing sales difficulties, further reduction of acreage is to be expected for 1996. Apparently, hops are still grown on a small scale in two further places, to the south of Lake Balaton and near Szolnok on the Teis. However, there are no details to be obtained regarding acreage (presumably approx. 2 - 3 ha each) or production.

ROMANIA

The growing area decreased by about 140 ha from the previous year leaving approx. 2,030 ha which produced a crop of roughly 1,500 to. The resulting average yield of only 0.74 to/ha is almost certainly due to the fact that hop growing, like the rest of the economy in Romania, is struggling with major financial problems. The average net wage, for example, has multiplied several times in the last three years without any improvement in purchasing power being achieved.

The twelve hop-growing "agro-industrial trading companies" (i.e. state enterprises) lack the necessary financial means to purchase sufficient quantities of fertilizer and pesticide and to make regular replacement investments.

Hop yards which are too old and difficult to farm (e.g. on hillsides) are gradually being abandoned in favour of sites which are easier to irrigate.

Because of persisting marketing difficulties there are now several hundred tons of unsold stocks, not only from 1995 but also from previous crops.

SWITZERLAND

The area devoted to hop growing has remained unchanged since 1989, with 21 ha divided among 13 growers. This area produced a pleasingly high quantity of 47.9 to, roughly 24 % more than in the previous year. The average yield per hectare of 2.28 to/ha was approx. 13 % above the 10-year average.

The entire Swiss crop is processed into Type 45 pellets and purchased by the domestic brewing industry.

AMERICA

USA

Acreage and Production

Area	Variety	Development of Acreage 1994	+/-	1995	Development of Production Ø-Yield to/ ha 1994	1995	Production to 1994	1995
		Acreage ha						
Washington	Willamette	1,124	9	1,133	1.67	1.88	1,876.2	2,131.5
	Tettnang	875	48	923	1.22	1.28	1,067.9	1,177.9
	Cascade	540	-83	457	2.16	2.42	1,167.8	1,105.2
	Mount Hood	731	-279	452	1.50	1.78	1,097.1	804.2
	Perle	155	-55	100	1.17	1.54	181.9	154.1
	Liberty	48	8	56	1.06	1.35	50.8	75.8
	Total Aroma	**3,473**	**-352**	**3,121**	**1.57**	**1.75**	**5,441.7**	**5,448.7**
	Cluster	2,150	-67	2,083	2.37	2.30	5,104.3	4,782.4
	Northern Brewer	23	0	23	2.00	2.53	46.0	58.2
	Total Bitter	**2,173**	**-67**	**2,106**	**2.37**	**2.30**	**5,150.3**	**4,840.6**
	Galena	3,342	43	3,385	2.20	2.21	7,336.4	7,468.6
	Nugget	1,839	246	2,085	2.04	2.48	3,748.8	5,161.8
	Chinook	934	-12	922	2.12	2.27	1,976.1	2,096.7
	Eroica	181	-2	179	2.11	2.48	382.3	444.1
	Olympic	91	-26	65	1.96	2.28	178.6	148.1
	Total High Alpha	**6,387**	**249**	**6,636**	**2.13**	**2.31**	**13,622.2**	**15,319.3**
	Others *	269	269	538	2.18	2.23	586.0	1,199.6
	Total Washington	**12,302**	**99**	**12,401**	**2.02**	**2.16**	**24,800.2**	**26,808.2**
Oregon	Willamette	1,446	-126	1,320	1.70	1.70	2,453.3	2,244.8
	Tettnang	265	130	395	1.44	0.90	381.8	354.2
	Fuggle	190	32	222	1.44	1.30	272.9	287.8
	Mount Hood	107	9	116	2.02	1.62	215.8	187.5
	Perle	71	-9	62	1.59	1.94	113.1	120.2
	Total Aroma	**2,079**	**36**	**2,115**	**1.65**	**1.51**	**3,436.9**	**3,194.5**
	Nugget	992	233	1,225	2.51	2.27	2,489.3	2,778.6
	Chinook	*	*	24	*	1.81	*	43.5
	Galena	32	*	*	1.93	*	61.7	*
	Total High Alpha	**1,024**	**225**	**1,249**	**2.49**	**2.26**	**2,551.0**	**2,822.1**
	Others *	136	-2	134	1.73	1.76	235.5	235.2
	Total Oregon	**3,239**	**259**	**3,498**	**1.92**	**1.79**	**6,223.4**	**6,251.8**
Idaho	Banner	56	*	*	2.02	*	113.0	*
	Total Aroma	**56**	*****	*****	**2.02**	*****	**113.0**	*****
	Cluster	333	2	335	2.47	2.25	823.8	754.9
	Total Bitter	**333**	**2**	**335**	**2.47**	**2.25**	**823.8**	**754.9**
	Galena	249	-3	246	2.01	1.81	500.6	445.6
	Chinook	142	-4	138	2.07	1.85	294.3	255.4
	Total High Alpha	**391**	**-7**	**384**	**2.03**	**1.83**	**794.9**	**701.0**
	Others *	855	17	872	1.25	1.44	1,064.5	1,251.6
	Total Idaho	**1,635**	**12**	**1,591**	**1.64**	**1.70**	**2,683.2**	**2,707.5**
Total Aroma		**5,608**	**-372**	**5,236**	**1.60**	**1.65**	**8,991.6**	**8,643.2**
Total Bitter		**2,506**	**-65**	**2,441**	**2.38**	**2.29**	**5,974.1**	**5,595.5**
Total High Alpha		**7,802**	**467**	**8,269**	**2.17**	**2.28**	**16,968.1**	**18,842.4**
Total Others		**1,260**	**284**	**1,544**	**1.50**	**1.74**	**1,886.0**	**2,686.4**
USA TOTAL		**17,176**	**314**	**17,490**	**1.97**	**2.05**	**33,819.8**	**35,767.5**

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

*Others include: **Washington:** Aquila, Banner, Fuggle, Columbus
Oregon: Aquila, Banner, Cascade, Cluster, Eroica, 1994 also: Chinook, 1995 also: Galena
Idaho: Cascade, Mount Hood, Nugget, Olympic, Perle, Tettnang, Willamette, 1995 also: Banner

Growth

Washington

After three consecutive years of inadequate winter precipitation in the mountains, all reservoirs serving the Washington hop growing districts had little or no irrigation water carryover for the 1995 crop. Fortunately, heavy winter and spring snow storms replenished the snowpack around these reservoirs to adequate levels, assuring a full water supply for the entire season.

Temperatures varied widely throughout the entire growing season. A cooler and wetter than normal spring laid to rest any remaining fears about the irrigation water supply, but also delayed training, resulting in an uneven start for some varieties. Relatively normal early to mid-summer temperatures produced good growth and set expectations for an above-average crop. However, in early August, daytime and night-time temperatures dropped to record lows, slowing plant development significantly. Most affected by the delayed ripening was the variety **Galena,** producing the lowest alpha levels in years while maintaining average yields. The later harvested variety **Nugget** was able to catch up in maturity and produced only slightly lower than usual alpha.

Oregon

A cool and very wet spring resulted in Oregon's worst downy mildew infestations in years. Training in many yards was delayed due to the loss of healthy shoots.

However, temperatures in late spring and early summer provided good growing conditions and allowed plants to recover. Ultimately, yields for aroma varieties were variable but within their long-term averages, while **Nugget** produced slightly above-average yields. The alpha contents, especially on the earlier harvested **Nugget,** were in excess of one percentage point lower than normal, improving only gradually as the crop ripened.

Idaho

The winter precipitation produced an ample snowpack above the reservoirs, providing a sufficient supply of irrigation water throughout the season.

Cooler and wetter climatic conditions in spring delayed plant growth for all varieties. Although summer temperatures followed normal patterns, most varieties, especially **Galena,** never fully recovered from the slow growth in spring. Both yields and alpha contents were lower than in previous years.

Quality

As opposed to previous years, US growers were able to apply all of the US registered pesticides to assure the quality of their crop. This was also a direct result of the cooperative efforts by the major hop-producing countries to harmonize their pesticide portfolio.

The 1995 crop had an average estimated alpha content of 9.4 % (ASBC spectrophotometric, at time of harvest) producing a total alpha volume of 3,350 to, or close to 100 to alpha more than the previous year. The average bitter values of **high-alpha varieties** ranged between 10.8 % and 13.3 % (ASBC) or approximately 0.5 % lower than in 1994. Values for **aroma varieties** remained unchanged at between 4.9 % and 6.2 % (ASBC).

Alpha Acid Table

Alpha Acid content of the main American varieties from 1991 - 1995:

Variety	1991	1992	1993	1994	1995	Average
Willamette	4.1%	3.7%	4.5%	3.6%	4.0%	**4.0%**
Tettnang	4.2%	3.6%	4.6%	3.1%	3.2%	**3.7%**
Mount Hood	3.6%	3.4%	4.5%	3.4%	3.2%	**3.6%**
Cascade	4.9%	4.6%	5.7%	4.1%	3.8%	**4.6%**
Cluster	6.6%	6.3%	7.4%	6.4%	6.2%	**6.6%**
Galena	11.0%	10.4%	12.4%	11.3%	11.0%	**11.2%**
Nugget	12.4%	11.5%	12.6%	12.4%	11.7%	**12.1%**
Chinook	11.1%	10.3%	11.7%	10.4%	10.4%	**10.8%**

All data were converted from ASBC spectrophotometric (at time of harvest) into % as is according to EBC-Analytica 7.3.2. (Oct./Nov. after the harvest) to ensure comparability within this report.

Variety-Development

The acreage of the main varieties in all of the USA growing regions developed as follows during the last five years:

Variety	1991 ha	1992 ha	1993 ha	1994 ha	1995 ha
Willamette	2,500	2,522	2,561	2,568	2,453
Tettnang	1,147	1,094	1,108	1,139	1,318
Mount Hood	351	616	837	837	568
Cascade	502	511	553	540	457
Perle	379	409	381	226	162
Total main Aroma	**4,879**	**5,152**	**5,440**	**5,310**	**4,958**
Cluster	2,819	2,867	2,704	2,480	2,418
Total main Bitter	**2,819**	**2,867**	**2,704**	**2,480**	**2,418**
Galena	3,338	3,628	3,719	3,621	3,631
Nugget	1,884	2,392	2,636	2,830	3,310
Chinook	1,043	1,066	1,112	1,075	1,084
Total main High Alpha	**6,265**	**7,086**	**7,467**	**7,526**	**8,025**

Spot Market

On September 1, 1995 the total hop inventory held by growers, dealers and brewers, as reported by the USDA, had declined by 3,220.5 to to 25,356.1 to as compared to the previous year. At the same time, however, the industry anticipated one of the largest crops in history. Estimates ranged from 35,400 - 37,100 to, as US growers had strung 17,490 ha for harvest, or approximately 300 ha more than in 1994.

Initial market activities centered on aroma varieties which fetched higher prices than had been paid pre-harvest. Most **Tettnang** was sold at US$3.05/lb flat, some at US$3.00/lb plus. The **Perle** market started out at US$2.60/lb plus, but soon jumped to US$2.65/lb plus, with most sales occurring near or at US$2.90/lb plus. As the **Fuggle** crop came in short, the few available spot quantities were bought up quickly, commanding prices of US$3.40/lb flat. The **Willamette** market was relatively stable throughout at a level of US$2.00/lb plus. Most quantities of **Cascade** sold for US$1.10/lb plus, with some late sales occurring at US$1.40/lb plus.

The market for **Cluster** developed slowly with initial offers of US$0.80/lb to US$1.00/lb. However, throughout the harvest most spots sold at US$ 1.10/lb plus. In late October a short surge drove prices briefly to US$ 1.20/lb plus, ending at US$1.35/lb plus.

The high-alpha market, burdened by the weight of the anticipated large crop, initially only saw rumors developing about prices of US$0.80/lb and few actual sales of US$1.10/lb plus. However, a fire at a dealer's warehouse in Idaho ignited the market and set a price of US$1.45/lb plus for most subsequent high-alpha spots. Toward the end of September, the market strengthened for smaller quantities of **Nugget** with a higher alpha content, achieving prices of US$1.50/lb plus to US$1.65/lb plus.

Contract Market

The high-alpha spot market also stimulated the contract market, confining itself initially to Oregon, where **Nugget** were sold at:

Crop year	US$/lb
1996	1,40
1997	1,45
1998	1,50

plus leaf and stem premiums.

Subsequent post-harvest contracts in all states were made on the same base prices, with a few containing alpha premiums. These premiums ranged from 13.3 % to 13.7 % (ASBC Spectro) as an alpha base level above which 0.1 % of alpha (absolute) equaled US$0.01/lb. Some of these contracts also extended into the years of 1999 and 2000 with a US$0.05/lb per year increase. In late spring of 1996, **Nugget** contracts commanded a US$0.05/lb premium over the other high alpha varieties, in addition to alpha premiums, effectively stratifying the US high-alpha market into individual varieties.

In early October, above all in Washington, a future market developed for aroma varieties. The following prices were settled for the main variety, **Willamette:**

Crop year	US$/lb
1997	2,00
1998	2,05
1999	2,10

plus leaf and stem premiums.

As Oregon growers could not compete on this price level, it seems that in the long term hop growing of aroma varieties in Washington will increase at Oregon's expense. At the same time, **Tettnang** grower contract quantities for 1997 in all states, made directly with a large brewer, were cut by approximately 30 % from their previous level.

Future contracts for other aroma varieties were as follows:

Variety (US$/lb)	1996	1997	1998
Cascade	1.35	1.40	1.45
Perle	3.00	3.05	3.05

plus leaf and stem premiums.

CANADA

In 1995, the growing area on the one remaining hop farm was reduced by 108 ha to only 220 ha. This reduction mainly resulted from clearing land of **Mount Hood** due to its lack of sales potential. There was a significant improvement over the previous year in yield per hectare, although approx. 50 to of the crop was destroyed by fire in a hop kiln. The volume available for sale therefore amounted to only 165 to.

In 1996, the only varieties being grown are the aroma varieties **Bramling, Kent, Willamette** and **Hallertau**.

ASIA

CHINA

Acreage and Production 1995

Variety	Acreage ha	Ø-Yield to/ha	Production to
Xinjiang	4,000	2.40	9,600.0
Gansu	2,200	2.50	5,500.0
Ningxia	300	2.60	780.0
Others	50	2.50	125.0
CHINA TOTAL	**6,550**	**2.44**	**16,005.0**

Apart from **Tsingdao Flower 641,** the main variety, there are several other varieties in China which are grown to a lesser but increasing extent: **Toyomidori, Xinjiang Saaz,** and **Marco Polo.** Estimates of the total production in China continue to vary widely, between 16,000 and 18,000 to. This discrepancy can be explained by the fact that although many farms still grow hops on the same acreage as before, they are investing less and less in it due to low prices. In many hop yards the crop was not even picked, which mainly explains the fall in yield per hectare, particularly in Xinjiang. The precise effects on the total yield can only be estimated with difficulty.

Market Development

Most of the hops were purchased by the domestic brewing industry. Approx. 1,000 to were exported. In May 1995, approx. 1,200 to were still unsold in spite of spot prices of only about DM 25/Ztr. for low-quality hops. In China, quality is defined firstly by alpha value and secondly by appearance.

In 1996, a number of farms will further reduce their hop production or even abandon it altogether on account of the present unsatisfactory profit situation. Farms producing good-quality hops are not affected by sales or profit problems, however, and have in fact planted even more hops for 1996. It is therefore still too early to judge whether the phase of over-production will come to an end in 1996.

INDIA

The 1995 hop acreage in the Lahaul and Spiti districts (State of Himachal Pradesh) remained virtually unchanged from the previous year at 195 ha. The production volume is reported to have increased to 200 to.

An expansion of acreage to roughly 300 ha is anticipated for 1996.

JAPAN

Acreage and Production 1995

Brewing Group	Acreage ha	Ø-Yield to/ha	Production to
Kirin	308	1.85	568.3
Sapporo	159	1.78	282.8
Asahi	49	1.98	96.9
Suntory	4	1.88	7.5
JAPAN GESAMT	**520**	**1.84**	**955.5**

Hops were grown by 919 farms in Japan in 1995. The number of hop farms has therefore more than halved in the last six years. The reduction in acreage which has been noticeable for several years also continued. The main variety is an aroma variety called **Shinshu Wase.** The aroma varieties **Early Zug** and **Golden Star** and the bitter variety **Toyomidori** are also grown.

Growth and Quality

Sufficient rainfall during the growth period contributed to an average yield per hectare. The average of the last five years is 1.83 to/ha.

The alpha acid content in 1995 was roughly 6 %.

Market Development

97.4 % of production was given a first-class quality rating. The breweries paid 2,129 yen/kg for these hops. 2,024 and 1,599 yen/kg were paid for second-class and third-class hops respectively.

SOUTH KOREA

The decline in Korean hop growing continued in 1995. The remaining area of only 5.3 ha produced a crop of 9.2 to. The variety grown is unique to Korea, supposedly a bitter variety with an alpha content which was only approx. 2.3 % in 1995.

The crop was sold in its entirety to the South Korean brewing industry.

1996 CROP

AMERICA

ARGENTINA

Acreage and Production 1996

Area	Variety	Acreage ha	Ø-Yield to/ha	Production to
Bolsón	Cascade	170	1.00	170.2
	Ringwood	7	0.71	5.0
	Total Aroma/Bolsón	**177**	**0.99**	**175.2**
Alto Valle	Others	85	0.84	71.5
	Total Alto Valle	**85**	**0.84**	**71.5**
ARGENTINA TOTAL		**262**	**0.94**	**246.7**

In the Alto Valle region near the town of Neuquén hops are now grown by only one farm. Unusually high temperatures prevailed in Alto Valle until the end of December, which had an adverse effect on the yield of the growing areas.

The El Bolsón hop region experienced a dramatic drop of 125 ha from the 1995 level. In addition, the hop yards were damaged by severe frost. The growers in El Bolsón were faced with additional problems caused by spider mite infestation. The 1996 crop is regarded as sold out.

AFRICA

SOUTH AFRICA

Acreage and Production 1996

Variety	Acreage/ha	Ø-Yield/to/ha	Production/to
Southern Brewer	637	1.54	984.0
Outeniqua	19	1.26	23.9
SOUTH AFRICA TOTAL	**656**	**1.54**	**1,007.9**

Contrary to expectations in 1995, the growing area for the 1996 crop was expanded by 16 ha. Hops are grown on 25 farms in South Africa. A warm winter and cool conditions in the summer during the growth period had adverse effects on the yields.

The average alpha content of **Outeniqua,** a high-alpha variety bred by South African Breweries, amounted to 13.6%, compared with the approx. 9.4% recorded for **Southern Brewer** (EBC 7.3.2.).

The entire crop is sold to the South African brewing industry by future contract.

ZIMBABWE

55 to of **Southern Brewer** were harvested by two growers on a further reduced area of 36 ha.

AUSTRALIA – OCEANIA

AUSTRALIA

Acreage and Production

Area	Variety	Development of Acreage 1995	+/-	1996	Development of Production 1995 Ø-Yield to/ha	1996	1995 Production to	1996
		Acreage ha						
Tasmania	**Aroma**	**72**	**-12**	**60**	**0.85**	**1.55**	**61.1**	**93.2**
	Cluster	3	0	3	1.27	1.97	3.8	5.9
	Pride of Ringwood	425	11	436	2.83	3.07	1,201.6	1,340.2
	Total Bitter	**428**	**11**	**439**	**2.82**	**3.07**	**1,205.4**	**1,346.1**
	Nugget	71	0	71	1.69	2.65	119.9	188.4
	Other High Alpha	182	3	185	2.80	2.98	509.8	552.2
	Total High Alpha	**253**	**3**	**256**	**2.49**	**2.89**	**629.7**	**740.6**
	Total Tasmania	**753**	**2**	**755**	**2.52**	**2.89**	**1,896.2**	**2,179.9**
Victoria	Cluster	13	3	16	2.18	2.18	28.4	34.8
	Pride of Ringwood	196	-55	141	1.93	2.35	378.3	331.3
	Total Bitter	**209**	**-52**	**157**	**1.95**	**2.33**	**406.7**	**366.1**
	High Alpha	**92**	**4**	**96**	**2.78**	**3.50**	**255.6**	**336.2**
	Others	0	6	6	0.00	6.28	0.0	37.7
	Total Victoria	**301**	**-42**	**259**	**2.20**	**2.86**	**662.3**	**740.0**
Total Aroma		**72**	**-12**	**60**	**0.85**	**1.55**	**61.1**	**93.2**
Total Bitter		**637**	**-41**	**596**	**2.53**	**2.87**	**1,612.1**	**1,712.2**
Total High Alpha		**345**	**7**	**352**	**2.57**	**3.06**	**885.3**	**1,076.8**
Total Others		**0**	**6**	**6**	**0.00**	**6.28**	**0.0**	**37.7**
AUSTRALIA TOTAL		**1,054**	**-40**	**1,014**	**2.43**	**2.88**	**2,558.5**	**2,919.9**

The 1996 crop showed a continuation of the trend of recent years to grow greater quantities of high-alpha varieties, such as **Victoria, Opal** and **Nugget.** In Tasmania, the growing area is divided among 12 hop farms, in Victoria among 15. The winter was cold and wet in both areas. Growth in spring and early summer was held back by the persistently cool weather, with the result that up to the end of January everything pointed to the likelihood of a below-average harvest. However, plentiful summer rainfall then ensured excellent lateral growth and substantial flowering. Because of the slow growth and the rain, the harvest commenced roughly one week later than usual, i.e. it began in mid-March and was completed on April 12. The results of the harvest were highly satisfactory, with an increase of 12 % over the previous year in Victoria and as much as 15 % in Tasmania. The alpha values for pellets are approx. 10 % for **Pride of Ringwood,** 12 % for **Nugget** and over 14 % for **Victoria** and **Opal** (EBC 7.3.2.).

Market Situation

The greater part of the 1996 crop has already been sold by forward contract. At the end of May, only small quantities of **Pride of Ringwood** and **Nugget** were still available in the form of Type 90 pellets.

NEW ZEALAND

Production

Variety	1995/to	1996/to
NZ Hallertau Aroma	146.5	164.5
NZ Pacific Hallertau	---	4.2
Total Aroma	**146.5**	**168.7**
NZ Super Alpha	252.1	302.4
NZ Pacific Gem	205.9	216.6
NZ Green Bullet	100.0	95.4
NZ Sticklebract	50.4	43.1
NZ Southern Cross	1.6	5.6
Total High Alpha	**610.0**	**663.1**
Trial Varieties	---	1.1
NEW ZEALAND	**756.5**	**832.9**

Growth and Quality

Acreage in New Zealand in 1996 remained virtually unchanged from the previous year at 354 ha (1995: 355 ha). Of this area, 83 ha was planted with the aroma varieties **NZ Hallertau** (alpha content approx. 8.5 %, EBC 7.3.2.) and **NZ Pacific Hallertau** (alpha content approx. 5.6 %), the rest with high-alpha varieties. The aroma varieties produced an average yield of 2.03 to/ha, the bitter varieties 2.45 to/ha. The alpha acid values for the high-alpha varieties of between 12.4 % and 15 % were slightly below those of 1995.

For several years now, one farmer in New Zealand (where there are 22 hop farms altogether) has been growing hops organically, according to the requirements of the New Zealand Biological Producers Council. The growing conditions for this are favourable, as New Zealand – like Australia – has neither hop diseases, such as mildew, peronospora or wilt, nor hop aphids. The yield per hectare is lower than for hops grown by conventional methods, but the alpha acid content is comparable and the organoleptic appearance is good.

Market Situation

Most of the 1996 crop has been sold by future contract – in fact, the aroma varieties completely. In April 1996, only small quantities of high-alpha varieties were still available.

PLANT DEVELOPMENT 1996

Europe

The 1995/96 winter and the following spring were characterized for the most part by unusually low temperatures and lack of precipitation. Training was carried out on schedule and without any problems. By June 1996 most of the hops had reached a stage of development in line with the long-term average. Growth conditions in July and August will, as always, be the deciding factor for yield and bittering values. If there were to be insufficient precipitation during this period, accompanied by temperatures of predominantly over 30°C, however, the situation could become serious as a result of the rainfall deficit in the spring. In several growing areas, measures have had to be taken to combat downy mildew. Sufficient quantities of pesticide are available, also for hops earmarked for export to the USA.

USA

During the 1995/96 winter there was sufficient snowfall to replenish the mountain reservoirs, which means that enough water is available for hop irrigation. During a period of severe cold in January temperatures fell as low as -27°C. Fortunately a deep layer of snow protected the hop plants from damage. The subsequent rise in temperature, which was accompanied by severe flooding, also caused little damage to the plants, but did damage some trellis systems. The spring temperatures up to and including May were below-average in all growing areas, with readings of between 2°C and 15°C. This, combined with unusually heavy rainfall, slowed growth considerably and impeded training. Temperatures in June were ideal and permitted strong lateral growth, forming the basis for expectations of a good crop.

OUTLOOK 1996

The reduction in acreage worldwide of 1,000 - 1,500 ha for the 1996 crop can be seen as realistic, although an increase of approx. 325 ha is expected in the USA. Reductions in acreage of **Mount Hood** and **Cluster** will be more than compensated for by approx. 400 ha of newly planted high-alpha varieties.

In Germany, the growing area will probably decrease by approx. 110 ha, resulting from conversion to the new **aroma** and **high-alpha varieties** bred at the **Huell** research centre. The basis for a sufficient supply of the world market with alpha acids therefore continues to exist.

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.

European Monetary Union (EMU)

Plans and Perspectives

According to the Maastricht treaty, European monetary union is to be achieved in three stages.

The **first stage** began in the early 90s and laid down the framework for monetary union. The aim was to liberalize completely the movement of capital and to coordinate more closely the economic, financial and monetary policies of the members of the EU.

In the **second stage,** which is the present one, preparations are to be made for EMU. The aims of this stage are to establish the institutions central to implementing and supervising EMU, to forbid the financing of public deficits by the central banks and to supervise more closely the member states' economic and financial policies.

In the **third stage**, monetary union is to be completed. It will serve to fix the exchange rates between the members' currencies irrevocably, tying their currencies to the EURO. At present, January 1, 1999 is envisaged as the beginning of the third stage. Participation by EU states in EMU is attached to certain conditions, the much-discussed convergence criteria, which cover four areas:

a) Price stability:
Compliance with an inflation rate of not more than 1.5 percent above that of the (max.) three most stable countries.

b) Public finances:
Restriction of annual public borrowing to 3 % of gross domestic product (GDP) and restriction of national debt to 60 % of GDP.

c) Exchange rates:
Exchange rate stability vis-à-vis other member states in the last two years prior to accession without major tensions within the normal bands of the European exchange rate mechanism.

d) Interest rates:
Long-term nominal rate in the year prior to accession of not more than two percentage points above the interest rates of the (max.) three countries with the lowest inflation rates.

At the moment, only Luxembourg qualifies for entry to EMU. An adjustment of the convergence criteria to bring them into line with economic reality is therefore probable, so that the required minimum number of eight countries can qualify for monetary union by January 1, 1999. The wording of the treaty permits a certain degree of flexibility. What will be more important for EMU to function than the entrance criteria, however, is the compliance with standards after the union begins.

Since EMU is conceived as a **stability community** whose first priority is to ensure price stability in the member countries, it is to be expected that the stability factor that has taken hold in Europe lately will become even more firmly established in the future.

Leading politicians and economists in the EU emphasise that EMU should be launched according to plan in spite of current difficulties, as it constitutes Europe's strategic answer to the global changes and challenges of recent years.

As of the beginning of stage three, EMU is to be controlled by the European system of central banks. This will comprise the central banks of the individual member states and the **European Central Bank (ECB)** which is to be established for this purpose. The ECB will then assume responsibility for the Union's monetary policy, thus relieving the national central banks of their responsibility. The ECB is structured in more or less the same way as the German central bank (Deutsche Bundesbank). This particularly applies to its independence and commitment to stability policy. The ECB has in fact two advantages over the Bundesbank. First, the law regarding the ECB cannot be as easily amended as the German central bank law. Second, the ECB is strictly forbidden to finance any public deficits.

What are we make of EMU in general?

For business, there are several economic advantages to be anticipated from a single European currency:

- an end to **transaction costs** based on the exchange rates within Europe.
- greater **planning reliability** for companies in foreign trade dealings and especially in long-term investments
- the opportunity to create a genuine **stability zone** in Europe once governments are no longer able in future to incur debts in their own currencies and with their own central banks
- the creation of a larger and more powerful **European finance market** offering the possibility of falling capital market interest rates.

The stability pact laid down by monetary union constitutes a long-term chance for Europe. It remains to be seen, however, whether the envisaged independence of the ECB will be able to withstand the **political reality** and whether the governments responsible will also be able to summon up the courage to pass measures which are unpopular.

"A united Europe was the dream of a few. It has become the hope of many. And today it is a necessity for us all." *Konrad Adenauer (1954)*