1986/87

HOPS

Joh. Barth & Sohn

Conversion Table

1 ha	= 2,934 bayerische Tagwerk
1 ha	= 2,471 acres
1 bayerisches Tagwerk	= 0,341 ha
1 acre	= 0,405 ha
1 hl = 100 l	= 26,42 gall = 0,8523 bbl (USA)
	= 22,01 gall = 0,6114 bbl (Brit.)
1 bbl (USA)	= 31 gall = 1,1734 hl
1 bbl (Brit.)	= 36 gall = 1,6365 hl
1 metr. ton = 1.000 kg	= 20 Ztr. = 2.204,6 lbs
1 Ztr. = 50 kg	= 110,23 lbs = 1,102 cwt (USA)
	= 110,23 lbs = 0,984 cwt (Brit.)
1 cwt (USA)	= 100 lbs = 45,359 kg
1 cwt (Brit.)	= 112 lbs = 50,8 kg
1 cental (Brit.) = 100 lbs	= 45,359 kg = 0,9072 Ztr.
1 kg	= 2,20462 lbs
1 lb	= 0,45359 kg

Conversion of thermometer degrees in Fahrenheit and Celsius:

$$86\ °F = \frac{(86-32)\ 5}{9} = 30\ °C$$

$$30\ °C = \frac{30 \cdot 9}{5} + 32 = 86\ °F$$

Currency Exchange Table

As of 14 July 1987 the Frankfurt Currency Exchange Market listed:

	Discount Rate	Spot Rate 14/7/87 Selling Rate	Buying Rate
New York *	5.5	1.8395	1.8475
London *	12	2.969	2.983
Dublin *	12.8	2.673	2.687
Montreal *	8.64	1.3945	1.4025
Amsterdam	4.5	88.74	88.96
Zurich	3.5	119.81	120.01
Brussels	7.5	4.810	4.830
Paris	9.5	29.96	30.12
Copenhagen	7	26.29	26.41
Oslo		27.27	27.39
Stockholm	7.5	28.59	28.75
Milan **	11.5	1.3765	1.3865
Vienna	3.5	14.204	14.244
Madrid	8	1.449	1.459
Lisbon	15.5	1.269	1.289
Tokyo	2.5	1.2205	1.2235
Helsinki	7	41.13	41.33
Athens *	20.5	1.309	1.349

* = 1 unit, ** = 1000 units, all other 100 units

The Most Important Data of the World Market

	1986	1985	Diff. %
acreage/ha	84.220	86.855	− 3,1
hop production/tons	112.466	124.050	− 9,3
alpha production/tons	7.199	7.056	+ 2,0
beer production/1000 hl	1.015.917	983.624	+ 3,3

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Nuremberg, July 1987

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Political situation

An agreement on disarmament seems to have become a viable political reality. In particular the many proposals for disarmament initiated mainly by the USSR are justifying hopes for further détente between the superpowers.

On the other hand in the areas of political strife such as the **Near East, Afghanistan** and **Central America** no breakthrough for long-term peace prospects could be achieved.

In the **COMECON** member states the economic and political reform measures put forward by the Soviet party leader Michail Gorbatschow are obviously being viewed quite differently, the West is following such discussions with great interest.

In the **People's Republic of China** the students' demands for more personal and economic freedom have brought about disruptions which have resulted in the replacement of the Party's Secretary General.

Economic situation

In 1986 the **world economy** recorded a sluggish growth which was mainly generated by western industrialised countries and the nations in the Pacific whose gross national product rose between 2-3%. A sizable reduction of oil prices, lower interest and inflation rates favoured economic development in this area. At the same time a number of Third World countries as well as oil producing countries reported recessions.

The most significant incidence in the period under review was the enormous **fall of the dollar exchange rate** against other hard currencies. It occurred as a consequence of the three-fold US deficit (balance of trade, balance of current accounts, budget). The imbalances provoked by these deficits could possibly endanger worldwide free trade.

Economic development in the **FRG** was positive. Prices were stable (consumer prices dropped by 0.5%) and despite the falling dollar exchange rate a foreign trade surplus of DM 112 bn (1985: 73.4 bn) could be achieved.

Exchange rates within the **European Monetary System** were adjusted on January 12th, 1987 by devaluing the Danish, British, French, Irish and Italian currencies against the DM and the Dutch Guilder by 3% and against the Belgian Franc by 2%.

Some 1986 key data for the USA and the FRG:

Key data	USA	Fed. Rep. of Germany
Gross national product	+2.0%	+2.5%
Balance of trade	−$ 166.0 bn	+DM 112.2 bn
Balance of visible and invisible items	−$ 141.3 bn	+DM 76.5 bn
Inflation rate	+2.5%	−0.5%
Interest rate after May 1, 1987	8% (prime rate)	3.0% (Federal Bank discount rate)
Unemployment rate on Dec. 31, 1986	6.9%	8.9%

Table of Bitter Constituents

Bitter constituent values of the most important European varieties:

	crop 1986	crop 1985
variety	alpha %	alpha %
Hallertau Hallertau	4.3	3.5
Hallertau Hersbruck	2.9	3.3
Hallertau Hüller	5.1	4.9
Hallertau Perle	6.2	5.7
Hallertau Northern Brewer	8.3	6.8
Hallertau Brewers Gold	6.1	5.9
Tettnang	4.8	3.7
Spalt	4.8	3.9
Saaz	3.6	3.4
Yugoslavian Styrian Golding	5.4	5.8
Yugoslavian Super Styrian	9.1	8.0

Method of analysis

The hop alpha acids are measured conductometrically according to EBC using Toluol as solvent. Literature: EBC Analytica 3rd Edition 6.3.1 Page E 48.

The above values are considered as is and were measured in October/November after the harvest. They cannot form the basis of deliveries in the later course of the season. The bitter values of other important varieties are listed under the respective country report.

On our own behalf

Hops are no longer evaluated according to the total resin content. Therefore our table of bitter consituents will show in the future only the alpha acid values.

World Beer Production 1985/86

Specification in 1000 hl

EUROPE

Country	1986	1985
Fed. Rep. of Germany	94.100	93.294
Great Britain	59.166	62.500
USSR*	55.000	60.000
German Dem. Rep.*	24.300	25.500
Spain	24.126	23.353
Czechoslovakia	22.783	22.354
France	20.655	20.802
Netherlands	17.988	17.529
Belgium	13.715	14.500
Poland	11.380	10.801
Italy	11.082	10.306
Rumania*	11.000	11.500
Yugoslavia	10.500	10.505
Hungary	9.222	8.772
Bulgaria[1]	9.000	5.500
Austria	8.948	8.677
Denmark	7.500	7.924
Ireland	5.456	5.508
Switzerland	4.112	4.110
Sweden	4.100	3.910
Portugal	3.945	3.817
Finland	3.285	3.022
Greece	3.150	2.970
Norway	2.135	2.031
Luxemburg	732	630
Malta	135	117
Albania*	100	100
Iceland	38	41
TOTAL	437.659	440.073

[1] see resp. country report

AMERICA

Country	1986	1985
USA	230.545	226.825
Brazil	43.760	30.250
Mexico	29.287	27.392[1]
Canada	22.815	22.126
Colombia*	16.600	15.800
Venezuela	11.200	10.300
Peru	6.800	5.525
Argentina	5.900	4.600
Cuba*	4.000	2.600
Ecuador	2.386	2.500
Chile	2.200	1.887
Dominican Rep.	1.200	1.100
Paraguay	900	1.150
Panama	880	880
Bolivia	800	636
Costa Rica	800	600
Uruguay	750	490
Guatemala	710	600
Jamaica	650	600
El Salvador	650	550
Nicaragua	550	550
Honduras	540	534
Trinidad	350	200
Puerto Rico*	300	200
Netherl. Antilles	132	124
Surinam	112	142
Guyana	100	164[2]
Barbados	80	50
Martinique	63	66
San Lucia	60	40
Guadeloupe*	30	30
Belize*	25	25
Grenada	25	25
Haiti	25	23
St. Kitts*	25	25
St. Vincent	13	7
TOTAL	385.263	358.452

[1] later correction to 28,387
[2] not listed in the last year's statistics

AFRICA

Country	1986	1985
South Africa	14.500	13.500
Nigeria	6.840	10.000[1]
Cameroon	5.400	4.900
Zaire*	3.200	3.000
Kenya	3.200	2.700
Ivory Coast	1.320	1.300
Zimbabwe	1.050	1.165
Gabon*	1.000	1.060
Burundi	884	811
Tansania	850	762
P. Rep. Congo*	850	865
Ethiopia	842	935
Zambia	800	743
Ruanda	641	624
Algeria*	600	700
Angola*	530	700
Burkina Faso*	500	500
Egypt	472	420
Morocco	400	360
Togo*	400	397
Namibia	350	340
Tunesia	325	400
Central African Rep.	306	300
Benin	274	358
Madagascar	260	325[2]
Moçambique	229	300[3]
Lesotho	200	188
Mauritius	200	185
Botswana	194	181
Swaziland (Brewing year)	171	160
Malawi	160	160
Senegal	160	170
Ghana	151	130
Chad	115	149
Liberia	110	110
Reunion	100	98
Niger*	90	90
People's Dem.Rep.Yemen	85	70
Mali*	80	80
Uganda*	55	100
Seychelles	42	42
Sierra Leone	36	57
Guinea Bissau	20	31
Gambia*	12	12
TOTAL	48.004	49.480

[1] later correction to 9.250
[2] later correction to 260
[3] later correction to 228

NEAR EAST

Country	1986	1985
Turkey	2.200	2.200
Iraq	517	580
Israel	412	412
Cyprus	260	247
Lebanon	130	99
Syria*	90	90
Jordan	34	33
TOTAL	3.443	3.661

FAR EAST

Country	1986	1985
Japan	49.980	47.461
People's Rep. China*	40.000	32.000[1]
Philippines	8.300	8.100
Rep. of Korea	8.065	7.907
Taiwan	3.537	3.353
Vietnam*	2.000	2.000
India	1.800	2.000
Hong Kong	1.250	1.236
D. P. Rep. Korea*	1.000	1.000
Thailand	800	1.200
Malaysia	650	610
Indonesia	402	658
Singapore	391	391
Iran**	100	100
Mongolia*	100	100
Sri Lanka	72	70
Burma*	50	40
Nepal	45	37
Laos*	10	10
Pakistan*	10	10
Bangla-Desh*	5	5
Cambodia*	5	5
Okinawa	–	360[2]
TOTAL	118.572	108.653

[1] some sources estimate the 1985 output to already 35.000
[2] from 1986 on included in figure of Japan

AUSTRALIA/ OCEANIA

Country	1986	1985
Australia	18.170	18.503
New Zealand	3.924	3.940[1]
New Guinea	494	514
Fiji Islands*	165	165
Tahiti	118	94
New Caledonia*	55	44
Samoa*	50	45
TOTAL	22.976	23.305

[1] later correction to 3.834

***estimated**
****non-alcoholic**

	1986	1985
WORLD	**1.015.917**	**983.624**

Output Development

A growth rate of over 3% could be recorded for world beer production which had been stagnating since 1983. **Europe, Africa, the Near East as well as Australia/Oceania** suffered new setbacks here while output in the **Far East** and **America** increased considerably.

The development of production in 1,000 hl:

	1986 % rel.	1985 % rel.	1986 total	1985 total	+ (–) total
Europe	– 0.6	– 0.9	437,659	440,073	– 2,414
America	+ 7.5	+ 1.4	385,263	358,452	+26,811
Africa	– 3.0	+ 6.4	48,004	49,480	– 1,476
Asia (Far East)	+ 9.1	+12.3	118,572	108,653	+ 9,919
Near East	– 6.0	–10.7	3,443	3,661	– 218
Australia/ Oceania	– 1.4	– 1.5	22,976	23,305	– 329
Total	**+ 3.3**	**+ 1.6**	**1,015,917**	**983,624**	**+32,293**

Market Analysis

The major events on the 1986 hops market can be summed up as follows:

- slight deficits in the worldwide balance of bitter substances
- slow reduction of large stocks at breweries
- increased awareness of chemical pesticide residues in the hops
- starting-up of cultivation of aroma varieties in the USA.

In general the **development of prices** was subdued. Indeed from the point of view of the growers the price level was unsatisfactory. At times bottlenecks occurred on the market for German **aroma hops** causing price fluctuations, whilst demand for **bitter hops** could be met without any problems. Bitter varieties with low alpha values met with sales difficulties, however. Sizable quantities could not be sold in France and Belgium which was also true for hops of the 1985 harvest. The total US harvest was sold to consumers, though.

The instructions by **the US Environmental Protection Agency and the Food & Drug Administration** to apply strict controls to imports of hops and to reject hops that did not meet **US legal requirements for chemical tolerances for hops** at the port of entry, caused considerable commotion, particularly on the German market, from October 1986 to February 1987. Although a viable solution was found for the 1986 harvest, in the end in cooperation with the two above mentioned US authorities, the European hops industry which is dependent on exports, will have to adjust to meet the **US standards.** This will require considerable effort on the part of European hop growers who are at a greater disadvantage because of the more unfavourable climate than that of the USA.

Upon request of large US breweries the aroma varieties **Willamettes, Fuggles, Tettnanger and Perle** were cultivated for the first time in the areas of Oregon, Washington and Idaho on about 2,000 - 3,000 ha, only part of which was planted in 1987. Other triploide aroma varieties are presently being developed.

Thus it is to be concluded that trends on the world hops market are evident that will pass the European markets by in the future. This aspect should be considered when making the **policy decisions concerning areas under cultivation** of those producers who are organised within the EEC.

The advance contract rates (%) in the major growing areas in the world are assessed as follows:

Crop	1987	1988	1989	1990	1991	1992
USA	94	68	43	34	8	–
Fed. Rep. of Germany	70	60	50	40	30	20
CSSR	90	80	60	–	–	–
Yugoslavia (Slov.)	80	70	60	50	50	–
England	90	50	35	15	–	–

Our contract rate estimate is based on the areas under cultivation for the 1986 harvest. Possible changes have not been allowed for.

Acreage and Hop Production

area	1986 acreage in ha	1986 ∅ tons per ha	1986 crop in tons = 1000 kg	1985 acreage in ha	1985 ∅ tons per ha	1985 crop in tons = 1000 kg
Hallertau	16.682	1,77	29.474,5	16.681	1,87	31.146,0
Spalt	850	1,56	1.323,6	784	1,32	1.032,3
Hersbruck	139	1,34	185,9	140	1,54	215,0
Jura	693	1,88	1.300,6	733	1,98	1.449,3
Tettnang	1.266	1,45	1.839,6	1.239	1,47	1.823,2
others	19	1,62	30,7	20	1,56	31,1
Fed. Rep. of Germany	**19.649**	**1,74**	**34.154,9**	**19.597**	**1,82**	**35.696,9**
Kent	2.366	1,19	2.818,4	2.655	1,37	3.640,3
Hampshire	89	1,13	100,7	100	1,21	121,2
Sussex	156	1,02	159,1	208	1,21	251,9
Herefordshire	1.261	1,20	1.506,6	1.329	1,30	1.731,7
Worcestershire	360	1,35	486,4	457	1,65	751,9
England	**4.232**	**1,20**	**5.071,2**	**4.749**	**1,37**	**6.497,0**
Aalst	94	1,88	176,4	124	1,91	236,0
Poperinge	474	1,76	832,3	567	1,67	944,0
Vodelée	—	—	—	4	1,50	6,0
Belgium	**568**	**1,78**	**1.008,7**	**695**	**1,71**	**1.186,0**
Alsace	427	1,91	814,0	420	2,01	843,2
Burgundy	20	1,60	32,0	28	1,86	52,0
Nord	153	1,50	229,0	207	1,75	362,0
France	**600**	**1,79**	**1.075,0**	**655**	**1,92**	**1.257,2**
Ireland	**34**	**0,51**	**17,2**	**72**	**1,21**	**86,5**
Greece	—	—	—	—	—	—
Spain	**1.714**	**1,17**	**2.000,5**	**2.003**	**1,62**	**3.248,2**
Portugal	**163**	**2,02**	**329,4**	**174**	**2,18**	**379,7**
EEC	**26.960**	**1,62**	**43.656,9**	**27.945**	**1,73**	**48.351,5**
Saaz	7.678	0,82	6.271,0	7.740	0,96	7.398,0
Auscha	1.657	0,97	1.600,0	1.720	1,27	2.191,0
Tirschitz	1.015	1,07	1.084,0	925	1,47	1.356,0
Slovakia	1.600	0,66	1.060,0	1.565	1,17	1.833,0
Czechoslovakia	**11.950**	**0,84**	**10.015,0**	**11.950**	**1,07**	**12.778,0**
USSR*	**15.300**	**0,70**	**10.700,0**	**15.000**	**0,90**	**13.500,0**
Slovenia	2.518	1,43	3.604,0	2.491	1,62	4.022,0
Backa and Ilok	800	1,13	900,0	860	1,21	1.040,0
Yugoslavia	**3.318**	**1,36**	**4.504,0**	**3.351**	**1,51**	**5.062,0**
Germ. Dem. Rep.	**2.370**	**1,61**	**3.807,0**	**2.420**	**1,40**	**3.396,0**
Poland	**2.433**	**1,11**	**2.700,0**	**2.503****	**1,10**	**2.747,0**
Bulgaria	**967**	**0,75**	**720,0**	**1.300**[1]	**0,65**	**850,0**
Rumania*	**2.000**	**0,75**	**1.500,0**	**2.000**	**0,88**	**1.750,0**
Hungary	**512**	**1,25**	**641,7**	**518**	**1,19**	**615,1**
Mühlviertel	88	1,43	125,6	82	1,62	132,5
Leutschach	72	1,39	100,0	70	1,64	115,0
Austria	**160**	**1,41**	**225,6**	**152**	**1,63**	**247,5**
Switzerland	**20**	**1,94**	**38,8**	**22**	**1,42**	**31,2**
Albania*	**70**	**1,00**	**70,0**	**70**	**1,00**	**70,0**
EUROPE	**66.060**	**1,19**	**78.579,0**	**67.231**	**1,33**	**89.398,3**
Washington	7.089	2,29	16.032,0	7.904	2,09	16.533,0
Oregon	2.067	1,86	3.843,0	2.237	1,63	3.649,0
Idaho	1.003	2,26	2.262,0	1.274	1,78	2.271,0
USA	**10.159**	**2,20**	**22.137,0**	**11.415**	**1,97**	**22.453,0**
Canada	**279**	**1,18**	**329,9**	**291**	**1,56**	**453,8**
Japan	**1.011**	**1,96**	**1.977,9**	**1.051**	**1,79**	**1.884,0**
Australia	**755**	**2,50**	**1.885,0**	**776**	**2,50**	**1.937,0**
New Zealand	**110**	**2,50**	**274,5**	**211**	**1,95**	**412,0**
People's Rep. of China*	**3.500**	**1,43**	**5.000,0**	**3.500**	**1,43**	**5.000,0**
Dem. People's Rep. of North Korea*	**600**	**1,00**	**600,0**	**600**	**1,00**	**600,0**
Republic of South Korea	**458**	**1,31**	**601,5**	**488**	**1,43**	**696,5**
South Africa	**448**	**1,00**	**446,3**	**410**	**1,22**	**500,0**
India*	**450**	**0,56**	**250,0**	**325**	**0,55**	**180,0**
Colombia*	—	—	—	**2**	**2,00**	**4,0**
Turkey	**140**	**0,96**	**135,0**	**300**	**0,94**	**281,3**
Argentina*	**250**	**1,00**	**250,0**	**255**	**0,98**	**250,0**
WORLD	**84.220**	**1,34**	**112.466,1**	**86.855**	**1,43**	**124.049,9**

* estimate

** acreage for baby hops included

[1] official figures for 1985 at the moment: 962 ha and 660,0 to

Alpha Acid Production

Alpha acid production on the world market was calculated on the basis of the following groups of varieties:

group A: finest aroma hops (Saaz, Tettnang, Spalt)

group B: aroma hops (Hallertau, Hersbruck, Hüll, Perle, Strisselspalt, Golding, Fuggle, Cascade, and others)

group C: hop varieties without significance for the world market

group D: bitter hops (Northern Brewer, Brewers Gold, Cluster, Bullion, Pride of Ringwood, high-alpha hops from the USA and the UK).

When grouping world hop production in this way the following alpha production results for 1986 which compares to that of 1985 as follows:

	1986				1985			
group	share %	crop tons	α % ∅	α tons	share %	crop tons	α % ∅	α tons
A	8	14,396	3.9	570	7	15,633	3.3	516
B	13	23,223	4.0	933	14	25,077	3.9	978
C	18	27,051	4.9	1,326	24	31,300	5.3	1,659
D	61	47,796	9.1	4,370	55	52,039	7.6	3,903
Total	100	112,466	6.4	7,199	100	124,049	5.8	7,056

Due to increased cultivation of high alpha hops in the USA and the excellent bitter values of the European harvest, the percentage of group D increased to the detriment of group C while the shares held by groups A and B in the world market remained relatively stable.

Alpha Acid Balance

The amount of alpha acid used per hl can only be estimated. It probably varies between 6.8 and 7.2 g per hl.

For the alpha acid balance listed below one must consider that the figures for **production** are based on the amount of hops when freshly harvested. As bitter acids decrease in the course of the brewing year an alpha rate of 7.2 g per hl for this calculation seems justified.

Thus the balance for alpha acid currently presents the following picture:

1984 demand (hopping rate 7.2 gr alpha/hl)	7,000.0 tons alpha
1983 production	7,540.0 tons alpha
surplus	540.0 tons alpha
1985 demand (hopping rate 7.2 gr alpha/hl)	7,100.0 tons alpha
1984 production	8,175.0 tons alpha
surplus	1,075.0 tons alpha
1986 demand (hopping rate 7.2 gr alpha/hl)	7,314.7 tons alpha
1985 production	7,056.0 tons alpha
deficit	258.7 tons alpha
1987 demand (estimated hopping rate 7.2 gr alpha/hl)	7,400.0 tons alpha
1986 production	7,199.0 tons alpha
deficit	201.0 tons alpha

The low bitter values of the 1985 harvest and the significant rise in world beer production 1986 have caused a deficit in the supply of bittering substances on the world market for the first time since 1980.

European Community

With the entry of Spain and Portugal into the European Community on January 1, 1986, the number of hop growing countries in the EEC rose to seven. Greece on the other hand, discontinued its hop cultivation and does not belong to this group of EEC countries anymore.
European Community subsidies to the hop growers for the 1985 harvest were fixed at 8 million ECU (exchange rate: 1 ECU = DM 2.38516). Subsidies per ha for the different varieties were as follows:

Variety	ECU	= DM
Aroma	275	655,92
Bitter	350	834,81
Other	350	834,81

These subsidies went to the different member countries as follows:

Country	1,000 ECU	1,000 DM
FRG	6,060	14,454
France	215	513
Belgium	237	565
United Kingdom	1,515	3,614
Ireland	15	36
Total	8,042	19,182

In recent years subsidies had amounted to:

Year	1,000 ECU	1,000 DM
1980	5,744	15,260
1981	5,089	13,105
1982	7,623	11,050
1983	7,664	19,267
1984	7,873	18,778
1985	8,042	19,182

By Commission Regulation no. 2735/86 of September 3rd, 1986 Hop Varieties Regulation no. 1517/77 was amended including the Spanish varieties "H/3 Leones" and "H/7 Leones" in the group of bitter and the variety "Fino Alsacia" in the group of aroma hops.

Federal Republic of Germany

Growth, Estimated Harvest and Actual Weight

After a mild winter and warm spring weather all hops could be exposed and cut by the beginning of April. Very warm and dry weather assured that almost all hops had been trained by early May. At the end of May when the plants had reached 2/3 of the height of the trellises temperatures dropped, temporarily stopping growth. This was followed by three weeks of good weather and subsequent rainfall which promoted further growth. Sunshine and precipitation alternated until the start of the harvest which had positive effects on the quality of the hops. Harvesting started around August 25.

Below a comparison of the official estimate and the actual volume of the harvest:

Area	**Estimate tons**	**Quantity harvested tons**
Hallertau	29,750	29,475
Spalt	1,315	1,324
Jura	1,325	1,301
Tettnang	1,710	1,840
Hersbruck	210	186

Official estimates and actual quantities correlated to a large degree.

Varieties

In Germany the following varieties were cultivated and resulted in the following harvest figures:

area	variety	ha	Ø-yield/tons	amount harvested/tons
Hallertau	Hallertauer	852	1.08	922
	Hersbrucker	4,870	1.61	7,855
	Hüller	991	1.72	1,709
	Perle	1,520	1.79	2,716
	Northern Brewer	5,553	1.69	9,365
	Brewers Gold	2,457	2.58	6,338
	Orion	81	0.32	26
	others	358	1.52	544
Jura[1]	Hallertauer	65	1.31	85
	Hersbrucker	357	1.72	615
	Hüller	21	1.29	27
	Perle	78	2.08	162
	Northern Brewer	56	1.61	90
	Orion	2	0.50	1
	Brewers Gold	114	2.82	321
Spalt[1]	Hallertauer	496	1.51	749
	Spalter	241	1.32	317
	Hersbrucker	59	2.15	127
	Perle	27	2.37	64
	others	27	2.44	66
Hersbruck	Hallertauer	71	1.23	87
	Hersbrucker	47	1.13	53
	others	21	2.19	46
Tettnang	Hallertauer	323	1.85	597
	Tettnang	937	1.32	1,233
	Hersbrucker	6	1.50	9
remainder		19	1.63	31

[1] The acreage of the Spalt growing region increased by the 75 ha of the Kinding district. According to the regulation of July 15th, 1986 regarding the alteration of the „Hopfenherkunftsgesetz" (law of hop origin) Kinding was added to the Spalt region.

Acreage

In the **Federal Republic of Germany** the following acreage development resulted:

area	acreage development			aroma varieties					bitter varieties and others		
	acreage 1986 ha	+ / − ha	acreage 1985 ha	Hallertauer ha	Spalter ha	Tettnanger ha	Hersbrucker ha	Perle ha	Nothern Brewer ha	Brewers Gold ha	others ha
Hallertau	16,682	+ 1	16,681	852	16	–	4,870	1,520	5,553	2,457	1,414
Jura[1]	693	−40	733	65	–	–	357	78	56	114	23
Spalt[1]	850	+66	784	496	241	–	59	27	8	18	1
Hersbruck	139	− 1	140	71	–	–	47	5	11	3	2
Tettnang	1,266	+27	1,239	323	–	937	6	–	–	–	–
others	19	− 1	20	6	1	4	–	2	1	2	3
total	19,649	+52	19,597	1,813	258	941	5,339	1,632	5,629	2,594	1,443

Source: Verband Deutscher Hopfenpflanzer, „Statistik über die Hopfenvermarktung 1986".

[1] also see table "Distribution of varieties"

Meanwhile there is a tendency to favour **aroma hops.** The area under cultivation for the variety **Hersbrucker** increased by 402 ha and by 293 ha for the variety **Perle.** Due to the withering disease acreage for the variety **Hallertau** was reduced by another 197 ha. Insufficient demand for **Brewers Gold** hops certainly caused the 281 ha drop in acreage for this variety.

The ratio of the different categories of varieties changed in favour of **aroma hops** as follows:

Category	1986	1985
Aroma varieties	56 %	54 %
Bitter varieties	42 %	44 %
Other varieties	2 %	2 %

Market Development

The central problem was the decision of the **US Food & Drug Administration** not to admit any hops to the **USA** that had been treated with pesticides that were not licenced in the **USA** starting with the 1986 harvest. Until the end of the year it was still uncertain whether the **USA** would buy or not. As soon as a solution was in sight, prices-particularly those for **aroma hops-rose.** In spring no more **aroma hops** were available on the German market, some quantities of **bitter hops** remain in a processed form.

A few figures clearly illustrate how dependent the **German hop trade** is on exports, particularly to the **USA:**

The **FRG's** volume of exports to the **USA** is estimated to be approx. 6,000 tons – **aroma hops** without exception. As 17,000 tons of aroma hops are cultivated this signifies that over 35% are exported to the **USA.**

Our **market report** mentioned the following quotations for spot market hops:

area/variety	6/86	8/86	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87
HALLERTAU Hersbrucker	320.–	320.–	250.–	260.–	o.N.	o.N.	440.–	385.–	385.–	480.–
HALLERTAU Perle	260.–	260.–	230.–	210.–	(290.–)[1]	(290.–)[1]	290.–	290.–	290.–	380.–
HALLERTAU Northern Brewer	220.–	260.–	250.–	210.–	(290.–)[1]	(290.–)[1]	270.–	230.–	230.–	270.–
HALLERTAU Brewers Gold	160.–	160.–	120.–	110.–	160.–	160.–	120.–	120.–	120.–	200.–
SPALT	570.–	520.–	430.–	320.–	o.N.	o.N.	o.N.	o.N.	o.N.	o.N.
TETTNANG	570.–	520.–	430.–	320.–	o.N.	o.N.	o.N.	o.N.	o.N.	o.N.

[1] = nominal price. These varieties were not available at times.
o.N. = no price available

The above quotations are to be understood for 50 kg of packed hops, ex warehouse, excluding packing material and VAT.

ENGLAND

Growth, Harvest and Market Development

Extreme low temperatures characterised spring and summer which had unfavourable consequences on the growth of the plants. Thus the yields per ha were lower than estimated. Most varieties proved to be of good quality, however. This also applied to bitter values which were similar to last year's. Alpha acids were as follows:

Variety	alpha acids % 1986	alpha acids % 1985
Wye Target	10.0	10.8
Yeoman	10.1	9.7
Wye Challenger	7.4	7.3
Golding (East-Kent)	5.3	5.2
Bramling Cross	5.6	5.3
Bullion (Kent)	–	8.5

Advance sales for the next harvest are estimated as follows:

Crop	tons	%*
1987	4,500	88
1988	2,500	49
1989	1,750	34
1990	750	14

*) based on 1986 volumes

Acreage was reduced in the different regions as follows:

Region	Reduction ha
Kent	– 287
Sussex	– 52
Hampshire	– 10
Herefordshire	– 48
Worcestershire	– 29
Brewers' cultiv.	– 91
Total	– 517

ENGLAND

Varietal Cultivation

variety/ha	total		WGV		Fuggles		Bramling Cross		Northern Brewer		Bullion		Wye Northdown	
area	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**
Kent	2083	2370	139	138	30	39	49	78	3	4	–	3	58	80
Sussex	156	208	–	–	11	18	5	5	–	–	–	–	–	–
Hampshire	90	100	–	–	3	3	–	–	–	–	–	–	70	74
Herefordshire	1123	1171	–	–	448	433	–	–	9	11	–	3	246	306
Worcestershire	340	369	–	–	71	75	–	–	7	14	–	–	88	101
brewery cultivation	440	531	14	14	–	–	2	2	38	43	14	78	31	47
total	4232	4749	153	152	563	568	56	85	57	72	14	84	493	608

variety/ha	Wye Challenger		Wye Target		Wye Saxon		Yeoman		Goldings		others	
area	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**	**86**	**85**
Kent	125	144	940	1065	2	8	344	409	319	316	74	86
Sussex	7	16	82	109	–	–	40	46	–	6	11	7
Hampshire	4	4	–	–	–	–	–	–	–	–	13	20
Herefordshire	232	258	25	17	–	–	28	15	97	91	38	37
Worcestershire	74	87	–	–	–	–	–	–	84	82	16	10
brewery cultivation	47	62	191	164	1	1	48	47	9	9	45	64
total	489	571	1238	1355	3	9	460	517	509	504	197	224

Totals may not agree with addition of individual items because of rounding.

FRANCE

Growth and Market Development

The hops' growth was at first hampered by the relatively cold weather in spring. This retarded development could not be completely compensated in the regions of **Nord** and **Burgundy.** Alsace on the other hand reported high yields.

53% of the French harvest and 80% in the region of **Alsace** resp. were sold in advance contracts. Thus the advance contract rate for all French areas was around 12% lower than in the previous year.

While **aroma varieties** and the **Alsatian Brewers Gold** could be sold completely, about 110 tons of **Brewers Gold** together with another 250 tons from the 1985 harvest were awaiting sale at the growers' in the region **Nord** at the time of reporting.

Bitter values of the varieties **Strisselspalter** were 2.7% and **Northern Brewer** 8.0% resp.

FRANCE

Cultivation of varieties

The acreage of France can be broken down into varieties as follows:

variety/ha	total		Aroma hops		Brewers Gold		Northern Brewer	
area	86	85	86	85	86	85	86	85
Alsace	425.5	420.0	238.5	185.0	162.0	204.0	25.0	31.0
Nord	153.0	207.0	–	–	118.5	161.0	34.5	46.0
Burgundy	20.0	28.0	2.5	3.0	17.0	24.0	0.5	1.0
total	598.5	655.0	241.0	188.0	297.5	389.0	60.0	78.0

In Alsace the Brewers Gold hops are gradually replaced by the variety Strisselspalt, but the total acreage remained nearly unchanged.

In the areas Nord and Burgundy, however, the total acreage reduced furthermore.

The quantity harvested can be broken down into varieties as follows:

variety/to	total	Aroma hops	Brewers Gold	Northern Brewer + others
Alsace	814.0	325.0	452.0	37.0
Nord	229.0	–	183.0	46.0
Burgundy	32.0	2.0	30,0	–
total	1,075.0	327.0	665.0	83.0

(Totals may not agree with addition of individual items because of rounding)
For 1987 an acreage reduction of about 30 ha is to be expected.

BELGIUM

This country's area under cultivation was cut by another 127 ha. Cultivation was discontinued in **Vodelée.**
The different varieties are cultivated in the following areas:

Area/ha	Northern Brewer	Brewers Gold	Hallertau	Other	Total
Poperinge	214	193	43	24	474
Aalst	25	6	45	18	94
Belgium total	239	199	88	42	568

These areas gave following yield:

Area/to	Northern Brewer	Brewers Gold	Hallertau	Other	Total
Poperinge	331.7	386.0	77.4	37.2	832.3
Aalst	49.7	12.3	87.6	26.8	176.4
Belgium total	381.4	398.3	165.0	64.0	1,008.7

The following bitter values were reported to us:

Northern Brewer	8.6 %
Brewers Gold	4.0 %
Saaz	3.4 %
Hallertau	4.0 %

(values as is, measured conductometrically)

While at the time of reporting the varieties Northern Brewer and Hallertau were sold out, the growers were still warehousing 320 tons Brewers Gold hops, i.e. about 80 % of this variety.

For 1987 a further reduction of acreage of about 120 ha can be expected.

YUGOSLAVIA

Styria

In the months of January and February −26°C marked extremely low temperatures which continued well into spring. This retarded the hops' growth in particular that of the variety **Steirer Golding.**

While yield per hectar was inferior to last year's, the quality and the content of bitter substances of the hops harvested was satisfactory.

The different varieties are cultivated on the following acreage:

Variety	86 ha	85 ha
Styrian Golding	961	906
Aurora	1,194	1,192
Other varieties	363	393
Total	**2,518**	**2,491**

The following amounts were harvested per variety:

Variety	tons
Styrian Golding	994
Aurora	2,073
Other varieties	537
Total	**3,604**

No major changes in acreage are expected for 1987. The varieties Steirer Golding and Aurora will probably gain even more ground whilst reducing the volume of other varieties further.

Bačka

Winter was relatively mild with little snowfall. In spring dry weather continued which facilitated pest control in the hop fields. Until the time of the harvest no diseases or pests were to be found.

The quality of the hops and content of bitter substance corresponded to the average over many years.

In the total region of **Bačka** the following acreages were cultivated with the following varieties:

Variety	area (ha)	crop (tons)
Bačka	600	610
Neo Planta	110	160
Other varieties	90	130
Total	**800**	**900**

No major changes in acreage are expected for 1987.

CZECHOSLOVAKIA

In spring there was a lack of rainfall together with cold weather. Overall conditions improved later on. While relatively warm weather prevailed there were only short intervals of precipitation with lower temperatures.

Shortly before the harvest considerable damage due to hail and storms had an adverse effect on the generally good condition of the plants. In total about 2,500 ha of hop fields were damaged and about 100 ha were destroyed. Unfavourable conditions during the harvest such as rain and low temperatures damaged the crop further. This is why the quantity harvested was 2,763 tons or 22 % lower than last year, while acreage remained the same.

Due to the damage caused by storms in 1986 acreage is to be reduced by 50 ha in 1987.

German Democratic Republic

In comparison to the previous year the area under cultivation has been reduced insignificantly, while at the same time the average yield per ha was increased. At around 6.7 % bitter values were the same as last year.

The different cultivation areas had the following shares of the total quantity harvested:

Area	ha	Quantity harvested/ tons
Halle/Magdeburg	1,053	1,680.5
Erfurt	553	912.4
Dresden/Leipzig	720	1,140.3
Gera/ Karl-Marx-Stadt	44	73.8
	2,370	3,807.0

The GDR's production of hops satisfies domestic demand, although the balance of hops trade indicates 300 tons in imports. These are offset, however, by exports of 300 tons.

The acreage is reported to be the same for 1987.

SPAIN

As the weather was bad and the acreage was reduced average yield was lower than in the previous year.

Almost all of the harvest is of the bitter hop varieties H 7 and H 3 while the aroma hop cultivation in this EEC country is insignificant. The Spanish hops had an average bitter value of 7 %.

For 1987 further reductions of the acreage to 1,630 ha are expected.

It remains to be seen whether this country can continue its cultivation of hops in the long run in view of the keen competition from other EEC states. The same applies to Portugal.

PORTUGAL

Compared to the previous year this country has reduced its cultivation area. Further reductions are to be expected for 1987. The bitter value of the only variety grown, which is Brewers Gold, was 7.3 %. It is still an open question whether this country can continue its cultivation of hops after its entry into the European Community.

The different cultivation areas had the following shares of the Portuguese harvest:

Area	Acreage (ha)	production (tons)
Braga	63.4	115.0
Braganca	99.5	214.4
Total	**162.9**	**329.4**

POLAND

Conditions for growth were good in spring as there were medium temperatures and sufficient sunshine. The only negative aspect was a somewhat low amount of rainfall.

In early June temperatures dropped and the plants' further growth was slowed down. Conditions improved soon, however, and the occasional storms did not cause major damage. Harvesting started on schedule at the end of August lasting until mid-September. The rainy weather and strong winds during the harvest hardly influenced the hops' quality.

A somewhat smaller acreage – including 48 ha of baby hops – produced about the same harvest as previous year's. Aroma hops had a bitter value of 5.1 % as is. One is expecting about the same acreage and similar volume for 1987.

AUSTRIA

Mühlviertel

Although the areas under cultivation were slightly larger than last year the harvest was smaller.

The dominant varieties were still **Malling** and **Sanntaler** with a share of 90 %. Almost all hops were qualified as class I, selling at a price of ÖS 78.54 per kg. Domestic brewers buy up all of the Austrian harvest.

Alpha acids (in %, as is) were as follows:

Variety	alpha % 1986	alpha % 1985
Aurora	9.3	9.0
Apollon	11.3	9.1
Northern Brewer	11.5	7.0
Brewers Gold	9.6	8.1
Malling	7.4	8.6
Sanntaler	5.1	4.0

Styria (Leutschach)

Although area under cultivation was slightly larger than last year, the harvest was smaller. This reduction in volume was probably due to the dry months of April and July.

98 % of all hops from Styria were qualified as class I. **Sanntaler** continued to be the dominant variety in this area, holding a share of 60 %.

HUNGARY

Acreage and quantity harvested remained almost unaltered when compared with last year, covering almost 50% of the domestic brewers' demand. Imports of hops of about 750 tons are quoted. Acreage is expected to be almost the same for 1987.

BULGARIA

Since 1987 this country has been a member of IHB (International Hops Cultivation Bureau), therefore we now dispose of official figures. The area under cultivation is smaller than estimated. In 1985 it was 962 ha on which 660 tons were harvested. In 1986 the area remained almost unaltered but yield per ha improved. A slight reduction of the acreage has been announced for 1987.

The hops balance which was published this year for the first time lists 900 tons of imports. It is a matter of speculation which country supplied such imports. As domestic consumption is said to be 1,600 tons one can calculate that beer production is about 9 million hl, based on a hopping rate of 180 g of hops per hl. So far we had estimated production to be 5.5 million hl.

SWITZERLAND

2 ha less were under cultivation and the quantity harvested was higher than last year's.

The different quantities harvested occupied the following areas:

Tettnanger	2.74 ha
Hallertauer	6.70 ha
Perle	10.43 ha
other var.	0.07 ha

All of the harvest was sold as class I. Growers were paid sfr 600 per 50 kg, while the breweries bought the hops at sfr 570 per 50 kg. The difference is balanced by the compensation fund.

SOVIET UNION

Only very little information can be obtained about this major hop cultivating country. It is true, however, that in the meantime our estimate of the acreage of about 15,000 ha has been confirmed. At the same time average yields seem to be considerably lower than had been expected so far. For 1986 a total volume of 10,700 tons has been reported. The hops are said to have a bitter value of 3.5% as is which means that most of them belong to the category of aroma hops.
As a beer production of about 60 million hl in 1986 has been reported to us the USSR is probably self-sufficient regarding hops.
The country's beer production is still affected by the official anti-alcohol campaign.

OTHER COUNTRIES

NEW ZEALAND

The total harvest consists of the different varieties to the following extent:

Variety	tons
Green Bullet	55.5
Sticklebrack	108.0
Roborgh Super-Alpha	106.2
Others	4.8

New Zealand's breweries are estimated to need 150 tons. The remainder of the disposable volume is mainly exported to the neighbouring countries in the Pacific basin. New Zealand's hops are said to have had an average alpha value of 9.3 % in 1986.

Note on last year's report:
Obviously the hops cultivation area was only 160 ha in 1985, while we had quoted 211 ha.

JAPAN

While acreage shrank by 40.5 ha, total production rose by 93.7 tons.

Such excellent yields per ha which reached record highs in certain areas are due to the fact that there was no damage from typhoons. In general temperatures were too low during the growth period, particularly in the most significant cultivation area Touhoku. It was not until August that temperatures returned to their normal high and precipitation became sufficient.

Acreage and production volumes of the different brewing groups are as follows:

Brewery	Acreage (ha)	Production (tons)
Kirin	644.0	1,278.7
Sapporo	208.4	365.3
Asahi	145.4	308.3
Suntory	12.9	25.6
Total	**1,010.7**	**1,977.9**

The first quality Japanese hops were bought by the breweries at Yen 2.344 - 2.372 per kg, i.e. at DM 1,500 per 50 kgs. (100 Yen = DM 1,2859)

INDIA

The higher harvest of 250 tons reported this year compared to last year's 180 tons can be attributed to an extension of the acreage rather than to an increased yield. Hops from Cashmere are said to have an average alpha acid content of 7.5 % as is.

TURKEY

Considerably less area was under cultivation, i.e. 140 ha compared to last year's 300 ha, average yield per ha remained stable.
The hops' bitter value was said to be 8.5 %.

CANADA

The cultivation of hops decreased by 12 ha. At the same time yield per ha was almost 25 % lower in 1986.

The different quantities harvested occupied the following areas and resulted in the following harvest:

Variety	ha	tons
Bramlings/Kents	211	239
Nuggets	9	21
Fuggles	52	60
Hallertau	7	9
Total	**279**	**329**

REPUBLIC OF KOREA

Since last year the area under cultivation was slightly reduced. The yield per ha was further diminished by unfavourable weather during the hops growth and damages due to typhoon. While it had amounted to 1.43 tons in the previous year it was merely 1.31 tons this year.

Also bitter values were disappointing at between 6.0 to 7.1 % compared to last year's 6.5 to 7.5 %. For the first time aroma hops of the varieties Saaz, Perle and Cascade were grown in this country. Results seem disappointing, however, both regarding yield and quality.

The two local brewing groups bought up the 1986 harvest in the following way:

Brewery	ha	Quantity harvested
Dousan	238.5	374.8 to.
Crown	219.3	226.7 to.
Total	**457.8**	**601.5 to.**

CHINA

We must continue to estimate this country's hop production. Probably acreage did not change in the last year. Due to the weather conditions quantities could have been lower, though. On the world market no significant amounts of Chinese hops were offered in 1986.

Certainly the Chinese brewers will continue to experience positive growth with annual growth rates of approximately 10 %. With this in mind it might not be altogether unrealistic that the target of 50 million hl of beer to be produced in 1988 will in fact be reached. It can be assumed that most of the domestic demand will be met by national production. Therefore an extension of acreage is to be expected in the next years.

USA
Growth

A relatively mild winter favored the hop plants. New plantings were delayed because of an overall late spring, but fared well.
As in the years before, precipitation was far below long-term averages requiring early irrigation in all hop growing areas. Harvest conditions were good.

Yakima
Winter was short and mild. Cold temperatures and night-frost continued into May although the snow had melted by beginning of February. Growth of early varieties was retarded.
The cold spring temperatures also reduced plant pests.
Temperatures from May 15th until after harvest were above average, precipitation below average. Initial fears of insufficient water supplies were proven wrong. Harvest proceeded without problems from middle of August to about September 20th. Unusually high seed content was noted in some varieties.

Oregon
Very mild temperatures prevailed in fall, winter, and spring of 1985/86. Until late April precipitation measured 7-9 inches below long-term averages.
Extreme moisture and rains in late April and May caused development of downy mildew. Especially Cascades, Nuggets, and Galenas were affected, but recovered during a dry heat spell starting in June. This kind of weather continued into September necessitating frequent irrigation. Oregon is now in the third year of semi-draught conditions that so far can be overcome by irrigation.
Harvest started on August 15th with the picking of Fuggles. Yields of aroma varieties were relatively low, those of high alpha varieties excellent.

Idaho
Winter temperatures were very low with large amounts of rain and snow. Air temperatures started to rise in March, but heavy rainfalls delayed spring work. April and May were cool and retarded growth. Sunny and warm weather prevailed from the beginning of June until after harvest. Yields were very good with the exception of Cascades and Hallertauers.

California
This hop growing area is virtually nonexistent now although there remains some trellis on about 100 acres. Without a strong increase of hop prices within the next year the end of the hop growing area California will have come. In its heydays (1916) about 14,400 acres of hops were grown in California. Even in the post-World War II era (1951), about 9,500 acres of hops were grown.

Quality

Picking quality was the best in more than ten years with a leaf and stem content of 0.95%. However, quality was affected by sporadically high seed content in Washington. Alpha values were above last year's, Cluster averaged about 7.9%, high alpha varieties showed alphas from 11.8 to about 14.5%, depending on variety. Total alpha production increased from 1,871 to 2,045 tons. The average alpha increased from 8.3 to 9.1% although overall yield 1986 remained the same as in 1985.

Spot Market

Earlier than usual, the spot market opened in July, especially for Clusters at 65 ct. per lb. High alpha varieties were quoted at 5 to 10 ct. per lb. above Cluster prices with very few sales. The problems with pesticide residues in European hops affected the spot market from July on. Not only did the responsible government agencies disallow the use of hops already in the United States, but they also challenged the importation of European hops crop 1986. Precautionary purchases of US breweries cleared the market of 1985 hops and raised the prices of the relatively few spot hops crop 1986. In August, prices for Cluster were at 85 ct. per lb.. By middle of September they had risen to $ 1 to 1.05 per lb. for Cluster and $ 1.05 to 1.10 per lb. for high alpha varieties. By middle of November prices for the small remaining quantity dropped to 65 to 75 ct. per lb. for Cluster and 80 to 85 ct. per lb. for high alpha varieties. New demand arose in spring created by the weak dollar, favorable beer production in South America, as well as a hop warehouse fire in Australia. Prices for high alpha varieties leveled off at 95 ct. to $ 1.05 per lb. Approximately 1,200,000 lbs, were traded on the spot market.
Inventories remained high. However, for the first time in many years export as well as domestic demand increased. The historically high inventories were no longer a depressing factor on the market.

1981	34.4 mill. lbs.
1982	47.0 mill. lbs.
1983	61.6 mill. lbs.
1984	68.6 mill. lbs.
1985	70.5 mill. lbs.
1986	70.9 mill. lbs.

USA
Varietal Structure

Acreage per variety/ha*

Variety	Washington 86	Washington 85	Oregon 86	Oregon 85	Idaho 86	Idaho 85	Total 86	Total 85
Clusters	3,504	4,306	36	10	337	384	3,877	4,700
Bullions	14	128	16	60	–	–	30	188
Cascades	754	801	87	101	73	73	914	975
High alpha var.	2,617	2,408	710	472	481	706	3,808	3,586
Fuggles	56	31	1,192	1,577	–	–	1,248	1,608
Others	144	230	26	17	112	111	282	358
total	7,089	7,904	2,067	2,237	1,003	1,274	10,159	11,415

Acreage per variety and yield/ha in the U.S. hop growing areas are as follows:

Acreage per variety/%

Variety	Washington 86	Washington 85	Oregon 86	Oregon 85	Idaho 86	Idaho 85	Total 86	Total 85
Clusters	49	54	2	–	34	30	38	41
Bullions	1	2	1	3	–	–	–	1
Cascades	10	10	1	5	7	6	9	9
High alpha var.	36	31	35	21	47	55	38	32
Fuggles	1	–	60	70	–	–	12	14
others	3	3	1	1	12	9	3	3
total	100	100	100	100	100	100	100	100

Yield/ha (to)

Variety	Washington 86	Washington 85	Oregon 86	Oregon 85	Idaho 86	Idaho 85	Total 86	Total 85
Clusters	2.26	2.30	0.97	2.00	2.37	2.03	2.26	2.28
Bullions	2.43	1.03	2.63	2.75	–	–	2.53	1.58
Cascades	2.31	2.00	1.89	1.97	1.45	1.53	2.20	1.96
High alpha var.	2.36	1.89	2.36	1.65	2.49	1.70	2.38	1.83
Fuggles	–	–	1.59	1.56	–	–	1.55	1.53
Others	1.31	1.38	1.15	1.29	1.42	1.59	1.49	1.35
total	2.27	2.09	1.86	1.63	2.26	1.78	2.19	1.97

Crop (to) 1986*

Variety	Washington	Oregon	Idaho	Total
Clusters	7,925	34	800	8,759
Bullions	33	41	–	74
Cascades	1,737	163	106	2,006
High alpha var.	6,171	1,679	1,197	9,047
Fuggles	–	1,897	–	1,897
Others	166	29	159	354
total	16,032	3,843	2,262	22,137

* Totals may not agree with addition of individual items because of rounding

USA
Varietal Structure

Hop growing in the United States continues to emphasize the planting of very high alpha hops on one end and aroma varieties on the other end of the spectrum. The share of high alpha varieties was 38% while Clusters declined from 41% to 38%. Galenas and Nuggets are most in demand amongst the high alpha varieties while the new varieties Chinook and Olympia still have to prove themselves.

	1984	1985	1986
Galena	65 %	55 %	48 %
Nugget	14 %	22 %	30 %
Eroica	20 %	19 %	16 %
Chinook	0	1 %	3 %
Olympic	1 %	3 %	3 %
	100 %	100 %	100 %

Contract Market

Prices at the beginning of the year were mostly nominal. Contracts for the new aroma varieties Perle and Tettnang were closed in March and April at the following prices:

	1988	1989	1990	1991	1992
Perle/Willamette	1.45	1.50	1.60	1.65	1.70
Tettnang	1.90	2.00	2.10	2.10	–

A first price level supported by actual sales developed for Clusters and high alpha varieties in April, May and July. This price level continued until December. Prices for Yakima Clusters were as follows:

	1988	1989	1990	1991
January/February	1.20	1.25	1.30	–
April	1.05	1.15	1.20	1.30
December	1.05	1.10	1.20	1.25

High alpha varieties approx. 5 ct. per lb. higher.

The following prices were paid for larger quantities of special aroma varieties in fall 1986. This action must be viewed in connection with the pesticide residue problem in Europe:

	1987	1988	1989	1990	1991	1992
Willamette	2.00	2.05	2.10	2.15	2.20	2.25
Tettnang	2.40	2.45	2.50	2.55	2.60	2.65

(All prices in $ per lb.)

Average Price returned to Growers

Year	$/lb.
1981	1.51
1982	1.74
1983	1.93
1984	2.15
1985	1.98
1986	1.74

Average prices for growers are declining steadily with the expiration of the high price contracts of the early eighties. Already a number of growers without old contracts have to either stop hop growing or sell their farms. The remaining growers, if financially strong, are more resistant toward low price offers which they know are not covering their cost.

Outlook USA for 1987

New labor laws are threatening U.S. hop growing. In the past nearly all work was done by Mexican itinerant workers available in great numbers. In spring of 1987 Congress passed a new law reducing the availability of farm labor, at least for the 1987 season. A dramatic increase of labor cost for hop growing can be expected.

U.S. hop growing, at least with respect to varietal structure, will undergo a change because of the hop import problems connected with pesticide residues. Research and planting of European-type aroma hops will be greatly supported financially. Acreage for these varieties will increase in 1987/88.
In our estimation, acreage strung for harvest in 1987 should be around 28,500 acres, as opposed to 25,103 acres in 1986.

1987 Harvest

AUSTRALIA

In the Australian hop growing areas the harvest lasted from March 1987 to about the middle of April.

In the area of Victoria good to excellent yields per ha are reported together with good bitter values, while some yields in Tasmania are 20 - 30 % and bitter values 10 % below those of the mean of past years, due to insufficient maturity of the hops.

On April 15/16, 1987 a warehouse in Tasmania burnt down. The fire is said to have destroyed over 800 tons.

After the expiration of current contracts Australian Hop Marketers will not take over all of the Australian hops produced by the Australian growers and guarantee their distribution as has previously been the case.

NEW ZEALAND

The quantity of the 1987 harvest is estimated at 350 tons and is expected to have high bitter values again.

REPUBLIC OF SOUTH AFRICA

Again acreage was increased from 448 ha (1986) to 456 ha. The volume of the 1987 harvest was 634.5 tons (1986: 446 tons). The average alpha value of the hops is said to be 10.1 %.

Yield could be pushed up by over 40 % last year by installing flood lights in the hop fields. These are switched on between 1 and 3 hours daily after October.

In 1986 the farmers received Rand 7.00 and in 1987 Rand 8.04 per kg dried hops. Based on an exchange rate of 1 Rand = 0.90 DM this equals about DM 360 per 50 kgs dried hops.

ARGENTINA

It is expected that 216 tons (1986: 250 tons) are harvested on 225 ha. The variety Cascade has a bitter value of 6.5%, the 1986 value had been 5.5%. Argentine growers are paid US $ 5.– per kg which is DM 450 per 50 kgs.

EUROPE

After a long winter very low temperatures prevailed in early spring and much precipitation was measured. May temperatures were 2.1°C below the 50-year-average and precipitation was 30.7% above average.
Weather conditions only improved at the beginning of June and the hop plants recovered. At the time of copy deadline hop growth in all European areas was on the average or even good.

Outlook 1987

World beer production can be expected to increase in 1987. This positive development is mainly due to the activities of the countries in the Asian/Pacific region.

Within the EEC acreage will probably experience further reductions, while the area in the FRG will remain constant. In the USA larger areas than in the previous year will be cultivated because of new plantings of aroma hops.

The overall cut-down on acreage in recent years together with the growth rates in world beer production result in a further reduction of excess stocks of the breweries and consequently in a more relaxed situation on the hops market.

Beer Production per capita in liters

To supplement the table on "World Beer Production" (page 2) we hereby show the per capita beer production of the different countries that can be calculated on that basis:

(in liters)

EUROPE	
Luxemburg	172
Ireland	155
F.R. Germany	153
Denmark	147
GDR*	147
Czechoslov.	145
Belgium	139
Netherlands	122
Austria	115
United Kingdom	105
Hungary	86
Bulgaria	84
Finland	67
Switzerland	64
Spain	63
Norway	52
Rumania*	50
Sweden	49
Yugoslavia	46
France	38
Portugal	38
Greece	32
Poland	29
Malta	29
USSR*	20
Italy	19
Iceland	17
Albania*	4

AMERICA	
USA	97
Canada	88
Venezuela	67
Colombia	59
San Lucia	47
Netherl. Antilles	44
Panama	41
Cuba*	40
Mexico	38
Peru	35
Brazil	33
St. Kitts	33
Costa Rica	32
Barbados	31
Trinidad	30
Surinam	29
Ecuador	27
Paraguay	27
Jamaica	26
Uruguay	25
Argentina	20
Chile	19
Dominican Rep.	18
Grenada	18
Martinique	18
Nicaragua*	17
Belize	13
Bolivia	13
Honduras	13
El Salvador	12
Guadeloupe*	9
Guatemala	8
Puerto Rico*	6
St. Vincent	5
Haiti	n

AFRICA	
Gabon	94
Seychelles	64
Cameroon	56
P. R. of Congo	51
South Africa	46
Namibia	31
Swaziland	26
Mauritius	19
Botswana	17
Reunion	17
Kenya	16
Zimbabwe	15
Ivory Coast	14
Ruanda + Burundi	14
Togo	14
Lesotho	12
Centr. Afric. Rep.	12
Zambia	11
Zaire*	10
Benin	9
Angola*	8
Upper Volta*	8
Nigeria	7
Tunesia	6
Liberia	5
Tansania	4
Algeria*	3
Guinea Bissau	3
Madagascar	3
Senegal*	3
Southern Yemen	3
Chad	3
Ethiopia	2
Malawi	2
Morocco	2
Mozambique	2
Niger*	2
Sierra Leone	2
Egypt	1
Gambia*	1
Ghana	1
Mali	1
Uganda*	1

FAR EAST	
Japan	42
Hong Kong	23
Rep. Korea	19
Taiwan	18
Philippines	15
Singapore	15
Mongolia*	6
Dem. PR Korea*	5
Malaysia	4
PR China*	4
Vietnam*	3
Thailand	2
Bangladesh*	n
Burma*	n
India	n
Indonesia	n
Iran	n
Cambodia*	n
Laos*	n
Nepal	n
Pakistan*	n
Sri Lanka	n

NEAR EAST	
Cyprus	36
Israel	10
Turkey	5
Iraq*	4
Lebanon	3
Jordania	1
Syria*	1

AUSTRALIA/OCEANIA	
Samoa*	125
New Zealand	122
Australia	119
New Caledonia*	28
Fiji*	23
New Guinea	15

*estimated

n = production less than 1 liter p.c.

Note: **Beer production** does not necessarily coincide with the country's real **beer consumption.** This applies only for major, populous nations. Luxemburg e.g. has a production p.c. of 172 liters while real consumption p.c. is only 119 liters. We find a similar situation in the beer-exporting countries like Denmark, Ireland, the Netherlands and other smaller countries.

The table is based on 1986 data. Source: Fischer Weltalmanach 1987.