1991/92

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 yard = 3 feet = 36 inches = 91,44 cm	
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 = 50,800 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 June 1992 the Frankfurt Currency Exchange Market listed:

	Spot Rate 12/6/92	
	Selling Rate	Buying Rate
New York *	1.5872	1.5952
London *	2.909	2.923
Dublin *	2.663	2.677
Montreal *	1.3275	1.3355
Amsterdam	88.675	88.895
Zurich	109.790	109.990
Brussels	4.849	4.869
Paris	29.615	29.775
Copenhagen	25.875	25.995
Oslo	25.520	25.640
Stockholm	27.620	27.780
Milan **	1.3165	1.3265
Vienna	14.189	14.229
Madrid	1.582	1.592
Lisbon	1.193	1.213
Tokyo	1.2455	1.2485
Helsinki	36.570	36.770

Unofficial dealings of July 1, 1992

	Selling Rate	Buying Rate
Australia *	1.2050	1.2170
Yugoslavia	–	0.51
New Zealand *	0.8575	0.8695

These rates are only given for the purpose of information.

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

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The world market's key data

	1991	1990	Diff. %
Acreage/ha	**91,409**	**91,271**	**+ 0.15**
Hop production/tons	**130,060**	**114,416**	**+13.67**
Alpha production/tons	**8,612**	**6,864**	**+25.47**
Beer production/1,000 hl	**1,165,291**	**1,141,733**	**+ 2.06**

Nuremberg, July 1992

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Political Situation

The breakdown of the Soviet Union, the state with the largest area on earth, kept the world in suspense.

On the occasion of the first free elections which took place on June 12, 1991, Boris Yeltsin was elected President of Russia, the – by far – largest succession state of the Soviet Union.

On July 1, the Warsaw Pact, the military alliance founded in 1955 under predominance of the Soviet Union, was dissolved.

A few weeks later, on August 19, an emergency committee assumed power in the Soviet Union and detained President Gorbatchev on the Crimea. After two days, the putsch failed and President Gorbatchev returned to Moscow. After that, the Russian President Yeltsin prohibited the Communist Party of the Soviet Union and Gorbatchev resigned from his office as party leader and, later on, as President.

On December 25, 1991, eleven of the former Soviet republics officially announced the end of the Soviet Union. The attempts to form some kind of "Commonwealth of Independent States" did not make any progress so far. On the contrary, the ethnic conflicts in Georgia, Armenia and Azerbaidzhan developed into war-like clashes.

In spite of the radical political changes in the former Soviet Union, the world powers USA and Soviet Union continued their efforts for disarmament of the nuclear arms and rocket arsenals still existing, by signing the START treaty on July 31, 1991. In Europe the tension was decisively reduced by signing a treaty of mutual understanding between the Federal Republic of Germany and its neighbouring countries Poland and Czechoslovakia.

On the other hand, the decay of Yugoslavia created a new seat of conflicts with bloody clashes similar to a civil war. When the former republics of Croatia and Slovenia unilaterally declared their independence from the Yugoslavian state union, the presidence controlled by Serbia authorized the army to intervene. The declaration of independence of the third republic, namely Bosnia-Herzegovina, on October 15 resulted in an extension of the civil war to this state. Various armistice agreements arranged by the UNO and the states of the European Community failed up to now.

A certain progress was reached in Asia. In Afghanistan the victorious people's mudschahedin formed a government, although the different tribal groups are now fighting for supremacy in this country. A certain pacification was reached by signing a peace treaty in Cambodia on October 23, 1991.

However, the flashpoints in the Middle East still remain unchanged. In spite of the USA's persistence, the talks between Palestinians and the Jewish state do not get off the ground. Libya is put under increasing political and economic pressure by the UNO in order to force the extradition of two presumed assassins. In Algeria, the clashes between fundamentalist moslems and the ruling government reached the peak with the assassination of the country's president.

The Republic of South Africa rescinded the law on classing people into different races and thus created a basis for abolishing the Apartheid policy.

Economic Situation

The hopes for a fast economic recovery could not be fulfilled in 1991. On the contrary, the USA, the world's largest national economy, remained in a persistant recession. Similar tendencies were observed in Great Britain, Australia and Canada. In other European countries, there was a decline in overall business activities, too, which only was mitigated by a strong impulse from the reunified Germany. Only Japan enjoyed good overall business activities – based on exports though. All in all, the gross national product of the main industrial countries increased by 1% (2.6% in the previous year), the world's foreign trade volume by 3% (6% in the previous year).

However, there was some progress in fighting world-wide inflation. The rate of price increase in the main industrial countries was only 4.5% (5.2% in the previous year). Especially the countries having problems with overall business activities, like the USA and Great Britain, could mark up some success in this field, while in other countries with more growth, like Germany, the price climate deteriorated.

continued on page 3.

The key 1991 economic data for the **USA** and the **Federal Republic of Germany**

Key data	USA	FRG
Gross national product	– 0.7 %	+ 3.1 %
Balance of trade	– $ 73.6 bn	+ DEM 40.3 bn
Balance of current acct.	– $ 8.5 bn	– DEM 32.9 bn
Inflation rate	+ 4.2 %	+ 3.5 %
Interest rate	6.5 % (prime rate p. 1.2.92)	8.0 % (Federal Bank discount rate p. 10.12.91)
Unemployment rate on May 1, 1992	7.2 %	5.7 % (FRG old) 14.7 % (FRG – new Länder)

Table of Bitter Constituents

The bitter constituent values of the most important European varieties 1991:

variety	total resin	conductometric value	conductometric value in the total resin
Hallertau Hallertau	14.8	5.0	33.7
Hallertau Hersbruck	11.7	3.6	30.8
Hallertau Hüll	15.8	6.5	41.1
Hallertau Perle	16.2	7.7	47.5
Hallertau Record	14.6	6.4	43.8
Hallertau Northern Brewer	17.2	8.8	51.6
Hallertau Brewers Gold	14.9	6.8	46.6
Hallertau Orion	17.0	8.4	49.4
Tettnang	12.3	4.6	37.4
Spalt	12.6	4.5	35.7
Saaz	12.1	3.9	32.2
Yugoslavian Styrian Golding	13.6	5.5	40.4
Yugoslavian Super Styrian	15.1	6.8	45.0

The values are in % as is according to Woellmer (extraction with ether).
The values were measured in October/November after the harvest. For deliveries in the later course of the season reductions have to be taken into account.
The bitter values of other important varieties are listed in the respective country report.

World Beer Production 1990/91

Specification in 1,000 hl

EUROPE

Country	1991	1990
FRG – old Länder	—	104,271
FRG – new Länder	—	15,890
FRG	118,000	—
Great Britain	60,843	59,653[4]
USSR	—	50,000*
C.I.S. [2]	50,000*	—
Spain	26,447	27,315[1]
Czechoslovakia	23,885	23,527
France	22,880	21,398
Netherlands	19,893	20,047
Belgium	14,084	14,141
Poland	12,000	12,240
Italy	10,699	11,067
Austria	10,188	9,600
Yugoslavia [3]	10,000*	13,540
Romania	9,727	13,100[6]
Hungary	9,352	9,823
Denmark	8,700	8,510
Portugal	6,882	6,995
Bulgaria	5,500	6,000*
Sweden	5,240	5,100
Ireland	4,870	4,853[7]
Finland	4,275	4,131
Switzerland [1]	4,183	4,170
Greece	3,500	3,700*[5]
Norway	2,236	2,236
Lithuania	1,715	(1,715)
Luxemburg	542	600
Malta	170	170
Albania	100*	190*
Iceland	61	64
TOTAL	445,972	453,978[8]

[1] production year Oct. 1 to Sept. 30 · [2] approx. 14,000 hl Ukraine · [3] for 1991 corresponding successor states
[4] later correction to 63,034 · [5] later correction to 4,100
[6] other sources: only 10,000 · [7] later correction to 4,853
[8] later correction to 452,331

AMERICA

Country	1991	1990
USA	237,283	238,997
Brazil	65,000	58,000
Mexico	40,753	39,743
Colombia	24,000	17,500
Canada	22,135	22,565
Venezuela	12,900	11,000
Argentina [1]	8,300	6,900
Peru	6,400	4,900
Cuba	3,000*	3,000*
Chile	3,000	2,670
Ecuador	1,750	1,700
Bolivia	1,450	1,280
Dominican. Rep.	1,400	1,160
Guatemala	1,300	1,000
Paraguay	1,280	1,100
Panama	1,100	1,236
Jamaica	850	800
El Salvador	760	600
Honduras	758	807
Costa Rica	740	800
Uruguay	710	670
Puerto Rico	690	750
Trinidad	600	435
Nicaragua	400	440
Netherl. Antilles	140	165
Guyana	130	120
Surinam	120	125
Barbados	120	110
Bahamas	96	95
Martinique	65	63
San Lucia	44	97
Haiti	36	78
Belize	35	45
Guadeloupe	30*	30*
Grenada	29	32
St. Vincent	26	28
St. Kitts	23	30
TOTAL	437,453	419,071

[1] brewing year July 1 to June 30

AFRICA

Country	1991	1990
South Africa	22,500	22,500
Nigeria	8,386*	8,000*
Cameroon	3,965	4,505
Kenya	3,300	3,700
Zaire	3,000*	2,918
Zimbabwe	2,800*	2,700
Ivory Coast	1,095	1,095
Burundi	1,000*	998
Zambia	900	850
Gabon	900	750
Tanzania	667	530
Morocco	625	500
Ghana	602	644
P. Rep. Congo	600*	632
Ruanda	600*	596
Namibia	556	500
Togo	550	531
Egypt	500	500
Angola	499	500
Ethiopia	460	545
Botswana	459	437
Tunesia	400	420
Burkina Faso	400*	400*[1]
Lesotho	399	358
Moçambique	372	390
Algeria	321	640
Mauritius	315	300
Benin	286	251
Uganda	247	145[3]
Madagascar	236	300
Central. African. Rep.	222	220
Swaziland	198	220
Réunion	190*	189
Senegal	150*	150[2]
Chad	110*	115
Niger	101	80*
Malawi	100*	100*
Sao Tome	(100)	100
Mali	80*	80*
Jemen	80	80
Seychelles	59	63
Liberia	50	75
Sierra Leone	50*	56
Gambia	30	10*
Cap Verde	20*	30
Guinea Bissau	20*	20*
TOTAL	58,500	58,723

[1] later correction to 408
[2] later correction to 153
[3] later correction to 213

NEAR EAST

Country	1991	1990
Turkey	3,000	3,700
Israel	533	490
Cyprus	340	335
Iraq	100*	200*
Syria	90*	90*
Jordan	60*	61
Lebanon	40	75
TOTAL	4,163	4,951

FAR EAST

Country	1991	1990
People's Rep. China	80,000[1]	70,000[1]
Japan	67,990	65,617
Rep. of Korea	16,400	12,690
Philippines	15,400	15,000
Taiwan	4,501	4,557
Thailand	2,880	2,620
India	2,010	3,300
Hong Kong	1,378	1,700
Indonesia	1,195	1,190
D. P. Rep. Korea	1,000*	1,000*
Vietnam	1,000	1.000
Malaysia	855	884
Singapore	487	663
Iran	100**	100**
Mongolia	100*	100*
Nepal	100	70
Sri Lanka	68	88
Burma	40	40
Laos	30*	10
Cambodia	10	5*
Pakistan	9	12
Bangla-Desh	5*	5*
TOTAL	195,558	180,651

[1] see country report probably higher in 1990

AUSTRALIA/ OCEANIA

Country	1991	1990
Australia[1]	19,000	19,548
New Zealand[1]	3,700	3,858
New Guinea	428	476
Fiji Islands	230*	225
Tahiti	122	121
New Caledonia	65	59
Samoa	60	52
Salomon Islands	30	10
Vanuatu	10*	10
TOTAL	23,645	24,359

[1] brewing year July 1 to June 30

*estimated
**non-alcoholic

	1991	1990
WORLD	**1,165,291**	**1,141,733**

The balances on current account of important industrial countries showed a favourable tendency after having been marked for a long time by considerable discrepancies. It was mainly due to the reunification that Germany had to face a current account deficit of approx. 33 billion DEM for the first time, while obtaining a surplus in the previous year still. On the other hand, the US-American balance on current account decreased from a deficit of USD 92 billion in the previous year to USD 8.5 billion. The current account surplus of Japan doubled in comparison with the previous year and reached 73 billion USD, thus aggravating the problems in terms of foreign trading policy between Japan and its partners.

The transition from planned economy to market economy in the former communist countries can be regarded as the most important challenge of this century. The related crises resulted in almost all nations in question in a decrease of the gross national product, in inflation and unemployment (so far unknown) – all in all, in an economic impoverishment of a large part of the population.

The economic development in the Federal Republic of Germany was marked by the reorganization of the new "Länder". In spite of money transfers in the amount of 200 billion DEM within a period of two years, the economy in East Germany suffered considerable setbacks. The unemployment rate in the new "Länder" increased to 15%. Structural crises of the obsolete large-scale enterprises could not be avoided – even though 45.4 billion DEM were spent in the current year for employment creating measures.

The states of the European Community decided upon the introduction of a common monetary policy until the end of this century by signing a treaty on December 9 and 10, 1991, the so-called Maastricht resolutions. With that, the European Community intends to put into effect a fast development of the integrational process in Europe, according to which a free internal market for trade, passenger traffic, service and capital transactions is planned to be realized from January 1, 1993 on.

Output development

In the different continents production experienced the following changes (in 1,000 hl):

	1991 % rel.	1990 % rel.	1991 total	1990 total	+/– total
Europe	– 1.8	+ 0.3	445,972	453,978	– 8,006
America	+ 4.4	+ 2.3	437,453	419,071	+ 18,382
Africa	– 0.9	+ 4.6	58,500	58,723	– 223
Asia (Far East)	+ 8.3	+ 12.9	195,558	180,651	+ 14,907
Near East	– 16.0	+ 18.7	4,163	4,951	– 788
Australia/Pacific	– 2.9	+ 3.7	23,645	24,359	– 714
Total	+ 2.1	+ 3.2	1,165,291	1,141,733	+ 23,558

Market Analysis

While beer output increased only slightly, the amount harvested worldwide was 13% above that of the previous year.

During all of the season the market was calm, sometimes even dull which was partly due to the good, above-average bittering values of the main European and US varieties – leading to an increase in alpha acid production to above 8,600 tons compared to 6,864 tons of the previous year.

For this reason, the growers were hardly able to realize their hopes, namely to stabilize prices on a considerably higher level – neither on the spot nor on the contract market. On the contrary, the expected output of the brewing industry for the brewing year of 1991/92 and the news about increases of acreage in the US adversely affected the prices. The reserve of the brewing industry despite stock reductions is due to the assumption that on a medium-term basis the supply of the world market will be secured by the acreage itself and the increasing portion of high alpha hops.

In spite of the calm market, the harvest was sold by spring. The brewing industry was able to build up a certain, though normal stock. Business on the contract market and the sale of hops of the 1991 crop started almost simultaneously. Both brewing industry and trade were interested in contracting hops until crop 1993/94, whereas the farmers preferred long-term contracts (until 1999/2000), although the prices offered and paid neither met their expectations nor did they allow for the annual increase in expenses for hop cultivation.

When work started in the gardens in spring, the contract market came to a standstill.

Due to the good market supply and the world's brewing industry's low expectations in view of output increases, the development of market and prices will strongly depend on the quality of the 1992 hops. All in all, at the reporting date the market is rather dull and reserved.

For the main hop growing countries, our estimates of the contract rate for the years to come on basis of the current acreage are the following (in %):

Country	1992	1993	1994	1995	1996
Fed. Rep. of Germany	75	60	50	40	30
USA	90	75	70	55	20
CSFR	70	55	45	45	40
United Kingdom	75	65	50	20	10
Slovenia	70	50	40	30	20

Acreage and Hop Production

area	1991 acreage in ha	1991 ∅ tons per ha	1991 crop in to = 1000 kg	1990 acreage in ha	1990 ∅ tons per ha	1990 crop in to = 1000 kg
Hallertau	17,360	1.67	28,919.9	16,982	1.39	23,580.3
Spalt	792	1.31	1,034.1	812	1.05	855.0
Hersbruck	117	1.21	147.2	113	1.27	143.3
Jura	752	1.94	1,456.5	735	1.59	1,169.3
Tettnang	1,512	1.46	2,206.1	1,448	1.28	1,849.2
Elbe-Saale	2,011	1.32	2,662.2	–	–	–
others	23	1.19	27.3	23	1.08	24.9
Fed. Rep. of Germany	**22,567**	**1.62**	**36,453.3**	**20,113**	**1.37**	**27,622.0**
England	**3,527**	**1.71**	**6,016.7**	**3,594**	**1.28**	**4,582.6**
Aalst	69	1.75	120.8	74	1.57	116.5
Poperinge	320	1.62	519.4	295	1.64	484.4
Belgium	**389**	**1.65**	**640.2**	**369**	**1.63**	**600.9**
Alsace	521	1.27	661.6	474	1.53	723.3
Nord	61	1.20	73.0	56	1.11	62.0
Burgundy	2	1.35	2.7	2	1.50	3.0
France	**584**	**1.26**	**737.3**	**532**	**1.49**	**788.3**
Ireland	**12**	**1.49**	**17.9**	**17**	**2.02**	**34.3**
Spain	**1,387**	**1.39**	**1,920.4**	**1,412**	**1.51**	**2,126.9**
Portugal	**92**	**1.78**	**163.5**	**106**	**1.61**	**170.6**
EEC	**28,558**	**1.61**	**45,949.3**	**26,143**	**1.37**	**35,925.6**
Saaz	7,291	0.89	6,520.0	7,538	0.84	6,363.0
Auscha	1,773	1.15	2,038.0	1,772	0.95	1,675.0
Tirschitz (Mähren)	1,137	1.05	1,192.0	1,135	1.23	1,397.0
Slovakia	1,319	0.92	1,211.0	1,362	0.87	1,182.0
Czechoslovakia	**11,520**	**0.95**	**10,961.0**	**11,807**	**0.90**	**10,617.0**
Ukraine	7,300	0.83	6,056.0	–	–	–
Rep. of Russia	5,000	0.72	3,600.0	–	–	–
Rep. of White Russia		no figures available		–	–	–
CIS (ex USSR)	**12,300**	**0.78**	**9,656.0**	**15,000***	**0.60**	**9,000.0***
Slovenia	2,388	1.55	3,696.0	2,508	1.45	3,641.0
Serbia (Bačka and Ilok)	621	1.43	889.0	609	0.90	550.0
Ex Yugoslavia	**3,009**	**1.52**	**4,585.0**	**3,117**	**1.35**	**4,191.0**
Fed. Rep. of Germany (now Elbe-Saale)	**–**	**–**	**–**	**2,286**	**1.17**	**2,662.3**
Poland	**2,225**	**1.18**	**2,630.8**	**2,257**	**1.03**	**2,320.0**
Bulgaria	**913**	**0.95**	**862.5**	**933**	**0.62**	**580.0**
Romania	**2,380**	**1.10**	**2,618.0**	**2,346**	**1.14**	**2,060.0**
Hungary	**374**	**1.46**	**544.7**	**382**	**1.10**	**421.7**
Mühlviertel	105	1.34	141.0	103	1.29	132.7
Leutschach	87	1.40	119.0	85	1.42	121.0
Waldviertel	7	0.67	4.7	8	0.40	3.2
Austria	**199**	**1.33**	**264.7**	**196**	**1.31**	**256.9**
Switzerland	**21**	**2.27**	**47.8**	**21**	**2.06**	**43.2**
Albania*	**70**	**1.00**	**70.0**	**70**	**1.00**	**70.0**
EUROPE	**61,569**	**1.27**	**78,189.8**	**64,558**	**1.06**	**68,147.7**
Washington	11,439	2.12	24,290.0	10,390	1.83	19,064.0
Oregon	2,912	1.58	4,615.0	2,874	1.68	4,938.0
Idaho	1,667	1.47	2,463.0	1,093	1.68	1,841.0
USA	**16,018**	**1.95**	**31,368.0**	**14,357**	**1.80**	**25,843.0**
Canada	**329**	**0.51**	**166.1**	**329**	**1.06**	**348.9**
Japan	**741**	**1.70**	**1,256.2**	**842**	**1.97**	**1,655.6**
Australia	**1,125**	**2.38**	**2,675.0**	**1,085**	**1.93**	**2,097.5**
New Zealand	**216**	**2.10**	**454.5**	**210**	**2.00**	**420.4**
People's Rep. of China [1]	**8,000**	**1.63**	**13,000.0**	**6,500**	**2.00**	**13,000.0**
Dem. People's Rep. of North Korea *	**2,000**	**0.60**	**1,200.0**	**2,000**	**0.60**	**1,200.0**
Republic of South Korea	**317**	**0.49**	**154.0**	**324**	**0.78**	**254.0**
South Africa	**587**	**1.72**	**1,010.0**	**530**	**1.38**	**730.0**
Turkey*	**120**	**1.00**	**120.0**	**120**	**1.00**	**120.0**
Argentina	**303**	**0.96**	**289.5**	**270**	**1.00**	**270.0**
Zimbabwe [1]	**84**	**2.10**	**177.0**	**146**	**2.25**	**328.5**
WORLD	**91,409**	**1.42**	**130,060.1**	**91,271**	**1.25**	**114,415.6**

* estimated
[1] see corresponding country report.

Alpha Acid Production

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

Group A: finest aroma hops such as Saaz, Tettnang, Spalt

Group B: aroma hops such as Hallertau, Hersbruck, Hüll, Perle, Golding, Fuggle, Cascade and others

Group C: hop varieties without significance for the world market

Group D: bitter hops such as 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 1991 which compares to the previous year as follows:

	1991				1990			
Group	share %	crop tons	α % ø	α tons	share %	crop tons	α % ø	α tons
A	7	14,201	4.2	600	6	13,322	3.1	414
B	23	36,796	5.4	1,986	23	29,732	5.1	1,527
C	21	34,238	5.2	1,780	27	35,784	5.4	1,932
D	49	44,825	9.5	4,246	44	35,578	8.4	2,991
Total	100	130,060	6.6	8,612	100	114,416	6.0	6,864

The fact that the alpha acid production on the world market increased by 25% in comparison to the previous year is due to an increase of the amount harvested by 13% as well as an increase of the average bittering value by 10%.

When grouping the alpha acid quantities in the single groups, a worldwide shift within the bitter hops, that is between groups C and D is to be noted. Due to the increasing cultivation of high alpha varieties in the traditional growing regions, the production of group D increased by almost 50% compared to the previous year. In contrast to that, the share of group C decreased because of worse quality of the hops harvested and crop failure in some important growing regions. The hops of groups A and B, however, mainly were able to keep their share of the world production.

Alpha Acid Balance

The 1991 harvest, which was good in terms of both quality and quantity, brought a surplus for the first time after three years during which the supply of the world market was calculated as being too low.

The alpha acid deficits in 1988, 1989 and 1990 were balanced by the reduction of surplus stocks of the brewing industry, so that now stocks are used up to a large extent. The production of a small surplus in 1991 made it possible to keep a normal stock of raw material.

1989 demand (hopping rate 7.0 g alpha/hl)	7,730.0 tons alpha
1988 production	7,276.0 tons alpha
Deficit	454.0 tons alpha

1990 demand (hopping rate 6.9 g alpha/hl)	7,877.3 tons alpha
1989 production	7,290.0 tons alpha
Deficit	587.3 tons alpha

1991 demand (hopping rate 6.8 g alpha/hl)	7,924.4 tons alpha
1990 production	6,864.0 tons alpha
Deficit	1,060.4 tons alpha

1992 demand (estimated hopping rate 6.8 g alpha/hl)	8,100.0 tons alpha
1991 production	8,612.0 tons alpha
Surplus	512.0 tons alpha

European Community

Subsidies to Growers

As per regulation (EEC) No. 3671/91 of the European Council dated December 11, 1991 the following subsidies to growers were determined:

Subsidies to Growers 1990

Group of variety	ECU	= DEM (per ha)
Aroma	340	800.42
Bitter	340	800.42
Other	340	800.42
Trial plants	340	800.42

1990: 1 ECU = DM 2.354

The Commission of the EEC distributed subsidies worth ECU 9.6 million = DEM 23 million.

Subsidies for structural changes in hop acreage

With its decision of September 4, 1991, the European Commission amended a modification of the programme for structural changes in hop acreage submitted by the United Kingdom. The total acreage concerned by the structural changes consists of 800 ha, on which 137 ha of aroma hops and 663 ha of high alpha hops (mostly the variety Target) are cultivated.

Modification of Regulation (EEC) No. 1517/77 – List of variety groups for cultivation in the European Community

With regulation (EEC) No. 328/91, three varieties, namely Hallertauer Tradition, Spalter Select and Hallertauer Magnum were added to the above-mentioned regulation of the European Community, the first two varieties being classed as aroma hops and the third one as bitter hops.

Modification of Regulation (EEC) No. 1696/71

The Council of the European Community adopted two amendments to this basic regulation on the certification of hop products and the import of hops from non-EEC states. The quality criteria of imported hops are defined in such a way that they must at least meet the requirements of the European Community.

Propositions regarding the modification of regulations (EEC) No. 1696/71

The hop producer associations approved by the European Community are released from the commitment to market the total hop production of their members as per article7/3, as "a producer association or a community may permit its members to market part or all of their hop production by themselves, in accordance with specified rules and under the supervision of the Community".

According to a proposition of the Council of the European Community, the possibility for the producer associations to choose how to market the hops should be kept in future. However, those producer associations that are not fully marketing the hops of their members should be granted less subsidies. The proposition of the Council of the European Community provides for a reduction of subsidies to at least 50% of the annual amount. The Association of German Hop Growers suggested as an alternative that the relevant producer association might keep 50% of the subsidies for cultivation of market and varieties. The final decision on the formulation of the basic regulations is still to be taken.

Federal Republic of Germany

Estimated harvest and actual weight

The official harvest estimates around August 20, 1991 – including the growing region of Elbe-Saale for the first time – gave the following results in comparison with the actual weight:

Area	Estimate 1991/tons	Actual weight 1991 as of March 31, 1992 tons
Hallertau	27,100	28,920
Jura	1,280	1,457
Spalt	1,015	1,034
Tettnang	2,025	2,206
Hersbruck	150	147
Elbe-Saale	2,850	2,663
Others	30	27
Total	34,450	36,454

Apart from smaller growing regions, it was only the region of Elbe-Saale which did not reach the estimated quantity. The actual amount harvested in the regions Hallertau, Jura and Tettnang was considerably higher than the estimated harvest.

Modification of the German "Hopfenherkunftsbezeichnung"

As per regulation of February 11, 1992 on the modification of the "Hopfenherkunftsbezeichnung", the sealing area of Altmannstein is assigned to the hop growing region of Hallertau. The growing region Jura will then be dissolved. The regulation will come into force on August 1, 1992. The hops harvested in the area called Jura up to now will in future be sealed and marketed as "hop sealing area Altmannstein, Hallertau".

Varieties

In the German hop districts the following varieties were cultivated which produced the following crop quantities:

area	variety	ha	Ø-yield/tons	crop quantity/tons
Hallertau	Hallertauer	254	1.35	342.1
	Hersbrucker	6,647	1.63	10,828.9
	Hüller	415	1.64	678.4
	Perle	2,826	1.74	4,905.5
	Northern Brewer	4,713	1.63	7,697.5
	Brewers Gold	1,654	2.19	3,623.2
	Orion	131	2.08	272.7
	others	720	0.79	571.6
Jura	Hallertauer	29	1.21	35.1
	Hersbrucker	441	2.04	899.3
	Hüller	2	1.55	3.1
	Perle	94	2.11	198.1
	Northern Brewer	48	1.97	94.4
	Brewers Gold	74	2.54	188.1
	others	64	0.60	38.6
Spalt	Hallertauer	340	1.27	431.4
	Spalter	225	1.20	269.9
	Hersbrucker	160	1.63	261.5
	Perle	34	1.73	59.0
	others	33	0.38	12.4
Hersbruck	Hallertauer	48	1.12	53.9
	Hersbrucker	48	1.48	70.9
	others	21	1.07	22.4
Tettnang	Hallertauer	478	1.70	814.2
	Hersbrucker	4	1.81	7.3
	Tettnanger	1,030	1.34	1,384.7
Elbe-Saale	Northern Brewer	1,815	1.29	2,337.8
	Bullion	169	1.82	307.7
	others	27	0.65	17.5
remainder		23	1.19	27.3

Acreage development

In comparison with last year, the acreage (in ha) for the major varieties showed the following changes:

Variety	1991 ha	1990 ha	+/– ha
Hallertauer	1,153	1,321	– 168
Hersbrucker	7,300	7,404	– 104
Perle	2,966	2,580	+ 386
Northern Brewer *	4,770	4,868	– 98
Brewers Gold *	1,741	1,731	+ 10

* the acreage 1991 only applies to the old "Länder" of the Federal Republic of Germany, that is without the region of Elbe-Saale.

Acreage and yield of the new varieties

Growing region	Variety tons	Acreage ha	Amount harvested tons	Ø yield to/ha
Hallertau	Nugget	91	120.6	1.33
	Target	58	84.8	1.46
Jura	Nugget	13	16.8	1.29

We do not yet avail of official statistics regarding the cultivation of the varieties Magnum, Tradition and Select.

Federal Republic of Germany

Acreage

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

area	acreage development			aroma varieties					bitter varieties and others			
	acreage 1991 (ha)	+ / – (ha)	acreage 1990 (ha)	Hallertauer (ha)	Hersbrucker (ha)	Spalter (ha)	Tettnanger (ha)	Perle (ha)	Northern Brewer (ha)	Brewers Gold (ha)	Orion (ha)	others (ha)
Hallertau	17,360	+378	16,982	254	6,647	5	2	2,826	4,713	1,654	131	1,128
Jura	752	+ 17	735	29	441	6	–	94	48	74	3	57
Spalt	792	– 20	812	340	160	225	–	34	2	6	–	25
Hersbruck	117	+ 4	113	48	48	–	–	7	6	4	–	4
Tettnang	1,512	+ 64	1,448	478	4	–	1,030	–	–	–	–	–
others	23	-	23	4	–	–	8	5	1	3	–	2
Subtotal FRG (old)	20,556	+443	20,113	1,153	7,300	236	1,040	2,966	4,770	1,741	134	1,216
Elbe-Saale	2,011	–275	2,286	–	–	–	–	–	1,815	–	–	196
FRG total	22,567	+168	22,399	1,153	7,300	236	1,040	2,966	6,585	1,741	134	1,412

Source: Verband Deutscher Hopfenpflanzer, „Statistik über die Hopfenvermarktung 1991".

Growth

The weather during the vegetation-period was rather normal. Humidity and sunshine hours were close to the 50 years average.

The winter was dry and cold. In February the ground was frozen down to a depth of 50 cm. The temperatures in March were above average which had a positive influence on the start of vegetation. However, growth was delayed by a cold April with overnight frosts. At the same time, precipitation during this month was below average.

In May and June temperatures were moderate at first and then warm with sufficient rainfall. Harvest started about three to five days later than in other years.

Market development

At the beginning, shortly after the harvest, the growers held back their spot hops as they expected to achieve higher prices because of the bad results in the previous year. Thus the market was calm at the beginning, only few spot hops were sold.

It was only in the course of October that market activity was stimulated, with demands rising especially for the variety Perle. However, not all demands for this variety were satisfied. Thus prices for Perle were increasing by 50.00 DEM per 50 kg, while there was little interest in Hersbrucker and therefore, no price increase for this variety.

The course of the market was rather dull with slightly easing prices. It was only around the end of the year – when increasing quantities of hops were sold – that prices improved, partially to reach a much higher level. However, at the time of new year, the first provisional results of the harvest became known according to which a large market supply was to be expected so that prices did not rise any further. Until spring, German varieties were all sold, although the market was calm.

The contract market already started in autumn after the harvest with firm prices. The merchants concentrated their demand on the crop years 1992 to 1995, while the farmers preferred long-term contracts. When spring work started in the 1992 season, the active contract market calmed down.

Our market report indicated the following purchasing prices for spot hops in farmer's bales of 50 kg:

area/variety	9/91	10/91	11/91	12/91	1/92	2/92	3/92
Hallertau Hersbrucker	350	350	350	480	450	450	450
Hallertau Perle	500	550	500	550	550	550	550
Hallertau Northern Brewer	400	450	420	480	480	450	450
Hallertau Brewers Gold	300	300	300	340	350	350	350
Spalt	500	550	550	580	550	550	550
Tettnang	500	550	550	580	600	600	600

UNITED KINGDOM

Growth and Market Development

After a series of disappointing years, the 1991 harvest was satisfying. The amount harvested on a slightly decreased acreage was 6,016.7 tons, thus 30% more than last year. The crop estimate published in August before the harvest was only 4,582 tons.

Sufficient precipitation in spring and summer contributed to the good results. The red spider, from which the plants suffered severely during the last years, was controlled successfully. In addition to higher amounts harvested, the bitter values were higher than that of last year.

If it had not been for a storm on August 23, shortly before picking, the results would have been even better. Some hop yards were damaged, some parts of other gardens completely destroyed. A fire in a storage in Paddock Wood damaged another 6,000 bales which could not be marketed anymore.

Nevertheless, there was sufficient supply to the English market, as the local brewing industry registered considerable decreases in output. Thus, the market was calm and 1,729 tons were exported, which is almost as much as last year (1,814 tons).

UNITED KINGDOM

Varieties grown and yield

Compared to the previous year acreage per variety was as follows:

Variety:	Crop 1991 ha	Crop 1990 ha	Crop 1989 ha
Goldings	337	382	416
Fuggles	319	370	420
W.G.V.	67	79	87
Progress	62	58	44
Bramling Cross	29	35	41
Challenger	437	442	459
Target	1,692	1,526	1,457
Yeoman	128	192	266
Zenith	11	17	17
Omega	21	51	59
Northdown	408	425	446
Northern Brewer	16	17	25
Others	–	–	5
Total	3,527	3,594	3,742

In comparison with the previous year the bitter values as is in % were the following:

Variety	Crop 1991	Crop 1990
Goldings	6.0	5.1
Fuggles	4.8	4.6
W.G.V.	6.5	6.1
Progress	7.0	6.0
Bramling Cross	6.5	5.6
Target	12.0	10.0
Yeoman	12.3	10.3
Zenith	9.7	8.5
Omega	10.6	8.5
Challenger	8.0	7.5
Northdown	8.5	8.2
Northern Brewer	9.7	8.1

Compared to last year the total crop was distributed to the different varieties as follows:

Variety:	Harvest/tons 1991	Harvest/tons 1990
Goldings	584.8	521.4
Fuggles	513.2	464.3
W.G.V.	81.2	82.9
Progress	93.0	56.3
Bramling Cross	37.2	25.9
Challenger	819.9	600.3
Target	2,812.8	1.934.8
Yeoman	203.0	203.6
Zenith	17.3	20.1
Omega	34.5	45.4
Northdown	794.5	601.3
Northern Brewer	25.5	26.7
Total	6,016.9	4,583.0

FRANCE

Growth and Market Development

Unfavourable weather conditions adversely affected the amount harvested in the third consecutive year. Especially the aroma variety Strisselspalt suffered from lack in precipitation and drought. The amount harvested per ha of this variety was again 14% below that of the previous year. As this variety makes up 85% of the total hop cultivation, it decisively influences the total result of the French crop.

A large extent of the French harvest was sold by contracts. The remaining spot hops were all sold shortly after the harvest. 50% of the hops were exported.

Acreage and amount harvested

In Alsace, the area planted with the variety Brewers Gold was reduced by 20 ha, the area planted with aroma hops experienced an increase. 2.5% of the total acreage are planted with Northern Brewer, while the high alpha varieties now amount up to 6%. Another increase in acreage by 48 ha is to be expected for 1992.

The growing region in the areas of Nord and Burgundy did not experience any major changes compared to last year.

FRANCE

Cultivation of varieties

The table below shows which varieties were grown on which acreage and in which region:

variety/ha	Total		Aroma hops		Brewers Gold		Northern Brewer		High Alpha	
area	**1991**	**1990**	**1991**	**1990**	**1991**	**1990**	**1991**	**1990**	**1991**	**1990**
Alsace	521.0	473.5	492.0	427.0	13.0	33.0	–	–	16.0	13.5
Nord	61.0	56.0	15.5	12.0	11.0	7.0	14.5	16.0	20.0	21.0
Burgundy	2.0	2.0	–	–	2.0	2.0	–	–	–	–
Total	584.0	531.5	507.5	439.0	26.0	42.0	14.5	16.0	36.0	34.5

The following amounts were harvested of the different varieties (tons):

variety/area	total	Aroma hops	Brewers Gold	Northern Brewer	High Alpha
Alsace	661.6	605.7	34.5	–	21.4
Nord	73.0	13.1	15.7	21.7	22.5
Burgundy	2.7	–	2.7	–	–
Total	737.3	618.8	52.9	21.7	43.9

BELGIUM

Last year the acreage increased by 20 ha. 56 ha of the total acreage are baby hop gardens, the major part of which is cultivated with the new high alpha varieties. The acreage will increase by further 50 ha in 1992, resulting in a total acreage of 440 ha.

At the time when this report was made, all of the Belgian crop was sold out. The contract rate for 1992 is approx. 60% of an average yield.

Acreage in ha is distributed to the single varieties as follows:

Area acreage	Total	Northern Brewer	Hallertauer	Target/ Yeoman	Other Aroma varieties	Other Bitter varieties
Poperinge	320	127	49	92	27	25
Aalst/Asse	69	18	36	–	4	11
Total	389	145	85	92	31	36

Thus 30% of the acreage are planted with aroma hops, the other 70% with bitter hops.

The total amount harvested of 640.2 tons is distributed to the single varieties as follows:

Area/ variety	Total	Northern Brewer	Hallertauer	Target/ Yeoman	Other Aroma varieties	Other Bitter varieties
Poperinge	519.4	222.8	72.5	157.3	33.2	33.6
Aalst/Asse	120.8	30.8	68.5	–	4.5	17.0
Total	640.2	253.6	141.0	157.3	37.7	50.6

YUGOSLAVIA

Serbia

On the national territory of former Yugoslavia, hops were cultivated in two regions, that is in Serbia in the Wojwodina and in the Republic of Slovenia, which now is independent, namely in the fertile Sava valley near Ljubljana.

The Serbian region called Backa, which is still belonging to the remainder of Yugoslavia, reported a much higher crop than last year. Bitter hops with an average alpha acid content of 5.5% are cultivated on almost 60% of the acreage. The total Serbian crop is taken up by the local brewing industry, only 10 tons were reported as being destined for exports.

SLOVENIA

Favourable conditions in spring and summer had a positive influence on the amount harvested. If it had not been for a thunderstorm with hail shortly before picking, an even better result would have been obtained.

The total yield, which was reported to be 3,696 tons, was obtained as follows:

Variety	Amount harvested to
Golding	1,215
Aurora	2,308
High alpha varieties	173
Total	3,696

We did not receive information on how acreage is distributed among the varieties.

The acreage is reported to be the same in 1992.

CZECHOSLOVAKIA

The 1991 harvest did not meet the expectations in any of the four Czechoslovakian hop growing regions (Auscha, Saaz, Moravia, Tirschitz). Hop quality was good though, the bitter value was the highest since 1981.

Due to the political changes in this country, hops will be cultivated in future also by private individuals who got their land back. Apart from that, agricultural production cooperatives, which developed from former state cooperatives, will continue to work on a voluntary basis.

The acreage on which hops are grown only changed slightly during the last years. The only variety grown is still Saazer.

SPAIN

Unfavourable weather conditions in May, June and July negatively affected plant growth and resulted in a late bloom. Harvest started one week later than normal.

The total amount harvested of 1,921 tons is distributed to the single varieties as follows:

H 3	1,397 tons
H 7	523 tons
Strisselspalter	1 tons

The quality was reported to be worse than last year. The bitter values were higher though, they were indicated as follows:

Variety	Bitter value 1991	Bitter value 1990
H 3	7.7	6.8
H 7	6.6	6.0

The total acreage of 1,387 ha is distributed to the three varieties as follows:

H 3	829 ha
H 7	556 ha
Strisselspalter	2 ha

PORTUGAL

Another decrease in acreage is reported for this country. The number of hop-growing enterprises diminished to 34.

The total amount harvested is distributed to the areas of Braga and Braganca as follows:

Area	Acreage ha	Amount harvested/tons
Braga	16	20.5
Braganca	76	143.0
Total	92	163.5

The only variety grown was Brewers Gold. At present, changes in variety (Nugget) are being made. The total amount harvested is taken over by the local brewing industry.

POLAND

A cold and dry spring adversely affected plant development. It was only in mid June that the conditions of growth improved – with pouring rain and also some warm and sunny days. Thus, the hops were harvested in due time and were of good quality.

The new acreage, which is said to be 75 ha, is divided into 35 ha cultivated with aroma hops and 40 ha cultivated with bitter hops. The aroma variety called „Lublin", a large part of which is being exported, still is predominant – making up more than 90% of the total acreage and the amount harvested. The export rate of this country is approx. 35%. About the same quantity has to be imported to cover the local needs.

About 90% of the future Polish crops are covered by contracts, assuming average yields.

AUSTRIA

Leutschach

In spite of hail and storm which shortly before the harvest damaged or even destroyed some of the plants, it was possible to obtain almost the same results than last year. The amount harvested of the variety Golding was 88 tons and that of the variety Aurora 30 tons. The remainder is made up by hops of different varieties from experimental gardens.

New high alpha varieties will be planted in this region during the years to come.

Mühlviertel

Spring was cold and dry, early summer was rainy and cold. The unfavourable conditions negatively affected hop growth. The shoots were weak and pointed, the hops hardly reached the top of the trellises. Improved conditions in July and August resulted in good cone set and plant maturity. At picking time, the hops were of excellent quality with the bitter value being slightly higher than last year. Just as last year, the average yield of 1.34 tons per ha was again below the 10 years average of 1.64 tons. During hop classification, which takes place after the harvest, the total Mühlviertel yield was placed in quality class I.

Zwettl

In this small growing area with its seven farms, storm and hail adversely affected the yield; with only 0.67 tons per ha it again remains far below Austrian average.

HUNGARY

Shortly before the harvest still, the crop was expected to be below average. However, the actual amount harvested on a slightly decreased acreage was almost 30% higher than last year. Bitter hops are cultivated on almost 90% of the total acreage.

It remains to be seen whether hop cultivation in this country will be continued in view of the changing political and economic situation.

SWITZERLAND

Although the acreage remained the same, the yield was 10% higher than last year. 14.5 ha of the acreage are planted with the predominant variety Perle, on further 6 ha the variety Hallertauer is grown.

Hop quality was good, the total yield, placed in quality class I, was taken up by the Swiss brewing industry.

BULGARIA

Shortly before picking average results with a slightly better yield than last year were expected. Then the amount harvested was 50% higher than 1990, although acreage slightly decreased.

For 1992, an increase of the acreage for bitter varieties from 550 ha to 650 ha is reported. The total acreage should then be more than 1,000 ha.

UKRAINE

For several years, this country - which was the largest hop growing region of the former national territory of the USSR - has been a member of the International Hop Growers Convention. Due to this fact we have official figures regarding hop cultivation in the Ukraine.

The acreage increased by 140 ha compared to last year, resulting in a total acreage of 7,300 ha. The amount harvested was reported to be 6,056 tons. The major part of the acreage is planted with aroma hops having an average alpha acid content of 3.1%.

For 1992, the area of 7,300 ha is reported to remain the same, however, baby hops will be grown on 120 ha – from which we may conclude that there were some changes in variety.

We even were provided with further information on hop cultivation. For 1991, considerable problems regarding quality and quantity were reported, which mainly concerned the aroma varieties. The bittering value thus was below average. It is also said that some years ago the hop growing region was larger by about 2,000 ha and that the acreage was reduced after the reactor accident of Tschernobyl. At the same time, the growing region was transferred further to the South.

RUSSIA

Thanks to the political changes in the former Soviet Union reliable data on hop cultivation are getting through now. The main hop growing region of Russia is situated in the autonomous republic of Tschuwasch, approx. 500 km to the east of Moscow. About 2,800 tons of hops are cultivated on an acreage of approx. 3,000 ha which is located in the vicinity of the capital of Tchepoksary. The hop growing farms are state farms cultivating hops on an average acreage of 150 ha. Some private individuals are cultivating hops, too, but mainly for the purpose of producing their own beer.

The following varieties are reported to be grown in this area:

Variety	Alpha acid %
Istrinskyi	5.0
Podvjazoyi	4.7
Ramig	4.3
Sprolistyi	6.0

alpha acid in % as is.

The hop cultivated in this area is exclusively supplied to the Russian brewing industry. The per capita beer consumption in Russia is reported to be 18 l. From that, one could calculate a beer output of approx. 50 million hl for the national territory of the former Soviet Union.

Apart from the cultivation in the republic of Tschuwasch, hop is also planted in the Altai, near the city of Belgorod at the Ukrainian border and at the Volga, near Mariska. The total Russian production is reported to be 3,600 tons.

WHITE RUSSIA

This republic, which emerged from the former USSR, has a small hop growing region said to be located south-east of the capital of Minsk, near the city of Gomel.

We do not yet avail of further data as, for example, acreage or amount harvested.

OTHER COUNTRIES

AUSTRALIA

The result of 1991 crop is the following:

Region	ha	crop tons
Tasmania	817	1,995
Victoria	308	680
Total	**1,125**	**2,675**

The result roughly correspond to the estimates shortly before harvest.

NEW ZEALAND

The amount harvested on an only slightly extended acreage increased by 34 tons compared to last year.

Following are the amounts harvested of the single varieties:

Super Alpha	192.7 tons
Sticklebract	60.8 tons
Green Bullet	82.8 tons
Pacific Gem	72.2 tons
New Zealand Hallertau	43.9 tons
Tettnanger	1.8 tons
Hallertau Mittelfrüh	0.2 tons
Total	454.4 tons

As the local brewing industry only needs approx. 30% of the hops, about 300 tons will be exported. The average bitter value of the hops was slightly more than 12.0%. The hops are marketed exclusively by the New Zealand Hop Marketing Board.

CANADA

The unusually low amount harvested of 0.51 tons/ha with the acreage being the same is due to the following reasons: firstly, there were two heavy frosts in January 1991 shortly after each other which damaged the roots, above all of the English varieties. In addition to that, the three hop-growing farms are in the process of changing varieties. The amount harvested per ha from the newly planted varieties thus was below average in 1991.

INDIA

Some experiments on hop cultivation are made in the region of Himachal at the southern edge of the Himalaya. In the previous hop growing region in Cashmere, hop cultivation was given up because of political and religious reasons. The annual requirements of the Indian brewing industry amount to 500 tons of raw hop, from which a beer output of approx. 3.5 million hl with a hopping rate of approx. 150 g may be deduced.

REPUBLIC OF KOREA

The acreage on which hops are cultivated was further reduced in this Far Eastern country. At the same time, the amount harvested per ha decreased so that the total crop was approx. 50% less in comparison to last year.

A further decrease in acreage was reported for the 1992 harvest. Thus, the amount harvested is expected to be below 100 tons.

PEOPLE'S REPUBLIC OF CHINA

We still depend on estimates regarding hop cultivation and beer production in this country.

It seems to be sure now that acreage really is larger than assumed so far. According to the information available, the acreage is about 8,000 ha, from which an average crop of approx. 14,000 to 15,000 tons can be expected.

However, the 1991 harvest does not seem to have met the expectations according to plan. It is said that above all in the hop growing region of Xinjang, some gardens were affected by the drought. It might be due to this reason that the actual amount harvested only was approx. 13,000 tons. As a result, export contracts were difficult to fulfill and there was insufficient supply for the local brewing industry.

For estimates regarding the beer output, we have to evaluate information from various sources. From some information one might assume an output of 95 million hl, while we estimated the output to be approx. 80 million hl. Other sources indicated however that this output was obtained in 1990 already while we still indicated an output of only 70 mil hl.

ZIMBABWE

We were provided with contradictory information on this new hop growing region. The figures for the year of 1991 should now be official ones, as they were reported by the local brewing industry.

Plans are made to increase hop cultivation to approx. 315 ha during the next three or four years to no longer depend on hop imports.

KENYA

Hops are cultivated in a small experimental garden. The varieties grown are Southern Brewer, Cascade and Comet.

It remains to be seen whether hops can be cultivated successfully in this country. The fact that the temperatures remain constant during all of the year with minimum temperatures of 13°C to 14°C seems to be a problem. In Zimbabwe, for example, temperatures may drop to 0°C in the winter.

JAPAN

The hop quality suffered from the heat and a drought so that bloom started early. There was little sunshine and a lot of rain in July and August which negatively affected growth. The average amount harvested fell to 1.7 tons compared to 1.97 tons last year. In addition, mildew reduced the quality of the hops. Over 10% of the total amount harvested could not be placed in quality class I.

All hops harvested were taken over by the four Japanese brewery groups that are paying between 2,129 and 1,599 Yen per kg (approx. 1,200 to 910 DEM per 50 kg), depending on the quality class.

Brewery Group	Acreage ha	Amount taken over tons
Kirin	455.5	757.3
Sapporo	171.6	310.9
Asahi	102.9	173.2
Suntory	10.9	14.8
Total	**740.9**	**1,256.2**

Compared to last year, hop cultivation in Japan experienced another decrease. The number of hop-growing farms diminished from 1,677 farms last year to 1,427.

USA

Growth

The winter in general for all the growing areas was colder than normal. There was very little report of plant damage due to the colder winter temperatures. With adequate water supply for Washington and Oregon, the concern turned to Idaho's insufficient water supply.

The summer weather was dry and cooler than normal by 5-7 degrees Fahrenheit. The cooler temperatures helped some of the aroma varieties' yields. Harvest conditions were good.

Acreage increased in 1991 by approximately 4090 acres, resulting in a total crop of 69.16 million pounds (1990 = 56.85 million pounds) with an average yield of 1,748 pounds per acre, compared to 1,603 pounds per acre in 1990.

Washington

The winter of 1990-91 was noticeably colder than normal. A cold arctic air mass entered the growing areas from late December through mid-February, bringing temperatures of zero degrees Fahrenheit to minus 27 degrees Fahrenheit. Along with the cold came winds, reducing temperatures even lower due to the windchill factors. There was some snow on the ground during these cold periods, insulating the plants from injury. The temperatures in April were warm allowing spring work to be done on time. May through June temperatures were cooler than normal. These cooler temperatures allowed the plants to grow slower with closer lateral growth. This lateral growth allowed more possibility for bloom development which resulted in a larger crop.

The 1991 Washington crop was 53,550,700 pounds with an average 1,896 pounds per acre, up considerably from 1990 which was 41,941,800 pounds with an average 1,634 pounds per acre. Almost all varieties improved in yield.

Mite and Aphid were better controlled due to the introduction and use of Agrimek and Brigade.

Oregon

Oregon experienced a winter with less than normal precipitation and lower than normal temperatures. Spring vine growth was uneven and very slow. May and June were also cold with much more rainfall accumulation. Downy mildew infections were prevalent and difficult to control until late June. Weather conditions improved dramatically by early July, and there was an immediate improvement in vine development. The blooming period was later than normal for the second consecutive year. The hops were not able to overcome the poor weather and mildew infections, resulting in a less than average crop. The overall production per acre was 1,415 lbs. in 1991, compared to 1,530 for 1990. The two predominant varieties, Nugget and Willamette were significantly below average in yield. Nugget produced 1,790 pounds per acre vs. 1,970 pounds per acre in 1990.

Willamettes also yielded less at 1,400 pounds per acre as compared to 1,420 pounds per acre in 1990. There is growing concern in growers circles about the viability of the Willamette variety.

Idaho

For the second year in a row the winter snowpack in the mountains was light to moderate. With this small snowpack, the water outlook was uncertain. The spring weather (May through June) was predicted to be warm and dry, but cooler than normal temperatures and above normal precipitation came. With the cooler temperatures, plant growth was slowed considerably and plant development was delayed. In July, temperatures changed quickly to above normal and very dry. These weather conditions had a negative impact on the crop, reducing yield from 1990. Average yield per acre for 1991 was 1,319 pounds, down from the 1990 average of 1,500 pounds per acre.

Quality

The hop quality continues to improve. The insect damage has been greatly refined with control of the hop aphid; there was little detection of hop mold again this year. The spider mite was held in check reasonably well this year, so the red tint caused by spider mites was kept to a minimum.

The picking quality improved as the average leaf and stem content was reduced from 1.09% to 0.85%. Seed content increased slightly from 1990.

Alpha production increased to 2,878 metric tons (1990 - 2,480 metric tons) which is a 16% increase. Part of the alpha increase is due to the 11.5% increase in acreage. In addition, the average alpha increased to 9.2% from 8.7% in 1990. Cluster alpha rose to 7.3% from 7.2%. The alpha for the high alpha varieties remained relatively the same at 10.4% to 13.8%. The aroma varieties ranged from 3.5% to 6.3%, with Perle showing alpha from 6.7% to 9.5%.

Spot Market Crop 1991

At the beginning of 1991, there were approximately 4,500-5,000 bales of 1990 spots in growers' hands. Growers sold some 1990 spots in January-February for $2.80 per pound for Cluster, with high alpha hops selling for $3.25 per pound. Growers had approximately 2,500-3,000 bales in their possession at the beginning of the 1991 harvest, which they were able to sell at the above mentioned prices.

The 1991 spot market began in late August with Tettnanger selling for $2.60-$2.70 per pound and Willamette at $2.20-$2.25 per pound. By the middle of September, Cluster, Cascade and High Alpha were all selling at a range of prices from $1.90 flat per pound (without usual leaf and stem premiums) to $2.00 flat per pound (this price would have leaf and stem premiums). With reports of a successful harvest coming in and contract deliveries being fulfilled, the price for spots held firm. Most of the 15,000-18,000 bales of 1991 crop spots were sold by the end of December. Currently there is an estimated 1,500 to 2,000 bales of 1991 spots left in growers' hands. The 1991 spots consisted mainly of Cluster and High Alpha varieties, with only an approximately 1,500 to 2,000 bales aroma mixed in.

The September hop stock report of 49.6 million pounds was 2.3 million down from 51.9 million pounds reported in 1991.

1985 – 70.6 million Pounds
1986 – 70.9 million Pounds
1987 – 70.6 million Pounds
1988 – 60.6 million Pounds
1989 – 51.7 million Pounds
1990 – 51.9 million Pounds
1991 – 49.1 million Pounds

Exports dropped considerably for the first time in five years. Exports for 1989-1990 were 49.1 million pounds and exports for 1990-1991 were 35.99 million pounds, which is a decrease of 13.11 million pounds. Imports increased 4.7 million pounds from 17.2 million in 1989-1990 to 21.9 million pounds in 1990-1991.

USA

Varietal Structure

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

Acreage per Variety/Variety Group (%)

Variety/	Washington		Oregon		Idaho		Total[1]	
Variety Group	91	90	91	90	91	90	91	90
Cluster	22	24	–	–	18	21	18	19
Cascade	4	5	–	–	–	–	3	3
Highalpha	48	43	25	21	30	42	42	39
Aroma varieties	23	22	68	74	–	–	28	31
others*	3	6	7	5	52	37	9	8
total	100	100	100	100	100	100	100	100

Acreage (ha) per Variety/Variety Group (absolute)

Variety/	Washington		Oregon		Idaho		Total	
Variety Group	91	90	91	90	91	90	91	90
Cluster	2,522	2,451	–	–	297	227	2,819	2,678
Cascade	502	514	–	–	–	–	502	514
Highalpha	5,437	4,519	726	604	496	460	6,659	5,583
Aroma varieties	2,597	2,334	1,975	2,113	–	–	4,572	4,447
others*	377	572	210	157	874	406	1,461	1,135
total	11,435	10,390	2,911	2,874	1,667	1,093	16,013	14,357

Yield (to) per ha

Variety/	Washington		Oregon		Idaho		Total	
Variety Group	91	90	91	90	91	90	91	90
Cluster	2.35	2.12	–	–	2.30	2.24	2.34	2.13
Cascade	2.30	1.83	–	–	–	–	2.30	1.83
Highalpha	2.28	2.00	2.03	2.21	1.61	1.60	2.20	1.99
Aroma varieties	1.52	1.26	1.47	1.58	–	–	1.50	1.41
others*	2.44	1.64	1.22	1.68	1.13	1.47	1.48	1.58
total	2.13	1.83	1.60	1.68	1.48	1.68	1.96	1.80

Yield (to) 1991

Variety	Washington	Oregon	Idaho	Total
Cluster	5,919	–	684	6,603
Cascade	1,155	–	–	1,155
Highalpha	12,403	1,474	801	14,678
Aroma varieties	3,947	2,894	–	6,841
others*	918	257	984	2,159
total	24,342	4,625	2,469	31,436

* Others include **Washington** - Hallertau, Hersbrucker, Northern Brewer, Mt. Hood, Fuggle, Aquila, Banner, Experimental. **Oregon** - Hallertau, Chinook, Bullion, Aquila, Banner, Eroica, Cluster, Cascade, Mt. Hood, Experimental. **Idaho** - Hallertau, Hersbrucker, Mt. Hood, Tettnang, Cascade, Talisman, Nugget, Aquila, Banner, Willamette, Experimental.

Contract Market

The contract market was active from February to April 1991, then again from September to December. The Cluster contract market started in February with sales at $1.90 per pound each year for 1991 through 1995. The Cluster market held at this level until June when interest for Cluster dwindled.

The High Alpha contract market had some flexibility in pricing. In February, High Alpha hops sold for $2.00 per pound each year for 1991 through 1995. By March, High Alpha hops sold for $2.00, $2.05, $2.10, $2.15 and $2.20 per pound for years 1991, 1992, 1993, 1994 and 1995, respectively. The market held at this level until June when inquiries lessened.

The Aroma market showed interest in Willamette variety only in February. Willamette sold for $2.25, $2.30, $2.35, $2.40 and $2.45 per pound for years 1991, 1992, 1993, 1994 and 1995, respectively. Also, there was some interest in 1994 Perle hops at $3.00 per pound.

Variety/$/lb	1991	1992	1993	1994	1995
Cluster	1.90	1.90	1.90	1.90	1.90
High Alpha	2.00	2.00-2.05	2.00-2.10	2.00-2.15	2.00-2.20
Willamette	2.25	2.30	2.35	2.40	2.45
Tettnang			No Activity		
Perle				3.00	
Cascade			No Activity		
Mt. Hood			No Activity		

The contract market was reactivated in September with Cluster sales at $1.80 per pound each year 1992 through 1995. The Cluster future market held at this price for the remainder of the year.

The High Alpha price softened some from June with High Alpha now selling for $1.90 per pound each year 1992 through 1995.

For the first time in 1991, there was interest in Cascade which sold in September for $1.80, $1.85, $1.90, $1.95 and $2.00 per pound for years 1992, 1993, 1994, 1995 and 1996, respectively. In December, the Mt. Hood market came into focus with sales at $2.40, $2.45, $2.50 and $2.55 per pound for years 1992, 1993, 1994 and 1995, respectively.

Variety/$/lb	1991	1992	1993	1994	1995	1996
Cluster	1.80-1.90	1.80	1.80	1.80	1.80	
High Alpha	2.00	1.90	1.90	1.90	1.90	
Willamette	2.25			No Activity		
Tettnang	2.60-2.70			No Activity		
Perle	2.35			No Activity		
Cascade	2.00	1.80	1.85	1.90	1.95	2.00
Mt. Hood	2.70	2.40	2.45	2.50	2.55	

All 1991 crop prices are average spot prices paid for hops.

Average Price Return for Growers

Year	$/lb.
1985	2.03
1986	1.78
1987	1.51
1988	1.40
1989	1.31
1990	1.40

Crop 1990 is the first year since 1985 where the declining trend of the season average has reversed. Further improvement can be expected for crop 1991. This increase is welcomed by growers due to the fact growers have been struggling. The price increase is partly due to the continued sales of large quantities of spot hops at $1.90 to $2.00 per pound. Another reason is that some of the old lower price contracts are being completed and replaced by high priced ones. Another possibility for the season average price to increase is more aroma hops are being sold which normally carry higher prices than the alpha varieties.

1 acre = 0.405 ha
1 lb = 0.45359 kg

On our own account

When compiling the statistics "World Beer Production" and "Acreage and Hop Production" up to now, we often had to rely on estimates or on the evaluation of information from sources of low reliability – which above all applied to the states of the former Eastern bloc.

Since these countries opened to the world market, more and more reliable information is available for our world statistics. However, this often implies a correction of our previous statistics. Moreover, they need to be adapted to the different political situation – just to mention the hop growing countries of Ukraine and Slovenia which so far were part of the Soviet Union and of Yugoslavia, respectively. Another example is Lithuania. During the last reporting period we received reliable data on beer output from this republic which meanwhile became independent. As a consequence, this country is now mentioned separately in our statistics on world beer production.

Even though in some case or other we only were provided with incomplete information due to this reorganization in Europe, we decided to provide the readers of our report with the sometimes very little data and information – given in the text or in the statistics themselves.

CROP 1992

Vegetation development 1992 Europe

After a rather mild winter with only few snow in the most important European growing regions, the weather during spring 1992 was mostly cold and rainy. However, spring work started without important problems and at the time when our report went to print, hop vegetation was normal and mostly good. The plants were not extraordinarily affected by insects or diseases so far. In the Hallertau area, rain is urgently wished for.

Hops from the Federal Republic of Germany and other European countries, which are to be exported to the USA, still may be treated with a limited number of plant protectives only. The number of protectives against downy mildew, mildew and aphids seems to be sufficient, however, problems may arise with regard to the treatment of soil pests and red spider.

Apart from development of growth and market, the interest presently lies in the further development of the brewing and hop commerce in the countries of the former East bloc. The farms located there, which so far depended on state subsidies, now have to adapt to a new, unknown economic situation governed by efficiency and quality. Hop cultivation in Czechoslovakia gives the impression to have the best future prospects.

USA

The weather during winter and spring was milder than normal, accompanied by insufficient precipitation in the northeast of the USA which negatively affected plant development. In general, plant development was two weeks earlier than normal, while the varieties Galena in Yakima and Nugget in Oregon where flowering early. The variety Willamette in Oregon is especially weak. There is a water shortage in Idaho and the Yakima valley because of the long drought.

Crop 1992

AUSTRALIA

The crop was excellent with an amount harvested of 3,131.5 tons from an acreage increased by 30 ha.

The total acreage is distributed to the growing regions of Tasmania and Victoria and to the varieties grown as follows:

Region	Variety	Acreage ha	Amount harvested tons
Tasmania	Pride of Ringwood	618	1,828.5
	APR *	170	415.0
	Cluster	15	32.5
	Aroma	10	10.5
Subtotal		813	2,286.5
Victoria	Pride of Ringwood	274	744.0
	Cluster	46	87.0
	APR *	22	14.0
Subtotal		342	845.0
Total		**1.155**	**3,131.5**

* APR = Australian Highalpha

NEW ZEALAND

The amount harvested was higher than expected. Bitter substance content, however, was slightly lower compared to last year.

The total amount harvested is distributed to the varieties grown as follows:

Variety	Acreage ha	Amount tons	Yield harvested tons/ha
New Zealand Hallertau	25	55.7	2.2
Pacific Gem	67	155.6	2.3
Green Bullet	39	85.3	2.2
Super Alpha	95	226.4	2.4
Sticklebract	25	62.4	2.5
Tettnanger	2	1.2	0.6
Hallertauer	1	0.9	0.9
Total	**254**	**587.5**	**2.3**

The bitter values were the following:

New Zealand Hallertau	8.0
Pacific Gem	14.8
Green Bullet	12.4
Super Alpha	12.2
Sticklebract	12.7
Tettnanger	8.3
Hallertauer	7.1

in percent, as is. The values were measured after the harvest.

For the next season, a slight increase in acreage (to approx. 270 ha) is reported.

ZIMBABWE

Acreage was extended to 119 ha. We were not provided with any results of the harvest. It is said that the average amount harvested was only 1.0 ton per ha.

SOUTH AFRICA

The acreage increased by 63 ha to 650 ha. The amount harvested in 1992 was 1,180 to, that is an increase of nearly 20%. The good result, namely 1.82 to/ha compared to 1.72 to/ha last year, was due to sufficient precipitation during the vegetation.

383 ha of the total acreage are cultivated by farmers who are working independently, the remaining acreage by the hop farms of the South African Breweries. The only variety grown is Southern Brewer, the bitter value of which was approx. 9.5% as is in 1992.

Prospects 1992

The crop results which were considerably better in comparison with last year in terms of quality and quantity were faced with an only slightly increased world beer output. As the world market was sold out quickly, supply gaps from the 1990 harvest could be filled. Apart from that of the former East bloc countries, the brewing industry's stocks can be considered as normal. Thus, for the future market development the expected output will play an important role, in close connection with the world's business activities. There does not seem to be much reason for too much optimism.

The development of the acreage on which hops are grown still is an important criterion. Apart from some newly planted areas in the US, the world acreage will not change too much in 1992, when leaving some unpredictable changes in the former communist countries out of consideration. The present price level does not really induce increases in acreage – which would not be needed anyway.

The hop producers of the southern hemisphere had an excellent harvest in 1992 – which is not of great importance for the world market though. In the northern hemisphere, plant development did not yet progress to such an extent to make similar predictions.

Printed in Germany
The publication of our Hop Report involves obtaining data from all parts of the world. We wish to express our gratitude to all who assisted us.

Joh. Barth & Sohn in Saaz

On October 11, 1991, Joh. Barth & Sohn Nuremberg registered a branch in Zatec, the former Saaz, which is the centre of the famous hop growing region of the same name.

Until the foundation of Czechoslovakia in 1945 there already existed a branch of our company in both Saaz and Prague. The former presence in the area of Saaz, which now was resumed, emphasizes this traditional link as well as the importance of hops from this region to the world market.

Bohemian hops look back on a rich history. In the 15th and 16th century already, Saazer hops were sold to the increasing number of breweries of Europe's early trading cities. Later on, hops from Bohemia were considered as the best raw material for the production of a bottom-fermented beer of light colour with hops added to obtain a mild and bitter taste – that is that type of beer called Pilsener having its origins in the industrial and commercial city of Pilsen situated at the edge of the growing region of Saaz.

In the period between the two world wars, the growing region of Saaz was considered to be the most important supplier of raw material to the German brewing industry, the beer output of which was at that time 50 million hl. It was only due to the changing political and economic situation after 1945 and when the so-called Iron Curtain went down on Europe that the Hallertau region advanced to its present size in order to make supplies for the western brewing industry independent of the political situation.

Even under the difficult conditions of a planned socialist economy, hops from Saaz kept their reputation as "finest aroma hops", although they lost their importance for the world market to other growing regions. No doubt the efficient farmers will continue to exist under the new marketing structures in the competition of the free market. Joh. Barth & Sohn will contribute to this with the foundation of this new branch.