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HOPS 1977/78

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Political Situation

Important international conflicts were to be observed at a number of different places. The efforts of Egypt and Israel to find a peaceful solution to the Middle East conflict were nullified by military actions in the Lebanon. Ethiopia was able to regain control over the Ogaden region only with help from foreign countries. In Rhodesia, a transitional government comprising both whites and blacks was established, but not recognized by the black nationalists. In Namibia, too, negotiations are still going on, the aim of which is to transfer the power of government to the black population. In 1977/78, too, international terrorism continued to chill the world with a number of spectacular actions. The necessity of close international cooperation to combat terrorism, led to a number of gratifying successes being achieved.

Economic Situation

On 18. 10. 1977, the General Agreement on Tariffs and Trade (GATT) celebrated its 30th birthday. International cooperation has been particularly successful in the sphere of the reduction of customs duties, the abolition of quantitative restrictions of imports, exceptions being made for countries in balance of payment difficulties and preferential treatment.

Almost all the countries of the OECD (Western Europe, USA, Japan) again introduced measures to reactivate demand and production. Attempts are intended to stimulate private consumption by making tax concessions. The high unemployment continued to cause international concern, since its elimination is possible only by the creation of new work places, that is, by increased investments which, however, are not being made to the required degree. In the USA, the Prime Rate (roughly corresponding to the German Bank Discount Rate) was increased to 8.5 %.

Due to the considerable drop in the value of the dollar, the **Federal Republic of Germany** sees danger ahead for its exports. In 1977, the Gross National Product increased by only 2.4 %, which was the lowest increase ever. The original growth target of 5 % was not achieved. The balance of current transactions closed with a surplus of 8.2 billion DM. The cost of living increased in 1977 only by a gratifying 3.9 %. This figure secured for Germany a leading position in the world. Admittedly, the number of unemployed remained, on average over the year, somewhat in excess of one million. For the first time since 7 months, this figure decreased below one million in May 1978. On the 15. 12. 1977, the Bank Discount Rate was reduced by ½ % to 3 %.

1 ha = 2.934 bayr. Tagwerk — 1 bayr. Tagwerk = 0.341 ha
1 ha = 2.471 acres — 1 acre = 0.405 ha

1 hl = 100 l = 26.42 gall = 0.8523 bbl (USA) — 1 bbl (USA) = 31 gall = 1.1734 hl
1 hl = 100 l = 22.01 gall = 0.6114 bbl (Brit.) — 1 bbl (Brit.) = 36 gall = 1.6356 hl

1 metr. Tonne = 1,000 kg = 20 Ztr. = 2,204.6 lbs

1 Ztr. = 50 kg = 110.23 lbs = 1.102 cwt (USA) — 1 cwt (USA) = 100 lbs = 45.359 kg
1 Ztr. = 50 kg = 110.23 lbs = 0.984 cwt (Brit.) — 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:

$$86^\circ\ F = \frac{(86-32)\ 5}{9} = 30^\circ\ C \qquad 30^\circ\ C = \frac{30 \cdot 9}{5} + 32 = 86^\circ\ F$$

Production of Beer 1977

Country	1000 hectolitres	
Germany, Fed. Rep.	94.300	
United Kingdom	66.085	
USSR	65.000	
France	22.772	
Czechoslovakia	22.500	
Germany, Dem. Rep.	22.000	
Spain	18.600	
Belgium	14.035	
Netherlands	13.970	
Poland	12.069	
Jugoslavia	9.588	
Denmark	8.453	
Romania	7.910	
Austria	7.611	
Italy	7.338	
Hungary	7.003	
Ireland	5.659	
Bulgaria*)	5.200	
Sweden	4.515	
Switzerland	4.033	
Finland	2.613	
Portugal	2.274	
Norway	1.984	
Greece	1.720	
Luxembourg	703	
Malta	100	
Iceland	37	
Europe		428.072
USA[1])	200.125	
Brazil	23.000	
Mexico	21.045	
Canada	20.389	
Colombia	10.123	
Venezuela	7.500	
Peru	5.200	
Cuba*)	3.500	
Argentina	2.543	
Ecuador	1.600	
Chile	1.383	
Bolivia	969	
Guatemala	675	
Dominican Rep.	605	
Uruguay	600	
El Salvador	600	
Jamaica	576	
Nicaragua	550	
Costa Rica	470	
Puerto Rico	436	
Paraguay	430	
Panama	400	
Honduras	364	
Trinidad and Tobago	290	
Martinique and Guadeloupe	96	
America		303.469
South Africa	6.000	
Zaire	4.196	
Nigeria	3.315	
c. f.	13.511	731.541

Country	1000 hectolitres	
b. f.	13.511	731.541
Kenya	2.500	
Cameroons	2.000	
Ivory Coast	1.050	
Angola	1.030	
Zambia	967	
Rhodesia	900	
Ruanda-Burundi	892	
Mozambique	850	
Tanzania	780	
Ghana	705	
Algeria	600	
Gabun	450	
Ethiopia	410	
PR Congo (Brazzav.)	377	
Egypt	350	
Morocco	330	
Tunisia	320	
Senegal	250	
Madagascar	248	
Central Africa	202	
Upper Volta	190	
Togo	185	
PR Benin (Dahomey)	185	
Uganda	180	
Mauritius	165	
Tchad	160	
Southw.Afr. (Namibia)	130	
Liberia	120	
Sudan	90	
other countries	304	
Africa		39.431
Japan	41.242	
Philippines	6.000	
South-Korea	2.541	
Turkey	2.040	
China, Peoples Rep.*)	1.750	
Taiwan	1.620	
Vietnam*)	1.500	
Malaysia a. Singapore	1.190	
Thailand	970	
India*)	850	
Hongkong	600	
Iran	570	
Indonesia	531	
Israel	424	
Iraq	305	
Cyprus	135	
Lebanon	115	
Syria	80	
Sri Lanka (Ceylon)	71	
Jordan	49	
Pakistan	27	
Asia		62.610
Australia	19.511	
New Zealand	4.180	
Tahiti	96	
Australia/Oceania		23.787
Total		848.369

*) Estimate

[1]) USA: Above figure refers to beer produced in 1977, i.e. including non-taxable and exported quantities

Production of Beer

From 1976 to 1977, the increase in world beer production was about 22.7 million hectolitres = 2.7 %. For the first time a reliable figure was obtained from the USSR, which explains the drop in Europe. In contrast, America, Asia and Africa were all able to increase their beer production markedly.

1977 Crop

Market Observations

Assessments that became known shortly before harvesting began, indicated that the 1977 crop would be about 100,000 Ztr. (5,000 tonnes) larger than that of the previous year. In view of ample stocks generally held by the breweries, and the fact that in many countries beer sales were stagnant, or even reduced, it seemed as though it would not be possible to place the whole of this crop. As a result, the 1977/78 season in Europe began with a price depression unknown since the introduction of advanced contracts in 1958. In the USA, on the other hand, the market remained firm.

Thanks to the intervention of the Hallertau Producers Group, which took up all the free hops offered, irrespective of variety, at a price of DM 100,— per 50 kilogrammes, a further decline in producer prices was prevented at the beginning of September, 1977. The other European markets conformed to this line on prices. The resulting price level was so attractive that even well-provided breweries bought up large quantities for their stocks. Soon, purchasing from the farmers was no longer in step with sales. By the end of October/beginning of November, 1977, there was a shortage of supply on the European markets, which resulted in an increase in prices. In the main, the varieties with high bitter content were affected. By March, 1978, the German crop, the second largest since 1973, was virtually sold out.

At purchase prices from farmers of DM 250,— per 50 kilogrammes, in November 1977 for European products, US hops became interesting on the export markets, this development arising not least in consequence of the dropping value of the dollar. Most American hops were delivered from brewery stocks.

While, on the one hand, the placing of the whole of the 1977 hop crop was gratifying, on the other hand, purchasing for stock represents a burden on the 1978 market, and subsequent crops. The normalization of the hop market, in particular with respect to hops with high bitter content, cannot be expected in the near future. This fear is compounded by the slowing growth in world beer production. For German hop exports, the unfavourable relationship of the German mark to the US dollar is a considerable complication.

One ray of hope is, however, the again increasing demand for aroma hops.

Contract Market

While in the USA, supply and demand are relatively balanced (some 95 % of the next crop is already under contract), the European Community is much more dependent on the spot market, that is, the sale of non-contractual hops. The lower prices for non-contractual hops observed since 1973, have resulted in doubts being expressed as to the usefulness of advanced contracts. In many cases, German breweries have reduced their percentage of contractual buying from 80-90 % to 50-60 %.

The grubbing of hop acreage in the European Community, affects almost 60 % aroma hops so that a shortage of offers may be expected for these varieties. This is particularly the case in the 1978 crop. The increase in price for the 1978-80 crops involving aroma hops underlines this situation.

On the basis of average crop yield, the percentage of contractual hops in the 1978 crop can be estimated as follows:

Fed. Rep. of Germany	75 %	USA	96 %
France	30 %	CSSR	90 %
Belgium	10 %	Jugoslavia	80 %

Acreage and Hop Production

Country	1976			1977		
	Acreage hectares	Ø ton per ha	Crop tons = 1.000 kg	Acreage hectares	Ø ton per ha	Crop tons = 1.000 kg
Hallertau	16.563	1,45	24,075,7	16.290	1,98	32.285,6
Spalt	1.000	1,40	1.406,5	932	1,55	1.445,3
Hersbruck	285	1,26	387,7	244	1,70	416,0
Jura	532	1,81	954,5	540	1,99	1.077,4
Tettnang	1.269	1,18	1.534,7	1.221	1,37	1.680,3
Other Districts	28	1,01	28,2	23	1,40	32,2
Germany, Federal Rep.	**19.677**	**1,43**	**28.387,3**	**19.250**	**1,91**	**36.936,8**)**
Kent	3.206	1,38	4.437,0	3.204	1,19	3.841,5
Hants/Surrey	208	1,38	287,2	206	1,16	240,6
Sussex	273	1,17	318,7	266	1,06	284,1
Herefordshire	1.624	1,36	2.209,2	1.634	1,28	2.097,4
Worcestershire	615	1,28	784,3	613	1,25	769,5
England	**5.926**	**1,36**	**8.036,4**	**5.923**	**1,22**	**7.233,1**
Alsace	656	1,70	1.112,5	604	1,87	1.132,5
Burgundy	61	0,82	50,0	67	1,14	76,4
Flanders	315	1,75	550,0	298	1,61	480,4
Other Districts	18	1,81	32,5	15	1,66	25,0
France	**1.050**	**1,66**	**1.745,0**	**984**	**1,74**	**1.714,3**
Aalst	273	1,50	409,2	254	1,76	447,5
Poperinge	671	1,96	1.315,2	698	1,89	1.325.0
Vodelée	27	1,50	40,5	30	1,41	42,5
Belgium	**971**	**1,82**	**1.764,9**	**982**	**1,84**	**1.815,0**
EC-Countries	**27.624**	**1,44**	**39.933,6**	**27.139**	**1,75**	**47.699,2**
Saaz (Zatec)	7.020	0,92	6.480,3	7.020	1,14	8.072,0
Auscha (Ustek)	1.761	1,07	1.877,7	1.787	1,27	2.270,0
Other Districts	1.296	1,04	1.353,8	1.393	1,34	1.870,0
Czechoslovakia	**10.077**	**0,96**	**9.711,8**	**10.200**	**1,19**	**12.212,0**
USSR	**11.300**	**0,96**	**10.900,0*)**	**11.300**	**0,97**	**11.000,0**
Slovenia	2.303	1,12	2.574,0	2.189	1,24	2.719,5
Backa	1.062	1,63	1.730,0	990	1,75	1.733,0
Jugoslavia	**3.365**	**1,28**	**4.304,0**	**3.179**	**1,40**	**4.452,5**
Germany, Democratic Rep.	**2.130**	**1,25**	**2.670,5**	**2.175**	**1,35**	**2.944,6**
Poland	**2.170**	**1,17**	**2.542.0**	**2.329**	**1,06**	**2.474,0**
Bulgaria	**1.200**	**0,92**	**1.100,0**	**1.400**	**0,53**	**750,0*)**
Romania	**1.100**	**0,60**	**660,0**	**1.100**	**0,80**	**880,0*)**
Hungary	**481**	**0,82**	**396,7**	**501**	**0,79**	**400,0*)**
Galicia	76	0,70	53,4	53	0,58	31,2
León	1.731	1,44	2.494,5	1.737	1,15	2.010,2
Cantábrica	34	0,36	12,4	13	0,43	5,7
Spain	**1.841**	**1,39**	**2.560,3**	**1.803**	**1,13**	**2.047,1**
Other European Countries	**422**	**1,61**	**678,9**	**438**	**1,52**	**669,4**
EUROPE	**61.710**	**1,22**	**75.457,8**	**61.564**	**1,38**	**85.528,8**
Washington	8.499	2,20	18.670,0	8.386	2,06	17.193,0
Oregon	2.185	1,86	4.066,0	2.220	1,89	4.216,1
California	607	1,86	1.129,5	611	1,82	1.109,1
Idaho	1.214	1,93	2.340,5	1.179	1,98	2.328,3
USA	**12.505**	**2,10**	**26.206,0**	**12.396**	**2,01**	**24.846,5¹)**
Canada	**326**	**1,14**	**372,0**	**326**	**1,39**	**455,5**
Argentina	**314**	**0,64**	**200,0*)**	**340**	**0,76**	**260,0**
Japan	**1.307**	**1,70**	**2.222,0**	**1.287**	**1,77**	**2.287,0**
Victoria	405	1,85	750,0	442	1,35	776,0
Tasmania	513	2,20	1.129,0	587	1,99	1.330,0
Australia	**918**	**2,05**	**1.879,0**	**1.029**	**1,75**	**2.106,0**
New Zealand	**191**	**1,65**	**315,5**	**191**	**1,07**	**204,7**
Other Countries	**926**	**0,95**	**880,4*)**	**1.485**	**0,74**	**1.112,5*)**
WORLD	**78.197**	**1,37**	**107.532,7**	**78.618**	**1,48**	**116.801,0**

*) Estimate　　** Official Weight 3. 3. 1978　　[1]) 1 to = 2.204 lbs = 11,02 Standard bales

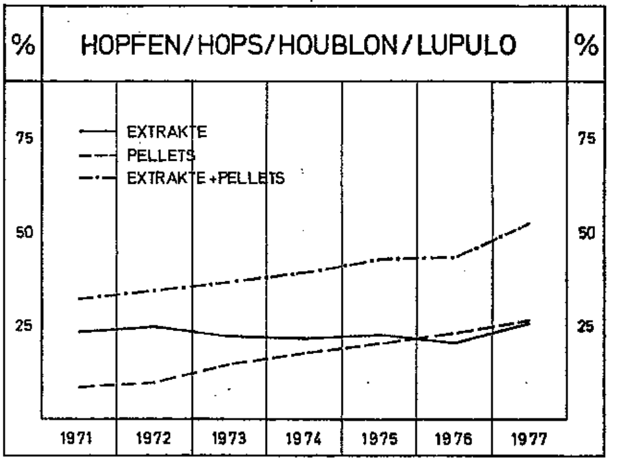
Hop Products

The unusually large purchases for stocks from the 1977 crop have greatly stimulated the processing of hops to extract and pellets. The reason for this is, of course, the fact that they can be stored for long periods of time and used years later without any appreciably loss of brewing value. In the absence of statistics, we have to rely on **estimates** of the quantities of hops processed into extract and pellets; the following picture then emerges:

Processed to		1977	1976
Extract:	Fed. Rep of Germany	ca. 13,675 to	ca. 8,800 to
	USA	ca. 9,425 to	ca. 7,200 to
	Other countries	ca. 7,050 to	ca. 5,850 to
		ca. 30,150 to	ca. 21,850 to
	= % of world production	ca. 25.8%	ca. 20.3%
Pellets:	Fed. Rep. of Germany	ca. 15,600 to	ca. 11,975 to
	USA	ca. 6,900 to	ca. 6,750 to
	Other countries	ca. 8,050 to	ca. 5,670 to
		ca. 30,550 to	ca. 24,395 to
	= % of world production	ca. 26.2%	ca. 22.7%

The number of countries in which plants for the extraction and pelletization of hops are being built, is increasing constantly. Insofar as they are not suppliers of the world market, the intention is to process their home-grown hops.

The percentage of the world production of hops processed to extract and pellets is shown in the following graph.



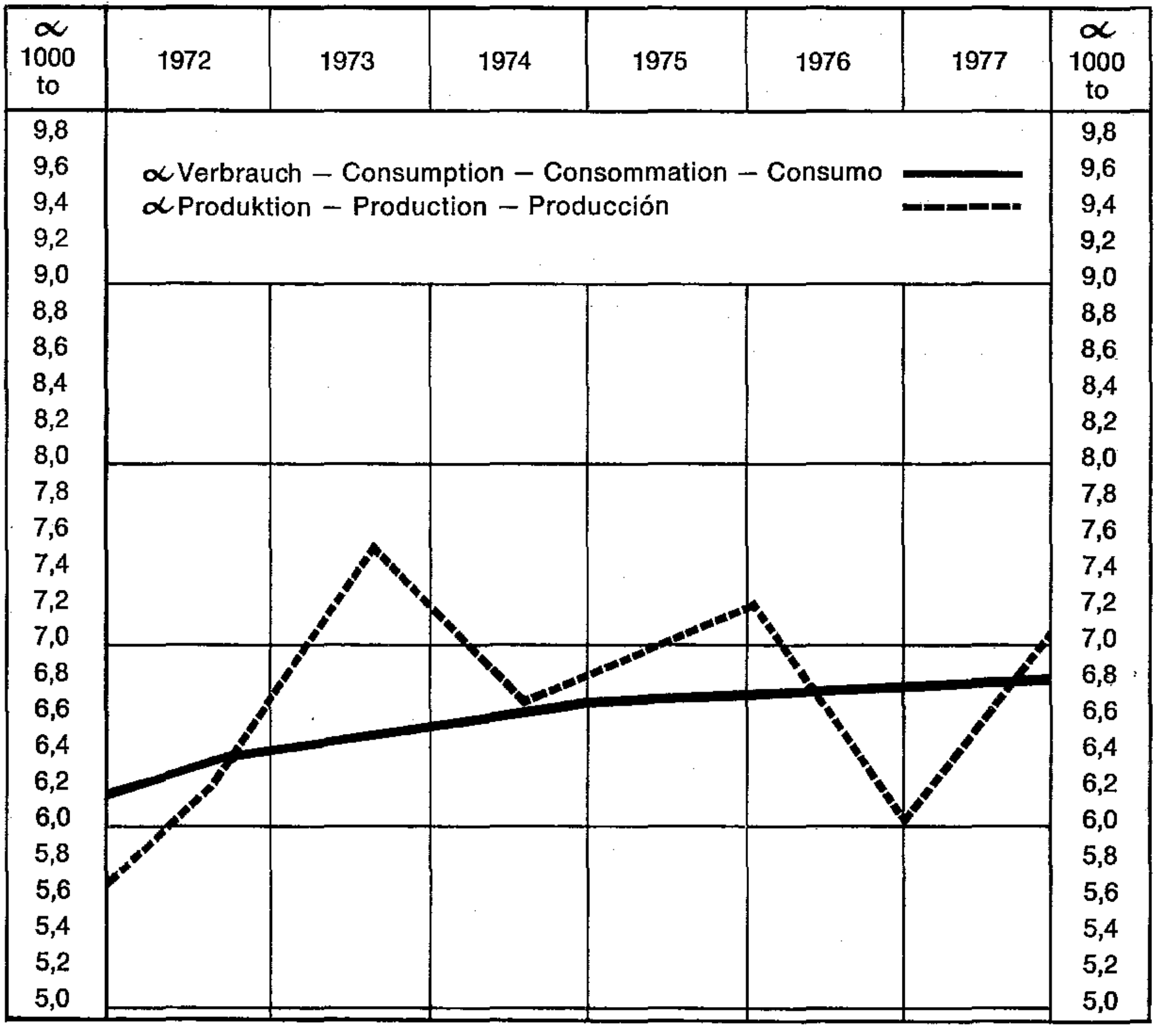
Bitter Values 1977 Crop

1977 saw alpha values representing only the average for the last 10 years. The range between the lowest and highest values was unusually large. Owing to the fact that in Europe the cold winter weather was very late, the deterioration of alpha acids started unusually early and proceeded rapidly. As early as November, the values were about 8% relative below those obtained immediately after harvesting.

	1976			1977		
Variety	Total Resin Content	α	% of total resins	Total Resin Content	α	% of total resins
Hallertau Aroma	12,1	3,9	32,2	13,5	4,9	36,3
Hallertau Northern Brewer	15,0	6,6	44,0	17,7	8,6	48,6
Hallertau Brewers Gold	12,4	5,2	41,9	14,8	6,5	43,9
Spalt	11,9	3,8	31,9	13,7	5,1	37,2
Tettnang	12,1	4,0	33,1	12,8	4,8	37,5
Hersbruck	13,0	4,2	32,3	14,3	5,0	35,0
Saaz	9,8	2,8	28,6	12,0	3,9	32,5
Alsace / Strisselspalt	16,2	5,3	32,7	14,0	5,0	35,7
Jugoslav. Styria (Golding)	12,1	4,6	38,0	12,7	5,4	42,5
Belgian Northern Brewer	17,8	8,9	50,0	17,5	8,4	48,0
Belgian Brewers Gold	17,0	7,3	42,9	12,5	5,3	42,4
Polish Lublin	12,6	4,2	33,3	14,6	5,2	35,6
US-Yakima	15,8	6,5	41,1	16,8	6,9	41,4

The figures in the above table refer to the values per Oct./Nov. 1977, **as is**, α evaluated conductometrically. Therefore, they cannot be used as a basis for the evaluation of supplies in the later course of the season.

World Production of Beer and Alpha



For the determination of Alpha production following classification of hops has been maintained:

Group A) **Choicest Aroma Hops** (Saaz, Tettnang, Spalt)
Group B) **Aroma Hops** (Hallertau mittelfrueh, Hersbruck, Hüller, Strisselspalt, Saale, Lublin, Golding, Fuggle, Cascade and others)
Group C) **Hops with no influence on the World Market** (Eastern Europe, England, Spain, Africa, Asia and other countries)
Group D) **Bitter Value Hops** (Northern Brewer, Brewers Gold, Cluster, Bullion, Pride of Ringwood and others)

Hop Group	1976				1977			
	% of World Crop	Crop metr. tons	α ⌀	α metr. tons	% of World Crop	Crop metr. tons	α ⌀	α metr. tons
A	12	12.609.8	3,05	385,05	12	14.001,15	4,03	563,67
B	22	23.951,9	4,24	1.016,10	24	27.614,85	4,93	1.362,72
C	29	30.988,5	6,10	1.889,04	25	29.873,90	5,82	1.739,58
D	37	39.809,4	6,84	2.722,07	39	45.311,10	7,45	3.374,36
Total	100	107.359,6	5,60	6.012,26	100	116.801,00	6,03	7.040,33

The average rate of 8.5 gm alpha per hectolitre of beer throughout the world is, according to the latest calculations, no longer applicable. Since savings are effected step by step, the following alpha rates were assumed: 8.4 g/hl for 1975, 8.2 for 1976 and only **8.0 gm alpha acid per hectolitre of beer for 1977.**

1974	770.95 mill. hl × 8.5	= 6,553.1 t of α
	Production	= 6,631.1 t of α
	Surplus	= 78.0 t of α
1975	802.41 mill. hl × 8.4	= 6,740.2 t of α
	Production	= 7,234.0 t of α
	Surplus	= 493.8 t of α
1976	825.71 mill. hl × 8.2	= 6,770.8 t of α
	Production	= 6,012.3 t of α
	Deficit	= 758.5 t of α
1977	848.37 mill. hl × 8.0	= 6,787.0 t of α
	Production	= 7,040.3 t of α
	Surplus	= 253.3 t of α

A comparison between 1976 and 1977 reveals the following picture:

World	1976	1977	Difference
Cultivation area ha.	78,197	78,618	+ 421 = 0.5 %
Hop crop t.	107,533	116,801	+ 9,268 = 8.5 %
Alpha production t.	6,012.3	7,040.3	+ 1,028 = 17.0 %
Beer production mill. hl	825,705	848,369	+ 22,664 = 2.7 %

EUROPEAN COMMUNITY (EC)

In July, 1977, Spain made official application in Brussels to join the Community.

On 29. 8. 1977, Sweden left the European Monetary Union, the Swedish Crown being devalued by 10 % at the same time. Denmark and Norway also decided to devalue their respective currencies by 5 % each, and Finland followed suit with a 3 % devaluation.

Customs Union

With the elimination of customs duty that came into force on 1. 7. 1977, an objective, set twenty years previously, namely the creation of a large free trade zone in Europe, (EEC and EFTA) was finally realized. Sixteen countries belong to this zone.

Hop Market

With effect from 1. 7. 1977, the **Regulation (EEC) No. 1170/77 issued by the Council on 17. 5. 1977** to change the Regulation (EEC) No. 1696/71 governing the Common Market Organization for Hops, came into force. As a result, a number of supplementary regulations and implementation provisions became necessary.

Regulation (EEC) No. 1516/77 issued by the Commission and dated 6. 7. 1977 on changes to the Regulation (EEC) No. 776/73 on the registration of contracts and the communication of information in the hop sector.

Regulation (EEC) No. 1517/77 issued by the Commission and dated 6. 7. 1977 dealing with the establishment of the list of variety groups for the cultivation of hops in the Community.

Regulation (EEC) No. 1784/77 issued by the Council and dated 19. 7. 1977 dealing with the certification of hops.

Regulation (EEC) No. 2253/77 issued by the Council and dated 11. 11. 1977 dealing with structural measures in the hop sector.

Regulation (EEC) No. 2254/77 issued by the Council and dated 11. 11. 1977 dealing with amendments to the Regulation (EEC) No. 879/73 on the granting of aids on the part of the member states to the recognized hop producers groups, and payment of these aids.

Regulation (EEC) No. 2564/77 issued by the Commission and dated 22. 11. 1977 to amend the Regulation (EEC) No. 1351/72 dealing with the recognition of producers groups in the hop sector.

In addition, in **Regulation (EEC) No. 1363/77 issued by the Council and dated 20. 6. 1977,** the aids to be paid to hop producers for the 1976 crop on a pro ha. basis, were established as follows:

200 Acc. Un.:	Brewers Gold, Target, Keyworth's Midseason	400 Acc. Un.:	Hallertau, Bramling Cross
300 Acc. Un.:	Northern Brewer, Hersbruck, Hüller, Spalt, Tettnang, Progress, WGV	550 Acc. Un.:	Record, Fuggles, Tutsham, Saaz, Strisselspalt, Star, Saxon, Burgundy

1 Acc. Un. = DM 3.48

New acreage planted in 1976 will be excluded from these aids.

The Regulation (EEC) No. 708/78 issued by the Council and dated 4. 4. 1978 on the establishment of the list of areas, in which the production aid for hops from the 1978 crop is to be granted only to recognized producers groups, gives the following areas: Bavaria, Baden-Wuerttemberg, Rhineland-Palatinate and Ireland.

By means of **Regulation (EEC) No. 853/78 issued by the Council and dated 24. 4. 1978,** dealing with the payment of aids to hop growers for the 1977 crop, these aids were fixed as follows:

Aroma hops	375 Acc. Un.
Bitter hops	285 Acc. Un.
Others	500 Acc. Un.

1 Acc. Un. = DM 3.412

New acreage planted in 1977 will be excluded from these aids. In the Federal Republic of Germany and Ireland, the farmers are to receive the producer aids directly for the last time.

The variety groups were defined by means of **Regulation (EEC) No. 891/78 issued by the Commission and dated 28. 4. 1978** as follows:

Aroma hops: Hallertau mittelfrüh, Hersbruck late, Hüller, Spalt, Tettnang, Progress, Fuggles, Golding, WGV, Tutsham, Saaz, Strisselspalt, Burgundy late, Star, Bramling Cross and Challenger.

Bitter hops: Northern Brewer, Brewers Gold, Bullion, Target, Keyworth's Midseason, Northdown.

Others: Record, Viking, Saxon, Perle, Kent.

As a supplement to the Regulation (EEC) No. 1784/77 issued by the Council and dated 19. 7. 1977, the **Regulation (EEC) No. 890/78 issued by the Commission and dated 28. 4. 1978** and dealing with details of certification was adopted for implementation.

Below, a summary of the most important amendments:

Certification — All the hops produced within the Community and also all the products manufactured from these hops are subject to an official compulsary certification procedure. For hops and hop products from non-member countries, an appropriate certificate must be produced. The certificate must, in the case of hops, contain at least the following:

Place, or places, of production, year of the harvest and variety.

The German law on hop origin passed in the year 1929, is thus outdated.

In the case of hop products, the following points must also be included:

Identification of the goods, reference number of the certification, nett weight and place and date of processing.

This compulsory certification requirement does not apply to:

a) Hops grown by a brewery for its own use,
b) Brewery owned hops processed for account of this brewery and destined for its own use,
c) Isomerized extracts.

The certification requirement comes into force on 1. 8. 1978.

Producers groups — For recognition as a producers group, its attributions and position must be laid down in writing. This also includes the quantities the growers themselves may sell, the regulations for such sales, and the conditions, under which the producers group is entitled to employ the aids granted for the purpose of stabilizing the market.

Cultivation stop — Hop cultivation areas in the European Community may not be extended until 31. 12. 1979. A hop producers group can be considered, however, as a single producer.

Changes in varieties and grubbing — Aids may be granted with respect to effecting a change in the varieties cultivated, i.e. to promote more easily marketable varieties. Admittedly, the acreage under cultivation after the change must be at least 40 % smaller than that for which aids were applied for. By granting grubbing premiums of up to 1,800 Acc. Un. (= DM 6,140.—) per ha, a further contribution is being made to stabilize the hop market.

FED. REP. of GERMANY Growth 1977

During the 1977 growing period, the weather was, by and large favourable. Although, in general, it was too dry, cold and windy up until the beginning of June, it then became warm and frequent thundery rain promoted growth. At the beginning of July, hops in all regions had reached the height of the trellises and had developed plenty of laterals. Diseases and pests were not so frequent, and were dealt with in good time. In the Hallertau, less damage was caused by wilt than in earlier years.

Some 45 % of the **Tettnang** acreage was hit by a severe **hailstorm** on 12. 8. 1977. In **Hersbruck,** too, hailstones caused a loss of some 500 ztr. (25 tonnes) after the crop had already been estimated.

The medium-sized cones had a bitter content which about equalled the average over the last ten years.

Crop Estimate

The crop estimate, carried out as usual at the end of August, and the official weighing-up on 3. 3. 1978, revealed the following figures:

	Estimate		Weighed on 3. 3. 1978	
	Ztr.	Tonnes	Ztr.	Tonnes
Hallertau	549.000	27.450	645.712	32.285,60
Jura	21.500	1.075	21.547	1.077,35
Spalt	31.000	1.550	28.905	1.445,25
Hersbruck	8.800	440	8.321	416,05
Tettnang	32.500	1.625	33.606	1.680,30
remaining districts .	700	35	645	32,25
Total	643.500	32.175	738.736	36.936,80

This is the biggest hop harvest since 1973. Of decisive importance were the very high yields of Northern Brewer (45 ztr. or 2.25 tonnes per ha.), while the aroma varieties produced only average yields.

Purchase from Farmers

Since the Hallertau Cooperative announced on 3. 9. 1977, that it would take up all varieties, paying in advance DM 100.— per 50 kg, with a probable additional payment later, the lower price limit for the 1977 crop was established. Business was immediately brisk and many breweries decided to make large purchases for stocks in the form of extracts and pellets. Information as to the quantities actually taken up by the Cooperative remain unclear; estimates put the amounts involved at between 70 and 100,000 ztr. (3,500 to 5,000 tonnes). Bitter hops were in particularly great demand.

Already by the beginning of October, a narrowing of the supply on the market became noticeable, which initially led to some slight price increases. The development of prices paid to the farmers is represented below.

Variety	7. 9.	12. 9.	16. 9.	26. 9.	3. 10.	10. 10.	17. 10.	24. 10.	27. 10.	10. 11.
Hallertau Aroma	130,—	130,—	120,—	120,—	120,—	120,—	130,—	130,—	150,—	220,—
Hallert. N. Brewer	130,—	120,—	120,—	120,—	120,—	130/140,—	150,—	160,—	200,—	250,—
Hallert. Br. Gold	110,—	100,—	100,—	100,—	100,—	120,—	120,—	120,—	180,—	250,—
Spalt	—	150,—	140,—	110,—	130,—	140/150,—	150,—	180/200,—	200,—	300,—
Tettnang	180,—	150,—	140,—	130,—	130,—	150,—	150,—	—	250,—	300,—
Hersbruck	100,—	100,—	120,—	120,—	120,—	120,—	120,—	120/130,—	140,—	160,—

Above quotations in DM per 50 kg ex producer's premises, excluding VAT and packing materials.

By the middle of November, Spalt and Tettnang were reported to have been cleared, while the Jura area had been already sold out by beginning of October.

Nuremberg Market

Events on the Nuremberg Market clearly reveal the hectic activity of business in the season just ended. Even before the start of harvesting, significant transactions in hops of the 1977 crop were being made via the Nuremberg Market.

On 27. 8. 1977, the Hallertau Cooperative authorized the growers to sell their 1977 hops themselves. The market immediately reacted with a rapid drop in prices, which was oriented to the "takeover price" of the Cooperative for non-contractual hops.

For the sake of clarity, the evolution of the 1977/78 market has, in the following table, been divided up into various sections, in which the prices were in the ranges indicated, with the usual fluctuations.

Variety	1.—20. 8. 77	29. 8.—26. 10.	28. 10.—20. 11.	22. 11. 77—15. 1. 78	17. 1.—23. 4. 78
Hallertau Aroma	255/265,—	155/165,—	195/245,—	210,—	240/278,—
Hallertau N. Brewer	250/260,—	160/175,—	255/293,—	270/278,—	278/308,—
Hallertau Brewers Gold	220/230,—	140/175,—	248/278,—	250/258,—	255/275,—
Spalt	325,—	175/210,—	350,—	280,—	280/290,—
Tettnang	300,—	170/210,—	315,—	270,—	270/285,—

The above quotations were in DM per 50 kg goods, packed ex-stock, excluding VAT and packing materials.

In the case of foreign hops, a considerable turnover was achieved, in the main with Belgian Northern Brewer hops, while trading in other varieties was only sporadic.

In the season just ended, the market-regulating function of the Nuremberg Market came into full effect.

Acreage

For 1977, the hop acreage under cultivation is made up as follows:

Growing Region	1975	1977		
	Total Acreage ha	Existing Acreage ha	New Plantings ha	Total Acreage ha
Hallertau	16.911	16.078	212	16.290
Jura	491	531	9	540
Spalt	1.089	922	10	932
Hersbruck	336	243	1	244
Tettnang	1.351	1.221	—	1.221
other regions	33	23	—	23
Federal Republic	20.211	19.018	232	19.250

In 1975, the total area of hops under cultivation was the largest since the war. Since then, it has decreased by a total of 961 ha.; in the Hallertau by 621 ha. In the small Wuerttemberg region, the last hop garden has now disappeared (1 ha).

In 1976/77, grubbing was particularly extensive in Hersbruck (— 14.4 %) and Spalt (— 6.8 %). It is to be feared that these two areas are becoming of little interest for the world market. Only the Jura growing region adjacent to the Hallertau, showed a slight expansion of the area under cultivation.

Cultivation of Varieties

The varieties cultivated in 1977 may be broken down as shown in the following table:

Growing Region	Hallertau mittelfrüh ha	Spalt ha	Hersbruck late ha	Tettnang ha	Hüller ha	Northern Brewer ha	Brewers Gold ha	Record, ohters ha
Hallertau	3.043	14	2.792	1	1.640	6.067	2.295	438
Jura	284	—	80	—	37	49	88	2
Spalt	533	349	1	—	14	6	27	2
Hersbruck	118	1	99	—	6	17	7	—
Tettnang	285	—	8	927	—	—	—	—
Total	4.263	364	2.980	928	1.693	6.139	2.417	442

In the ratio of aroma to bitter hops, only a slight change occurred.

		1974	1975	1976	1977
Federal Republic of Germany:	Aroma hops	59 %	56 %	54 %	53 %
	Bitter hops	41 %	44 %	46 %	47 %
Hallertau:	Aroma hops	52 %	49 %	46 %	46 %
	Bitter hops	48 %	51 %	54 %	54 %

In the **Hallertau,** the Mittelfrüh (Medium Early) variety dropped by a further 261 ha (8 %). As a replacement for this endangered variety, the German Association of Hop Research was able to secure variety protection for two new breeds. In both cases, the hops are medium early aroma varieties. However, the intention is to propagate only the new variety „Perle".

UNITED KINGDOM

The dry summer of 1976 was followed by an unusually wet winter and a cold spring. Not until the warmer weather had set in, from July onwards, were the hops able to make up their retarded growth, and generous precipitations made it appear likely that an average crop might be expected after all. The weather conditions were such that **aphis** appeared in particularly large numbers, but fortunately, were successfully dealt with. Despite this, however, the crop did not come up to expectations; on the contrary, not only the quantity, but also the bitter contents were disappointing.

The variety Wye Target, which is being cultivated in greatly increasing quantities, mainly in Kent, and also the variety Wye Northdown, produced consistently high alpha values.

As a result of the weak yields, the contracts with the breweries could not be met in full, so that the free hops available only in small quantities, were quickly bought up. The remaining demand had to be met by imported hops.

Cultivation of Varieties

The acreage under cultivation remained virtually unchanged compared with 1976, and the trend towards more bitter hops was maintained.

County	Golding ha	W.G.V. ha	Fuggles ha	Bramling Cross ha	Northern Brewer ha	Bullion ha	North-down ha	Chal-lenger ha	Target ha	other varieties ha
Kent	276	298	66	437	37	136	158	162	863	465
Hampshire, Surrey	1	—	2	—	36	7	112	43	—	3
Sussex	2	2	40	26	6	32	20	29	67	32
Herefordshire	88	—	448	—	162	79	389	319	—	7
Worcestershire	79	—	71	—	75	55	148	98	—	3
Brewer Growers	32	25	1	48	58	107	70	52	59	92
Total	478	325	628	511	374	416	897	703	989	602

A particularly marked decline in the cultivation of the aroma varieties Bramling Cross (— 95 ha) and Fuggles (— 49 ha), was observed, but also Bullions dropped by 54 ha and Northern Brewer by 37 ha. In comparison, considerable increases were achieved by the new breeds Target (64 ha), Northdown (49 ha), Challenger (48 ha) and Wye Saxon (71 ha). These latter are mostly hops with a high bitter content. However, Northdown and Challenger are both susceptible to wilt and this is the reason why the hop farmers are hesitating to cultivate these varieties in even larger quantities.

FRANCE

A very cool spring with local night frosts inhibited the development of the hops in **ALSACE.** Plentiful rain during the summer stimulated growth, in particular of Northern Brewer. However, it also, in part, delayed flowering and the formation of cones. Owing to the weather, downy mildew was considerably in evidence and a late attack of aphis posed some problems.

The **quality** of the 1977 crop was excellent (95 % Class I), and the bitter value of all varieties was gratifyingly high. Some 75 % of the hops harvested was sold on the basis of advance contracts; the remaining non-contractual (free) hops were quickly taken up on the market.

In **BURGUNDY,** too, where 99 % of the crop was under contract, non-contractual hops were sold without any difficulty.

The spring was also too cool and wet in **FLANDERS.** The growth of the plants was delayed and by mid-May the variety Brewers Gold had only just attained half the height of the trellises. Diseases and pests were dealt with successfully and in good time.

The weather conditions, which were mainly unfavourable for the most grown variety, Brewers Gold, had a negative effect on the crop. With respect to their bittering content, too, the hops were weaker than in the previous year.

The percentage of Flanders hops under contract was 13 %. In view of the large German harvest, and the prices on the German market, interest in Flanders hops was initially only slight.

As the following table shows, prices had to be matched to those achieved in Hallertau. The **market prices** per 50 kg, prime costs ex producer's premises, developed as follows:

Variety		1. 9.	15. 9.	1. 10.	15. 10.	1. 11.	15. 11. 77
Northern Brewer	FF	—	230,—	250,—	300,—	450,—	500,—
Brewers Gold	FF	—	200,—	170,—	200,—	400,—	400,—

By the end of March, 1978, the unsold hops were estimated at 420 ztr. (21 tonnes) of Brewers Gold and 80 ztr. (4 tonnes) of Northern Brewer.

Reports indicate that many hop farmers will stop cultivating hops if no improvement in market prices is forthcoming in 1978.

Cultivation of Varieties

Compared with 1976, the hop acreage dropped by 67 ha (6.4 %). The varieties cultivated are shown below:

Growing Region	Strissel-spalt ha	Northern Brewer ha	Brewers Gold ha	Record ha	Burgundy Hallertau ha
Alsace	291	56	211	45	—
Flanders	—	97	201	—	1
Burgundy	—	7	45	—	10
Total	291	160	457	45	11

Despite improved yields in 1977, the variety Record continued to lose ground. An increase was seen only in the case of Brewers Gold.

Hop Market

In consequence of the measures effected by the EC, plans to support hop cultivation on a national basis have become void. The French hops industry now has to adapt itself to the new requirements that come into force on 1. 8. 1978

BELGIUM

The 1976/77 winter was mild and very wet. During the growing period, the temperatures were usually below average and the rainy weather persisted. Intensive counter-measures were needed against downy mildew and aphis. The generally unfavourable weather retarded the growth of the hops so that **picking** was delayed. During harvesting, the weather was warm and dry.

The **quality** of the hops was about on a par with that of the previous year, with only Brewers Gold having a very low alpha content as compared with 1976. In Poperinge, 95 % of the crop was adjuged to be Class I, and in Aalst, 75 %. The deterioration of the bittering substances began early and proceeded rapidly.

Market Development

In consequence of the late harvest, buying was also delayed. The prices had to be aligned to those achieved in the Hallertau. Already by the middle of October, the small area of Aalst was cleared while Poperinge was not sold out until the end of February, 1978. As a result, the hop farmers in this area were able to profit from the increase in prices in Germany.

The price profile was not uniform and the following table is intended merely to show the general trend (per 50 kg ex producer's stocks, excluding packing):

Variety		15. 9. 77	1. 10	15. 10.	1. 11.	1. 2. 78
Northern Brewer	BF	1500/1750,—	1500,—	2000,—	3500,—	4250,—
Brewers Gold	BF	1000/1500,—	1000,—	1250,—	1250,—	3250,—
Hallertau	BF	2000,—	2000/2300,—	2250/2500,—	3000,—	3250,—

To the same extent that German bitter hops became scarcer and more expensive, larger lots could be exported, with the result that the Belgian hop crop was finally sold out completely.

The fact that producer prices were again unsatisfactory suggests that a stronger reduction in the cultivation of hops may be expected for 1978.

Cultivation of Varieties

On a cultivated area that was virtually unchanged compared with 1976, a marked change in the varieties cultivated was observed only in the case of Brewers Gold, which increased by some 31 ha. The aroma varieties, on the other hand, and also Northern Brewer, were reduced somewhat.

Growing Region	Northern Brewer ha	Brewers Gold ha	Hallertau ha	Record ha	Fuggles ha	Saaz ha	other varieties ha
Aalst-Asse	78	30	76	51	—	17	2
Poperinge	285	346	46	6	—	—	15
Vodelée	5	6	—	—	11	4	4
Total	368	382	122	57	11	21	21

IRELAND

Although the weather up to the end of May was not favourable for hops, and higher temperatures were not measured until the end of June, the hop crop in the County of **KILKENNY** was a good 30 % larger than that of the previous year. Admittedly, the lack of sunshine in August and September did have a negative effect on the alpha content of the hops. This was particularly so in the case of the varieties Bullion and Fuggles.

The varieties cultivated remained unchanged as compared with 1976, with the exception of a newly planted area of 3 ha of Northern Brewer, which resulted in an increase of the acreage under cultivation to 66 ha. which yielded a crop of 84 tonnes. In accordance with the contracts they had concluded, the brewers took up the entire production.

It is intended, after the 1978 crop, to replace the 16 ha presently grown with Fuggles, by the bitter varieties Northdown and Northern Brewer. The area under cultivation will, however, remain unchanged.

CZECHO-SLOVAKIA

Cool, wet weather in the spring and summer delayed the growth of the hops. Unusually violent precipitation in July and August made difficult the treatment of disease and pests, which, however, thanks to intensive measures, were finally brought under control. The **picking** took place at the usual time of the year, between 24. 8. and 11. 9. 1977.

The **quality** was equal to the average over many years. The 1977 crop has reached with 12,212 tonnes a record result. Correspondingly large was the percentage of hops exported, namely 54.5 % of the hop production. As a result, no hops were imported. For 1978, an increase in hop production of 4.8 % compared with 1977 is planned.

JUGOSLAVIA

SLOVENIA. Despite the fact that, in part, the weather conditions were unfavourable, in particular a dry period in May, the cultivation area, reduced by some 114 ha., yielded a considerably better result than in 1976. In consequence of retarded growth, the hops were late to ripen, so that **picking**, too, started about a week later than usual. The result was a better **quality** (96 % Class I) and some 15 % higher alpha content than in the previous year.

While cultivation of the traditional variety, Golding, fell by some 253 ha., the area covered by the variety Super Styrian increased by 139 ha. No expansion of the area under cultivation is planned for 1978. About 90 % of the 1978 crop is already under contract.

BACKA: On the whole, the hops in this area had favourable weather for growing. From the end of June, warm weather predominated and frequent, evenly distributed rain fell. **Harvesting** began with a delay of one week, which had a beneficial effect on the ripening of the hops.

The **quality** of the 1977 crop was better than that of the last two years, namely 79 % Class I and 20 % Class II. Only the well-known aroma variety Backa is cultivated. On a cultivated acreage reduced by some 72 ha. as compared with the preceding year, virtually the same quantity of hops was harvested as in 1976. As a result, hops again became available for the export market. Some 40 % of the crop was exported.

POLAND

Up until the beginning of June, the weather was predominantly cool. Ample rain during the whole of the growing period ensured adequate moisture in the ground. **Flowering** was luxuriant and held out promise of a large crop. Shortly before picking was about to start, **storms** and violent rains caused a great deal of damage in the hop gardens. In addition vigorous measures had to be adopted against downy mildew and aphids. As a result of the poor weather, the harvest took longer than usual to complete. Some 60 % of the hops are picked by machines.

Quality. Although the bittering content of the 1977 crop was gratifyingly high, only 14.5 % of the hops could be graded as Class I and 51.6 % as Class II; this was due to the damage caused by the storms. The entire crop was sold.

The area under cultivation was given as to consist of 1,750 ha of the variety Lublin and 579 ha of the variety Pulawy. The Pulawy hops have a somewhat higher alpha content than that of Lublin. In comparison with 1976, the area under cultivation increased by about 159 ha, but the crop was smaller. No changes in hop cultivation are planned.

GERMAN DEMOCRATIC REPUBLIC

The growth of the hops was influenced up until the beginning of June by dry, generally cool and changing weather. Warm, sunny conditions in June/July then favoured flowering and the formation of cones. In the months so important for the development of the hops, adequate rain fell. Diseases and pests occurred only locally and were quickly brought under control by the adoption of early countermeasures.

The **quality** of the 1977 crop was above the original expectations. 52 % of the hops were of Class I and II, the bittering content attained almost the high values of the previous year.

For the areas under cultivation, the following information is available:

Growing Region	Acreage ha	Yield to/ha	Crop to
Halle/Magdeburg	1.009	1,33	1.343
Erfurt	474	1,41	669
Dresden/Leipzig	658	1,33	878
Gera/Karl-Marx-Stadt	60	1,03	62
Total	2.201	1,34	2.952

No changes are planned for 1978.

SOVIET UNION

While there is a lack of new information as to the growing regions and acreage under cultivation, and as to the varieties and yields, the 1977 crop is said to have been some 11,000 tonnes. The average alpha content is given as 4.8 %. Since domestic hop production is not sufficient to meet requirements, reliance has to be placed on imports. In the main, bitter hops and the products obtained from such are imported.

HUNGARY

It is reported that the area of 501 ha. under cultivation yielded a good crop of some 400 tonnes of hops. The variety Brewers Gold has proved to be the best suited for cultivation. However, about a half of the domestic requirements had to be met by imports.

SPAIN

During the whole of the growing period, weather conditions were very unfavourable. Rainfall was continuous and it was too cold. Flowers were scarce and the cones were unable to ripen, despite the late start to the harvest. The consequence was that the bittering value of the 1977 crop remained considerably below normal values. Both in quantity and quality, it was the poorest crop since 1971.

The main variety under cultivation, H-3, tolerated the unfavourable weather least well. The yield per ha. for this variety was more than 30 % below that of the previous year. The H-7 variety, on the other hand, showed no losses. As a consequence of the small crop it was possible to market all stocks of hops and extract from earlier years.

The marked decrease in area under cultivation in the Cantabrian region is due to its partial incorporation into the León region.

Broken down into varieties cultivated, the crop quantities and their percentages are represented in the table below.

Varieties	H—3	H—7	Strissel-spalt	Hallertau	other varieties
Crop/tonnes	1.191,3	795,3	44,4	14,2	1,9
= % of crop	58,2	38,8	2,2	0,7	0,1

PORTUGAL

In this country, unfavourable weather conditions were identical to those in neighbouring Spain, and led to the poorest crop in 15 years. The alpha content of the hops was also below normal values.

The area under cultivation remained unchanged,

Braga: 118 ha. giving a crop of 237 tonnes
Braganca: 89 ha. giving a crop of 133 tonnes.

98 % of the hops were graded Class I, and marketing the 1977 crop posed no problems.

AUSTRIA

In the **MÜHLVIERTEL (UPPER AUSTRIA)** growing proceeded under normal to very favourable conditions. Thus, on a slightly larger area under cultivation, namely 54.5 ha., the gratifyingly large crop of 87 tonnes of hops was harvested. 97 % of the crop was Class I. With respect to the alpha content, too, — on average 7 % — the crop result was very good.

Malling and Golding continue to be the main varieties grown. Up to 1980, 80 tonnes of hops each year are already under advanced contract.

Hop cultivation in **STYRIA** covers an area of some 65 ha. which yielded 82 tonnes of hops. The crop was taken up by the brewers on the basis of existing contracts.

Austrian hop production covers some 10 % of the requirements of the domestic breweries.

GREECE

The region **IOANNINA** produced 21.7 tonnes of hops on a growing area of 32 ha. Only the variety Brewers Gold is cultivated and very high alpha values were obtained.

SWITZERLAND

Both the area under cultivation (13.2 ha) and the varieties grown, remained completely unchanged. Thanks to the favourable weather and the absence of disease **and damage due** to hail, a crop of 25 tonnes, all of Class I hops was harvested. Its sale is ensured by contracts with the brewing industry.

USA
Growth

The shortage of water feared in the spring of 1977 for the West Coast, did not materialize. As a precautionary measure, however, some 74 ha. of hop acreage in the **Yakima** valley were left idle since it would have become a problem to supply adequate amounts of water. In addition, the planned changeover to English varieties on an area of cultivation of 117 ha. was postponed until the spring of 1978.

During the **flowering** period the weather was excellent. As a result of a very hot August, the cones remained small, so that the high yields per ha. obtained in the previous year were not repeated. Only in **OREGON** was a better crop than 1976 harvested.

In its **quality**, the 1977 crop matched the average over many years. Thanks to the uniformly mild climate and the reliable supply of water secured by means of irrigation, fluctuations in quality of the crops are much smaller than in Europe.

Market Development

The hop market began under the influence of the surplus of hops in Europe and a domestic crop some 5 % smaller than the preceding year. Estimates put the quantity of non-contractual hops at less than 10,000 bales (1 bale = 200 lbs = 90/91 kg),which is a very small amount.

Until about the middle of October, the market remained relatively quiet. By the middle of November, the stocks in Washington had already been reduced to less than 2,000 bales, while prices increased markedly. At the beginning of November the hops of the 1977 crop brought into the Reserve Pool were being sold at 80 cents per lb plus premium. This price applied to all varieties.

For **Yakima Clusters,** the price development was as shown below:

	1. 9.	15. 9.	1. 10.	15. 10.	1. 11.	15. 11.	1. 12.	15. 12.
$	—,70	—,70	—,70	—,55	—,80	—,80	—,80	—,80/82

per lb (0.45359 kg), prime cost plus premium.

In January of 1978, the price dropped to 70 cents a lb. By the end of February, some 1,200 bales of Yakima Clusters from the 1977 crop were still in the hands of the farmers, and were fetching 75 cents a lb plus premium. The Reserve Pool contained only hops from the 74—76 crops.

Contract Market

On the occasion of the usual meeting of the Hop Administrative Committee held in January, 1978 in Portland/Oregon, the sales quota for 1978 was again set at 100 % of the basic quota. During the discussion on contract prices it was shown that the farmers were prepared to conclude contracts up until 1980. On account of the general increase in costs, however, considerable reluctance was shown with respect to the subsequent crops. In addition, from 1979/80 onwards a balanced hop market is expected again.

At the present time, the **contract prices** are as shown below (per lb = 0.45359 kg, prime costs, excluding premium):

Varieties			1978	1979	1980	1981	1982
Clusters	Yakima	$	—,75	—,80	—,85	—,87	—,88
	Idaho	$	—,75	—,80	—,85	—,87	—,88
Cascade	Yakima	$	—,75	—,75	—,80	—,85	—,86
	Oregon	$	—	1,05	1,05	1,05	1,05
Bullion	Yakima	$	—,87	—,90	—,91	—,93	—
	Oregon	$	—	—,96	—,97	—,98	1,—
Fuggles	Oregon	$	—	—	1,32	1,35	1,37

Premiums are granted to the farmers for low leaf and stem content and also, in many cases, for Clusters having an alpha content of more than 8 %.

The **percentage** of coming crops **under contract** is estimated as follows:

1978	1979	1980	1981
95 %	90 %	75 %	45 %

Varieties planted

In 1977, the area under cultivation in the USA dropped by only somewhat more than 1% as compared with the previous year.

Variety	Washington ha	Oregon ha	Idaho ha	California ha
Clusters	6.601	55	535	609
Fuggles	—	872	—	—
Cascade	1.100	369	248	—
Bullion	337	538	—	—
Brewers Gold	43	291	—	—
Talisman	—	37	316	—
Comet	234	2	1	2
others	71	56	79	—
Total	8.386	2.220	1.179	611

More and more attention is being paid to the question of the varieties under cultivation. Here, too, the trend towards the bitter hops can be recognized. Thus, the area covered by Bullion and Brewers Gold has increased, while that allocated to Clusters, Fuggles and Cascades is on the decrease. In the case of newly developed varieties, too, the picture is the same. There is no doubt that in the Yakima valley with its fertile soil, favourable climatic condition and a good irrigation system, conditions for the cultivation of hop varieties rich in bitter substances are better than those found in Europe.

In the USA there are only about 150 hop farmers. As a result of the prevailing Market Regulation, newcomers are virtually debarred from hop growing, since they possess no base allotment. Consequently, they have to buy free producer quotas from other farmers. The large size of hop farms allow a highly rationalized farming and thus lower producer costs.

CANADA

The growth of the hops in 1977 proceeded under normal conditions. Local attacks of downy mildew due to damp, was successfully dealt with.

With respect to quantity, the 1977 crop was better than that of the previous year by a good 22 %. Although the alpha content of the English varieties was somewhat higher than in 1976, the **quality** in general was adjuged to be only average. The entire crop was taken up by the brewing industry.

No changes were to be observed in the **cultivation of varieties** nor are any **planned** for the near future.

ARGENTINA

Hop cultivation was little changed and was broken down as follows:

Growing region	Acreage ha	Crop to
Chubut Neuquén Rio Negro	40 30 270	40 20 200
Total	340	260

During the growing period 1976/77, generally favourable weather conditions prevailed, and these lasted throughout harvesting, too. Towards the end of the summer, a slight attack of red spider hat to be fought off, but no damage ensued.

For the greater part, the crop was harvested by machines. For manual picking adequate numbers of pickers were available. 50 % of the hops were of Class I and 35 % Class II. The hops were weaker in bittering content than in the previous year. Part of the crop was supplied to the breweries in the form of pellets. The entire 1977 production was taken up by the brewing industry.

TURKEY

For the region of **BILECIK,** the area under cultivation was given as 304 ha., of which 274 ha. were covered by Brewers Gold and 30 ha. by late Clusters. On account of the dry summer, irrigation of the hop gardens posed problems. The control of diseases and pests was undertaken by the Ministry of Agriculture.

Picking was again done by hand. The breweries in the country are obliged to buy up all the hops produced, no difference in price being observed for different varieties or qualities. The 1977 crop was large enough to cover domestic requirements, so that no imports were necessary.

Cultivation trials are being carried out with Strisselspalt hops.

INDIA

Great efforts are being made to promote hop cultivation. According to plan, in some three years, domestic hop requirements should be covered by home-produced hops.

In the State of **Jammu & Cashmir,** the area under cultivation is already 39 ha., which yielded a crop of 76.6 tonnes of hops. With the exception of the early Clusters, all other varieties produce two crops per year. Talisman, Comet, Clusters, Ringwood Special, but also other aroma hops are cultivated. Both crops had gratifyingly high alpha values.

1978 Crop

From the Southern Hemisphere, where the hop crop is harvested in February/March, the following information is available:

ARGENTINA

On an unchanged cultivation area, some 250 tonnes of hops with the high average alpha content of 5.5 % were harvested. The entire crop was taken up by the breweries.

AUSTRALIA

The area under cultivation in **VICTORIA** remained unchanged at 442 ha., and produced a crop of 598 tonnes of hops. In **TASMANIA** the area dropped somewhat owing to the fact that a number of small hop farmers had given up growing the plant. On the remaining 572 ha 1,215 tonnes were harvested. Thus, the 1978 yield was some 15 % lower than the 1977 crop. The entire crop was sold.

NEW ZEALAND

The 1978 crop is said to amount to about 500 tonnes. Since only the domestic market is supplied, this result is of no interest for the world market. A home-bred variety, rich in bittering substances, named "Supreme" is cultivated, the alpha content of which is said to attain as much as 13 %.

Growth 1978

In Europe, cold winter weather set in at a very late stage and lasted until spring had already started. As a result, the spring work in the hop gardens was not finished until later than in a normal year. In particular the month of May, which was both too cold and wet, with night temperatures close to zero degree Celsius, retarded the growth of the vines. As a result of the wet soil, working in the hop gardens was made very much more difficult and, in some cases, even impossible. Not until the last days of the month did a reversal of the poor weather occur, so that the retardation in the development of the hops might yet be overcome.

FEDERAL REPUBLIC OF GERMANY. It is expected that in the Hallertau, some 1,200 ha. of cultivation area will be grubbed and in the remaining hop-growing regions some 300 ha. In addition, in 1978, approximately 400 ha. will be out of production due to changes in the varieties cultivated. Aroma varieties are most strongly affected by clearing (some 58 %), so that in the case of these hops, a reduced supply is to be expected. Some 460,000 ztr. (23,000 tonnes) of hops of the new crop are under contract.

ENGLAND. The area under cultivation in 1978 is reduced to some 5,879 ha. 85 % of the expected crop is under advanced contract.

FRANCE. Up to the middle of April, 1978, 65 ha. Strisselspalt and 26 ha. Brewers Gold and Record were registered for grubbing. Since Strisselspalt is cultivated only in Alsace, the reduction in hop cultivation is particularly marked in this region.

USA. In comparison with 1977, an expansion of the area under cultivation by 400 acres (145 ha.) is to be observed. As a result, the situation of 1976, when 31,000 acres (12,550 ha) were under cultivation, has been virtually re-established. Of significance is the increasing cultivation of bitter varieties.

The preliminary breakdown of **cultivation areas in 1978** in comparison with the situation of the previous year, is shown below:

		Washington	Oregon	Idaho	California	Total
1977	ha	8.386	2.220	1.179	611	12.396
1978	ha	8.642	2.217	1.089	593	12.541
Difference	ha	+ 256	— 3	— 90	— 18	+ 145

The special allotment of 1 million lbs (450 tonnes) of Fuggles remains unchanged until 1982.

Cultivation Area 1978

The cause of unsatisfactory producer prices is indisputably the world-wide over-production of hops. In view of this situation, the European Community is demanding a reduction in the area under cultivation.

Information available to date indicates the following changes for 1978 as compared with 1977:

Federal Republic	— Grubbing	ca.	1.500 ha.
of Germany	— Change in varieties	ca.	400 ha. (only 1978)
Belgium	— Grubbing	ca.	100 ha.
France	— Grubbing	ca.	100 ha.
England	— Grubbing	ca.	25 ha.
European Community		ca.	2.125 ha.
USA	— New plantings	ca.	145 ha.
real reduction		ca.	1.980 ha.

If we assume an average yield of some 33 ztr. (1.65 tonnes) per ha. for this area, a reduction in production of some 65,300 ztr. (3,265 tonnes) of hops can be expected for 1978. In the opinion of the EC experts, however, this reduction in the production of hops will not suffice to bring the hop market into equilibrium again, so that the measures already initiated, will be continued until 1980. Clearing measures in the European Community are offset by an unknown expansion of hop cultivation in Eastern Europe.

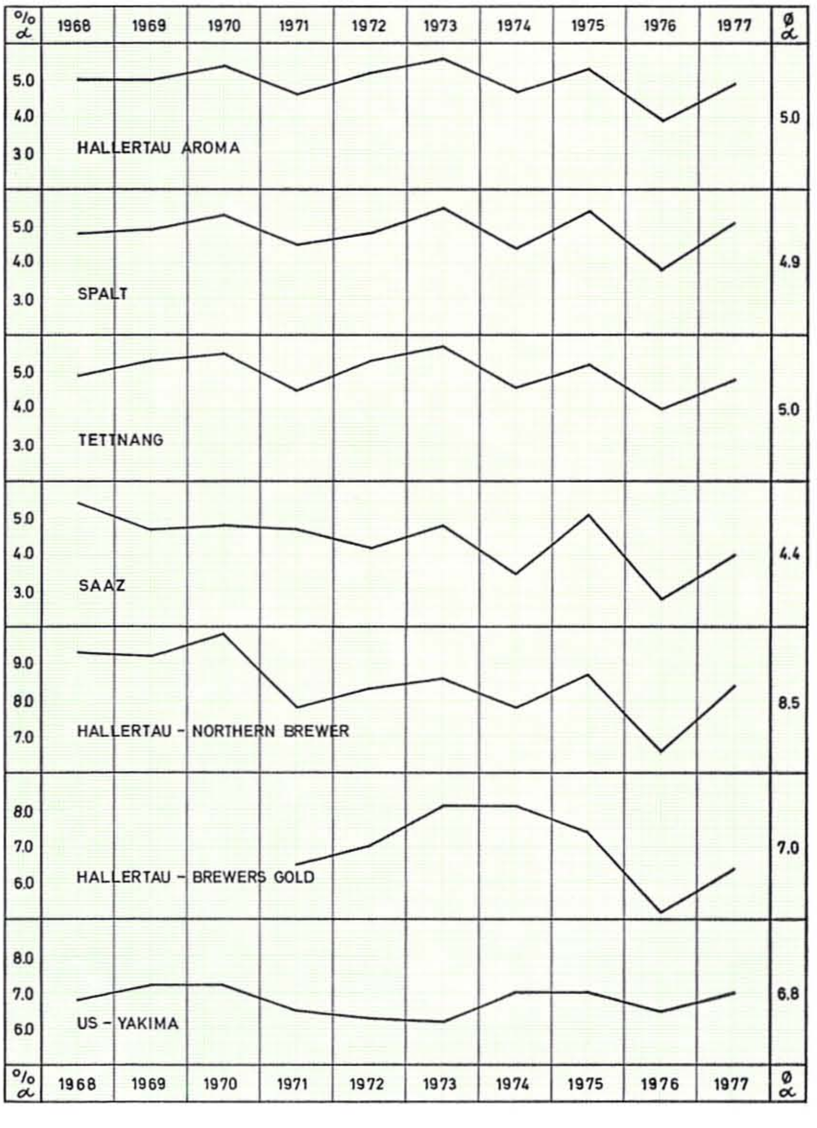
Nuremberg, June 15th, 1978 **JOH. BARTH & SOHN**

The publication of our Hop Report involves obtaining material from sources throughout the world. We wish to express our gratitude to all who assisted us.

Average Alpha Values over the last 10 Years

In an attempt to achieve a better utilization of the bittering substances in the brewery, hops are today mostly used in accordance with their alpha content. Using the processed products BARTH-X-TRAKT and BARTH-Pellets HOPAROM, Type 90 (standard) and Type 45 (concentrated), it is possible to ensure an always uniform hopping.

The methods of analysis were coordinated and improved in cooperation with internationally recognized institutes. The average values represented graphically below (as is, alpha conductometrically measured, in October/November) were obtained on the basis of several thousands of analyses carried out by our central laboratory at Wolnzach.



Worthy of particular note are:

1. The approximately identical course of the curves in the same harvest year, which shows the significance of the influences of the weather independently of the variety and cultivation area and

2. the generally falling tendency of the average values, in particular those of the bitter hops. An exception are the artificially irrigated US-Yakima hops, whose alpha content is subjected to smaller fluctuations.