

# Joh. Barth & Sohn

HOPS SINCE 1794

HOP FARM BARTHOF HALLERTAU

TELETYPE 06/22030  
CABLE ADDRESS:  
BARTHSONN NUERNBERG

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July 26th, 1967

## Hop Report 1966/67

In view of the continuation and the escalation of the war in Vietnam the world's political activities were concentrated upon Asia. Further, a new dangerous situation was created by the conflict between Israel and the Arab nations.

**Economical  
situation**

In order to meet the world-wide inflationary trend, economic measures of the Western industrial countries were aimed at restoring balance between progress and stability. These efforts led first of all to a general increase in interest rates on an international level.

In the **Federal Republic of Germany** the excessive expansion has also come to an end since Fall 1966. Due to this phase of consolidation recessive tendencies have been clearly noted since the end of the year 1966. As a first consequence of the slower domestic demand exports in 1966 showed a surplus of DM 7.95 billion. The balance of payments produced a surplus of DM 1.03 billion. In order to stimulate the market activity the Deutsche Bundesbank gradually reduced the interest rate to now 3%, in four steps of ½% each, beginning at 5%.

World beer production in 1966 showed an increase of about **19.6 million bbl.** compared to 1965. The rate of growth is as follows: Western Europe + 3%, Eastern Europe + 7.5%, North America (U.S.A. adjusted) + 4%, Central and South America + 5%, Africa + 14.1%, Asia + 8.1%, Australia and Oceania + 2.4%.

**Production  
of Beer**

1 ha = 2.934 bayr. Tagwerk	1 bayr. Tagwerk = 0.341 ha
1 ha = 2.471 acres	1 acre = 0.405 ha
1 Liter = 0.2642 gall. (USA)	1 gall. (USA) = 3.7853 Liter
1 Liter = 0.2201 gall. (Brit.)	1 gall. (Brit.) = 4.5435 Liter
1 hl = 100 Liter = 26.42 gall. = 0.8523 bbl. (USA)	1 bbl. (USA) = 31 gall. = 1.1734 hl
1 hl = 100 Liter = 22.01 gall. = 0.6114 bbl. (Brit.)	1 bbl. (Brit.) = 36 gall. = 1.6356 hl
1 kg = 2.20462 lbs.	1 lb. = 0.45359 kg
1 shortton (sht) = 2000 lbs. = 907.185 kg	
1 longton (lgt) = 2240 lbs. = 1,016.059 kg	
1 metr. Tonne = 20 Ztr. = 1000 kg = 1.10231 shorttons = 0.98419 longtons	
1 Ztr. = 50 kg = 110.23 lbs. = 1.102 cwt. (USA)	1 cwt. (USA) = 100 lbs. = 45.36 kg = 0.9072 Ztr.
1 Ztr. = 50 kg = 110.23 lbs. = 0.984 cwt. (Brit.)	1 cwt. (Brit.) = 112 lbs. = 50.8 kg = 1.016 Ztr.
1 quarter (qr) = 400 lbs. = 181.44 kg (barley)	1 Ztr. = 0.27555 qr.
1 bushel (bu) = 48 lbs. = 21.77 kg (corn, malt)	1 Ztr. = 2.2965 bu.
1 bushel (bu) = 34 lbs. = 15.42 kg (malt)	1 Ztr. = 3.2425 bu.
DM 1.— = US\$ —.25 / DM 4.— = US\$ 1.— / US\$ 2.80 = DM 11.20 = £ 1.—	
1 mm precipitations = 1 Ltr. of water per m <sup>2</sup> , 1 mm = 0.04 Inch, 1 Inch (100 points) = 25 mm	

Conversion of thermometer degrees in Fahrenheit and Celcius:

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

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

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Production of Beer 1966							
Country		1000 bbl. of 31 gall. each		Country		1000 bbl. of 31 gall. each	
Germany W.	64,855			b. f.	3,325	404,234	
East*)	12,527	77,382		Nigeria	548		
England		42,065		Cameroons*)	426		
USSR*)		27,015		Angola	355		
France		16,650		Kenya	311		
Czechoslovakia		16,512		Ruanda-Burundi	308		
Belgium		10,653		Algeria	298		
Spain		7,092		Rhodesia	279		
Poland		7,073		Morocco	256		
Austria		6,277		Ghana	222		
Netherlands		4,853		Uganda	196		
Denmark		4,738		Ethiopia*)	187		
Italy		4,472		Zambia*)	182		
Hungary		3,952		Ivory Coast*)	170		
Switzerland		3,867		Tunisia*)	153		
Jugoslavia		3,452		Mozambique*)	153		
Ireland		2,916		Egypt*)	132		
Sweden		2,447		Senegal*)	102		
Roumania*)		2,386		Tanzania	99		
Bulgaria		1,534		Centralafric. Rep.*)	94		
Finland		1,020		Sudan*)	85		
Norway		920		South West Africa*)	81		
Portugal*)		512		Rep. Congo (Brazzav.)	64		
Luxembourg		462		Madagascar*)	44		
Greece		409		Libya	38		
Malta*)		30		Dahomey	34		
Iceland		17		Guinea	34		
<b>Europe</b>			248,706	<b>Africa</b>		8,176	
U.S.A.		104,263		Japan	18,119		
Canada		17,420		Philippine Islands*)	1,790		
Mexico		9,494		Vietnam	1,023		
Brazil		6,903		China*)	682		
Columbia		5,117		Israel*)	494		
Venezuela		2,368		Malaysia	384		
Argentina		1,866		South-Korea	348		
Peru		1,669		Turkey*)	336		
Chile		1,585		Singapore	312		
Puerto Rico		963		Thailand*)	181		
Cuba*)		928		Indonesia	170		
Uruguay		520		India	170		
Bolivia		426		Hongkong	132		
Ecuador		379		Formosa*)	128		
Panama		300		Iran*)	111		
Jamalca		251		Lebanon	66		
Guatemala		221		Ceylon	65		
Dominican Republic		170		Iraq*)	60		
Honduras		162		Cyprus	43		
Nicaragua		122		Syria*)	26		
El Salvador		118		Pakistan	21		
Costa Rica*)		102		<b>Asia</b>		24,661	
Trinidad a. Tobago		83		Australia	11,207		
Paraguay		81		New Zealand*)	2,386		
Martinique		17		Tahiti*)	17		
<b>America</b>			155,528	New Caledonia*)	5		
Congo-Kinshasa		1,875		Australia/Oceania		13,615	
Rep. of South Africa		1,450		<b>Total</b>		450,686	
c. f.		3,325	404,234	*) = estimate			

### Beer Output in Western Germany

Output of beer in Western Germany during the year 1966 amounted to . 62,809,794 bbl.  
 Production of beer in the Western sector of Berlin for the same period was . 2,045,458 bbl.  
 Total **64,855,252 bbl.**

These figures include 1,280,686 bbl. for exports delivered tax-free (1965 = 1,290,203 bbl.) as well as sales against foreign currency and to the occupation forces totalling 275,065 bbl. (1965 = 298,542 bbl.).

### Imports of Beer 1966

The imports of beer to Western Germany amounted to 396,955 bbl. in 1966

## Crop 1965 (Supplement)

Complete figures of imports and exports of hops crop 1965 during the period of September 1st, 1965, to August 31st, 1966 can now be stated as follows:

	Import	Export
Germany . . . . .	10,250,288 lbs.	12,947,175 lbs.
Belgium . . . . .	4,147,514 lbs.	1,863,107 lbs.
England . . . . .	1,180,122 lbs.	2,617,411 lbs.
U. S. A. . . . .	6,943,939 lbs.	23,813,097 lbs.

The world's hop crop 1965 was sufficient to cover the demand of the brewing industry. The German crop was sold out until the end of 1965 and no stocks had to be carried over into the season 1966.

## Crop 1966

### Growth of the Hops Crop 1966 in Germany

After a relatively mild winter spring work had to be interrupted again towards end of March 1966 on account of **Snowfalls**. During the uncovering of the plants damages showed up in those yards which had already suffered from strong precipitations and dammed up water during the previous year.

The development of the vines was favoured by fine weather, especially by summer-like temperatures in the beginning of May 1966. These showed an improvement in growth of about 10 days compared to 1965. The menace of attacks by **Downy Mildew** and **Aphids** was favoured by vigorous growth in consequence of the good weather conditions so that control of **Diseases** and **Pests** had to be started in good time.

Also in June, which brought strongly decreasing temperatures especially during the nights, this advantage in development of the hops could be maintained. Towards end of June the vines reached the height of the trellises. A great number of **Laterals** was to be noticed. Strong winds and excessive precipitations caused damages in some hop yards. In the last days of June a violent change of the weather with a drop of temperature to 15° C slowed down further development, thus effecting loss of all advantages gained in the beginning.

The change from **Bloom** to **Formation of the Cones** was retarded in July 1966 by long lasting and very substantial rainfalls. The beginning of a **Second Bloom** disturbed the uniform standing of the hop yards, but this did mostly not refer to gardens which had been cut early in the spring. Plentiful precipitations in June/July 1966 made the cultivating of the gardens as well as control of **Aphids** and **Downy Mildew** most difficult, since it was nearly impossible to enter the yards with vehicles. The standing of the plants was therefore not always satisfactory.

**Picking** was generally started a little later than in normal years. Sporadically it began on August 24/25th, 1966 and was in full swing by the end of this month. The weather during the harvest was cool and rainy, increasing difficulties in bringing in the crop. Towards middle of September there was a change to dry and warm weather which favourably influenced the quality of late picked hops only.

The whole yield remained below the official estimate of the 1966 crop.

**HALLERTAUE.** As far as the Hallertau is concerned, the year 1966 could not be called a favourable one. All districts in this area were struck by **Verticillium Wilt** to an extent never known before. The gardens around Wolnzach were hit by a bad hailstorm on June 14th, 1966. Already in 1965 persisting damages by excessive moisture were to be noted throughout the Hallertau. On account of the water-logged gardens caused by anomalously abundant precipitations from the middle of June until the harvest, **the crop 1966 had the smallest yield per acre since the year 1952.** An additional loss of 2—3,000 cwts. occurred by the use of an erroneously wrong packed and labelled preparation for spraying. Picking no doubt started already before the cones were fully ripened, since it had to be feared that the hop cones would not keep on the vines due to a too wet growth and further losses were to be expected if retarding the harvest.

## Acreage, Yield and Production 1965 and 1966

	Acreage 1965 Acres	Yield Pounds per acre	Production 1965 Pounds	Acreage 1966 Acres	Yield Pounds per acre	Production 1966 Pounds
Hallertau . . . . .	19,066	1,642	31,376,418	20,440	1,423	29,078,012
Spalt . . . . .	2,535	1,163	2,947,220	2,595	1,371	3,558,555
Hersbruck . . . . .	1,279	1,139	1,454,815	1,181	1,199	1,414,692
Jura . . . . .	555	1,388	770,067	593	1,326	786,491
Bavaria . . . . .	23,435	1,560	36,548,520	24,809	1,404	34,837,750
Tettngang . . . . .	1,979	1,614	3,199,646	2,108	1,493	3,147,507
Wurttemberg . . . . .	170	1,236	210,098	143	1,433	204,917
Baden . . . . .	62	1,406	87,192	59	1,612	95,129
Rheinpfalz . . . . .	54	1,100	59,414	52	1,187	61,729
<b>Germany West . . . . .</b>	<b>25,700</b>	<b>1,557</b>	<b>40,104,870</b>	<b>27,171</b>	<b>1,411</b>	<b>38,347,032**)</b>
<b>Germany East . . . . .</b>	<b>5,303</b>	<b>831</b>	<b>4,409,200</b>	<b>5,295</b>	<b>1,150</b>	<b>6,089,105</b>
Saaz (Zatec) . . . . .	16,531	716	11,845,867	16,902	935	15,797,612
Auscha (Ustek) . . . . .	3,607	898	3,240,762	3,632	995	3,613,339
Other Districts . . . . .	1,112	694	771,610	1,137	841	1,001,440
<b>Czechoslovakia . . . . .</b>	<b>21,250</b>	<b>746</b>	<b>15,858,239</b>	<b>21,671</b>	<b>942</b>	<b>20,412,391</b>
Alsace . . . . .	2,595	1,300	3,373,038	2,471	1,842	4,550,625
Dep. Côte d'Or . . . . .	217	1,219	264,552	217	1,340	290,787
Northern France . . . . .	519	1,434	744,053	539	1,480	797,955
Lorraine . . . . .	30	735	22,046	—	—	—
<b>France . . . . .</b>	<b>3,361</b>	<b>1,310</b>	<b>4,403,689</b>	<b>3,227</b>	<b>1,758</b>	<b>5,639,367</b>
Alost . . . . .	926	1,631	1,510,151	927	1,474	1,366,852
Poperinghe . . . . .	1,668	1,561	2,604,184	1,668	1,520	2,535,290
Vodelée . . . . .	49	1,518	74,405	79	1,116	88,184
<b>Belgium . . . . .</b>	<b>2,643</b>	<b>1,585</b>	<b>4,188,740</b>	<b>2,674</b>	<b>1,492</b>	<b>3,990,326</b>
Slovenia . . . . .	5,831	1,068	6,229,097	5,421	1,253	6,796,782
Backa . . . . .	3,657	1,225	4,479,747	3,657	1,326	4,850,120
<b>Jugoslavia . . . . .</b>	<b>9,488</b>	<b>1,128</b>	<b>10,708,844</b>	<b>9,078</b>	<b>1,229</b>	<b>11,646,902</b>
<b>Austria . . . . .</b>	<b>296</b>	<b>958</b>	<b>283,732</b>	<b>286</b>	<b>1,202</b>	<b>343,697</b>
Galicía . . . . .	531	721	383,049	487	487	237,325
León . . . . .	1,927	1,048	2,020,185	1,950	1,156	2,254,424
Cantabria . . . . .	467	6,17	288,141	445	576	256,285
<b>Spain . . . . .</b>	<b>2,925</b>	<b>920</b>	<b>2,691,375</b>	<b>2,882</b>	<b>954</b>	<b>2,748,034</b>
Switzerland . . . . .	30	1,451	43,540	32	1,378	44,092
Roumania . . . . .	1,977	613	1,212,530	1,977	624	1,234,576
Bulgaria . . . . .	2,965	372	1,102,300	2,891	467	1,349,215
Hungary . . . . .	1,730	580	1,003,095	1,730	543	959,002
Poland . . . . .	6,118	755	4,620,842	5,263	865	4,552,499
USSR . . . . .	29,652	520	15,432,200	29,652	520	15,432,200
<b>Continent . . . . .</b>	<b>113,438</b>	<b>934</b>	<b>106,063,196</b>	<b>113,829</b>	<b>991</b>	<b>112,788,438</b>
Kent . . . . .	11,243	1,408	15,836,413	10,976	1,268	13,914,994
Hants . . . . .	652	1,418	924,499	642	1,394	894,957
Surrey . . . . .	91	1,384	125,993	93	1,181	111,001
Sussex . . . . .	1,848	1,342	2,480,616	1,752	1,181	2,068,907
Hereford . . . . .	4,665	1,404	6,550,087	4,655	1,246	5,802,176
Worcester . . . . .	2,150	1,456	3,131,744	2,125	1,305	2,772,174
Other Counties . . . . .	49	1,523	74,626	59	1,248	73,634
<b>England . . . . .</b>	<b>20,698</b>	<b>1,407</b>	<b>29,123,978</b>	<b>20,302</b>	<b>1,263</b>	<b>25,637,843</b>
<b>Europe . . . . .</b>	<b>134,136</b>	<b>1,007</b>	<b>135,187,174</b>	<b>134,131</b>	<b>1,032</b>	<b>138,426,281</b>
Washington . . . . .	21,115	1,708	36,080,263	20,699	1,790	37,052,933
Oregon . . . . .	4,603	1,449	6,669,797	5,001	1,430	7,149,959
California . . . . .	3,101	1,839	5,703,741	2,501	1,589	3,975,004
Idaho . . . . .	3,902	1,949	7,604,768	4,001	1,810	7,239,906
<b>U.S.A. . . . .</b>	<b>32,721</b>	<b>1,713</b>	<b>56,058,569</b>	<b>32,202</b>	<b>1,721</b>	<b>55,417,802</b>
<b>Canada . . . . .</b>	<b>1,035</b>	<b>1,416</b>	<b>1,465,287</b>	<b>1,035</b>	<b>1,723</b>	<b>1,782,970</b>
Victoria . . . . .	600	1,333	799,939	600	1,231	738,541
Tasmania . . . . .	1,532	1,122	1,719,588	1,574	1,947	3,064,394
<b>Australia . . . . .</b>	<b>2,132</b>	<b>1,182</b>	<b>2,519,527</b>	<b>2,174</b>	<b>1,749</b>	<b>3,802,935</b>
New Zealand . . . . .	576	1,736	1,000,006	665	1,579	1,049,941
Japan . . . . .	3,976	1,505	5,985,489	4,658	1,473	6,864,022
Manchuria . . . . .	247	402	99,207*)	247	402	99,207*)
Northern-Korea . . . . .	1,236	143	176,368*)	1,235	143	176,368*)
Argentina . . . . .	296	652	192,902	316	732	231,483
South Africa . . . . .	305	497	151,015	279	713	198,965
<b>Total . . . . .</b>	<b>176,660</b>	<b>1,148</b>	<b>202,835,544</b>	<b>176,942</b>	<b>1,176</b>	<b>208,049,974</b>

\*) Estimate

\*\*) Official Weight April 14th, 1967

**Quality.** The Hallertau hops crop 1966 were of irregular growth and yellowish green colour, slightly wind whipped. The yellow-golden lupulin had an intense aroma, but was not so plentiful as the year before. This is partly a consequence of the premature picking. Picking and kilning of the hops repeatedly gave reason for reclamations.

Weather data from the Experimental Hop Farm Hüll/Hallertau							
1966	March	April	May	June	July	August	Sept.
Precipitations per month (mm)	69	69	94	110	137	134	35
Monthly average of air temperature °Celsius	2.6	9.6	12.1	16.4	15.2	15.0	13.1
Maxima of air temperature °Celsius	12.6	20.5	25.6	29.0	27.5	32.5	27.2
Minima of air temperature °Celsius	— 6.7	— 2.3	1.1	2.1	10.0	5.7	2.0
Monthly average of relative humidity %	80	80	76	76	82	84	82
Other data:	days	days	days	days	days	days	days
Snowfall	10	—	—	—	—	—	—
Rain and snow	3	—	—	—	—	—	—
Snowcover	10	—	—	—	—	—	—
Thunderstorm	—	4	2	6	4	1	2
Fog	—	2	2	—	1	2	7
Hoarfrost	10	6	—	—	—	—	1
Dew	—	13	21	20	20	12	19

**SPALT.** In this region damage by moisture was to be noted in lower locations. Preventive sprayings against **Pests** and **Diseases** were hampered by bad weather. Especially **Aphids** had become a serious problem here.

**Quality.** The cones of the Spalt hops crop 1966 were of irregular shape and of yellowish green colour. The light lupulin was of fine flavour but not so plentiful as in the year before. Also in this district the high content of waste from the picking machines was a reason for complaints. The kilning was not satisfactory.

**TETTANG.** The spreading of **Downy Mildew** was favoured also in this district by the rainy weather during the year 1966. Local damages were caused by hailstorms. A late attack of **Aphids** could be controlled successfully.

**Quality.** The Tettang hops crop 1966 showed cones of irregular growth and yellowish-green, not always clean colour. The light-shade lupulin had a fine and mild aroma but was not so plentiful as last year. The **Kilning** of the hops was satisfactory but **Picking** standards are increasingly being neglected.

**HERSBRUCK GEBIRGE.** On account of unusual abundant precipitations, hop growers had to deal with considerable difficulties while cultivating their hop yards and during the control of **Pests** and **Diseases**. Especially in water logged gardens on heavy soils the early varieties showed a weak growth and the vines turned yellow. Late hops on the other side had better chances for development and this resulted also in a better crop.

**Quality.** Herbruck hops crop 1966 were very irregular in growth and formation of the cones. The cones were of yellowish-green shade and very wind whipped. The light yellow lupulin had a strong flavour. **Picking** could not be judged well also in 1966, since numerous lots contained a large part of stems, leaves and other waste. Kilning, too, was a reason for complaints.

**German  
Hop Acreage  
1966**

Verification of the hop acreage in 1966, resulted in the following figures:

Districts	1939 Acreage acres	1966		
		Existing acr. acres	Additional acr. acres	Total acres
Hallertau . . . . .	11,317	18,809	1,631	20,440
Spalt . . . . .	2,276	2,456	138	2,595
Hersbruck . . . . .	2,118	1,142	40	1,181
Jura . . . . .	200	541	52	593
Tettngang*) . . . . .	—	27	—	27
Alschgrund/oth. distr. Bavaria . . . . .	200	12	—	12
	16,111	22,988	1,861	24,848
Wurttemberg . . . . .	1,223	143	—	143
Tettngang**) . . . . .	1,636	1,957	151	2,108
Baden . . . . .	440	57	5	62
Baden-Wurttemberg	3,299	2,157	156	2,313
Pfalz . . . . .	151	47	7	54
Rheinland-Pfalz . . . . .	151	47	7	54
Germany . . . . .	19,561	25,192	2,024	27,216

\*) areas in Bavaria      \*\*) except areas in Bavaria

**Hop Acreage  
1967**

According to informations received until now an increase in acreage by about 1,200 acres is to be expected in the **Hallertau** district. The prospective crop of the new hop yards is almost completely under contract. In the gardens, struck by **Verticillium Wilt**, the affected plants were replaced by varieties less susceptible to this disease.

Also in **Spalt** new hop gardens were layed out. On the other side, however, overaged yards were eliminated thus effecting the total acreage to remain practically unchanged in 1967.

Reports from **Tettngang** say that new plantings come to about 250 acres. Since no old yards were rooted up in this area the total acreage can be estimated to about 2,350 acres in 1967.

**Verticillium  
Wilt**

The spreading of **Verticillium Wilt** was favoured in the **Hallertau**, especially in the main districts by the moist and cool weather during Summer 1966. About 11,100 acres of the total acreage of 20,440 acres have already been attacked by this disease. The incidence, however, is very different in the various yards. On an area of 1,200 to 2,000 acres a total loss occurred already. Losses caused by this disease in 1966 are estimated from 10,000 to 12,000 cwts.

Since no success in controlling this disease could be achieved last year, farmers are convinced more and more of the necessity of growing less susceptible varieties with a high resistance to **Verticillium Wilt**. In the other German hop growing districts this disease has not appeared as yet.

**Bitter Values  
of Crop 1966**

Origin	Total resin content anhydric	Soft resins		Humu- lon		Lupulon + Fraction of softresin		Hard resins		Bitter value Wöllmer	
		%	%	%	%	%	%	1966	1965		
Hallertau . . . . .	16.2	13.1	81.20	5.5	33.80	7.7	47.40	3.1	18.80	6.2	7.1
Hallertau/Au . . . . .	15.5	12.8	82.40	5.2	33.70	7.5	48.70	2.7	17.60	6.0	7.0
Hallertau/Mainburg . . . . .	15.6	12.9	83.10	5.4	34.60	7.6	48.50	2.6	16.90	6.2	7.1
Hallertau/Wolnzach . . . . .	16.4	13.3	81.30	5.6	34.40	7.7	46.90	3.0	18.70	6.5	7.1
Hallertau/Barth-Nordbr. . . . .	21.6	18.1	83.70	10.1	46.60	8.0	37.10	3.5	16.30	11.0	12.1
Spalt . . . . .	16.2	13.1	80.70	5.8	35.80	7.3	44.90	3.1	19.30	6.6	6.9
Tettngang . . . . .	16.6	13.9	84.05	5.9	35.85	8.0	48.20	2.6	15.95	6.8	7.8
Hersbruck . . . . .	15.1	12.3	82.30	5.3	35.70	7.0	46.60	2.6	17.70	6.1	6.8
Alsace . . . . .	18.4	15.7	85.60	7.3	40.00	8.4	45.60	2.6	14.40	8.3	7.5
Belgium/Brewers-Gold . . . . .	17.2	14.6	84.95	8.0	46.70	6.6	38.25	2.6	15.05	8.7	7.9
Saaz . . . . .	14.6	12.2	83.70	4.8	32.80	7.5	50.90	2.4	16.30	5.6	5.9
Jugoslavia/Styria . . . . .	16.3	13.8	84.70	6.8	42.10	6.9	42.60	2.5	15.30	7.6	7.1
Jugoslavia/Backa . . . . .	20.0	16.1	80.30	6.8	33.80	9.3	46.50	3.9	19.70	7.8	6.7
Yakima Seedless . . . . .	20.4	16.5	80.90	7.8	38.40	8.7	42.50	3.9	19.10	8.8	9.1

The figures of the above table refer to bitter value (dry basis, alpha evaluated conductometrically) only in the beginning of the season and will not hold good for the judgement of supplies in the later part of the year.

A special characteristic of crop 1966 is the reduction of the bitter value of hops of nearly all provenances by about 10 — 15 % compared with last year's crop. This may be due to the unfavourable weather in August 1966. An exception was made by Alsacian hops and Jugoslavian Backa hops only, which partly showed considerably higher bitter values.

**Quality of German Hops Crop 1966**

Again the drop in the quality of German hops is to be regretted and this disagreeable fact is to be brought to discussion. During the handling of the crop 1966 numerous complaints had to be placed with the producers on account of a too high percentage of leaves, stems and picking waste. Contrary to this, the efforts of other countries (especially in Eastern Europe) to supply hops in a perfect brewing quality are worth to be mentioned.

The persisting demand calling for an improvement of the quality should no longer be ignored in order to maintain the high reputation of Choicest German Hops. Endeavours in this direction are encouraged in an approvable way by the "Verband Deutscher Hopfpflanzer" (German Hop Planters Assoc.).

The justified worries about maintaining, or improving the quality standards of German hops brought up long lasting negotiations between the German Hop Planters Association and the Association of Hop Merchants, which led in August 1966 to the contracting of the "German Hop Business Agreements". These agreements are provisionally effective for one year only and will be applied to the Inland Trade with sealed German hops of the different provenances. In particular the following points are defined and regulated:

- Fulfilment of hop purchase contracts,
- Determination of maximum quantities per acre to be contracted,
- Quality complaints and kinds of deficiencies,
- Definition of the classification "average quality",
- Establishment of a board of arbitration.

Appeals were placed with this board of arbitration in a few cases only, since the above mentioned treaty was signed shortly before the harvest and the function of the latter institution was not yet known everywhere. In first line, however, the classification of quality standards was prevented by the heavy drawback in the Hallertau crop and the hectic take over of the contracted hops.

The estimate of the German crop 1966 took place from August 19th/24th, 1966, and resulted in the following figures:

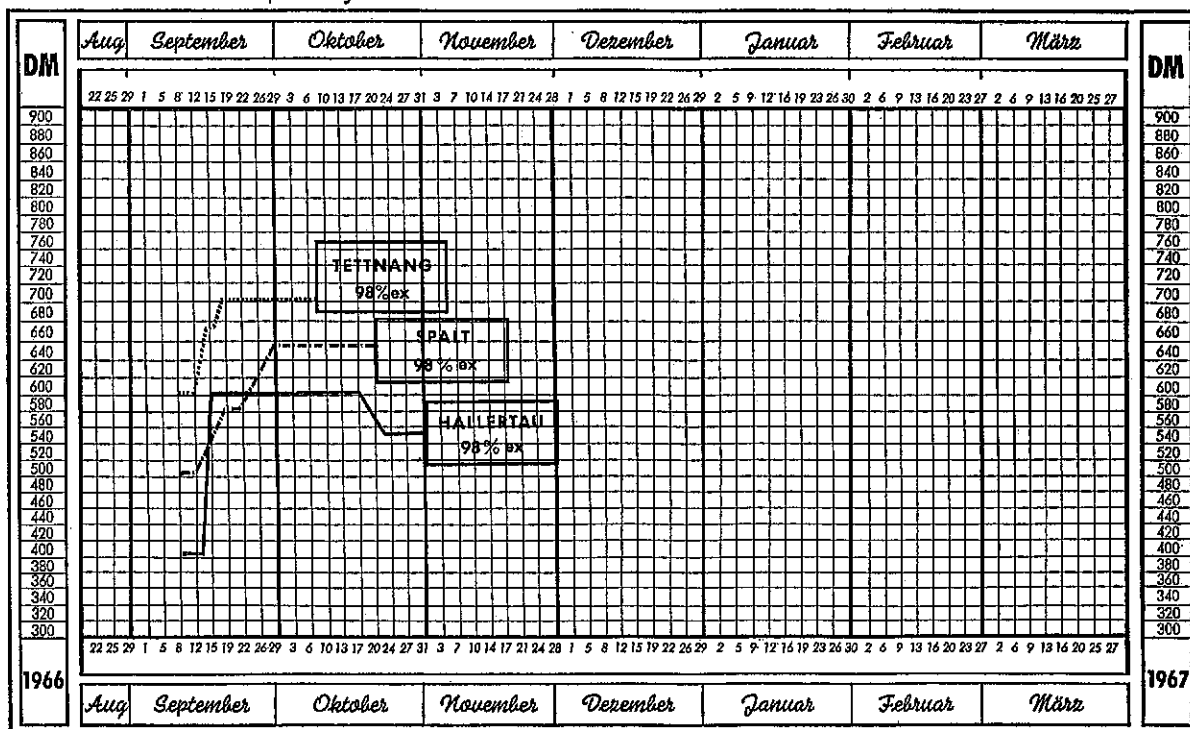
	Yield estimated 1966 lbs.	Yield weighed on April 14th, 1967 lbs.
Hallertau . . . . .	31,966,700	29,078,012
Spalt . . . . .	3,527,360	3,558,445
Tett nang . . . . .	3,306,900	3,147,507
Hersbruck Gebirge .	1,543,220	1,414,692
Wurttemberg . . . .	220,460	204,917
Jura . . . . .	881,840	786,491
Baden . . . . .	93,695	95,128
Rheinpfalz . . . . .	71,650	61,729
	<u>41,611,825</u>	<u>38,347,034</u>

**German Hop Business Agreements 1966 (D.H.G.V.)**

**Crop estimate 1966**

Again the uneven stand of the hop yards made the estimate of crop 1966 extremely difficult. These difficulties were increased by the strong attack of *Verticillium Wilt*, especially in the main districts of the Hallertau and the losses caused by the use of a wrong spraying compound. Although the decrease in the crop amounting to 10—12,000 cwts. was taken into consideration during the estimate, the official weighing of April 14th, 1967, remained by 30,000 cwts. under the estimated quantity.

**Hop Purchase Crop 1966 in Germany**



HALLERTAU ——— SPALT ——— TETT NANG .....

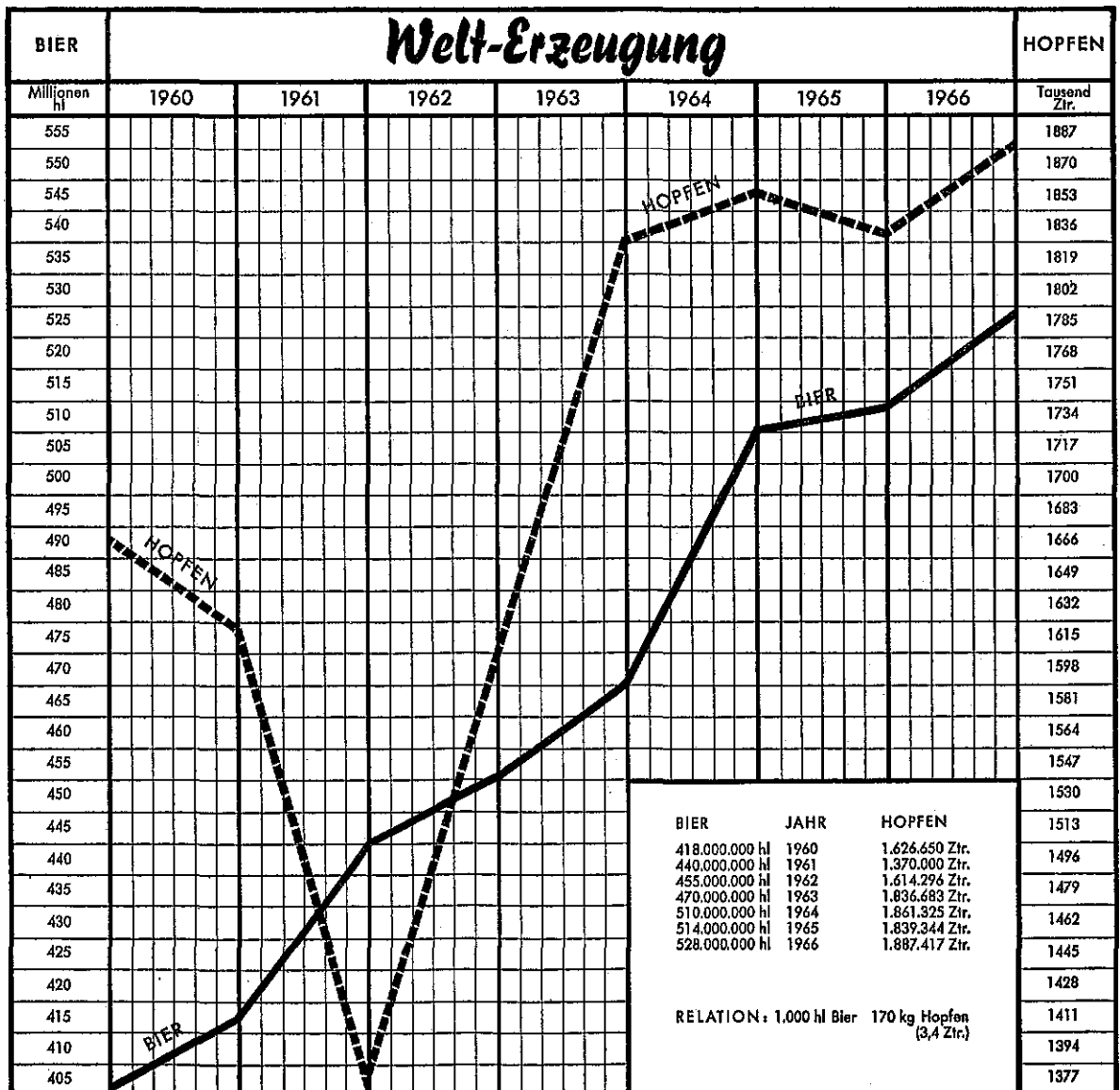
Already the first official weighings showed the strong decrease in this crop. Especially in the main districts of the Hallertau many producers were not able to deliver the contracted quantities completely, whereas growers in the outskirts were in a more favourable position regarding fulfilment of contracts. The obscure situation led to rumours tending to a shortcoming of the expected crop. Although the brewing industry generally showed an inactive attitude, lively purchases developed throughout the trade in order to cover existing short supplies as well as shortages from underdeliveries of approx. 15 % against forward contracts. For this reason prices for free available Hallertau hops rose sharply, influencing all other districts including the world market.

On account of the retentive attitude in the brewing industry which covered a large part of the required hops in foreign provenances, business in German hops slowed down considerably in the first half of October 1966. Towards end of this month prices for purchases from farmers began to decrease. At this time, however, already 98 % of the German crop were sold out.

The slow tendency on the German market lasted until end of January 1967, and due to the sudden and unexpectedly appearing of unsold free stocks, prices developed a strongly dropping tendency. This baisse situation was again accompanied by the world market.

**HALLERTAUE.** In view of the harvest's uncertain result no business could be done in the beginning of the season. As far as purchases have been effected at all, they referred only to liquidation of surplus deliveries from contracts. In this connection the following prices can be quoted: beginning of September DM 450.—, middle of September DM 500.—, 9, 26th, 1966 DM 550.—, 9, 28th, 1966 DM 600.—. Prices remained unchanged at this level with slight fluctuation to the high side until end of October. With nearly a standstill in business and very small sales only, prices decreased towards end of December to DM 500.—. For the last lots sold by growers and for "hidden" hops a price of DM 250.— was paid in May 1967. On account of the reduced quantities of free hops practically no real market developed during the whole season.

World  
production  
of beer and  
hops





**SPALT.** First purchases were effected on September 13th, 1966, at prices around DM 480.—/500.—. In the following days DM 500.— were paid generally, although business was rather slack. On September 21st, 1966, prices practically leaped to DM 600.— and substantial purchases were done on this base. During a lively demand prices arrived at DM 650.— on September 26th, 1966. On this basis the district was practically cleared of stocks in the beginning of October except of a few unimportant remainders.

**TETTANG.** In this district the first small purchases were done on September 13th, 1966, at DM 600.—. On September 20th, 1966, prices climbed up rapidly to DM 650.— and arrived even at DM 700.— in the following days. This district was practically sold out towards beginning of October on base of this price.

**HERSBRUCK GEBIRGE.** The market in this district started unusually soon on September 2nd, 1966. Small quantities were purchased at DM 370.—. On September 9th, 1966, already prices from DM 380.— to DM 390.— were paid and same increased to DM 400.— generally on September 12th, 1966. Following the tendency of the market quotations went up to DM 450.— towards middle of this month and arrived actually at DM 500.— on September 21st, 1966. In a few cases business was done even at DM 550.—. On account of these augmentations the demand declined and so prices dropped again to DM 500.— from middle of October 1966. This district could be considered as sold out per end of October 1966.

All prices and quotations as mentioned above and herebefore refer to hops ex stocks of producers.

In the season 1966/67 the Nürnberg hop market again proved to be an important trading post for balancing the business in this special article and to handle also transactions in substantial quantities of foreign hops, this latter business resulting from the lack in offers of Hallertau hops. The development of prices was as follows:

**Nürnberg  
Market**

	<u>9/19/1966</u>	<u>9/22/1966</u>	<u>9/23/1966</u>	<u>9/29/1966</u>
Hallertau . . . . .	DM 540.—	DM 560.—	DM 620.—	DM 650.—
Spalt . . . . .	—	DM 650.—	DM 685.—	DM 700.—
Tettang . . . . .	—	DM 770.—	DM 770.—	DM 750.—
Hersbruck Gebirge . . . .	DM 500.—	DM 500.—	DM 555.—	DM 575.—

Towards end of September/beginning of October 1966 lively business could be registered in hops of Jugoslavian, Alsatian, American and Eastern German origin.

From beginning of October 1966 the market became rather slow and business practically came to a standstill for several months. Quotations were of nominal importance only.

Revival of the market began in the second half of March 1967 under absolutely new aspects as far as prices were concerned. On March 22nd, 1967, quotations for Hallertau hops came to DM 400.—, Spalt hops to DM 460.—, Tettang hops to DM 500.— and Hersbruck hops to DM 350.—. Prices dropped further and in the beginning of May 1967 Hallertau hops could be purchased at DM 280.—. Hops of the other provenances accompanied this depressive trend.

All quotations are based on prices for interim packed hops.

The world's entire crop 1966 in hops was sufficient to cover the demand of the brewing industry without difficulties. Only choicest European hops were short depending on provenances required. The evolution of the German market was strongly influenced during the months of September and October 1966 by the shortage of the Hallertau crop which is an important factor in the world market. There was a gap of about 35,000 cwts. contracted but not grown hops. The exchange transactions into hops of other provenances in equal price and quality could be effected quicker than expected.

**Market  
Survey**

The upward trend in prices for German hops reached its culmination in the beginning of October 1966. Prices for other European hops followed hesitatingly only. On account of impossibilities of deliveries in German hops, however, prices for these foreign hops gained benefits from this situation by a fast sellout. The recessive economical situation in Western Germany and the stagnation in the German beer output added to the declining market tendency. The actual demand of German breweries for hops remained below expectations. When calculating the quantity of the needed hops it will be necessary in future to consider especially the influence of products derived from hops (extract and hop powder) on the course of the market.

After months of nearly absolute slackness the German market returned to a certain activity in March 1967 on base of strongly reduced prices. Larger quantities than expected appeared again on the market which could only be disposed of at a loss. Would these hops have been offered in good time, sales would have been concluded without difficulties and less imports would have been necessary.

With unsold stocks of about 30,000 cwts. of hops on hand, also the US market collapsed and prices fell far below the costs of production.

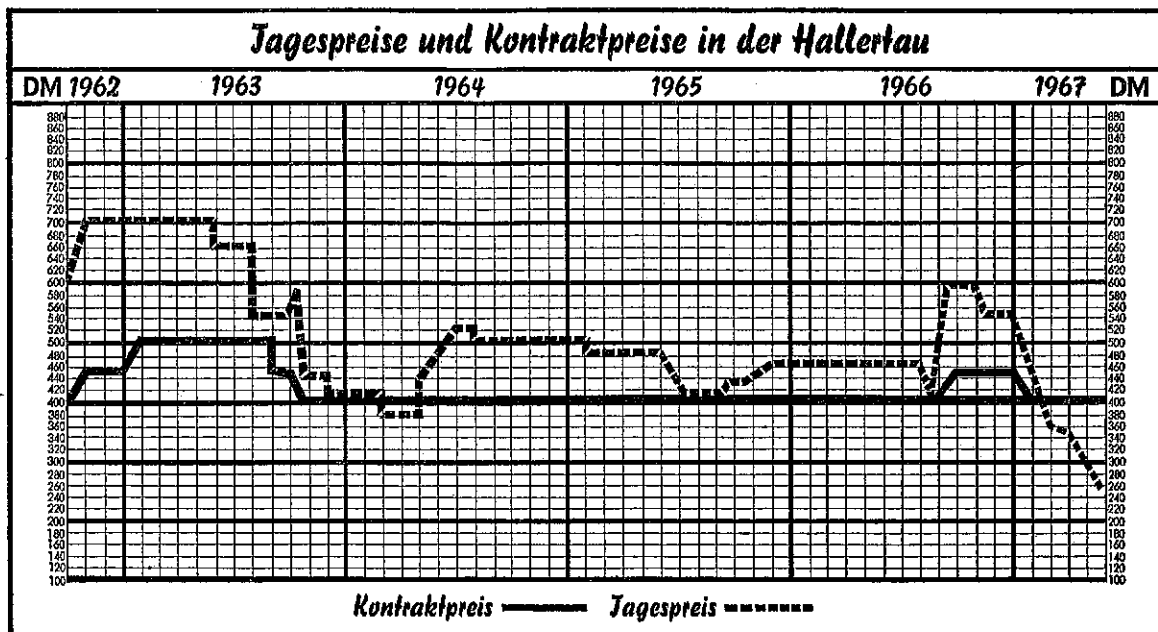
**Forward Contracts**

Contract agreements holding good for several years practically are the base of hop growing. For agricultural enterprises the risk of high investment costs is only bearable on account of securing the sale of the prevailing part of the prospective crop on long lasting terms. The short crops of the passed three years have shown, that forward contracts for a time of several years can contribute to a lower quality standard.

In the most important German hop growing district, Hallertau, forward sales of producers up to 15 cwts. per acre were considered to be unobjectionable. This corresponds to about 80 % of a good average crop. While taking over contract hops crop 1966, it became evident that most of the farmers had signed forward contracts up to this limit, some even above it. Since the average yield per acre arrived at 13 cwts. only in 1966, considerable underdeliveries resulted, especially in the main districts of the Hallertau, averaging 15 % of the signed contracts.

It is supposed that at present the highest stand of possible contracts has been reached in the Hallertau. The percentage for this district is estimated to about 80 %, for Western Germany to about 70 % of the 1967 crop.

**Daily quotations and contract prices for Hallertau hops**



**Export of Hop Extracts**

The use of hop concentrates and hop powder by the brewing industry continues gaining in importance. The predominating part of the processed hops were of foreign origin, the extracts of which mostly being exported again. The exports of extracts developed as follows:

Export of Hop Extracts			
	Total in lbs.	Percentage of Total	
		German Export	Export "in bond"
1964 9/1/64 — 8/31/65	840,842	22.44 %	77.56 %
1965 9/1/65 — 8/31/66	1,257,074	28.55 %	71.45 %
1966 (7 months) 9/1/66 — 3/31/67	1,001,779	20.65 %	79.35 %

**German Hop Imports Crop 1966**

From September 1st, 1966 to March 31st, 1967: the following hops were imported:

Country	Domestic Consumpt.	Refinement transit	Country	Domestic Consumpt.	Refinement transit
	lbs.	lbs.			
U. S. A. . . . .	2,526,251	1,618,617	b. f. . . . .	7,238,142	4,586,889
Jugoslavia . . . . .	2,042,121	750,666	Bulgaria . . . . .	8,818	52,910
Czechoslovakia . . . . .	1,134,046	668,214	Great Britain . . . . .	—	31,967
France . . . . .	846,125	432,542	Netherlands . . . . .	—	11,023
Belgium-Luxembourg . . . . .	568,346	564,157	Japan . . . . .	—	6,614
Poland . . . . .	121,253	277,559	People's Rep. of China . . . . .	3,968	—
Spain . . . . .	—	170,636	New Zealand . . . . .	—	2,425
Austria . . . . .	—	104,498	Hungary . . . . .	1,102	—
c. f. . . . .	7,238,142	4,586,889	Total . . . . .	7,252,030	4,691,828

German hop imports crop 1965 until March 31st, 1966=8,177,964 lbs.

Continuously increasing quantities of foreign hops were imported to Western Germany which after treatment or conversion are being exported again as hops, hop powder or hop extract. With that, a change in the structure of the German hop balance has taken place which asks for a more detailed statistical specification in order to ascertain the exact quantity of the imports for domestic consumption. From September 1st, 1966, until March 31st, 1967, there have been

imported . . . . .	11,943,861 lbs.
refinement transit . . . . .	4,691,830 lbs.
inland consumption . . . . .	<u>7,252,031 lbs.</u>

In order to overcome difficulties in the supply of the German brewing industry with choicest hops crop 1966 discussions took place on October 6th, 1966, in the "Bundesernährungsministerium" (Ministry for Food, Agriculture and Forests) at Bonn. On this occasion an additional quota for the import of hops from Eastern European countries was asked for.

**JUGOSLAVIA.** The import contingent originally limited to 14,000 cwts. was increased by 4,000 cwts. to a total of 18,000 cwts.

**CZECHOSLOVAKIA.** Besides of the quantity of 6,000 cwts. fixed in the treaty of commerce for home consumption, an additional contingent of 2,000 cwts. was at the disposal of exporting breweries (tender number 24 1220 and 24 1221). Further quantities could be imported on base of compensation business at a rate of 1 : 2 when exporting German hops to Czechoslovakia.

**POLAND.** For the first time a quota of 4,000 cwts. was granted for Polish Lublin hops according to a publication in the *Bundesanzeiger No. 214* of November 15th, 1966, tender No. 24 1294. On account of short Polish supplies this import contingent could not be utilized completely.

**Exports of  
German Hops  
and Extracts  
Crop 1966**

Export of German Hops and Extracts Crop 1966					
September 1st, 1966 — March 31st, 1967					
Country	Hops lbs.	Extract lbs.	Country	Hops lbs.	Extract lbs.
Italy . . . . .	791,672	103,616	b. f. . . . .	9,627,490	851,636
France . . . . .	703,929	225,530	Morocco . . . . .	20,944	—
Austria . . . . .	544,757	66,799	Algeria . . . . .	20,944	—
Sweden . . . . .	533,072	14,771	Sudan . . . . .	18,739	3,527
Switzerland . . . . .	414,465	87,082	Ethiopia . . . . .	17,637	—
Belgium . . . . .	325,399	31,746	Ivory Coast . . . . .	12,125	1,323
Czechoslovakia . . . . .	220,019	—	Senegal . . . . .	12,125	—
Spain . . . . .	171,077	110,671	Central Afric. Republic . . . . .	11,023	6,614
Norway . . . . .	165,124	3,086	Ghana . . . . .	11,023	661
Denmark . . . . .	155,424	52,910	Tanzania . . . . .	11,023	441
Finland . . . . .	146,826	11,023	Libya . . . . .	8,818	661
Portugal . . . . .	116,844	661	Dahomey . . . . .	8,818	220
Netherlands . . . . .	109,789	120,812	Nigeria . . . . .	6,614	27,337
Great Britain . . . . .	98,105	3,086	Upper Volta . . . . .	5,732	—
Malta . . . . .	4,409	—	Togo . . . . .	3,748	—
<b>Europe</b> . . . . .	<b>4,500,911</b>	<b>831,793</b>	Liberia . . . . .	2,866	220
U.S.A. . . . .	4,816,390	220	<b>Africa</b> . . . . .	<b>543,213</b>	<b>77,822</b>
Brazil . . . . .	176,809	220	Japan . . . . .	580,251	19,400
Canada . . . . .	67,902	—	Philippine Isl. . . . .	155,204	—
Argentina . . . . .	44,092	4,409	Thailand . . . . .	101,852	8,818
Venezuela . . . . .	—	12,125	Turkey . . . . .	46,296	—
Bolivia . . . . .	14,330	661	Hongkong . . . . .	31,526	—
Nicaragua . . . . .	6,614	—	Iraq . . . . .	25,794	661
Mexico . . . . .	441	2,205	Iran . . . . .	23,810	—
<b>America</b> . . . . .	<b>5,126,579</b>	<b>19,843</b>	Vietnam . . . . .	22,046	—
Congo (Kinshasa) . . . . .	137,126	4,409	Lebanon . . . . .	17,637	—
Canary Islands . . . . .	66,579	1,102	South-Korea . . . . .	13,007	—
Mozambique . . . . .	39,683	—	Ceylon . . . . .	6,614	2,645
Angola . . . . .	36,596	2,205	<b>Asia</b> . . . . .	<b>1,024,037</b>	<b>31,525</b>
Republic of South Africa . . . . .	36,376	20,503	Un. of Australia . . . . .	—	31,525
Madagascar . . . . .	28,219	—	French Pacific Isl. . . . .	22,046	—
Kenya-Uganda . . . . .	26,455	8,598	<b>Australia</b> . . . . .	<b>22,046</b>	<b>31,525</b>
c. f. . . . .	9,627,490	851,636	Other Countries . . . . .	5,952	9,259
			<b>Total</b> . . . . .	<b>11,222,738</b>	<b>1,001,772</b>

German hop exports crop 1965 until March 31st, 1966 = 11,152,851 lbs.

On occasion of the tenth anniversary since the conclusion of the Treaties of Rome a special meeting was held in this town on May 29/30th, 1967. Themes of discussions were the joining of England and a closer political cooperation. No resolutions were taken, however. The Council of Ministers of the E. E. C. shall attend to these questions and then obtain the decision of the Commission of the E. E. C. at Brussels.

**DEVELOPMENT OF THE E. E. C.** The final success of a Customs Union of the six member states will be achieved soon since the Council of Ministers of the E. E. C. came to an agreement on May 5th, 1966, as to the agricultural financing until end of 1969 as well as to the beginning of the Customs Union by July 1st, 1968. A most important task will now be to abolish distortions of competition, especially as far as taxes are concerned, in order to obtain full liberty of labor and capital, furthermore harmonization of economical politics of the member states.

The continuing lively interest in joining this large European market is clearly expressed by the entering applications placed by England, Ireland and Denmark. Negotiations about admission of further nations could not yet be concluded.

**HARMONIZATION OF TAXES.** In order to let the uniform turnover-tax policy come into force on January 1st, 1970, the Ministers of Finance of the E. E. C. recommended the soonest possible passing of the bills for the necessary national laws. Germany has already provided for a replacement of the turnover-tax laws valid up to now by a taxation of the surplus value. At the present time, however, no exact comments exist on this subject.

**KENNEDY-ROUND.** Negotiations lasting already for several years under the name "Kennedy-Round" are aiming at a world-wide reduction of Customs duties within the GATT (General Agreement on Tariffs and Trade). The following main problems are waiting to be solved:

- Reduction of Customs barriers and other obstacles in the trade in industrial products
- Steps to facilitate the exchange of agricultural products and raw materials
- Modes of action to enlargen the foreign trade of countries of development.

During these negotiations the E. E. C. is acting as **one** member only with the same rights and duties as the remaining GATT-partners. The completion of the Customs Union will, however, result in an isolation of the E. E. C. to a certain degree against third countries by its relatively high external Customs tariffs. The successful conclusion of the "Kennedy-Round" is therefore of extraordinary importance.

After difficult negotiations the partners arrived at a satisfying compromise middle of May 1967 at Geneva. According to this agreement the Customs tariff for Hops was reduced from 12 % to 9 %. Until May 31st, 1967, the outlines of the lists of concessions must be placed with the GATT Secretary's Office in order to settle eventually arising differences of opinions up to the 23rd of June 1967. On this date the negotiating council will meet again for the ratification of the conclusive documents.

**CUSTOMS-TARIFFS.** According to a resolution by the E. E. C. Council of Ministers published by Bulletin No. 7/66 of May 11th, 1966, the internal common duties for industrial products will be reduced by 5 % on July 1st, 1967. The abolition of the remaining 15 % is provided for on July 1st, 1968. From then on the common external Customs tariff will come into force.

The free trade in **Agricultural Products** will be realized gradually in several steps in the time from November 1st, 1966, to July 1st, 1968.

The following table will show the Custom duties valid for hops from July 1st, 1967 which have especially in the E. E. C. common market undergone a further reduction by 10 % to 25 % of the basic Customs tariffs:

Country	Customs Duties for Imports from				
	Members of the E.E.C.			other countries	
	Basis 1957	from 1/1/66	from 7/1/67	from 1/1/66	from 1972*
Belgium . . .	8 %	2.8 %	2 %	10.4 %	9 %
Germany . . .	15 %	5.2 %	3.7 %	13.2 %	9 %
France . . . .	12 %	4.2 %	3 %	12.0 %	9 %
Italy . . . . .	4 %	1.4 %	1 %	8.8 %	9 %
Luxembourg .	8 %	2.8 %	2 %	10.4 %	9 %
Netherlands .	8 %	2.8 %	2 %	10.4 %	9 %

\*) Exact details regarding the gradual decrease of the external E.E.C.-Tariff until 1972 are not yet officially known.

According to the reduction of the internal Customs tariffs a respective increase of the partial Customs duties has to be taken into consideration.

**MARKETING REGULATIONS.** Until July 1st, 1968, at the latest, the common marketing agreement for hops shall come into force. Uniform regulations shall be found for the following points:

- 1) Common denomination as to provenance, variety and crop year,
- 2) Determination of quality characteristics,
- 3) Inclusion of other products manufactured from hops (hop extract, hop powder) into the law of provenance,
- 4) Preference for E. E. C.-products,
- 5) Elimination of competition distortions,
- 6) Prevention of imports at dumping prices.

In Germany, the law of provenance holding good since 1929 offers an ideal base for a common marketing agreement. Also in Belgium a control system of quality and origin exists since 1963, however, on a voluntary base. A respective certificate is issued upon request.

Advanced development caused by exceptionally warm and favourable climate during April and May 1966 was hampered again in June by substantial precipitations and cool temperatures. Average values referring to the weather in the principal districts were as follows:

	March	April	May	June	July	August	Sept.
Precipitations	43	52	48	91	98	70	33 mm
Temperatures	3.4	9.1	13.2	17.5	16.2	16.1	12.9° C

**Deutsche  
Demokratische  
Republik  
(D. D. R.)**

The plants reached the height of the trellises in the beginning of July 1966 and showed some overhang with the exception of a few hop yards. The **Bloom** lasted for a longer time, so that burr and fully developed cones could be observed on a plant at the same time. Diseases and pests were controlled by 5—6 sprayings. Serious damage occurred partly by **Downy Mildew** and the control of this disease was made rather difficult by plentiful precipitations.

For the first time **Verticillium Wilt** was to be noticed on a small area.

**Picking** started generally on August 25th, and was finished on September 17th, 1966. The harvest was hampered by rain and lack of pickers. About 70 % of the crop were picked by machines, 106 picking machines were in action.

**Quality.** The cones were of irregular growth and showed a good green colour. The lupulin content was less than in the year before. The crop was classified as follows: Grade II 2.5 %, Grade III 92.3 %, Grade IV 5.2 %.

Hops were handled centrally and prices for the different quality grades remained unchanged as in the year before. 51,000 cwts. of these own hops were supplied to the inland brewing industry. 85 % of the production area belong to agricultural cooperatives and 15 % are in the hand of state's farms.

For the first time in the history of East German hop growing, larger quantities were exported to buyers in Western countries under the declaration "Saale Hops".

No strong frosts were to be noted during the winter 1965/66. Only in the Lublin district temperatures went down to — 12° C in January and February 1966. The hops, however, had wintered well. Favourable climatical conditions in March/April made it possible to effect **Spring Work** in good time. Precipitations and temperatures were as follows:

**Poland**

	March	April	May	June	July	August	Sept.
Precipitations	10	31	67	85	45	38	25 mm
Temperatures	2.7	9.5	14.2	15.7	18.6	16.9	12° C

Rising temperatures from middle of May until end of June advanced the growth of the hop plants and the gardens showed a satisfying standing. The hops reached the height of the trellises by the end of June and stood in full **Bloom** in the second half of July.

Rainfalls beginning in July and the considerable differences in air temperature favoured diseases and pests, on the other side spraying work was nearly impossible in the water logged gardens. This unfavourable weather led to a strong infection by **Downy Mildew** which negatively influenced quality and quantity of the crop.

**Picking** began on August 15th and ended on September 10th, with at times windy and rainy weather. For the first time a lack of labour was noted, which shall be compensated by the acquisition of picking machines.

The **Quality** of the hops was weaker than the year before, especially the bitter values were considerably lower. The cones were of yellowish-green colour and showed partly discolourations due to climatic conditions. Damages caused by **Downy Mildew** were especially disadvantageous to the quality. The crop was graded as follows: 20 % of Grade I, 79 % of Grade II and 1 % of Grade III. The whole crop was handled centrally at fixed prices until mid-December 1966. About 21,000 cwts. of the hops were exported.

## Czechoslovakia

The hops had wintered well and **Spring Work** could be done in good time during favourable weather. Rainfalls were distributed as follows:

	March	April	May	June	July	August	Sept.
Saaz . . . . .	41.0	69.7	40.3	100.8	102.5	130.6	19.3 mm
Auscha . . . . .	38.4	58.3	37.6	83.0	94.0	33.3	13.9 mm

Development of the plants was extraordinary well on account of warm weather in May and the stand of the gardens in June was impressive. The vines reached the height of the trellises in the middle of June and at the same time first **Burr** was to be noticed. A second burr showed up in the middle of July which led to an uneven growth and ripening of the cones.

End of July, however, a cool and rainy spell set in. **Downy Mildew** appeared sporadically and was carefully controlled by sprayings. Since the water-logged gardens were not accessible on account of heavy rainfalls, spraying against **Aphids** and **Red Spider** was effected successfully by planes. This method proved, however, of little efficiency against **Downy Mildew**.

**Picking** started between August 15th, and 20th, and could be concluded on September 15th, under mostly wet weather conditions. 220 picking machines were used for the harvest of about 27 % of the crop.

**Quality.** The quality of the hops crop 1966 was judged to be satisfying. The cones mostly showed an even green colour. The bitter value of Saaz hops was lower than in the years before. The crop was graded as follows: Grade I and II 65 %, Grade III 35 %.

The crop estimate of 155,000 cwts. established under consideration of larger losses was in the final result exceeded by 30,000 cwts. Imports were about 8,000 cwts. only, mostly US-hops. Exports actually came to 99,180 cwts.

## Hungary

Climatic conditions from March until May 1966 favoured development of the hops. Beginning from June a period of abundant precipitations and sinking temperatures set in causing delay of the growth. Rainfalls were distributed as follows:

	March	April	May	June	July	August	September
Precipitations	38	65	120	150	130	100	30 mm

The plants arrived at the height of the trellises in the first half of June but remained in general pointed. First **Bloom** of early varieties began end of May and second **Bloom** towards end of June. These circumstances had a negative influence on the quantity as well as quality.

Sprayings were necessary up to 25 times against **Downy Mildew**, which was benefited by the moist climate. **Aphids** could be kept under control.

The **Picking** of early varieties lasted from July 30th, to August 20th, late varieties were picked from August 22nd, to September 10th. Weather conditions during the picking were generally rainy. In the beginning of September a dry period set in, favouring the harvest of the late varieties. Two Czechoslovakian picking machines were available and an acute lack of pickers was to be noted as far as hand picking was concerned.

**Quality.** Early varieties of hops were less uniform in colour and quality than last year. Contrary to this, the late varieties were more even in growth and of better shade. The crop was classified as follows: Grade I 42.4 %, Grade II 30.9 %, Grade III 26.7 %.

The whole crop was consumed by the Hungarian brewing industry which further required an additional quantity of 8,500 cwts. of imported hops.

In the **SANNTAL (Slovenia)**, hop plants had wintered well. Even a period of cold weather in January caused no damages by frost. Precipitations were distributed as follows:

**Jugoslavia**

	March	April	May	June	July	August	September
Precipitations	108.8	77.0	97.4	106.1	172.7	104.4	49.8 mm

Excellent climatic conditions until middle of June benefited the development of the hops. The plants reached the height of the trellises end of June and showed a normal overhang. At this time the early cut gardens were in full **Bloom**. The formation of the cones was specially favoured by a heat wave in June in addition to warm rainfalls. Spraying was effected up to six times in order to control pests and diseases. The cones on the lower third of the vines ripened very well.

**Picking** was started on August 15th, and was finished in the first days of September during fairly fine weather. Pickers were plentiful and about 20 picking machines were in action.

The **Quality** was superior in comparison with last year's crop. The cones were of regular growth, uniform green colour and possessed a high lupulin content. The bitter value was clearly higher than in previous years. Classification of the crop was as follows: Grade I 91.55 %, Grade II 7.15 %, Grade III 1.30 %.

Exportation amounted to 53,440 cwts., whereas 8,220 cwts were delivered to domestic breweries. According to reports on hand, the three largest hop producing countries U.S.A., Germany and England, have absorbed 60 % of the Jugoslavian crop, whereas supplies to Eastern countries have decreased considerably and are estimated at 21,000 cwts. for the harvest year 1966/67.

In the **BACKA** rainfalls and temperatures were as follows:

	March	April	May	June	July	Aug.	Sept.
Precipitations	27	57	37	85	98	42	15 mm
Temperatures	5.3	13.1	16.1	19.3	20.7	20.7	17.2° C

The hops wintered well and did not suffer from frost. Climatic conditions during the growth and the bloom were not very favourable. Lasting rainfalls and low temperatures from the end of July until beginning of August benefited the appearance of diseases and pests, so that on the average 11 sprayings were necessary. The following sunny warm and dry weather had a very favourable effect on the **Formation of Cones** and the quality of the hops.

**Picking** began on August 25th, and was concluded on September 7th. The harvest was considerably assisted by fine weather. Pickers were plentiful and 17 % of the crop were brought in by fourteen picking machines.

**Quality.** The hops of the crop 1966 were judged to be generally of good quality. The cones were uniform in growth, of even green colour with a rich lupulin content. The bitter value was 10 % higher than the year before. The crop was graded as follows: Grade I 76.61 %, Grade II 21.79 %, Grade III 1.60 %.

All hops were handled centrally. Clearance with the growers was effected on an average price for the whole crop. The home brewing industry required a quantity of 14,000 cwts. All export engagements were fulfilled. 10.4 % of the production acreage is cultivated by private farmers, the other 89.6 % by cooperatives.

Besides of some **Snowstorms** accompanied by icy winds in January 1966, the climatic conditions were normal. Precipitations and temperatures were as follows:

**Bulgaria**

	March	April	May	June	July	August	Sept.
Precipitations	48.9	46.4	54.5	127.9	59.8	56.6	39.5 mm
Temperatures	5.3	12.2	14.9	17.7	20.4	21.1	16.2° C

Growth developed well in April/May during rising temperatures. The plants showed a good stand and numerous laterals. Quite contrary to the weather in normal years lasting rainfalls set in during June/July which favoured the spreading of **Downy Mildew**. Six sprayings

were not sufficient to control this disease successfully and therefore losses in the crop were caused of the late variety "Striesselspalter" especially in the production district of Tran. About 790 acres suffered severely from **Hailstorms**.

The hops reached the height of the trellises on June 15th, and stood in full and very rich **Bloom** in the beginning of July. **Picking** began on July 26th, with pickers lacking locally and was finished on September 5th. The weather during the harvest was fine. All hops were picked by hand.

**Quality.** Compared to the crop 1965 an improvement in quality could be noticed. The formation of the cones was more regular, the shade yellowishgreen, but the weather had caused discolourations to a certain extent. The crop was judged as follows: Grade I 55 %, Grade II 32 %, Grade III 13 %.

6,540 cwts. were supplied to the home brewing industry and a further quantity of 5,700 cwts. was exported. The production acreage is shared amongst state farms (88 %) and cooperatives (12 %).

## Belgium

**ALOST.** The plants had wintered well. On account of extraordinary moist and cool climatic conditions the hops could only slowly develop until middle of May. In order to control **Downy Mildew** and **Aphids**, the gardens were sprayed regularly in intervals of ten days. Precipitations were distributed as follows:

March	April	May	June	July	August	September
63.9	56.4	46.7	122.1	103.2	84.7	26.5 mm

A heat wave lasting from end of May until beginning of June caused a standstill in the growth of the variety "Northern Brewer". At this time already **Burr** set in too early. On the other side the variety "Replant Hallertau" had endured the heat well. The hops reached the height of the trellises on July 5th, and the stand of the gardens was satisfying.

**Picking** started end of August for the Northern Brewer hops and on September 5th, for Replant Hallertau. All picking was done exclusively by machines.

The **Quality** of the Replant Hallertau hops was generally judged quite well whereas the variety Northern Brewer as a consequence of the abundant rainfalls in July and August had very unequal cones with leaves growing out of the center.

Prices for Replant Hallertau amounting to bfrs. 4,000.— in the beginning of September increased to bfrs. 4,500.— until middle of this month and reached bfrs. 5,000.— in the beginning of October. This price remained unchanged until middle of this month but fell until end of October to bfrs. 4,500.—. This quotation was reduced again to bfrs. 4,000.— towards middle of November. The variety "Northern Brewer" was quoted at bfrs. 5,000.— in the beginning of September, bfrs. 5,500.— towards middle of this month and arrived at bfrs. 6,000.— in October. Until November 15th, prices dropped again to bfrs. 4,500.—. In the district of Alost a few hundred cwts. were supposed to be still unsold in March 1967, especially with the cooperative.

**POPERINGE.** After a mild Winter 1965/66 **Spring Work** could be done in good time during February and March. Very moist weather in April favoured a vigorous growth of the hops until middle of May. Precipitations and temperatures were distributed as follows:

	March	April	May	June	July	Aug.	Sept.
Precipitations	48.0	81.1	50.5	85.9	121.6	114.6	19.6 mm
Temperatures	5.9	8.8	13.2	16.0	15.3	15.9	13.9° C

On May 22nd, hop yards of an acreage of 245 acres were destroyed by a violent **Hailstorm** and gardens on an area of 620 acres were more or less heavily damaged. Moist weather conditions in June and July favoured the growth of the hops. In those yards not injured by hail the vines reached the height of the trellises by the end of June. In spite of careful control substantial damages occurred by **Oidium** and **Downy Mildew**. **Bloom** began a little retarded in the last third of July.

The variety Northern Brewer had suffered most from hail. On account of this circumstance plants could not make up for the delay in growth and the vines remained pointed. Contrary to this, the development of the tough variety **Brewers Gold** was satisfactory. The stand of the gardens was not uniform during the whole period of growth.

**Picking** began on September 5th, and was concluded during fair weather on September 24th. The whole crop was picked by machines.



The **Quality** of the hops was about equal to crop 1965. The cones were developed normally, but showed discolourations. Prices for Brewers Gold and Replant Hallertau amounted to bfrs. 4,000.— in the beginning of September and increased to bfrs. 5,000.— until beginning of October. Slackening demand led to a reduction which brought prices down to bfrs. 4,500.— in the beginning of November. Quotations for the variety Northern Brewer amounted to bfrs. 5,000.— on September 1st, this price rising to bfrs. 5,500.— towards middle of this month and arriving at bfrs. 6,000.— in the beginning of October. During a slow market period in the first days of November prices decreased as far as bfrs. 5,250.—. In the beginning of March the stocks remaining unsold were about 800 cwts. at the farmers and about 1,000 cwts. at the cooperative.

Belgium imported the following quantities of hops, crop 1966 from September 1st, 1966 until December 31st, 1966:

Country	lbs.	Country	lbs.
Germany West . . . . .	239,860	b. f. . . . .	527,561
France . . . . .	80,909	Poland . . . . .	207,453
Great Britain . . . . .	34,392	Czechoslovakia . . . . .	894,847
Jugoslavia . . . . .	169,093	U. S. A. . . . .	220,019
Netherlands . . . . .	3,307	Bulgaria . . . . .	16,534
c. f. . . . .	527,561	Total . . . . .	1,866,414

Belgian hop imports crop 1965 until August 31st, 1966: 4,147,514 lbs.

Export of Belgian hops from September 1st, 1966, until December 31st, 1966 are shown as follows:

Country	lbs.	Country	lbs.
Australia . . . . .	661	b. f. . . . .	954,591
Denmark . . . . .	71,870	Netherlands . . . . .	1,543
Germany West . . . . .	808,427	Norway . . . . .	1,102
Ivory Coast . . . . .	1,102	Portugal . . . . .	2,645
Finland . . . . .	8,818	Sweden . . . . .	87,302
France . . . . .	5,291	Switzerland . . . . .	13,228
Great Britain . . . . .	56,217	Rep. of South Africa . . . . .	2,866
Ireland . . . . .	1,323	U. S. A. . . . .	12,125
Congo-Kinshasa . . . . .	882	Total . . . . .	1,075,402
c. f. . . . .	954,591		

Belgian hop exports crop 1965 until August 31st, 1966: 1,863,107 lbs.

Regarding the development of planting according to variety the following information are now on hand:

District: Alost	1964	1965	1966
Replant Hallertau	50 %	45 %	45 %
Northern Brewer	35 %	40 %	40 %
Other Provenances	15 %	15 %	15 %
District: Poperinge	1964	1965	1966
Replant Hallertau	32 %	30 %	25 %
Replant Saaz	2 %	1 %	1 %
Northern Brewer	31 %	35 %	40 %
Brewers Gold	32 %	33 %	33 %
Other Provenances	3 %	1 %	1 %

Precipitations in France (Alsace) were distributed as follows:

France

March	April	May	June	July	August	September
39.6	58.1	49.3	98.5	61.3	133.8	26.3 mm

In the **ALSACE** district the hops came well through a relatively mild Winter. The **Uncovering** and **Cutting** could be concluded on March 20th, during fair Spring weather. The growth benefited greatly from sunny and warm climatic conditions from middle of April until end of May. Although rainy weather set in in June and July, the good development of the hops went on and the vines arrived at the height of the trellises on June 25th. The gardens were in full **Bloom** by the end of July and showed an abundant overhang as well as a strong development of laterals.

Although 16 to 18 sprayings were necessary against **Downy Mildew**, local damages could not be quite avoided. **Aphids**, too, had to be carefully controlled. The formation of the cones and the **Ripening** of the hops was favoured by warm and sunny weather towards end of August and especially in September.

**Picking** started on September 5th, and was finished on September 24th, under dry climatic conditions. 90 % of the crop were handled by 200 picking machines.

**Quality.** In 1966 the Alsace hops yielded a very substantial crop of excellent quality. The regular shaped cones of yellowish-green colour had a high lupulin content with fine aroma. The whole crop was graded as follows: Grade I 90 %, Grade II 6 %, Grade III 4 %. The district was sold out by the end of October at prices between FF 380.— and FF 450.—.

**FLANDRES.** The hops had wintered well. **Spring Work** could be effected in good time during fine weather. Further in May the growth benefited from lasting warm weather. Hops on an acreage of about 225 acres were badly damaged on May 22nd, 1966, by a **Hailstorm**. At this time the vines had reached the height of two meters. As far as possible unharmed laterals were attached to the strings and plenty of manure was applied to the hills. Although a 40 % loss of the crop of Replant Hallertau and Northern Brewer hops was inevitable this work was well worth its while.

The gardens in districts not injured by hail showed a good stand. Against **Diseases** and **Pests** up to 18 sprayings had to be effected.

**Picking** started sporadically on August 31st, 1966. On September 5th, this work was in full swing and it could be finished end of September. 90 % of the crop were picked by machines.

The **Quality** of the hops was classified as follows: 10 % of Grade I, 75 % of Grade II, 15 % of Grade III. The relatively small cones had a pale green colour and showed discolourations.

70 % of the hop production are estimated to be under forward contracts.

In 1966 France imported:

Countries	Jan.-June lbs.	July—Dec. lbs.	Total lbs.
Belgium-Luxembourg . . . . .	93,034	5,070	98,104
Germany West . . . . .	542,552	361,334	903,886
Jugoslavia . . . . .	391,757	125,662	517,419
Czechoslovakia . . . . .	178,352	569,007	747,359
U. S. A. . . . .	102,293	24,030	126,323
Total . . . . .	<u>1,307,988</u>	<u>1,085,103</u>	<u>2,393,091</u>

French hop imports for the calendar year 1965 = 2,717,170 lbs.

Export of French hops in 1966 were as follows:

Destination	Jan.—June lbs.	July—Dec. lbs.	Total lbs.
Algeria . . . . .	27,778	7,275	35,052
Belgium-Luxembourg . . . . .	87,082	133,819	220,901
Denmark . . . . .	22,046	—	22,046
Germany West . . . . .	377,427	1,066,145	1,443,572
Great Britain . . . . .	—	1,102	1,102
Guinea . . . . .	22,046	—	22,046
Cameroons . . . . .	—	11,023	11,023
New Caledonia . . . . .	2,645	1,323	3,968
Netherlands . . . . .	—	4,189	4,189
Austria . . . . .	22,046	—	22,046
Sweden . . . . .	—	6,614	6,614
Switzerland . . . . .	28,660	5,291	33,951
U. S. A. . . . .	49,604	69,665	119,689
Other Countries . . . . .	6,614	2,205	8,819
Total . . . . .	<u>645,948</u>	<u>1,308,650</u>	<u>1,954,598</u>

French hop exports for the calendar year 1965 = 1,598,555 lbs.

**Austria**

In the **MUEHLVIERTEL** district **Spring Work** was interrupted again at the end of March, by snowfalls but could be concluded during relatively dry spring weather in the first half of April.

Mild weather in May favoured the growth further. About this time already, the first sprayings to control **Aphids** and **Downy Mildew** were necessary. Climatic conditions contin-

ued to be favourable for the hops until end of June. At this time the vines had already reached at the height of the trellises and overhang was to be noticed. Damage in the hop yards occurred by stormy winds in the beginning of July. A period of cool weather followed together with extraordinary abundant precipitations, which lasted until after the harvest. Eleven sprayings were required to control the permanent menace by **Downy Mildew**.

**Bloom** began at the end of July. Cones could ripen well also on the lower third of the vines. **Picking** started on August 27th, and was finished on September 12th. The harvest was hampered considerably by prevailing bad weather. Picking was exclusively done by hand.

Colour and **Quality** were judged better than in the year before, the formation of the cones was irregular, however. The classification of the crop was as follows: Grade I 95 %, Grade II 4.5 %, Grade III 0.5 %.

On a total acreage of 112 acres, a crop of 1,218 cwts. was harvested (10.8 cwts. per acre). The whole crop was delivered to the home brewing industry according to contracts.

In the district of **LEUTSCHACH** the plants could develop only slowly on account of substantial precipitations and local hailstorms. The cultivating of the wet gardens was most difficult. Against **Diseases** and **Pests** sprayings were effected from twelve to fourteen times. The vines arrived at the height of the trellises in the middle of June but showed only little overhang.

**Picking** started on August 20th, and was concluded on September 9th, during changeable weather. Nine picking machines were in action and brought in 63.5 % of the crop. For the picking of the remaining quantity sufficient labour was available.

The **Quality** was judged the same as last year and classified as follows: Grade I 76.4 %, Grade II 14.9 %, Grade III 7.5 %, off grade 1.2 %. The home brewing industry accepted the entire crop according to contracts. A crop of 1,900 cwts. was produced on an area of 175 acres which means a yield of 10.8 cwts. per acre.

Cool weather in April/May 1966 hampered the growth of the hops. In June climatic conditions were very dry. Until the harvest there were frequent thunderstorms accompanied by abundant rainfalls. Precipitations were distributed as follows:

Switzerland

March	April	May	June	July	August	September
39.9	71.3	68.7	66.5	151.5	161.1	41.4 mm

The vines reached the height of the trellises on June 23rd, and showed a good overhang. **Bloom** set in already towards end of June. The lower third of the vines, however, had no cones at all. **Picking** lasted from August 23rd, until September 12th, but had to be interrupted several times on account of lasting rainfalls. The whole crop was handled by three picking machines.

The hops were of satisfying **Quality**. With exception of the last picked hops, the cones were of good colour. Also the formation of the cones was quite uniform generally, so that the whole crop was classified as Grade I.

On the 32 acres a crop of 400 cwts. (12.5 cwts. per acre) was harvested. Breweries paid a standard price of Sfr. 700.— per 50 kilos. From this price an amount of Sfr. 85.— per cwt. was paid into the compensation fund.

The hop producing acreage in Spain has practically remained unchanged. About two thirds of the hops are grown in the district of León. According to information received, the **Golding** variety is replaced more and more by other varieties which are judged more favourably.

Spain

Growth progressed well under fair climatic conditions and development was benefited by rainfalls, especially during the months of April and May. No damages by **Pests** and **Diseases** occurred. In the respective districts the crop 1966 was as follows:

Galicia	237,325 lbs.
León	2,254,424 lbs.
Cantábrica	256,285 lbs.
Total	2,748,034 lbs.

Generally an improvement in quality is to be noted in the last years. The hops were classified as follows: Grade I 83 %, Grade II 16.5 %, Grade III 0.5 %.

The whole crop is taken over and distributed among the home brewing industry by **Fomento del Lúpulo S.A.** Hop production in Spain practically covers the requirements of the Spanish brewing industry and therefore only small quantities of aromatic hops are imported for the production of special beers.

The hops came well through the mild Winter 1965/66. Contrary to former years heavy Rainfalls set in during February thus raising as a consequence the underground water-level until Summer.

In the beginning of May the hops which had already been attached to the strings were struck by a serious attack of **Downy Mildew** in all growing districts. In replacement of affected vines healthy shoots had to be trained to the strings.

Fine Spring weather favoured the development of the plants and the following warm Summer with abundant sunshine promised a crop of excellent quality. By continuous use of modern spraying materials the yards could be kept free everywhere from **Diseases** and **Pests**. **Aphids**, however, were highly resistant to sprayings with systemic preparations. Protection of the plants was effective for 10 days only in comparison to 21 days in previous years. Shortly before picking started the districts in the Southeast of the country were struck by an extraordinary violent attack of **Verticillium Wilt**. Vigorous, healthy gardens turned brown within a few days, even before an emergency harvest could be effected.

**Picking** began on August 31st, and was concluded by end of September. During this time ideal climatic conditions prevailed, enabling vehicles to enter the dry hop yards without difficulties for transportation of the cut vines to the picking machines. About 95 % of the hops were picked mechanically, for picking by hand sufficient labour was available.

The **Quality** of the cones was judged well in respect of colour as well as lupulin content, and the brewing value of the hops was higher than last year. The crop was classified as follows: Grade I 19.5 %, Grade II 64.4 %, Grade III 16.1 %. The price paid to farmers was increased by sh 40/— per cwt. against 1965.

Two new wilt-tolerant hop varieties "**Progress**" and "**Alliance**" will be in commercial production on several farms in 1967. High expectations are entertained that these varieties will prove to be a "Fuggle" replacement in the future.

The quota of production for crop 1966 was assessed to 89 %. Since this crop exceeded this quota by 5—6 %, part of the hops remained unpicked.

On account of the still existing stocks caused by the over-average yield of the preceding crop the imports did not quite arrive at the licenced contingent of 12,200 cwts. Compared with last year, imports went down by 7 %, and hop exports decreased by 33 %.

The following quantities of hops crop 1966 were imported from September 1st, 1966 to March 31st, 1967:

Country	cwts.	Country	cwts.
Belgium . . . . .	1,386	b. f. . . . .	8,847
Canada . . . . .	866	New Zealand . . . . .	810
Denmark . . . . .	142	Poland . . . . .	391
Germany West . . . . .	720	Switzerland . . . . .	175
Germany East . . . . .	154	Czechoslovakia . . . . .	786
Ireland . . . . .	426	U. S. A. . . . .	971
Jugoslavia . . . . .	5,153	Total . . . . .	11,980
c. f. . . . .	8,847	1 cwt. = 50.8 kg	

English imports of hops crop 1965 until March 31st, 1966 = 11,203 cwts.

The following quantities of hops crop 1966 were exported from September 1st, 1966 to March 31st, 1967:

Exports of English Hops Crop 1966			
September 1st, 1966 — March 31st, 1967			
Country	cwts.	Country	cwts.
Angola . . . . .	2	b. f. . . . .	13,264
Belgium . . . . .	1,049	Malayan States . . . . .	316
Canada . . . . .	5	Malta . . . . .	231
Germany West . . . . .	18	New Zealand . . . . .	4
Finland . . . . .	17	Nigeria . . . . .	246
Iraq . . . . .	18	Pacific-Islands . . . . .	4
Ireland . . . . .	12,150	Republ. of South Africa . . . . .	268
Jamaica . . . . .	5	Other Countries . . . . .	12
c. f. . . . .	13,264	Total . . . . .	14,345
		1 cwt. = 50.8 kg	

English exports of hops crop 1965 until March 31st, 1966 = 21,340 cwts.

**CALIFORNIA.** In the district of **Sacramento** the hops showed no signs of damage by frost. Development was well during favourable climatic conditions. Precipitations were distributed as follows:

Jan.	Febr.	March	April	May	June	July	Aug.	Sept.
1.9	1.56	— .14	— .47	— .25	— .02	— .10	—	— .07 inch.

The weather in Summer was exceptionally hot. The vines reached the height of the trellises on June 6th, and had a good overhang. Cones on the lower third of the vines could not ripen.

**Picking** began on August 10th, and was finished on August 31st, during a period of very hot weather. 20 picking machines were available to bring in the crop.

**Quality.** The hops of the crop 1966 were in colour, formation of the cones and lupulin content equal to those of the year before. The crop was graded as follows: 5 % of Grade I, 85 % of Grade II and 10 % of Grade III.

Since 1963 hop production in California is decreasing steadily. Compared with 1965 the hop growing acreage was 20 % less. The crop 1966, however, arrived only at 70 % of the year before.

**WESTERN OREGON.** Despite of a few periods of **Frost** in the months of January and February the hops came well through the Winter. Only in lower locations sporadic slight damages by frost were to be noticed. Normal weather in April and May favoured the growth of the hops. Rainfalls were distributed as follows:

Jan.	Febr.	March	April	May	June	July	Aug.	Sept.
6.60	2.24	6.08	1.07	— .78	— .58	— .53	— .40	1.66 inch.

Appearing **Diseases** and **Pests** could be controlled successfully by two sprayings. The vines arrived at the height of the trellises on June 25th, and full **Bloom** occurred in the middle of July. The plants generally showed good overhang.

The **Picking** of the Fuggles started on August 15th, and was finished by the end of this month. The harvest of the Clusters and other varieties began end of August and was concluded towards September 20th. Fair weather prevailed during this time. Picking was done by 45 picking machines.

The **Quality** of the hops was judged better than the year before in respect to colour as well as to formation of the cones. Classification of the crop was as follows: Grade I 30 %, Grade II 65 %, Grade III 5 %.

**EASTERN OREGON and IDAHO.** During favourable Spring weather, the plants developed well until the middle of April. Cooler climatic conditions together with light rainfalls at the end of April and in May hampered the growth, especially of the early Cluster varieties. Precipitations were distributed as follows:

Jan.	Febr.	March	April	May	June	July	Aug.	Sept.
— .68	— .49	— .42	— .45	— .29	— .30	—	—	— .24 inch.

The hops reached the height of the trellises towards June 20th. The exceptionally warm weather in July and August proved to be unfavourable for the late Clusters. On the average, sprayings were effected three to four times against **Downy Mildew** and **Red Spider**. Whilst the early Clusters developed a good overhang and ripened very uniformly, the late Clusters remained pointed and matured rather irregular on account of the warm weather.

**Picking** started on August 20th, and was finished on September 22nd, during ideal weather. 23 picking machines were in operation.

**Quality.** The cones were of green colour but showed **Wind Whipping** occasionally. The crop's quality was judged as follows: Grade I 50 %, Grade II 40 %, Grade III 10 %.

**WASHINGTON.** In the **Yakima** district the hops came without damage through a relatively mild Winter. **Spring Work** was negatively influenced by violent winds. Climatic conditions during the whole period of growth, however, were excellent. Rainfalls were distributed as follows:

Jan.	Febr.	March	April	May	June	July	Aug.	Sept.
1.73	—,11	—,81	—	—,10	—,17	—,71	—	—,87 inch.

**Downy Mildew** and **Aphids** were controlled successfully by three sprayings. The hops reached the height of the trellises in the middle of June. The early Clusters were in **Bloom** on June 20th, whereas bloom of the later varieties began on July 1st. In most hop yards the vines remained pointed, but cones in the lower third of the vines could develop fine.

**Picking** started on August 20th, and was almost finished on September 20th. The whole crop was harvested by 130 picking machines.

**Quality.** The hops of the 1966 crop were of good colour, partly with slight discoloration only. On account of the rich lupulin content, the brewing value proved to be higher than in normal years. The crop could be classified as follows: Grade I 15 %, Grade II 50 %, Grade III 35 %.

**Pricing  
situation  
U. S. A.**

The still existing unsold stocks of **Crop 1965** were estimated to 5,500 cwts. in May 1966. All sales of hops could be concluded at that time at 35 cents per lb. Also in contract business no remarkable activities were to be noticed. The demand for contracts revived immediately after publication of the Hop Market Agreement. Interest concentrated in first line on the crops 1967 and 1968 at prices of 43 cents and 45 cents per lb. plus premiums. With regard to the approaching crop 1966 demand for still available hops of crop 1965 further remained slow.

Immediately after the crop a lively demand set in for free available hops of the **1966 Crop**. News from Germany about a shortcoming hop crop and the total sellout of the Jugoslavian crop contributed to the reluctant attitude of the producers who were waiting for better prices. For the farmers the situation was difficult since it was not exactly known which quantities of hops were still free for sale, or had to be transferred to the Reserve Pool according to the Market Agreement. Only in Oregon the available hops were sold out completely shortly after the harvest. For the English varieties 43 cents plus premiums were paid, whereas the seeded Fuggles were quoted at 60 cents per lb. In Washington and Idaho prices of 43 cents could be obtained for free available hops, but the market arrived at a stable price level of 45 cents per lb. on September 22nd. On account of the reduced crop in California, a number of farmers could not harvest their annual allotment. In order to fulfil their contracts, hops were bought in other districts where production exceeded the quota. Prices for such hops fluctuated between 20 and 25 cents. Principal sources for these additional purchases were Washington and Idaho.

As dealers started re-purchasing hops from overstocked breweries at a price of 45 cents per lb., no further purchases on farms were effected in October. In November, too, there was no activity on the market. At this time the unsold quantities on farms were estimated at 17,000 bales = approx. 30,000 cwts. During the further course of the season quotations for hops crop 1966 decreased to 35 cents in February and beginning of March 1967. In April prices dropped to the lowest level of 25 cents without premium. On this base about 10,000 cwts. were sold.

**Marketing  
Agreement  
U. S. A.**

On July 7th, 1966, 76 % of the producers in Washington, Oregon, Idaho and California, who represent 63 % of the hop growing acreage, voted for the Marketing Agreement, which was set in force on July 22nd, 1966. The aim of this Marketing Agreement is to achieve stability of the US-hop market.

In this regard the Marketing Agreement provides the following:

- 1) The allotment of production quotas, and
- 2) Creation of a Reserve Pool and disposal of surplus hops.

The statistical figures of home consumption and export rendered by the U.S. Department of Agriculture will serve the Administrative Committee in the assessment of a total quota for the respective crop year. The basic allotment for each farmer can be established either

by his average crops in the years 1962—1965, this average being 100 % of his basic allotment,

or

he may choose from these years' crops the most favourable one for himself. In this case his basic allotment will be 95 % of the respective crop year.

Out of the crops 1966 and 1967 farmers may sell 93% of their basic allotments. From 1968 on, the quota can be reduced up to 15% by the Administrative Committee. In agreement with the U. S. Department of Agriculture this reduction of the quota will be fixed each year on March 1st for the new crop. Only upward amendments within this limit of 15% are possible until August 1st.

For those farmers, whose hops are under contract from 1966—1970, special regulations have been agreed upon. All contracts placed before January 1966 may be fulfilled up to the basic allotment.

According to further agreements, farmers who keep their whole acreage in production but nevertheless do not reach their basic quota, are entitled to cover the deficit from other producers who have harvested in excess of their allotment. This regulation has, however, been cancelled again in the meantime.

All hops being produced by the farmers in surplus to the basic allotments have to be reported to the Administration Committee until November 1st, or the latest November 15th, after the harvest. Producers now have the possibility to offer such hops to the specially created "Reserve Pool", or to stock the hops on their farms. If these hops are released for sale at a later time, or if they are to be destroyed, will be decided by the Administrative Committee together with the Ministry of Agriculture.

Hop Imports U.S.A. Crop 1966		
September 1st, 1966 — January 31st, 1967		
Country	lbs.	cwts. p. 50 kg
Belgium-Luxembourg . . . . .	73,826	670
Canada . . . . .	134,306	1,218
Germany West . . . . .	4,877,597	44,249
France . . . . .	369,623	3,353
Jugoslavia . . . . .	2,137,713	19,393
Other Countries . . . . .	575,302	5,219
Total . . . . .	8,168,367	74,102

Hop Imports  
U. S. A.

Import of hops crop 1965 amounted to 50,087 cwts. until January 31st, 1966.

Exports of US-Hops Crop 1966					
September 1st, 1966 — January 31st, 1967					
Country	lbs.	cwts. per 50 kg	Country	lbs.	cwts. per 50 kg
Ethiopia . . . . .	23,000	208	b. f. . . . .	11,857,512	105,752
Argentina . . . . .	295,301	2,679	Rep. Congo . . . . .	33,959	308
Belgium-Luxembourg . . . . .	858,045	7,784	Malaysia . . . . .	123,476	1,120
Bolivia . . . . .	89,476	811	Mexico . . . . .	2,370,787	21,507
Brazil . . . . .	1,351,649	12,262	Mozambique . . . . .	27,043	245
British Gulana . . . . .	16,433	149	Nicaragua . . . . .	15,432	140
Canada . . . . .	2,037,911	18,488	Netherlands . . . . .	524,919	4,762
Chile . . . . .	445,048	4,037	Nigeria . . . . .	92,400	838
Colombia . . . . .	753,339	6,834	Norway . . . . .	24,204	220
Costa Rica . . . . .	35,229	320	Austria . . . . .	96,809	878
Denmark . . . . .	416,165	3,775	Paraguay . . . . .	22,046	200
Germany West . . . . .	4,036,077	36,615	Peru . . . . .	603,987	5,479
Dominican Republic . . . . .	30,069	273	Philippine Isl. . . . .	294,997	2,676
Ecuador . . . . .	35,228	319	Portugal . . . . .	65,600	595
Finland . . . . .	12,664	115	El Salvador . . . . .	39,792	361
France . . . . .	78,350	711	Singapore . . . . .	12,850	116
Greece . . . . .	18,933	171	Rep. of South Africa . . . . .	158,563	1,438
Great Britain . . . . .	80,153	727	South-Korea . . . . .	11,023	100
Guatemala . . . . .	14,950	135	Sweden . . . . .	55,801	506
Hongkong . . . . .	38,095	346	Switzerland . . . . .	116,974	1,061
Honduras . . . . .	47,618	432	Taiwan . . . . .	79,392	720
Ireland . . . . .	590,808	5,360	Trinidad . . . . .	45,567	413
Israel . . . . .	44,168	400	Czechoslovakia . . . . .	861,774	2,999
Italy . . . . .	61,922	562	Vietnam . . . . .	64,080	581
Jamaica . . . . .	90,633	822	Venezuela . . . . .	566,806	5,143
Japan . . . . .	156,247	1,417	Other countries . . . . .	35,906	326
c. f. . . . .	11,657,512	105,752	Total . . . . .	18,021,699	163,483
			110.23 lbs. = 1 cwt. p. 50 kg		

Hop Exports  
U. S. A.

The American export of hops crop 1965 came to 119,720 cwts. until January 31st, 1966.

## Canada

While hops in the inland districts suffered from cold weather, growth in the coastal districts benefited from friendly climatic conditions. Damages by frost could not be noticed. **Pests** and **Diseases** were carefully controlled. Precipitations were distributed as follows:

	March	April	May	June	July	Aug.	Sept.
Coast (Chilliwack, Sardis and Sumas)	8.81	5.52	5.22	2.28	2.82	1.35	3.53 inch.
Interior (Kamloops)	0.06	0.40	0.89	0.99	2.72	0.71	0.44 inch.

Conversion: 10 inches of snow = 1 Inch of rain

In the **INLAND DISTRICT** (Kamloops) temperatures during the period of growth were under the normal average until middle of August. The plants reached the height of the trellises on June 5th, and were in full **Bloom** in the beginning of August. The hops showed a good overhang, but the cones on the lower third of the vines did not ripen.

**Picking** started on September 5th, and was finished on September 26th, 1966, during fine weather. The whole crop was handled by one picking machine. The hops did not arrive at last year's quality.

In the **COASTAL DISTRICTS** the favourable conditions of growth in Spring and Summer pointed to a good crop and this expectation was not disappointed. The hops reached the height of the trellises on June 20th and stood in full **Bloom** on July 20th. The cones on the lower part of the vines ripened well.

**Picking** began on August 26th, during rainy weather and was done by eight picking machines.

**Quality.** The hops of the 1966 crop were judged very well regarding colour and lupulin content. The whole crop was accepted by breweries.

The crop of 16,175 cwts., grown on a total acreage of 1,035 acres represents a record yield for the year 1966. In the last five years the crop's average was about 12,200 cwts.

## Japan

In the **NAGANO** district temperatures in March and April were higher than usual and **Spring Work** could be done in good time. On account of the plentiful precipitations in the months of May including July the hops could develop better than in previous years. Rainfalls and temperatures were registered as follows:

	March	April	May	June	July	Aug.	Sept.
Precipitations	108	35	96	148	109	48	204 mm
Temperatures	4.3	10.3	14.5	18.9	22.8	25.3	20.2 °C

**Downy Mildew** and **Red Spider** could be controlled by regular sprayings and therefore no damages occurred. The hops reached the height of the trellises about June 15th, and were in full **Bloom** at the beginning of July. The plants showed a good overhang and cones also ripened on the lower third of the vines on account of favourable climatic conditions.

**Picking** started in the beginning of August and was concluded at the end of this month. 80 % of the crop were picked by machines.

The **Quality** generally was judged well. The uniform cones were of good colour with ample lupulin content.

In the district of **HOKKAIDO** conditions for growth were not so favourable as in Nagano. Especially the low temperatures retarded the development of the hops. Precipitations and temperatures were as follows:

	March	April	May	June	July	Aug.	Sept.
Precipitations	75	53	31	102	75	275	110 mm
Temperatures	- 1.6	3.4	11.3	15.4	18.6	22.1	14.4 °C



Sprayings against **Downy Mildew** and **Red Spider** were effected up to 15 times. The hops reached the height of the trellises end of June and **Bloom** set in by the middle of July. The **Formation** of the cones and the **Ripening** of the hops was hampered in August by low temperatures and lack of sunshine.

The appearance of a disease similar to Verticillium Wilt observed for the first time in 1962, has already become an increasing menace in the hop district of Hokkaido.

**Picking** began on August 15th, and was finished on September 15th. There were temporarily not enough pickers available. The **Quality** was about the same as last year. The cones were smaller and had a low lupulin content.

Japanese hops of the crop 1966 were classified as follows: Grade I 87.1 %, Grade II 6.7 % Grade III 6.2 %.

On a total acreage of 4,654 acres, of which 295 acres were young hop yards, a crop of 6,864,897 lbs. (1,475 lbs. per acre) was harvested.

In Japan all farmers have their hop production under contract with the breweries. After the harvest the total crop is taken over by sponsoring breweries and for this reason no trade takes place and no free stocks remain at the producers.

## CROP 1967

From the Southern Hemisphere where the hop crop is harvested in March each year, the following information have come to hand:

The hops came well through the mild Winter 1966/67. From October until the end of January the worst drought experienced in the last 60 years, caused the smallest crop ever raised in South Africa. Just after picking had started, finally cooler weather with long awaited rainfalls arrived in February and March. Precipitations were distributed as follows:

**Rep. of  
South Africa**

1966					1967		
Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
3.30	2.58	0.53	0.61	1.15	0.95	3.56	5.01 inch.

The hops could not reach the height of the trellises. **Bloom** set in towards middle of January and the cones on the lower third of the vines ripened well. To control **Diseases** and **Pests** only one spraying was effected.

**Picking** started on February 6th and was finished on March 11th on all farms. 20 % of the crop were picked by one machine. There were enough pickers available to bring in the small crop.

The **Quality** was judged well. The lupulin content of the hops was somewhat higher than last year. The cones were of good colour. The crop was classified as follows: Grade I 62 %, Grade II 33 %, Grade III 5 %. On an acreage of 259 acres including 42 acres of young gardens, a crop of 103,604 lbs. was harvested. This corresponds to an average of only 9 cwts. per acre. The price paid to farmers amounted to 55 cents per lb. (DM 241.— per cwt.).

According to information received until now the crop was estimated at 2,800 cwts. in the middle of April 1967. This quantity is distributed to the different districts as follows:

**Argentina**

<b>PROVINCE OF BUENOS AIRES</b> . . .	80 cwts.
<b>RIO NEGRO</b> . . . . .	1,720 cwts.
<b>NEUQUEN</b> . . . . .	1,000 cwts.

The crop was, however, unfavourably influenced by a strong attack of **Downy Mildew** and under these circumstances the final result of the crop will probably come to about 2,300 cwts. only.

The home brewing industry imported 2,567 cwts. of hops during the year 1966, this quantity being about two thirds of the annual requirements. In the year 1965 imports came to 3,556 cwts. which were to 90 % U. S. hops. Import prices for U. S. hops were about DM 328.— per cwt. whereas DM 504.— per cwt. had to be paid for German hops. These prices refer to delivery C & F Buenos Aires.

The Australian crop 1967, which was brought in while writing down this report, amounts to about 30,845 cwts. and remains therefore by 17 % below the 1966 figures. The reason for this short crop is mainly due to the fact that a rather large acreage in **TASMANIA** has been lately replanted with the wilt-resistant "Ringwood" variety.

**Australia**

Of course, these young gardens yielded no crop in this first year. A **Bush Fire** in February 1967 also added to the decrease of the crop. The resulting loss in already kilned hops was estimated to about 10 %.

At the beginning of the season the necessities of hops had been amply covered by the home brewing industry due to the large crop of the preceding year and the high imports during the season 1965/66. Nevertheless it appears that Australian breweries will have to import still important quantities for the coming brewing year.

## New Zealand

Growth started early in November and the plants putting forth new shoots progressed normally. In December 1966 growth was hampered by rainfalls and lack of sunshine.

Precipitations during the season 1966/67 were distributed as follows:

1966					1967		
Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
1.71	4.68	1.98	7.01	6.49	2.80	0.72	4.70 inch.

The plants reached the height of the trellises in the first week of January 1967 and stood in **Full Bloom** in the middle of this month. The vines developed good overhang and the cones ripened also on the lower part of the plants.

**Picking** started in the beginning of March and was finished on March 25th. Only once the harvest was interrupted by rain for a very short time. 90 % of the hops were picked by machines. For the rest sufficient labour was available.

**Quality.** The hops of crop 1967 showed a good colour. The formation of the cones was irregular. The lupulin met the average. The crop was classified as follows: 3.8 % Grade I, 35.4 % Grade II, 50.3 % Grade III, 10.5 % Grade IV. On an acreage of 665 acres a crop of 9,525 cwts. was harvested (14.3 cwts. per acre). There were no newly planted yards.

The price paid to farmers was between sh 4/8 and sh 5/10 per lb. (DM 226.— to DM 359.— per 50 kilos). For hops of Grade I and the variety "Smoothcone" a premium of 3 d per lb. (DM 15.60 per 50 kilos net) was paid.

## Growth 1967 in Germany

The mild winter 1966/67 brought very few precipitations in January and February. Cold weather with excessive rainfalls prevailed so that working the hop yards became exceedingly difficult and was retarded.

**HALLERTAU. Spring Work** was hampered by adverse climatic conditions. On account of the wet and cold weather in the first days of April the new shoots had a slow start. During warm and dry weather from April 10th to 17th, the **Uncovering** and **Cutting** could be concluded. Dropping temperatures from April 18th, together with some nightfrosts retarded the vegetation considerably. The cold and moist weather in the last days of April nearly caused a standstill in growth. During rising temperatures in the beginning of May the hops again began to develop vigorously. Against intense attacks of **Downy Mildew** already seven sprayings have been effected. **Diseases** and **Pests** were hardly to be noticed. In the average the vines have arrived at half the height of the trellises. Despite of the cold and rainy conditions in the beginning of June the stand of the plants can be considered well, is however, compared with last year about 14 days late.

**TETTANG.** In this district, too, **Spring Work** started slowly on account of the wet and cold weather end of March and in the beginning of April. Also in the second half of April, cool temperatures prevailed mostly combined with rain and snow. The growth of the plants benefited during the first half of May from sunny and dry climatic conditions. Generally the hop yards were carefully tended. Up to four sprayings were effected in order to control **Downy Mildew**. Cold weather in the end of May and the beginning of June influenced the growth of the plants unfavourably. At this time the vines had reached a height of 3 to 3.50 meters. The whole development, however, was about two weeks delayed in comparison with last year.

**SPALT.** The plants came through the mild Winter without remarkable damages. The **Uncovering** and **Cutting** of the hops could be started after constant rainfalls in the beginning of April only. Favoured by dry weather which continued until April 20th, **Spring Work** generally could be finished until end of April. The growth of the young vines was hampered from the second half of April until beginning of May by changing climatic conditions. Plants had the best period of growth about middle of May. The development was again retarded end of May and in the beginning of June by rainshowers and very low night temperatures down to 0° C. Preventive sprayings against **Downy Mildew** were effected up to three times. Also **Aphids** and **Red Spider** had to be controlled already.

The stand of the yards was not uniform and the height of the plants ranged from 1.50 meters to 2.50 meters, sometimes also up to 3.50 meters. General development is about a fortnight later in comparison with last year.

**HERSBRUCK GEBIRGE.** While the early varieties wintered well, the late varieties had suffered considerably from the mild winter. Many roots had turned black and had to be replaced. After changeable weather **Spring Work** began end of March and was generally finished until April 22nd. The growth of the plants was delayed in the second half of April on account of a cold spell. First preventive sprayings against **Downy Mildew** were effected. Dry weather in the beginning of May and partly summerlike temperatures in the middle of this month favoured the growth of the hops. Towards end of the month precipitations increased, which were very welcome on account of the preceding dryness. Low temperatures in the beginning of June hampered further development. The height of the plants ranged from 1.50 to 3 meters, depending how early they had been uncovered.

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For further development of the hops, warm Summer weather would now be necessary in order to enable the plants to overcome the present retardation in growth.

**JOH. BARTH & SOHN**

The compilation of this report has been made possible in many instances by data supplied from observers in many countries, which is hereby gratefully acknowledged.

# JOH. BARTH & SOHN

## Suppliers of Hops and Hop Products

The world-wide export experience of our firm as well as close relations to our brewery friends at home and abroad enable us to realize market tendencies and the requirements of consumers well in advance.

The use of **FRESH HOPS IN CONES** is still prevailing within the brewing industry. All provenances and varieties of hops can be offered and supplied by us according to request. Realizing the growing interest in **Hops with High Bitter Value** we have promoted the production of the variety **Hallertau-Nordbrauer** in Germany.

From the beginning of the 1967 season we shall be also in a position to supply **Hops treated by the patented Weiner Method**. During this special process the oxygen is eliminated by vacuum and replaced by an inert gas (nitrogen), thus effecting an excellent conservation of the bitter substances and refining the aroma.

In the course of the last five years **HOP EXTRACTS** have found a fast expanding market. Our products are manufactured under the brands

**HOPCON - Standard**

**HOPCON - Super**

**HOPCON - Extra**

in the most modern equipped extraction plants of HOPCON-Joh. Barth & Sohn G.m.b.H., at Wolnzach/Hallertau, and HOPCON INC., at Wapato, Wash. (U.S.A.).

As a further new product **HOP POWDERS** have been introduced. Beginning from crop 1967 the concentrated hop powder

**HOPAROM,**

**Vacuum treated** by the Weiner process, will be supplied also by our firm. This hop powder possesses the whole lupulin and aroma content of fresh hops. It is therefore specially suitable for the last hopping rate with fine aromatic hops.