Joh. Barth & Sohn

HOPS SINCE 1794

HOP FARM BARTHHOF HALLERTAU

TELETYPE 06/22030
CABLE ADDRESS:
BARTHSOHN NUERNBERG

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August 5th, 1965

Hop Report 1964/65

Economical Situation

During the preceeding year, changes took place within the Government of the USSR and England. The American President L. B. Johnson was elected for a further period of four years. On the economical side there was a notable good cooperation of the international exchange authorities in the interest of the pound sterling. In England, the discount was increased up to 7 %, and measures were taken in order to equalize the balance of foreign trade. The U. S. A. intend to free additional reserves of gold in the interest of international payments.

In the Federal Republic of Germany, the discount of 3 % valid since May 5th, 1961, was increased to 3.5 % on January 22nd, 1965. Western Germany could maintain the favourable balance of Foreign Trade in 1964 with an active balance of D-Mark 6 billions as the year before. After deducting the deficit of the balance for payments including contributions (assistance to countries of development etc.) a deficit of D-Mark 1.8 billion resulted (1963: favourable balance D-Mark 1.05 billion).

Production of Beer

World production of beer in 1964 showed an **Increase** of about 33.6 million bbl. against 1963. The percentage rates of the increase are as follows: Western Europe +7.1 %, Eastern Europe +16 %, North America +5.20 %, South America + 7.2 %, Africa + 5.6 %, Asia +20.2 %, Australia and Oceania +4,9 %.

1 ha = 2.934 bayr. Tagwerk
1 ha = 2.471 acres

1 bayr. Tagwerk = 0.341 ha
1 acre = 0.405 ha

1 Liter = 0.2642 gall. (USA) / 0.2201 gall. (Brit.)

1 gall. (USA) = 3.7853 Liter
1 gall. (Brit.) = 4.5435 Liter

1 hl = 100 Liter = 26.42 gall. = 0.8523 bbl. (USA.) / 22.01 gall. = 0.6114 bbl. (Brit.)

1 bbl. (USA.) = 31 gall. = 1.1734 hl
1 bbl. (Brit.) = 36 gall. = 1.6356 hl

1 kg = 2.20462 lbs.
1 lb. = 0.45359 kg
1 shortton (sht) = 2000 lbs. = 907.185 kg
1 longton (lgt) = 2240 lbs. = 1.016.048 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.) / 0.984 cwt. (Brit.)

1 cwt. (USA.) = 100 lbs. = 45.36 kg = 0.9072 Ztr.
1 cwt. (Brit.) = 112 lbs. = 50.8 kg = 1.016 Ztr.

1 quarter (qr) = 400 lbs. = 181.44 kg (barley)
1 bushel (bu) = 48 lbs. = 21.77 kg (barley, malt) / 56 lbs. = 25.4 kg (corn, milocorn)

1 Ztr. = 0.27555 qr.
1 Ztr. = 2.2965 bu.
1 Ztr. = 1.9685 bu.

DM 1.— = US$ —.25 / DM 4.— = US$ 1.— / US$ 2.80 = DM 11.20 = £ 1.—.—

1 mm precipitations = 1 Ltr. of water per m², 1 mm = 0.04 inch, 1 inch (100 points) = 25 mm

Conversion of thermometer degrees in Fahrenheit and Celcius:

$$86^0\,F = \frac{(86 - 32)\,5}{9} = 30^0\,C \qquad 30^0\,C = \frac{30 \cdot 9}{5} + 32 = 86^0\,F$$

Production of Beer 1964

Country	1000 bbl. of 31 gall. each		Country	1000 bbl. of 31 gall. each	
Germany W. 61,627			b. f.	2,855	393,677
East*) 11,335	72,962		Nigeria	457	
England	39,969		Cameroons*)	341	
USSR*)	32,563		Kenya	283	
France	16,654		Angola	272	
Czechoslovakia	15,193		Marocco	256	
Belgium	12,357		Ruanda-Burundi	242	
Poland	6,461		South Rhodesia	237	
Spain	5,748		Algiers	187	
Austria	5,727		Ivory Coast*)	170	
Netherlands	4,230		Zambia*)	170	
Denmark*)	4,133		Egypt*)	145	
Switzerland	3,861		Tunis*)	145	
Hungary	3,658		Ethiopia*)	128	
Italy	3,569		Moçambique*)	102	
Ireland	2,956		Senegal*)	102	
Jugoslavia	2,275		Ghana	85	
Sweden	2,202		Uganda	78	
Roumania*)	1,662		Sudan*)	77	
Bulgaria*)	980		Centralafric. Rep.*)	72	
Finland	954		Tansania	54	
Norway	787		South West Africa*)	51	
Luxembourg	442		Dahomay	34	
Portugal*)	401		Rep. Congo (Brazzav.)	29	
Greece	345		Madagascar*)	21	
Malta*)	34		Guinea	9	
Iceland	17		**Africa**		6,602
Europe		240,140	Japan	17,125	
U.S.A.	105,900		Philippine Islands*)	1,108	
Canada	15,176		Vietnam	810	
Brazil	8,096		China*)	597	
Mexico*)	7,926		Malaysia	354	
Columbia*)	6,392		Turkey*)	256	
Venezuela	2,045		Singapore	236	
Argentine	1,383		South-Korea	202	
Peru	1,333		Israel*)	170	
Chile	914		Indonesia	157	
Cuba	883		Hongkong*)	145	
Puerto Rico*)	758		India	125	
Uruguay	532		Thailand*)	77	
Ecuador*)	384		Formosa*)	68	
Dominican Republic	259		Iran*)	68	
Panama	288		Ceylon	61	
Bolivia	210		Lebanon	51	
Guatemala	210		Cyprus	43	
El Salvador*)	187		Iraq*)	43	
Jamaica	185		Syria*)	21	
Honduras	149		Pakistan	13	
Costa Rica*)	94		**Asia**		21,730
Nicaragua*)	82		Australia	10,453	
Trinidad a. Tobago	72		New Zealand	2,309	
Paraguay	62		Tahiti*)	13	
Martinique	17		New Caledonia*)	4	
America		153,537	Australia/Oceania		12,779
Congo (Leopoldv.)	1,704		Total		434,788
Un. of South Africa	1,151				
c. f.	2,855	393,677	*) = estimate		

Beer Output in Western Germany

Output of beer in Western Germany during the year 1964 amounted to . 59,732,344 bbl.
Production of beer in the Western sector of Berlin for the same period was . 1,894,277 bbl.
Total **1,626,621 bbl.**

These figures include 891,776 bbl. for exports delivered tax-free (1963 = 827,674 bbl.) as well as sales against foreign currency and to the occupation forces totalling 312,896 bbl. (1963 = 313,711 bbl).

Imports of Beer 1964

The imports of beer to Western Germany amounted to 351,823 bbl. in 1964.

Crop 1963 (Supplement)

Complete figures of imports and exports of hops crop 1963 during the period of September 1st, 1963, to August 31st, 1964, can now be stated as follows:

	Import	Export
Germany	6,279,142 lbs.	11,959,735 lbs.
Belgium	4,012,813 lbs.	2,192,254 lbs.
England	1,186,405 lbs.	2,280,989 lbs.
U. S. A.	5,638,154 lbs.	21,218,283 lbs.

The world crop 1963 which was about 200,000 cwts. greater than the year before, went entirely into consumption so that at the start of crop 1964 there were no final lots of the old crop 1963 available.

Crop 1964

Growth of the Hops Crop 1964 in Germany

There were only scant precipitations during the winter 1963/64. **Frost** prevailed until the end of February/beginning of March 1964 and **Spring Work** was retarded until April by cool and wet weather conditions. Warm and sunshiny weather until the end of June resulted in an especially good development of the hops and occasional rainfalls refreshed the hop yards. The deeply rooted hop plants were able to obtain the necessary moisture, so that the general scarcity of precipitations did not influence the hops and there were expectations for a very good crop.

Extremely hot weather and corresponding dryness since mid-June, however, could not fail to influence the hop yards especially on lighter soils and on high locations. The hop plants remained pointed but developed numerous laterals as the vines had more joints than usual and the plants generally had less foliage than on the average. Local rainfalls eliminated the danger of **Premature Blooming.** Expectations regarding an especially good quality of the hops were not realized. The quantitative results of the harvest corresponded generally to the official estimate.

The hop yards were very carefully tended everywhere. **Verticillium Wilt** was restricted as a consequence of dryness and high soil temperatures during the month of June. **Downy Mildew** was less notable but locally it was necessary to control very carefully **Aphids** and especially **Red Spider.**

Weather data from the Experimental Hop Farm Hüll/Hallertau

1964	March	April	May	June	July	August	Sept.
Precipitations per month (mm)	63	55	114	78	45	61	39
Monthly average of air temperature °Celsius	0.6	8.7	13.1	16.7	17.9	15.4	13.1
Maxima of air temperature °Celsius	13.8	23.8	27.6	29.9	33.4	32.3	29.8
Minima of air temperature °Celsius	—16.8	—1.6	0.5	4.6	2.0	3.2	—3.3
Monthly average of relative humidity %	85	78	76	75	71	79	78
Other data:	days	days	days	days	days	days	days
Snowfall	6	1	—	—	—	—	—
Rain and snow	2	1	—	—	—	—	—
Snowcover	9	1	—	—	—	—	—
Thunderstorm	—	1	1	4	5	2	—
Fog	1	3	—	—	—	2	2
Hoarfrost	10	3	2	—	1	—	3
Dew	1	12	17	21	21	18	14

HALLERTAU. After the mild winter, welcome dry and warm weather did not arrive in March 1964. It remained cool and humid at the beginning of April, too, so that **Spring Work** was hampered. The **Uncovering** and **Cutting** was finished generally during the third week of April. Hop yards which had been cut in the autumn of 1963 were off to a better start than other gardens. The young shoots suffered locally from a somewhat stronger infestation of **Weevils** and preventive sprayings against **Downy Mildew** became necessary at that early time.

In May, the hop plants developed well under warm weather and welcome rainfalls. The growth of the plants was very luxuriant and the weather remained favourable until the beginning of June. About mid-June some gardens already had reached the height of the trellises and the plants showed numerous **Laterals.** The development was about two weeks earlier than normal. **Downy Mildew** as well as **Aphids** had to be carefully controlled whereas **Red Spider** appeared only occasionally.

Acreage, Yield and Production 1963 and 1964

	Acreage 1963 Acres	Yield Pounds per acre	Production 1963 Pounds	Acreage 1964 Acres	Yield Pounds per acre	Production 1964 Pounds
Hallertau	16,167	1,805	29,183,282	17,171	1,855	31,853,384
Spalt	2,340	1,714	4,010,057	2,444	1,081	2,642,434
Hersbruck	1,272	1,439	1,829,928	1,295	1,202	1,556,117
Jura	477	1,771	844,913	514	1,414	726,967
Bavaria	20,256	1,771	35,868,180	21,424	1,717	36,778,902
Tettnang	1,831	1,807	3,309,215	1,920	1,619	3,108,486
R.H.W.	250	1,459	364,641	205	1,549	317,462
Baden	59	1,526	90,058	59	1,319	77,822
Rheinpfalz	54	1,564	84,436	47	1,574	73,964
Germany West	**22,450**	**1,769**	**39,716,530**	**23,655**	**1,706**	**40,356,636**
Germany East	**5,164**	**1,136**	**5,851,008**	**5,251**	**1,104**	**5,795,893**
Saaz (Zatec)				16,679	654	10,905,054
Auscha (Ustek)				3,830	762	2,919,993
Other Districts				988	1,378	1,361,341
Czechoslovakia	**21,053**	**943**	**19,859,037**	**21,497**	**706**	**15,186,388**
Alsace	2,595	1,614	4,188,740	2,595	1,697	4,403,689
Dep. Côte d'Or	234	1,272	297,621	235	657	154,322
Northern France	420	1,391	584,219	494	1,506	744,053
Lorraine	30	1,102	33,069	30	735	22,046
France	**3,279**	**1,591**	**5,103,649**	**3,354**	**1,587**	**5,324,110**
Alost	790	1,465	1,157,415	877	1,571	1,377,875
Poperinghe	1,458	1,436	2,094,370	1,544	1,472	2,273,494
Vodelée	49	1,350	66,138	49	1,350	66,138
Belgium	**2,297**	**1,444**	**3,317,923**	**2,470**	**1,505**	**3,717,507**
Slovenia	5,661	1,111	6,290,495	5,995	1,269	7,608,295
Backa	3,879	1,194	4,629,660	3,781	1,370	5,180,810
Jugoslavia	**9,540**	**1,145**	**10,920,155**	**9,776**	**1,308**	**12,789,105**
Austria	250	**1,354**	361,334	296	1,246	**368,719**
Galicia	583	904	527,230	531	798	423,724
León	1,856	964	1,789,364	1,927	1,158	2,230,945
Cantabria	408	637	259,812	467	584	272,819
Spain	**2,847**	**905**	**2,576,406**	**2,925**	**1,001**	**2,927,488**
Switzerland	27	1,347	36,376	30	1,033	30,975
Roumania	1,977	401	793,656	1,977	613	1,212,530
Bulgaria	2,619	387	1,014,116	3,212	429	1,377,875
Hungary	1,730	495	856,156	1,730	637	1,102,300
Poland	6,237	914	5,700,434	6,368	1,056	6,724,030
USSR	29,652	446	13,227,600*)	29,652	520	15,432,200
Continent	**109,122**	**1,002**	**109,334,380**	**112,193**	**1,001**	**112,345,756**
Kent	11,559	1,462	16,899,251	11,527	1,308	15,071,858
Hants	645	1,548	998,573	620	1,625	1,007,723
Surrey	103	1,277	131,504	89	1,402	124,780
Sussex	1,841	1,474	2,714,414	1,851	1,211	2,242,078
Hereford	4,603	1,471	6,772,862	4,626	1,433	6,628,902
Worcester	2,150	1,502	3,229,408	2,137	1,447	3,092,062
Other Counties	54	1,600	86,420	47	1,958	92,042
England	**20,955**	**1,471**	**30,832,432**	**20,897**	**1,352**	**28,259,445**
Europe	**130,077**	**1,077**	**140,166,812**	**133,090**	**1,056**	**140,605,201**
Washington	20,598	1,560	32,136,234	20,717	1,689	34,983,034
Oregon	4,001	1,350	5,399,947	4,304	1,489	6,407,009
California	4,099	1,660	6,806,041	3,501	1,750	6,125,040
Idaho	4,001	1,770	7,079,852	4,102	1,429	5,862,913
U.S.A.	**32,699**	**1,573**	**51,422,074**	**32,624**	**1,636**	**53,377,996**
Canada	**1,055**	**1,403**	**1,480,720**	**1,055**	**1,451**	**1,530,764**
Victoria	479	1,707	817,576	502	1,339	671,962
Tasmania	1,488	1,923	2,861,901	1,488	1,008	1,500,010
Australia	**1,967**	**1,871**	**3,679,477**	**1,990**	**1,091**	**2,171,972**
New Zealand	554	1,198	663,805	596	1,104	657,742
Japan	3,617	1,224	4,426,506	3,892	1,563	6,084,806
Manchuria	247	402	99,207*)	247	402	99,207*)
Northern-Korea	1,236	143	176,368*)	1,236	143	176,368*)
Argentine	726	288	209,437*)	326	608	198,414
South Africa	269	405	133,158	304	497	151,015
Total	**172,447**	**1,174**	**202,457,564**	**175,360**	**1,169**	**205,053,485**

*) Estimate **) Official Weight January 29th, 1965

The hop plants had reached the height of the trellises about the end of June/beginning of July. Further development was hampered by the beginning of dry and hot weather. Some rainfalls on June 19/21st refreshed the hop yards. **Burrs** showed a good and strong development. Sprayings against pests and diseases were effected very carefully. The stand of the hop yards was considered quite good in mid-July as the hops had numerous **Laterals** with an abundant set. Lack of moisture became notable in hop yards on lighter soils and strong rainfalls were eagerly expected everywhere. **Verticillium Wilt** appeared during the second half of July.

Warm weather continued and occasional precipitations were not sufficient. The **Formation** of the **cones** had started everywhere at an early date. The cones, however, remained unequal. **Downy Mildew** was no danger for the hops and Verticillium Wilt was less apparent than the year before. Careful sprayings against **Red Spider** and **Aphids** had to be continued locally.

The weather continued dry and sunny in August but the crop was improved by local rainfalls. The aspect of the hop yards generally was uniformly quite good. Picking started on August 24th, 1964.

Quality: Hallertau hops crop 1964 had cones of middling size which were not always uniform and somewhat more broken than the year before as a consequence of the generally dry weather. The colour of the cones was green-yellowish. Light lupulin of fine aroma was not as amply present as expected. The picking of the hops was good even if sometimes leaves and stems were encountered. The kilning of the hops was very good.

SPALT. As a consequence of favourable weather the **Uncovering** and **Cutting** in this district could be done early and was finished during the second half of April. The weather remained sunny and warm and a good development was to be noted especially in early cut gardens. Growth was temporarily hampered by wet weather and low temperatures but climatic conditions improved considerably at the beginning of May and this continued during the whole month. The vines reached the height of the trellises in early locations. **Aphids** had to be carefully controlled already in mid-May and preventive sprayings against **Downy Mildew** were effected at the same time. During the very warm and dry weather which continued in June, attacks of **Red Spider** had to be carefully controlled. The development of the hops in mid-June was about 10 days early as against the average.

During the second half of June the long period of dryness showed its consequences. The growth of the hops was delayed. Early yards had attained the height of the trellises by the end of June, whereas late gardens showed a height of only three quarters of the trellises. The development of **Laterals** was not always good.

As a consequence of the strong dryness in June, the hop yards were irrigated as far as possible. This was continued as only intermittent light rains fell during the second half of July. The hops were in **Full Bloom** in mid-July and the **Formation** of the **Cones** started in some locations.

The generally hot and dry weather continued during August and occasional precipitations were insufficient. Hop yards which were irrigated showed a better development. **Red Spider** as well as **Aphids** which continued to appear had to be controlled.

Picking started sporadically on August 20th, and was in full swing on August 24th. The hop yards were refreshed by some lighter rainfalls but this could not influence any more the result of the harvest.

Quality. Spalt hops of crop 1964 were rather unequal in size. The cones were small to middling and leafy. The colour of the cones was yellowish-green. The light lupulin had a fine aroma. The picking of the hops was not always satisfactory as the hops contained leaves and stems. The kilning generally was good as a consequence of weather conditions.

TETTNANG. The weather during March was cool and wet and became warmer and dryer only during the first half of April. The **Uncovering** and **Cutting** was generally finished during the second half of April. The plants were off to a good start under warmer weather and welcome rainfalls. A good growth resulted until the end of May under fine warm weather and sufficient precipitations but the development was still somewhat retarded against normal. Some hop yards reached the height of one to two meters. The favourable weather continued during June so that the plants showed a good growth under warm weather and sunshine with sufficient rainfalls. Sprayings against **Downy Mildew** and **Red Spider** had to be effected. By mid-June, some parts of the hop yards already had three quarters of the height of the trellises.

At the end of June/beginning of July the hops had reached the height of the trellises under continuing favourable weather conditions and showed a good development of **Laterals.** At this time it became necessary to control **Aphids.** In mid-July the good development of the hops was hampered by cool nights and insufficient precipitations. **Premature Blooming** was noted in some yards. Tropical heat and dryness prevailed until the end of July and the development of the plants came practically to a complete stop. The hops remained pointed.

The hop yards were in **Full Bloom** in late locations and occasionally the **Formation** of the Cones started already. **Red Spider** had to be controlled very carefully. Lack of rainfalls continued during the first half of August. The plants remained pointed and had short laterals. There was only little overhang. In general the stand of the hop yards was healthy but especially in dry locations **Red Spider** continued to be a danger. **Picking** started about August 15th/17th.

Quality. The middling sized cones of Tettnang hops crop 1964 had a uniform green to greeny-yellowish colour. The lupulin was of light colour and just as ample as the year before. The hops had a fine aroma and were good, both in picking and kilning.

HERSBRUCK GEBIRGE. In this district **Frost** was experienced until March 1964 and the weather remained cool to cold until the end of that month. The **Uncovering** and **Cutting** could start in lighter locations by the beginning of April whereas in hop yards on heavier soils **Spring Work** was still retarded. There was a cold spell again in mid-April but finally temperatures rose so that field work which was hampered only occasionally by light precipitations could be finished during the second half of April.

Sufficient rainfalls improved the lack of precipitations during the winter. Warmer weather at the beginning of May resulted in a good growth of the hop vines so that the plants had reached a height of two to three meters in early cut hop yards. This weather relieved by welcome rainfalls continued until the end of June and favoured growth.

The plants developed well during the first half of June and reached three quarters of the height of the trellises. Full height was already reached in some hop yards. Generally, there was a very good development of laterals. **Downy Mildew** appeared only occasionally whereas **Aphids** showed a stronger appearance at the end of May. The very good development of the plants continued during the second half of June.

Hop yards had reached the height of the trellises generally by the end of that month and the development of the plants showed an advance against normal years. **Downy Mildew** continued to appear only locally whereas **Aphids** had to be carefully controlled.

By the end of June/beginning of July there were precipitations with local **Hail** which did some damage. Early varieties were in **bloom** at the beginning of July. Very hot weather started in mid-July. Thunderstorms and hail occasioned local damages. The stand of the hop yards was not quite uniform but the plants generally showed a good **Set.** Rainfalls at the beginning of August refreshed the plants. Early varieties were now in the **Formation** of the **Cones** which showed a satisfactory development whereas late varieties started with the formation of the cones at that time. The hop yards continued to show a rather unequal stand. The development was better in low valley locations whereas hop yards on lighter soils showed less good development. Occasional rainfalls were very welcome under warm weather in August. Late varieties especially could improve growth. **Picking** was in full swing by the end of August.

Quality. Hersbruck hops crop 1964 had irregular small until middling cones and were often leafy. The colour was uniformly green with occasional **Wind Whipping.** The light lupulin had a pronounced aroma. Kilning of the hops was satisfactory in consequence of weather conditions but the picking could be better so that less leaves and stems would appear in the hops.

German Hop Acreage 1964

Verification of the hop acreage in 1964, resulted in the following figures:

Districts	1939 Acreage acres	1964 Existing acreage acres	1964 Additional acr. acres	1964 Total acres
Hallertau	11,317	16,047	1,124	17,171
Spalt	2,276	2,328	116	2,444
Hersbruck	2,118	1,233	62	1,295
Jura	200	462	52	514
Tettnang *)	—	27	—	27
Aischgrund/oth. distr.	200	12	—	12
Bavaria	16,111	20,109	1,354	21,463
Wurttemberg/RHW	1,223	203	2	205
Tettnang**)	1,636	1,791	102	1,893
Baden	440	57	2	59
Baden-Wurttemberg	3,299	2,051	106	2,157
Pfalz	151	47	—	47
Rheinland-Pfalz	151	47	—	47
Germany	19,561	22,207	1,460	23,667

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

Hop Acreage 1965

Continued strong demand and favourable sales conditions for German hops resulted in a further increase of acreage especially in the Hallertau. The produce of these new hop yards is already under contract to a considerable extent.

In order to insure economical working conditions, hop yards are now constructed over a greater acreage than heretofore. New trellis constructions are started already with steel and concrete posts.

Verticillium Wilt

Verticillium Wilt did not spread as rapidly as in 1963 due to generally hot and dry weather in 1964. Only after the necessary precipitations in August 1964 which were necessary for the final development of the hop plant, an increase of this disease was noted. In the **Hallertau** about 1,235 acres of hop yards are estimated to have been infected for the first time by Verticillium Wilt. In other districts new infections have been noted in two hop yards only.

There is still no progress in the chemical control of Verticillium Wilt. Hop farmers tend more and more to the planting of new varieties which up to now have shown a certain resistance to this disease.

Machine Picking

Automatic picking of hops has now been introduced in all districts of production in a very extensive way. For the harvest of crop 1964 the following number of picking machines was available:

District	
Hallertau	2,700
Spalt	350
Hersbrucker Gebirge	80
Jura	40
Tettnang	215
others	15
Total	3,400

Even the few farms which have not yet turned to machine picking are now deciding to adopt same. It may be expected that during the autumn of 1965 about 95 % of the hop crop in Germany will be picked by machines.

Bitter Values of Crop 1964

Origin	Total resin content anhydric	Soft resins	%	Humulon	%	Lupulon +Fraction of soft resin	%	Hard resins	%	Bitter value Wöllmer 1964	Bitter value Wöllmer 1963
Hallertau	15.7	12.4	78.97	5.6	35.66	6.8	43.31	3.3	21.03	6.4	6.5
Hallertau/Au	15.0	11.9	79.33	5.3	35.33	6.6	44.00	3.1	20.67	6.0	6.8
Hallertau/Mainburg	16.0	13.2	82.49	5.9	36.87	7.3	45.62	2.8	17.51	6.6	6.9
Hallertau/Wolnzach	16.0	12.8	79.99	5.7	35.62	7.1	44.37	3.2	20.01	6.5	6.2
Spalt	14.2	11.6	81.68	5.3	37.32	6.3	44.36	2.6	18.32	6.0	6.6
Tettnang	15.7	13.2	84.07	6.0	38.21	7.2	45.86	2.5	15.93	6.8	7.9
Hersbruck	13.9	10.9	78.41	5.1	36.69	5.8	41.72	3.0	21.59	5.7	6.1
Alsace	13.7	11.5	83.93	5.2	37.95	6.3	45.98	2.2	16.07	5.9	5.7
Belgium/Northern-Brewer	22.5	18.8	83.55	10.9	48.44	7.9	35.11	3.7	16.45	11.8	10.6
Saaz	15.5	12.5	80.65	5.5	35.48	7.0	45.16	3.0	19.36	6.3	6.2
Jugoslavia	15.9	13.0	81.75	7.3	45.91	5.7	35.84	2.9	18.25	8.0	7.3
U.S. Seedless Yakima	19.1	16.0	83.33	7.5	39.06	8.5	44.27	3.2	16.67	8.8	8.3

Quality of German Hops Crop 1964

The quality of German hops crop 1964 was judged quite well according to the physical or hand evaluation. In contrast to this, the bitter value of hops crop 1964 was once again lower than the year before. This may be a result especially of the dryness during the most important time of growth during which the soil nutrients were not available to the plant for lack of moisture. As a consequence of the decreased content of alpha-acids in the hop a quicker oxidation and a decrease in bitter substances resulted.

The quality of the hops as delivered to breweries is more and more evaluated analytically. This fact especially in connection with a crop low in bitter substances as in 1964 leads to difficulties between breweries and suppliers. The debatable points in this connection may be based on the following facts:

- Hops as a natural produce are never a homogenous commodity.
- Hop farmers as well as dealers generally have only limited knowledge regarding the chemistry of hops. Even today the entire crop is purchased on farms according to hand evaluation and most especially according to aroma.
- Considering the very great number of small lots there is a great lack of laboratories as well as of useable rapid methods of analysis even if only small parts of a crop should be analytically examined.
- The reduction of soft resins during the season is not taken into consideration by breweries for delivery late after the harvest. The first table of bitter values published immediately after the harvest does not correspond to average values of the crop and leads to misunderstandings.

Furthermore, there are other complications — difference in results of analysis, the way of extracting samples from the hops — which contribute to the knowledge that a solution of this problem will not be easily found.

Crop Estimate 1964

The official estimate of crop 1964 in its total result corresponded approximately to the real harvest in Germany. Smaller results especially in Spalt and Hersbruck Gebirge were offset in part by the somewhat larger harvest in the Hallertau.

	Yield estimated lbs.	Yield weighed on January 29th 1965 lbs.
Hallertau	31,415,550	31,853,384
Spalt	2,976,210	2,642,434
Tettnang	3,086,440	3,108,486
Hersbruck Gebirge .	1,984,140	1,556,117
Wurttemberg . . .	308,644	317,462
Jura	881,840	726,967
Baden	66,138	77,822
Pfalz	66,138	73,964
Total	40,785,100	40,356,636

Hop Purchase Crop 1964 in Germany

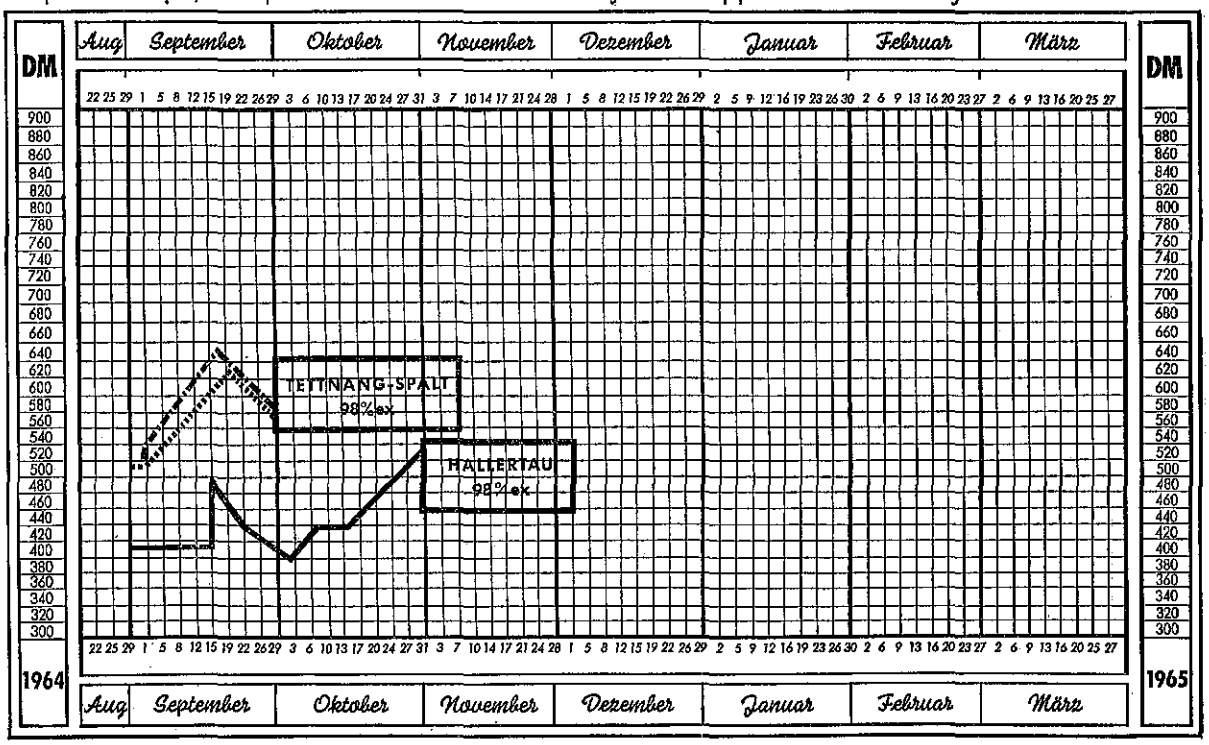
The activity in purchasing hops not under contract is mostly subject to the amount of hops under contract which is different among the several German districts of production. There are no exact figures available but it may be estimated that about 75 % of the German crop 1964 were under contract and in the district of the Hallertau, this figure amounted probably to about 80 %. This development, however, was further influenced by the fact that the Franconian districts of Spalt and Hersbruck brought only small crops as a result of the continued dryness. Furthermore, it may be supposed that some dealers were short in hops.

By these reasons the always sensible market for mild aromatic hops became very narrow and prices for Tettnang hops, too, profited by this situation. Corresponding to the development of delivery of contracted hops, the purchasing periods and the formation of prices in the several districts of production developed at different times. The usual relation of prices among the several proveniences in Germany was only established as late as October 1964.

Under constant strong demand, the district of Tettnang was sold out generally in mid-September, whereas Spalt and Hersbruck were practically sold out during the second half of that month. In the Hallertau, purchasing started only at the beginning of October. Higher prices asked by farmers could not prevail during the start of purchasing activities. Corresponding to the constant demand especially for the home breweries, quotations in the Hallertau, too, did conform to higher prices for other proveniences and quotations rose constantly until the end of October. About this time the Hallertau was practically sold out.

At the end of October 1964 already about 355,000 cwts. of crop 1964 which had been estimated at a total of about 370,000 cwts. were already sold and had passed the official weighing and sealing.

The extremely early sellout of German hops led once again to looking for additional imported hops, the qualities of which had already been approved in former years.



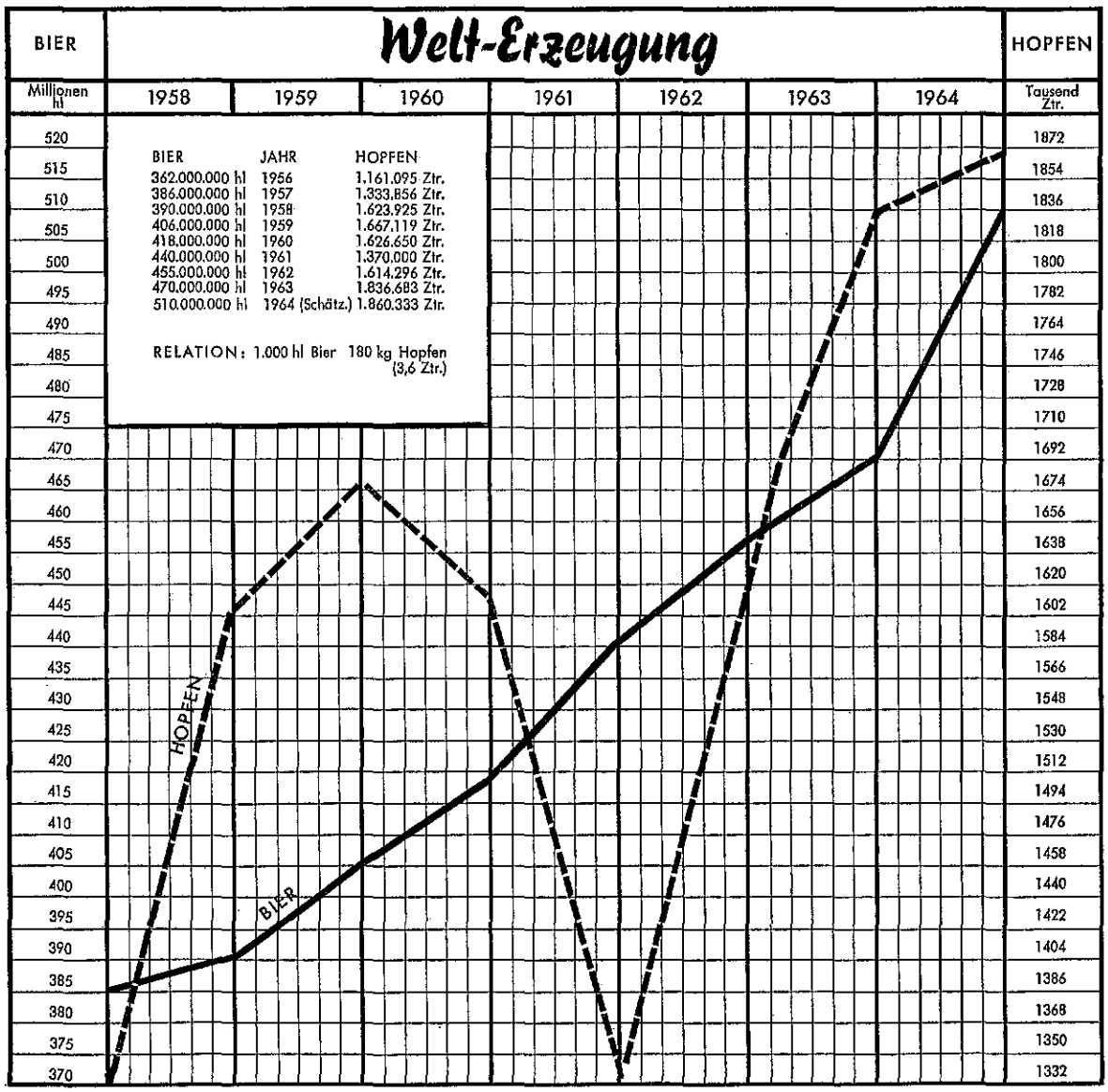
HALLERTAU. First small purchases were done at DM 400.—/420.—. Farmers were reluctant sellers so that under quiet trading in mid-September prices which were mostly nominal increased to DM 420.—/500.—. These quotations, however, could not be maintained. Around September 23/25th prices were once again about DM 430.—/450.—. Continued slow trading

was done at somewhat lower prices which at the beginning of October were around DM 400.—/420.—. Farmers were asking for higher bids which stood at DM 430.—/450.— on October 7th. This pricing situation was maintained until mid-October. Available stocks on farms were already sold to a considerable extent and as farmers increased their prices, the market firmed during the second half of October. Quotations rose rapidly to DM 500.- again and reached DM 520.-/530.- at the end of October. The Hallertau, too, was sold out at that time.

SPALT. During the first half of September first prices were DM 500.—/520.— but farmers demanded very soon DM 550.—. Purchasing became very active and prices rose to DM 620.—/630.— and to DM 650.— on September 16/17th. Demand ceased on this basis. Prices decreased to DM 600.- since September 25th and there were even lower bids. By the end of September this district which crop had been smaller than expected was sold out to a considerable extent. Last available lots went into second hands at DM 580.-/600.- under slow trading.

TETTNANG. Hop purchases at the beginning of September were effected at DM 500.—/520.—. Insistent demand resulted in rising prices which reached DM 580.— already on September 11th. Demand did not slack and quotations rose to DM 600.— on September 15th, and DM 620.—/630.— on September 18th/19th. Prices however, decreased soon again to DM 600.—/610.— and last available lots were sold at the end of September within a price bracket of DM 580.—/600.—.

HERSBRUCK GEBIRGE. Purchases started hesitatingly on September 11th at DM 360.—. Quotations rose, however, already until September 15th to DM 400.— after which demand became slack. On September 21st quotations had risen to DM 425.—/430.— but purchases were continued in a limited way only. At the end of September/beginning of October there was scarcely any demand on a price basis of DM 400.—. Mid October, sales were effected at DM 400.—/420.— and the district was soon sold out with final lots purchased by the end of October at DM 430.—/450.—.



Nürnberg Market

Final stocks in hops of the old crop 1963 had been sold with the exception of small quantities by the middle of April 1964 so that only limited offers came on the market.

Offers for hops of the new crop 1964 became available for small lots at the beginning of the second half of September 1964. Trading was slow. Hallertau hops were quoted at

DM 475.—/490.—, Spalt DM 665.—, Hersbruck Gebirg DM 440.—/450.—. Continued reduced demand resulted in lower prices at the beginning of October, which stood at DM 455.—/465.— for Hallertau hops. Spalt hops DM 635.—/650.—, Tettnang hops DM 650.— and Hersbruck Gebirg DM 440.—. Somewhat stronger demand in mid-October coupled with reduced offers resulted in an increase of prices for Hallertau hops to DM 480.—/490.—, Spalt DM 635.—/650.—, Tettnang DM 660.—, Hersbruck Gebirg DM 440.—/445.—. Offers continued scarce and by the end of October prices for Hallertau hops were at DM 560.— whereas the mostly nominal quotations for Spalt hops were DM 670.—/675.—, Tettnang DM 690.— and Hersbruck Gebirg DM 510.—.

All other districts being practically sold out, trading was limited mostly to Hallertau hops for which prices did not rise despite the limited offer. Other proveniences were traded only sporadically. At the end of 1964 the following prices were quoted: Hallertau DM 550.—, Spalt DM 665.—, Tettnang DM 690.—, Hersbruck Gebirg DM 500.—.

In January 1965 Hallertau hops were still traded at DM 530.—/535.—, but these prices were reduced at the beginning of February to DM 500.—. Occasional increased sales resulted in prices up to DM 520.—, which, however, went down again to DM 500.— in mid-April. Spalt hops were quoted at DM 580.—/600.— in mid-April. Tettnang hops were sold out at the beginning of March on a basis of DM 655.—/660.—. Hersbruck Gebirg hops were traded at DM 475.— at the end of February and DM 455.— at the end of April 1965. Stocks being very limited and demand very slow, sales were only occasionally effected since the end of April. (All quotations based on prices for interim packed hops).

Market Survey

The hop crop in 1964 was just about sufficient to cover the demand on the world market. The world market situation, however, remained stable which mostly was the consequence of forward contracts, the advantages of which result in a constantly increased activity in contracting.

The early sellout of the German crop 1964 may be explained mostly by the fact that the production of beer in Western Germany rose once again by between five and six million bbls. which corresponds to a yearly demand of an additional quantity of about 25,000 cwts. of hops. Active demand resulted in a rising pricing tendence.

This situation, however, was offset on the world market by sufficient hops on offer from Belgium, France, and the U.S.A. on the one side as well as Czechoslovakia, Jugoslavia and Poland on the other side.

Efforts to establish a hop marketing agreement in the U.S.A. may lead to changed conditions in the future. Whereas growing costs of production in the American hop industry ought to result in increased prices, the hop industry in Europe disposes of sufficient possibilities to counterbalance rising costs by more economical methods of production. A new influence on the world market is the appearance of new countries of production. Acreages have been expanded not only in Japan and in Spain, but in Greece, too. Among the Eastern States, Poland has appeared increasingly as an exporter of hops during the last several years and now Bulgaria as well as Roumania are producing quantities of hops above their necessities, which are looking for a home in the world market.

Forward Contracts

The table published in this place up to now showed the percentage of forward contracts in the German hop crop retrospectively. This table has now outrun its usefulness as forward contracts have become an integral part of the hop market. The question now reverts to the importance of forward contracts in future crops which is not only more interesting but has become a considerable factor regarding the judgement of the development of the hop market.

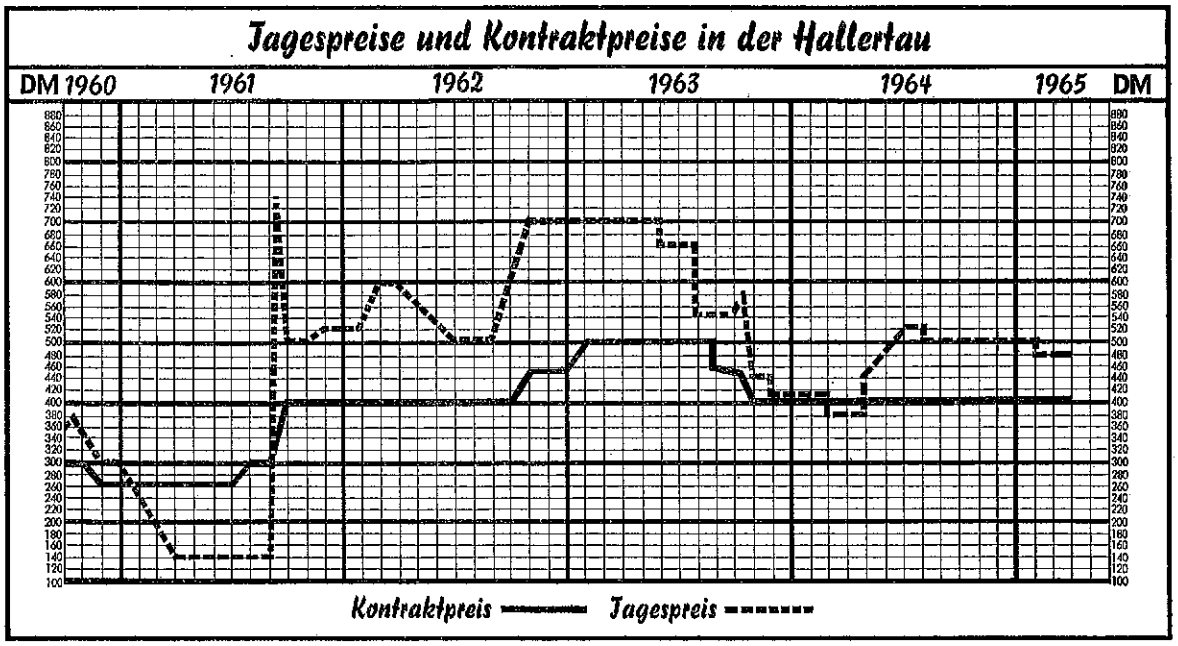
This, however, includes the great difficulty that estimates for the future most especially for several years, are always subject to many sources of mistakes. Keeping in mind this possibility of error we estimate the total quantity of forward contracts on crops of the coming three years as follows:

	Crop 1965	Crop 1966	Crop 1967
Hallertau	85 %	75 %	65 %
Germany Total . .	79 %	69 %	59 %

The dominating position of the production of hops within the Hallertau as well as the drive to increase the acreage if necessary results from the following table:

District of Production	Acreage 1939	Acreage 1964	Changes against 1939
Hallertau	4,580 Hektar	6,949 Hektar	+ 51.7 %
Spalt	921 Hektar	989 Hektar	+ 7.4 %
Tettnang	662 Hektar	777 Hektar	+ 17.4 %
Hersbrucker Gebirge	857 Hektar	524 Hektar	— 38.9 %

The extensive area of the Hallertau offers favourable conditions for an increase of the hop acreage. In addition to this, farmers in the Hallertau tend more and more to turn to bigger acreages under hops in connection with advance contracts.



The development of trading in advance contracts showed that the terms of initially five years later on were reduced mostly to three years only but the latest development is for contracts of 5—6 years in general. There are occasionally forward contracts on longer terms, up to 10 years but it appears questionable whether such long terms are in the best interest of all circles concerned.

Exports of Hops as Hop Concentrate

The usage of hop concentrate in breweries according to export statistics shows a considerable increase of hops in bond as against German hops extracted (1963 = about 72 % in bond as against 28 % concentrate manufactured from German hops). The reason for this may be looked for mostly in the discrepancy in prices and bitter values among the several types of hops from different origins.

Export of Hop Concentrates			
	Concentrates Total in lbs.	Percentage of Total	
		German Export	Export "in bond"
Year 1962 9/1/62 — 8/31/63	414,579	55,36 %	44,64 %
Year 1963 9/1/63 — 8/31/64	746,925	27,96 %	72,04 %
1964 (7 months) 9/1/64 — 3/31/65	568,792	25,58 %	74,42 %

The export figures for the first seven months of crop 1964 show that even under a smaller total export of hop concentrates extracts in bond continue to increase whereas the percentage of concentrates manufactured from German hops is on the decrease.

German Hop Imports Crop 1964

The following lots of hops have been imported from September 1st, 1964, to March 31st, 1965:

Belgium-Luxembourg	783,074 lbs.	b. f.	4,478,204 lbs.
France	1,030,210 lbs.	Czechoslovakia	1,212,310 lbs.
Great Britain	12,566 lbs.	U. S. A.	3,092,613 lbs.
Jugoslavia	2,585,775 lbs.	Austria	83,334 lbs.
Netherlands	11,023 lbs.	Other Countries	31,746 lbs.
Poland	55,556 lbs.		
c. f.	4,478,204 lbs.	Total	8,898,207 lbs.

German hop imports crop 1963 until March 31st, 1964 = 5,360,044 lbs.

German Hop Exports Crop 1964

Export of German Hops Crop 1964

September 1st, 1964 — March 31st, 1965

Country	lbs.	lbs.	Country	lbs.	lbs.
Belgium-Luxembourg	360,452		b. f.	58,422	11,119,122
Denmark	244,270		Canary Islands	47,399	
Finland	183,202		Kenya-Uganda	64,374	
France	1,284,620		Congo	76,941	
Great Britain	102,293		Liberia	4,409	
Ireland	8,598		Lybia	2,205	
Italy	853,621		Madagascar	4,409	
Malta	9,039		Marocco	33,069	
Netherlands	259,481		Moçambique	41,887	
Norway	182,541		Uppervolta	6,173	
Austria	576,503		Réunion	4,189	
Portugal	137,347		Rhodesia	5,071	
Spain	195,107		Senegal	8,598	
Sweden	595,022		Sudan	23,148	
Switzerland	629,854		Republic of South Africa	27,337	
Europe		5,621,950	Tansania	15,432	
			Tunis	11,023	
Argentine	40,565		Central Afric. Republic	15,432	
Bolivia	25,353		**Africa**		449,518
Brazil	221,562				
Canada	40,785		Burma	10,582	
Columbia	2,205		Hongkong	35,053	
French West Indies	9,921		Iraq	15,432	
Mexico	8,818		Japan	1,301,375	
Nicaragua	6,614		Lebanon	13,228	
Panama exc Canalzone	2,646		Malayan States	6,614	
Uruguay	13,228		Pakistan	1,323	
U.S.A.	5,108,940		Philippine Isl.	235,231	
West Indies	16,535		South-Vietnam	167,550	
America		5,497,172	Syria	6,614	
			Taiwan	6,614	
Ethiopia	8,818		Thailand	83,775	
Angola	35,274		**Asia**		1,883,391
Dahomay	7,716				
Ghana	6,614		Australia	3,527	
			French Pacific	16,534	
c. f.	58,422	11,119,122	**Australia**		20,061
			Total		13,472,092

German hop exports crop 1963 until March 31st. 1964 = 10,771,676 lbs.

IMPORT REGULATIONS. The possibilities for the import of hops from Czechoslovakia do not correspond to the demand of the German brewing industry.

The import of an additional quantity of Saaz hops crop 1964 was allowed by a tender number 240809 published in the *Bundesanzeiger* No. 28 of February 11th, 1965.

The import of hops from **Jugoslavia** was put under regulation once again on June 28th, 1962. Special dispositions for these imports were published on July 14th, 1962. The import of these hops would be restrained in case prices in the Hallertau should decrease to less than DM 400.—. In August 1964 information appeared that by controls to be effected through the cooperatives in Jugoslovia the export of hops to Germany was to be restricted to a total of 14,000 cwts. This quantity, for crop 1965 was divided among Styrian hops with 60% and Backa hops with 40 %. On the basis of this arrangement the import of Jugoslavian hops in Germany was unrestrained once again by the *Bundesministerium für Wirtschaft* according to publication, dated October 24th, 1964, and published in the *Bundesanzeiger* No. 201 of October 27th, 1964.

The question of **Forward Contracts (Import)** for liberalized hops continued under discussion. The *Aussenhandelsstelle für Ernährung und Landwirtschaft, Frankfurt,* informed on June 24th, 1964 (file number III B 1) that terms of delivery until 36 months could now be granted. Custom authorities in Western Germany continue to grant a term up to five years for custom purposes.

European Economic Community (E. E. C.)

PRODUCTION OF HOPS AND BEER. The production in beer within the six countries of the E. E. C. has developed as follows since the agreement of Rome was signed on March 25th, 1957:

Country	Production of Beer		
	1957	1964	Increase
Germany W.	37,647,860 bbl.	61,626,900 bbl.	+ 63.7 %
France	12,913,750 bbl.	16,654,170 bbl.	+ 29.0 %
Belgium	11,660,130 bbl.	12,357,250 bbl.	+ 6.0 %
Netherlands	2,445,880 bbl.	4,229,590 bbl.	+ 72.9 %
Italy	1,428,330 bbl.	3,569,120 bbl.	+ 149.8 %
Luxembourg	352,820 bbl.	440,600 bbl.	+ 24.9 %
E. E. C.	66,448,770 bbl.	98,877,630 bbl.	+ 48.8 %

Over the same period the production of hops within the E. E. C. took the following development:

Country	Production of hops		
	1957	1964	Increase
Germany W. . . .	32,214,938 lbs.	40,356,636 lbs.	+ 25.3 %
France	3,869,073 lbs.	4,789,494 lbs.	+ 23.8 %
Belgium	2,615,758 lbs.	3,417,130 lbs.	+ 30.6 %
E. E. C.	38,699,769 lbs.	48,563,260 lbs.	+ 25.5 %

In comparison to the considerably increased production of beer within the E. E. C. the production of hops has not grown in a corresponding relation. Here, therefore, a gap has opened which explains the increased import of hops from other countries into the E. E. C. as well as the decreased possibilities for the export of hops from the E. E. C. to other countries.

Present indications seem to show that within the next coming years the production of hops will increase more than the production of beer.

CUSTOM TARIFFS. According to the planning the custom rates within the six countries of the E. E. C. have been decreased on January 1st, 1965, for hops too, by another 10 % of the original rates. The corresponding decree for Germany which refers to the German Custom Tariff, 1965, has been published in the *Bundeszollblatt* No. 71 of December 21st, 1964, page 1.046. (*Bundesgesetzblatt* II S. 1514 of December 18th, 1964). The custom rates have now developed as follows:

Country	Custom Duties for Imports from				
	Members of the E. E. C.			other countries	
	since		Additional Import Taxes	since	Additional Import Taxes
	July 1st, 1963	Jan. 1st, 1965		Jan. 1st, 1962	
Belgium . .	4.4 %	3.6 %	12.43 %	9.2 %	13.10 %
Germany .	8.2 %	6.7 %	4.27 %	13.5 %	4.54 %
France . .	6.6 %	5.4 %	12.00 %	12.0 %	12.86 %
Italy	2.2 %	1.8 %	4.00 %	6.4 %	4.27 %
Luxembourg	4.4 %	3.6 %	3.10 %	9.2 %	3.27 %
Netherlands	4.4 %	3.6 %	5.45 %	9.2 %	5.74 %

The rates for custom taxes as well as additional import taxes refer to the value of the hops f. o. b. border station. The percentage rates are equal for the import both from other countries and from countries of the E. E. C. The small differences appearing in the above table are to be explained by the fact that the calculation of the rates partially are based upon the value of the hops plus custom rates.

At the same time that custom rates within the E. E. C. were decreased, the rates for partial custom duties for hops from other countries to be re-exported to members of the E. E. C. have been increased. This new regulation went into force on February 7th, 1965, and was published in the *Bundeszollblatt* 1965, page 148. The rates are now as follows:

since July 1st, 1963 55 % of the E. E. C. tariff (other countries = 12 %)
since February 7th, 1965 65 % of the E. E. C. tariff (other countries = 12 %)

An additional adjustment of custom tariffs will be effected on January 1st, 1966. The E. E. C. tariff for hops (other countries = 12 %) will become effective as planned on January 1st, 1970. There have been no changes in custom tariffs of the several members of the E. E. C. valid against other countries since January 1st, 1962.

Deutsche Demokratische Republik (D. D. R.)

Weather conditions were quite favourable for the growth of the hops in 1964 although precipitations were insufficient. The lack of humidity was most especially felt in certain districts which were suffering from a lack of rain already since 1962. Hop yards were irregated as far as possible. The average values for weather conditions in the most important districts of production were as follows:

	March	April	May	June	July	August	Sept.
Precipitations	28	49	60	55	34	85	24 mm
Temperatures	0.7	8.3	13.6	18.3	18.7	16.2	13.7 °C

Spring Work started somewhat late and was finished by the end of April. **Hail** and **Storms** occasioned local damages and even some total destruction of hop yards. The vines reached the height of the trellises at the beginning of July. **Bloom** started in mid-July. Against **Pests** the plants were treated by one irrigation of a systemic insecticide. Between two and three sprayings against **Downy Mildew** were sufficient.

The plants remained pointed in hop yards on dry locations and developed irregular cones. In more humid locations growth, too, was not so luxuriant than the year before but the **Formation** of the **Cones** was normal.

Picking started occasionally on August 20th and was in full swing on August 25th and finished mostly on September 12th. 90 picking machines handled about 65 % of the crop.

Quality. The quality of the hops crop 1964 was generally better than in 1963. Cones were especially more uniform in such districts of production where plantings of hops have been effected strictly in one variety only. The hops were graded as follows: Grade II 7.9 %, Grade III 89.4 %, Grade IV 2.4 %, Grade V 0.3 %. The total harvest went into the local brewing industry. Prices for the several grades of quality were unchanged against the year before.

Poland

There were no **Frosts** during the winter of 1963/64 with the exception of short cold spells in the district of Lublin during January 1964. The **Snowcover** was about 3 to 5 cm and the average temperature was —10° C. Subsoil moisture was improved by snowfalls and rain during February. Precipitations and temperatures were as follows:

	March	April	May	June	July	August	Sept.
Precipitations	37.5	21.1	24.8	42.3	14.8	83.9	20 mm
Temperatures	— 3	+ 7.6	13	20.5	19.5	16.4	13.5 °C

During April, the weather became warmer with occasional showers so that the soil thawed quickly and became dry. **Springwork** could start early and was finished around May 5th.

The hops were off to a good start and growth was quite good during May and June under temperatures up to 20° C. The vines had a luxurious stand with many laterals and an abundant **Set.** In contrast to the year before, **Downy Mildew** was only locally prevalent. Control measures were applied in good time in the same way as against **Aphids** and **Red Spider.** By the end of June the plants had reached the height of 7 to 7.5 m. **Bloom** started at the end of July. The **Formation** of the **Cones** was accelerated by higher temperatures and dryness in July. Cool winds and rainfalls around the end of July/beginning of August delayed the **Picking** by about 10 days. The harvest started around August 25th, and was finished in mid-September. There was no lack of labour. Four picking machines are in use but this, for the time being is more for trial purposes. The harvest was hampered by rainfalls.

Quality. The hops of crop 1964 were of yellowish-green colour with occasional wind whipping. The quality was graded as follows: Grade I 15 %, Grade II 84.7 %, Grade III 0.3 %. The entire crop went into second hand until the end of December 1964 at fixed prices.

Hop production in Poland is distributed among five districts of production of which the district of Lublin is the most important with about 4,120 acres. Other districts of production exist in Posen, Breslau and in South West Poland. It is intended to plough out the smaller districts of production and replant hops in greater districts on better soils and locations.

All hops are packed in a central warehouse in Lublin. For export, only hops of this district are utilized. About 20,000 cwts. of hops were exported.

The acreage is distributed as follows: Private farmers 57 %, Cooperatives 34 %, State farms 9 %.

Czechoslovakia

The hops came well out of dormancy and were off to a good start under favourable weather conditions. There were some local damages by hail in June of 1964. Rainfalls were distributed as follows:

	April	May	June	July	August	Sept.
Saaz	36.7	28.5	38.5	20.1	60.5	26.9 mm
Auscha	36.7	34.6	31.9	27.3	67.3	27.6 mm

Dry weather with almost tropical temperatures started about mid-June and retarded the development of the hops. The vines had locally reached the height of the trellises at the beginning of July and were already in **Bloom** during the first half of July. Owing to the early bloom, the plants remained pointed but there were long **Laterals.** The heat continued unabated in August, too, so that the harvest was smaller than expected at the beginning of the season. Four to six sprayings were effected against **Pests** and **Diseases.**

Picking started locally on August 15th, and was finished on September 3rd. 154 picking machines handled about 25 % of the total crop.

Quality. The cones were of middling size and of a uniform green colour. The crop was graded as follows: Grade I and II 80 %, Grade III 20 %.

The harvest was centrally handled at fixed prices. The home breweries accepted only a sensibly reduced quantity of hops from crop 1964 as stocks in hand of crop 1963 were still plentiful. In this way all contracts for export could easily be filled. Imports of American hops were effected in the same way as in 1963 but the quantities were not important.

Hungary

In 1964, the weather was generally favourable for the development of the hops despite insufficient precipitations in some districts. **Downy Mildew** as well as **Pests** were noted only occasionally and easily controlled. The approximate average of precipitations was as follows:

March	April	May	June	July	August	September
83.7	87.1	67.8	82.1	120.8	46.5	63.3 mm

The **Uncovering** and **Cutting** of the hops was retarded by a late spring. In March and April 1964 the weather was cooler than normal and remained dry on the average. Welcome rainfalls in July improved the development of the hops which reached the height of the trellises on June 10th. Weather conditions were variable during June and July but favourable for the growth of the hops on the average. **Bloom** started about June 30th on early varieties and around July 15th on late hops. Limited precipitations and sunshiny weather during August and September were favourable for the **Formation** of the **Cones** as well as for the picking.

The harvest of early varieties started around August 10th, and was finished around August 25th. Picking of the late varieties was executed between September 3rd and 18th. Locally, there was some lack of labour.

Quality. The hops of crop 1964 were better than those of the year before. The cones were better developed and better in colour. The crop was graded as follows: Grade I 29 %, Grade II 54 %, Grade III 17 %. The entire harvest went into consumption by the Hungarian brewing industry.

People's Republic of China

The oldest brewery in this most populous country of the world was constructed in **Tsingtao** in1903. Until 1949, the number of breweries amounted only to 20 in all. According to latest information, since that time a considerable expansion of the brewing industry has taken place. At the same time, the production of hops was increased as well. The centers of hop production are said to be encountered in almost all provinces of China and the production of hops is sufficient to supply the whole industry.

Hop yards have only a height of 1.80 meters as a precaution against the prevailing strong winds especially during the late part of spring and the early summer time. The plants suffer locally from **Downy Mildew.** It is much more necessary than in other countries to control **Red Spider** and **Caterpillars** and at the beginning of the vegetative development damages by **Weewils** are encountered. Sprayings against these pests have relatively little success as the hop plants on the low trellises grow into an extremely dense mass, and the spraying materials cannot be applied effectively. Yields are indicated at about 1,290 lbs. per acre.

In Tsingtao, the acreage under hops is estimated at about 150 acres. An experimental institute for hops has been installed in 1963 which does not only select suitable clones for propagation but at the same time is working on the control of pests and diseases.

Jugoslavia

In the **Sanntal** (Slovenia) the hops came well out of dormancy. The winter was not too strong and the extensive snowfalls in December which covered the land until the beginning of March provided the necessary soil moisture. Warmer weather with ample rainfalls during the second half of March retarded **Spring Work** which started on April 5th, and was finished on April 20th. Temperatures decreased below 0^0 C at the end of April and the weather remained rather cool until the beginning of May. The slow development of the plants was set off in May by higher temperatures. Sprayings against **Downy Mildew** and **Pests** were regularly applied.

Sufficient rainfalls by the end of May provided the necessary humidity. The weather was very dry in June. The plants had reached a height of five meters in mid-June and attained the height of the trellises under favourable weather conditions during the second half of that month. At the same time first **Burrs** were noted. It is regrettable that the weather became dry again so that in some hop yards artifical irrigation was applied. The dry weather was followed by rainfalls at the beginning of July but there were some damages by **Hail** as well. **Bloom** and the **Formation** of the **Cones** were favoured by warm weather at the end of July and during August. **Red Spider** appeared locally and had to be controlled. Precipitations and temperatures were as follows:

	March	April	May	June	July	August	Sept.
Precipitations	97.8	131.1	134.3	216.5	158.2	123.0	105.03 mm
Temperatures	3.57	10.97	15.17	20.30	20.07	18.26	15.57 ^{0}C

Picking started on August 15th, and was finished in the first days of September. Locally, there was some lack of labour. There are 10 picking machines in operation which handled the crop of about 500 acres. The weather during the harvest was warm and sunny.

The **Quality** was better than in 1963. The cones were of relatively uniformed size and had an ample content of lupulin. The crop was graded as follows: Grade I 93.5 %, Grade II 5.3 %, Grade III 1.2 %.

The local brewing industry was supplied with 5,920 cwts. of hops whereas until the beginning of March 1965 about 62,000 cwts. of hops were exported. The acreage is distributed among private farmers (52.5 %) and cooperatives as well as state farms (47.5 %).

In the **BACKA** rainfalls were distributed as follows:

	March	April	May	June	July	August	Sept.
Precipitations	58	46	50	60	65	42	58 mm
Temperatures	3.6	11.9	15.3	22.2	20.8	19.6	16.2 ^{0}C

The hop yards came well through the winter and showed no frost damage. A continuous rainy spell in July favoured local infections of **Downy Mildew.** Up to 12 sprayings were effected against **Pests** and **Diseases.** The waterlogged hop yards did not allow spraying by machinery. Airplanes were used which, however, owing to their high velocity could not execute this work to satisfaction. For this reason, it is intended to experiment with helicopters during the coming season.

The plants reached the height of the trellises at the beginning of June and were in full **Bloom** in mid-July. The vines showed a good development in the upper parts but there were few cones present on the lower third of the plants.

Picking started on August 22nd, and was finished on September 10th, despite lack of pickers. 13 picking machines handled an acreage of about 570 acres. The **Quality** was judged better than in 1963. The cones were uniformly sized and had a green colour. The crop was graded as follows: Grade I 53 %, Grade II 32 %, Grade III 15 %.

The intended increase of acreage in the Backa has not been realized. All hops were handled centrally. Of the total hop acreage there are 17 % in hands of private farmers whereas 83 % are in possession of cooperatives.

Bulgaria

Hop production in Bulgaria has now already been increased in such a way that not only the brewing industry in Bulgaria is supplied with hops but there are even hops available for export.

In 1964, hop yards showed a good development under favourable weather conditions and sufficient precipitations. Between two and four sprayings were effected against pests and diseases. The hops reached the height of the trellises in June and were in **Bloom** by mid-June. **Picking** started on August 1st and was finished on August 31st. Sufficient pickers were available. There are no picking machines in use. The weather during the harvest was favourable.

Quality. The hops of crop 1964 had cones of middling size and yellow-greenish colour. The crop was graded as follows: Grade I 60 %, Grade II 35 %, Grade III 5 %.

The entire crop is handled by the states organization. The price was Lewa 280.— per cwt. (DM 560.— per 50 kilos net). Breweries in Bulgaria are supplied with hops until the end of 1965.

Belgium

In the district of ALOST the subsoil moisture was diminished after the dry autumn of 1963. The hops came well through the winter of 1963/64 but suffered from lack of moisture during the very dry summer of 1964. The dryness was noticeable especially in the growth of the varieties Northern Brewer and Brewer's Gold. Temperatures on the average were higher than normal.

Sprayings against **Pests** and **Diseases** were regularly effected about every 10 days. The variety Replant Hallertau reached the height of the trellises at the beginning of July whereas the varieties Northern Brewer and Brewer's Gold were retarded and attained this height only about July 15th. **Bloom** developed quickly after mid-July. As a consequence of a hot spell shortly before the harvest some of the cones ripened too early.

Picking started around August 25th. There is no lack of labour as the harvest is practically completely automatic. The **Quality** of the variety Replant Hallertau was generally judged well whereas the variety Northern Brewer as a consequence of premature ripening showed sometimes yellowish and brownish cones. The crop was judged as follows: Grade I 60 %, Grade II 10 %, Grade III 30 %. The percentage of Grade III was increased as a consequence of unsatisfactory colour of the hops which, however, showed a good content of lupulin.

The crop was sold out on farms until the beginning of October. Quotations for the variety Replant Hallertau remained unaltered at bfrs. 3,500.— until the early sellout whereas Northern Brewer under insistent demand rose from bfrs. 4,000.— in the beginning to bfrs. 4,500.— and attained bfrs. 5,000.— at the close of the selling.

POPERINGHE. There were practically no missing hills in the hop yards when the plants were **Uncovered** and **Cut** with the exception of occasional losses in the variety Brewer's Gold. **Frost** and **Snow** were experienced still during March 1964. Despite some lack of rainfall the hops showed a good development in April and May. Precipitations and temperatures were as follows:

	March	April	May	June	July	August	Sept.
Precipitations	46.3	47.8	42.5	97.3	29.2	19.7	62.1 mm
Temperatures	3.6	8.55	13.8	15.1	16.6	16.35	14.85 ^{0}C

The development of the hops continued well but the vines did not reach the height of the trellises in such a way as originally expected. Growth was retarded especially for the variety Northern Brewer as soon as **Bloom** set in during the middle of July. The variety Brewer's Gold showed some **Wilting** at the top of the vines, the reason of which is still unknown.

Sprayings against **Pests** and **Diseases** were regularly effected. The hops were in **Full Bloom** by the end of July. The crop was curtailed somewhat by dry weather conditions and especially the **Formation** of the **Cones** was not always satisfactory on late varieties.

Picking started sporadically on August 16th, was in full swing on August 24th, and finished around September 10th, with the exception of some late varieties. The weather during the harvest was dry and very warm so that on August 26th/27th under temperatures of 35° C some picking machines had to be stopped as difficulties of functioning appeared. The crop is picked mechanically by about 99 % as there are about 150 picking machines in opera tion.

The quality of crop 1964 was judged differently and on the average not better than the year before. The crop was graded as follows: Grade I and II 85 %, Grade III 15 %.

The district was sold out until the end of October. The variety Brewer's Gold and Replant Hallertau were quoted at bfrs. 3,200.—/3,500.— at the beginning of September, reached bfrs. 3,700.—/3,800.— at the beginning of October and were sold at bfrs. 4,000.— by the end of October. The variety Northern Brewer was quoted at bfrs. 4,000.— on September 1st, but rose to bfrs. 5,000.— by September 15th, and was sold out on this basis.

Belgium imported the following quantities of hops crop 1964 from September 1st, 1964, until December 31st, 1964:

	lbs.		lbs.
Germany West	224,208	b. f.	1,171,524
France	255,954	Great Britain	63,272
Netherlands	20,282	Czechoslovakia	911,602
U. S. A.	528,222	Jugoslavia	401,899
Poland	142,858	Total	2,548,297
c. f.	1,171,524		

Belgian hop imports crop 1963 until August 31st, 1964: 4,012,813 lbs.

Export of Belgian hops from September 1st, 1964, until December 31st, 1964 are shown as follows:

	lbs.		lbs.
Australia	375,664	b. f.	1,457,020
Denmark	54,013	Netherlands	109,128
Germany West	860,235	Norway	1,543
France	60,847	Austria	123,458
Great Britain	25,132	Pakistan	1,764
Ireland	10,141	Portugal	19,841
Italy	4,409	Sweden	441
Kenya and Uganda	33,069	Switzerland	46,297
Congo (Leopoldv.)	33,510	Un. of South Africa	43,651
c. f.	1,457,020	U. S. A.	213,405
		Total	2,016,548

Belgian hop exports crop 1963 until August 31st, 1964: 2,192,254 lbs.

France

Precipitations in France were distributed as follows:

	Jan.	Febr.	March	April	May	June	July	August	Sept.
Alsace	11.1	37.5	84.8	42.6	47.8	54.2	17.1	64.8	68.3 mm
North	—	—	32.5	47.1	26.5	105.8	14.9	20.5	— mm

In the **ALSACE** the hops came well trough the winter 1963/64. The **Uncovering** and **Cutting** was executed from the end of March until the middle of April. The hops were off to an early start under sunny warm and dry weather and could continue growing without interruption so that the vines reached the height of the trellises somewhat earlier than in normal years. The general stand of the hop yards was quite good by the end of June 1964.

Downy Mildew was controlled by sprayings with mixtures of limited copper content. **Aphids** appeared somewhat more plentiful during the second half of May and increased rapidly so that careful control measures became necessary. **Red Spider** on the other hand was only noted locally.

By the end of June/beginning of July a great dryness with very high temperatures continued and prevailed until August 7th. The growth of the vines was hampered and therefore developed relatively few laterals. The plants had reached the height of the trellises by the end of June and **Bloom** started during the second half of July. The vines remained pointed to a certain degree and produced only little overhang. Extensive rainfalls since August 8th, improved the growing conditions as well as the **Formation** of the **Cones.**

Picking started on September 5th, and was finished on September 20th, under fine and dry weather conditions. There were about 140 picking machines in operation. The quality of the hops was determined by well formed cones of good and light colour but contents of lupulin were rather limited. The crop was graded as follows: Grade I 95 %, Grade II 3 %, Grade III 2 %.

Purchasing on farms was executed swiftly. The district was sold out by the end of November at prices between Fr. 350.— and Fr. 450.— per 50 kilos. Based on a bigger share for export, the sales from second hands were smoother than the year before. The crop had gone into the breweries until January 1965 with the exception of small remaining lots.

FLANDRES. The hops had wintered well, and **Spring Work** could be executed in good time under favourable temperatures around the end of April. Growth was favoured by continued warm weather in May.

The plants had reached the height of the trellises about mid-June despite great dryness. As a consequence of this dryness the variety Northern Brewer was in **Bloom** already by the end of June and the variety Replant Hallertau and Brewer's Gold by the beginning of July. The vines were pointed and had little overhang.

During the growth of the hop yards about 20 sprayings were effected against **Pests** and **Downy Mildew.** An increased infestation by **Aphids** was controlled. **Verticillium Wilt** was sporadically noted on the variety Replant Hallertau.

Picking started on August 27th and was finished on September 14th. The harvest was effected at about 90 % by 25 picking machines.

The **Quality** of the hops was determined by small and not uniform cones. The lupulin was disappointing as the fraction of alpha acids was rather small. The crop was graded as follows: Grade I 65 %, Grade II 30 %, Grade III 5 %.

As a consequence of forward contracts the oscillations of prices were limited and prices on farms developed as follows: Replant Hallertau Fr. 350.—/390.—, Brewer's Gold Fr. 375.—/400.—, Northern Brewer Fr. 450/500.—. The crop went swiftly into consumption and there were only small remaining stocks during the first quarter of 1965.

SUBSIDIES FOR EXPORT. A subsidy for hops had been planned by the French Government already for the excess quantity from crop 1963. Exporters, however, are still today awaiting payment of this premium.

In 1964 France imported:

Countries	Jan.—June lbs.	July—Dec. lbs.	1964 Total lbs.
Belgium-Luxembourg	1,764	11,023	12,787
Germany West	186,289	800,270	986,559
Jugoslavia	347,886	26,455	374,341
Czechoslovakia	281,748	240,301	522,049
U. S. A.	—	29,762	29,762
Total	817,687	1,107,811	1,925,498

French hop imports for the calendar year 1963 = 2,307,555 lbs.

Export of French hops in 1964 were as follows:

Destination	Jan.—June lbs.	July—Dec. lbs.	1964 Total lbs.
Algiers	1,764	2,205	3,969
Argentine	—	11,023	11,023
Belgium-Luxembourg	218,035	203,044	421,079
Denmark	14,330	23,589	37,919
Germany West	674,828	591,274	1,266,102
Ivory Coast	2,866	2,646	5,512
Great Britain	51,147	5,071	56,218
Guadeloupe	661	—	661
Guinea	—	11,684	11,684
Italy	12,125	220	12,345
Cameroons	26,455	—	26,455
Martinique	661	—	661
New Caledonia	1,323	1,102	2,425
Netherlands	12,125	—	12,125
Norway	—	1,984	1,984
Austria	49,824	—	49,824
Switzerland	100,971	39,021	139,992
Spanish North-Africa	11,023	11,023	22,046
U. S. A.	—	38,581	38,581
Vietnam	72,752	—	72,752
Central Africa	1,323	—	1,323
Total	1,252,213	942,467	2,194,680

French hop exports for the calendar year 1963 = 1,330,917 lbs.

Austria

MUEHLVIERTEL. In this district, the **Uncovering** and **Cutting** of the hops could start only at the beginning of April after the frozen soil had thawed. The plants had wintered well and spring work was finished around April 20th.

The plants could develop well under quite favourable climatic conditions and reached the height of the trellises around June 20th. **Aphids** appeared in greater number but were carefully controlled as well as **Downy Mildew.** Locally, there were some damages by storm and hail in many hop yards. These storms had their effect, both on the quantity and the quality of the crop.

Bloom started during the second half of July. The hops showed a good overhang and the cones ripened on the lower third of the vines. **Picking** started by the end of August and was finished about mid-September. The weather during the harvest was mostly good.

The hops of crop 1964 had cones of some smaller size than the year before but corresponded otherwise in quality to crop 1963 with the exception of more wind whipping. The crop was graded as follows: Grade I 70.5 %, Grade II 26 %, Grade III 3.5 %.

A harvest of 1,380 cwts. was picked on an acreage of 124 acres (1,228 lbs./acre). The entire crop was purchased by sponsoring breweries until the middle of September.

LEUTSCHACH. Weather conditions were quite favourable for the development of the hops. Temperatures and precipitations were as follows:

	March	April	May	June	July	August	Sept.
Precipitations	117	100	137	124	132	145	71 mm
Temperatures	9.5	15.5	18.4	20.0	22.8	21.9	22.1° C

Ample rainfalls and warm temperatures made for a good development of the growth and the hops reached the height of the trellises by the middle of June. Between 8 and 12 sprayings were effected against **Pests** and **Diseases.** The hops developed a good overhang and the cones on the lower third of the vines ripened too. **Picking** started on August 15th and was finished on September 9th, under somewhat changeable weather conditions. Seven picking machines handled about half of the crop and for the rest there was no lack of pickers.

A crop of 216,600 lbs. resulted from an acreage of 172 acres (including 19 acres young plantings) which corresponds to 1,260 lbs. per acre. The **Quality** of the hops crop 1964 was judged better than the year before. The crop was graded as follows: Grade I 75.5%, Grade II 17.6 %, Grade III 6.9 %. The total crop was purchased by sponsoring breweries.

Switzerland

The hops were off to a good start under sufficient rainfalls in March which continued until May. The total development was favoured by warm weather in mid-May and there were practically no pests and diseases with the exception of some local damages by **Grubworms.** In May, however, the weather became very dry and this was interrupted only by local insufficient showers until the harvest. Precipitations were distributed as follows:

Jan.	Febr.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11.5	29.0	98.9	52.9	119.9	74.3	56.5	111.8	63.3	71.0	53.5	22.2 mm

The plants reached the height of the trellises on June 25th, but **Bloom** had started already very early in mid-June. For this reason the hops in general remained pointed and showed only a partial weak overhang. The cones on the lower third of the vines ripened.

Picking started on August 12th and was finished on September 5th. There are now two picking machines available so that no hand picking is done anymore. The quality of the hops was generally quite good with the exception of occasional somewhat oversized cones. A crop of 30,975 lbs. resulted from an area of about 29 acres (1,068 lbs. per acre). Prices were settled on October 6th, as follows:

	Grade I (99 % of the crop)	Grade II (1 % of the crop)
prices to farmers	Fr. 530.— per 50 kilos	Fr. 510.— per 50 kilos

For crop 1964 there were neither payments to or from the compensation fund.

Spain

The development of the hops crop 1964 followed the dry climatic conditions of the year. There were practically no pests or diseases. The districts of hop production showed the following development in 1964:

District	Acreage acres	Crop lbs.	Yield per acre lbs.
Galicia	531	423,724	798
León	1,927	2,230,945	1,158
Cantabria	467	272,819	584
Total	2,925	2,927,488	1,001

The quality of crop 1964 was judged as follows:

Grade I 68.2 %
Grade II 30.1 %
Grade III 1.7 %

The total crop was purchased by the Spanish brewing industry which in some proportion is abundantly covered with hops from the home production.

Greece

The following information has come to hand about the district of **ARTAS** which has a total acreage of 16 acres:

The development of the hops was favoured by good climatic conditions in 1964. Three sprayings were effected against pests and diseases. **Bloom** started at the beginning of July at which time the vines had reached the height of 5 to 6 meters. **Picking** started at the beginning of August and was finished on September 2nd. There are no picking machines in operation.

The total hop acreage of Greece had been increased to 61 acres which brought a total crop of 63,930 lbs. (1,048 lbs./acre) in 1964. The entire crop was purchased by the home breweries.

England

Weather conditions following the harvest in 1963 were favourable for cultivation work in the autumn. **Spring Work** in 1964, too, was favoured by good weather. The hops could develop well under good climatic conditions. In contrast to the continent of Europe there were very heavy rainfalls in England during the vegetative growth in 1964 which decreased the crop in the districts of production in the South East of England. This decrease was equalized by higher crops in other districts. **Verticillium Wilt** constituting a special danger to hops in England, farmers now give special attention to wilt resistant **Whitbread** varieties in the planting of new hop yards.

Sprayings against **Pests** and **Diseases** were effected at least every three weeks. Verticillium Wilt is increasing in the Southern districts of production.

The hops reached the height of the trellises in July and were in **Full Bloom** by the end of July/beginning of August 1964. The plants developed a good overhang and cones ripened on the lower third of the vines.

Picking which is practically done by machines only started sporadically on August 21st, was in full swing on September 7th, and finished about the end of September. The basic quota for farmers had been established at 101.5 % on May 31st, 1964. The weather during the harvest was good and sunny and only occasionally too hot.

Quality. The hops of crop 1964 were judged better than in 1963. The crop was graded as follows: Grade I 20.8 %, Grade II 71.9 %, Grade III 7.3 %. The crop was delivered in usual form on the basis of existing contracts. The average price to farmers was set at £ 34.15.— (against £ 31.10.— in 1963) per cwt. (DM 390.— per 50 kilos).

Contracts for crop 1964 were delivered in full. Applications for crop 1965 have been submitted up to now for 221,900 cwts. (against 218,000 cwts. the year before). This will be increased by applications for export which are not yet known. It is visible, however, already now that demand will be somewhat higher than for crop 1964. A quantity of 12,000 cwts. from crop 1965 had been allowed for the import against 11,500 cwts. from crop 1964.

The following quantities of hops crop 1964 were imported from September 1st, 1964 to March 31st, 1965:

Country	cwts.	Country	cwts.
Germany West	1,175	b. f.	11,578
Belgium	1,808	Poland	167
U. S. A.	1,922	Canada	1,649
Netherlands	176	France	46
Jugoslavia	5,869	Total	13,440
Czechoslovakia	628	1 cwt = 50,8 kg	
c. f.	11,578		

English imports of hops crop 1963 = 9,671 cwts.

Exports of English Hops Crop 1964

September 1st, 1964 — March 31st, 1965

Country	cwts.	Country	cwts.
Angola	20	b. f.	18,173
Australia	4,531	Lebanon	2
Belgium	1,023	Malayan States	106
Canada	4	Malta	346
Ceylon	53	Netherlands	199
Germany West	7	Nigeria	62
Fiji Islands	10	Pacif-Islands	7
Finland	11	Rhodesia/Njassaland	109
Ireland	12,510	Southafric. Republ.	319
Jamaica	4	Total	19,323
c. f.	18,173	1 cwt. = 50.8 kg	

English exports of hops crop 1963 = 19,557 cwts.

U. S. A.

CALIFORNIA. In the district of **Sacramento** the hops could develop free from damages by weather conditions and pests. The weather was favourable for the start of the growth during the spring and the entire development corresponded to the average over many years. Precipitations were distributed as follows:

March	April	May	June	July	August	Sept.
2.46	1.62	—.62	—.12	—	—.04	—.22 inch.

The weather during the summer of 1964 was cool and at harvest time, too, temperatures were lower than customary. In many hop yards there were no sprayings necessary against pests and diseases in 1964. In other hop gardens preventive sprayings were effected up to three times.

The plants reached the height of the trellises between the 16th and 20th of June 1964, and showed a very good overhang. **Bloom** started about June 25th but there was only a scant **Set** on the lower third of the vines. **Picking** started during the first week of August and was finished in mid-September. The harvest not only in this district but in all other American districts of production is fully automatic.

Quality. The hops of crop 1964 were quite satisfactory and better than the year before both in colour and contents of lupulin as well as the formation of the cones. The crop was graded as follows: Grade I 30 %, Grade II 69 %, Grade III 1 %.

WESTERN OREGON. In this district, the hops could develop under the usual prevailing cool and sometimes wet climatic conditions in the springtime. There were no damages by frost. During the vegetation there were no extremely high temperatures so that the plants could develop normally. Precipitations were distributed as follows:

March	April	May	June	July	August	September
3.55	1.28	—.59	1.73	—.45	—.41	—.74 inch.

One or two sprayings were generally sufficient against **Pests** whereas **Downy Mildew** was controlled by three or four dustings on the average. The hops reached the height of the trellises on June 25th and were in **Bloom** between July 25th and 30th. The vines had formed a good overhang and the cones ripened uniformly. Picking of the fuggles varieties started on August 14th and was finished at the end of August. The picking of the bullions started on September 3rd and was finished on September 20th always under favourable weather conditions.

Quality. The cones were generally of normal size and had a good colour. Contents of lupulin, however, and of alpha-acids as well did not quite correspond to previous expectations. The crop was graded as follows: Grade I 45 %, Grade II 50 %, Grade III 5 %.

EASTERN OREGON and **IDAHO.** The hops had a slow growth under relatively cool weather during the spring and summer of 1964. Strong **Winds** especially during the spring of 1964 occasioned local damages. Under the cool temperatures especially the early clusters developed slower than usual so that **Bloom** started before the growth of the vines was sufficiently completed. On July 29th, there were storm damages in Idaho which locally retarded the normal development of the hops. During the springtime **Downy Mildew** had to be controlled very carefully whereas **Aphids** and **Red Spider** were more easily controlled than usual. Rainfalls were distributed as follows:

March	April	May	June	July	August	September
—.64	1.35	1.76	2.—	—.41	—.53	—.70 inch.

The average temperatures were lower than normal from March through August 1964. Late clusters reached the height of the trellises around June 25th and showed a good overhang. Early clusters had not reached the height of the trellises in some hop yards and remained mostly pointed. The ripening of the hops was good on early clusters whereas late clusters could not ripen as well as normal especially on the lower part of the vines.

Quality. The hops of crop 1964 were not judged as favourably as the year before. The crop was graded as follows: Grade I 55 %, Grade II 30 %, Grade III 15 %.

WASHINGTON. In the district of **Yakima** growth during the season of 1964 was quite normal. After a mild winter 1963/64 **Spring Work** was done in good time. The weather during the spring was cool and young shoots were off to a slow start. It was shown, however, that the hops had grown remarkably well under the relatively cool weather in this district. Precipitations were distributed as follows:

March	April	May	June	July	Aug.	September
—.14	—.25	—.03	1.18	—.08	—.20	—.03 inch.

Downy Mildew was much less in evidence than in 1963 but many farmers continued preventive sprayings. **Red Spider** was a serious danger and the control of this pest caused increased expenses.

The hops reached the height of the trellises around July 1st. Early clusters were in bloom at this time whereas late clusters came into **Full Bloom** about 8—10 days later. The vines in general did not show any overhang but the development of the cones was good even on the lower part of the vines.

Picking started around August 23rd and was finished about September 25th under very good weather conditions.

Quality. The hops of crop 1964 were in all respects practically equal to the year before. The crop was graded as follows: Grade I 35 %, Grade II 45 %, Grade III 20 %.

Hop Market U. S. A.

Crop 1963 had been sold out in May 1964. There was eager demand for advance contracts and in June 1964 the coming crop 1964 already seemed to be under contract to a great extent. At that time the position of forward contracts was estimated as follows:

Crop 1964—95 %, Crop 1965—85 %, Crop 1966—60 %.

As a consequence of a quantitatively satisfactory crop and as a reaction to slow demand quotations for crop 1964 decreased from 38/40 cents until 35 cents which were paid for sporadic purchases in September. Free available stocks on farms were estimated at about 20,000 cwts. and for these hops there was no demand shortly after the harvest. Trading was stimulated again only in October/November when prices rose until 45 cents and found a steady level at 42/43 cents. Until the end of the year 1964 stocks had been sold out with the exception of small remaining lots.

Trading in forward contracts continued to be eager and contracts were closed on a basis of 42 cents per lb. In December 1964 the position of forward contracts was estimated as follows:

Crop 1965—90 %, Crop 1966—75 %, Crop 1967—60 %.

Farmers became less eager to close advance contracts as soon as it became known that the law which allows an employment of Mexican labour for agriculture in the U. S. A. would not be prolonged after December 31st, 1964. This labour in the future will not be available anymore and farmers will then be obliged to employ workers at higher pay who, however, locally are available only in limited numbers. This fact as well as the continually growing expenses cannot fail to influence the calculation of farmers especially during the coming years. The actual pricing situation and the expected higher cost of production have led to efforts among farmers to introduce a **Marketing Agreement** for hops. As the production of hops in the U. S. A. has already been extensively mechanized it will not be possible to compensate rising cost of production by additional rationalizing. This, therefore, must lead to higher prices. At the moment the possibility for a new marketing agreement is still undetermined. Discussions as well as verifications by the agricultural authorities are on the way but it is expected that a decision will not be reached until the late summer of 1965.

Hop Export U. S. A.

Exports of US-Hops Crop 1964
September 1st, 1964 — March 31st, 1965

Country	lbs.	Ztr. je 50 kilos	Country	lbs.	Ztr. je 50 kilos
Ethiopia	23,000	209	b. f.	11,173,646	101,367
Argentine	227,023	2,060	Malaya	8,296	75
Australia	39,830	361	Mexico	3,812,066	34,583
Belgium-Luxembourg	657,044	5,961	Moçambique	26,962	245
Bolivia	119,563	1,085	Nicaragua	13,227	120
Brazil	976,185	8,856	Netherlands	313,138	2,841
Canada	2,239,120	20,313	Nigeria	132,583	1,203
Ceylon	46,000	417	Norway	14,316	130
Chile	2,646	24	Austria	120,868	1,097
Colombia	749,294	6,798	Pakistan	3,122	28
Denmark	390,597	3,543	Panama	45,551	413
Germany West	3,113,233	28,243	Peru	472,529	4,287
Dominican Republic	42,804	388	Philippine Isl.	92,800	842
Ecuador	100,076	908	Portugal	84,444	766
Finland	7,499	68	El Salvador	10,581	96
France	50,170	455	Spain	10,000	91
Great Britain	231,933	2,104	Union of South Africa	192,670	1,748
Guatemala	19,291	175	South-Korea	85,535	776
Honduras	60,966	553	Sweden	89,297	810
Hongkong	16,009	145	Switzerland	212,415	1,927
Indonesia	11,023	100	Talwan	50,706	460
Ireland	1,424,916	12,927	Trinidad	13,287	121
Israel	13,818	125	Czechoslovakia	164,719	1,494
Italy	59,474	540	Uruguay	114,728	1,041
Japan	474,642	4,306	Venezuela	457,747	4,153
Rep. Congo	77,490	703	Vietnam	46,297	420
c. f.	11,173,646	101,367	Other Countries	135,731	1,231
			Total	17,897,261	162,365
			110,23 lbs = 1 Ztr. zu 50 kg		

Hop Imports U. S. A.

Hop Imports U.S.A. Crop 1964 September 1st, 1964 — March 31st, 1965		
Country	lbs.	Ztr. je 50 kg
Germany West	5,053,457	45,844
Jugoslavia	3,171,436	28,771
Canada	1,824	17
Belgium-Luxembourg	377,156	3,422
France	115,734	1,050
Other Countries	368,843	3,346
Total	9,088,450	82,450

Canada

The rainy and cold weather in both districts of production **Sardis** and **Kamloops** was rather unfavourable for the growth of the hops. Precipitations were distributed as follows:

	March	April	May	June	July	Aug.	Sept.
Sardis	8.41	4.92	3.80	3.89	3.75	4.90	6.87 inch.
Kamloops	0.09	0.29	0.56	2.08	1.22	1.11	1.90 inch.

Conversion: 10 inches of snow = 1 inch of rain

In the district of **SARDIS** about 14 sprayings were effected against **Pests** and **Diseases.** The vines reached the height of the trellises on June 30th and were in **Bloom** at mid-July. The plants showed a good overhang and the cones ripened well despite the unfavourable climatic conditions.

Picking started on September 1st and was finished on October 2nd, under rainy and windy weather conditions. The entire crop was handled by eight picking machines.

The hops were good in colour but not so good in quality as the year before. The entire crop was graded as Grade II.

In the district of **KAMLOOPS** only three sprayings were effected against **Pests** and **Diseases.** The hops reached the height of the trellises on June 10th and came into **Full Bloom** during the last week of July. The formation of the cones and the **Ripening** of the hops suffered from lack of sunshine and warm weather.

One picking machine is sufficient to handle the total crop which was graded as Grade II.

On a total acreage of somewhat more than 1,000 acres a crop of 1,551,437 lbs. was harvested. All hops were sold until April 19th, 1965.

Japan

In the district of **NAGANO** good climatic conditions prevailed during the growth of the hops. Between seven and eight sprayings were effected against Red Spider and Downy Mildew.

	March	April	May	June	July	Aug.	Sept.
Precipitations	38.2	87.2	36.7	88.4	250.5	72.5	189.7 mm
Temperatures	2.5	13.8	16.2	18.7	24.0	26.2	19.2 °C

Under favourable weather conditions the hop vines reached the height of the trellises during the first half of June and were in **Bloom** already on June 25th. The formation of the cones was favoured by sunny weather so that the cones on the lower third of the vines ripened well. There were no damages by Downy Mildew. **Picking** started on August 5th and was finished on August 30th. Pickers were not sufficiently available. The hops were judged better in quality than the year before. The cones had a good colour and had more ample contents of lupulin.

In the district of **HOKKAIDO** weather conditions were most unfavourable for the development of the hops. The prevailing warm weather in May was followed by a cold spell which started at the beginning of June continuing until the beginning of August. The growth of the hop vines was retarded and a bad crop was the consequence. Sprayings against pests and diseases were effected up to 13 times.

	March	April	May	June	July	Aug.	Sept.
Precipitations	38.0	112.5	69.1	158.5	109.7	152.1	84.4 mm
Temperatures	0.3	6.2	13.1	16.4	19.0	22.0	15.9 °C

The hops reached the height of the trellises at the end of June and were in **Bloom** in mid-July. Hop yards did not show a very good aspect. Violent storms about the end of July were further reasons for the reduced crop. **Picking** started on August 15th, and was finished on September 10th. There was some lack of labour during the close of the harvest. The quality of the hops corresponded generally to that of the year before but contents of lupulin were lower.

The Japanese hops of crop 1964 were graded as follows: Grade I 89 %, Grade II 6 %, Grade III 5 %. About 80 % of the hops were picked by machines.

Sponsoring breweries acquire the hops according to contracts at an average price of Yen 32,890.— per 50 kilos (DM 365.— per 50 kilos).

New Zealand

Rainfalls during the season 1963/64 were distributed as follows:

1963					1964		
Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
5.27	3.89	0.39	1.79	1.49	3.28	4.81	3.14 inch.

The hops could develop well at the beginning of the season under favourable weather in October/November 1963. Climatic conditions in December 1963 and January 1964 became unfavourable through reason of cold winds. Temperatures as well as sunshine were considerably under normal so that the growth of the plants was hampered. **Red Spider** had to be controlled only locally.

The vines reached the height of the trellises retarded in January 1964 and developed little overhang. **Bloom** started during the first decade of January and was favoured by warmer weather in February in the same way as the formation and the **Ripening** of the **Cones.** Picking started during the last week in February 1964 and was finished within four weeks with some interruptions by rain. About 70 % of the harvest are handled by machines and there was sufficient labour available for the remaining part of the crop.

Quality. The hops of crop 1964 were not especially good in colour whereas lupulin was on the average. The crop was graded as follows. Grade I 2.6 %, Grade II 56.3 %, Grade III 38.4 %, Grade IV 2 %. An insignificant quantity of 0.7 % was rejected.

Prices between sh 4/2 and sh 5/4 per lb. (DM 256.— to DM 328.— per 50 kilos) were paid for the Californian varieties up to now mostly planted in New Zealand. The Californian varieties are now replaced by three new varieties which suffer less from Root Rot. These are the varieties "First Choice", "Calicross" and "Smooth Cone". For these new hops an increase of 3 d per lb. was paid (DM 15.—/16.— per 50 kilos net).

Crop 1965

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

Union of South Africa

Growth of the hops in South Africa was not favoured by climatic conditions. A very intense cold spell in November 1964 occasioned considerable damages. Many plants were killed by frosts, had to be cut off and to be replanted only late in the season. Rainfalls were distributed as follows:

1964					1965		
Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
3.18	9.21	1.49	2.03	1.03	0.87	3.45	2.79 inch.

The hops reached the height of the trellises by the end of December and were in **Full Bloom** at the beginning of January 1965. The vines showed only little overhang but the cones ripened on the lower third of the vines. **Caterpillars** and **Red Spider** occasioned only local damages and could be controlled.

Picking started on February 17th, 1965, and was finished on March 20th, under hot weather with occasional precipitation. 25 % of the crop were handled by one picking machine and for the remainder of the crop there were not sufficient pickers available.

The hops of crop 1965 were of good colour and cones had a higher content of lupulin than in 1964. The crop was graded as follows: Grade I 60 %, Grade II 35 %, Grade III 5 %. On a total acreage of 304 acres a crop of 151,015 lbs. was harvested.

Argentine

In the districts of RIO NEGRO and NEUQUEN where the most important percentage of the hop production in Argentine is situated there were no favourable conditions for the development of the hops during the summer 1964/65. Hop yards suffered from continually strong winds and rainfalls which were distributed as follows:

1964					1965		
Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
2.2	14.0	3.7	15.3	18.1	15.5	5.7	8.7 mm

The wet weather favoured the appearance of **Downy Mildew** which had to be controlled with four and five sprayings. The danger of this disease, therefore, was avoided but the infection had unfavourably influenced the result of the crop. Only one or two sprayings were necessary against **Red Spider.**

The vines reached the height of the trellises in November 1964 but showed scarcely any overhang. **Bloom** appeared by the end of December 1964 despite the unfavourable weather. **Picking** was effected from February 15th until March 12th, 1965 under dry and calm weather. About half of the crop in this district was handled by six picking machines. A total crop of 1,750 cwts. (approx. 15 cwts. per ha) was harvested in this district.

The quality corresponded about to the year before both in colour and formation of the cones. The crop was graded as follows: Grade I 60 %, Grade II 30 %, Grade III 10 %. As a consequence of difficult sales for crop 1964 there were no new gardens established and the acreage remained unchanged at 296 acres. The home breweries took over the crop 1965 almost completely at average prices of Pesos 400.— per kilo (DM 600.— per 50 kilos). Advance contracts for crop 1965 had been closed in December 1964.

PROVINCE OF BUENOS AIRES. The district **Commandante Nicanor Otamendi** has an unchanged acreage of 29 acres of which 25 acres are gardens which are new planted or reactivated. This explains the limited crop in this district of only 4,409 lbs. (364 lbs. per acre). Precipitations were distributed as follows:

1964			1965	
October	November	December	January	February
44	70	103	68	113 mm

Downy Mildew appeared already at an early date and had to be carefully controlled. After this disease was less notable in November and December 1964, a new infection appeared during the ripening of the hops. About 13 sprayings became necessary. The vines reached the height of the trellises during the first half of November and there was some overhang especially in older hop yards. **Bloom** started by the end of December. Cones on the lower third of the vines did not completely ripen. **Picking** was effected under good weather conditions during the first week in March 1965 by one picking machine.

The **Quality** was judged better than in 1964. The entire quantity of 4,409 lbs. was judged to be Grade II.

Australia

In **TASMANIA** the cold weather on the Southern Hemisphere during the summer 1964/65 was the reason for a smaller quantitative result of the harvest in March 1965. **Spring Work** was finished early but the growth of the hops was hampered by two spells of **Frost** in August 1964. The hops reached the height of the trellises in December and were in **Full Bloom** in mid-January 1965. The **Formation** of the **Cones** developed only slowly under the influence of exceptional cold winds in January and the cones were of unequal size. The vines showed a good overhang and cones had ripened well on the lower third of the vines too, especially on the variety Ringwood. Precipitations were distributed as follows:

1964		1965		
Nov.	Dez.	Jan.	Febr.	March
114	138	106	14	136 points

It was not necessary to spray against pests and diseases. Verticillium Wilt is noted in many hop yards but only sporadically in single cases here and there.

Picking started at the end of February and was finished during the third week in March. There is no lack of labour anymore since picking machines were installed which now handle 25 % of the crop. The weather during the harvest was favourable.

The cones were good in colour and showed an ample content of lupulin. The quality of the hops was judged better than the year before. On a total acreage of 1,530 acres of which 10 acres young hop yards, a crop of 1,720,000 lbs. was harvested (2,766 lbs./acre).

Rainfalls in **VICTORIA** were distributed as follows:

1964					1965		
Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
342	477	651	178	292	0	171	44 points

Ample rainfalls during the spring as well as warm and dry weather during the summer may be the main reason for the fact that the harvest was 20 % larger than the year before. About 799,939 lbs. were picked on an acreage of 600 acres (3,285 lbs. per acre).

New Zealand

According to information received up to now, the crop 1965 was sensibly higher than the year before. Lack of precipitations reduced the quality of the hops. A total quantity of 1,000,006 lbs. was harvested on 576 acres (4,298 lbs. per acre).

Growth 1965 in Germany

After a mild winter until the end of January 1965 with ample precipitations a cold spell set in which continued until the end of March 1965. The precipitations were favourable for the replenishment of the subsoil moisture. **Spring Work** was executed in the several districts of production as follows:

HALLERTAU. The **Uncovering** and **Cutting** was started at an early date. Hop yards cut in the autumn of 1964 showed a good growth. Unfavourable weather conditions in April with local **Snowfall** hampered the work in the hop yards. The hops were off to a slow start.

TETTNANG. **Spring Work** started during the first days of April and was finished even if hampered by precipitations. An extended **Snowcover** was to be noticed after April 20th for a few days over most of this district.

SPALT. The **Uncovering** and **Cutting** could start at the beginning of April but was hampered by unfavourable weather conditions during the second half of April.

HERSBRUCK GEBIRGE. **Spring Work** started by the end of March and was finished especially in hop gardens on lighter soil during the second half of April.

The growth in the hop yards in all German districts of production shows an overall influence of cool weather with occasionally abundant rainfalls during the time from the end of April/beginning of May until mid-June. The plants were hampered in growth and were retarded in their development by about a fortnight. Locally, hop yards were under water as a consequence of excessive precipitations. The unfavourable weather conditions influenced most especially the development of slips newly planted in the spring of 1965.

The necessary work for the cultivation of the hop yards was generally done with usual care. The plants on the average are healthy as a consequence of careful control measures against **Downy Mildew** whereas **Pests** constituted no danger. The weather improved since June 12th/13th which brought better conditions for the development of the hops. Decreased rainfalls allowed the hop yards to become dry. Higher temperatures especially during the night favoured the growth of the vines which partly could set off the lost development. Warm and dry weather is now very necessary for the further growth of the hop yards.

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.

We have the pleasure to announce that according to a partner's agreement of December 1, 1964,

Mr. HARALD GOERING, Jr.,

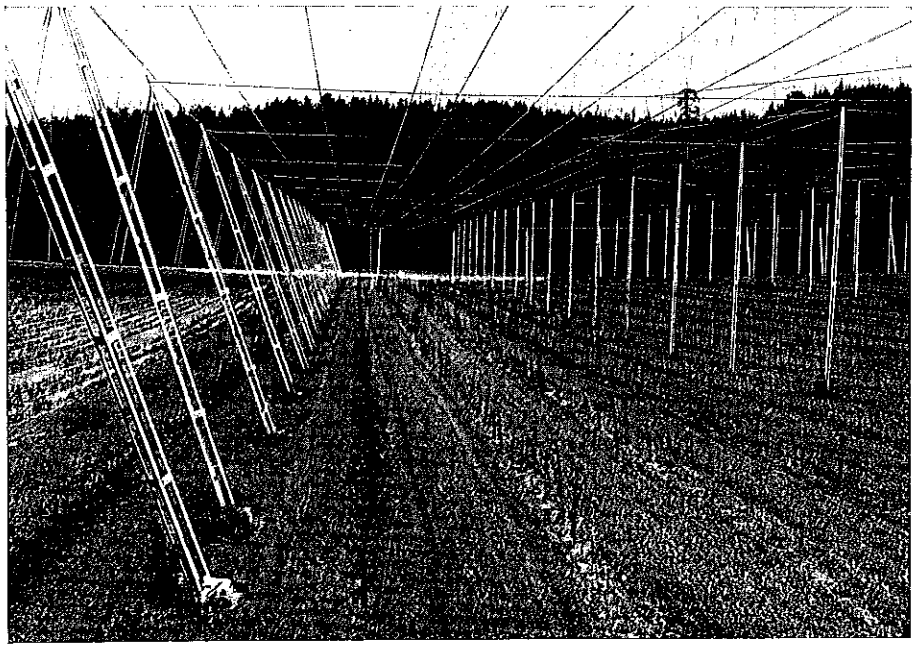
son of our partner Harald Goering, Sen.,
and at present vice president of our branch
John Barth Inc., 415 Lexington Avenue, New York 17, N. Y.

as well as

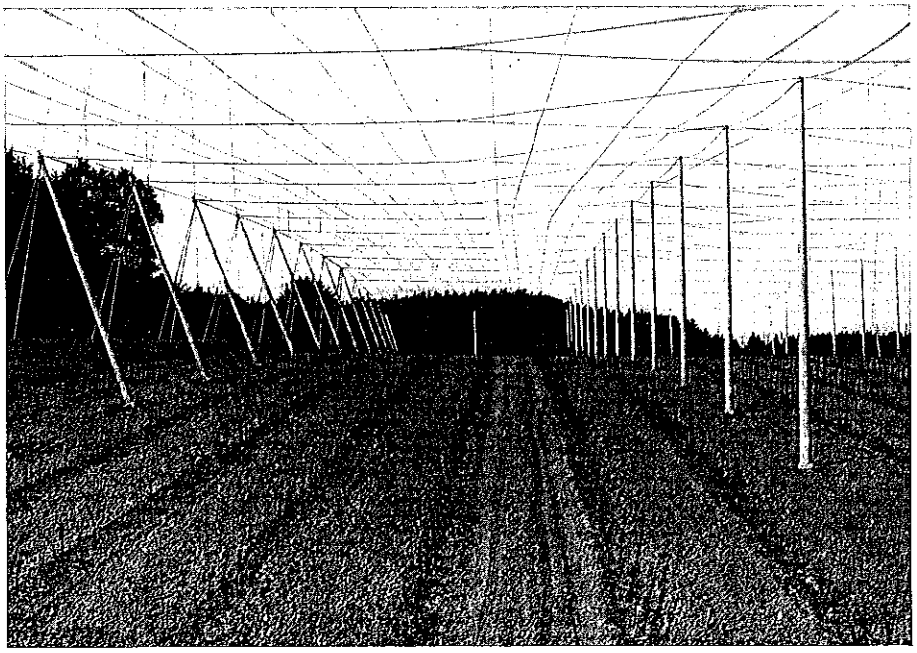
Mr. MICHAEL BARTH,

son of our late partner Johannes Barth,
who was killed in action in 1942

have entered our firm as **Full Partners.** They will have to maintain the tradition and the standing of our enterprise.



Steel Poles
Weight of
Corner poles
85 kilos
Lateral poles
75 kilos
Support poles
42 kilos



Concrete Poles
Weight of
Corner poles
550 kilos
Lateral poles
440 kilos
Support poles
380 kilos

When increasing the hop acreage of our hop farm **Barthhof**-Hallertau in the spring of 1965, new hop yards were installed with expanded width between hills and greater distance between rows of poles by using concrete poles or steel masts. The greater distance between rows of poles of 21 meters against about 9 meters allows a more economical cultivation of the hop yards. As the number of support pole rows is now smaller, the wire trellises had to be reenforced to carry the increased weight. The rows of plants distant 2.80 m from each other are laid out in such a way that no plantings exist any longer in the lines of poles. The rows of hops are now planted to a greater number of hills nearer to each other (now 0.80 meters instead of formerly 1.50 meters). In this way, the number of hills per unit of acreage remains unchanged. The training of the vines beginning with the second year of cultivation is not done any longer obliquely in the direction of the rows of plants but is now directed alternately per hill to the right or to the left of the rows of plants.

Korn Druckerei Nürnberg