

Joh. Barth & Sohn

HOPS SINCE 1794

HOP FARM BARTHOF HALLERTAU

TELETYPE 06/22030
CABLE ADDRESS:
BARTHSONN NUERNBERG

8500 NÜRNBERG 2

P. O. B. 331
TELEPHONE 44 45 51 / 53

August 5th, 1966

Hop Report 1965/66

Warlike developments in Asia, especially Vietnam tended to complicate the international relations. Revolutions in several of the young states of Africa established additional elements of disquietude.

**Economical
situation**

Whereas the economy in the U. S. A. continued in high gear, the developments in Europe became varied. In the **Federal Republic of Germany** the election year of 1965 resulted in a number of new commitments which after the election had to be withdrawn for lack of funds. The economic situation which is distinguished by an insufficient workers' supply is worsened by constantly rising wages and shortened working times which is not in conformity with the increase of the Gross National Product. The natural result was a passive balance of foreign trade amounting to DM 6.148 billion (year before: deficit DM 1.8 billion).

World production of beer in 1965 showed an **Increase** of about 3.8 million bbl. against 1964. The percentage rates of the increase are as follows: Western Europe + 1.9%, Eastern Europe (adjustment UdSSR) — 7%, North America + 3.1%, South America — 0.7%, Africa + 8.6%, Asia + 5.0%, Australia and Oceania + 4.7%.

**Production
of Beer**

| | |
|--|---|
| 1 ha = 2.934 bayr. Tagwerk | 1 bayr. Tagwerk = 0.341 ha |
| 1 ha = 2.471 acres | 1 acre = 0.405 ha |
| 1 Liter = 0.2642 gall. (USA) | 1 gall. (USA) = 3.7853 Liter |
| 1 Liter = 0.2201 gall. (Brit.) | 1 gall. (Brit.) = 4.5435 Liter |
| 1 hl = 100 Liter = 26.42 gall. = 0.8523 bbl. (USA) | 1 bbl. (USA) = 31 gall. = 1.1734 hl |
| 1 hl = 100 Liter = 22.01 gall. = 0.6114 bbl. (Brit.) | 1 bbl. (Brit.) = 36 gall. = 1.6356 hl |
| 1 kg = 2.20462 lbs. | 1 lb. = 0.45359 kg |
| 1 shortton (sht) = 2000 lbs. = 907.185 kg | |
| 1 longton (lgt) = 2240 lbs. = 1.016.048 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) | 1 cwt. (USA) = 100 lbs. = 45.36 kg = 0.9072 Ztr. |
| | 0.984 cwt. (Brit.) 1 cwt. (Brit.) = 112 lbs. = 50.8 kg = 1.016 Ztr. |
| 1 quarter (qr) = 400 lbs. = 181.44 kg (barley) | 1 Ztr. = 0.27555 qr. |
| 1 bushel (bu) = 48 lbs. = 21.77 kg (corn, malt) | 1 Ztr. = 2.2965 bu. |
| | 34 lbs. = 15.42 kg (malt) 1 Ztr. = 3.2425 bu. |
| DM 1.— = US\$ —.25 / DM 4.— = US\$ 1.— / US\$ 2.80 = DM 11.20 = £ 1.—.— | |
| 1 mm precipitations = 1 Ltr. of water per m ² , 1 mm = 0.04 inch, 1 inch (100 points) = 25 mm | |
| Conversion of thermometer degrees in Fahrenheit and Celcius: | |
| 86° F = $\frac{(86 - 32) \cdot 5}{9} = 30° C$ | 30° C = $\frac{30 \cdot 9}{5} + 32 = 86° F$ |

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| Production of Beer 1965 | | | | | | | |
|-------------------------|--------|----------------------------|---------|-----------------------|--------|----------------------------|--|
| Country | | 1000 bbl. of 31 gall. each | | Country | | 1000 bbl. of 31 gall. each | |
| Germany W. | 62,358 | | | b. f. | 2,862 | 395,481 | |
| East*) | 12,272 | 74,630 | | Nigeria | 496 | | |
| England | | 41,315 | | Cameroons*) | 341 | | |
| USSR*) | | 24,288 | | Angola | 319 | | |
| France | | 16,122 | | Algeria | 298 | | |
| Czechoslovakia | | 16,023 | | Ruanda-Burundi | 288 | | |
| Belgium | | 12,357 | | Kenya | 285 | | |
| Poland | | 6,597 | | Marocco | 256 | | |
| Spain | | 6,392 | | South Rhodesia | 239 | | |
| Austria | | 5,894 | | Ghana | 196 | | |
| Netherlands | | 4,604 | | Ivory Coast*) | 170 | | |
| Denmark*) | | 4,196 | | Zambia*) | 170 | | |
| Italy | | 3,884 | | Uganda | 162 | | |
| Hungary | | 3,784 | | Tunis*) | 153 | | |
| Switzerland | | 3,711 | | Ethiopia*) | 153 | | |
| Ireland | | 2,988 | | Egypt*) | 132 | | |
| Jugoslavia | | 2,552 | | Moçambique*) | 119 | | |
| Roumania*) | | 2,271 | | Senegal*) | 102 | | |
| Sweden | | 2,210 | | Centralafric. Rep.*) | 94 | | |
| Bulgaria*) | | 1,462 | | Sudan*) | 77 | | |
| Finland | | 994 | | South West Africa*) | 77 | | |
| Norway | | 791 | | Tansania | 63 | | |
| Portugal*) | | 490 | | Dahomay | 34 | | |
| Luxembourg | | 435 | | Guinea | 30 | | |
| Greece | | 371 | | Rep. Congo (Brazzav.) | 29 | | |
| Malta*) | | 30 | | Madagascar*) | 21 | | |
| Iceland | | 17 | | Africa | | 7,168 | |
| Europe | | | 238,409 | Japan | 17,102 | | |
| U.S.A. | | 108,207 | | Philippine Islands*) | 1,364 | | |
| Canada | | 16,619 | | Vietnam | 1,023 | | |
| Mexico*) | | 8,661 | | China*) | 682 | | |
| Brazil | | 6,903 | | Malaysia | 384 | | |
| Columbia*) | | 5,305 | | South-Korea | 363 | | |
| Venezuela | | 2,238 | | Israel*) | 341 | | |
| Argentina | | 1,926 | | Turkey*) | 277 | | |
| Chile | | 1,386 | | Singapore | 274 | | |
| Peru | | 1,345 | | Indonesia | 170 | | |
| Cuba | | 883 | | India | 147 | | |
| Puerto Rico*) | | 782 | | Hongkong*) | 128 | | |
| Uruguay | | 500 | | Thailand*) | 123 | | |
| Bollvia | | 426 | | Iran*) | 102 | | |
| Ecuador*) | | 361 | | Formosa*) | 85 | | |
| Panama | | 280 | | Lebanon | 68 | | |
| Jamaica | | 227 | | Ceylon | 60 | | |
| Guatemala | | 214 | | Iraq*) | 43 | | |
| Dominican Republic | | 171 | | Cyprus | 38 | | |
| Honduras | | 153 | | Syria*) | 26 | | |
| El Salvador*) | | 120 | | Pakistan | 21 | | |
| Costa Rica*) | | 102 | | Asia | | 22,818 | |
| Nicaragua*) | | 94 | | Australia | 10,958 | | |
| Trinidad a. Tobago | | 82 | | New Zealand | 2,319 | | |
| Paraguay | | 68 | | Tahiti*) | 17 | | |
| Martinique | | 17 | | New Caledonia*) | 5 | | |
| America | | | 157,072 | Australia/Oceania | | 13,299 | |
| Congo (Leopoldv.) | | 1,652 | | Total | | 438,766 | |
| Un. of South Africa | | 1,210 | | | | | |
| c. f. | | 2,862 | 395,481 | | | | |

*) = estimate

Beer Output in Western Germany

Output of beer in Western Germany during the year 1965 amounted to . 60,474,763 bbl.
Production of beer in the Western sector of Berlin for the same period was . 1,883,340 bbl.
Total 62,358,103 bbl.

These figures include 991,753 bbl. for exports delivered tax-free (1964 = 891,776 bbl.) as well as sales against foreign currency and to the occupation forces totalling 298,542 bbl. (1964 = 312,896 bbl.).

Imports of Beer 1965

The imports of beer to Western Germany amounted to 340,679 bbl. in 1965.

Crop 1964 (Supplement)

Complete figures of imports and exports of hops crop 1964 during the period of September 1st, 1964, to August 31st, 1965, can now be stated as follows:

| | Import | Export |
|-------------------|-----------------|-----------------|
| Germany | 10,777,628 lbs. | 15,221,220 lbs. |
| Belgium | 4,262,814 lbs. | 3,006,192 lbs. |
| England | 1,639,451 lbs. | 2,321,003 lbs. |
| U. S. A. | 6,467,084 lbs. | 22,529,284 lbs. |

The world crop in 1964 was about sufficient to cover the demand for hops on the world market. The German crop was relatively quickly sold out. For the rest, there were sufficient hops to cover the necessities as especially the production of hops in the Eastern countries is constantly on the increase and the excess of production is looking for buyers on the world market.

Crop 1965

The winter of 1964/65 was mild in the beginning, but continued until the end of March 1965 and was followed by a cold and rainy spring and a very rainy summer. The extremely disfavoured weather conditions made it difficult to tend the hop yards and the growth of the plants was retarded. Young hop yards especially suffered from the wet and cold weather. Under these circumstances the result of the crop must be considered satisfactory. It has been shown that constant wet weather has a more disfavoured influence upon the development of the hops as compared to longer periods of dryness as during the year 1964.

Growth of the Hops Crop 1965 in Germany

| Weather data from the Experimental Hop Farm Hüll/Hallertau | | | | | | | |
|--|--------|-------|-------|------|------|--------|-------|
| 1964 | March | April | May | June | July | August | Sept. |
| Precipitations per month (mm) | 61 | 99 | 110 | 181 | 153 | 70 | 97 |
| Monthly average of air temperature °Celsius | 1.1 | 6.2 | 10.9 | 15.7 | 16.0 | 14.3 | 12.0 |
| Maxima of air temperature °Celsius | 16.0 | 19.1 | 26.0 | 30.6 | 31.0 | 31.1 | 24.2 |
| Minima of air temperature °Celsius | — 17.0 | — 3.1 | — 1.2 | 2.3 | 5.0 | 3.7 | 1.9 |
| Monthly average of relative humidity % | 82 | 81 | 80 | 78 | 78 | 79 | 83 |
| Other data: | days | days | days | days | days | days | days |
| Snowfall | 8 | — | — | — | — | — | — |
| Rain and snow | 1 | 1 | — | — | — | — | — |
| Snowcover | 20 | 1 | — | — | — | — | — |
| Thunderstorm | 2 | 3 | 4 | 4 | 5 | 4 | — |
| Fog | 2 | — | 1 | 1 | — | 1 | 3 |
| Hoarfrost | 10 | 6 | 2 | — | — | — | 1 |
| Dew | — | 9 | 10 | 18 | 11 | 22 | 18 |

HALLERTAU. After the mild January 1965, temperatures fell sometimes under average in February and March, whereas precipitations, especially since March, were notably over average. Under more favourable weather at the beginning of April **Spring Work** could be started in time. Hop yards, cut during the autumn of the year before, showed a more forceful growth. Generally the hops were off to a slow start in April due to the disfavoured weather during this month, where sometimes **Snowfalls** were registered. Ample precipitations and low temperatures continued in May. During the first half of that month the first infections of **Downy Mildew** were noted. Preventive sprayings were effected despite difficulties due to waterlogged gardens. The hop yards were retarded in the development, but showed a healthy aspect in general although remaining damages due to accumulation of water were to be noted in low locations.

Acreage, Yield and Production 1964 and 1965

| | Acreage 1964 Acres | Yield Pounds per acre | Production 1964 Pounds | Acreage 1965 Acres | Yield Pounds per acre | Production 1965 Pounds |
|---------------------------------|--------------------------|-----------------------------|------------------------------|--------------------------|-----------------------------|------------------------------|
| Hallertau | 17,171 | 1,858 | 31,914,782 | 19,066 | 1,642 | 31,305,430 |
| Spalt | 2,444 | 1,083 | 2,646,402 | 2,535 | 1,163 | 2,947,220 |
| Hersbruck | 1,295 | 1,212 | 1,569,234 | 1,277 | 1,139 | 1,454,815 |
| Jura | 514 | 1,450 | 745,596 | 555 | 1,372 | 761,359 |
| Bavaria | 21,424 | 1,721 | 36,876,014 | 23,435 | 1,556 | 36,468,824 |
| Tettnang | 1,920 | 1,631 | 3,131,744 | 1,979 | 1,614 | 3,194,685 |
| R.H.W. | 205 | 1,549 | 317,462 | 170 | 1,236 | 210,098 |
| Baden | 59 | 1,319 | 77,822 | 62 | 1,406 | 87,192 |
| Rheinpfalz | 47 | 1,574 | 73,964 | 54 | 1,100 | 59,414 |
| Germany West | 23,655 | 1,711 | 40,477,006 | 25,700 | 1,557 | 40,020,213**) |
| Germany East | 5,251 | 1,104 | 5,795,893 | 5,303 | 831 | 4,409,200 |
| Saaz (Zatec) | 16,679 | 654 | 10,905,054 | 16,531 | 716 | 11,845,867 |
| Auscha (Ustek) | 3,830 | 762 | 2,919,993 | 3,607 | 898 | 3,240,762 |
| Other Districts | 988 | 1,378 | 1,361,341 | 1,112 | 694 | 771,610 |
| Czechoslovakia | 21,497 | 706 | 15,186,388 | 21,250 | 746 | 15,858,239 |
| Alsace | 2,595 | 1,697 | 4,403,689 | 2,595 | 1,300 | 3,373,038 |
| Dep. Côte d'Or | 235 | 657 | 154,322 | 217 | 1,219 | 264,552 |
| Northern France | 494 | 1,506 | 744,053 | 519 | 1,434 | 744,053 |
| Lorraine | 30 | 735 | 22,046 | 30 | 735 | 22,046 |
| France | 3,354 | 1,587 | 5,324,110 | 3,361 | 1,310 | 4,403,689 |
| Alost | 877 | 1,571 | 1,377,875 | 926 | 1,631 | 1,510,151 |
| Poperinghe | 1,544 | 1,472 | 2,273,494 | 1,668 | 1,561 | 2,604,184 |
| Vodelée | 49 | 1,350 | 66,138 | 49 | 1,518 | 74,405 |
| Belgium | 2,470 | 1,505 | 3,717,507 | 2,643 | 1,585 | 4,188,740 |
| Slovenia | 5,995 | 1,269 | 7,608,295 | 5,831 | 1,068 | 6,229,097 |
| Backa | 3,781 | 1,370 | 5,180,810 | 3,657 | 1,225 | 4,479,747 |
| Jugoslavia | 9,776 | 1,308 | 12,789,105 | 9,488 | 1,128 | 10,708,844 |
| Äustria | 296 | 1,246 | 368,719 | 296 | 958 | 283,732 |
| Galicia | 531 | 798 | 423,724 | 531 | 721 | 383,049 |
| León | 1,927 | 1,158 | 2,230,945 | 1,927 | 1,048 | 2,020,185 |
| Cantabria | 467 | 584 | 272,819 | 467 | 6,17 | 288,141 |
| Spain | 2,925 | 1,001 | 2,927,488 | 2,925 | 920 | 2,691,375 |
| Switzerland | 30 | 1,033 | 30,975 | 30 | 1,451 | 43,540 |
| Roumania | 1,977 | 613 | 1,212,530 | 1,977 | 613 | 1,212,530 |
| Bulgaria | 3,212 | 429 | 1,377,875 | 2,965 | 372 | 1,102,300 |
| Hungary | 1,730 | 637 | 1,102,300 | 1,730 | 580 | 1,003,093 |
| Poland | 6,368 | 1,056 | 6,724,030 | 6,116 | 755 | 4,620,842 |
| U S S R | 29,652 | 520 | 15,432,200 | 29,652 | 520 | 15,432,200 |
| Continent | 112,193 | 1,002 | 112,466,126 | 113,438 | 934 | 105,978,539 |
| Kent | 11,527 | 1,308 | 15,071,858 | 11,243 | 1,408 | 15,836,413 |
| Hants | 620 | 1,625 | 1,007,723 | 652 | 1,418 | 924,499 |
| Surrey | 89 | 1,402 | 124,780 | 91 | 1,384 | 125,993 |
| Sussex | 1,851 | 1,211 | 2,242,078 | 1,848 | 1,342 | 2,480,616 |
| Hereford | 4,626 | 1,433 | 6,628,902 | 4,665 | 1,404 | 6,550,087 |
| Worcester | 2,137 | 1,447 | 3,092,062 | 2,150 | 1,456 | 3,131,744 |
| Other Counties | 47 | 1,958 | 92,042 | 49 | 1,523 | 74,626 |
| England | 20,897 | 1,352 | 28,259,445 | 20,698 | 1,407 | 29,123,978 |
| Europe | 133,080 | 1,057 | 140,725,570 | 134,138 | 1,007 | 135,102,518 |
| Washington | 20,717 | 1,689 | 34,983,034 | 21,115 | 1,708 | 36,080,263 |
| Oregon | 4,304 | 1,489 | 6,407,009 | 4,603 | 1,449 | 6,669,797 |
| California | 3,501 | 1,750 | 6,125,040 | 3,101 | 1,839 | 5,703,741 |
| Idaho | 4,102 | 1,429 | 5,862,913 | 3,902 | 1,949 | 7,604,768 |
| U.S.A. | 32,624 | 1,636 | 53,377,996 | 32,721 | 1,713 | 56,058,569 |
| Canada | 1,055 | 1,451 | 1,530,764 | 1,035 | 1,416 | 1,465,287 |
| Victoria | 502 | 1,339 | 671,962 | 600 | 1,333 | 799,939 |
| Tasmania | 1,488 | 1,008 | 1,500,010 | 1,532 | 1,122 | 1,719,588 |
| Australia | 1,990 | 1,091 | 2,171,972 | 2,132 | 1,182 | 2,519,527 |
| New Zealand | 596 | 1,104 | 657,742 | 576 | 1,736 | 1,000,006 |
| Japan | 3,892 | 1,583 | 6,084,806 | 3,976 | 1,505 | 5,985,489 |
| Manchuria | 247 | 402 | 99,207*) | 247 | 402 | 99,207*) |
| Northern-Korea | 1,236 | 143 | 176,368*) | 1,236 | 143 | 176,368*) |
| Argentine | 326 | 608 | 198,414 | 296 | 652 | 192,902 |
| South Africa | 304 | 497 | 151,015 | 304 | 497 | 151,015 |
| Total | 175,360 | 1,170 | 205,173,855 | 176,662 | 1,148 | 202,750,889 |

*) Estimate

**) Official Weight January 21st, 1966

Temperatures remained cooler than normal until the month of June, whereas precipitations were higher and the duration of sunshine under the average. At the end of June for the first time the weather became somewhat more favourable. The vines in the best of cases had reached half the height of the trellises. Preventive sprayings against **Pests** and **Diseases** were not overlooked. The still variable weather during the first half of July could not well improve the growth of the vines and the **Laterals**. First **Burrs** were to be noted in early locations. The yards were carefully tended all the time and a certain decrease of water damaged parts was to be noted. In July the weather improved considerably and finally led to a full growth of the vines which reached the height of the trellises in general, even if many yards had remained pointed. **Bloom** started plentifully, but the general retard in growth was still to be noted. **Hailstorms** which were more numerous than in other years, occasioned local damages. **Downy Mildew** was carefully controlled, whereas only preventive sprayings were necessary against pests.

After a plentiful **Set** and the **Bloom** there started in all hop yards the **Formation** of the **Cones** in a satisfactory way, even if the weather could have been more favourable. The stand of the hop gardens continued not uniform and the development of the laterals was variable, especially in hop yards on wet locations. The plantings remained satisfactorily free from pests and diseases with the exception of some **Wind Whipping**, which was noted locally. After the many doubts during the beginning of the growing season, the expectations for the crop had improved considerably. The situation remained unchanged until the start of the **Picking** at the end of August. **Aphids** had to be controlled in some districts at the end of the growth and furthermore **Verticillium Wilt** appeared somewhat more strongly about the time of the harvest.

Quality. The Hallertau hops, crop 1965 showed good cones of middling size. The colour was green to yellowish-green with some wind whipping, but was somewhat darker than normal. Light lupulin with a forceful aroma which only in some lots was a little weaker, was plentiful. Bitter values were about 10% higher than the year before. **Picking** was done exclusively by machines. The work was not done with sufficient care and the hops showed at some parts a considerable addition of stems, leaves and other parts. The dryness of the hops was considered still satisfactory.

SPALT. Under dry weather during the beginning of April **Spring Work** was started and could be finished in good time despite difficulties by unfavourable weather, which started again during the second half of April. The hops were off to a slow start. The development was retarded by rain and cool weather so that already at the beginning of May the growth showed a delay of about a fortnight.

In spite of somewhat more favourable weather in May, nights were still too cool so that growth was not favoured. **Red Spider** which is a danger in this district, was carefully controlled and sprayings against **Downy Mildew** were effected. At the beginning of June a certain increase of temperatures was noted, but the growth of the vines remained variable and was between one and three meters of the height of the trellises. Tending the hop yards was hindered by the wet weather and damages by water were noted most especially on the locations within the valley of the Rezat. **Aphids** were locally noted and had to be controlled. The weather turned high summery in mid-June, which benefited the growth of the hops so that the loss of development could be offset in part. The vines reached more than half the height of the trellises and spraying was carefully effected. Under variable weather conditions about the end of June hop yards were still about fifteen days retarded against normal years. The hop yards had only sporadically reached the height of the trellises and were rather unequal. They showed in part a pointed growth and a sparse development.

The vines could, however, recuperate during July under favourable weather. Generally the height of the trellises was reached and the plants showed some overhang. The **Set** appeared on the lower parts of the vines, whereas the tops of the plants were still growing. The hop yards showed a healthy aspect, but continued sparse. In August, too, the increase of growth was notable. The hop yards were in **Full Bloom**. In early locations the **Formation** of the **Cones** was already beginning. **Red Spider** had to be controlled very carefully. Local damages were occasioned by **Strong Winds** especially in hop yards on the top of the hills. The warm and summery weather was very favourable until the **Ripening** of the hops. Not accounting for local damages by **Hail**, the crop in all hop yards was of a middling quantity when the harvest started as expected at the beginning of September.

Quality. The Spalt hops, crop 1965 showed relatively uniform grown cones of middling size and yellowish green, not always unblemished colour. The light lupulin had a fine aroma and was somewhat more plentiful than the year before. It has to be noted for this district as well, that **Picking** gave reason for reclamations. Especially, however, the **Kilning** of the hops ought to be much better.

TETTANG. A firm **Snowcover** remained in all districts of Tettang until mid-March 1965 and was dissolved only by sufficient rainfalls. **Spring Work** started at the beginning of April and was finished in mid-April under favourable weather. Rainfalls, however, started once again and during the last decade of April **Snowfalls** were once again experienced. The supply of subsoil moisture was already considerably increased against the year before. Weather conditions continued cool and wet and the development of the hop yards was retarded. This situation continued during May so that the lack of growth could not be offset. The plants had developed somewhat better only in early locations.

The weather continued disfavouredly wet and cold in June with little sunshine and the height of the vines was not more than 1.5—2 meters. Despite wet hop yards preventive sprayings against **Downy Mildew** were effected. The plants reached about 2/3 to 3/4 of the height of the trellises only under warmer weather about the end of June. In low and heavy locations the growth was retarded locally by long standing immersion. The weather at the beginning of July turned warm and sunny and growth benefited especially on light soils, so that the plants reached the height of the trellises and past them. The set of **Laterals** was abundant. The weather in July improved the development satisfactorily. On light soils there was a good overhang and a plentiful development of laterals, whereas hop yards on heavy soils remained pointed and showed few laterals.

At the beginning of August the hop yards were in **Full Bloom**. Weather conditions did not remain as favourable as heretofore, which retarded development in some way. The hop yards showed a variable aspect, but were generally healthy and **Downy Mildew** was always carefully controlled. Until the end of August the weather conditions benefited the stand of the vines. **Downy Mildew** was scarcely to be noted, whereas **Aphids** still had to be controlled. The control of **Pests** and **Diseases** in Tettang is in many instances done on contract by firms which have their own installations for sprayings. This seems to be somewhat problematic as the hop yards are sprayed only, when it is time "according to plan" and not when it is necessary.

Quality. Tettang hops crop 1965 had cones of middling size with somewhat unequal growth of light green yellowish colour and showed more **Wind Whipping** than usual. The light lupulin had a fine aroma. The quality of the harvest showed a notable decrease as against the years before. It is to be regretted that producers in Tettang have conformed only too easily to the low standard of picking in other German districts of production. Kilning was generally still acceptable.

HERSBRUCK GEBIRGE. The wintry weather continued until March 1965. A **Snow-cover** was still in existence during the first half of that month, whereas strong rains fell during the second half of March. The **Uncovering** and the **Cutting** started by the end of March and was finished in April although the weather was not especially favourable. Weather conditions continued wet and cold so that the development of the hop yards was retarded against the year before. Strong rainfalls in May and local **Damages** by **Hail** were followed only during the second half of May by somewhat warmer weather, although temperatures in some parts were still quite cool. The plants continued in retard against the year before, but the hop yards were generally healthy. Early uncovered hop gardens generally showed a better development. Preventive sprayings against **Downy Mildew** were carefully effected. **Pests** were practically no danger, but attacks of **Aphids** had to be carefully controlled.

The weather was sometimes dry during the first half of June and it became very warm. The plants showed a better growth and reached one third/two thirds of the height of the trellises. **Laterals** were little in evidence. Against the end of the month there were further ample rainfalls, but growth could improve under warmer temperatures at the same time. Most of the hop yards had reached the height of the trellises and the development of laterals was quite good, even if the hop yards in part remained pointed. Good and warm weather was beneficial for the hop yards in July. The height of the trellises was reached everywhere and some overhang was to be noted. Some weak gardens were found in hop yards on heavy locations. It became warm again by the end of August after continued changing weather conditions. The **Formation** of the **Cones** started now in early hop yards, whereas **Bloom** started on late vines. The set of the plants was quite good and development of the cones was satisfactory.

Quality. Gebirg hops of crop 1965 had somewhat unequal cones of middling size and greenish-yellow colour occasionally with blemishes. The light lupulin had a good aroma and the bitter value was somewhat higher than the year before. **Picking** could not be judged well, as the several lots contained stems, leaves and other matter. **Kilning**, too, ought to be much better.

Verification of the hop acreage in 1965, resulted in the following figures:

**German
Hop Acreage
1965**

| Districts | 1939 Acreage acres | 1965 | | |
|---|--------------------------|------------------------|--------------------------|----------------|
| | | Existing acr. acres | Additional acr. acres | Total acres |
| Hallertau | 11,317 | 17,188 | 1,878 | 19,066 |
| Spalt | 2,276 | 2,397 | 138 | 2,535 |
| Hersbruck | 2,118 | 1,224 | 54 | 1,278 |
| Jura | 200 | 504 | 52 | 556 |
| Tettang*) | — | 27 | — | 27 |
| Aischgrund/oth. distr. Bavaria | 200 | 12 | — | 12 |
| | 16,111 | 21,352 | 2,122 | 23,474 |
| Wurttemberg/RHW | 1,223 | 170 | — | 170 |
| Tettang**) | 1,636 | 1,816 | 136 | 1,952 |
| Baden | 440 | 57 | 5 | 62 |
| Baden-Wurttemberg | 3,299 | 2,043 | 141 | 2,184 |
| Pfalz | 151 | 47 | 7 | 54 |
| Rheinland-Pfalz | 151 | 47 | 7 | 54 |
| Germany | 19,561 | 23,442 | 2,270 | 25,712 |

*) areas in Bavaria

**) except areas in Bavaria

According to informations received until now, increases of acreage may be expected during the current year, especially within the Hallertau and here mostly in the heavy central locations. It can be expected for this district of production that the crop of the new hop yards continues already under contract.

**Hop Acreage
1965**

In Spalt as well as in Tettngang increases of production of smaller size are expected. The new plantings in 1966 may show a total acreage of about 1,350 acres.

The appearance of Verticillium Wilt depends upon the soil temperatures. As soon as temperatures over 28° C in the soil are maintained for a longer time, the development of the Verticillium fungus will be interrupted. It was therefore no surprise during the unfavourable weather conditions of 1965 that Verticillium Wilt expanded once again strongly. There is now no district of production within the Hallertau free from this disease. The incidence, however, is very variable and in many places still small for the time being. Even if the source of infection for Verticillium Wilt is known, no useful product of control is on the market as yet. It appears questionable whether the illness could be cured at its root. In many cases, however, the possibility seems to be given that overfertilization, directed towards high yields over many years, has influenced the soil disfavouredly and in an onesided way. This is considered a reason which contributes to the fact that the healthy balance between plant, soil and microbiology is disturbed. It has been noted that the variety "Hallertau middling-early" is very susceptible to Verticillium Wilt. The introduction of hop varieties which are less subject to Verticillium Wilt offers itself as an economical alternative.

**Verticillium
Wilt**

| Origin | Total resin content anhydric | Soft resins % | | Humulon % | | Lupulon + Fraction of softresin % | | Hard resins % | | Bitter value Wöllmer | |
|-------------------------------------|------------------------------|---------------|-------|-----------|-------|-----------------------------------|-------|---------------|-------|----------------------|------|
| | | | | | | | | | | 1965 | 1964 |
| Hallertau | 17.7 | 14.5 | 82.15 | 6.2 | 35.00 | 8.3 | 47.15 | 3.1 | 17.85 | 7.1 | 6.4 |
| Hallertau/Au | 17.2 | 14.3 | 83.55 | 6.1 | 35.55 | 8.2 | 48.00 | 2.8 | 16.45 | 7.0 | 6.0 |
| Hallertau/Mainburg | 17.7 | 14.5 | 82.30 | 6.1 | 34.80 | 8.4 | 47.50 | 3.1 | 17.70 | 7.1 | 6.6 |
| Hallertau/Wolnzach | 17.6 | 14.6 | 83.30 | 6.2 | 35.30 | 8.4 | 48.00 | 2.9 | 16.70 | 7.1 | 6.5 |
| Hallertau/Barth-Nordbr. | 22.8 | 19.2 | 84.00 | 11.2 | 49.00 | 8.0 | 35.00 | 3.6 | 16.00 | 12.1 | — |
| Spalt | 17.1 | 14.3 | 83.45 | 6.0 | 35.10 | 8.3 | 48.35 | 2.8 | 16.55 | 6.9 | 6.0 |
| Tettngang | 18.5 | 15.6 | 84.25 | 6.8 | 37.00 | 8.7 | 47.25 | 2.9 | 15.75 | 7.8 | 6.8 |
| Hersbruck | 16.9 | 14.2 | 84.00 | 5.9 | 34.70 | 8.3 | 49.30 | 2.7 | 16.00 | 6.8 | 5.7 |
| Alsace | 18.2 | 15.0 | 82.40 | 6.6 | 36.40 | 8.4 | 46.00 | 3.2 | 17.60 | 7.5 | 5.9 |
| Belgium/Replant-Hallertau | 17.3 | 13.4 | 77.70 | 5.8 | 33.75 | 7.6 | 43.95 | 3.8 | 22.30 | 6.7 | 5.8 |
| Saaz | 15.1 | 12.5 | 83.20 | 5.1 | 33.60 | 7.5 | 49.60 | 2.5 | 16.80 | 5.9 | 6.3 |
| Jugoslavia/Styria | 15.0 | 12.9 | 85.90 | 6.4 | 42.95 | 6.4 | 42.95 | 2.1 | 14.10 | 7.1 | 8.0 |
| Jugoslavia/Backa | 17.4 | 14.4 | 82.80 | 5.8 | 33.10 | 8.6 | 49.70 | 3.0 | 17.20 | 6.7 | — |
| Yakima Seedless | 19.0 | 16.2 | 85.15 | 8.2 | 42.90 | 8.0 | 42.25 | 2.8 | 14.85 | 9.1 | 8.8 |

**Bitter Values
of Crop 1965**

The evaluation by hand effected up to now according to Woellmer has been shown in the meantime as no longer sufficient, according to new results and analyses. During a discussion on the occasion of the hop exhibition, the VLB (*Versuchs- und Lehranstalt für Brauerei, Berlin*) on October 4th, 1965, informed that for the evaluation of the quality the contents of moisture as well as the bitter value will be considered for the evaluation according to analytical methods. The highest value of 5 points for kilning accorded, remained in force but will be divided into different stages according to analytical results. The evaluation of the bitter acids was expanded to 30 points and awarded in stages according to the alpha content after spectrophotometrical analysis from under 2.6 ‰ until over 9.5 ‰. This leads undoubtedly to a more reliable evaluation than according to the hand evaluation as effected up to now.

The quality of German hops has decreased during the last years. This fact is based mostly on the following reasons:

**Quality of
German Hops
Crop 1965**

The introduction of the mechanical harvest. In 1965 4,200 picking machines were in operation against 3,400 machines the year before.

Considerable increase of acreage without corresponding expansion of kilning capacity.

Sales security of hop production by contract.

Limited hop supplies since 1961 which allowed the sale of second and even third qualities without difficulty.

The most important claims coming from customers for German hops are concentrated upon the bad pick and kilning. As a result of this, a quicker deterioration of the important soft resins appears. An especially disagreeable situation has arisen for breweries and hop dealers, as they up to now have not been able to insist with the producers of hops upon the necessary measures regarding an improvement of quality.

Efforts are on way to obtain a general improvement of the situation by fixing certain standard qualities and establishing a board of arbitration which would be able to function on short notice. This will be done in cooperation with the "Verband Deutscher Hopfenpflanzer", which takes a special interest in maintaining the good reputation of German hops.

The entire hop industry is deep in a phase of change owing to the mechanisation of hop growing, alterations of sales conditions and new realizations regarding the hop chemistry. It will probably still take some time until many of the several points which now show a certain disorder will be settled in an orderly fashion. It is to be hoped that within the brewing industry it will be taken into consideration that without **Mechanical Picking** it will be impossible to maintain the production of hops within the now existing quantities, not considering even the aspects regarding the pricing situation.

Crop estimate 1964

To complete the latest statements it has to be noted that the final result of **Crop 1964** has been published on the 31st of August 1965 with a total of 367,205 cwts. This quantity corresponded to the estimate taken in August 1964.

Crop estimate 1965

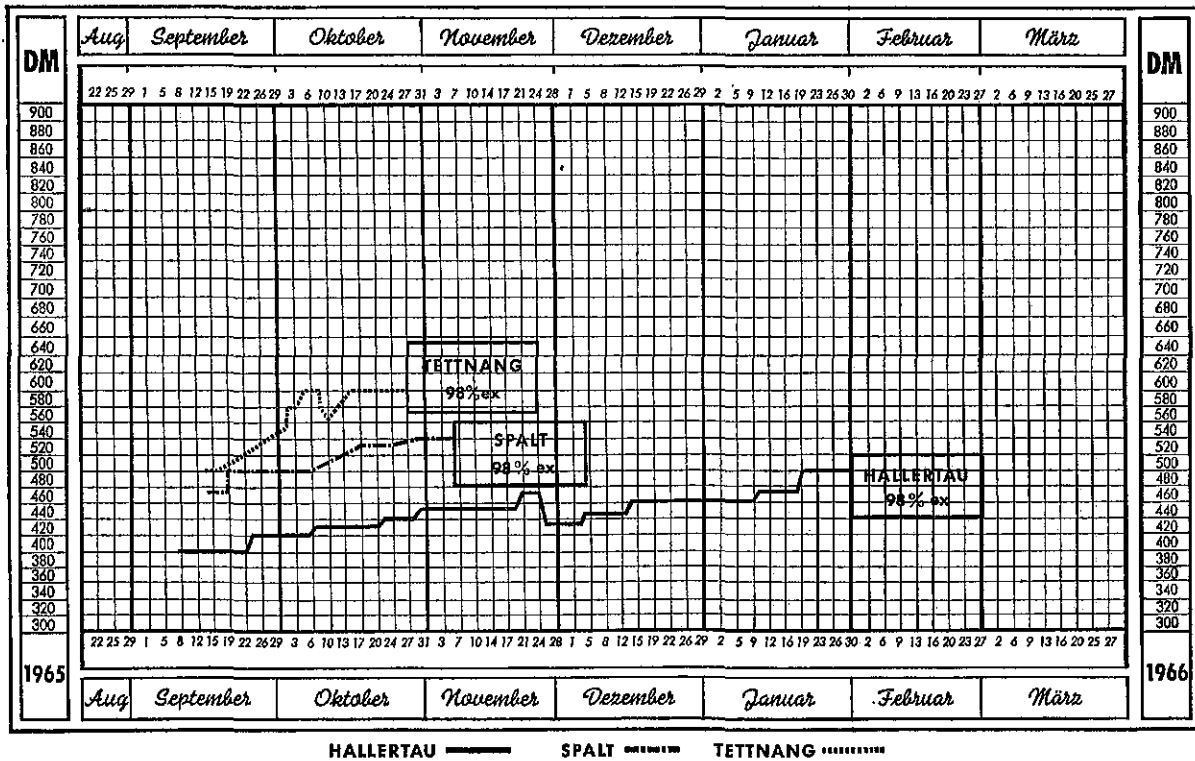
The estimate of crop 1965 brought the following result which exceeded by about 35,000 cwts. the official weighing until January 31st, 1966:

| | Yield estimated 1965 lbs. | Yield weighed on January 31st, 1966 lbs. |
|---------------------|---------------------------------|--|
| Hallertau | 33,620,150 | 31,305,430 |
| Spalt | 3,637,590 | 2,947,220 |
| Tett nang | 3,306,900 | 3,194,686 |
| Hersbruck Gebirge . | 1,984,414 | 1,454,815 |
| R.H.W. | 275,575 | 210,098 |
| Jura | 881,840 | 761,359 |
| Baden | 88,184 | 87,192 |
| Rheinland-Pfalz . . | 33,069 | 59,414 |
| | <u>43,827,722</u> | <u>40,020,214</u> |

The unequal stand of the hop yards made the estimate of crop 1965 especially difficult. In retrospect it may be said that the hops "were showing off on the vines" and the cones did not reach the expected weight. This situation may be considered symptomatic for all European districts of production.

The purchasing of free available hops has become rather insignificant in proportion to the total harvest. The quantities, however, were quite differentiated according to the respective district of production. At the beginning of the season 1965/66 in September, the market opinion showed a waiting attitude. On the one side the crop appeared to give a satisfactory quantitative result and on the other side the production of beer in Germany and other important purchasing countries had been unsatisfactory owing to a summer spoiled by rainy weather in 1965. The brewing industry informed about high stocks of hops on hand.

Hop purchase Crop 1965 in Germany



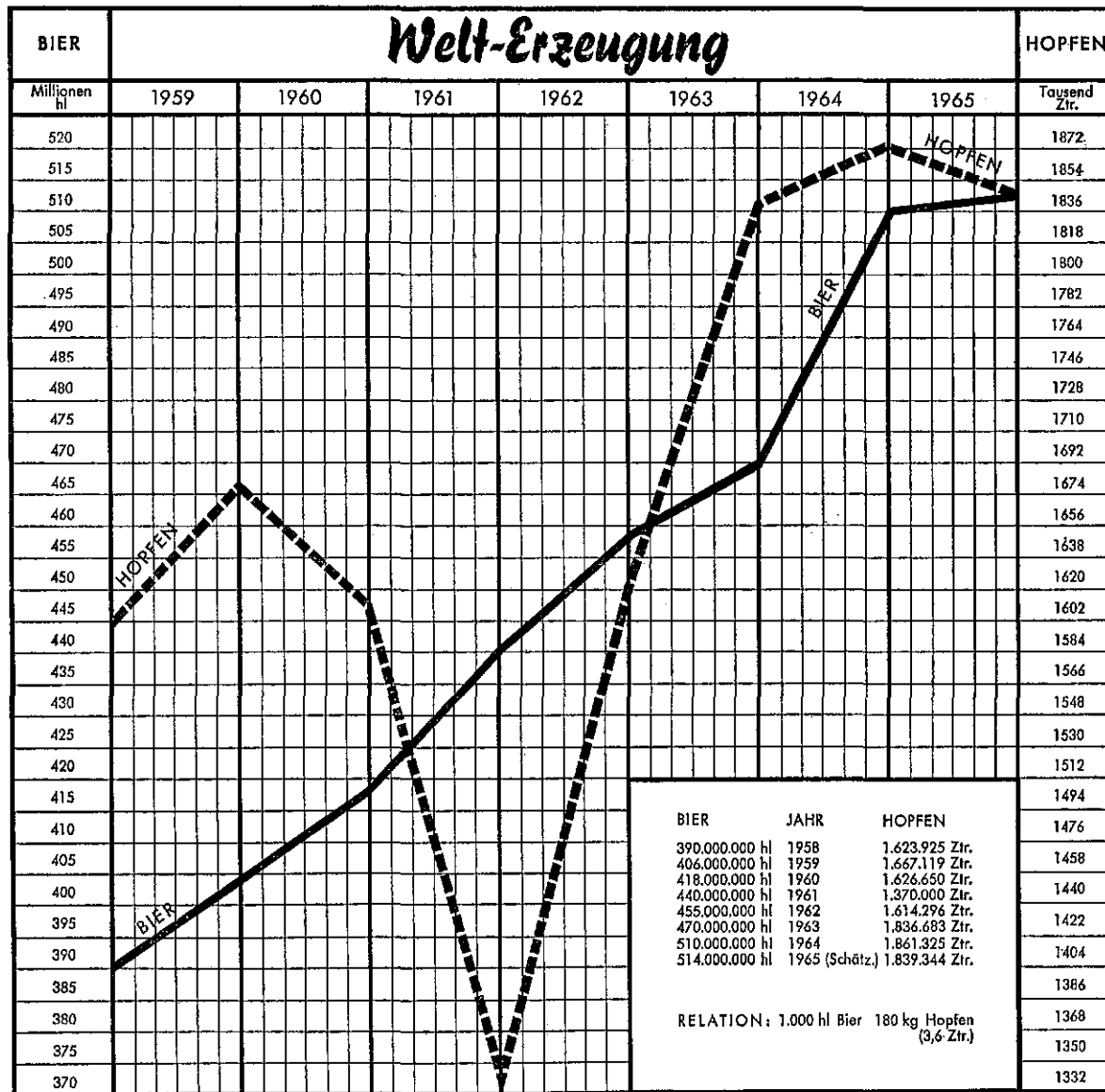
The delivery of contracted hops was executed in the first order. This showed very soon, however, that the crop of the smaller districts of production was somewhat less than expected. Producers had only small quantities of hops still available after contracts were fulfilled and these small remaining lots were often delivered together with contracted hops in order to dispose of same.

Under slow trading somewhat more than one third of the crop had been weighed until September 22nd, whereas by the end of September/beginning of October deliveries already reached two thirds of the crop and rose to about 85% of the crop by mid-October. At the

beginning of November only about 10,000 cwts. of the harvest remained available on farms. This showed that the market was practically sold out. Final lots were accepted until mid-November at unchanged prices. Slow demand was met by a limited offer so that the free hops could be sold without difficulty at rising prices.

HALLERTAU. The settlement of contracts took all available time, so that after the harvest there was scarcely any possibility to effect purchases in free available hops. First purchases were effected about the middle of September at DM 400.—. On this base for the time being, the quantities delivered over and above contracted hops were sold. Under somewhat more insistent demand prices until DM 420.— were offered after September 24th. This price bracket was maintained until the beginning of October and rose on October 5th to DM 420.—/450.—. Prices demanded rose for some time until DM 470.— in mid-October, but this quotation could not be maintained so that after a few days under easy trading a price of DM 430.—/450.— was quoted once again. The district was already sold out to a considerable part and final quantities went into second hands on this basis with occasional pricing oscillations.

SPALT. In this district there were only contracted hops delivered at the beginning, so that first quotations were noted only on September 23rd at DM 450.—. Already the following day DM 480.—/500.— were paid, and afterwards under sometime hectic trading DM 500.— were offered generally. On October 5th prices were demanded on a basis of DM 520.—/530.—, but this was only a passing situation. Quotations could not be maintained on this level and fell once again to DM 500.—. The district was sold out at about 90% already on October 8th. Prices rose again until DM 520.—/530.— and to DM 530.—/540.— on November 18th. The district of Spalt was sold out on this basis until the second half of November under sometimes insistent demand.



TETTANG. Trading remained quiet in September and started similarly to Spalt only about September 23rd. Quotations in this district were about DM 50.— over the Spalt level and increased under consistent demand to DM 550.— at the beginning of October. Under continuing frantic demand prices rose to DM 600.— until October 4th. At this time already 85% of the crop had been sold out, but demand became slack and prices decreased to DM 560.—/580.— on October 9th. Quotations, however, were already once again at DM 600.— on October 13th and last lots changed hands on this basis until October 25th.

**Nürnberg
Market**

HERSBRUCK GEBIRGE. Sales developed only slowly in September 1965 and quotations remained on a basis of DM 350.— until the beginning of October. On October 4th the bracket of prices rose to DM 350.—/360.— under somewhat more pronounced demand and rose on October 12th to a general quotation of DM 370.— as the supply of other proveniences became scarcer. In the second half of October until DM 400.— were paid for small quantities evidently to obtain cover for an existing short supply. The price bracket remained at DM 370.—/380.— until the beginning of November and on that basis the Hersbruck district had been sold out with the exception of small remaining quantities at the first half of November.

The influence of advance contracts, which had been in effect now in all districts of production, was to be noted now on the Nürnberg Market as well. Daily quotations developed more than formerly, according to oscillations on the market for free hops within the district of production. Until mid-June 1965 the last remaining stocks, especially in **Hallertau Hops Crop 1964**, were completely sold out on a price basis of DM 455.—/460.—.

Trading in hops of the **New Crop 1965** developed slowly on the market under limited offers. At the beginning of September, Hallertau hops were quoted at DM 450.—/455.—, whereas prices for Gebirg hops were at DM 415.—/400.—. Only about the end of September trading in other proveniences set in and the pricing basis at that time was as follows: Hallertau DM 450.—/460.—, Tettngang DM 560.—, Hersbruck DM 400.—. Later on, prices for Hallertau and Gebirg hops remained unchanged, whereas Spalt hops were quoted at DM 550.—/565.— and Tettngang hops at DM 580.—.

Demand continued very slack and sales were effected at the beginning of October at somewhat higher prices with the exception of Tettngang hops, which rose to DM 660.—/640.—. Quotations for Tettngang hops were reduced until DM 625.— in mid-October. Prices at the beginning of November were as follows: Hallertau DM 485.—/490.—, Spalt DM 570.—/580.—, Tettngang DM 650.—/660.—, Hersbruck DM 420.—/435.—. Until the end of November prices for Hallertau hops fell to DM 470.—/480.— and for Hersbruck hops to DM 410.—, whereas Spalt and Tettngang hops were quoted unchanged. At the beginning of December Hallertau hops were priced at DM 475.—/485.—.

Under more insistent demand in December 1965 and limited offers, even small lots of Hallertau hops were sold at DM 490.—, whereas quotations for other proveniences remained unchanged. The decrease of stocks of Hallertau hops resulted in an increase of prices until DM 500.—/510.—, at the beginning of January 1966 and Gebirg hops were traded at DM 430.—/435.—, Spalt hops were sold at DM 570.—/595.— for occasional lots, but prices could not be maintained on this basis.

Since February 1966 transactions on the Nürnberg Market had only nominal importance with strongly limited stocks. (All quotations based on prices for interim packed hops).

**Market
Survey**

The demand of hops by the brewing industry could be covered by supplies on the hops world market. The demand was covered by forward contracts to about 80/90%. The slow demand in the beginning for free available hops became stronger during the months of October/November as it became known that crop quantities in Europe would not reach the estimated quantities for the harvest. It is to be noted, however, that the price bracket delimited by forward contracts generally rose only slowly and price increases were not too high. Increased trading was mostly to be noted by a speedier sellout of the market. At the beginning of 1966 there were only limited stocks available in Jugoslavia, Poland and Bulgaria, most especially, however, in the U.S.A.

The market development in the districts of production in the U.S.A. at the beginning was contrary to the general tendency in Europe. After a decrease of prices quotations rose quickly in December and in that way conformed to the generally well maintained price level of the world market. Despite this the shortlived decrease of quotations has led to renewed efforts regarding a marketing agreement in the U.S.A.

**Forward
Contracts**

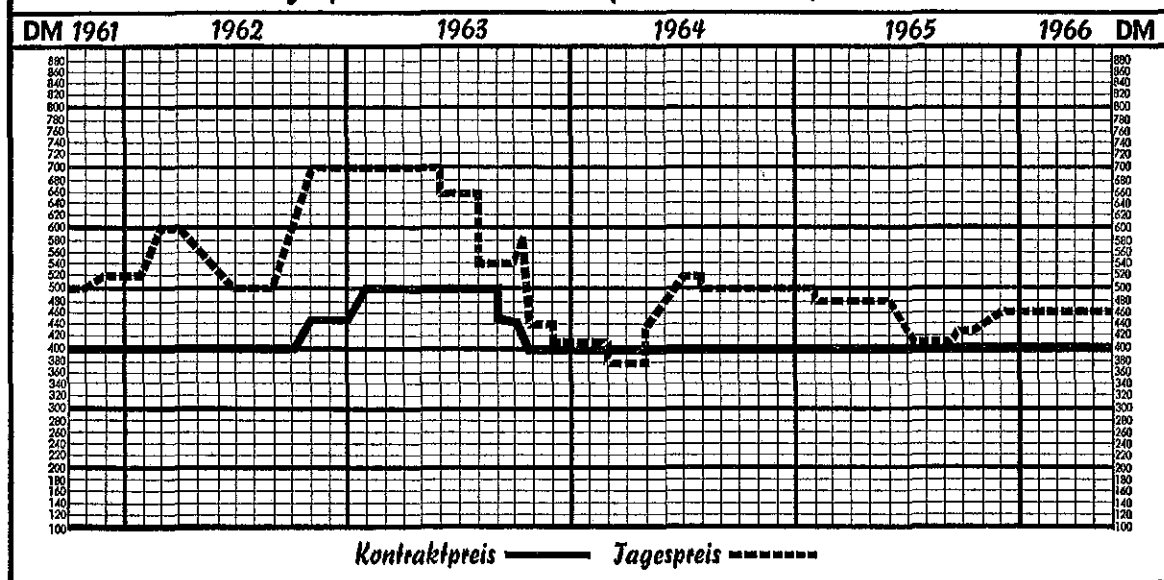
The fact that forward contracts continue to be maintained, has a considerable influence upon the stability of the hop market, especially in Germany. Contracts in general still are for three years, but the tendency for contracts for five years has increased notably. This is less the desire of the brewing industry, but corresponds to the wishes of the hop producers, who want a sales basis for longer times. In the Hallertau there are occasionally contracts even until 1975.

The actual stand of forward contracts may be estimated as follows:

| | Crop 1966 | Crop 1967 | Crop 1968 |
|---------------------|-----------|-----------|-----------|
| Hallertau | 85 % | 75 % | 70 % |
| Germany Total . . | 80 % | 70 % | 65 % |

The quantity of each year's harvest has a considerable influence upon the liquidation of contracted deliveries. At the beginning of the growing season 1965, doubts prevailed generally whether contracts could be honoured in full. For the hop farmer, therefore, it is of great importance not to close contracts for too high a percentage of the regular harvest. Corresponding recommendations are contained within the text of the approved sales contracts.

Tagespreise und Kontraktpreise in der Hallertau



The use of hop concentrate by breweries continues on the increase. As a tendency towards higher concentrated extracts increases at the same time, a real comparison with the quantities of the year before is rather difficult. An approximate estimate shows that about 60,000 cwts. of hops, crop 1965 have been passed through German extraction plants and about half of the concentrates have been used in Germany. The exports developed as follows:

Exports of Hops as Hop Concentrate

| Export of Hop Concentrates | | | |
|------------------------------------|-------------------------------|---------------------|------------------|
| | Concentrates Total in lbs. | Percentage of Total | |
| | | German Export | Export "in bond" |
| Year 1963 9/1/63—8/31/64 | 746,925 | 27.96 % | 72.04 % |
| Year 1964 9/1/64—8/31/65 | 840,842 | 22.44 % | 77.56 % |
| 1965 (4 months) 9/1/65—12/31/65 | 302,033 | 48.75 % | 51.25 % |

The following lots of hops have been imported from September 1st, 1965, to February 28th 1966. (an important part on these quantities has the Transit-business).

German Hop Imports Crop 1965

| Country | lbs. | Country | lbs. |
|--------------------|------------------|-----------------|------------------|
| Belgium-Luxembourg | 908,295 | b. f. | 3,644,424 |
| Bulgaria | 33,069 | Czechoslovakia | 1,087,088 |
| France | 342,154 | U. S. A. | 3,331,812 |
| Jugoslavia | 2,144,855 | Austria | 98,105 |
| Poland | 39,903 | Other Countries | 16,535 |
| Spain | 176,148 | Total | <u>8,177,964</u> |
| c. f. | <u>3,644,424</u> | | |

German hop imports crop 1964 until March 31st, 1965 = 8,898,206 lbs.

The import of hops from **Jugoslavia** has been officially liberalized. There continues in existence, however, an agreement for the self-control of exports to the Federal Republic of Germany, which has been set at 14,000 cwts. According to an internal agreement in Jugoslavia, this quantity will be delivered in Styrian hops (60 %) and in Backa hops (40 %).

Regarding the import of hops from **Czechoslovakia**, it has been agreed that 6,000 cwts. of Saaz hops would be imported for the use in Germany and 2,000 cwts. for export breweries. The corresponding bid was published under Number 340946/47 in the Bundesanzeiger No. 190 dated October 8th, 1965. Additional quantities can be imported only if a delivery of German hops to Chechoslovakia in corresponding quantities is effected.

German Hop Exports Crop 1965

| Export of German Hops Crop 1965 | | | | | |
|--|-----------|-----------|------------------------------------|---------|------------|
| September 1st, 1965 — February 28th 1966 | | | | | |
| Country | lbs. | lbs. | Country | lbs. | lbs. |
| Belgium-Luxembourg | 309,526 | | b. f. | 83,334 | 9,896,449 |
| Denmark | 164,243 | | Canary Islands | 41,005 | |
| Finland | 109,348 | | Kenya-Uganda | 37,478 | |
| France | 965,174 | | Congo | 46,297 | |
| Great Britain | 45,194 | | Liberia | 1,764 | |
| Ireland | 11,023 | | Lybia | 5,512 | |
| Italy | 808,868 | | Madagascar | 6,614 | |
| Malta | 8,597 | | Marocco | 6,614 | |
| Netherlands | 195,328 | | Moçambique | 39,683 | |
| Norway | 164,243 | | Senegal | 8,818 | |
| Austria | 612,879 | | Republic of South Africa | 25,132 | |
| Portugal | 105,380 | | Togo | 1,764 | |
| Spain | 11,023 | | Tunis | 15,432 | |
| Sweden | 583,778 | | Central Afric. Republic | 6,614 | |
| Switzerland | 546,520 | | Africa | | 326,060 |
| Czechoslovakia | 74,736 | | Burma | 4,409 | |
| Europe | | 4,715,860 | Cyprus | 220 | |
| Argentina | 55,556 | | Hongkong | 3,748 | |
| Bolivia | 5,512 | | Iraq | 9,921 | |
| Brazil | 88,404 | | Iran | 28,660 | |
| Canada | 72,311 | | Japan | 593,037 | |
| Chile | 661 | | Lebanon | 17,637 | |
| Mexico | 17,637 | | Pakistan | 4,409 | |
| Nicaragua | 6,614 | | Philippine Isl. | 77,602 | |
| U.S.A. | 4,848,356 | | South-Korea | 46,297 | |
| West Indies | 2,205 | | South-Vietnam | 33,069 | |
| America | | 5,097,256 | Syria | 6,614 | |
| Ethiopia | 26,455 | | Taiwan | 22,046 | |
| Algeria | 11,023 | | Thailand | 70,547 | |
| Angola | 33,730 | | Asia | | 918,216 |
| Dahomay | 6,614 | | Australia | 1,102 | |
| Ghana | 5,512 | | French Pacific | 11,023 | |
| c. f. | 83,334 | 9,896,449 | Australia | | 12,125 |
| | | | Total | | 11,152,850 |

German hop exports crop 1964 until March 31st. 1965 = 13,483,113 lbs.

For the import in France, there exist still several regulations, which are applied too in the trade with countries of the E.E.C. This list is shrinking constantly and contains at this time still about 45 numbers of the customs tariff, which include **Hops**. Delivery of German hops to France, therefore, is still subject to an import licence, whereas French hops can be freely delivered to Germany.

European Economic Community (E. E. C.)

All questions pertaining to the integration of the E.E.C. have a considerable influence upon the European economy. It appears, therefore, that especially all points which touch upon the brewing industry, ought to be mentioned in this report which otherwise refers almost exclusively to hops.

DEVELOPMENT OF THE E.E.C. The integration of the E.E.C. for which the first agreements were signed in Rome on March 25th, 1957, experienced a standstill since the middle of the year 1965. Difficulties resulted especially from the transfer to majority decisions within the Council of Ministers of the E. E. C. as of January 1st, 1966. As of that date, among other consideration the decisions regarding a common agriculture policy are dependent. This includes, too, discussions regarding the "Kennedy Round". Furthermore, there are of importance factual and personal questions, which touch the sections of the E. E. C. Especially far reaching wishes have already been submitted regarding the activity of the Commission of the E. E. C.

Two sessions of the Council of Ministers of the E.E.C. took place on January 17/18th and January 28th/29th, 1966 in Luxemburg in order to discuss all points. The Commission of the E.E.C. was absent during these sessions. Regarding the question of majority decisions a compromise could be reached. The Council of Ministers of the E.E.C. will restart as soon as possible its sessions in Brussels. The treatment of questions of agriculture policy as well as the problem of the "Kennedy-Round" appear to be most important.

CUSTOM-TARIFFS. Further adjustments of custom tariffs had to be effected as of January 1st, 1966. The necessary discussions had in part been delayed during the last semester of 1965. Regarding **Articles of Manufacture**, the necessary position of custom tariffs within the E. E. C. for January 1st, 1966, had been effected by Germany already on July 1st, 1964, so that eventually only small adjustments have to be effected. The alterations of the custom tariffs for **Imports from third Countries**, which had become necessary on January 1st, 1966, are now to undergo another examination. For the time being it remains on the existing basis.

ARTICLES OF AGRICULTURE. The alterations, which had to come into force on January 1st, 1966, for the custom tariffs have been effected for Germany according to a publication in the Bundeszollblatt No. 69 of December 30th, 1965 (page 1119).

The following table shows the decrease within the E.E.C. as well as the adjustment of import rates from third countries which had been unchanged since January 1962 in order now to reach the proposed general tariff of 12 0/0 for hops.

| Country | Custom Duties for Imports from | | | | | |
|---------------|--------------------------------|----------------|-------------------------|--------------------|----------------|-------------------------|
| | Members of the E.E.C. | | | other countries | | |
| | Custom rates since | | Additional import Taxes | Custom rates since | | Additional Import Taxes |
| | Jan. 1st. 1965 | Jan. 1st. 1966 | | Jan. 1st. 1962 | Jan. 1st. 1966 | |
| Belgium . . | 3.6 0/0 | 2.8 0/0 | 14.39 0/0 | 9.2 0/0 | 10.4 0/0 | 15.45 0/0 |
| Germany . . | 6.7 0/0 | 5.2 0/0 | 4.20 0/0 | 13.5 0/0 | 13.2 0/0 | 4.53 0/0 |
| France . . . | 5.4 0/0 | 4.2 0/0 | 11.85 0/0 | 12.0 0/0 | 12.0 0/0 | 12.86 0/0 |
| Italy | 1.8 0/0 | 1.4 0/0 | 4.67 0/0 | 6.4 0/0 | 8.8 0/0 | 4.97 0/0 |
| Luxembourg | 3.6 0/0 | 2.8 0/0 | 3.08 0/0 | 9.2 0/0 | 10.4 0/0 | 3.31 0/0 |
| Netherlands | 3.6 0/0 | 2.8 0/0 | 5.40 0/0 | 9.2 0/0 | 10.4 0/0 | 5.80 0/0 |

Custom rates and additional excises show the total payments on the value of the merchandise. The additional excises are percentually equal for the import from third countries and from countries of the E.E.C. The small differences result from the fact that the calculation of these excises in some part is done on the value of the hops including custom taxes.

PARTIAL CUSTOM DUTIES. In connection with the decrease of custom duties within the E.E.C. the partial custom duties for hops from third countries which are to be re-exported into member states of the E.E.C. have been increased. This regulation has been ordered according to the decision of the commission of the E.E.C. of December 21st, 1965 and was published binding for the Federal Republic of Germany in the Bundeszollblatt No. 1 on January 8th, 1966. The partial custom duties for hops have developed as follows:

As of February 7th, 1965 = 65 0/0 of the foreign tariff of the E.E.C. for hops (12 0/0)

As of January 1st, 1966 = 75 0/0 of the foreign tariff of the E.E.C. for hops (12 0/0)

ADDITIONAL EXCISES FOR IMPORTS. Whereas custom tariffs for hops (articles of agriculture) have now been reduced to 35 0/0 of the original custom rates, it may be considered that the final aim of a complete liberation from custom tariffs has already been reached to a considerable extent. It now appears especially impressive, that aside of custom duties various countries of the E.E.C. still ask for the payment of additional import excises, which now in part are already considerably higher than the custom duties. These rates will probably remain, even if custom duties are completely eliminated. In this way the principle of free transit between the countries of the E.E.C. would have been adhered too by the elimination of custom duties, but maintaining additional excise duties this fact would have become an illusion. This question ought to be considered with special care, as for instance in Luxembourg additional excise duties only amount to 3.08 0/0, whereas these payments in Belgium amount to 14.39 0/0. In this connection it may be mentioned that in Belgium and Italy since last year the turnover taxes, which have to be paid on imported articles as well, have been increased. It appears most necessary to harmonize such taxes in order to reach an equality of conditions within the E.E.C.

MARKETING REGULATIONS. Several marketing regulations for articles of agriculture have been worked out in the meantime and are expected to be published in June. This refers in part to new marketing agreements as well as to supplements of already existing marketing agreements regarding prices and other details.

In the meantime, in Germany new steps have been undertaken to obtain a marketing agreement for **Hops**. It may be remembered that in March 1965 an application has been submitted by Germany in the session of the agricultural section of the European parliament, according to which the commission of the E.E.C. was asked to submit a proposal for the regulation of the hop market within the E.E.C. An identical application referred to potatoes as well as tobacco. As now, by decisions regarding marketing agreements already about 90 0/0 of the agricultural production within the E.E.C. have been covered, it is a question whether additional marketing agreements which do not appear necessary generally for member states of the E.E.C. can still be taken into consideration.

Weather conditions were not favourable for the development of the hops during 1965 and especially distinguished by cool temperatures as well as too high precipitations. These influences did not benefit the growth of the hops, especially as tending the soil was very difficult and the development of **Downy Mildew** was favoured. Lack of sunshine in comparison to the year before retarded the development of the hops and especially the **Formation** of the **Cones**, as well as the development of the quality. Average figures for the weather in the most districts of production were as follows:

| | March | April | May | June | July | August | Sept. |
|----------------|-------|-------|------|------|------|--------|---------|
| Precipitations | 37 | 65 | 80 | 78 | 85 | 33 | 69 mm |
| Temperatures | 1.4 | 6.9 | 11.8 | 15.7 | 15.7 | 15.4 | 13.4° C |

The plants reached the height of the trellises rather retarded by the end of July and the necessary overhang was not developed in most of the hop yards. The hops remained pointed in general and the formation of the cones was retarded.

Deutsche
Demokratische
Republik
(D. D. R.)

During the decisive months from May until August, precipitations were up to 90% above normal. The monthly average temperatures were up to 2.5° C lower than normal and the temperatures during the days, especially during the second half of July were until 3° C lower than in former years. On the average three to five sprayings were effected against **Pests** and **Diseases**, of which one or two sprayings were combined for both aphids and diseases.

Picking started on September 1st and had to be finished until mid-September for reason of **Downy Mildew** and sometimes **Cladosporium** in practically all districts. There were not enough pickers available, although about 70% of the harvest were picked by 102 picking machines. The harvest was hindered often by light precipitations.

The **Quality** of the hops, both in **colour** and **Formation** of the **Cones** was often influenced unfavourably by **Wind Whipping** as well as by **Downy Mildew** and in part by **Hails**. The hops were judged as follows: 10% Grade II, 86% Grade III, 4% Grade IV. Hops were handled centrally as usual and prices were between DM 600.- and DM 1,000.- (East) per 50 kilos. The bigger part of the harvest was for use by the home brewing industry. An exportation of about 3,000 cwts. was effected. On the other side the import of hops is estimated at about 10,000 cwts. The acreage is in the hand of agricultural cooperatives (about 54%) and of state's farms (46%).

Poland

The winter of 1964/65 resulted in low temperatures until —30° C in February with strong **Snowfalls**, which continued until the beginning of March. The hops, however, had wintered well. During the second half of March and April **Spring Work** was effected in good time under temperatures of up to 16° C and finished in mid-April. The plants reached the height of 0.80/1.20 meters at the end of May. Rainfalls with thunderstorms as well as the decrease of temperatures until under +10° C by the end of July and August retarded the **Formation** of the **Cones** as well as the ripening of the hops. Precipitations and temperatures were as follows:

| | March | April | May | June | July | August | Sept. |
|----------------|-------|-------|------|------|------|--------|---------|
| Precipitations | 13.5 | 18.0 | 24.0 | 21.5 | 37.0 | 51.0 | 28.0 mm |
| Temperatures | 0.9 | 6.2 | 10.5 | 16.4 | 22.0 | 15.1 | 13.2° C |

Preventive sprayings were effected especially against **Downy Mildew**. The hops reached the height of the trellises about mid-July. The formation of the vines was not satisfactory and especially **Laterals** remained shorter than normal. **Bloom** of the hops was retarded by about a fortnight. **Picking** started about August 25th and was finished around September 20th. **Pickers** were sufficiently available. For the time being there are only 3 picking machines in trial operation on three more important hop plantings. The weather during the harvest was interrupted by rains and cool winds.

The **Quality** of the hops crop 1965 was judged as follows: The cones had a yellowish-green colour and showed sometimes discolourations by influence of weather conditions. The crop was graded as follows: Grade I 18.5%, Grade II 80%, Grade III 1.5%. All hops were handled centrally and removed from farms until September 31st. Exports from Poland amount to about 22,000 cwts. The acreage is indicated as follows: Private plantings 55%, cooperatives 36.5%, state farms 8.5%.

Czechoslovakia

Hop yards came well through the winter and subsoil moisture was satisfactory. The vegetative development was hindered by rainy and cool weather compared to the year before, but the hop yards had a healthy aspect. Rainfalls were distributed as follows:

| | April | May | June | July | August |
|------------------|-------|-------|------|------|---------|
| Saaz | 89.5 | 182.8 | 66.6 | 66 | 49.6 mm |
| Auscha | 75.6 | 148.1 | 64 | 86.8 | 31.6 mm |

Against **Aphids**, which appeared locally in July, as well as against **Downy Mildew** preventive sprayings were effected. The plants reached the height of the trellises generally during the first half of July, but locally only a fortnight later. **Bloom** started at the end of July, and was plentiful. **Picking** started locally on August 25th, was in full swing on August 28th and finished by September 17th. About 22% of the crop are picked by machines and 197 picking machines in fixed installations are available. The weather during the harvest was cool and occasionally interrupted by rainfalls.

The **Quality** of the hops showed cones of regular middling size and green colour. The cones were uniformly grown and well closed. The crop was graded as follows: 70% Grade I and II, 30% Grade III. It was satisfactory that the originally lower estimate of the crop finally resulted about 9,000 cwts. higher than expected. The entire crop was centrally handled. Exports amounted to about 85,000 cwts., whereas the home industry was supplied with 72,865 cwts. To offset the difference in quantity for the home industry, about 15,000 cwts. were imported mostly from the U. S. A.

About 0.5 % of the acreage are tended by private farmers whereas the rest is distributed among cooperatives (29.5 %) and public estates (70 %).

The exceptionally rainy and cool weather from April until June 1965 has prolonged the time for the vegetative growth of the hops between a fortnight and three weeks. Aside of the slower growth the **Bloom** also was late. Rainfalls and temperatures were distributed as follows:

Hungary

| | March | April | May | June | July | August | Sept. |
|----------------|-------|-------|-------|-------|-------|--------|---------|
| Precipitations | 47.2 | 63.1 | 132.7 | 125.9 | 189.9 | 89.4 | 67.4 mm |
| Temperatures | 6.6 | 9.9 | 14.9 | 19.7 | 21.4 | 19.3 | 17.5° C |

The hops reached the height of the trellises during the last third of June. **Bloom** was irregular and started generally about the end of June. The development was generally good, but the cones did not develop in late locations. The hop yards remained pointed in general and had no overhang. The disfavoured weather benefited the development of **Pests**. There were local damages by **Aphids**, so that careful measures of control had to be effected. Since mid-May, an exceptionally strong incidence of **Downy Mildew** resulted, which occasioned a loss of production. The hops were sprayed until 25 times. **Picking** of early varieties started about August 10th and was finished on August 26th. Late varieties were picked from August 28th to September 10th. There are only three picking machines available and an acute lack of pickers was noted. The weather during the harvest was changeable and rainy.

The **Quality** of the hops was not judged so well as the year before. Cones were smaller and not so good and brilliant in colour and bitter values, too, were lower than last year. The crop was graded as follows: 35.1 % Grade I, 30 % Grade II, 34.9 % Grade III. The acreage of 1,730 acres was not expanded. The officially fixed prices remained unchanged. The total crop went into consumption by the home breweries, which in addition required a quantity of 167 tons of imported hops. In Hungary no hop acreage is in the hands of private farmers. 98 % of the area are on state farms, whereas two percent are tended by cooperatives.

There are now offers for hops from this country on the world market. According to informations on hand, these hops come from the districts of Sinkiang, as well as inner Mongolia and from plantings in the North-East and the East of China. Smaller quantities of these hops are traded on the world market for the time being on a trial basis. Hops are competitive in prices, but not in quality.

People's
Republic of
China

In the **SANNTAL (Slovenia)**, weather conditions were unfavourable for the growth of the hops. The plants had wintered well and did not suffer from **Pests** and **Diseases** during the time of development. The hops had a good start until the beginning of April, but during April the growth was hindered by a cold spell with three weeks of rainfalls. Precipitations and temperatures were distributed as follows:

Jugoslavia

| | March | April | May | June | July | August | Sept. |
|----------------|-------|-------|-------|-------|-------|--------|----------|
| Precipitations | 103.7 | 158.0 | 144.8 | 147.1 | 188.1 | 132.2 | 118.2 mm |
| Temperatures | 4.12 | 8.67 | 13.7 | 18.47 | 19.47 | 17.3 | 16.05° C |

During the beginning of May the plants could offset the loss of development under somewhat higher temperatures, but by the end of May/beginning of June another cold spell set in. About that time the vines had reached a height of 2/3 meters. Preventive sprayings were effected against **Downy Mildew**. The plants had reached a height of about 4/4.5 meters until the end of June and made good growth at the beginning of July, when the height of the trellises was reached within 8 days under very warm weather. The **Set** started in mid-July and the **Formation** of the **Cones** began about the end of July. It was to be regretted that weather conditions worsened again during the second half of July and the weather remained unstable, rainy, as well as relatively cool until picking.

Hop yards were sprayed up to 7 times on the average. The **Harvest** started on August 18th and was finished within the first days of September. Pickers were plentiful and 12 picking machines were available. The **Quality** was judged to be less heavy than the year before and the cones were of good and uniform colour. The bitter value and especially the alpha fraction was noticeably under normal years. The crop was graded as follows: 90.35 % Grade I, 8.87 % Grade II, 0.88 % Grade III. Of the total crop 1965 2,800 cwts. were consumed by the home brewing industry whereas the balance of 53,710 cwts. was exported. No hops were imported. The acreage is in the hand of private farmers and of cooperatives in equal proportion. Prices for producers were uniform and corresponded to the pricing basis of sales.

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

| | March | April | May | June | July | August | Sept. |
|----------------|-------|-------|------|------|------|--------|---------|
| Precipitations | 17 | 52 | 84 | 97 | 25 | 41 | 42 mm |
| Temperatures | 3.6 | 11.9 | 15.3 | 22.2 | 20.8 | 19.6 | 16.2° C |

The plants had wintered well, but about 124 acres were destroyed during the inundations in May and June, especially in the valley of the Danube between Novi Sad and Backa Palanka. The hop yards are to be replanted in the spring of 1966, but hop yards situated in too low locations will be removed to higher elevations.

The weather was changeable during the entire vegetative development. In May/June a danger of greater incidence of **Downy Mildew** existed as a result of high precipitations and it was necessary to effect careful sprayings. Warmer and dryer weather about the end of June prevented a more extensive infection. The already mentioned inundations in the Danube valley, which appeared between Apatin (Hungarian border) until Novi Sad occasioned noticeable damages. Hop yards on the average were sprayed 10 times. The hops reached the height of the trellises around June 5/6th and were in **Bloom** in mid-July. **Picking** started on August 23rd and was finished about September 7th. There were sufficient pickers available so that the picking machines were not fully occupied.

The **Quality** was judged quite well. The cones were of good green colour. The crop was graded as follows: Grade I 84.18 0/0, Grade II 14.62 0/0, Grade III 1.20 0/0. The hops of this district were handled centrally and paid at an average price for the entire crop. The production is in the hands of private farmers (16.4 0/0), whereas 83.6 0/0 are produced by cooperatives.

Regarding the **Export of Hops** from Yugoslavia during the calendar year 1964, the following details are now available:

| Hop Exports from Yugoslavia 1964 | | | |
|----------------------------------|-----------|---------------------------|------------|
| Country | lbs. | Country | lbs. |
| Egypt | 24,802 | b. f. | 5,488,682 |
| Belgium-Luxembourg | 370,924 | Italy | 97,554 |
| Brazil | 188,493 | Japan | 97,002 |
| Denmark | 216,051 | Marocco | 40,785 |
| Dahomey | 40,785 | Netherlands | 751,769 |
| Germany East | 154,322 | Austria | 327,824 |
| Germany West | 2,802,708 | Senegal | 18,739 |
| Ivory Coast | 24,251 | Spain | 26,455 |
| Finland | 8,818 | Sweden | 22,156 |
| France | 438,715 | Switzerland | 223,216 |
| Great Britain | 1,200,625 | Tunis | 30,864 |
| Guinea | 4,630 | USSR | 1,521,174 |
| Iraq | 1,102 | Hungary | 66,138 |
| Iran | 5,842 | U. S. A. | 1,894,523 |
| Israel | 6,614 | Other Countries | 23,920 |
| c. f. | 5,488,682 | Total | 10,630,801 |

Bulgaria

Weather conditions during 1965 were generally subject to the customary weather conditions in this country. There was practically no rain during all the months of vegetative development, whereas temperatures were high and insulation was practically constant.

Under these conditions the **irrigation** has an increasing importance in hop production. It can be noted that the vines reached the height of the trellises during the first half of June and in part remained peaked. It has to be noted, however, that the districts of production are situated in climatically varied areas where high locations and lower located hop yards interchange.

Picking started about July 23rd and was finished on September 15th, 1965. The harvest is exclusively done by hand and the long duration of the picking depends on the fact that hop yards contain early, middling-early and late varieties. There was no lack of pickers and weather conditions during the harvest were good and sunny.

The quality of the Bulgarian hops was better than the year before in colour, as well as in lupulin. The hops of the different districts of production, however, had to be judged differently. Crop 1965 was graded as follows: Grade I 50 0/0, Grade II 20 0/0, Grade III 30 0/0. About 4,000 cwts. of the total crop which was about 10,000 cwts., were destined for the home brewing industry. In addition, these breweries had to accept about 4,000 cwts. from the excess of crop 1964, which were in cold storage. The balance of crop 1965 of about 6,000 cwts. was exported. The Bulgarian crop is produced on state farms (about 80 0/0) and by cooperatives (about 20 0/0). There are no private farmers producing hops. Prices to producers were the same as the year before.

Belgium

ALOST. More intense precipitations during the winter of 1964/65 improved subsoil moisture. The weather continued moist which on the one side retarded the development of the variety Replant Hallertau, whereas on the other side the varieties Northern Brewer and Brewers Gold benefited from this weather. Precipitations were distributed as follows:

| March | April | May | June | July | August | September |
|-------|-------|------|------|-------|--------|-----------|
| 49.3 | 70.8 | 92.8 | 48.4 | 150.5 | 69.2 | 65.3 mm |

There were scarcely any damages by **Pests** and furthermore **Downy Mildew** was regularly controlled, so that scarcely any damages appeared. Sprayings, which amounted at least to once a week were always carefully effected. The plants reached the height of the trellises only around July 20th, and were, therefore, about a fortnight retarded against normal years.

The **Harvest** started during the first days of September and was still about one week late. Only about 2 0/10 of the crop are picked by hand. For this there were sufficient pickers available. Weather conditions were not favourable at the beginning of the harvest, but were quite good and dry during the second half of the work and until the finish of the harvest. The cones of the variety Replant Hallertau were smaller than normal and not clean in colour as a consequence of **Wind Whipping**. The varieties Northern Brewer and Brewers Gold showed larger cones than the year before and were generally of better colour as well. The crop was graded as follows: Grade I 65 0/10, Grade II 20 0/10, Grade III 15 0/10. The harvest was sold out by the end of October 1965 with the exception of small remaining lots. The variety Replant Hallertau was sold out at unchanged prices of bfrs. 3,500.— until October 15th. Northern Brewer hops obtained a price of bfrs. 4,500.— and last available lots were sold by the end of October at bfrs. 5,000.—.

POPERINGE. During the winter of 1964/65 there were ample snowfalls so that the plants were protected against frost damages. The **Training** of the vines was finished about the end of April. About this time the weather turned colder with more precipitations. About the beginning of May the plants could develop well under warmer, until even very warm weather, whereas in June and July there reigned cool temperatures with almost daily precipitations. Rainfalls were distributed as follows:

| March | April | May | June | July | August | September |
|-------|-------|------|------|-------|--------|-----------|
| 50.4 | 57.7 | 75.1 | 59.2 | 104.2 | 60.6 | 94.0 mm |

Sprays against **Downy Mildew** and **Pests** were effected about once a week on the average. This careful tending of the hops brought under control a somewhat stronger infestation of **Aphids** about the end of the growing season.

The hops had reached the height of the trellises about mid-July. **Bloom** started at the end of July and the set was abundant up to the top of the vines. Despite the unfavourable weather conditions, even the cones on the lower part of the vines were well ripened. The variety Northern Brewer showed an especially good stand. The **Formation** of the **Cones** started at the beginning of August.

The **Picking** started sporadically on September 2nd and was in full swing about September 6th. The first hop yards were emptied about September 15th, whereas late varieties have been picked until September 25th. Mechanical picking is just as widespread as in Alost. The rainy weather during the first fortnight hampered the gathering of the crop and resulted most especially in difficulties during the transportation of the cut vines. After September 19th, the weather became friendly and warm. On this occasion **Aphids** appeared once again and occasioned some damages on late varieties, such as Brewers Gold.

Despite of the unfavourable weather conditions, colour and quality were better than in the year before. The cones were bigger and well formed. The crop was graded as follows: Grade I 80 0/10, Grade II 18 0/10, Grade III 2 0/10.

The pricing situation in this district was somewhat irregular. The variety Replant Hallertau was quoted at bfrs. 3,750.— at the beginning, but fell to bfrs. 3,500.—/3,600.— in October. At the beginning of November the price recuperated to bfrs. 3,750.— and last available lots were purchased at bfrs. 4,000.—. The variety Northern Brewer was generally graded at bfrs. 4,500.— with the exception of a small increase of prices in mid-October and last available lots were sold at bfrs. 5,000.—.

The variety Brewers Gold suffered stronger variations in prices, which set in at bfrs. 3,750.— at the beginning of September. Quotations fell to bfrs. 3,500.— in mid-September and to bfrs. 3,000.—/3,250.— at the beginning of October. Prices rose to bfrs. 3,600.—/3,750.— between mid-October and the beginning of November and final lots were purchased at bfrs. 4,000.—. The market was sold out by the middle of December.

Belgium imported the following quantities of hops, crop 1965 from September 1st, 1965 until December 31st, 1965:

| Country | lbs. | Country | lbs. |
|------------------------|-----------|--------------------------|-----------|
| Germany West | 253,749 | b. f. | 1,040,570 |
| France | 79,145 | Great Britain | 77,822 |
| Germany East | 58,201 | Czechoslovakia | 1,489,869 |
| U. S. A. | 240,301 | Jugoslavia | 253,970 |
| Poland | 409,174 | Bulgaria | 50,485 |
| c. f. | 1,040,570 | Total | 2,912,716 |

Belgian hop imports crop 1964 until August 31st, 1965: 4,262,815 lbs.

Export of Belgian hops from September 1st, 1965, until December 31st, 1965 are shown as follows:

| Country | lbs. | Country | lbs. |
|-----------------------------|-----------|-------------------------------|-----------|
| Australia | 82,672 | b. f. | 1,017,202 |
| Denmark | 73,193 | Norway | 1,984 |
| Germany West | 695,992 | Austria | 11,023 |
| Finland | 9,039 | Portugal | 3,749 |
| France | 34,612 | Sweden | 29,982 |
| Great Britain | 109,128 | Switzerland | 56,658 |
| Ireland | 7,716 | Un. of South Africa | 19,180 |
| Kenya and Uganda | 3,968 | Rhodesia | 15,872 |
| Congo (Leopoldv.) | 882 | U. S. A. | 61,729 |
| c. f. | 1,017,202 | Trinidad | 2,205 |
| | | Total | 1,219,584 |

Belgian hop exports crop 1964 until August 31st, 1965: 3,006,192 lbs.

Regarding the development of planting according to variety the following information is now available:

| District: Alost | 1962 | 1963 | 1964 |
|----------------------------|------|------|------|
| Replant Hallertau | 60 % | 55 % | 50 % |
| Northern Brewer | 25 % | 30 % | 35 % |
| Other Proveniences | 15 % | 15 % | 15 % |
| District: Poperinge | 1962 | 1963 | 1964 |
| Replant Hallertau | 55 % | 41 % | 32 % |
| Replant Saaz | 6 % | 4 % | 2 % |
| Northern Brewer | 19 % | 28 % | 31 % |
| Brewers Gold | 15 % | 24 % | 32 % |
| Other Proveniences | 5 % | 3 % | 3 % |

France

Precipitations and temperatures in France (Alsace) were distributed as follows:

| | March | April | May | June | July | August | Sept. |
|----------------|-------|-------|-------|-------|------|--------|---------|
| Precipitations | 80.7 | 76.9 | 113.9 | 117.8 | 57.9 | 55.1 | 84.5 mm |
| Temperatures | 6.2 | 9.6 | 14.0 | 17.7 | 17.9 | 17.9 | 14.1° C |

In the **ALSACE** fine weather favoured **Spring Work** which was finished quickly and in time. The growth, however, was retarded by overwhelmingly wet weather from April until mid-June. **Hails** did some local damage, but the district was mostly free of **Pests** with the exception of locally appearing **Aphids**. The changing weather was maintained until the beginning of August after which the weather was sunny and warm until the middle of August. After that, climatic conditions changed once again to rain. Up to 12 sprayings were effected against **Pests** and **Diseases**. The plants reached the height of the trellises at the beginning of July and **Bloom** started at the end of July. The hops remained peaked in many hop yards and reached only the height of the trellises, whereas in many hop gardens a short overhang was to be noted.

Picking started on September 6th and was finished on September 20th under generally changeable weather conditions. In the total district there are about 160 picking machines available.

The **Quality** showed cones of good colour with occasional **Wind Whipping** and lupulin was more plentiful than the year before. The crop was graded as follows: Grade I 92 %, Grade II 5 %, Grade III 3 %. Prices were between FF 370,— and 450,— and the district was sold out until mid-November.

FLANDRES. The plants had wintered well. Growth went on under the same weather conditions as general during the last year in Europe. Up to 15 sprayings were effected against **Pests** and **Diseases**. Among these there were three applications of systemic products. **Verticillium Wilt** appeared sporadically. The extension of this disease is estimated at a total of half the hectare (about 1.2 acres).

The plants reached the height of the trellises around June 25th and were in **Bloom** on July 6th. The vines had developed a luxuriant overhang. Cones were developed quite well on the lower third of the vines with the exception of the variety **Brewers Gold**. Picking started on September 6th and was finished on September 28th. The weather during the harvest was very rainy during the first two weeks, but later dry and cloudy.

About 90 % of the crop are mechanically picked, so that there was no lack of labour.

Quality. The crop 1965 was paler in colour than usual and had often discolourations. The cones were normally developed, but on the average were not judged as well as the year before. The harvest was graded as follows: Grade I 10 %, Grade II 65 %, Grade III 25 %.

The sale of the hops was influenced by existing contracts and free of important oscillations in prices. The variety **Northern Brewer** was traded within a bracket of FF 450.—/500.—, whereas the other varieties (**Replant Hallertau**, **Fuggles**, **Brewers Gold**), were traded at FF 350.—/400.—. The harvest was sold out with the exception of small final lots on January 1st 1966.

In 1965 France imported:

| Countries | Jan.-June lbs. | July—Dec. lbs. | Total lbs. |
|------------------------------|-------------------|-------------------|---------------|
| Belgium-Luxembourg | 116,623 | 65,697 | 182,320 |
| Germany West | 587,305 | 499,121 | 1,086,426 |
| Jugoslavia | 412,260 | 24,472 | 436,732 |
| Czechoslovakia | 455,470 | 493,389 | 948,869 |
| U. S. A. | 62,832 | — | 62,832 |
| Total | 1,634,490 | 1,082,679 | 2,717,179 |

French hop imports for the calendar year 1964 = 1,925,498 lbs.

Export of French hops in 1965 were as follows:

| Destination | Jan.—June lbs. | July—Dec. lbs. | Total lbs. |
|--------------------|-------------------|-------------------|------------------|
| Algeria | 13,889 | 23,810 | 37,699 |
| Belgium-Luxembourg | 64,374 | 158,952 | 223,326 |
| Denmark | 3,748 | — | 3,748 |
| Germany West | 564,818 | 330,910 | 895,728 |
| Great Britain | 11,464 | — | 11,464 |
| Guinea | 10,362 | — | 10,362 |
| Italy | 882 | 441 | 1,323 |
| Cameroons | — | 11,023 | 11,023 |
| New Caledonia | 2,645 | 2,645 | 5,290 |
| Netherlands | — | 2,425 | 2,425 |
| Austria | — | 22,487 | 22,487 |
| Switzerland | 184,084 | — | 184,084 |
| U. S. A. | 154,983 | 30,203 | 185,186 |
| Other Countries | 2,205 | 2,205 | 4,410 |
| Total | 1,013,454 | 585,101 | 1,598,555 |

French hop exports for the calendar year 1964 = 2,194,679 lbs.

In the district of **MUEHLVIERTEL**, the long extended winter delayed **Spring Work**, which could be finished only at the end of April. The plants had wintered well. The development of the hops was retarded under almost uninterrupted rainfalls until the end of June so that the vines reached the height of the trellises only in mid-July. Careful control had to be effected against **Downy Mildew**, which appeared more notably in July and against **Aphids**, which infested the plants shortly before the harvest. On the average sprayings were effected until 11 times.

Austria

Bloom appeared already during the second half of July so that the plants generally remained peaked and showed only a limited overhang. Good weather which appeared together with the bloom resulted in a very good quality, but could not increase any more the quantity of the harvest which showed a big reduction.

Picking started around September 5th and was finished about September 20th. Pickers were plentiful almost everywhere. The harvest went on under good weather conditions.

The **Quality** was better in colour and cones than the year before, but with some more wind whipping. The crop was graded as follows: Grade I 81.5%, Grade II 17%, Grade III 1.5%.

There were no problems regarding the sale of the hops as the entire crop is taken over according to contract at firm prices by the brewing industry.

In the district of **LEUTSCHACH** the hops had wintered well. The vegetative development was retarded under high precipitations and local damages by **Hail**. The weather was rather changeable during the entire time of growth and precipitations during the time from March 1st until September 30th, 1965, brought a total of 1,041 mm. Sprayings against **Pests** and **Diseases** were effected up to 12 times.

The hops reached the height of the trellises about the end of June, but did not show much overhang. **Picking** started on August 20th and was finished on September 9th. 9 picking machines are handling about 60% of the crop. There were sufficient pickers available for the balance of the hop yards to be picked by hand. Weather conditions during the harvest were satisfactory.

The **Quality** was judged better than the year before. The hops were graded as follows: Grade I 77.7%, Grade II 15.4%, Grade III 6.9%. On a total area of 175 acres a quantity of 1,900 cwts. was harvested (26.7 cwts. per acre). The total crop was accepted by the breweries in Styria on the agreed price basis.

Climatic conditions during the growth of 1965 were mostly wet and cool. So that the development was retarded and the hops came to a late ripening. Precipitations were distributed as follows:

Switzerland

| March | April | May | June | July | August | Sept. |
|-------|-------|-------|-------|-------|--------|---------|
| 173.0 | 123.9 | 188.7 | 194.0 | 138.0 | 95.5 | 95.7 mm |

The expected spring weather started only about mid-May and brought for the plants warm and dry days until the second half of June. Later on, the weather was mostly changeable, cool and rainy or threatening thunderstorms. During the vegetative development a persisting infestation of **Aphids** was noted, which had to be controlled by 8 to 10 sprayings.

The hops reached the height of the trellises at the beginning of July and **Bloom** started on July 15th. The plants had developed a luxuriant overhang, but the lower part of the vines had practically no or only cones of little value. **Picking** was effected by two picking machines from August 30th to September 18th. There were constant and strong rainfalls during that time.

The **Quality** was judged well and better equalized than the year before. The crop was graded as follows: Grade I 97.5%, Grade III 2.5%.

The area of 32 acres brought a crop of 395 cwts. (1,234 cwts. per acre). Prices to be paid by breweries were established on October 19th, 1965 as follows:

Prices to farmers Grade I (97.5% of the crop) Sfr. 530.— per 50 kilos Grade III (2.5% of the crop) Sfr. 460.— per 50 kilos

From these prices an amount of Sfr. 10.— per cwt. was paid into the compensation fund. All hops were accepted by the brewing industry of Switzerland.

Spain

As a consequence of the favourable weather in 1965 the crop was judged to be of excellent quality. The yield in 1965 was as follows:

| | |
|------------------------------|--------------|
| District of production León: | 18,283 cwts. |
| Others: | 6,133 cwts. |
| Total | 24,416 cwts. |

The development in the most important district of production, León went from 31 farmers in 1950 with hop yards comprising about 30,000 plants altogether to 2,250 farmers in 1965. The number of hills in the hop yards amount to 2,475,000 in total.

The total crop in Spain was distributed to the Spanish brewing industry by the Fomento del Lúpulo. The Spanish breweries are well supplied with hops so that theoretically Spain is independent of other supplies.

England

The growth of the hops in England in 1965 suffered from difficult conditions. The winter 1964/65 was too mild and brought insufficient frost and practically no snowfall, so that the earth could not freeze as necessary. After that time weather conditions in general were cool until cold with little sunshine and even the very necessary sunshine in August 1965 was less than normal.

The growing period was especially difficult regarding **Pests** and **Diseases**. Producers had to effect preventive sprayings and much more insistent than during the last years. **Downy Mildew** was a constant danger during the entire season, but could be kept under control. **Aphids** could be controlled only by constant preventive measures, which required a corresponding outlay. Shortly before the harvest a remarkable infection of **Verticillium Wilt** resulted. Generally farmers had to take the decision to plough out the infected plants and to plant the holes new. It is regrettable that even hop yards were infected which contained Whitbread, Golding Variety and Bramling Cross, although these types up to now were considered resistant to the Wilt.

It was noted that the systemic products did not suffice for the time of three weeks. Especially against aphids it was necessary to spray at least once in a fortnight, which was not possible shortly before the harvest. In connection with weather conditions an exceptional situation was noted regarding male plants. Usually pollen are released in mid-June in order to fertilize the female bloom. In 1965, however, the male cones were still green in mid-August and released pollen. Some of the early varieties, therefore, were not sufficiently fertilized in June, so that the cones remained underdeveloped.

The entire vegetative development was about one week later than usual. **Picking** started around September 6th/7th and was finished by the end of September. The harvest continued about 8 days longer in the Midlands only.

The crop is picked by machines which handled more than 90% of the harvest. The weather during the harvest was notably wet and the hop yards were very wet and waterlogged. The **Quality** showed an improvement against former years despite the disagreeable summer. The crop was graded as follows: Grade I 24%, Grade II 63.4%, Grade III 12.6%. Prices to producers were fixed by sh 35 per cwt. higher than in 1964

Existing contracts for crop 1965 were delivered in full. The quantity for the crop 1965 was 221,685 cwts. for the home breweries and 6,010 cwts. for exports, making a total of 227,695 cwts. Up to now contracts amounting to 196,917 cwts. have been submitted for crop 1966 whereas contracts for export have not yet been submitted. For the time being, the quota of production in 1966 for producers has been settled at 88.5% of the basis quota. In consequence of this it may be expected that prices for farmers will be raised in 1966.

The following quantities of hops crop 1965 were imported from September 1st, 1965 to February 28th, 1966:

| Country | cwts. | Country | cwts. |
|--------------------------|-------|-----------------------|--------|
| Germany West | 771 | b. f. | 8,879 |
| Belgium | 1,310 | Poland | 340 |
| U. S. A. | 328 | Canada | 991 |
| Netherlands | 80 | Denmark | 350 |
| Jugoslavia | 5,765 | Switzerland | 114 |
| Czechoslovakia | 625 | Italy | 68 |
| c. f. | 8,879 | Total | 10,742 |
| | | 1 cwt. = 50.8 kg | |

English imports of hops crop 1964 = 13,440 cwts.

Exports of English Hops Crop 1965

September 1 st, 1965 — March 31 st, 1966

| Country | cwts. | Country | cwts. |
|------------------------|--------|-----------------------------|--------|
| Angola | 16 | b. f. | 17,991 |
| Australia | 4,156 | Malayan States | 488 |
| Belgium | 995 | Malta | 232 |
| Canada | 16 | New Zealand | 4 |
| Ceylon | 142 | Nigeria | 310 |
| Germany West | 8 | Pacif-Islands | 5 |
| Finland | 10 | Southafric. Republ. | 317 |
| Ireland | 12,643 | Other Countries | 90 |
| Jamaica | 5 | Total | 19,437 |
| c. f. | 17,991 | 1 cwt. = 50.8 kg | |

English exports of hops crop 1964 = 19,323 cwts.

CALIFORNIA. There was neither frost nor other damages by weather in the district of **SACRAMENTO**. Growth and Development of the hops were normal. There were practically no precipitations.

U. S. A.

The weather during the time from the end of March until the end of September 1965 was cooler than normal and there appeared very **Strong Winds** in April and May. Up to five sprayings were effected against **Pests** and **Diseases**.

The hops reached the height of the trellises at the beginning of June and **Bloom** started about June 12th. The vines showed a good overhang, but cones on the lower third of the plants did not ripen. **Picking** started on August 14th and was finished on September 9th. There was no lack of labour. The weather during the harvest was exceptionally cool. Furthermore shortly before the harvest a cloud-burst was noted.

Quality. The hops of crop 1965 showed a somewhat lower content of lupulin than the year before, but the colour was better than normal. Generally, both the quality as well as the growth of the cones could be considered normal. The crop was graded as follows: Grade I 20 %, Grade II 75 %, Grade III 5 %.

WESTERN OREGON. In this district growth could develop from 8 to 10 days earlier than usual under fine and normal weather conditions. The hops were off to an early start and the necessary spring work was finished in the usual form. Rainfalls were distributed as follows:

| March | April | May | June | July | August | September |
|-------|-------|------|------|-------|--------|-------------|
| — .87 | 2.41 | 1.16 | 1.11 | — .19 | — .99 | — .13 inch. |

The summer was somewhat dryer and warmer than usual. This weather was unfavourable for the variety Fuggles. **Aphids** were easily controlled, so that only the normal sprayings had to be applied once or two times. **Red Spider**, however, appear to become resistant, and it was especially difficult to control this pest in 1965. Some farmers had to spray or to dust the hop yards 6 or 7 times in order to control aphids. Hops reached the height of the trellises around June 20th and were in **Full Bloom** between June 20th and 25th. **Picking** of the Fuggles started around mid-August and was finished on August 31st, whereas the harvest of the Bullions started at the beginning of September and was finished around September 20th. The weather during the picking was exceptionally good.

Quality. Colour and quality, as well as the sizing of the cones of the variety Fuggles did not satisfy very much, although the quality of these English hops was judged somewhat better than the year before. The crop was graded as follows: Grade I 40 %, Grade II 55 %, Grade III 5 %.

EASTERN OREGON and IDAHO. The **Spring Work** was finished within normal time. The weather during the **Training** of the hops was still favourable, but turned to cool in May 1965. This weather was maintained until mid-June. **Downy-Mildew** appeared only locally in small extension. Rainfalls were distributed as follows:

| March | April | May | June | July | August | September |
|-------|-------|-------|-------|-------|--------|-------------|
| — .30 | 1.32 | — .81 | — .60 | — .01 | 1.71 | — .51 inch. |

The cool weather retarded the development of the vines and occasional winds resulted in local damages. The expectations for the crop were improved in July, when the weather turned warmer and as a final result the hops developed quite normally. Sprayings against **Downy-Mildew** were effected five times on the average and against **Aphids**, as well as **Red Spider** two or three sprayings were applied. The late clusters reached the height of the trellises about June 25th and developed a good overhang, whereas the early clusters developed slower and generally reached the height of the trellises only at the beginning of July. As the latter variety only developed a weak overhang, general expectations pointed to a smaller crop. An abundant set, however, could offset this impression and yields were good. The late clusters bloomed more than normal and brought a normal crop which reached uniformly from the top of the vines to the lower parts. The harvest started on August 19th and was finished around September 20th. There was an occasional lack of labour during the last week of the harvest. The weather during the picking was good until mid-September, after that, however, the gathering of the hops into the barns became difficult through the influence of rain, wind and even frost.

Quality. The hops were judged notably better than the year before in colour, lupulin, quality and sizing of the cones. The harvest was graded as follows: Grade I 65 %, Grade II 25 %, Grade III 10 %.

WASHINGTON. In the district of Yakima the winter 1964/65 was especially hard and brought temperatures under 0 degrees F with an ample snowcover. The hops, however, had wintered astonishingly well, and **Spring Work** started normally. Precipitations were distributed as follows:

| March | April | May | June | July | August | September |
|-------|-------|------|------|------|--------|------------|
| — | —,48 | —,05 | —,51 | —,27 | —,21 | —,04 inch. |

Favourable vegetative conditions during the spring and summer of 1965 indicated a good harvest and these expectations were not deceived. The harvest in the district of Yakima was the greatest during the last preceding years. It could have been still greater, if there had not been a **Strong Frost**, which appeared during the harvest. All hops, which were picked after the frost were more or less discoloured and red. In addition farmers noted a decrease of yields.

Downy Mildew was no danger at any time. **Red Spider**, however, brought apprehension to farmers and resulted in great costs for the control. Farmers sprayed generally 3 or 5 times. Spraying against **Red Spider** had to be effected with considerable care in July, August and September. Aside of this an occasional incidence of aphids had to be controlled.

The hops reached the height of the trellises at the beginning of July. At this time early varieties were in **Bloom** whereas late varieties bloomed about 10 days later. As a consequence of the growth vines did not show an overhang, but cones on the lower third of the plant had developed better than in other years. **Picking** started about August 22nd and was finished on September 27th. The weather during the harvest was excellent. The hops were judged well in colour, lupulin, quality and size of cones with the exception of those hop yards which had been picked after the frost. The quality was graded as follows: Grade I 30 %, Grade II 50 %, Grade III 20 %.

Pricing situation U. S. A.

The pricing situation on the American market showed a generally calm tendency for crop 1965 in front of an ample harvest. There were little sales between July 1965 until October 19th on a nominal pricing basis for Yakima hops of 42 cents. During this time there were offers from dealers to breweries already at prices, which showed quotations on a lower basis either speculatively, or in order to dispose of existing unsold stocks. On October 20th first purchases were effected on a basis of 27 cents and this price was maintained until about the end of that month. Stronger demand set in and prices advanced to 30 cents and to 35 cents in mid-November 1965. This pricing basis has been maintained more or less since that time. This development refers to seedless Yakima hops. For other varieties, especially Oregon Fuggles and California hops, the marketing development was sometimes somewhat different according to the situation in these districts of production.

The development of the market was based especially upon the fact that there was very little demand from breweries and on the other side an ample crop had been harvested, so that the quotation of 42 cents generally was judged to be too high. This reason is emphasized by the fact that after the end of October, when quotations conformed to the market situation, a considerable part of free available hops, crop 1965 could be sold out within a short time.

Prices for advance contracts remained practically unchanged since July 1965 and were as follows:

Crop 1966 42 cents, crop 1967 43 cents, crop 1968/70 45 cents.

The fact that prices for advance contracts did not conform to the general development of the market may be based in new efforts which already started in October/November 1965, in order to effect a new marketing agreement for hops in the U. S. A.

Both crops of 1966 and 1967 were practically already sold out, so that the lack of demand on the market generally referred to hops later years.

Marketing Agreement U. S. A.

After the original discussions regarding a new marketing agreement for hops in 1965, the necessary quote was effected on August 6th, 1965. Although free hops of crop 1965 did not fall under the new agreement, farmers were very reluctant against sales of any crop years especially beginning with crop 1966.

After the voting it was realized that only 54 % of the voting farmers would agree to the new orders, whereas 44 % of all farmers voted against a marketing agreement and two per cent did refrain from voting. As two thirds of all votes are necessary to introduce a marketing agreement, this new order was disapproved. The passing lower basis for prices for free hops, crop 1965 renewed the reason for new discussions. At the beginning of March 1966 another discussion regarding the submission took place in Yakima under the leadership of the Ministry of Agriculture of the U.S.A. The most salient fact was to fix basic quota for saleable hops, against which considerable doubts were raised by interested circles. It may be expected that within 90 days, which would be about the beginning of June, the necessary decisions for voting can be taken and it remains to be seen whether the result of the voting in 1965 would now in 1966 be superseded by an approval of a marketing agreement.

Since the discussions regarding a marketing agreement had started again, producers were once again reluctant regarding contracts for future harvests. Free available hops of crop 1965 could profit from the lower willingness to sell.

**Hop Exports
U. S. A.**

| Exports of US-Hops Crop 1965 | | | | | |
|--|-----------|---------------------|---------------------------------|------------|---------------------|
| September 1 st, 1965 — January 31 st, 1966 | | | | | |
| Country | lbs. | Ztr. je 50 kilos | Country | lbs. | Ztr. je 50 kilos |
| Ethiopia | 19,842 | 180 | b. f. | 8,981,698 | 81,483 |
| Argentina | 203,212 | 1,844 | Kenya | 11,760 | 107 |
| Australia | 142,542 | 1,293 | Rep. Congo | 114,813 | 1,042 |
| Belgium-Luxembourg | 512,989 | 4,654 | Malaya | 24,650 | 224 |
| Bolivia | 108,915 | 988 | Mexico | 2,064,861 | 18,732 |
| Brazil | 584,349 | 5,301 | Mocambique | 16,024 | 145 |
| British Gulana | 70,576 | 640 | Nicaragua | 13,228 | 120 |
| Canada | 1,794,029 | 16,275 | Netherland | 255,934 | 2,322 |
| Chile | 6,159 | 56 | Nigeria | 74,852 | 679 |
| Colombia | 655,766 | 5,949 | Norway | 17,888 | 162 |
| Costa Rica | 24,304 | 221 | Austria | 82,102 | 745 |
| Denmark | 381,520 | 3,461 | Pakistan | 10,924 | 99 |
| Germany (West) | 3,063,106 | 27,788 | Peru | 220,860 | 2,004 |
| Dominican, Republic | 37,783 | 343 | Philippine Isl. | 49,927 | 453 |
| Finland | 26,453 | 240 | Portugal | 59,579 | 541 |
| France | 47,966 | 435 | El Salvador | 22,188 | 201 |
| Greece | 19,109 | 173 | Spain | 8,842 | 80 |
| Great Britain | 195,067 | 1,770 | Union of South Africa | 104,400 | 947 |
| Guatemala | 13,181 | 120 | South-Korea | 23,890 | 217 |
| Honduras | 41,974 | 381 | Sweden | 95,303 | 865 |
| Ireland | 843,803 | 7,655 | Switzerland | 207,400 | 1,882 |
| Iceland | 22,046 | 200 | Trinidad | 15,223 | 138 |
| Italy | 46,362 | 421 | Czechoslovakia | 330,678 | 3,000 |
| Jamaica | 65,568 | 595 | Uruguay | 41,887 | 380 |
| Japan | 55,077 | 500 | Venezuela | 325,641 | 2,954 |
| c. f. | 8,981,698 | 81,483 | Other countries | 21,813 | 198 |
| | | | Total | 13,196,365 | 119,720 |
| | | | 110.23 lbs = 1 Ztr. zu 50 kg | | |

**Hop Imports
U. S. A.**

| Hop Imports U.S.A. Crop 1965 | | |
|--|-----------|---------------|
| September 1st, 1965 — January 31st, 1966 | | |
| Country | lbs. | Ztr. je 50 kg |
| Germany West | 4,117,750 | 37,356 |
| Jugoslavia | 671,249 | 6,090 |
| Canada | 17,605 | 160 |
| Belgium-Luxembourg | 83,886 | 761 |
| France | 218,220 | 1,980 |
| Other Countries | 412,210 | 3,740 |
| Total | 5,520,920 | 50,087 |

Canada

The area of production in the Inland district suffered especially damages by the cold weather in December 1964 and additional damages by frost in March 1965. The weather during the vegetative development was good.

The production in the costal districts was under the average as a consequence of the dryness in the early spring and summer 1965. However, there were no frost damages.

Red Spider had to be carefully controlled, but damages of the crop could be avoided. Precipitations were distributed as follows:

| | March | April | May | June | July | Aug. | Sept. |
|--------------------|-------|-------|------|------|------|------|------------|
| Sardis | 2.89 | 3.35 | 4.11 | 0.50 | 0.47 | 3.01 | 2.15 inch. |
| Kamloops | 0.09 | 0.20 | 0.16 | 0.42 | 0.49 | 2.99 | 0.76 inch. |

Conversion: 10 Inches of snow = 1 inch of rain

In the **COSTAL DISTRICTS** about 16 to 17 sprayings against **Pests** and **Diseases** were effected. Climatic conditions showed a lack of rain and there were not sufficient means of irrigation to supply hop yards with humidity. The hops reached the height of the trellises on June 15th and were in **Full Bloom** on July 15th. **Picking** started on August 27th and was finished under good conditions. There were eight picking machines available and picking by hand is not done any more.

The **Quality** of the hops was judged quite well in colour, but was under normal in content of lupulin and quality. The harvest was judged as 100 % Grade I.

In the **Inland district** only 2 sprayings were necessary against **Pests** and **Diseases**. The hops reached the height of the trellises on June 15th and were in **Bloom** on July 25th, and showed a good overhang. The cones on the lower third of the vines ripened well. The total crop was harvested by one picking machine.

Picking started on September 1st and was finished under good weather conditions on September 25th. The **Quality** was judged better than the year before. The total crop was graded as Grade I.

On a total acreage of about 1,035 acres, a crop of 1,465,239 lbs. was harvested. All hops except one small balance of 26,611 lbs. had been accepted by breweries on January 1966 at a price of \$ 0.60 per lb.

Japan

In the district of **NAGANO** weather conditions during the growth were not especially favourable. There were small precipitations in March and April 1965, but stronger rainfalls from May to July. A dry August was followed by a September with average precipitations. Rainfalls and temperatures were as follows:

| | March | April | May | June | July | Aug. | Sept. |
|----------------|-------|-------|------|------|------|------|---------|
| Precipitations | 34 | 47 | 121 | 158 | 180 | 30 | 139 mm |
| Temperatures | 1.6 | 6.7 | 15.4 | 19.6 | 22.1 | 24.5 | 19.0° C |

The months of March and April brought a relatively cold weather so that the growth of the hops and **Spring Work** were retarded by two to three weeks. The vines did not develop as well as expected by lack of sunshine.

Downy Mildew was controlled by regularly effected sprayings up to 15 times with Bordeaux mixture and did not do any damages. The vines reached the height of the trellises until mid-June and were in bloom by the end of June. Generally hop yards showed a good development, even if cones on the lower third of the vines did not ripen as well as in former years.

The **Picking** started at the beginning of August and was finished by the end of that month. There were not sufficient pickers available. The weather during the harvest was good and sunny.

In the district of **HOKKAIDO**, vegetative conditions on the whole were not more favourable than in Nagano. Precipitations and temperatures were as follows:

| | March | April | May | June | July | Aug. | Sept. |
|----------------|-------|-------|------|------|------|------|---------|
| Precipitations | 47 | 30 | 65 | 96 | 68 | 99 | 266 mm |
| Temperatures | — 5.0 | 2.2 | 11.0 | 16.7 | 18.6 | 21.4 | 15.5° C |

Despite small precipitations at the beginning of the growth there resulted much more rain, especially in September during the picking. The very much oscillating temperatures remained low on the average. It was necessary to spray in Hokkaido especially against **Oidium**, but damages of the hops could not entirely be avoided. Low temperatures and lack of sunshine disfavouredly influenced the quality of the hops. Late varieties had to be controlled very carefully against **Downy Mildew**. In the district there appeared since 1962 some aspects of a disease which was some appearance of **Verticillium Wilt**. This affair, however, is still under observation as it is supposed that there are practically scarcely reasons for this disease. In the meantime we suppose that it may be **Gliocladium**.

The hops reached the height of the trellises by the end of June and were in **Bloom** in mid-July. The general aspect of the hop yards did not show an especially good growth. **Picking** started in mid-August and was finished by the end of September. Labour was not always sufficiently available.

Machine Picking. The lack of pickers is increasing from year to year, so that the introduction of machine picking advances in correspondence. According to available estimates about 70 to 80 % of the crop are picked by machines. Hop yards in Japan are small on the average, so that big picking machines cannot be used. The yield of machines as used in Japan is about as follows:

| Size | Daily output in acres | Estimated number of machines |
|----------|-----------------------|------------------------------|
| Small | ab. 0.152 | 5,000 |
| Middling | ab. 0.25 | 40 |
| Big | ab. 0.5 | ab. 15 |

Quality. Cones were somewhat smaller than usual in all districts of production and the percentage of insufficiently ripened cones was greater than in former years. Content of lupulin was normal, but the hops weighed less than usual for equal volume. The quality was graded as follows: Grade I 87.2 %, Grade II 6.6 %, Grade III 6.2 %.

Sale of the Harvest. All hops are under contract by the breweries, so that no unsold hops remain on farms. The following prices were paid to farmers:

| | | |
|-----------|------------------|-----------|
| Grade I | 737 Yen per Kilo | (DM 8.15) |
| Grade II | 628 Yen per Kilo | (DM 7.00) |
| Grade III | 523 Yen per Kilo | (DM 5.80) |

Japanese breweries import additional hops and are covered for their needs generally for one year.

CROP 1966

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

Cold, wet and windy weather in November hampered growth by about 3 weeks. The summer was altogether cool and wet, so that the harvest was delayed by 2 weeks. Precipitations were distributed as follows:

**Union of
South Africa**

| 1965 | | | | | 1966 | |
|------|-------|------|------|------|------|------------|
| Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Febr. |
| 0.79 | 1.05 | 7.15 | 5.49 | 2.48 | 2.51 | 2.84 inch. |

The hops reached the height of the trellises in the middle of January and were in full **Bloom** by the end of January 1966. The vines showed a good overhang. Partly, the cones on the lower thirds of the vines did not ripen. Only one spraying was necessary against **Pests** and **Diseases**.

Picking started on February 22nd, 1966 and was finished on March 23rd. 25 % of the crop was handled by one picking machine. There was some lack of labour especially at the beginning of the harvest. The weather during the harvest was somewhat changeable. A storm lasting for 3 days during the harvest caused a loss of about 200 cwt.

Quality. The hops of crop 1966 had good developed cones, but the colour was diminished by wind whipping. The content of lupulin was lower than the year before. The crop was graded as follows: Grade I 48 %, Grade II 37 %, Grade III 15 %. On a total acreage of 299 acres of which 61 acres young hop yards a crop of 198,414 lbs. was harvested (1,653 lbs. per acre).

In the districts of **RIO NEGRO** and **NEUQUEN** were favourable vegetative conditions. Precipitations were distributed as follows:

Argentine

| 1965 | | | 1966 | |
|---------|----------|----------|---------|----------|
| October | November | December | January | February |
| 0,0 | 17,4 | 0,9 | 10,0 | 11,4 mm |

A small appearance of **Downy Mildew**, as well as **Red Spider** had to be controlled with two sprayings. The plants reached the height of the trellises by the end of October and showed a good overhang. **Bloom** started at the beginning of January and the hops ripened better on the lower part of the vines than the year before. **Picking** lasted from February 21st until the middle of March. About 30 % of the crop are handled by six picking machines. The weather during the harvest was favourable. 85 % of the crop was judged Grade I, so that the quality of the hops was better than last year.

On an enlarged acreage of 316 acres, of which 19 acres young hop yards, a crop of 231,483 lbs. (1,807 lbs. per acre) was harvested. The entire crop was taken over by the home brewing industry.

PROVINCE OF BUENOS AIRES. In the district of **Commandante Nicanor Otamendi** the acreage was expanded up to 74 acres. 44 acres are young hop yards.

The weather during the vegetative period in 1965/66 was generally dry. Precipitations from September 30th, 1965 until February 28th, 1966 were only 302 mm. Up to six sprayings against **Downy Mildew** were effected. **Picking** started under good weather conditions on March 5th and was finished on March 12th. The crop was handled by one picking machine.

Australia

In **TASMANIA** the hops had wintered well and there were only light frost damages in higher locations. The hops reached the height of trellises by the middle of December and were in full **Bloom** in mid-January. The vines remained pointed and developed only little overhang. Heavy **Winds** in the first half of February caused considerable damages, as quite a number of trellises collapsed. Against **Pests** and **Diseases** two sprayings were effected. **Verticillium Wilt** appeared only sporadically.

Picking started on February 21st and was finished on March 31st, 1966, under good weather conditions. There were sufficient pickers available. The **Quality** of the hops was judged better than the year before. On an acreage of 1,574 acres a crop of 3,064,394 lbs. was harvested (4,806 lbs. per acre). This is a quite considerable improvement as against last year with 2,766 lbs. per acre.

VICTORIA. As there are no exact figures from this district available, it can be computed from the total result of Australia that a crop of 738,541 lbs. was harvested, which means a decrease of nearly 7 % as against last year. The hop production was not sufficient to cover the need of the home brewing industry.

New Zealand

The development of the plants was very slow at the beginning of the growth. On account of a dryness during the last three months of the previous season the hills remained dormant. Low temperatures during November also contributed. Rainfalls were distributed as follows:

| 1965 | | | | | 1966 | | |
|------|-------|------|------|------|------|-------|------------|
| Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Febr. | March |
| 6.76 | 1.75 | 1.07 | 5.45 | 3.54 | 6.55 | 1.29 | 3.91 inch. |

Temperatures improved during the first half of December. Another drop of temperatures hampered growth again. In January and February temperatures were lower than average. No sprayings were necessary against **Pests** and **Diseases**.

The vines reached the height of trellises during the last week of December and **Burr** occurred in mid-January. Most gardens were not heavy in appearance and the cones on the lower third of the vines ripened. **Picking** was delayed and started at the beginning of March under good weather conditions. 90 % of the crop was handled by picking machines and for the remainder of the crop there were sufficient pickers available.

Quality. The hops were not especially good in colour and the content of lupulin was not uniform. The crop was graded as follows: Grade I 13 %, Grade II 41.9 %, Grade III 46.9 %, Grade IV 7.9 %. An insignificant quantity of 0.3 % was useless. On an area of 667 acres of which 7 acres are young yards, a crop of 1,073,640 lbs. was harvested (3,968 per acre).

The yield of crop 1966 exceeded the necessary domestic requirement and is the highest since 1962. Prices were somewhat higher than the year before. For hops grade I a price of sh 5/10 1/2 per lb. (DM 360.— per 50 kilos) was paid, whereas for grade IV only sh 4/8 1/2 per lb. (DM 290.— per 50 kilos) were paid. For the varieties "First Choice" and "Smooth Cone" an increase of 3 d per lb. (DM 15.60 per 50 kilos net) was paid.

Growth 1966 in Germany

The winter of 1965/66 was relatively mild except for a cold spell in November 1965. At the beginning of February strong frost set in again and lasted until the middle of February.

HALLERTAU. Despite the abundant subsoil moisture, the plants in general had wintered well. There were permanent damages in those hop yards which suffered through dammed up water in 1965, these yards also remained very weak in growth. The cool weather since mid-March hampered the growth of the plants so that **Frost Damages** could be avoided. Favourable weather at the end of April benefited the development of the hops, which was about a fortnight earlier as compared to the year before. Hot and sultry weather in the first half of June led to thunderstorms. On the 14th and 15th of June heavy hail unloaded in the eastern district of the Hallertau and destroyed hop yards on an area of appr. 247 acres.

Downy Mildew as well as **Aphids** which appeared very strongly had to be carefully controlled. Most of the vines had reached the height of the trellises and showed a healthy aspect.

TETTANG. After the **Uncovering** and **Cutting** the plants were off to a good start. Sprayings against **Downy Mildew** and **Aphids** had to be effected. Hails in mid-June occasioned local damages. Most of the hop yards have reached the trellises and show a good stand.

SPALT. **Spring Work** was delayed in this district, but the plants showed a good growth and the vines reached the height of the trellises by mid-June. **Downy Mildew** and **Aphids** had to be carefully controlled. The development of the hops shows an advantage of 8-10 days against normal years.

HERSBRUCK GEBIRGE. **Spring Work** was extended over a longer period of time which retarded the development of the hop yards. In autumn and in early spring uncovered hop yards showed a better development. Sprayings against **Downy Mildew** and **Aphids** had to be effected.

High temperatures and sufficient rainfalls by the end of June benefited the development of the hops. In some yards the possibilities of **Premature Bloom** were avoided by ample precipitations and a decrease of the high temperatures at the same time. In general the plants are 2 weeks ahead against normal years. The hop yards are much better developed in comparison to last year.

JOH. BARTH & SOHN

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AROMA or BITTERVALUE ?

The problem how to evaluate the characteristics of hops has led to an increasing number of discussions between experts during the course of the last years. For the majority of breweries the use of fine European hops, known as "aroma hops" is still prevalent for the production of first quality beer. For this reason research work on the essential oils of hops has been intensified recently. At the moment remarkable scientific studies are being done by means of gaschromatography. All this may contribute to better information in the near future about the importance of hop oils and their influence on the taste of beer.

On the other hand great efforts of the international brewing industry can be noticed to obtain better knowledge of the bittering substances in the hops by modern analytical methods in order to achieve a more economical use of this raw material. The application of hop extracts as well as the lately appeared hop powders on the market are in line of this tendency. An increasing number of breweries now evaluate the hops on the basis of the alpha content which represents about 90 % of the bitter value according to Wöllmer. This opinion was conformed by the VLB (Versuchs- und Lehranstalt Berlin) at the occasion of the last hop exhibition 1965 at Berlin by introducing a revised system of evaluation.

As a consequence of the present situation, it is the main task of the German hop industry to foresee the requirements of the market and provide same according to its demands. For this reason the variety **Nordbrauer** with a high content of lupulin was introduced in Germany apart from already existing varieties of German hops.

Specifications of analyses compare as follows:

| | Hallertau Nordbrauer Crop 1965 | Hallertau Mittelfrüh Crop 1965 |
|-----------------------------|-----------------------------------|-----------------------------------|
| Total resins | 22.8 | 17.7 |
| Total soft resins | 19.2 | 14.5 |
| Alpha | 11.2 = 49 % | 6.2 = 35.00 % |
| Beta | 8.0 = 35 % | 8.3 = 47.15 % |
| Hard resins | 3.6 = 16 % | 3.1 = 17.85 % |
| Bitter value | 12.1 | 7.1 |

(according to Wöllmer, as is, conductometric measurement)

Seven years of growing trials with the variety **Nordbrauer** on our hop farm Barthhof/Hallertau show favourable conditions for the acclimatization on the characteristics of the hop growing district Hallertau. Considering the high bitter value of the German Nordbrauer Hops, this provenience is one of the most economic on the world market.