Hop report - Saaz fine aroma hops

Crop 2007 – January / April 2007 (Saaz region)

Weather condition – January / March 2007

Average temperature (°C)	2007	2006	30 years average
January	5,7	-4,9	-2,0
February	4,5	-1,8	-0,2
March	6,4	3,6	3,6
AVERAGE	-3,1	2,5	1,4

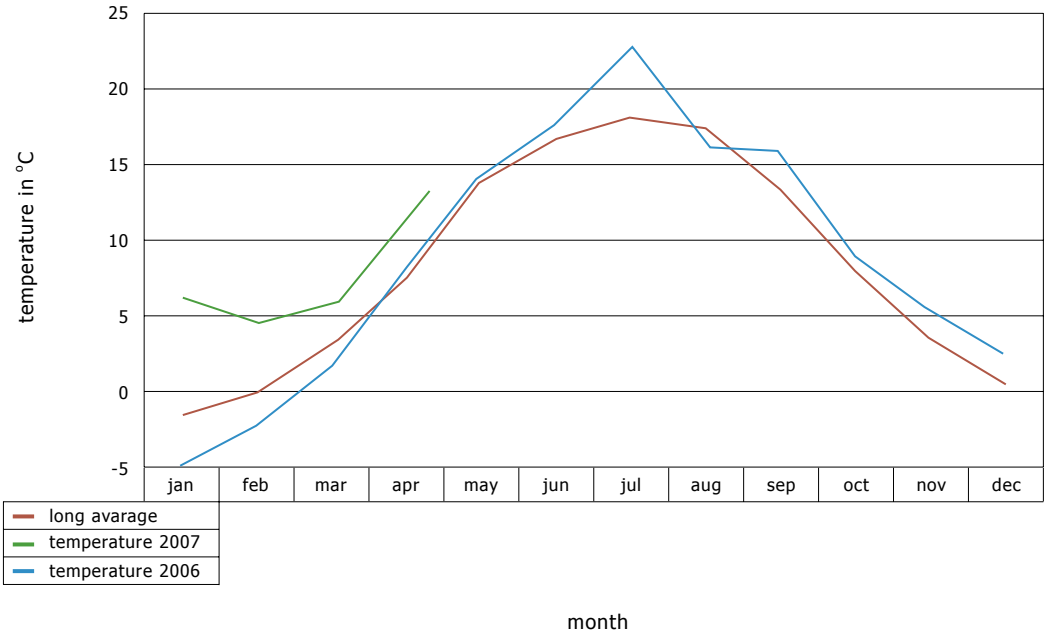
Total precipitation (mm)	2007	2006	30 years average
January	40,0	12,2	20,0
February	32,6	10,2	19,0
March	16,8	28,8	23,0
TOTAL	89,4	51,2	62,0

During the first two months of 2007 the precipitations were over the long-term average in the Saaz region. March precipitations reached 73% of the 30-years average. It is possible to say, that the first quarter of 2007 was favourable period what regards rainfalls. However, the development of the temperature is more important factor. During the whole trimester the temperatures abnormally over the average were recorded. In fact it concerned all three months. Even in January the maximum temperatures increased to 14,8 °C and in twelve days they overdrew 10 °C. The maximum temperature recorded in February was “only” 11,7 °C and in just three days the temperature increased to more than 10 °C. The maximum in March was 15,9 °C and practically half of all days showed the values of over 10 °C.

Weather condition – April 2007

Temperature & precipitation in April	2007	2006	30 years average
Average temperature (°C)	12,8	8,9	8,5
Precipitation (mm)	2,1	48,8	32,0
Total precipitation (mm) JAN-APR	91,5	100,0	94,0
Max. temperature (°C)	26,6 (27.4.)	23,7(25.4.)	
Min. temperature (°C)	-0,1 (21.4.)	-4,5(7.4.)	
Max. precipitation (mm)	1,3	11,4	
Number of dry days	28	16	

According to the submitted data it is evident, that the development of climatic conditions in April was catastrophic. Practically zero value of precipitations and expressively high temperatures, corresponding to the summer levels, influenced negatively the moisture conditions of the soil.



Growth report

As per our estimation, the abnormally high temperatures within the first trimester and April have speeded up the spring works by almost 14 days, in general. What regards spring works on hop gardens, we are of the opinion that they are about one week in advance, thanks to weather conditions. The pruning of the hops was finished properly and in time, in spite of the problems with the hardening of the soil. On majority of the gardens the leading hop strings have been inserted until the end of April. At the moment the farmers, which produce the hybrid varieties of hops (Sldek, Premiant, Agnus) attend intensively to the training of vines. The training of Saaz semi-early red-bine hops should start on the beginning of May.

What regards the occurrence of the diseases and insect hop pests it was necessary to provide the protection measures against alfalfa snout weevil (Otiorrhynchus sulcatus F.) and flea beetle (Psylliodes attenauta Koch). At the same time it is necessary to follow up the occurrence of rosy rustic moth (Hydroecia micacea Esp.) and hop bug (Lygocoris Spinolay Meyer-Duer). View to abnormally high temperatures the first winged hop aphids (Phorodon humuli Schrank) were ascertained on hop gardens. High temperature and dry weather create good conditions for red spider mite (Tetranychus urticae Koch). High attention is therefore inevitable. On the other side, current weather conditions are not favourable to the propagation of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.).

Saaz, May 3, 2007
Jaroslav Hájek, Irena Nováková

Hop report - Saaz fine aroma hops

Crop 2007 – May 2007 (Saaz region)

Weather condition – May 2007

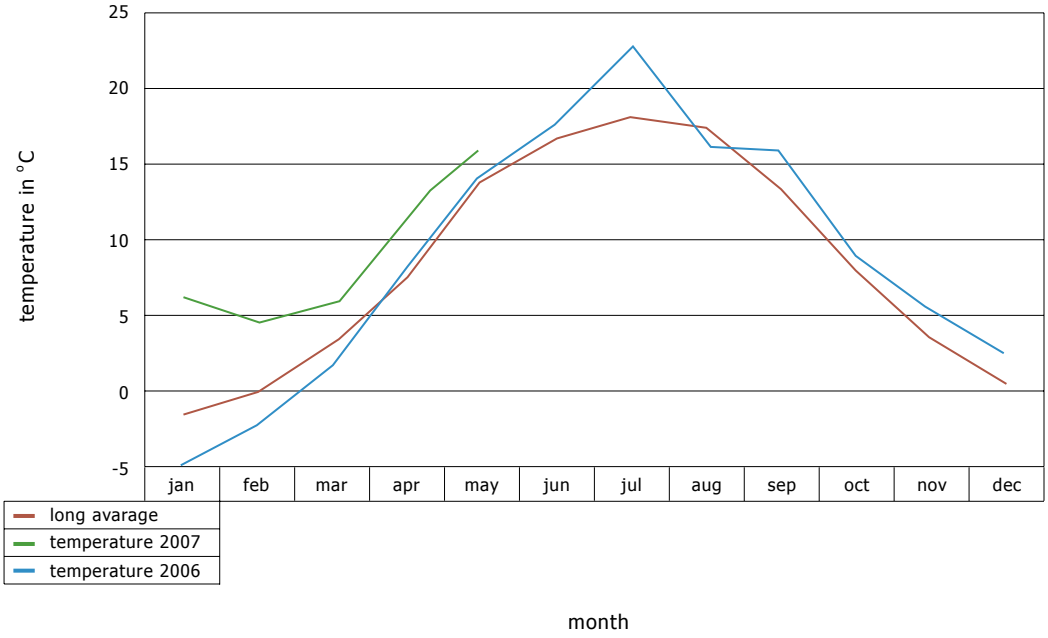
Temperature & precipitation in May	2007	2006	30 years average
Average temperature (°C)	15,8	13,7	13,4
Total precipitation in May (mm)	57,0	39,0	54,0
Max. temperature (°C)	31,5 (26.5.)	27,3 (22.5.)	
Min. temperature (°C)	-0,6 (2.5.)	0,3 (1.4.)	
Highest precipitation in one day (mm)	15,0 (14.5.)	7,4 (1.5.)	
Total precipitation Jan - May (mm)	148,5	139,0	148,0
Number of dry days	16	17	

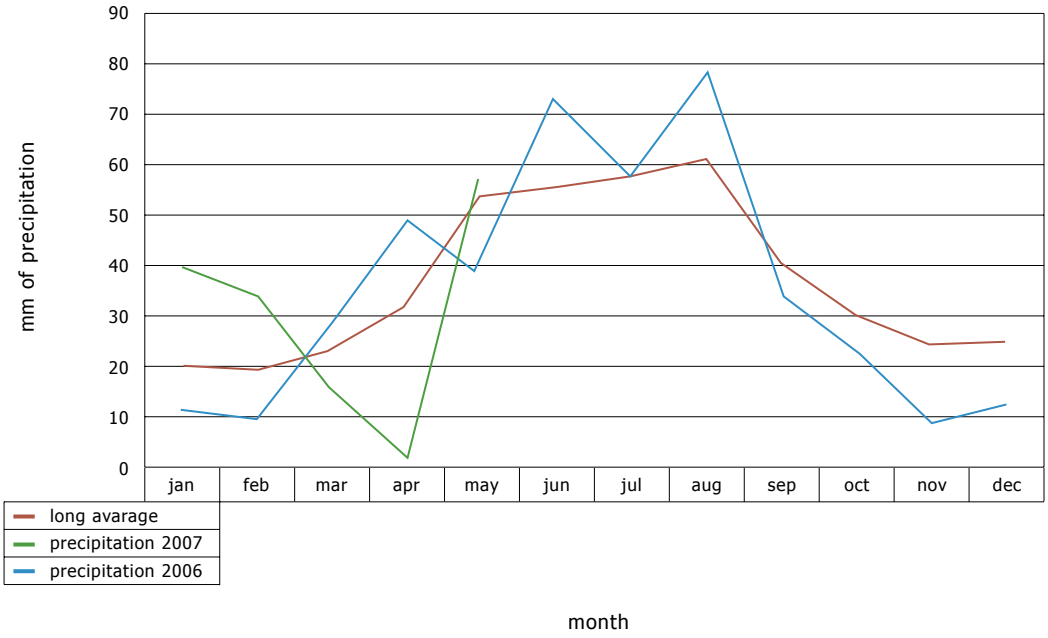
Dry weather continued until beginning of May, with the first rains coming only by the end of the first decade of the month, when the rainfalls reached 8,9 mm within three rainy days. The second and the third decade were more generous ones and the precipitations practically equalized the level of long-term average. View to the fact, that in majority of cases the rains were of storm character, there are substantial differences in locally reported rainfalls figures. The average temperature in May 2007 was 2,4°C higher than long-term average.

Growth report

The development of hop vines in May 2007 was keeping the advance of approx. 10 days compared to usual stage. The training of hops (Saaz semi-early red bine hops) started immediately on the beginning of May. Due to continuing dry weather the hop vines did not have a big growth increase and in spite of the lack of manpower, especially on the beginning of the training process, this operation was managed in desired timing and quality. In the wake of training the nitrogen fertilizers have been applied and the inter-row soil was loosened and the earth heaped up to the roots of the plants. View to rains during the second and the third decade of May it is necessary to carry out the treatment of the gardens, especially on the areas, which were not treated by the first spraying, against the secondary infection of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.).

We recommend treating the hop gardens with fungicides Ridomil Gold Plus 42,5 WP and Aliette Bordeaux or with the preparative Ortiva, which was registered in 2006. In the third decade the hop aphid appeared on majority of hop gardens – the concentration was so dense, that it became inevitable to carry out the treatment against this pest. Warm and dry weather within spring months was favourable also to the propagation of red spider mite (Tetranychus urticae Koch), seen in some gardens. View to the date of month we recommend the treatment with Nissorun 10 WP. At the moment the growths of hops are in good condition and the height of vines exceeds usual average on majority of the gardens. On some hop gardens the hop plants already exceeded 4 metres of height. Approximately 36 hectares were damaged by hailstorms by the end of the second decade, in localities Kounov, Mutejovice and Lhota pod Dzbanem.





Other information

The Acreage of Hop Gardens in the Czech Republic in 2007

Variety	Saaz Region (ha)	Auscha Region (ha)	Trschitz Region (ha)	Czech Republic (ha)
Saaz	3 643	632	568	4 843
Agnus	51	0	0	51
Bor	10	7	0	17
Premiant	134	41	74	249
Sládek	157	8	57	222
Fuggle	0	0	3	3
Magnum	2	7	2	11
Others	11	1	0	12
Czech Rep.	4008	696	704	5408

Source: Central Institute for Supervising and Testing in Agriculture Brno, Department of Permanent Cultures - Hop Division Zatec – ing. Vladimr Barborka, Head of Department

Gallery

Ploughing after hop traininig

Hop gardens at the end of May

Saaz, 1st June, 2007

Jaroslav Hájek
Irena Nováková

Hop report - Saaz fine aroma hops

Crop 2007 – June 2007 (Saaz region)

Weather condition – June 2007

Temperature & precipitation in June	2007	2006	30 years average
Average temperature (°C)	19,6	18,2	16,7
Total precipitation in June (mm)	47,6	72,4	56,0
Max. temperature (°C)	32,3 (9.6.)	31,8	
Min. temperature (°C)	7,6 (1.6.)	1,5	
Highest precipitation in one day (mm)	14,0 (21.6.)	28,6	
Total precipitation Jan - June (mm)	196,1	211,4	204,0
Number of dry days	17	21	

The character of the weather is keeping the dry and warm trends. Especially the end of the first and the whole second decade were abnormally hot and dry. The temperatures of June exceeded not only the long-term average, but also the figures reached during June of previous year. On the other side, June precipitations were deeply below the level of previous year and the average.

Growth report

Thanks to the influence of warm and dry weather the hop plants maintained the gain in development of about 10 days, but within the second decade the stretching growths decelerated and even stopped in some areas, such that on some gardens the height of the plants does not reach the height of the supporting constructions. This phenomenon was obvious on older hop cultures. Predominantly it was the case of Saaz Semi-early Red Bine Hops. We estimate, according to the condition of the plants, that stretching growths is practically finished on these gardens and we expect that eventual further growth will be just imperceptible. On the other side, there are very nice plantations not older than 10 years. The blossoming of hops was registered already within the third decade of June, i.e. approx. 10 to 15 days earlier than it is usual in case of Saaz Hops.

Hop phytosanitary information

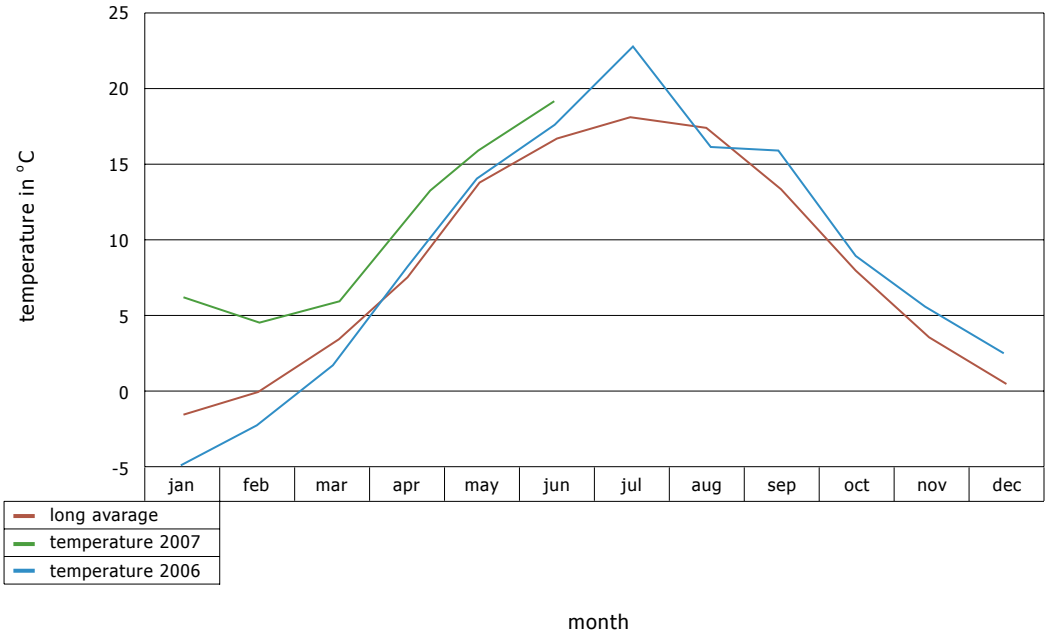
Also on the beginning of June the migration of hop aphid (Phorodon humuli Schrank) from stone fruit trees continued. Therefore it was necessary to turn high attention on this question. It was recommended to use effective aphicides – Confidor 70 WG, Kohinor 70 WG, eventually Chess 25 WP, according to the intensity of the occurrence. Dry and warm weather created also good condition for development of red spider mite (Tetranychus urticae Koch). Besides application of Nissorun 10 WP, it was necessary to treat the gardens, where the derogation caused by the red spider mite was recorded, also by other preparations, as Ortus 5 SP and Omite 30 W. The occurrence of downy mildew of hops (Pseudoperonospora humuli Miy et. Takah.) corresponds to the normal situation and the gardens have been treated according to the methodology of hops protection. The occurrence of powdery mildew (Sphaeroteca humuli (DC) Burr.) has not been registered. The health condition of hop plants is good.

Other information

According to the information given by Central Institute for Supervising and Testing from the Advisory body of the Ministry of Agriculture, the hops are produced by 139 subjects in the Czech republic.
They are divided as follows:

Saaz Hop region – 94 subjects
Auscha Hop region – 31 subjects
Trschitz Hop region – 14 subjects

Furthermore, as per estimations of Central Institute for Supervising and Testing, based on the newest research, the harvested area in 2007 will be slightly lower than estimated up to 30th April 2007 (5 408 ha).



Gallery

Blooming hops at the end of June

Hop garden at the end of June

Saaz, 2nd June, 2007

Jaroslav Hájek
Irena Nováková

Hop report - Saaz fine aroma hops

Crop 2007 – July 2007 (Saaz region)

Weather condition – July 2007

Temperature & precipitation in July	2007	2006	30 years average
Average temperature (°C)	19,5	22,8	18,0
Total precipitation in July (mm)	87,4	59,5	59,0
Max. temperature (°C)	36,7 (16.7.)	36,5 (20.7.)	
Min. temperature (°C)	10,1 (31.7.)	8,2 (17.7.)	
Highest precipitation in one day (mm)	45,7 (22.7.)	14,2 (31.7.)	
Total precipitation Jan - July (mm)	287,5	270,9	263,0
Number of dry days	13	22	

However the average month climatic data concerning July 2007 do not exceed the normal limits, this month was characteristic by extreme fluctuation of temperatures. Whereas the temperatures of the first and the third decades varied around normal or slightly below normal values, the temperatures recorded during the second decade have the average expressively overdrawn. The precipitations on the whole were rather weak, with an exception of the rain of 22nd July, when the rainfalls reached 45,7 mm, what represent more than 50% of the total precipitations of the months. Higher intensity of windy weather is worth mentioning.

Growth report

Extreme unbalance of the growth of individual hop gardens seems to be the most distinctive feature of this crop. The age of the gardens and the date of the cut of the plants have influenced the growth and the habitus of the gardens more than usually – the older is the garden, the weaker is the growth of plants. When analysing the influence of the date of the plant cut, it is becoming evident, that the earlier cut plants are weaker. The hops started to blossom in full within the first decade of July. Thanks to rich precipitations in the second decade and the beginning of the third decade, the hop plants began to blossom for the second time in majority of the gardens. The present state of the vegetation from the point of view of the maturing of hops can be described as follows: In majority of the gardens relatively developed cones out of the first flower setting are visible on individual plants, while higher parts of the plants bear new flowers. It will be necessary to observe further vegetation development (especially the continuing of the second blossoming) with regard to the determination of the time of hop-picking. The development of climatic conditions by the end of the growing season can naturally influence the final results of hop production in 2007. Nowadays we consider negative relatively low night temperatures, which decrease down to 6ºC in some localities. Based on evaluation of the growth we estimate, that there will be the average or slightly below average production in terms of quantity. View to state of vegetation we already dispose of results of the first tests of alpha bitter substances up to 1st of August, being analysed, at the moment, by the laboratory of Chmelařský institut (Hop Research Institution) in Žatec. The arithmetic average of the 15 sample withdrawals in Saaz region shows the content of 2,28% of KH, in case of 5 withdrawals in Auscha region than 1,85% of KH. For comparison we indicate the levels of KH as measured in 2005 and 2006.

YEAR	2007	2006	2005
DAY OF SAMPLE WITHDRAWAL	01.08.07	07.08.07	04.08.07
THE ARITHMETIC AVERAGE			
SAAZ/SAAZ	2,28%	1,37%	2,38%
SAAZ/AUSCHA	1,86%	1,35%	2,10%

Hop phytosanitary information

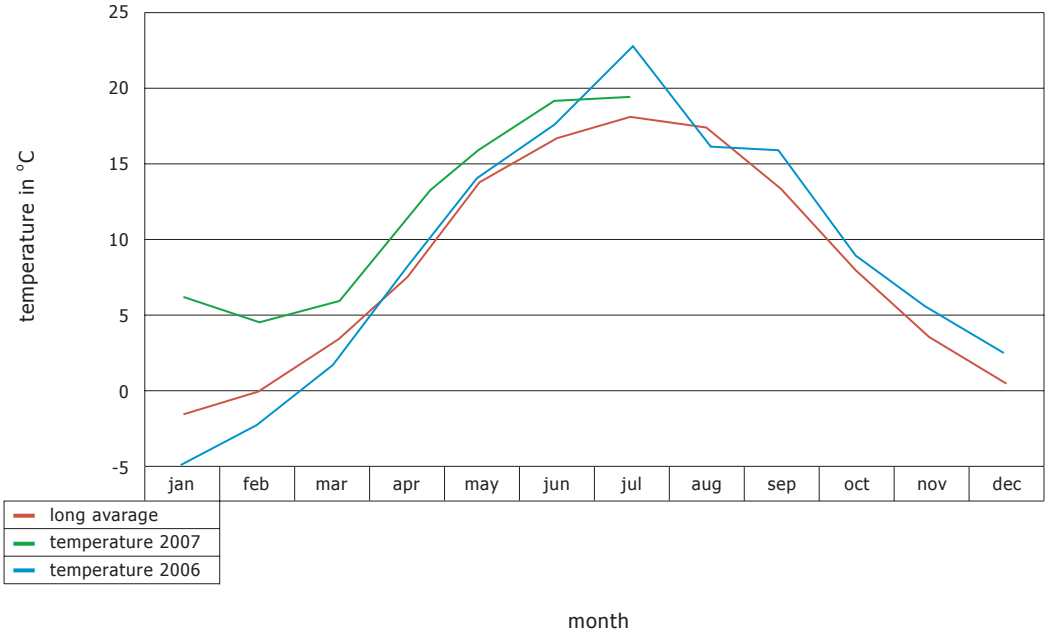
From the point of view of keeping health state of the hops, the situation in July was rather complicated. Compared to the previous years, when the elimination of influence of living pest insects was easier than the protection against downy mildew of hops (Pseudoperonospora humuli Miy et Takah.), the situation in this year changed substantially. Due to different development of the hops vegetation on individual localities, the effect of preparative Confidor 70WG was very different and on some hop gardens it was necessary to undergo further treatment of plants against that pest. The conditions for development of Red spider mite (Tetranychus urticae Koch) were favourable, especially within the second decade of the month, what reflected in higher occurrence of that pest. Therefore it was recommended to use urgently the preparatives Ortus 5SC and Omite 30W in the concentrations indicated by the Methodology of Hop Protection. The treatment was complicated by high temperatures, which are not convenient for application of Omite 30W, and also by long-lasting windy weather.

The protection against downy mildew of hops is carried out on the basis of the monitoring of occurrence potentiality, in accordance with the Methodology of Hop Protection. In higher extent it was necessary to treat the hop gardens against powdery mildew, as prevention.

Other information

View to the vegetation stage of hops we estimate that the hop harvest will begin between 17th and 19th August 2007, in majority of cases. Some of the farmers nevertheless will start harvesting on 15th August 2007.

Graphs


temperature in °C
25
20
15
10
5
0
-5
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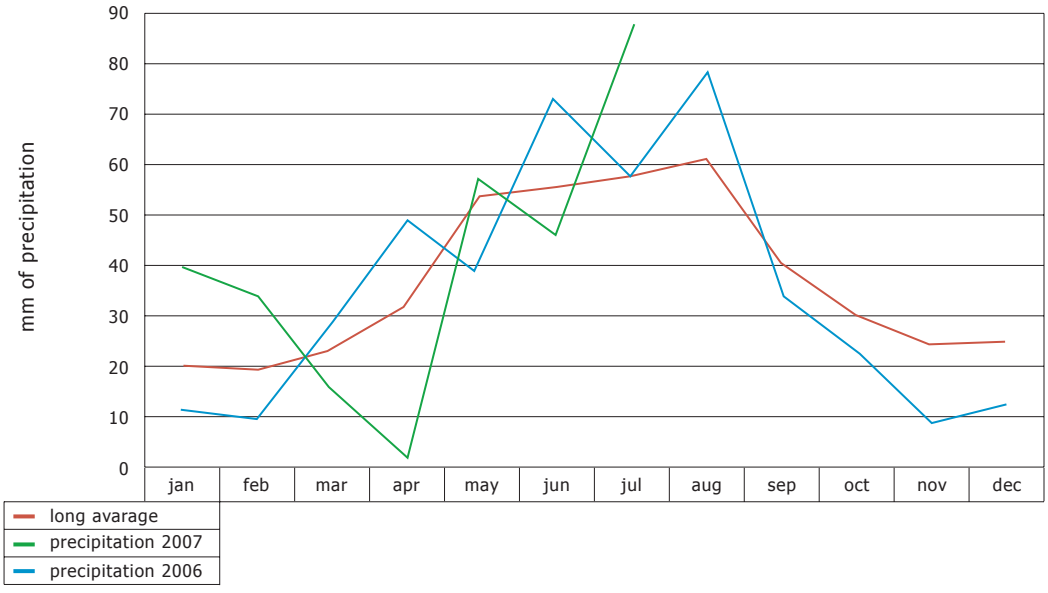
temperature 2007
temperature 2006
month


mm of precipitation
90
80
70
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40
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precipitation 2007
precipitation 2006
month

Hop garden in front of ruins of Hazenburk castle at the end of July

Hop cones at the end of July

Saaz, 2nd August, 2007

Jaroslav Hájek
Irena Nováková

Hop report - Saaz fine aroma hops

Crop 2007 – August 2007 (Saaz region)

Weather condition – August 2007

Temperature & precipitation in August	2007	2006	30 years average
Average temperature (°C)	18,9	16,7	17,4
Total precipitation in August (mm)	102,2	76,0	62,0
Max. temperature (°C)	31,8 (7.8.)	27,7 (19.8.)	
Min. temperature (°C)	7,8 (2.8.)	6,3 (24.8.)	
Highest precipitation in one day (mm)	26,2 (23.8.)	12,8 (6.8.)	
Total precipitation Jan - August (mm)	389,7	346,9	225,0
Number of dry days	19	13	

August 2007 belongs among the months with the highest precipitations level ever recorded within the period of at least 40 years, when the long-term average of precipitations has been monitored. The rains came around 8th of August, and persisted, with variable intensity, up to the beginning of the harvest. On some localities the rainfalls reached 80 mm (08.08.2007 in Sedčice near Žatec/Saaz). High precipitations not only did not benefit the growth of hops, but also deteriorated its quality and complicated the hop-picking process.

Growth report

The health state of hop gardens did not improve substantially in comparison with July. Part of the gardens, especially of older ones, did not reach the height of constructions and majority of the plantations has shown also weaker growth and the plants habitus, compared to the average. Bad state of the hop gardens was caused again by very warm weather in 2007; and also the hail-storms of previous year, which damaged some of the gardens, have left serious consequences. The results of analysis of alpha acids contents show that the level of bitter substances is also below long-term average in case of Saaz Semi-early Red-bine hops. Wide differences in yield per hectare are typical for current crop, as well as the differences in contents of alpha acids, not only among different farmers, but also among the gardens of the same producer. Based on the first results of the harvest, we estimate that the drop in production will reach approx. 20% in average, whereas the fall of the yields of Saaz Semi-early Red-bine hops variety will be even more expressive. The first hop-bines have been pulled down already on 12th August, 2007. Majority of producers nevertheless has begun to pick the hops between 17th and 20th August 2007. According to the last estimations most of the producers will finish the harvest until the end of August. Furthermore the harvest of other varieties (Premiant, Bor, Agnus, Sldek) will continue beyond that date.

Hop phytosanitary information

The complications concerning keeping of good health state of hops continued also in August - especially problems with elimination of red spider mite (Tetranychus urticae Koch), which was enjoying very good conditions for reproduction until the end of the month. The protection not only against this pest, but also against hop aphid (Phorodon humuli Schrank), downy mildew of hops (Pseudoperonospora humuli Miy et Takah.) and powdery mildew (Sphaeroteca humuli (DC) Burr) was difficult due to strong rains and storms. Owing to these conditions some gardens were damaged and we evaluate the health state of hops in this year as rather substandard one.

Other information

The Žatec (Saaz) Branch of Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ) has specified the data regarding harvested areas of hops Crop 2007.

The area of Hop gardens in the Czech Republic (Estimation made out up to 24th August 2007)

Variety/region	Saaz (ha)	Auscha (ha)	Terschitz (ha)	Czech Republic (ha)
Saaz	3 642	632	566	4 840
Sládek	157	1	57	215
Premiant	134	41	74	249
Agnus	51	1,35%	2,10%	51
Bor	10			10
Others	12	7	5	24
Total	**4 006**	**681**	**702**	**5 389**

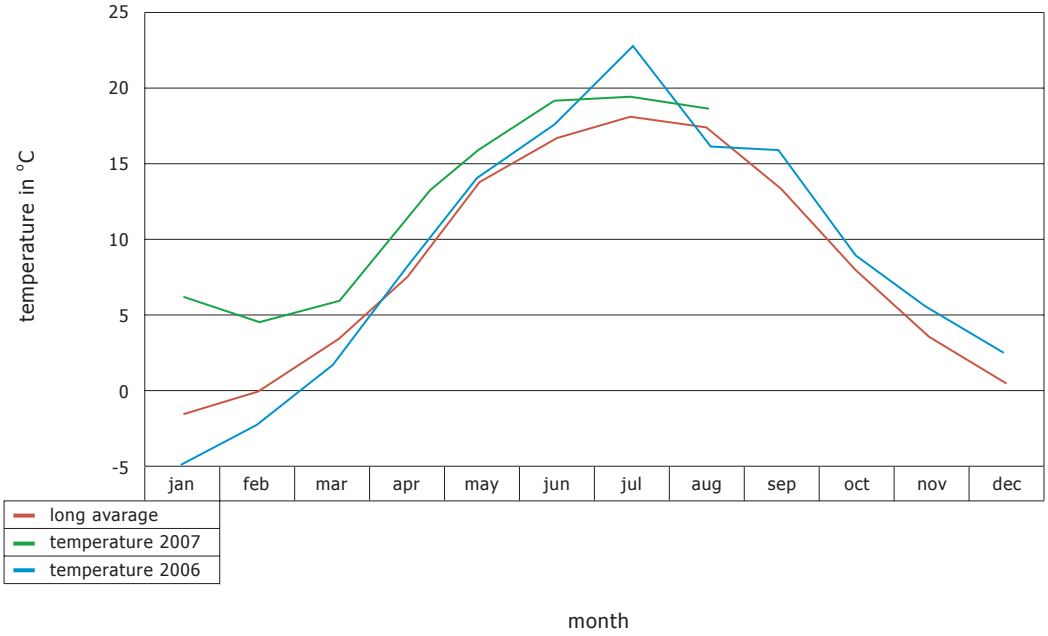
Gallery

Hop harves influenced by heavy rains

Hop-picking on LCCH-6 machine

Delivery of hops from growers to storage

Graphs



Saaz, 2nd September, 2007

Jaroslav Hájek
Irena Nováková