Hop report - Saaz fine aroma hops

Crop 2014 – January / April (Saaz region)

WEATHER CONDITION – JANUARY / MARCH

Average temperature (°C)	2014	2013	30 years average	Diff. 14-13
January	0,5	0,1	-2,0	+0,4
February	1,9	0,0	-0,2	+1,9
March	6,4	0,0	3,6	+6,4
Summary 1st Trimester	8,8	0,1	1,4	+8,7

Total precipitation (mm)	2014	2013	30 years average	Diff. 14-13
January	18,4	16,0	20,0	2,4
February	7,2	31,4	19,0	-24,2
March	12,2	19,8	23,0	-7,6
Summary 1st Trimester	37,8	67,2	62,0	-29,4

The temperatures during the first trimester of 2014 were highly above-average. In all three months the average temperatures reached the level over the freezing point. Especially in February and March the temperatures exceeded the long-term average considerably. E.g. only five days were colder than 0°C in February and no one day in March. As a matter of interest we indicate also the highest and lowest temperatures in individual months of the first quarter of 2014:

Minimum and maximum temperatures in the first trimestre of 2014 (in °C)

Month	Min. temp.	Max. temp.
January	-10,6 (26. 01.)	12,1 (08. 01.)
February	-8,7 (04. 02.)	11,6 (23. 02.)
March	-4,8 (10. 03.)	22,3 (31. 03.)

As it is evident from the presented table, the minimum temperatures were not as low as in previous year; on the other side the maximum temperatures (namely in February and in March) were much higher than in previous year.

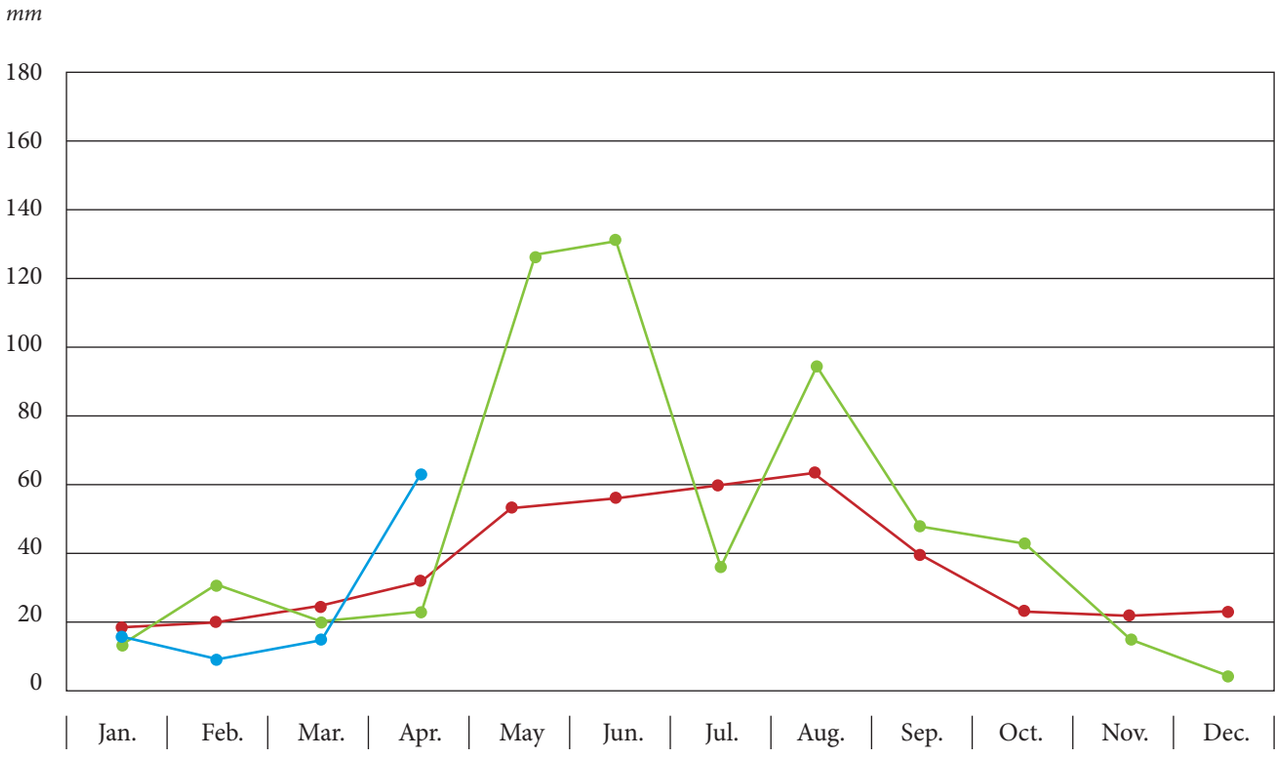
First trimester of 2014 was very problematic as far as the precipitation is concerned. Very bad situation have started already in November 2013, when the rainfalls reached only 14,8 mm, what represents just 61,6% of the long-term average. The situation has even worsened in December 2013, when only 6 mm of precipitation were recorded (24% of long-term average). This trend continued also during the whole first trimester of 2014. It is worth noting that the whole winter period was practically without snow cover; not only in lowlands but also in the mountain regions. As a consequence the underground water level decreased and also the flow rate of the rivers was very low during the spring period.

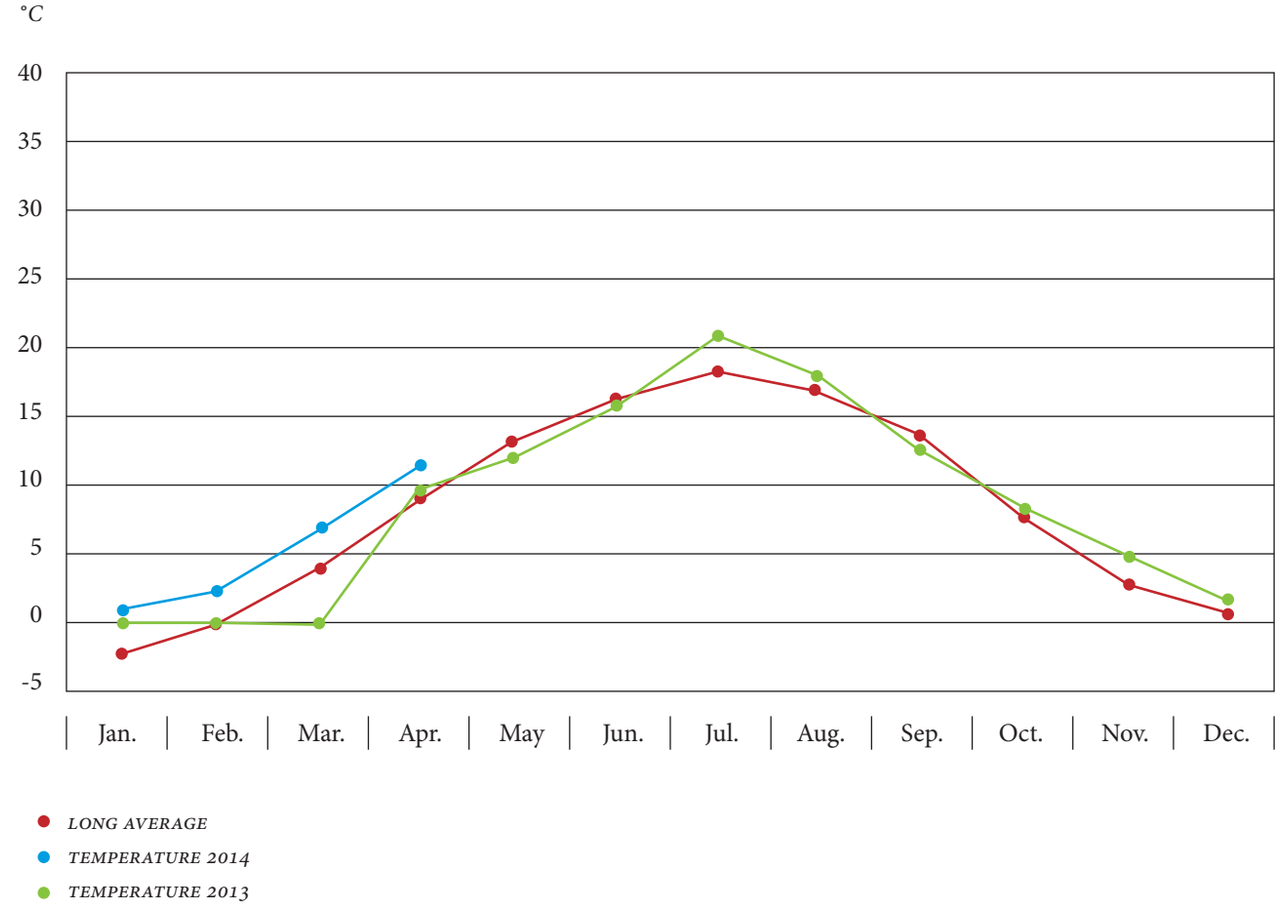
When evaluating the influence of climatic conditions for the further development of vegetation and start of spring works, we observe that due to the high temperature averages and low precipitations the spring works on fields have started very early. The spring cereals were sown already in the end of February in some localities. The vegetation of winter crops - grains and rape - is advanced by two to three weeks. Also the works in hop gardens have started earlier in comparison to normal situation due to the state of the vegetation.

WEATHER CONDITION – APRIL

Temperature & precipitation in April	2014	2013	30 years average
Average temperature (°C)	10,9	8,9	8,5
Precipitation (mm)	61,6	21,6	32,0
Total precipitation (mm) January-April	99,4	64,8	94,0
Max. temperature (°C)	23,3 (7.4.)	26,8 (18.4.)	
Min. temperature (°C)	-4,2 (17.4.)	-7,7 (8.4.)	
Max. precipitation (mm)	23,4 (28.4.)	5,8 (18.4.)	
Number of dry days	17	15	

The first two decades of April continued, as far as the climatic conditions are concerned within the trend of the first trimester of 2014. Warm and dry weather allowed early and well-timed beginning of spring works in hop gardens. The hop growers had enough time and space to carry out all the technological operations in the top quality. In many localities the problem of wet areas, so frequent in last three years, have been solved by carrying out of the draining, cleaning of the moats and drainage channels. The first two decades were almost equal as far as the average daily temperature is concerned. Minimum temperatures dropped under freezing point only within three days by the end of the second decade of April. During the third decade there was a considerable warming, when the average day temperatures varied around 13°C and maximum were on the level of 20°C. These relatively high temperatures were accompanied by rains, in majority of cases of stormy character, but with high differences in particular localities. The stormy character of rains was moreover underlined by the fact, that majority of them were accompanied hails, which nevertheless did not cause any serious losses, for the time being. The precipitations were above long-term average in April, with 192,5 % of normal rainfalls. However, it is necessary to be aware of the fact that the rains were very changeable and majority of the monthly aggregate rainfalls came only by the end of the months within two rainy days (26.4. and 28.4.2014). Also within these two days the aggregate rainfalls were rather different according to the locality; in many places there were just low precipitations on the level of few millimetres or none at all and paradoxically the highest precipitations were measured in the meteorological station in the town of Žatec.





SPRING WORKS AND GROWTH REPORT

As we have already stated, the spring works in hop gardens started in time. The development of the vegetation corresponded to the course of the weather. In some sites, especially those planted by the Sládek and Premiant varieties, which were cut by the end of March, it was necessary to come to the training already towards the end of April. The time for training of Saaz hops is expected to begin after the 5th of May, 2014.

Concerning occurrence of the plant pests the presence of hemp flea beetle (*Psylliodes attenuata* Koch.) was ascertained; this pest was eliminated by the treatment focused against alfalfa snout beetle (*Otiorhynchus ligustici* L.). Due to the fact that also in this year the permission of the Actara 25 WG was issued, there were no serious problems with the liquidation of these pests. Indispensable condition of successful protection of hops against downy mildew of hops (*Pseudoperonospora humuli* Myi et Takah.) in this year was timely elimination of primary infection. The growers have applied Aliette 80 WG. The alternative way of protection against downy mildew of hops, consisting in utilisation of PK fertilizer Farm-Fos 44 (monobasic potassium phosphate with 32% of P2O5 and 29% of K2O), whose application increases the natural resistance against the fungal pathogens, proved to be very useful.

PHOTO REPORT

Hop plant before training

Hop garden view before training

Saaz, May 2, 2014
Jaroslav Hájek

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2014 – May (Saaz region)

WEATHER CONDITION – MAY

Temperature & precipitation in May	2014	2013	30 years average
Average temperature (°C)	13,0	12,7	13,4
Precipitation (mm)	101,0	124,8	54,0
Total precipitation (mm) January-May	200,4	213,6	148,0
Max. temperature (°C)	27,9 (22.4.)	24,9 (17.5.)	
Min. temperature (°C)	-1,0 (4.5.)	3,2 (24.5.)	
Max. precipitation (mm)	36,4 (27.5.)	27,0 (30.5.)	
Number of dry days	12	14	

This year's May we evaluate as an average one as far as the temperatures are concerned (the difference compared to the long-term average was only 0, 4°C) and above-average concerning precipitations (long-term average is 54 mm). 50% of the month precipitations amount has fallen within the last week of May, more specifically on 27th May to 28th May. The character of rainfalls was stormy again and therefore there were high differences according to individual localities. Part of the Saaz region, the municipalities of Vinařice and Kozojedy, was affected by the hail-storm and about 40 hectares of hop gardens were damaged in the extent of 30% to 100%. From the point of view of temperatures we could divide this year's May into two parts. First half of the month was cold and it influenced the month average temperature, while during the second half of month the weather got considerably warmer.

GROWTH REPORT

The course of the climatic conditions in May was relatively normal for the development of hops. Low temperatures have slowed down the growth of hop plants, thus there were no problems with excessive growth of hops in the time of its training. The hop training therefore took place with no troubles within given time limits. Some areas, especially newly planted hop gardens could not be trained all at once, and they had to be passed through and trained up to three times. Hops are in usual condition and correspond to the normal condition in their development and growth.

HEALTH STATE OF HOPS

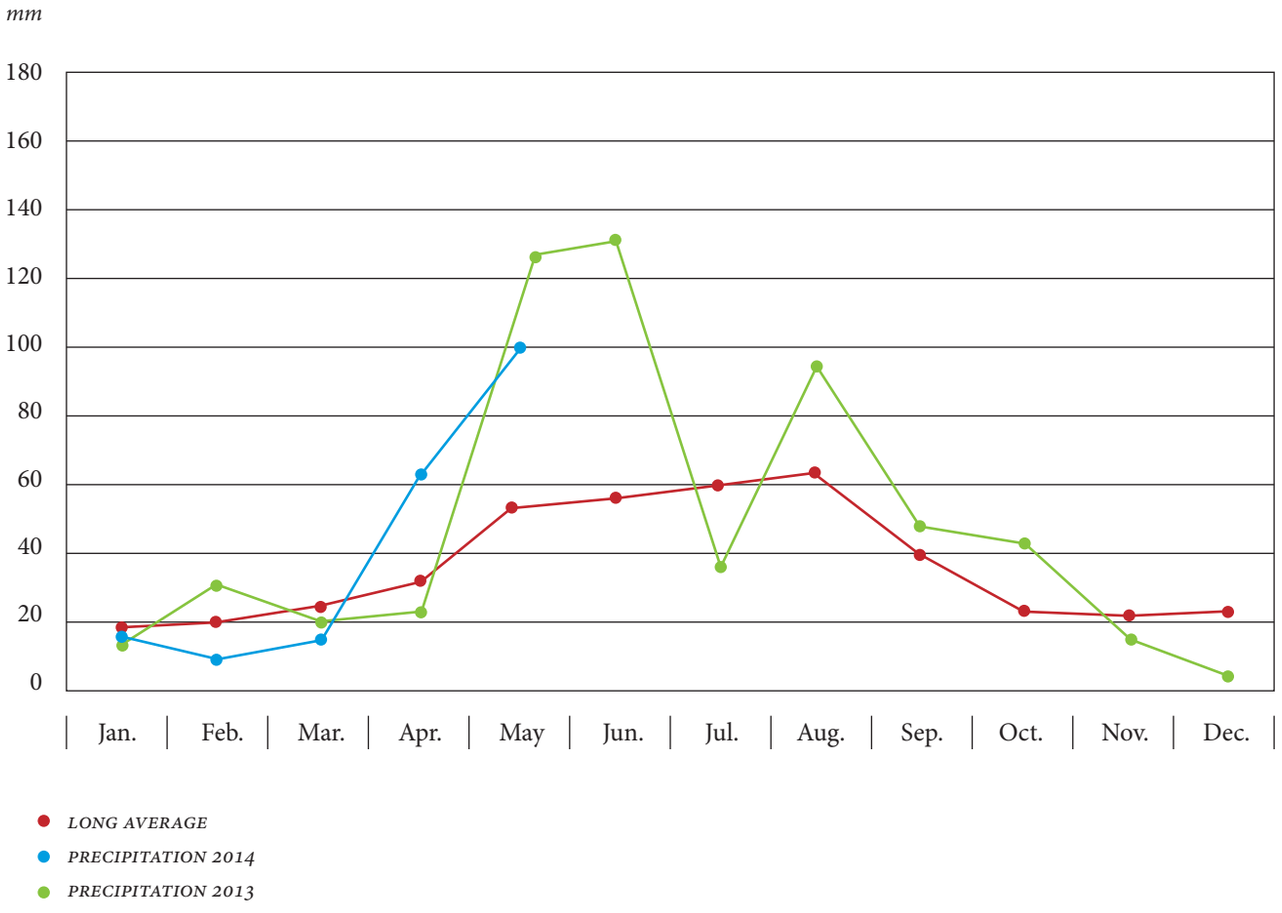
In general, the character of the weather in May was suitable for the dissemination of fungal diseases. During the second half of the month there was higher risk of the primary infection in connection with warming and consequent stormy rains. It was recommended to carry out the second treatment by the preparation Aliette 80 WG and to treat the gardens by the curative fungicide Curzate K in the localities where the ear-shape sprouts appeared. The carrying out of the chemical protection was influenced by windy weather. Although the first individuals of winged aphis (*Phorodon humuli* Schrank) have appeared already in the first half of May, the intensity of their occurrence was very weak ante therefore it was not necessary to carry out the treatment against that pest. The occurrence of red spider mite (*Tetranychus urticae* Koch) was not recorded as well.

OTHER INFORMATION

Hop area in the Czech republic according to varieties and regions up to 30th April 2014

Variety	Saaz region	Newly planted	Auscha region	Newly planted	Tirsitz region	Newly planted	Czech republic	Newly planted
Saaz var.	3 094	260	407	47	403	23	3 904	330
Agnus	37	0	3	0	0	0	40	0
Bohemie	1	0	0	0	1	0	2	0
Harmonie	6	1	0	0	0	0	6	1
Kazbek	11	9	2	2	5	5	18	16
Premiant	99	8	40	0	48	8	187	16
Rubin	1	0	0	0	0	0	1	0
Saaz Late	13	5	0	0	2	0	15	5
Sládek	171	15	20	4	81	17	272	36
Vital	1	0	0	0	0	0	1	0
Others	24	2	2	0	0	0	26	2
Total	**3 458**	**300**	**474**	**53**	**540**	**53**	**4 472**	**406**

ÚKZÚZ Žatec (Central Institute for Supervising and Testing in Agriculture)



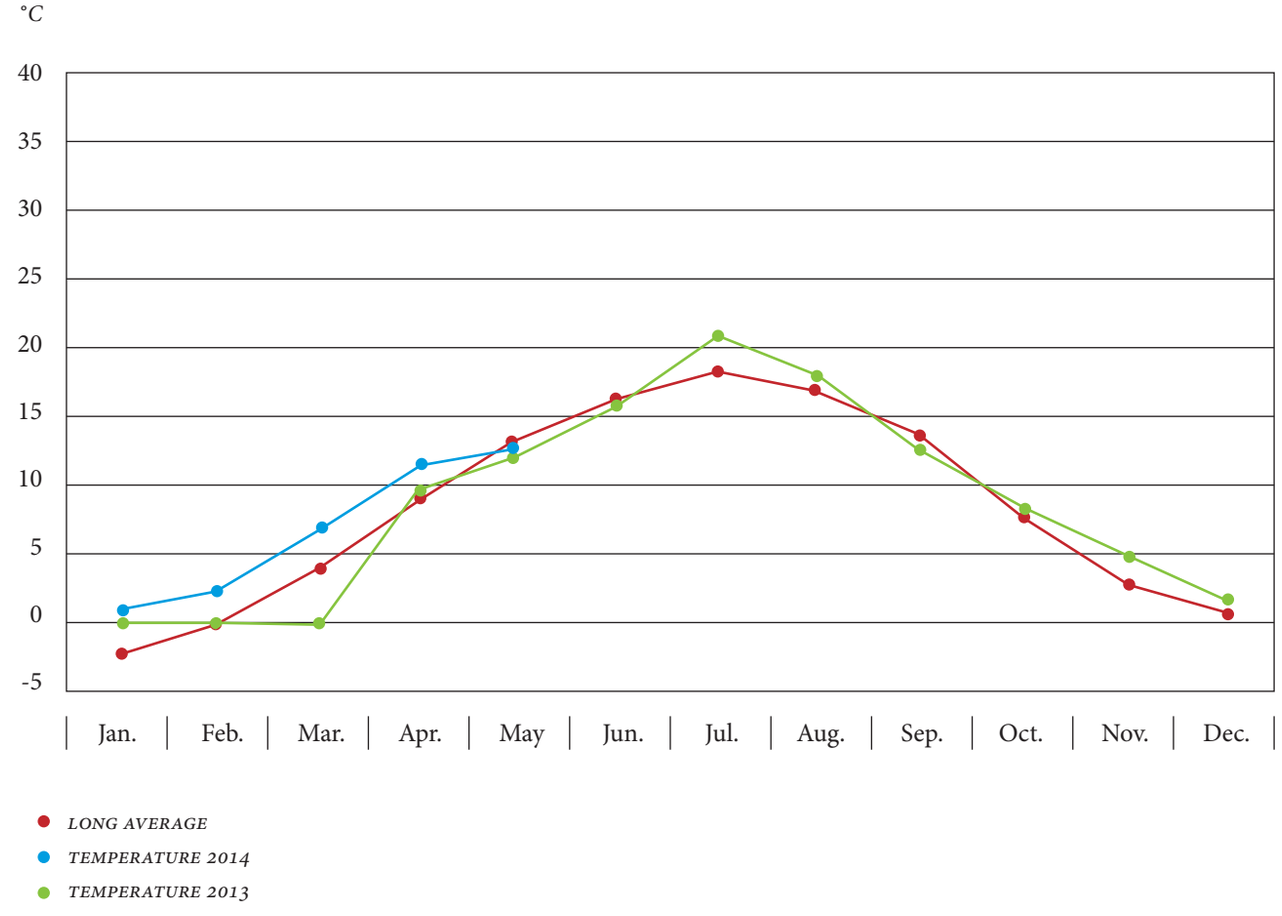


PHOTO REPORT

Hop plant at the end of May

Hop garden at the end of May

Offset detail view

Saaz, June 3, 2014
Jaroslav Hájek

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2014 – June (Saaz region)

WEATHER CONDITION – JUNE

Temperature & precipitation in June	2014	2013	30 years average
Average temperature (°C)	16,6	16,5	16,7
Precipitation (mm)	23,6	128,6	56,0
Total precipitation (mm) January-June	224,0	342,2	204,0
Max. temperature (°C)	32,1 (10.6.)	33,4 (18.6.)	
Min. temperature (°C)	4,6 (2.6.)	5,3 (5.6.)	
Max. precipitation (mm)	14,8 (25.6.)	47,2 (9.6.)	
Number of dry days	22	14	

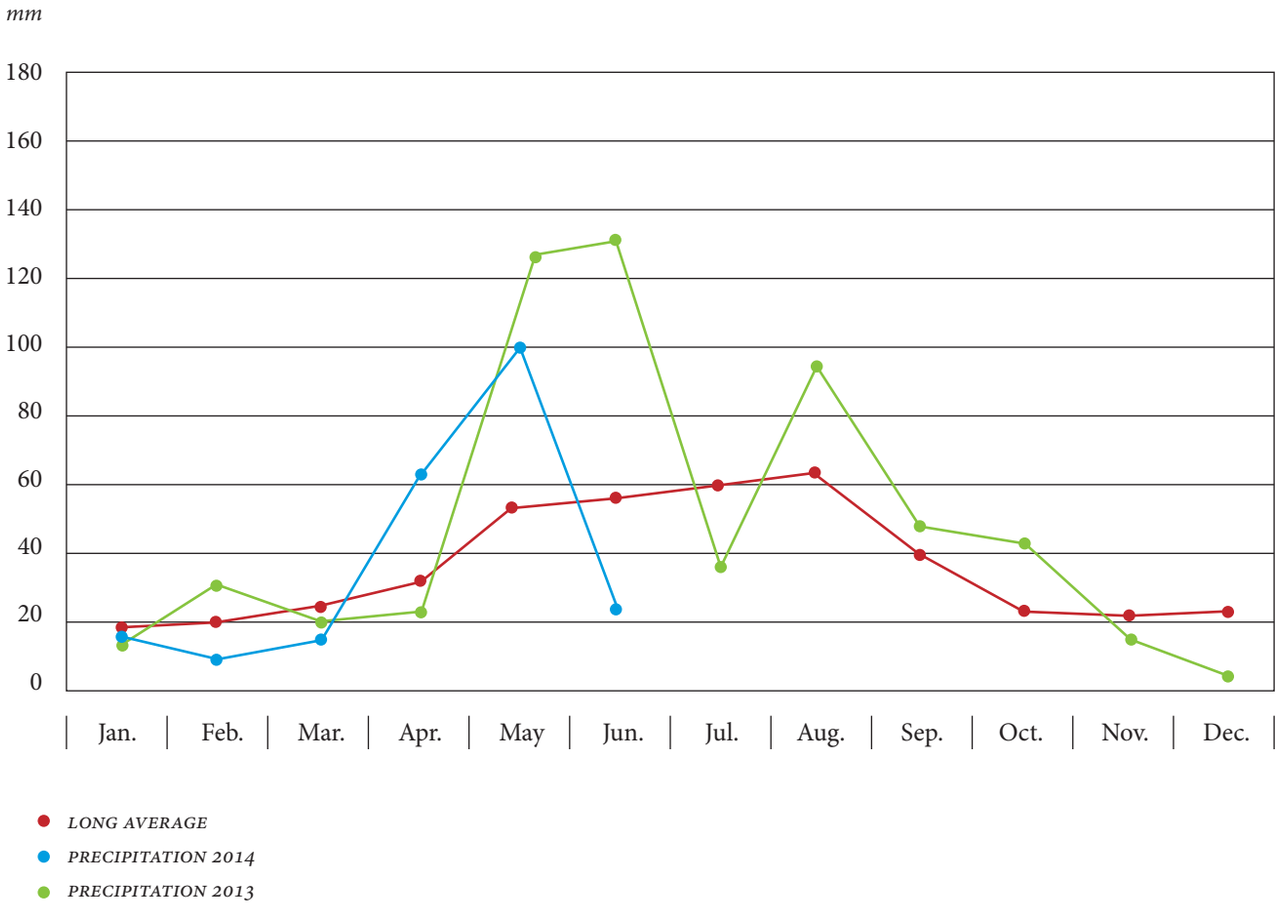
Climatic conditions of June were not favourable for the growth of hops, especially due to critical lack of the precipitations. The summary rainfall reached only 2,6 mm until the 23th of June; moreover they were divided in four rains. It can be therefore stated, that within the mentioned period there were practically no rains. More substantial rains came only on 24th and 25th June, with 16mm of precipitations. Also the development of the temperatures during the first decade of June was not optimal. Low average precipitations within the first five days of June were followed by the tropical heats, when the temperatures exceeded 30°C every day between 8th and 11th June of 2014. Practically from one day to another then it got considerably cooler and cold weather continued until the end of month. Primarily the night temperatures were very low and for the growth of hops they had negative impact.

GROWTH REPORT

Adverse climatic conditions fully influenced the growth and the development of hops. Good state of hop plants as seen by the end of May got worse in June. Majority of hop gardens keep loosing approximately 1 to 1,5metre in their growth. About 40% of hop vines reach the height of the trellis – above all it concerns the young hop plants. Critical weather conditions have shown again the difference between the state of old and young hop gardens. However, it is not valid for the gardens which have been planted in autumn of 2013, i.e. this year "planting". These sites suffered the most by the lack of moisture (due to undeveloped root system) and by low temperatures. The growths of these "plantings" are therefore very low, unbalanced and weak. The stretching growth still continues - what is a good piece of news - and we can suppose that the hops will grow until the 10th of July. The blossoming of hops was not still noticed.

HEALTH STATE OF HOPS

The weather development in the beginning of June (low precipitations and high temperatures) was not convenient for advancement of downy mildew of hops (*Pseudoperonospora humuli* Miy et Takah.), yet it was recommended to keep the sequence of the spraying against this disease by the preparations Ortiva, Aliette Bordeaux and Ridomil Gold plus 42,5 WP. In case the contamination by downy mildew of hops in the hop garden is confirmed, the application of the fungicide Curzate K would be recommended. The character of the weather on the beginning of June was favourable to higher intensity of flyover of hop aphid (*Phorodon humuli* Schrank) and propagation of new generations of red spider mite (*Tetranychus urticae* Koch). If the occurrence of hop aphid reaches the critical level, the preparations Teppeki, Confidor 200 OD or Chess 25 WP can be used. In some gardens the parallel occurrence of hop aphid and red spider mite was ascertained – in that case the farmers have applied the preparation Movento 150 OD. Against red spider mite, in case of its occurrence, the preparations Nissorun 10 WP, eventually Ortus 5SC or Vertimec 1,8 EC were used.



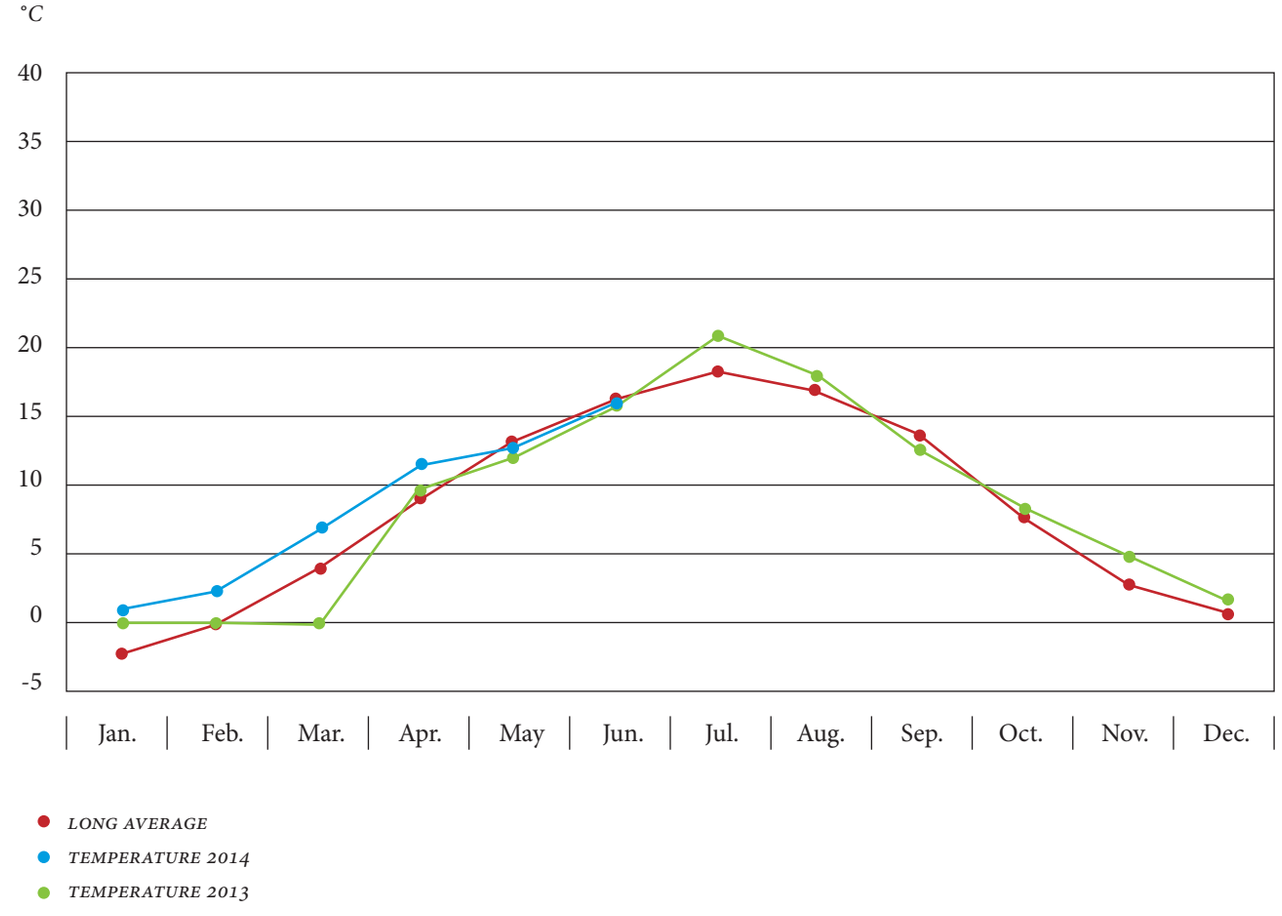


PHOTO REPORT

Hop plant at the end of June

The first blossom

Hop garden at the end of June

Saaz, July 1, 2014
Jaroslav Hájek

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2014 – July (Saaz region)

WEATHER CONDITION – JULY

Temperature & precipitation in July	2014	2013	30 years average
Average temperature (°C)	20,0	20,3	18,8
Precipitation (mm)	127,6	37,6	59,0
Total precipitation (mm) January-July	351,6	379,3	263,0
Max. temperature (°C)	33,4 (20.7.)	37,1 (28.7.)	
Min. temperature (°C)	7,1 (3.7.)	7,7 (13.7.)	
Max. precipitation (mm)	14,8 (25.6.)	47,2 (9.6.)	
Number of dry days	14	25	

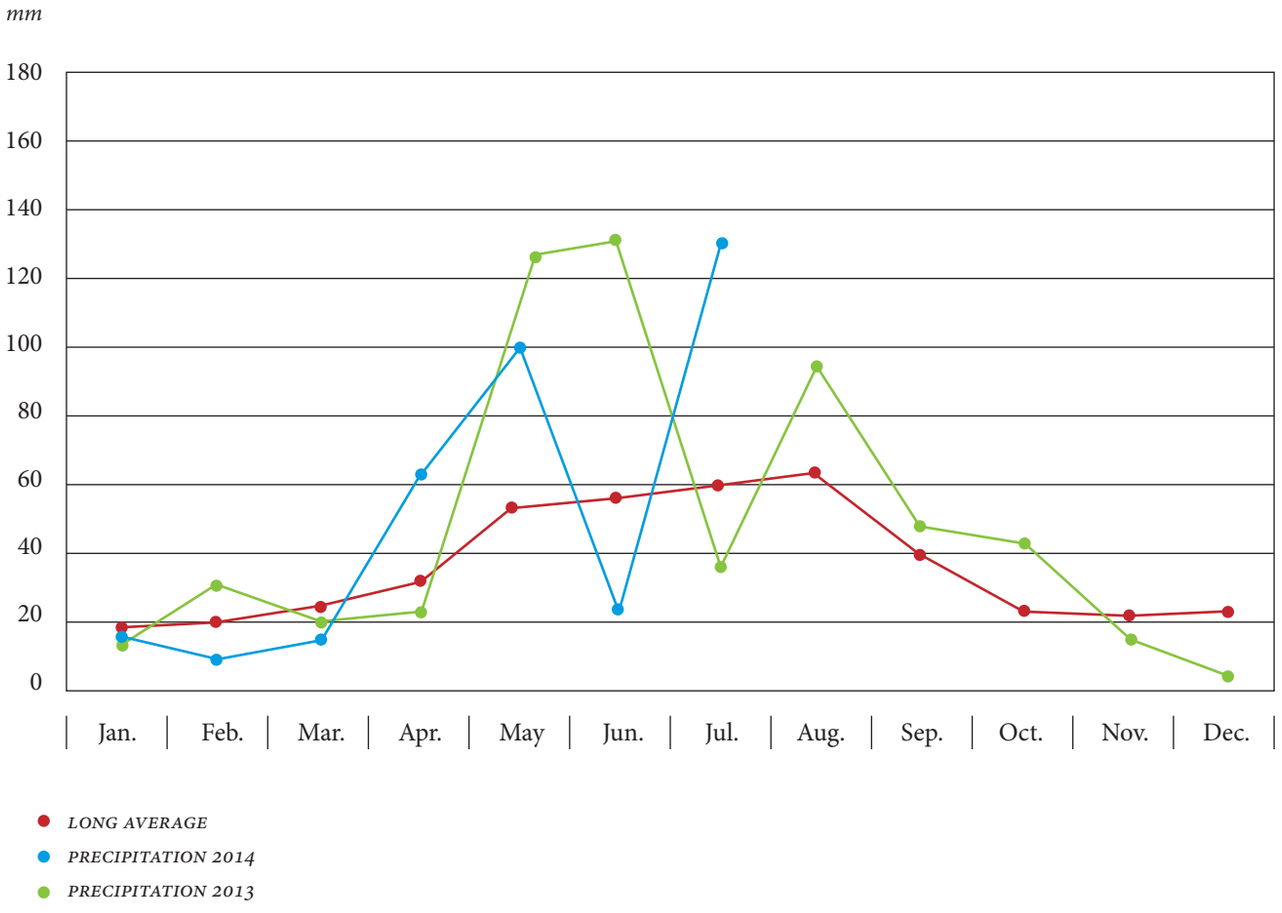
Climatic conditions in July 2014 had a beneficial effect on development of hops. The reason was sufficient amount of aggregate rainfalls and their distribution. During the first decade of the month 55mm of precipitation fell; within the second decade it was 16mm and in the third decade then 56mm of precipitation. The rains in the third decade were mostly of the stormy character with variation in the amount of rainfall depending to individual localities. As far as the temperatures are concerned, July of this year was 2°C above the long term average. The temperatures were developing relatively smoothly without major oscillations. Relatively high night temperatures during the second half of month are worth noticing; they varied around 15°C in average.

GROWTH REPORT

The situation of the hop gardens improved in July, compared to previous month, when the elongation growth ceased due to high temperatures. It was more perceptible on young hops vegetation, which initiated the elongation growth again. Owing to these conditions the hops started to blossom rather later this year; only during the second decade. The start of blossoming depended on the state of individual hop gardens. Overall we assess the blossoming as fair. By the end of July there appeared even second and third blossoming on some hop gardens. In average, the habit of the hop plants is weaker; some, especially older hop vegetation did not reach the height of trellis. Any serious damage of hops caused by the hailstorm or windstorm was not find out. Only in Auscha Region about 2,5 ha of hop gardens have fallen due to very strong rain and wind.

HOP PHYTOSANITARY INFORMATION

The infection spreading of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.) continued also in July. For the fourth or eventually further spraying the preparations Ortiva or Alliette Bordeaux or fungicide Bellis were recommended. Also the application of the preparation Ridomil Gold Plus 42,5 WP was possible. View to the short protective period the preparation Curzate K was used as well. Some of the growers already applied the spraying by the cupric fungicides (Kuprikol 250SC, Cuproxat SC) yet before the end of month. The incidence of hop aphid (*Phorodon humuli* Schrank) was very weak during the whole period. In July the preparation Movento 150 OD was applied; this insecticide has also acaricide effect. On the other side the conditions for the development of red spider mite (*Tetranychus urticae* Koch) were convenient. By the end of July the preparations Ortus 5SC and Vertimex 1,8 EC were used against this pest. The health condition of hops is considered good.



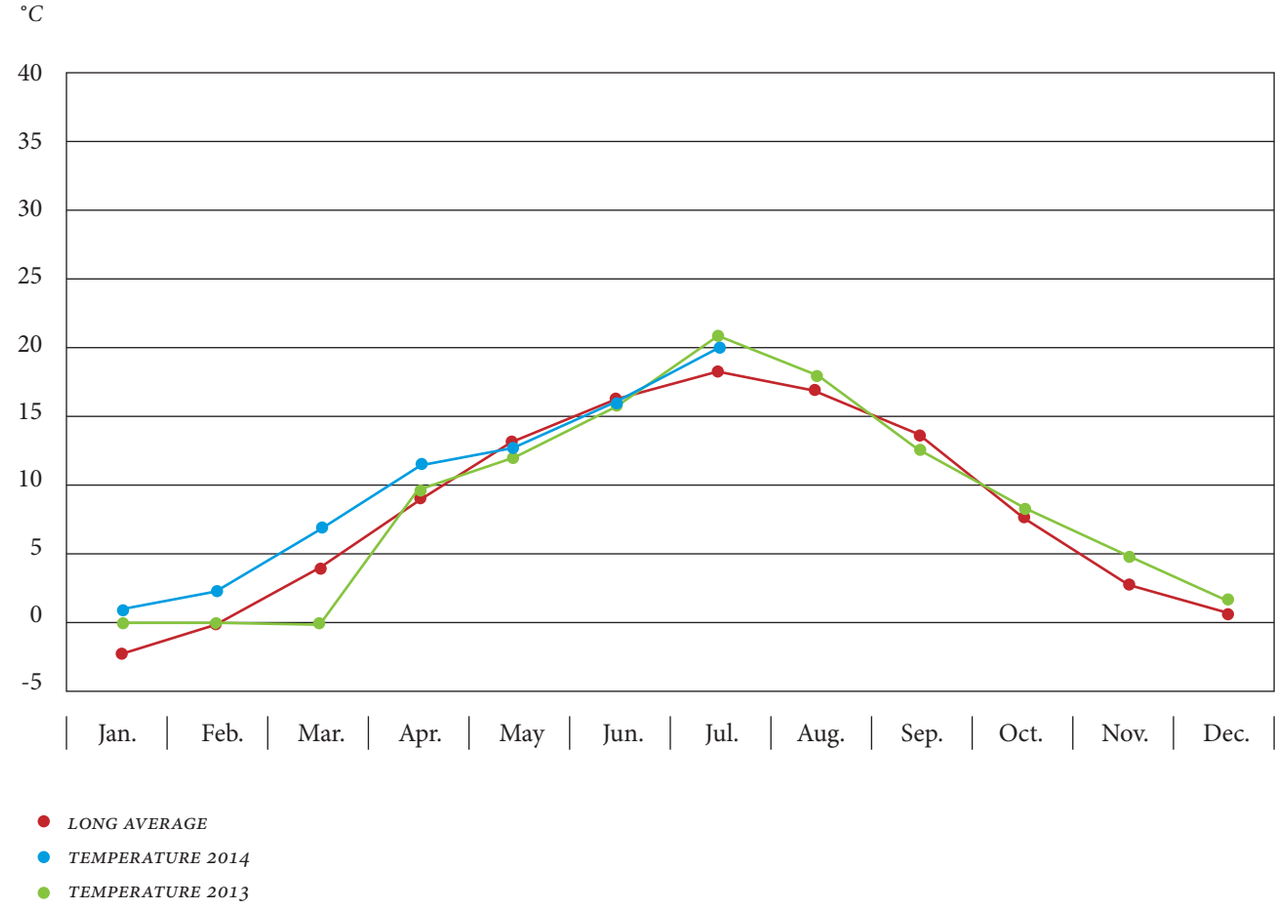


PHOTO REPORT

Cones condition at the end of July

Hop plant at the end of July

Hop garden at the end of July

Saaz, August 1, 2014
Jaroslav Hájek

Chmelařstvi Cooperative Žatec