Hop report

January–April 2017 (Saaz region)

1. Weather condition in 1th trimester 2017:

Long term average of the air temperatures and precipitation amount in the period of 1981 – 2010 as measured on the meteorological station Žatec

Temperature (°C)	**2016**	**2017**	**30 years average**	**Diff. 16-17**
January	-0,2	-4,7	-0,7	-4,5
February	3,8	1,6	0,4	-2,2
March	4,5	7,0	4,3	2,5
Summary 1st trimester	**8,1**	**3,9**	**4,0**	**-4,2**

Celkové srážky (mm)	**2016**	**2017**	**30 years average**	**Diff. 16-17**
Leden	23,8	8,0	21,5	-15,8
Únor	23,4	15,2	20,0	-8,2
Březen	23,8	29,2	25,9	5,4
Summary 1st trimester	**71,0**	**52,4**	**67,4**	**-18,6**

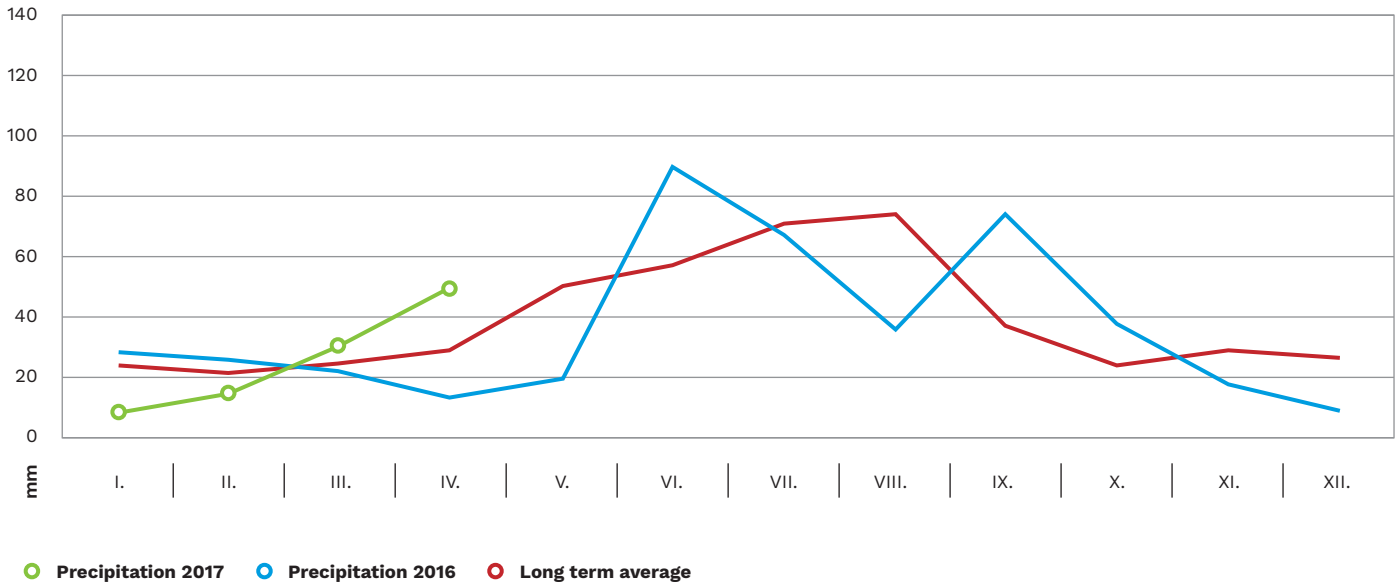
The weather during the first trimester of 2017 was characterized by huge differences between the average temperatures of individual months both in comparison to 2016 as well as the long term average. The most noticeable differences were recorded in January, when the average month temperature in this year was by 4,5°C lower than in previous year and by 4,0°C lower than the long term average. On the other side, the March average temperature was higher by 2,5°C, compared to the previous year, and by 2,7°C compared to the long term average. The variations of the temperatures nevertheless did not influence negatively the development of the hop vegetation.

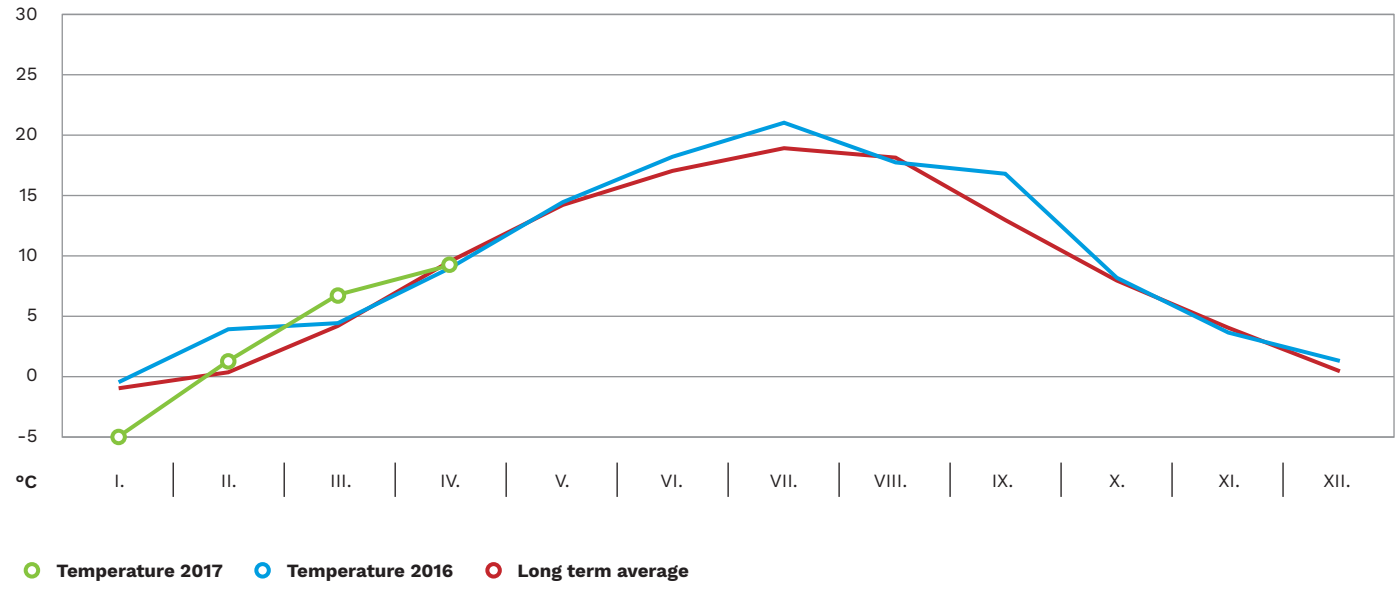
Precipitations during the first trimester of 2017 were then very weak. The summary of the rainfalls was by 18,6 mm lower than in previous year and by 15 mm lower than the long term average. The lowest precipitations were in January with only 8 mm of rainfalls.

Also in this year the weather conditions (namely high temperatures in March) enabled normal beginning of field works. The spring work in hop gardens started already in the last decade of March with discing of the hop gardens. By the end of March the growers also started with the cut of hops of hybrid varieties.

2. Weather condition in April:

Temperature & precipitation in April	**2016**	**2017**	**30 years average**
Average temperature (°C)	8,4	8,4	9,1
Precipitation (mm)	14,8	46,4	30,7
Total precipitation (mm) since 1st January	85,8	98,8	98,1
Max. temperature (°C)	24,2 (5. 4.)	23,6 (10. 4.)	
Min. temperature (°C)	-3,7 (2. 4.)	-3,5 (21 .4.)	
Max. precipitation (mm)	5,8 (28. 4.)	12,8 (4. 4.)	
Number of dry days	23	15	





The temperatures in April 2017 varied below the long term average, although they reached practically the same level as in April 2016. Similarly to previous year's April the first half of the month was warmer; on the contrary after the 16th April, 2017 the temperatures substantially decreased. For example, on 19th April the average daily temperature was only 2,7°C, where the highest temperature reached 5,6°C and the lowest dropped below the freezing point to -1,4°C. The conditions for the work in hop gardens therefore got worse, as the manipulation with the hop strings was more difficult. The works nevertheless continued well. As far as the precipitations are concerned, in this year's April they were more generous than those of previous year and also in comparison to the long term average the precipitations were higher. A short interruption of works, especially of the cut of hops, was caused by the rains in the first decade of the month, when the precipitations reached 22,4 mm between 3rd and 4th April, 2017.

3. Spring works and growth report:

The spring work in hop gardens take place as usual. Given the colder weather the hops does not grow and therefore the works concerning protection of hops still did not start. It is probable, that the main operations with the variety Saaz semi-early red-bine hops – the hop training – will start only after the 10th May, 2017.

4. Photodocumentation

Hop sprouts

Hop sprouts (top view)

Hop garden at 30. 4. 2017

PREMIANT variety plant (pruned in autumn 2016)

Saaz, May 2, 2017, Ing. Jaroslav Hájek

Hop report

May 2017 (Saaz region)

1. Weather condition – May 2017:

Temperature & precipitation	2016	2017	30 years average
Average temperature (°C)	14,3	14,4	14,2
Precipitation (mm)	20,6	21,0	52,0
Total precipitation (mm) since 1st January	106,4	119,8	150,1
Max. temperature (°C)	29,2 (22. 5.)	32,3 (29. 5.)	
Min. temperature (°C)	0,8 (2. 5., 3. 5.)	-2,1 (10. 5.)	
Max. precipitation (mm)	4,8 (24. 5., 31. 5.)	5,8 (13. 5.)	
Number of dry days	23	23	

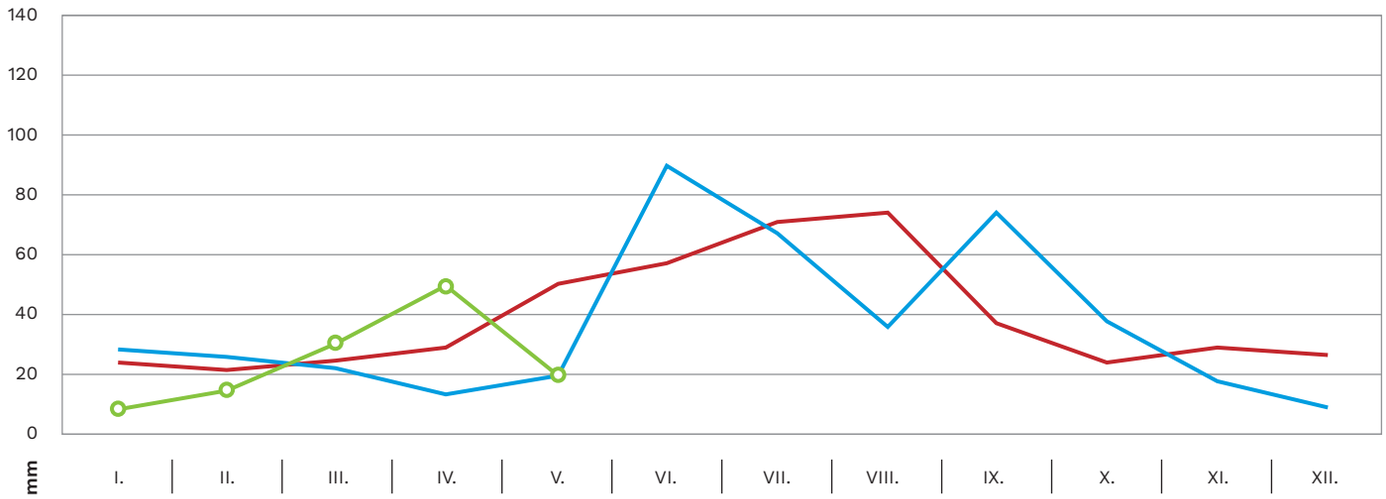
The first half of May 2017 was relatively cold. Especially the night temperatures were very low in this period (within May 9th and May 11th they even decreased below freezing point). The warming started only during the second half of the month, when the temperatures exceeded 30°C in last three days of May. These extremely high daily heats caused the hail storms in Auscha region, more concretely they affected the Cooperative Liběšice, Chmel Polepská Blata Comp., Agro Hošťka Comp. and the farmers Macek Miroslav and Drahota Stanislav. The first estimations speak of damage of approx. 60 ha at rate of 80% to 100%. As far as the precipitations are concerned, this May was deeply below average, the rainfalls reached just 21 mm, i.e. 40% of long-term average. For the vegetation, mainly the field crops, this is a very negative phenomenon.

2. Assessment of the state of vegetation:

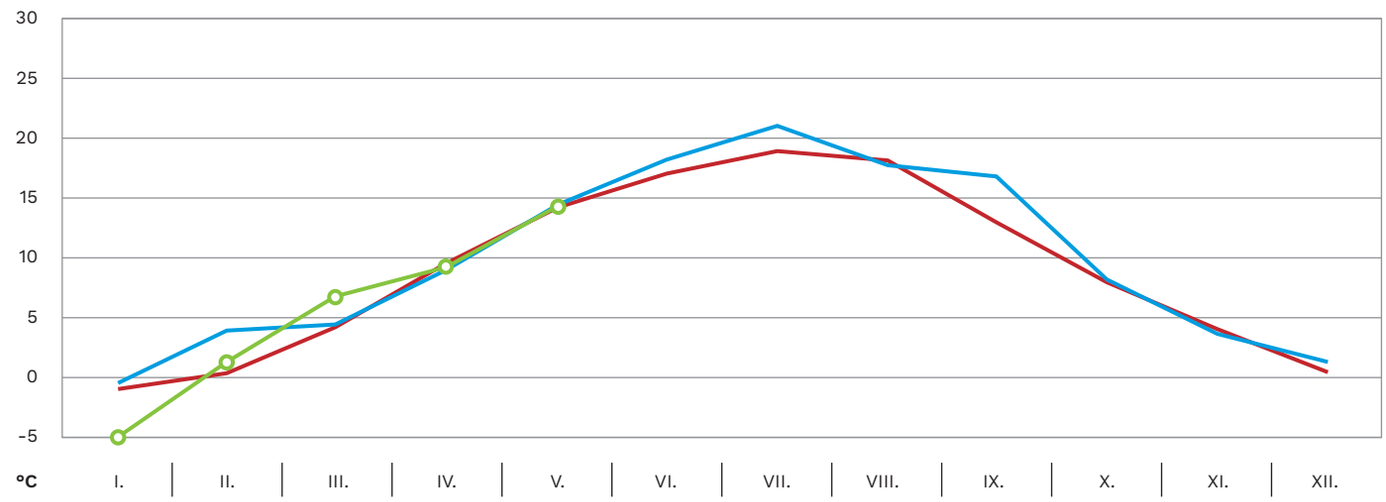
Cold weather at the end of April and beginning of May delayed the training of hops. It started only in the middle of May. This weather pattern resulted also in levelling of the differences in times of pruning of hop vines and therefore the hops emerged at the same time. It was necessary to change the time of beginning of training of hops. The growth of hops influenced by the warming in the second half of month picked up speed and then there started the problems with labour shortage for training of hops. The training of hops therefore took place later than usually, but there is the supposition of finishing of that operation until the end of May.

3. Assessment of the health state of hops:

The chemical protection of hops was concentrated in that period to the elimination of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.). The hops were treated by the preparation Aliette 80 WG. The preparation Curzate K was used in the hop gardens with higher occurrence of spike shoots. The first winged individuals of hop aphid (Phorodon humuli Schrank) were recorded during the second decade of May. The intensity of their incidence in some localities required the treatment against this pest, too. In majority of cases the pesticide Teppeki was applied. The warm and dry weather supports the propagation of red spider mite (Tetranychus urticae Koch). The growers were then recommended to carry out thorough monitoring of occurrence of red spider mite and - if necessary - to treat the gardens by acaricide Nissorun 10 WP or Ortus 5 SC.



Precipitation 2017 **Precipitation 2016** **Long term average**



Temperature 2017 **Temperature 2016** **Long term average**

4. Photodocumentation

Hop field at 1. 6. 2017

Row of hop plants

Row of hop plants after cultivation

Fertilizing of hops before cultivation

Saaz, June 1, 2017, Ing. Jaroslav Hájek

Hop report

June 2017 (Saaz region)

1. Weather condition – June 2017:

Temperature & precipitation	2016	2017	30 years average
Average temperature (°C)	18,1	18,9	17,0
Precipitation (mm)	91,0	59,4	59,1
Total precipitation (mm) since 1st January	197,4	179,2	209,2
Max. temperature (°C)	32,4 (24. 6.)	34,4 (22. 6.)	
Min. temperature (°C)	8,1 (7. 6.)	7,0 (2. 6.)	
Max. precipitation (mm)	20,2 (25. 6.)	27,6 (29. 6.)	
Number of dry days	13	21	

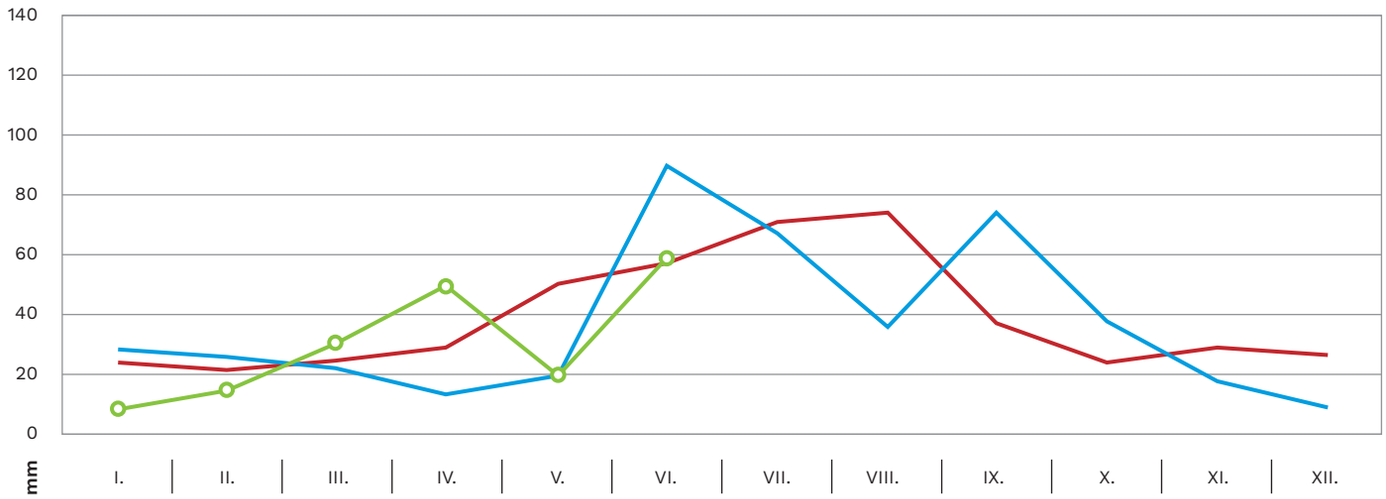
The temperatures in June 2017 were considerably higher in comparison to the long-term average (plus 1, 9°C). Maximum temperatures over the month moved above 20°C, three times they exceeded 30°C. The warmest period was between June 19 and June 26, 2017. As far as the precipitations are concerned, until 29th day of the month it was one of the poorest Junes during recent years. For the cultivation only the rains of June 4 and June 23, 2017 had more importance. Than in June 29, 2017 the rainfalls reached 27, 6 mm. The rains of that day were of the stormy character and so in some places of Auscha region the precipitations reached up to 53 mm.

2. Assessment of the state of vegetation:

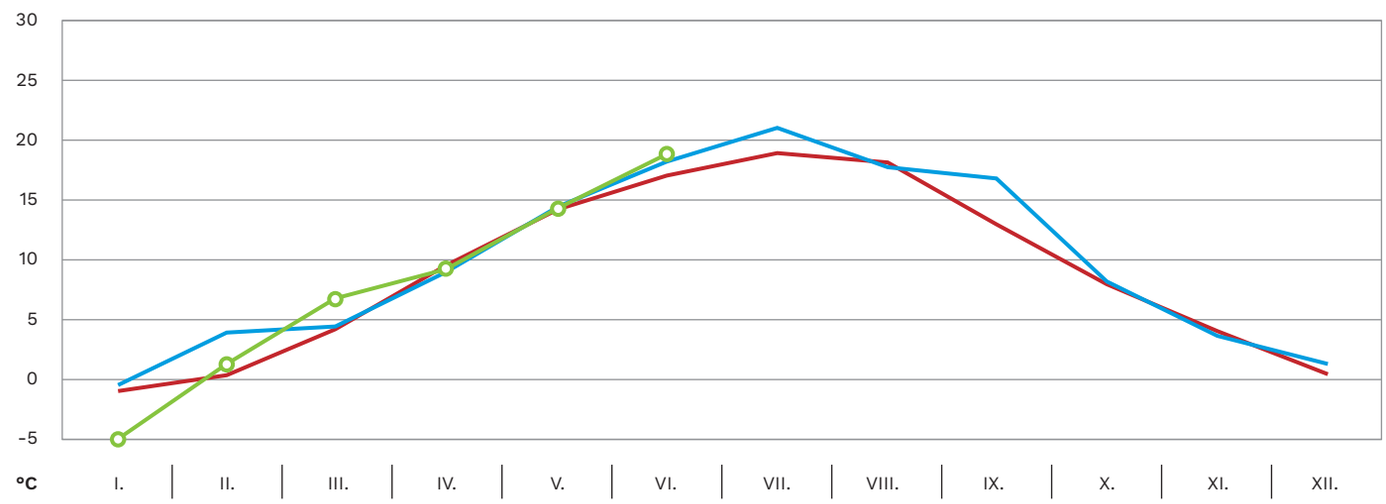
Delay in vegetation development, as consequence of cold weather in April and May together with high temperatures in June, has caused that hop vines, especially older stands, did not reach the height of the trellis. Another negative phenomenon of this year is the early blossoming of the hops, which appeared already around June 25, 2017. It stops the stretching growth of hops and so there is the presumption, that in some hop gardens the hop vines will not reach the height of the construction until the harvest.

3. Assessment of the health state of hops:

The weather development in June was not propitious for a turbulent advancement of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.). The growers were recommended to keep the sequence of the spraying against that disease, consisting of the preparations Ortiva, Bellis or Revus. In case of the confirmed incidence of downy mildew of hops in the hop garden it was recommended to apply the preparation Curzate K. The incidence of hop aphid (Phorodon humuli Schrank) was more frequent than in previous years. It was therefore necessary to treat more hop gardens against this pest. In majority of cases the farmers applied the preparation Teppeki with very good effect. The occurrence of red spider mite (Tetranychus urticae Koch) was relatively weaker in this year, although warm and dry weather gave good condition for its multiplication. In the areas, which needed the treatment against red spider mite, the preparation Nissorun 10WP was used.



Precipitation 2017 **Precipitation 2016** **Long term average**



Temperature 2017 **Temperature 2016** **Long term average**

4. Photodocumentation

Hopgarden view 30. 6. 2017

Row of plants at the end of June

The first blossom

The first blossom

Saaz, June 30, 2017, Ing. Jaroslav Hájek

Hop report

July 2017 (Saaz region)

1. Weather condition – July 2017:

Temperature & precipitation	2016	2017	30 years average
Average temperature (°C)	20,7	19,7	19,0
Precipitation (mm)	66,4	72,0*	69,4
Total precipitation (mm) since 1st January	263,8	251,2	278,6
Max. temperature (°C)	33,1 (11. 7.)	33,7 (30. 7.)	
Min. temperature (°C)	7,7 (4. 7.)	7,9 (14. 7.)	
Max. precipitation (mm)	14,4 (27. 7.)	24,4 (24. 7.)	
Number of dry days	11	15	

* Staňkovice meteorological station – Žatec station in defect

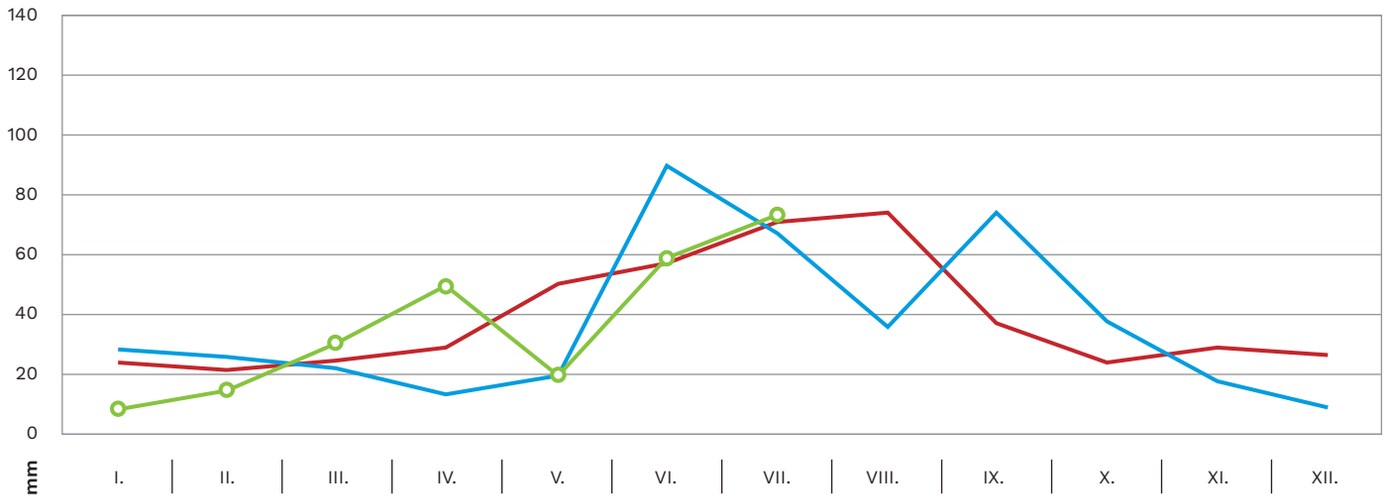
Climatic conditions of July 2017 were more favourable for the development of hops, in comparison to June 2017, especially as far as the average temperatures are concerned. The average temperatures were 0,7°C higher than the long-term average. The maximum temperature exceeded 30°C five times, in two cases just slightly. The precipitations reached long-term average in July. Majority of the rainfalls were of stormy character, so the precipitation amount varied according to individual locations. Only the rains of July 24th with 24,4 mm were more important for the growth of hops.

2. Assessment of the state of vegetation:

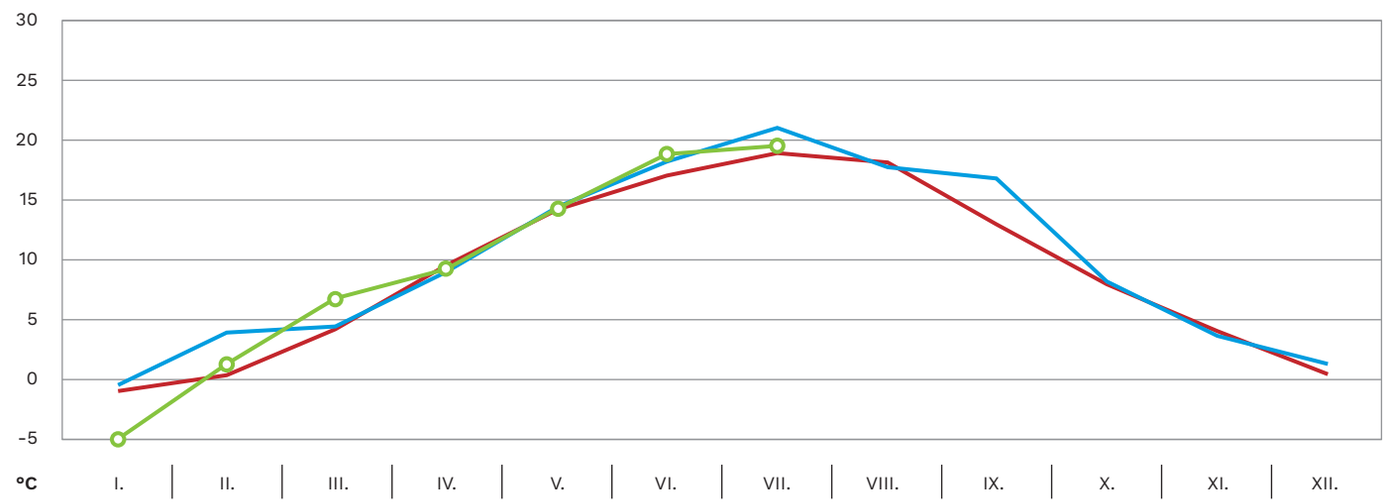
The general appearance (the habit of plants) by the end of June was not very good. This trend continued in July, as well. Only the young hop gardens showed certain improvement of the habit. The hop vines of older hop gardens did not reach the height of the trellis. This year the hops on these plantations formed the cones earlier and now the contrast to young growth of hops is obvious – young plantations are still blossoming or even starting to flower. In general, we evaluate the state of hops as average or slightly below average.

3. Assessment of the health state of hops:

Short-term prognosis of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.) gave reasons for treatment by fungicides of all varieties of hops. For the fourth spraying, which was recommended for application during the third decade of July, the preparations Revus of Orvego were suggested. Due to the danger of downy mildew of hops the growers´ attention was called to the necessity to carry out the fifth treatment of all the hop gardens between August 6th an August 15th, 2017.
The occurrence of hop aphid (Phorodon humuli Schrank) was practically eliminated by the use of the preparation Movento 150 OD. View to current warming it is necessary to monitor the development of red spider mite (Tetranychus urticae Koch). We recommend its careful monitoring and where the preparation Movento 150 OD was not applied, then it may be useful to have the preparations Ortus 5SC, Vertimec 1,8 EC or Kanemite 15 SC ready for use. The preparation Acramite 480 SC is recommendable for use not earlier than the first decade of August, if necessary.



Precipitation 2017 **Precipitation 2016** **Long term average**



Temperature 2017 **Temperature 2016** **Long term average**

4. Photodocumentation

Hopgarden view 30. 7. 2017

Row of plants at the end of July

Hop cone detail – 13 years old hop

Hop cone detail – 4 years old hop

Saaz, 1st August 2017, Ing. Jaroslav Hájek

Hop report

August 2017 (Saaz region)

1. Weather condition – August 2017:

Temperature & precipitation	2016	2017	30 years average
Average temperature (°C)	18,0	19,1	18,3
Precipitation (mm)	36,6	85,5	70,8
Total precipitation (mm) since 1st January	300,4	337,0	349,4
Max. temperature (°C)	33,6 (28. 8.)	34,8 (1. 8.)	
Min. temperature (°C)	5,2 (11. 8.)	5,2 (23. 8.)	
Max. precipitation (mm)	18,8 (5. 8.)	20,8 (9. 8.)	
Number of dry days	22	20	

The precipitations fell around the St. Lawrence Day, i.e. on 10th August, 2017. These rains came after long lasting drought and so they gave the growers hope for improvement of the situation in hops. Temperatures in August were much higher than the long-term average as well as the average of the same period of previous year.

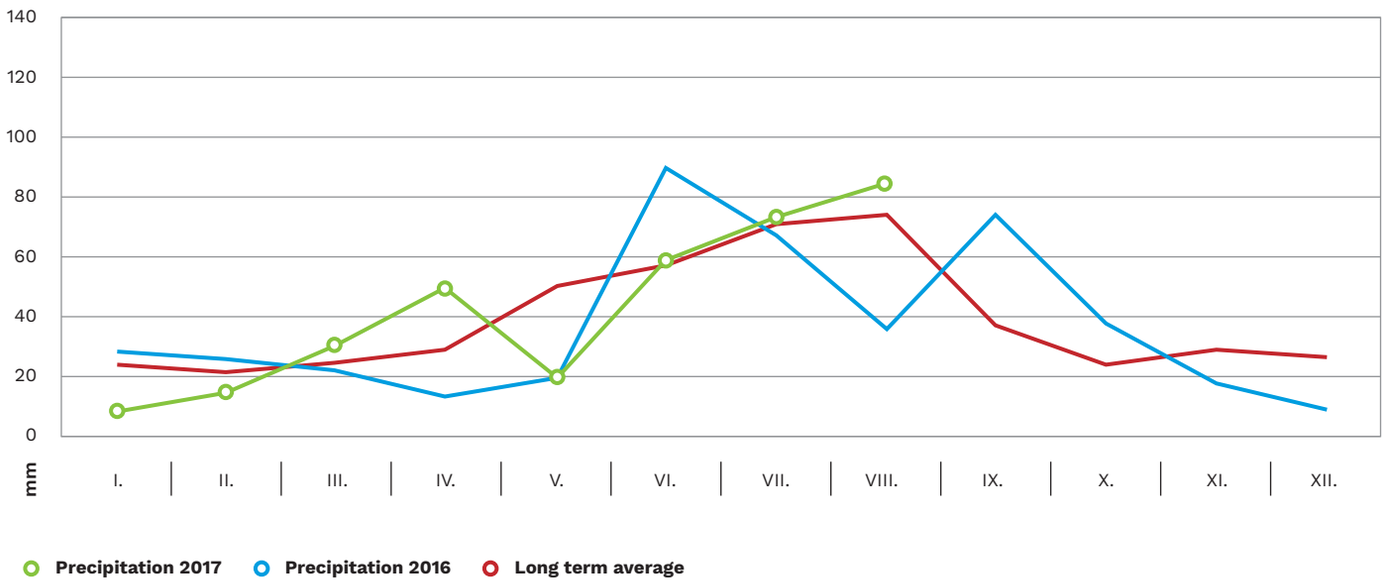
2. Growth report:

Climatic conditions in August, primarily the rains during the first decade of the month, have improved the state of the hop gardens, above all the situation of young growths of Saaz semi-early red-bine hops and especially the growths of hybrid varieties (Premiant, Sládek, Kazbek etc.). The rise of old hop gardens stopped by the end of July and they did not reach the height of the trellis. The harvest has started with individual hop growers in a relatively long time horizon between 15th August and 25th August, 2017. We expect average or slightly below-average yields. The first laboratory tests of the creation of alpha acids confirmed our fear of lower content of these substances in hop of current crop. We therefore estimate, that the content of alpha-bitter substances, especially with Saaz semi-early red-bine hops, will be below-average. For hybrid varieties we still do not have enough background material for quality estimation.

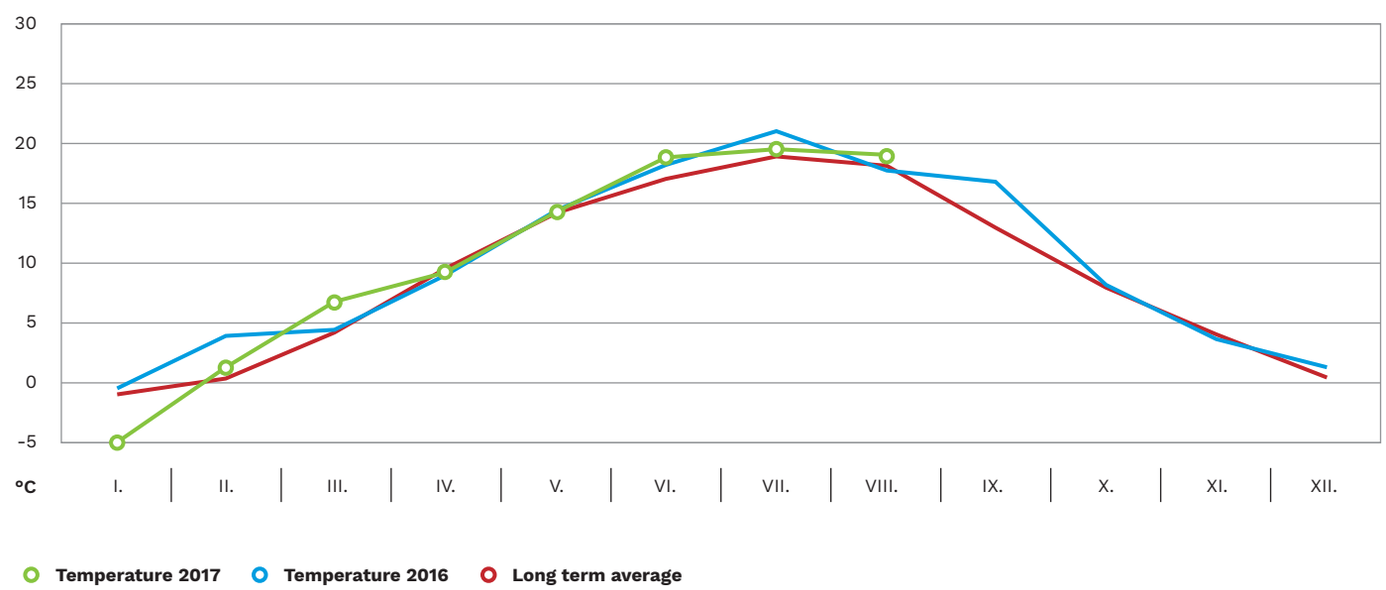
3. Hop phytosanitary information:

Health condition of hops is very good in this year.

Precipitation in 2017 and 2016 compared to a long average



Temperature in 2017 and 2016 compared to a long average



4. Other information:

The ÚKZÚZ – Central Institute for Supervising and Testing in Agriculture in Saaz specified the hop gardens acreage to be harvested in 2017. See more details in the Table below.

The acreage of hop gardens in the Czech republic in 2017, up to 20th August

Variety	Saaz region	Newly planted	Auscha region	Newly planted	Tirsitz region	Newly planted	Czech republic	Newly planted
Saaz var.	3 390	204	459	23	468	31	4 317	258
Agnus	39	4	3	0	0	0	42	4
Bohemie	1	0	0	0	1	0	2	0
Cascade	1	0	0	0	0	0	1	0
Hallertau	1	0	0	0	0	0	1	0
Harmonie	5	0	0	0	0	0	5	0
Kazbek	24	10	5	2	5	0	34	12
Perle	1	0	0	0	0	0	1	0
Premiant	96	0	34	0	35	0	165	0
Rubin	1	0	0	0	0	0	1	0
Saaz Late	42	3	0	0	2	0	44	3
Saaz Special	26	7	0	0	0	0	26	7
Sládek	177	19	29	2	89	11	295	32
Vital	3	0	0	0	0	0	3	0
Other	8	0	0	0	0	0	8	0
Total	**3 815**	**247**	**530**	**27**	**600**	**42**	**4 945**	**316**

Saaz, 4th September 2017, Ing. Jaroslav Hájek