Hop report - Saaz fine aroma hops

Crop 2010 – January / April 2010 (Saaz region)

Weather condition – January / March 2010

Average temperature (°C)	2010	2009	30 years average	Diff. 10-09
January	-4,2	-3,4	-2,0	-0,8
February	-2,3	0,5	-0,2	-2,8
March	3,6	5,2	3,6	-1,6
Summary 1st Trimester	-2,9	2,3	1,4	-5,2

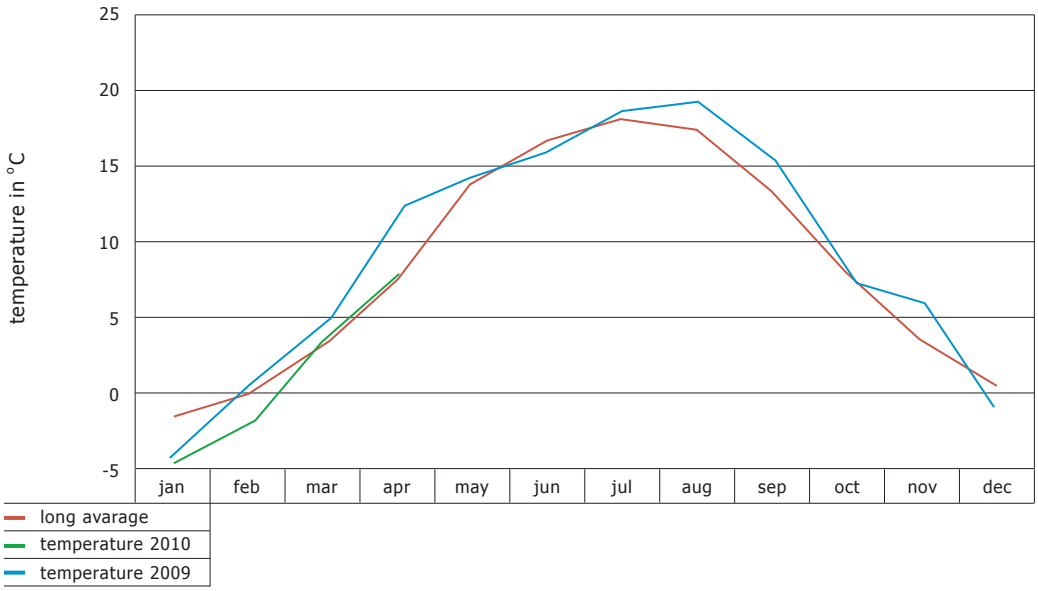
Total precipitation (mm)	2010	2009	30 years average	Diff. 10-09
January	22,6	6,6	20,0	16,0
February	7,4	13,4	19,0	6,0
March	10,2	25,0	23,0	-14,8
Summary 1st Trimester	40,2	45,0	62,0	-4,8

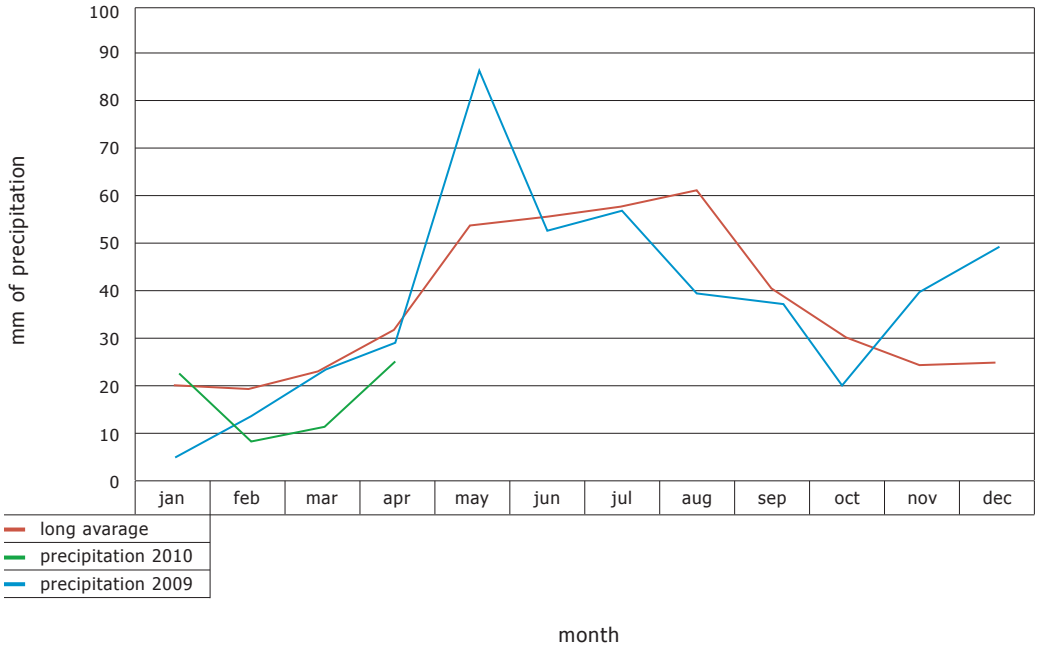
Humid and cold weather recorded at the end of 2009 continued also in January 2010. In principle the whole autumn of 2009 (September – December) was on the normal level as far as the temperatures are concerned, nevertheless the precipitations were considerably higher compared to the previous years and also to long term average. Within the last four months of passed year the aggregate rainfalls reached 127,5 % of long term average. In January 2010 the precipitations still exceeded the average by 13 %, but then it changed in February and in March, when the level of rainfalls, compared to the long term average, dropped to 38,9 % and 44,3 %, respectively. In terms of temperatures the whole first quarter was below long term average, especially January and February. The snow cover was unusually high during the whole winter. The first snow fell on non-frozen soil and therefore during the spring thaw majority of the water soaked into the earth. The losses by draining were really minimal. Based on this we are of the opinion that the humidity conditions in the soil should substantially improve and the level of subsoil water should increase. The negative effect was insufficient freezing through of the soil, so that the soil cover was compacted, unloosed and therefore worse treatable.

Weather condition – April 2010

Temperature & precipitation in April	2010	2009	30 years average
Average temperature (°C)	8,5	12,2	8,5
Precipitation (mm)	24,6	30,0	32,0
Total precipitation (mm) January-April	64,8	75,0	94,0
Max. temperature (°C)	25,3 (30.4.)	24,8 (27.4.)	
Min. temperature (°C)	-3,8 (3.4.)	-3,2 (1.4.)	
Max. precipitation (mm)	12,0	15,4	
Number of dry days	23	23	

Though the average temperature in April equalled the long term average, the night temperatures within the first decade fell below the freezing point. It repeated also at the end of the second and beginning of the third decade. The precipitations in April were below long term average (68,9%) as well as below the level of 2009 (86,4%). far as the weather is concerned.





Spring works and growth report

The development of climatic conditions within the first trimester and April 2010 was very specific compared to the same period of previous years. It expressed itself in the level of average temperatures, which never exceeded the long term average in 2010. January was rich in rainfalls, but the other months remained below the normal. That is why the start of spring works in hop gardens was rather puzzled. Although the dry weather enabled the farmers to choose the beginning and the course of the pruning according to their needs, the effect of the pruning in terms of the time distribution of the following operations was wiped out and it can be expected that after the increase of the temperature, especially in the night, the hops will sprout at a blow and it will be very exigent to manage the training of hops at optimal circumstances. The leading hop wires have been strung up and fastened until the end of April. Due to the cold weather only few gardens of hybrid varieties have been trained in April. The beginning of training of Saaz semi-early red-bine hops can be expected between 6th and 8th May, 2010.

Hop rising up in chilly April weather

With a view to the hop protection it is recommended to carry out the differential treatment against alfalfa snout beetle (Otiorhynchus ligustici L.), according to the occurrence of adult exemplars by the end of April. The flyover of aphides migrantes alatae from the primary host plants of Prunus gen. was not recorded up to now. The first winged aphides can be expected on hops within the second decade of May. No occurrence of red spider mite (Tetranychus urticae Koch.) has been ascertained up to now. As far as downy mildew of hops (Pseudoperonospora humuli Myi et Takah.) is concerned, it is recommended to treat the gardens of hybrid and virus-free varieties by fungicide Alliete 80 WP, always when the spiky sprouts are discovered.

Saaz, May 5, 2010
Jaroslav Hájek, Irena Nováková

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2010 – May 2010 (Saaz region)

Weather condition – May 2010

Temperature & precipitation in May	2010	2009	30 years average
Average temperature (°C)	12,0	14,1	13,4
Total precipitation in May (mm)	102,0	85,6	54,0
Max. temperature (°C)	23,2 (24.5.)	28,7 (26.5.)	
Min. temperature (°C)	3,1 (9.5.)	0,2 (5.5.)	
Highest precipitation in one day (mm)	15,0	15,0	
Total precipitation Jan - May (mm)	166,8	160,6	148,0
Number of dry days	10	12	

The weather in May 2010 was completely different than it was normal within previous years. It was very rainy and cold month. Precipitations reached 200% of the long term average and the medium temperature was 1,4°C below long term average. The data mentioned above concern the Saaz region, nevertheless in some localities of Terschitz region the total of rainfalls in May went up to 250 mm. Of course, such a high precipitations were not helpful to the hop growers, rather the opposite – they harmed their efforts. Part of the hop gardens in Saaz region was damaged by hailstorm on 24th May 2010. Especially following municipalities were affected: Janov, Kounov, Milostín, Mutějivice, Hředle, Měcholupy, and Oploty. In total, 204 ha of hop gardens were damaged, 17 ha Sladek variety, 6 ha Premiant variety and 181 Saaz variety.

As far as the percentage of the damage is concerned, the distribution was as follows:

Hectares of damaged hop gardens	Grade of damage
59 ha	below 10%
7 ha	10% - 20%
82 ha	20% - 30%
14 ha	30% - 40%
6 ha	40% - 60%
5 ha	60% - 80%
31 ha	more than 80%

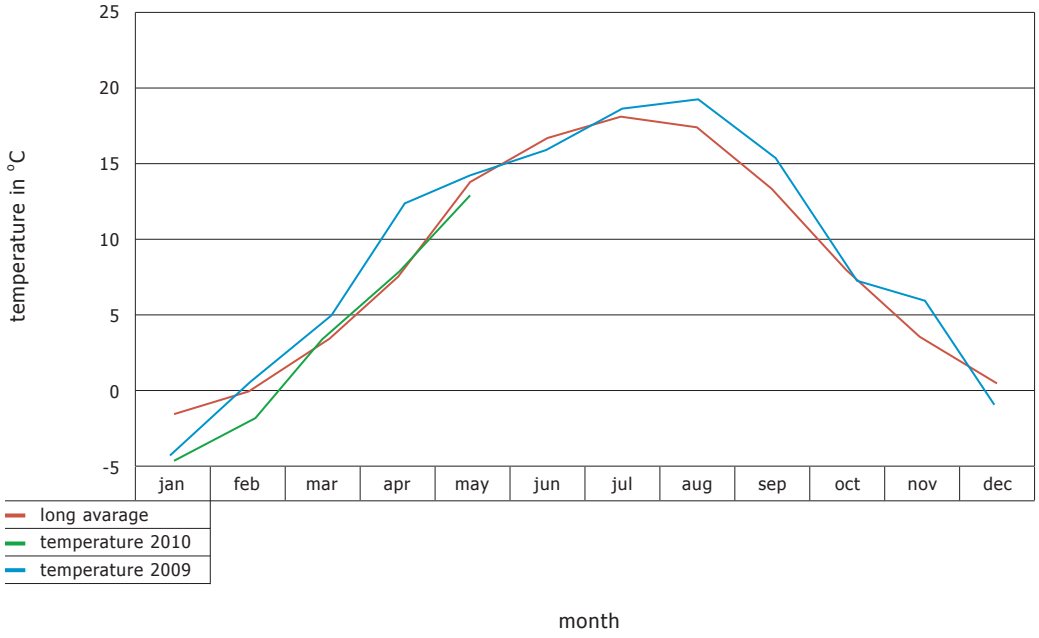
Growth report

As mentioned above, the climatic conditions in May were very unfavourable from the point of view of the hop growing. The problems arose in determination of the optimal time for training view to slow growth of the hop vines caused by low temperatures, as well as in implementation of cultivation works and in protection of hop. The farm work delayed and repeating training increased the cost of labour. The state of hops therefore is not good. The vines do not reach even the average height, the hop is endangered by mouldy diseases and the progress of the agricultural labour does not correspond to usual situation. The most important problem, faced by the farmers, is a fast and proper protection of hop cultures, especially against downy mildew of hops (*Pseudoperonospora humuli* Myi et Takah.). The accelerated effectuation of the first treatment against secondary infection is highly recommended. Although the adult virus-creating females of aphides (*Phorodon humuli* Schrank) were observed just sporadically up to now, the increase of population density is to be expected within the first decade of June. It is necessary to adopt an eventual time of the treatment subject given conditions. The occurrence of red spider mite (Tetranychus urticae Koch) is just sporadic. We recommend paying high attention to the incidence of this pest and in case of ascertainment of spider mite blisters it is necessary to treat hop with acaricide Nissorun 10 WP.

Other information

Variety	Saaz Region (ha)	Auscha Region (ha)	Trschitz Region (ha)	Czech Republic (ha)
Saaz	3 405	572	582	4 559
Agnus	58	3	0	61
Bor	4	7	0	11
Premiant	156	51	77	284
Sládek	193	15	75	283
Fuggle	0	0	5	5
Magnum	2	6	2	10
Others	21	1	3	25
Total	3 839	655	744	5 238

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



Unharmed hopfield at the end of May

Hop plant demaged by hailstorm

Saaz, June 5, 2010
Jaroslav Hájek, Irena Nováková

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2010 – June 2010 (Saaz region)

Weather condition – June 2010

Temperature & precipitation in June	2010	2009	30 years average
Average temperature (°C)	17,0	15,7	16,7
Total precipitation (mm)	109,0	54,4	56,0
Max. temperature (°C)	30,4 (29.6.)	26,8 (14.6.)	
Min. temperature (°C)	5,6 (5.6.)	1,4 (6.6.)	
Highest precipitation in one day (mm)	38,2	9,6	
Total precipitation Jan - June (mm)	275,8	215,0	204,0
Number of dry days	18	12	

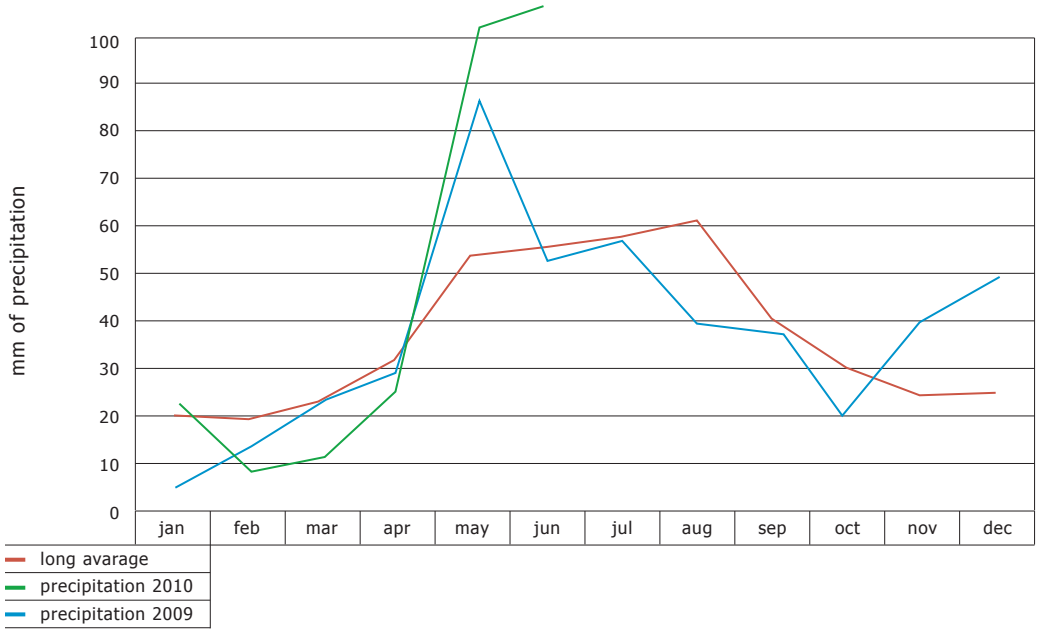
The precipitation in June highly exceeded the long term average. Together it reached 109 mm, what corresponds to 194,6% of 30 years average (1961-1990). It is curious, that 59,3% of the total June precipitations fell within just two days. The highest rainfalls were recorded on 30th June – 38,2 mm. They were nevertheless of stormy character and they fell on limited terrain just over the town of Žatec. Very this rain was accompanied by hailstorm, but just 12 hectares of Sládek and Premiant varieties have been affected. As far as the temperature is concerned, they were on long term average, thanks to heats by the ends of the first and third decades of the month.

Growth report

The growth of hops was inexpressive due to lower temperatures of the beginning of month. We can say that in this year the growth of hops is delayed 8 to 10 days. About 35% of hop vines reach the height of the trellis constructions. The rest is 1,0 to 1,5 meter below the top of the trellis. View to the fact that hop vines do not abbreviate in upper floors of internode, we can presume, that the stretching growth still goes on and that hops will continue growing at least during the whole decade of the month of July. The side shoot formation is good. In light of the growth we appreciate the state of hops as very good, view to climatic conditions.

Health state of hops

Convenient condition for dispersion of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.) continued also in June. The spicated sprouts still appear in some gardens. In such affected places both chemical and mechanical liquidation of these sprouts were recommended. The treatment against secondary infection had to be effected on all hop gardens. Farmers were recommended to use the agents Ridomil, Gold, Combi Pepite, Ortiva and newly registered Folpan 80 WG. The first treatment against aphides (Phorodon humuli Schrank) had to be effected around 10th June. Within the period between 25th and 30th June the spray treatment was performed, using preparations based on imidaclopride, mainly Confidor 70WG, eventually Tepeki (flonicamide) and Chess 50 WG (pymetrozine). The occurence of red spider mite (Tetranychus urticae Koch) has been detected only within the last decade of June in some areas. The farmers used mostly the preparation Nissorun 10 WP.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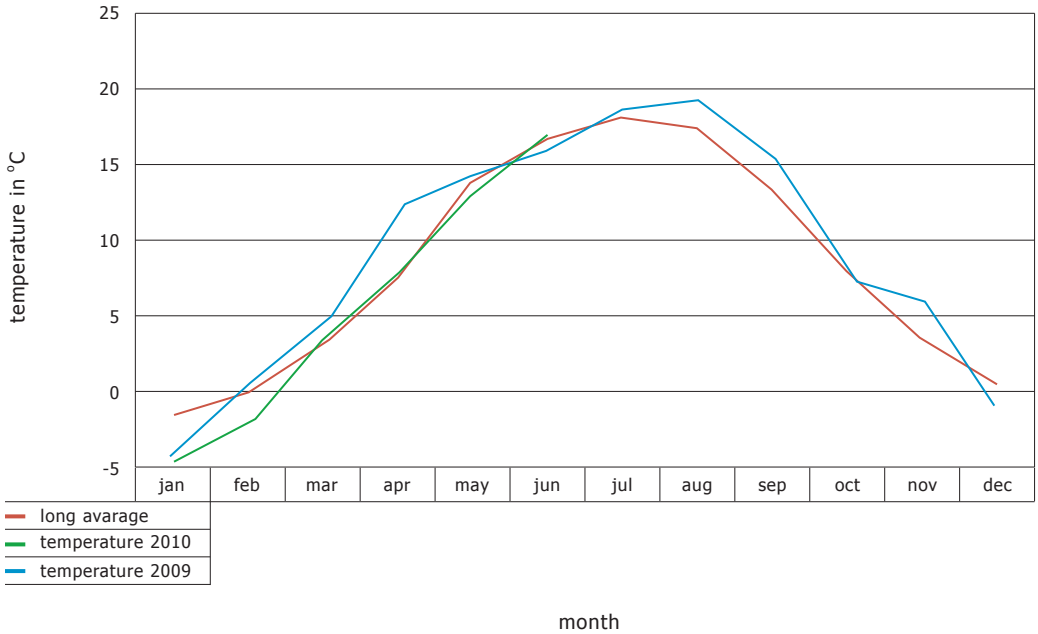
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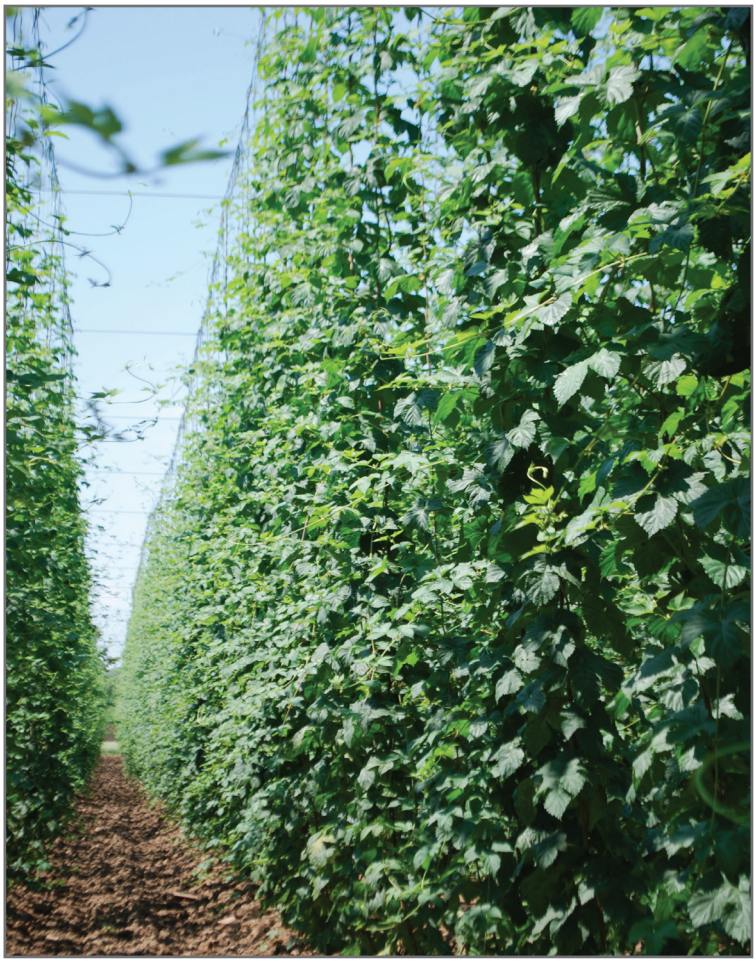
Chemical protection of hops against diseases and animal pests



Hop gardens at the end of June

Saaz, July 1, 2010
Jaroslav Hájek, Irena Nováková

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2010 – July 2010 (Saaz region)

Weather condition – July 2010

Temperature & precipitation in July	2010	2009	30 years average
Average temperature (°C)	20,7	18,8	18,0
Total precipitation (mm)	122,4	58,0	59,0
Max. temperature (°C)	35,0 (12.7.)	37,6 (17.7.)	
Min. temperature (°C)	8,5 (8.7.)	7,8 (27.7.)	
Highest precipitation in one day (mm)	42,2 (22.7.)	18,6 (18.7.)	
Total precipitation Jan - July (mm)	398,2	273,0	263,0
Number of dry days	12	12	

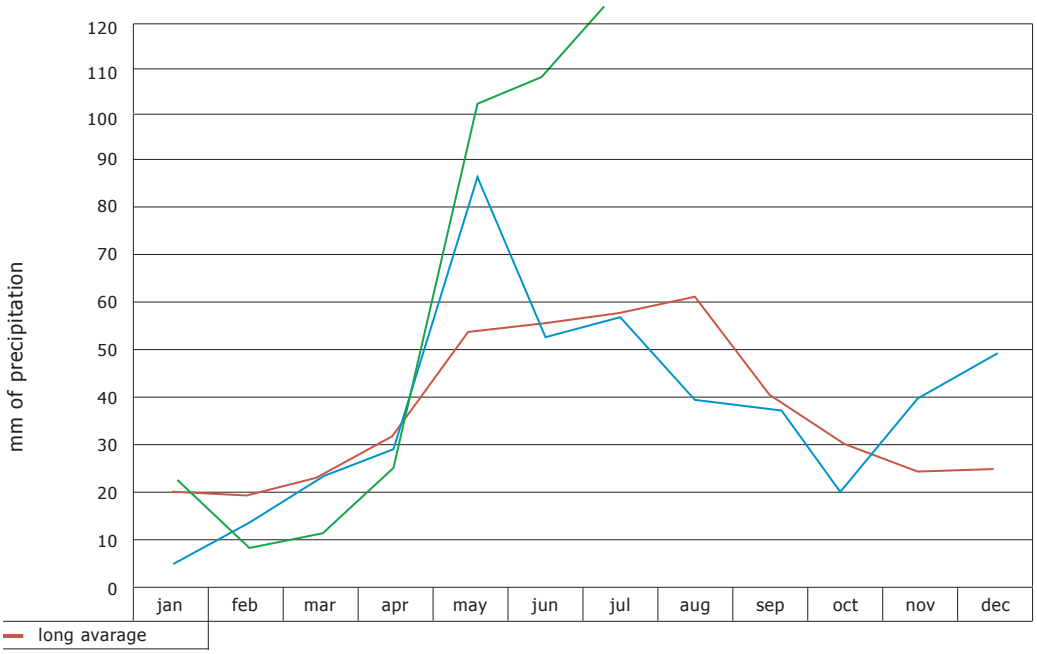
As it is evident from above mentioned survey, the temperatures as well as the precipitations were above-average in July 2010. Especially the rainfalls exceeded the long-term average by 63,4 mm, what represents 207,45 % of the normal. The development of hops was unfavourably influenced by high temperatures, particularly within the second decade of the month, when the stretching growth of hop vines was stopped.

Growth report

As we stated before, favourable development of hop vines has been stopped by heats mainly during the second decade of July. In consequence the vines in many hop gardens have grown just up to the construction. The first blossoms appeared relatively late in this year. We could register full blooming around 15th July 2010. Time period of flowering was relatively long and the creation of cones started only by the end of the month. The flower setting is very good view to the habitus in general and thanks to sufficient precipitation it can be expected, that also creation of cones will be satisfactory. Also in July the development of hops vines was delayed by about one week. That is why we estimate that the harvest will start only after the 20th of August 2010. View to present state of growth the yields should be the average ones.

Hop phytosanitary information

The hop growers managed to keep the health state of hops in good health state. Against downy mildew of hops (Pseudoperonospora humuli Miy et Takah.) it was necessary to apply more one or two fungicidal treatments in comparison to the normal. The occurrence of downy mildew of hops must be nevertheless carefully monitored and treated by preparations based on copper. Protection against hop aphid (Phorodon humuli Schrank) has been managed quickly and well. The application of basic spraying by Confidor 70 WG or by similar preparations has proved satisfactory. Also the protection against red spider mite (Tetranychus urticae Koch) has been managed successfully despite favourable conditions for its spreading especially within the second decade of July.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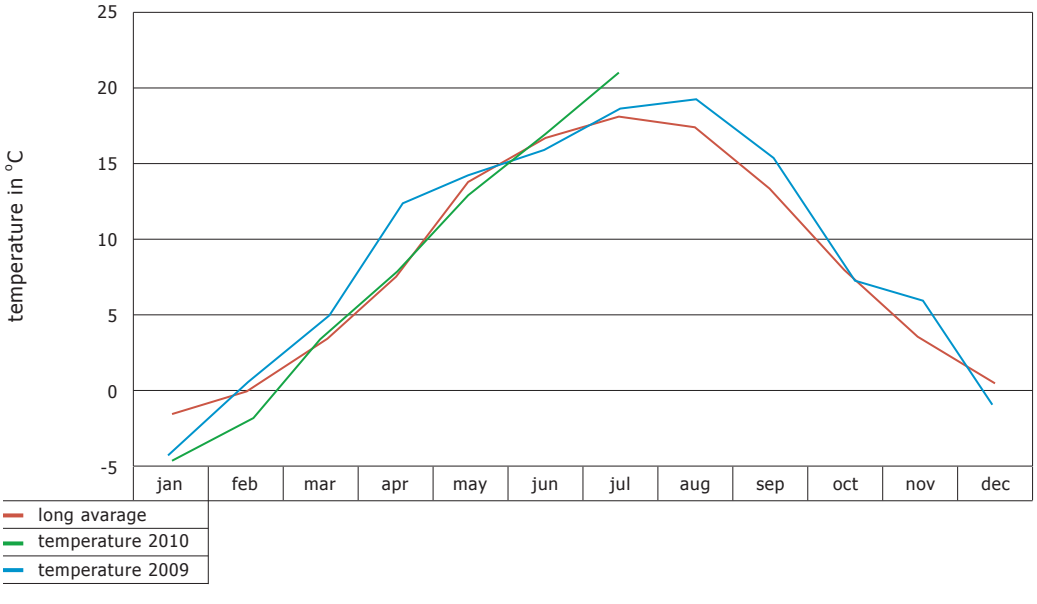
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temperature 2010
temperature 2009
month

Hop cones at the end of July

Control of the hops quality by our purchasers

Saaz, August 3, 2010
Jaroslav Hájek, Irena Nováková

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2010 – August 2010 (Saaz region)

Weather condition – August 2010

Temperature & precipitation in August	2010	2009	30 years average
Average temperature (°C)	17,7	19,3	17,4
Total precipitation (mm)	103,4	39,2	62,0
Max. temperature (°C)	30,6	32,3 (02.08.)	
Min. temperature (°C)	6,9	5,6 (30.08.)	
Highest precipitation in one day (mm)	18,4	12,2 (25.08.)	
Total precipitation Jan - August (mm)	376,4	312,2	325,0
Number of dry days	10	20	

The temperatures in August were below long-term average, and the precipitations were very rich. In Saaz region totally 19,3 hectares of hop gardens have fallen down, from that 15,3 ha of the variety Saaz Semi-early red-bine hops and 4 ha of Sládek variety. The losses in Auscha Region were 7,5 ha of collapsed constructions of hop gardens, all of them being Saaz Semi-early red-bine hops. Besides the damages caused by the crashing of hop gardens, big problems were caused by frequent, abundant and prolonged rains.

Growth report

Climatic conditions in August were not optimal for ripening of hops, especially for creation of alpha-bitter substances. The best condition for creating of alpha-bitter substances in that period is warm and sunny weather with minimum of rainfalls. However, August of this year was different. Continuing rainy weather strongly influenced the occurrence of downy mildew of hops (Pseudoperonospora humuli Miy et Takah.). Soil of many hop gardens was permanently waterlogged and that is why the protection of hops in that period was very complicated and somewhere even impossible. In such cases then occurred the damnification of the hops from the point of view of its standard quality indicators. Irregular ripening of hops caused also a wide dispersal in beginning of the harvest by individual growers. The first farmers started their hop-picking already on 16th August and the last ones on 30th August 2010. However, it is necessary to mention that majority of growers started the harvest within the period between 21st August and 25th August 2010. Also in this year the harvest will take more time, this once due to higher production of hops than we expected initially. Unfortunately, as per the first laboratory analysis we state, that the contents of alpha-bitter substances is lower than in previous year and the most probably the content of alpha-bitter substances will be also substantially lower than the long-term average (3,40% KH)

Hop phytosanitary information

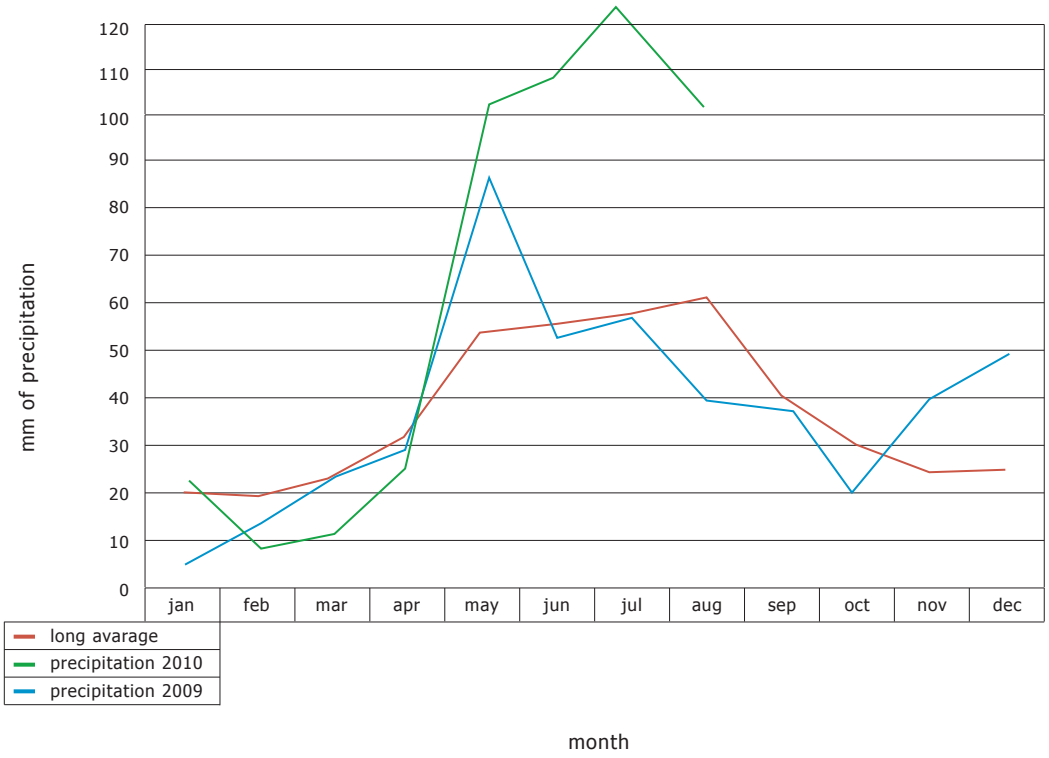
The month of August of 2010 was much more problematic than up to now the most difficult same month of previous year, view to the protection of hops. The prevention especially against downy mildew of hops was very exacting in this year, somewhere even impossible, and in spite of all measures such affected hop gardens are damaged. Otherwise the health state of the hops is good. Now everything will depend on how the growers will cope with the duration of the harvest.

Other information

The ÚKZÚZ – Central Institute for Supervising and Testing in Agriculture specified the hop gardens acreage to be harvested in 2010.

THE ACREAGE OF HOP GARDENS IN THE CZECH REPUBLIC IN 2010 (ÚKZÚZ 20th August 2010)

Variety	Saaz Region (ha)	Auscha Region (ha)	Trschitz Region (ha)	Czech Republic (ha)
Saaz	3 410	565	582	4 557
Agnus	58	3	0	61
Bor	4	0	0	4
Premiant	149	51	77	277
Sládek	187	15	75	277
Fuggle	0	0	5	5
Magnum	2	2	0	4
Harmonine	1	0	0	1
Rubín	1	0	0	1
Vital	1	0	0	1
Others	18	1	3	22
Total	3 831	637	742	5 210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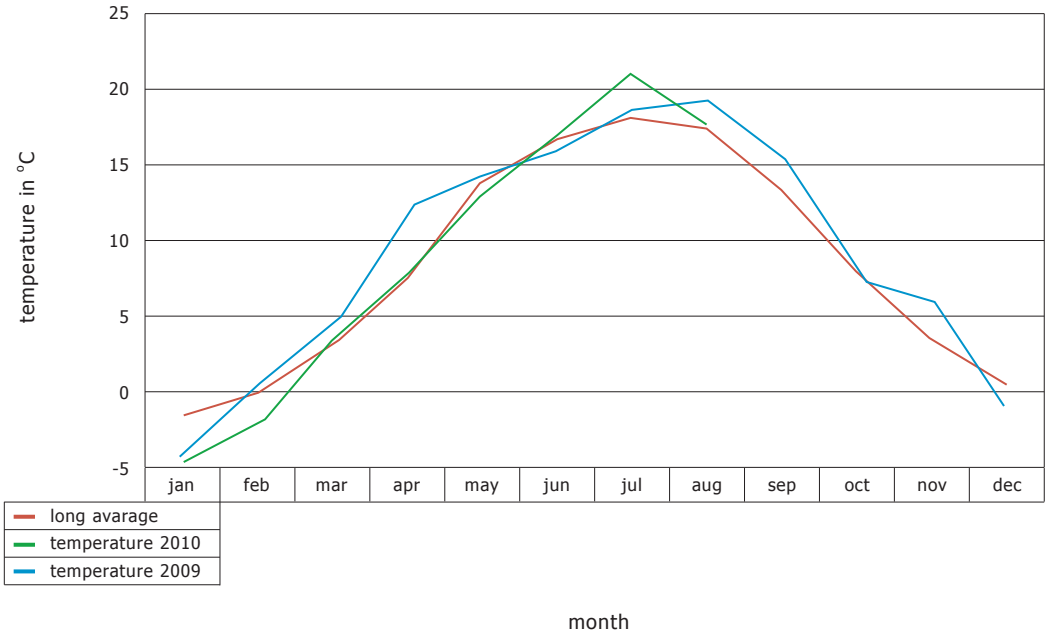
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long avarage
temperature 2010
temperature 2009
month

Flooded hop gardens before the harvest

Heavy hop cones setting before the harvest

Saaz, September 1st, 2010
Jaroslav Hájek, Irena Nováková

Chmelařstvi Cooperative Žatec