Hop report - Saaz fine aroma hops

Crop 2012 – January / April (Saaz region)

WEATHER CONDITION – JANUARY / MARCH

Average temperature (°C)	2012	2011	30 years average	Diff. 12-11
January	2,0	-0,7	-2,0	+2,7
February	-3,4	-1,2	-0,2	-2,2
March	6,2	3,6	3,6	+2,2
Summary 1st Trimester	1,6	0,7	0,5	+2,7

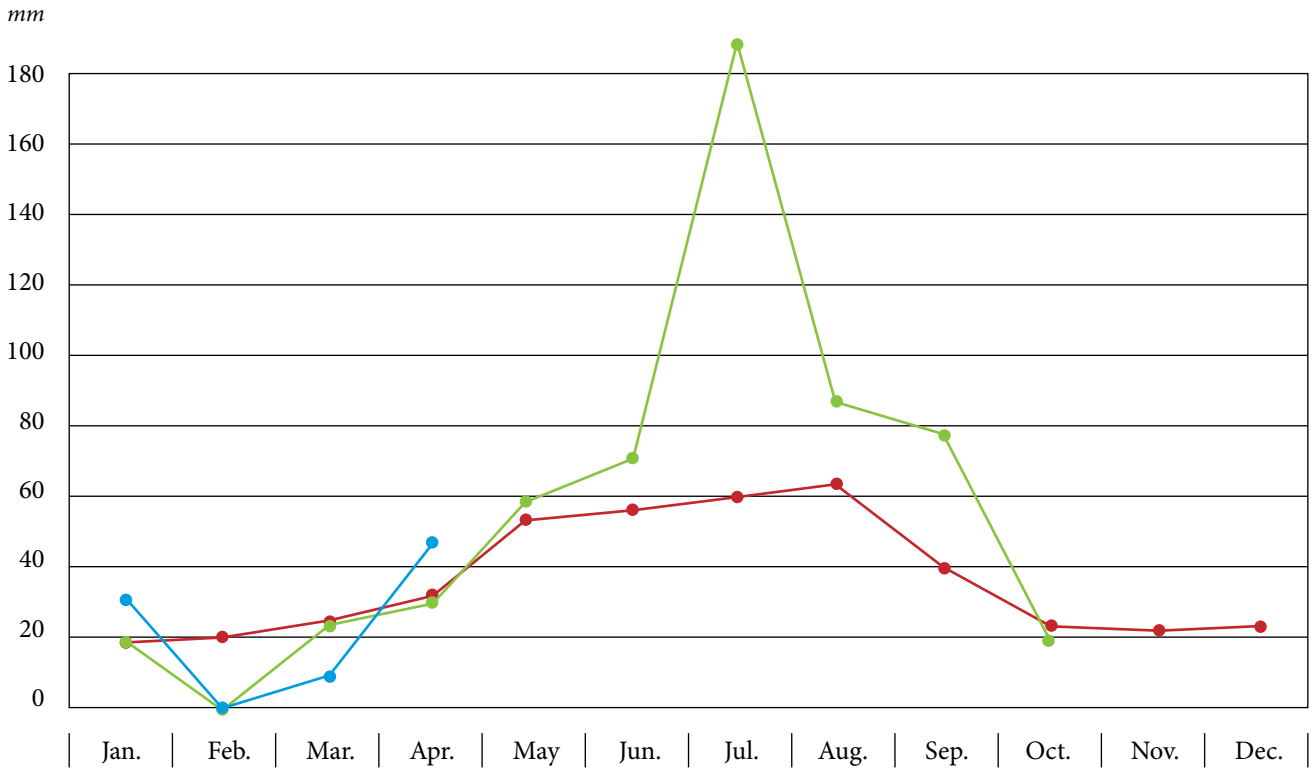
Total precipitation (mm)	2012	2011	30 years average	Diff. 12-11
January	32,2	21,0	20,0	+11,2
February	3,6	5,8	19,0	-2,2
March	26,8	23,0	23,0	-17,8
Summary 1st Trimester	44,8	53,6	53,6	-8,8

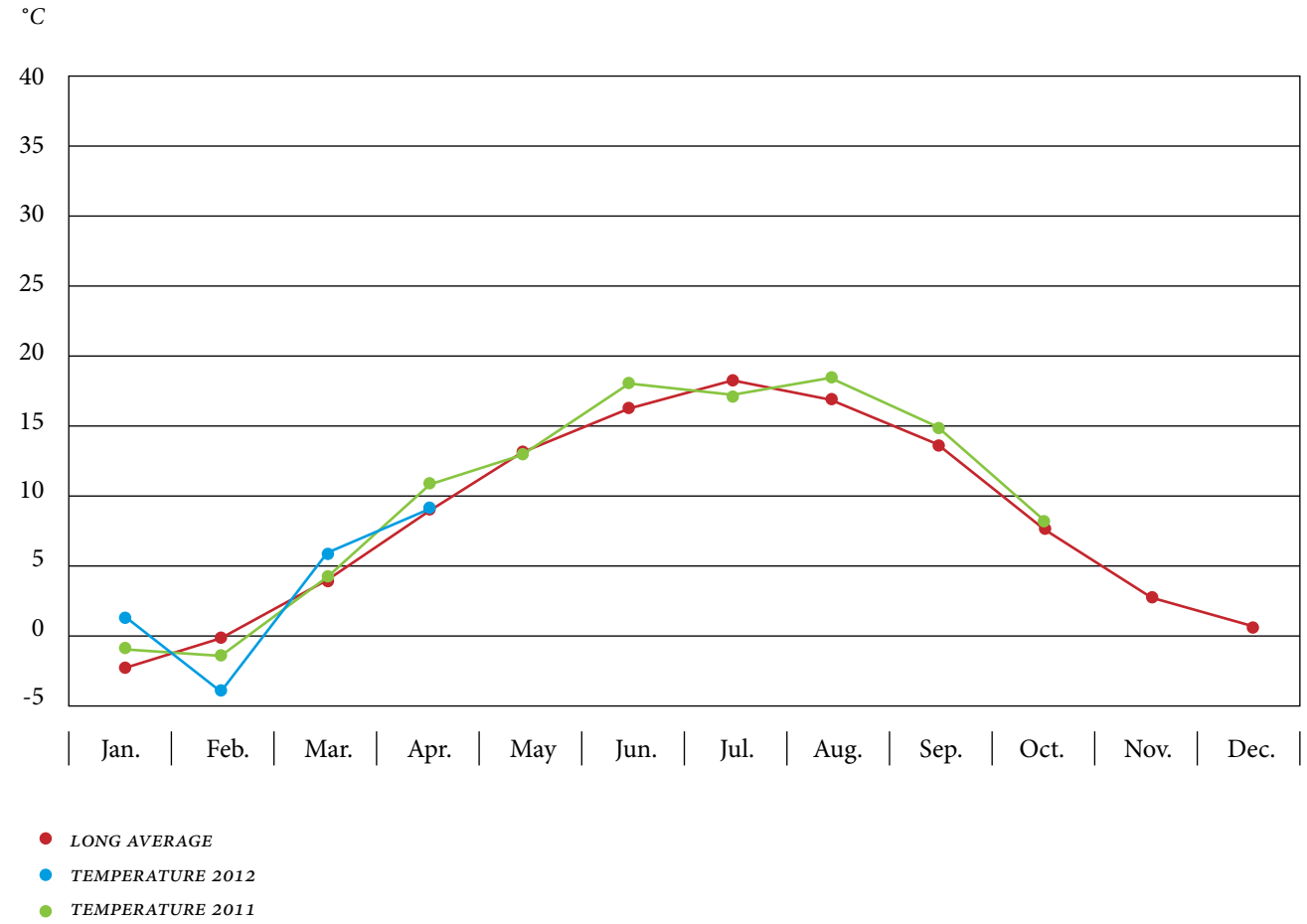
The character of weather during this year's winter and the first trimester of 2012 absolutely differ from the weather development of two previous years. The temperatures of the first trimester were higher in comparison to 2011 as well as to long term average. This situation was influenced by high average temperatures in January and in March. On the other side February was extremely cold with record breaking frosts. Precipitations then were deeply below the long term average, showing just 72% of normal. Especially February and March were significantly under average with 19% and 39% of normal precipitations, respectively. There were practically no snowfalls in hop-growing areas of Saaz, Auscha and Terschitz within those two months. Deep and prolonged frosts are then called "black frosts", which influenced very negatively the conditions of winter crops. According to our opinion they have nevertheless no negative impact to the hop cultures. The overall lack of the precipitations within the first trimester of this year has caused the decrease of the level of groundwater and general decline of moisture in the soil.

WEATHER CONDITION – APRIL

Temperature & precipitation in April	2012	2011	30 years average
Average temperature (°C)	8,7	11,3	8,5
Precipitation (mm)	45,8	28,0	32,0
Total precipitation (mm) January-April	90,0	81,6	94,0
Max. temperature (°C)	28,9 (28.4.)	24,6 (23.4.)	
Min. temperature (°C)	-7,9 (9.4.)	-1,1 (18.4.)	
Max. precipitation (mm)	18,8 (24.4.)	14,2	
Number of dry days	18	22	

Although April seems to be an average month as far as the temperatures concerns, cold weather prevailed until 25th of April. Sharp warming came within last days of the month, more specifically between 26th and 30th April. In that period the temperatures reached the summer levels, from 25,3°C to record breaking 28,9°C. If we consider very low morning temperatures, which fell deeply below the freezing point (8th April: -5,3°C and 9th April: -7,9°C), we must state, that the temperatures were extremely changing in April. This situation certainly was not optimal for the development of agricultural crops nor for hops in given period. The precipitations in April exceeded the level of long term average (143%). It was influenced by strong rainfalls of 12th April, 2012 (9,4 mm) and of 24th April, 2012 (18,8 mm). Otherwise, April was relatively dry month, almost without precipitations.





SPRING WORKS AND GROWTH REPORT

Climatic conditions of the first trimester and April 2012 did not cause any serious problems to the growers as far as the basic agrological measures in hop gardens are concerned.

All the labour proceeded well and without serious problems. The cut of the hop vines and the stretching and fastening of hop-leading wires were finished until the end of April. View to warm weather by the end of the months also the training of hops, although exceptional, was started (Sládek variety). The training of Saaz semi-early red-bine hops variety was supposed to start around 10th of May. Now we estimate that it will start on 5th and 6th of May.

The occurrence of alfalfa snout beetle (Otiorhynchus ligustici L.) is not very frequent on majority of hop gardens, nevertheless it is necessary to carry out the treatment everywhere, where more than 5 exemplars to 100 plants were found. In this year, as well as in 2011, the preparation Actara 25 WG was allowed, namely for the period of 24th of March to 10th May, 2012. This preparation kills also the spring generation of hemp flea beetle (Psylliodes attenuata Koch.). Against that pest, which appeared on hop gardens already by the end of April, also the preparation Karate Zeon 5 SC can be used. At the same time it is necessary to take care of the elimination of downy mildew of hops (Pseudoperonospora humuli Myi et Takah.) We therefore recommend to treat the gardens with the fungicide Aliette 80 WG.

PHOTO REPORT

Healthy and strong hop plant before training

hop plants before training

Saaz, May 2, 2012
Jaroslav Hájek

Chmelařství družstvo Žatec

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2012 – May (Saaz region)

WEATHER CONDITION

Temperature and precipitation	2012	2011	Average 1961 - 1990
Average temperature (°C)	14,8	13,2	13,4
Max. temprerature (°C)	31,1 (11.5.)	28,9 (26.5.)	
Min. temprerature (°C)	-1,7 (18.5.)	-2,8 (4.5.)	
Total precipitation (mm)	25,6	59,8	54,0
Highest precipitation in one day (mm)	7,8 (6.5.)	17,8 (2.5.)	
Number of dry days	18	19	

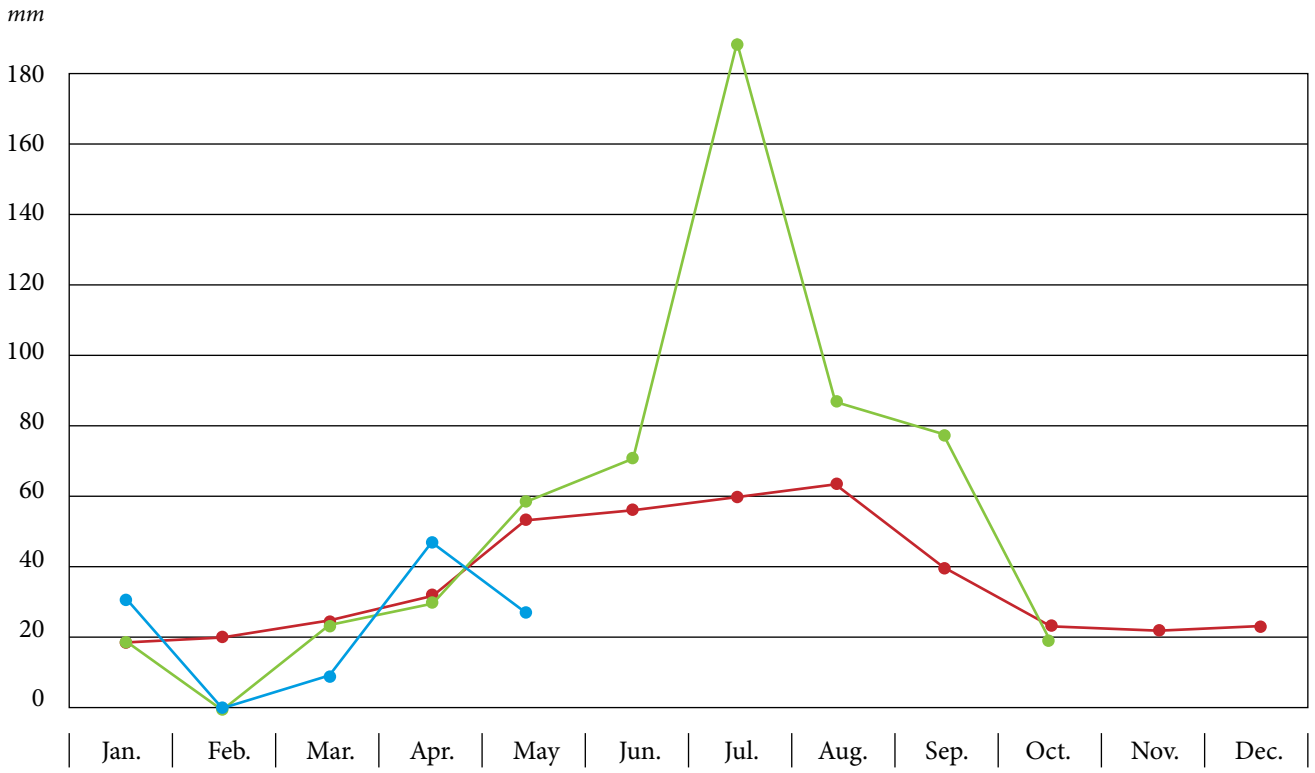
The temperatures in May 2012 are considered slightly above-average, on the other side the precipitations were deeply below normal – only 47, 4% of long-term average. It is worth mentioning high differences between day and night temperatures. The night temperatures were mostly very low, only eight times they increased above 10°C and two times they even decreased below freezing point. Precipitations were deeply below long-term average and the daily precipitation amount was usually very low. The windy weather prevailed practically within the whole month.

GROWTH REPORT

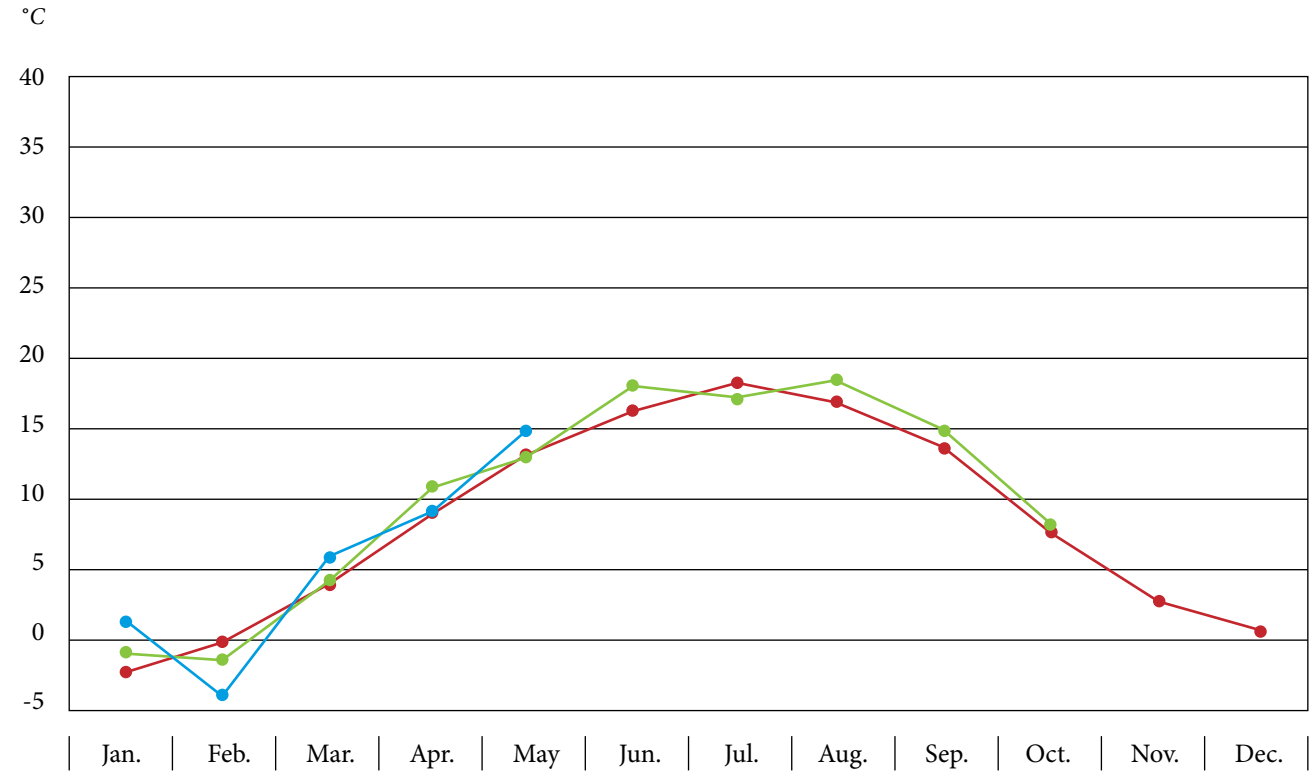
Climatic conditions were not favourable to growth of hops. Low night temperatures and lack of moisture have caused unequal and weak growth of hops. It was noticeable especially in case of hop gardens, which were cut in later period. Hop gardens cut early show basically normal development. This situation has caused problems especially in training of hop vines. It could not be done at one time, hop training had to be repeated (frequently two times) in particular gardens. In some gardens there appeared the open spaces after missing plants in higher extent. At the moment we investigate the reasons of this phenomenon. The hop vines do not reach the height usual by the end of May. The development of hops is therefore delayed by seven to ten days. As far as the treatment of hops is concerned, nowadays the priority is given to protection against downy mildew of hops (*Pseudoperonospora humuli* Myi et Takah.). This part of hops protection was complicated by putting out of the plant protection products Folpan, Ridomil Gold Combi Pepite and Pergado F, which contain the effective substance folpet. The internal analyses made out by Syngenta Company proved contamination of the effective substance folpet by agent captan in higher degree than approved by the specification submitted in frame of registration process. All our suppliers were informed about this situation by registered mail, by which the use of above mentioned plant protection products was prohibited with immediate validity. Syngenta Company has withdrawn mentioned plant protection products from the market.

The first sprayings by preparations Aliette 80 WP and Aliette 80 WG were already applied. Plant protection products Aliette Bordeaux, Ortiva a Curzate K are recommended as substitution of the rejected ones. The flyover of aphides (*Phorodon humuli* Schrank) was recorded the most frequently within the second decade of May. In case the critical number of 50 aphides for one leave is reached, we recommend to carry out the treatment by preparations approved against this pest.

The character of the weather is favourable also to the reproduction of red spider mite (*Tetranychus urticae* Koch). It is therefore necessary to follow the development and to implement the treatment by Nissorun 10 WP in time.



- *LONG AVERAGE*
- *PRECIPITATION 2012*
- *PRECIPITATION 2011*



- *LONG AVERAGE*
- *TEMPERATURE 2012*
- *TEMPERATURE 2011*

OTHER INFORMATION - THE HOP GARDEN ACREAGE IN 2012

Variety	Saaz Region (ha)	Auscha Region (ha)	Trschitz Region (ha)	Czech Republic (ha)
Saaz semi-early red-bine hops	3 032	398	424	3 854
Agnus	50	3	0	53
Bor	3	2	0	5
Premiant	140	44	63	247
Sládek	163	18	60	241
Fuggle	0	0	5	5
Others	27	0	3	30
Total	**3 415**	**465**	**555**	**4 435**

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

PHOTO REPORT

Hop plants at the end of May

Ploughing (visible drought)

Chemical hop protection

Saaz, June 4, 2012
Jaroslav Hájek

Chmelařství družstvo Žatec

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2012 – June (Saaz region)

WEATHER CONDITION

Temperature and precipitation	2012	2011	Average 1961 - 1990
Average temperature (°C)	17,2	17,6	16,7
Max. temprerature (°C)	32,4 (18.6.)	29,6 (29.6.)	
Min. temprerature (°C)	-0,1 (6.6.)	6,5 (10.6.)	
Total precipitation (mm)	51,4	70,5	56,0
Precipitation since January 1st (mm)	167,6	211,9	204,0
Highest precipitation in one day (mm)	16,0 (20.6.)	12,4 (6.6.)	
Number of dry days	11	11	

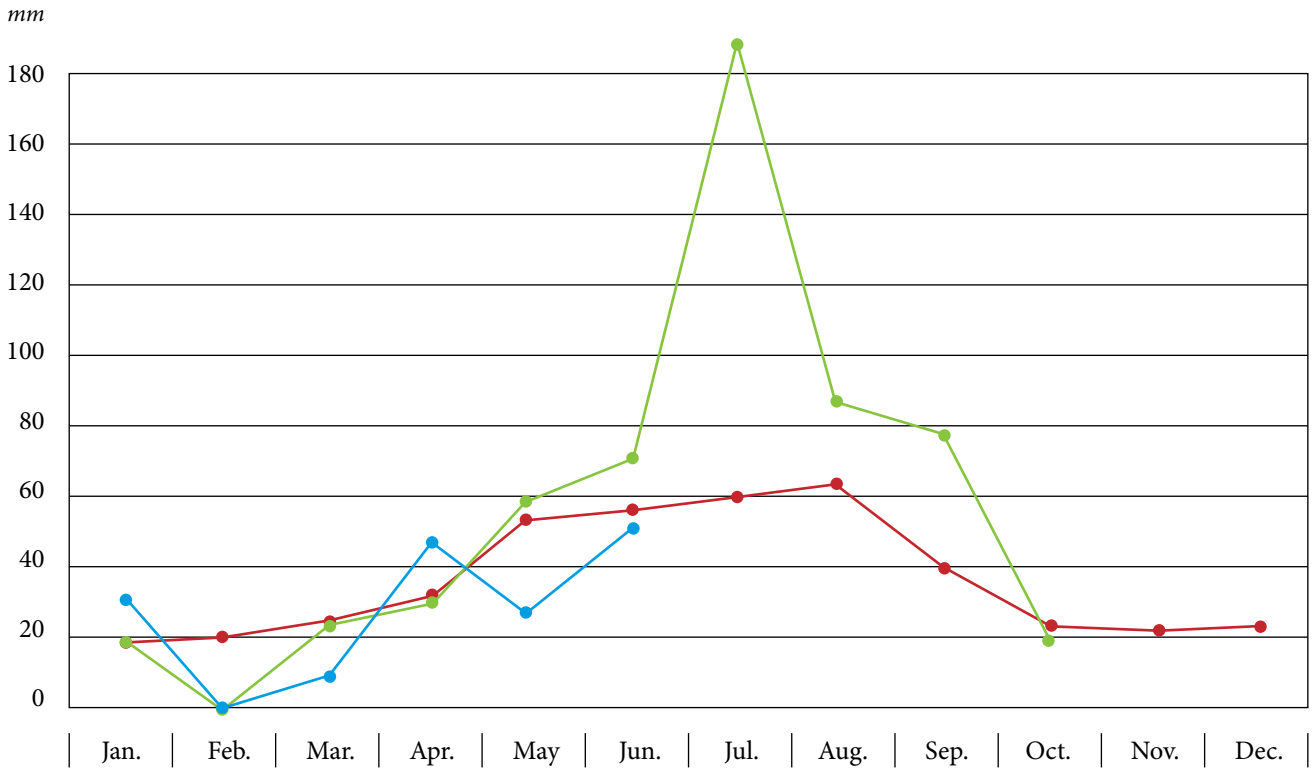
The month of June did not have a beneficial effect on hop growing from the point of view of climatic conditions. Frequent variations of the temperatures in the course of the month, high differences between day and night temperatures and especially the lack of precipitations during first two decades of June influenced negatively the growth and the development of hops in that period.

GROWTH REPORT

In May we predicted an anomalous phenomenon of dying of hop plants on some of the hop gardens. The samples of root clusters were drawn from such a damaged gardens and the tests were carried out. The most probable reason of the dying of the plants is a synergy effect of abnormal weather conditions of previous winter – very high temperatures followed by sudden and strong cooling down and the temperatures deeply below the freezing point. It is necessary to mention also further reasons – inundation of many localities within the harvest and pre harvest periods in previous two years and – last but not least – over-fertilizing of many hop gardens by nitrogen, what leads to higher sensitivity of the hop plants to a complex of mycoses. Unfortunately, the condition of the damaged hop gardens did not improved even in May. The gardens, which were not harmed, especially those cut in a proper time, nevertheless look rather well as far as their growth is concerned. However, in general, majority of the plants do not reach the height of the top of the trellis. The growth of hop vines is delayed by about one week compared to normal. The stretching growth still continues, it was not influenced even by the beginning of flowering.

HEALTH STATE OF HOPS

Although in this year the dispersion of downy mildew of hops (*Pseudoperonospora humuli* Miy et Takah.) is weaker than in previous two years, the conditions for the propagation and development of downy mildew mycelium were fulfilled by the end of the month, in accordance with earlier prognosis. That is why the farmers were recommended to treat the gardens against secondary infection by the fungicides Aliette Bordeaux, Ortiva and eventually Curzate K. Within the second half of the month the high day temperatures created optimal conditions for propagation of red spider mite (*Tetranychus urticae* Koch). The gardens had to be treated by the preparations Nissorun 10 WP and Ortus 5 SC. As far as hop aphid (*Phorodon humuli* Schrank) is concerned, the last (sixth) flyover wave happened by the end of June. Strong to very strong incidence of winged hop aphid was registered on many hop gardens. Following preparations were recommended for the protection of hop gardens against hop aphid: Tepeki, Confidor 70 WG, Confidor 200 OD, Chess 50 WG, and eventually also the preparation Movento 150 OD with acaricide effect.



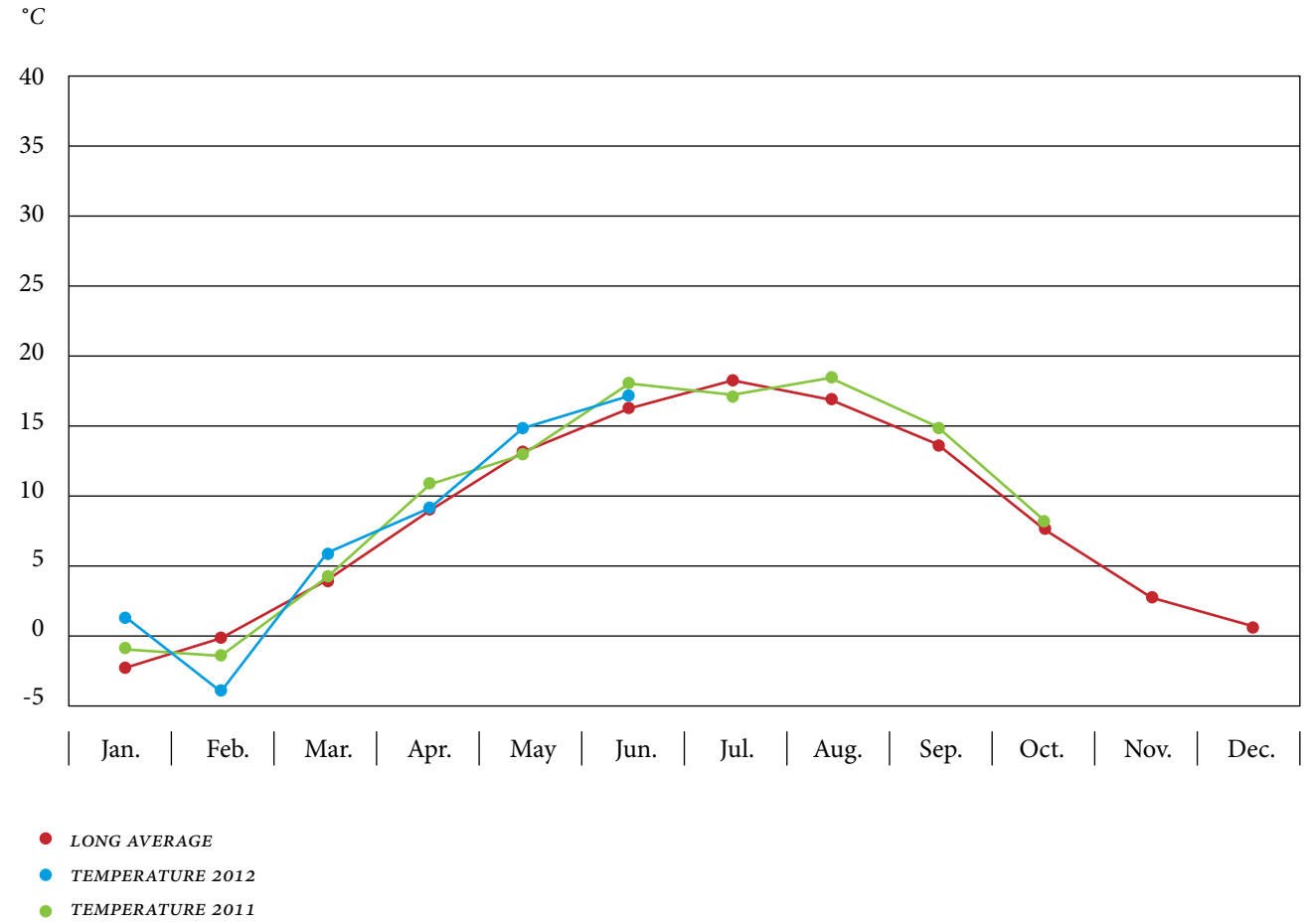


PHOTO REPORT

Hop plants at the end of June

First indication of hop blooming

Saaz, July 2, 2012
Jaroslav Hájek

Chmelařství družstvo Žatec

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2012 – July (Saaz region)

WEATHER CONDITION

Temperature and precipitation	2012	2011	Average 1961 - 1990
Average temperature (°C)	18,8	17,6	18,0
Max. temprerature (°C)	33,4 (27.7.)	29,7 (9.7.)	
Min. temprerature (°C)	5,8 (23.7.)	5,9 (1.7.)	
Total precipitation (mm)	80,8	194,2	59,0
Precipitation since January 1st (mm)	284,4	406,1	263,0
Highest precipitation in one day (mm)	20,6 (2.7.)	58,2 (30.7.)	
Number of dry days	13	14	

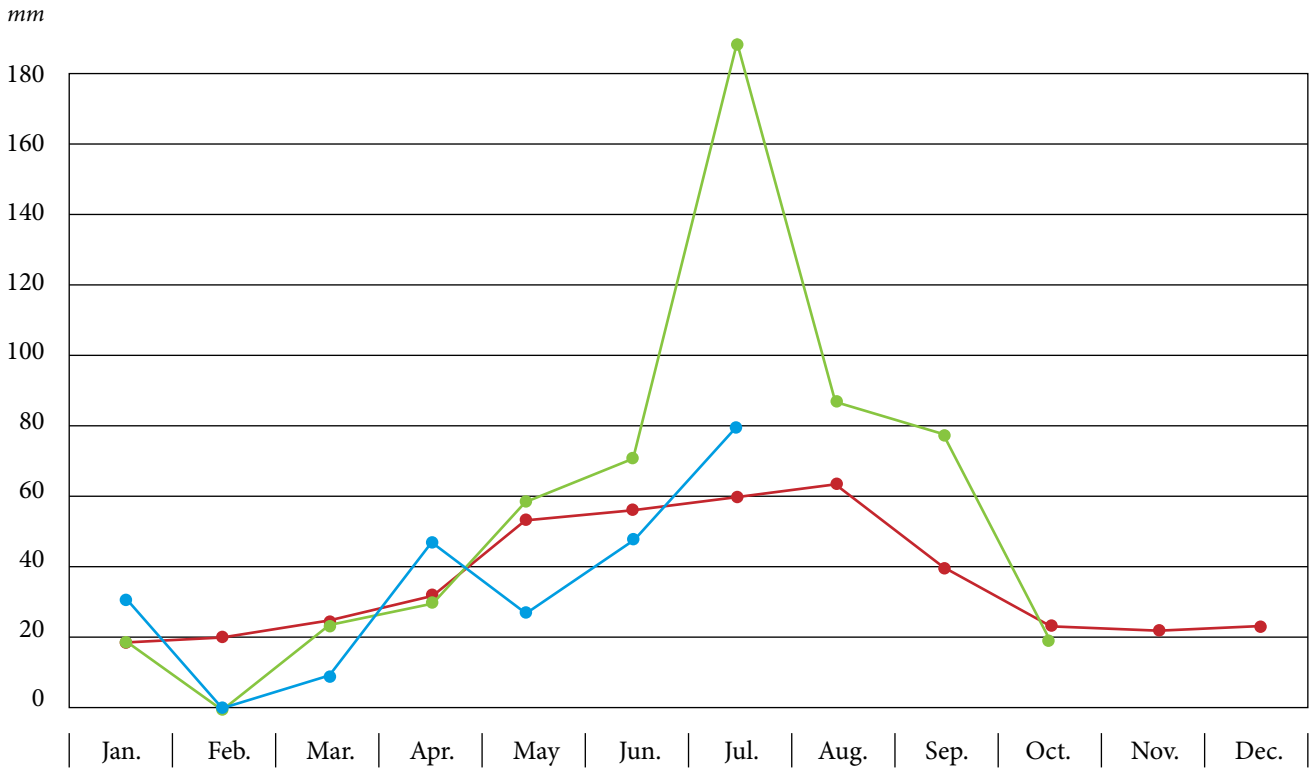
Temperatures and precipitations of this year's July were above long-term average. Big differences between day and night temperatures were recorded similarly to June, especially within the second decade of the month, when it influenced negatively the development of hop plants. Between 25th and 28th of July the maximum day temperatures exceeded the level of 30°C. Out of 18 rainy days only two (1st of July and 2nd of July) surpassed the level of 10 mm.

GROWTH REPORT

This year's vegetation is characterized by unequal growth of individual hop gardens. The reasons of this situation were already described in reports concerning vegetation periods of current crop year. Unevenness is evident not only in botanical habitus and the height of hops, but also in its development. In some hop gardens (usually weaker and of lower height) the hops are already creating cones. In hop gardens of stronger habitus, which reach and sometimes even exceed the height of the hop constructions, the hops are just blossoming. The lateral shoots are in majority of gardens shorter than usually. We consider the first blossoming satisfactory. View to unequal condition of the gardens we estimate that the harvest will start between 18th and 20th August 2012.

HOP PHYTOSANITARY INFORMATION

Practically within the whole month of July the conditions for growth and spreading of downy mildew mycelium were favourable. The highest figures were recorded between 4th of July to 9th of July, when measured values exceeded the critical limit more than two times. Within the first and the third decade it was therefore indispensable to carry out the third eventually the fourth spraying against secondary infection. In spite of constricted list of preparations approved as agent against downy mildew of hops (*Pseudoperonospora humuli* Miy et Takah.), the hop cultures are healthy. View to already finished overfly of hop aphid in this year (the third decade of June) there were no problems with this plant pest in July. Current course of the weather is nevertheless optimal for dissemination of red spider mite (*Tetranychus urticae* Koch). It is therefore necessary to carry out regular monitoring of this pest and the gardens, where the occurrence of red spider mite exceeds the count of five exemplars per leaf, it is necessary to treat with the preparation Ortus 5 SC.



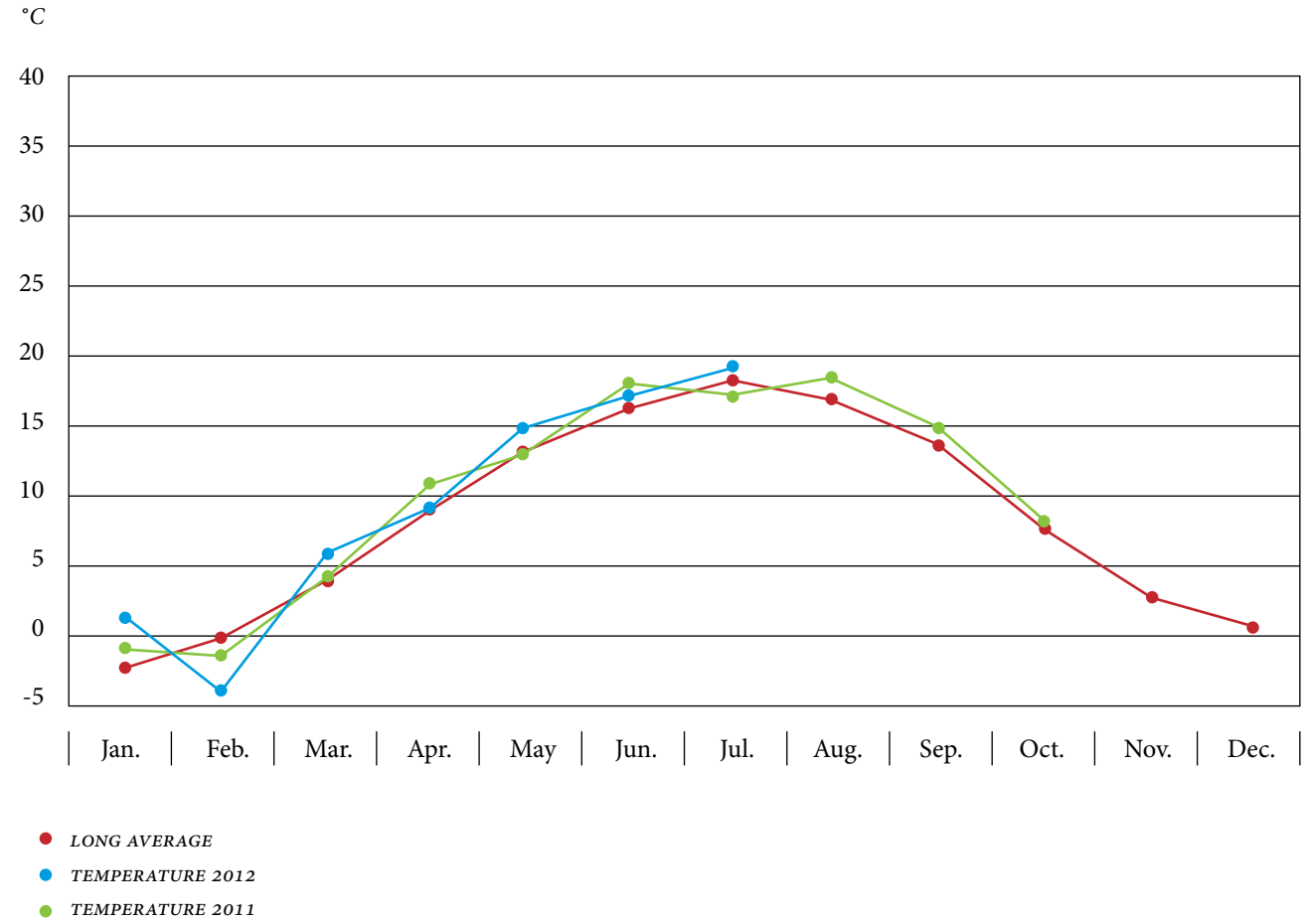


PHOTO REPORT

Hop garden at the end of July

Hop cones and blossom on one plant

Saaz, August 1, 2012
Jaroslav Hájek

Chmelařství družstvo Žatec

Chmelařstvi Cooperative Žatec

Hop report - Saaz fine aroma hops

Crop 2012 – August (Saaz region)

WEATHER CONDITION

Temperature and precipitation	2012	2011	Average 1961 - 1990
Average temperature (°C)	19,0	18,3	17,4
Max. temprerature (°C)	39,6 (20.8.)	32,0 (26.8.)	
Min. temprerature (°C)	4,7 (14.8.)	6,1 (31.8.)	
Total precipitation (mm)	48,2	89,6	62,0
Precipitation since January 1st (mm)	296,6	495,7	263,0
Highest precipitation in one day (mm)	15,0 (31.8.)	25,0 (4.8.)	
Number of dry days	18	16	

The precipitations recorded in August were very poor this year; on the other side the temperatures exceeded the level of long-term average substantially. Enormous heats within the period between 18th and 25th August were particularly unpleasant. In some localities the temperature exceeded even 40°C. As far as the precipitations are concerned, approx. 50% of rains have fallen on 30th and 31st of August, when in already could not have any influence to the growth of hops.

GROWTH REPORT

Climatic conditions in August intensified adverse weather character of almost whole vegetation period of this year. The lack of precipitation and high temperatures caused insufficient growth of hop cones, the hop plants did not iniciate the second blossoming (if somewhere some sporadic new blooms appeared, they got dry due to high temperatures) and in some localities even the whole plants have withered. It influenced negatively further development of hops. After first days of the harvest we estimate the yield of hops deeply below the average level of previous three years. The yields of Saaz semi-early red-bine hops should be around 0,85 tons per hectare, what represents the decrease of 37% in comparison with the year 2011.

The hop-picking started in majority of farms within the period between 18th and 20th August 2012. The conditions during harvest were not favourable due to drought and high temperatures. The hop cones were not fully developed nor closed and the picking was difficult. View to low yields the harvest went on rather quickly, so that the harvesting of Saaz semi-early red-bine hops was finished until the end of August, in majority of cases. Already harvested hops is of nice colour, with low percentage of hops admixtures and the contents of alpha-bitter substances will be also above long-term average (3,4%).

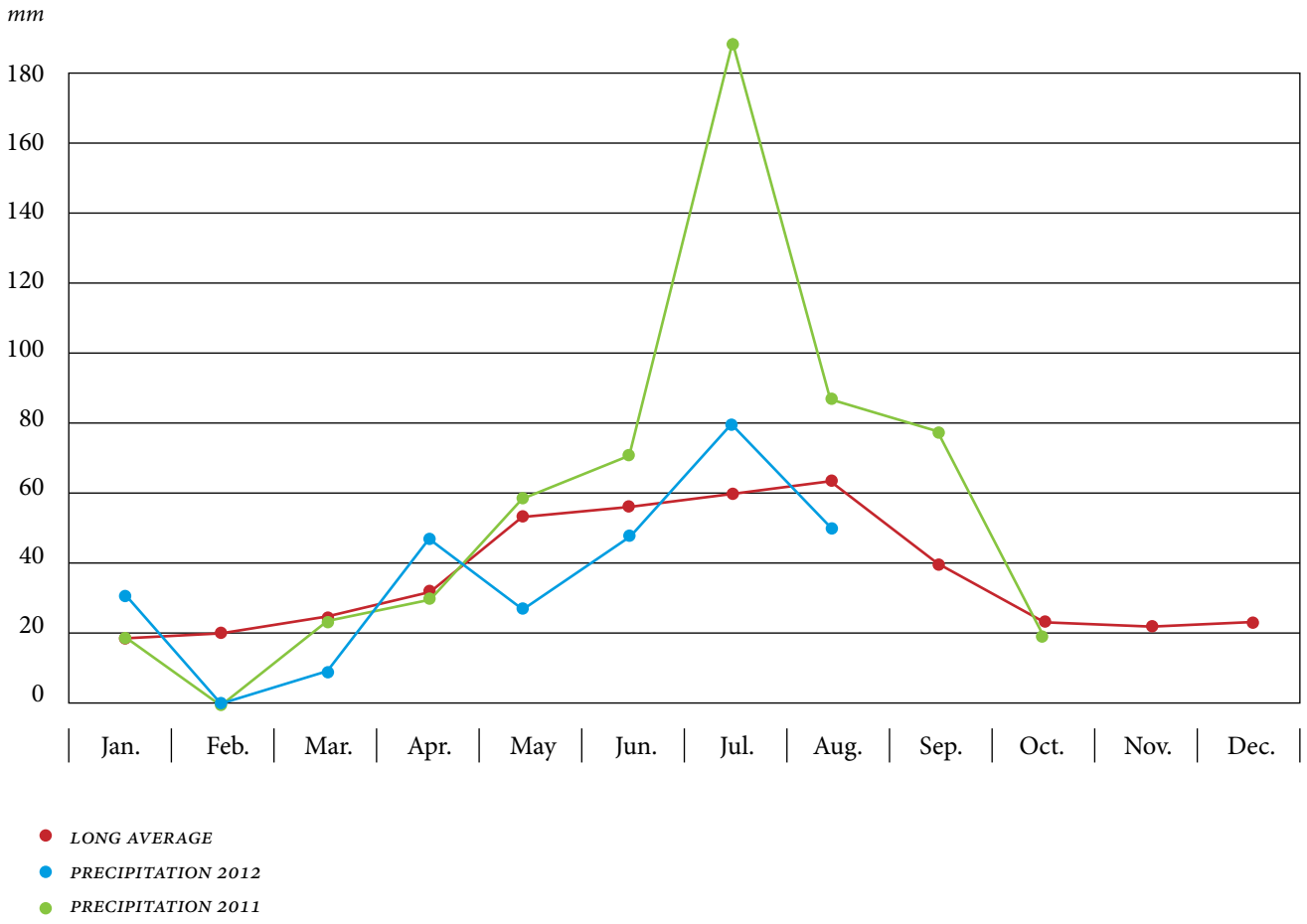
HOP PHYTOSANITARY INFORMATION

August of 2012 was very hard from the point of view of protection of hops against red spider mite, which had very good conditions for its fast reproduction, thanks to weather development. Moreover, the registration of preparation Omite 30W was finished. This preparation was very effective against mentioned pest just before the harvest view to short protective period. Although on some localities the hops was damaged by red spider mite, in general we can state, that overall health condition of hops is good.

OTHER INFORMATION - THE HOP GARDEN ACREAGE IN THE CZECH REPUBLIC IN 2012

Variety	Saaz Region (ha)	Auscha Region (ha)	Trschitz Region (ha)	Czech Republic (ha)
Saaz semi-early red-bine hops	3 018	399	389	3 806
Sládek	163	18	61	242
Premiant	138	44	47	229
Agnus	50	3	0	53
Bor	3	2	0	5
Bohemie	1	0	0	1
Saaz Late	7	0	2	9
Harmonie	1	0	0	1
Rubín	1	0	0	1
Vital	2	0	0	2
Others	16	0	1	17
Total	**3 400**	**466**	**500**	**4366**

Source: Central Institute for Supervising and Testing in Agriculturespecified the hop gardens acreage to be harvested in 2012



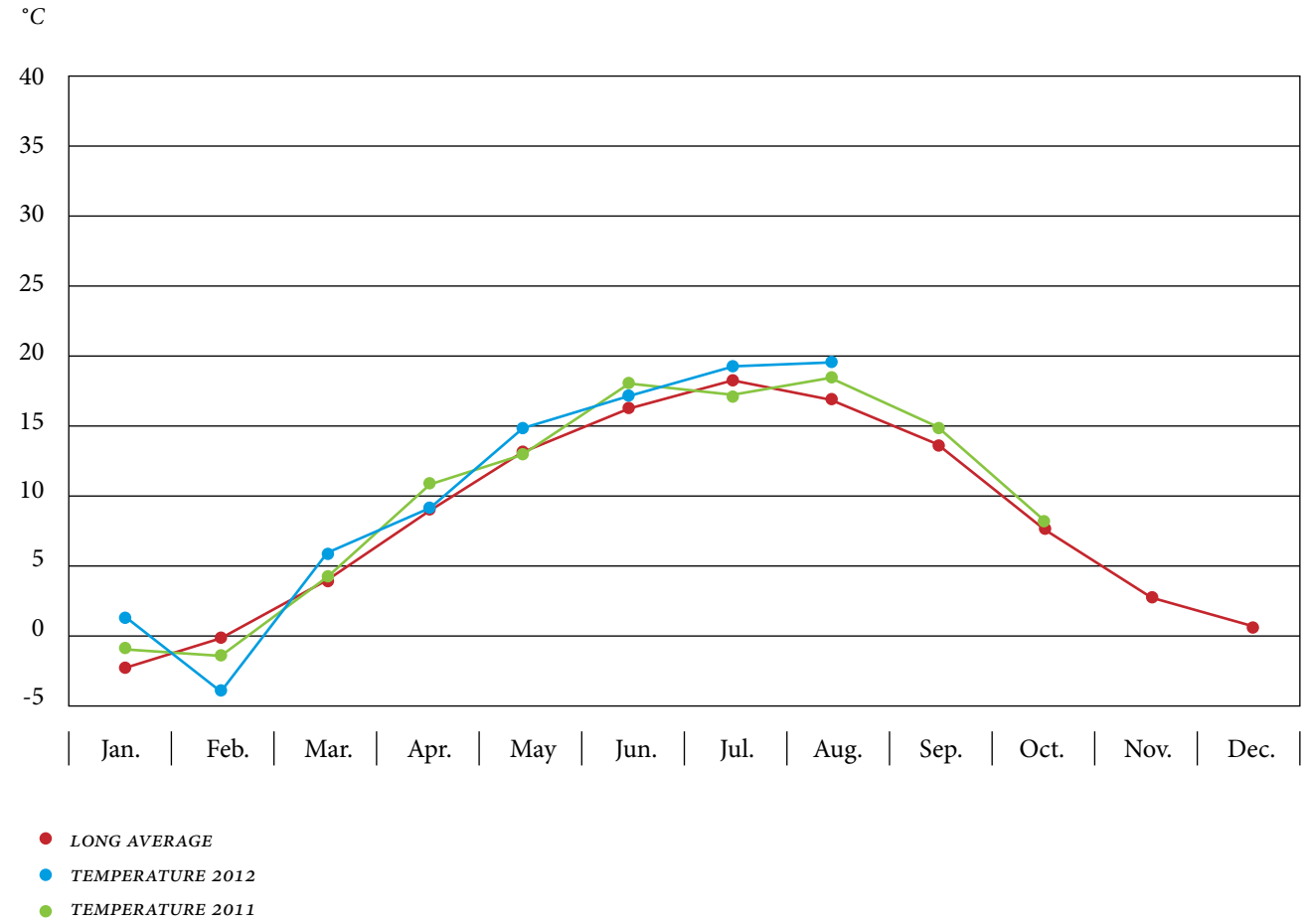


PHOTO REPORT

Hop harvest 2012 at the picking machine

Burned tops of hop plants due to tropical temperatures and sunshine

Saaz, September 1, 2012
Jaroslav Hájek

Chmelařství družstvo Žatec

Chmelařstvi Cooperative Žatec