



Hop report

1/2022

January-April 2022 (Saaz region)

1. Weather condition in 1st trimester 2022

Temperature (°C)	2022	2021	30 years aver.	Diff. 22-21
January	2,8	0,53	-0,7	+2,27
February	4,4	-1,36	0,4	+5,76
March	3,3	4,65	4,3	-1,00
Summary 1 th trimestr	10,5	3,82	4,0	-7,03

Precipitation (mm)	2022	2021	30 years aver	Diff. 22-21
January	13,8	39,6	21,5	-25,8
February	16,2	44,4	20,0	-28,2
March	12,0	18,2	25,9	-6,2
Summary 1 th trimestr	42,0	102,2	67,4	-60,2

Long-term average of the air temperatures and summary of the precipitation during the period 1981 – 2010 in Zatec.

The weather in the first trimester of 2022 was characterized by higher average month temperatures in January and February, in comparison to the previous year as well as to the long term average. Paradoxically, the average temperature in March was lower than in February and it approximated to the level of January. This situation was caused by very low temperatures during the first half of the month. E.g, on March 13 the minimum temperature dropped to -10°C .

Precipitation during the first trimester 2022 were below the level of the long-term average as well as below the level of 2021. It concerns all three months of the first trimester.

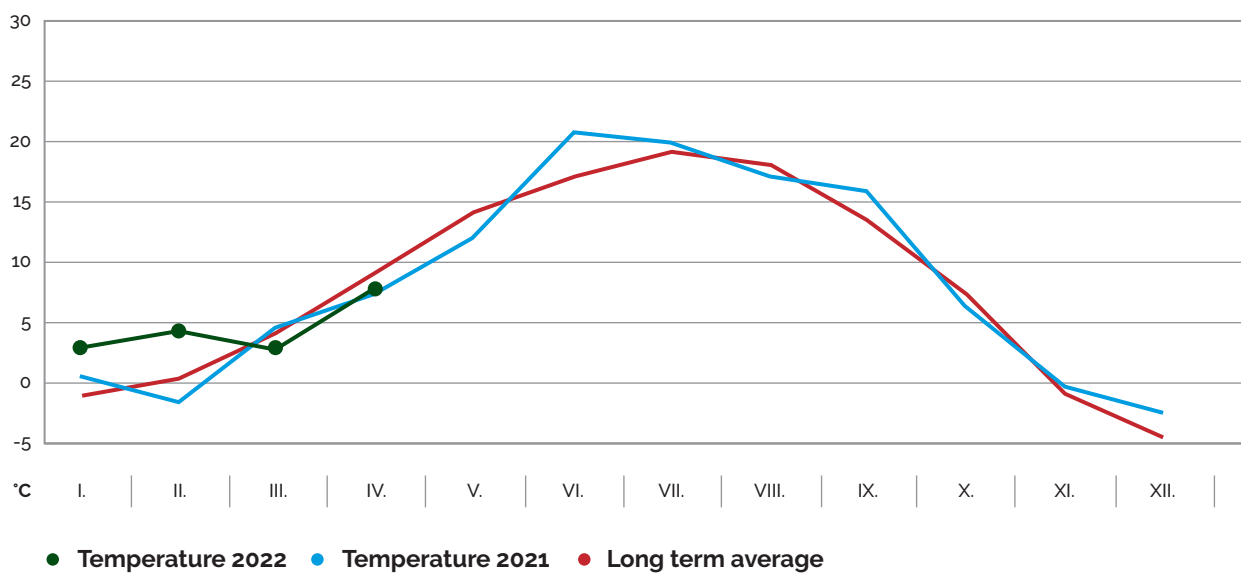
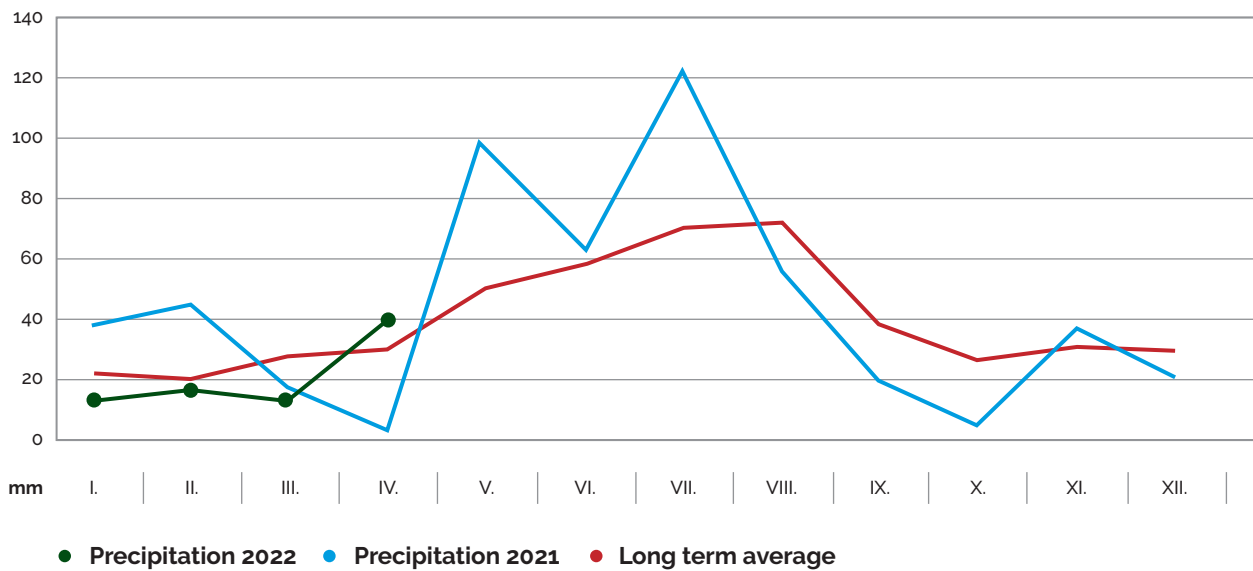
The nature of the weather enabled a normal start of the field works in most areas. The situation was similar in hop gardens. The spring works in hop gardens started in March, when they were primarily harrowed. At the end of March the hop growers started cutting hybrid varieties of hops.

2. Weather conditions in April

Temperature & precipitation	2022	2021	30 year aver.
Average temperature (°C)	7,4	7,17	9,1
Precipitation (mm)	39,8	6,8	30,7
Total precipitation since 1. 1.	81	109	98,1
Max. temperature (°C)	21,1 (14 .4.)	23,77	
Min. temperature (°C)	-4,4 (20 .4.)	-4,6	
Max. precipitation (mm)	17 (19. 4.)	2,4	
Number of dry days	17	23	

This year's April was below average in temperature, similarly to previous year. Also the maximum and minimum temperatures were recorded on the level of April, 2021. The feeling of the temperature was decreased by the cold wind, which also significantly drained the soil. In terms of precipitation we consider this April as slightly above-average. The total sum of the precipitation was considerably influenced by rain on April 24, 2022, when 17 mm of the water has fallen.

Precipitation and temperature graphs



3. Spring works and growth report

The nature of the weather enabled the growers to carry out spring works in hop gardens at the usual time. Weather without precipitation then allowed the growers to cut hops as usual. The pruning of hops was smoothly followed by the stringing of training wires and their embedding. Works on hop gardens were predominantly carried by the foreign workers. However, cold weather negatively affected the growth of hops. The hop plants did not grow due to very low temperatures. The time difference in hops pruning has therefore disappeared and it is assumed that the hops will grow all at once, independently of the date of the cut. It will increase the demand on the number of temporary workers. According to the state of vegetation the training of hops is estimated between May 6 and May 10, 2022.

4. Health condition of hops

Due to the climatic conditions some gardens were treated only against alfalfa snout weevil (*Otiorhynchus ligustri* L.), which has been found out on the hop gardens despite the low temperatures. The growers have applied the spraying by Actara 25 WG, which was authorized by the Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ) for plant protection for limited and controlled use. At the same time the pest infestation and leaf eating by the hemp flea beetle (*Psylliodes attenuata* Koch) was recorded on earlier pruned hop gardens. Protective action was recommended on relevant gardens.

The area of hop gardens to be harvested up to 30. 4. 2022

Variety	Saaz	Auscha	Terschitz	Czech Rep..
Saaz hops	3 235,8	406,4	479,4	4 121,6
Agnus	57,9	11,1	1,5	70,5
Blues	0,6	0	0	0,6
Bohemie	0,4	0	0,3	1,3
Boomerang	0,3	0	0	0,3
Country	0,8	0	0	0,8
Gaia	0,3	0	0	0,3
Hallertauer Magnum	2,7	0	0	2,7
Harmonie	6,8	0	0	0,4
Kazbek	13,6	4,8	3,9	22,2
Most	1	0	0	1
Perle	1,4	0	0	1,4
Premiant	127,0	36,6	48,8	212,8
Rubin	1	0	0	1
Saaz Brilliant	0,8	0	0	0,8
Saaz Comfort	0,4	0	0	0,4
Saaz Late	30,3	0	1,7	32,1
Saaz Shine	0,8	0	0	0,8
Saaz Special	41,2	0	0	41,2
Sládek	257,2	52,3	86	395,5
Vital	3,1	0,8	0	3,9
Others	8,7	0	0	8,7
Total	3 792,4	512	622,3	4 926,7

Source: ÚKZÚZ

4. Photo gallery



hop garden view



hop row view



hop plant



spring cultivation

Žatec May 4, 2022
Ing. Jaroslav Hájek



Hop report

2/2022

May 2022 (Saaz region)

2. Weather conditions in May

Temperature & precipitation	2022	2021	30 year aver.
Average temperature (°C)	15,4	12,13	14,2
Precipitation (mm)	29,8	97,4	52,0
Total precipitation since 1. 1.	111,6	206,4	150,1
Max. temperature (°C)	30,1 (20. 5.)	29,36 (10. 5.)	
Min. temperature (°C)	1,6 (1. 5.)	1,13 (8. 5.)	
Max. precipitation (mm)	11,9 (20. 5.)	20,8 (13. 5.)	
Number of dry days	21	11	

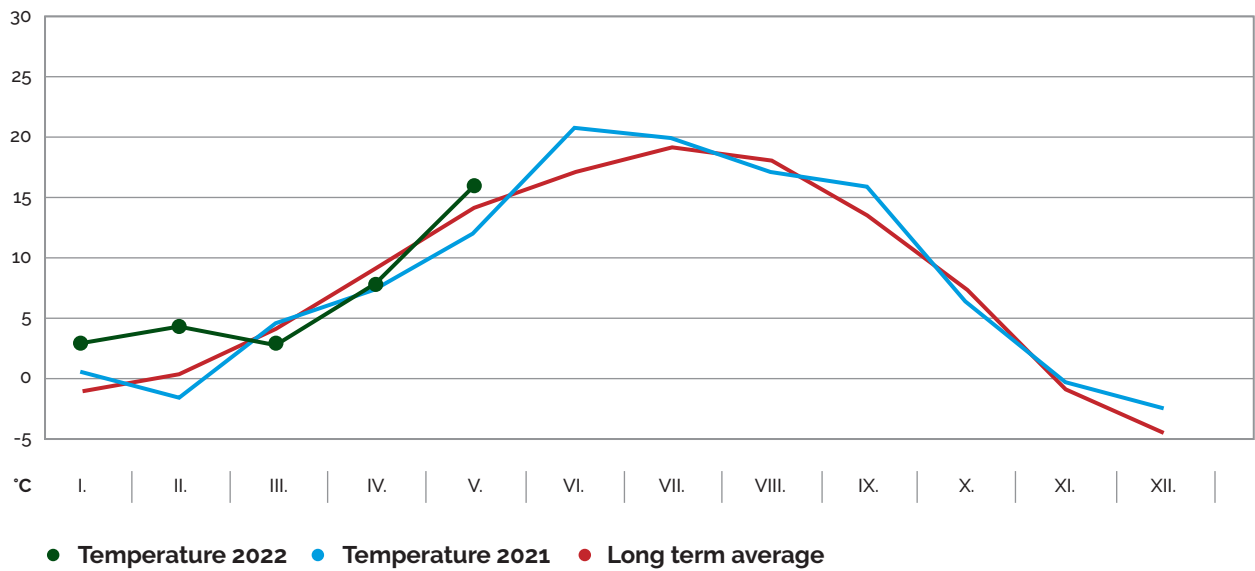
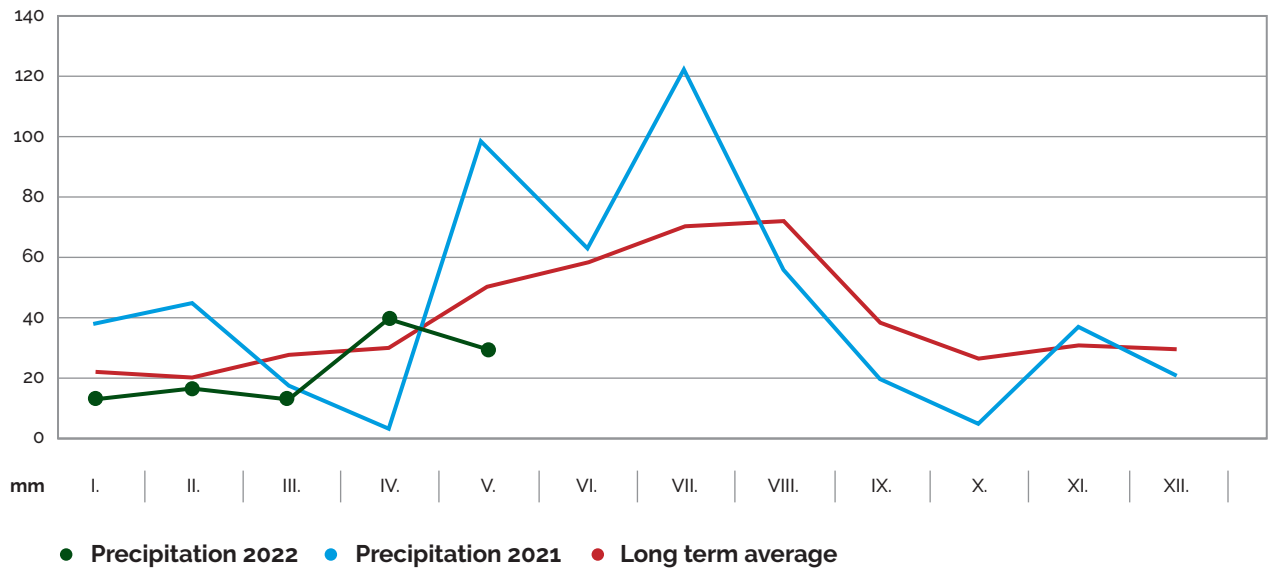
The average temperature in May 2022 was above normal, although the minimum temperatures in the first decade of the month were relatively low. The temperatures in some localities even decreased below freezing point. The difference of the average temperature in May 2022 compared to the long-term average was + 1,2 °C and compared to 2021 then +2,27 °C. Maximum temperatures than ranged between 20 °C and 25 °C. The temperature recorded on May 20, 2022, i.e. 30,1 °C, was simply an exception.

In terms of precipitation, this May was very bad compared to last year and reached only 30,6 % of the rainfalls of previous year. Compared to the long-term average it reached 57,3 %. Water regime of this year we consider very bad.

2. Growth report

Colder weather during the first week of May has influenced negatively the growth of hops. Due to the fact that hops grew very slowly at the beginning of May, the growers had to wait to the beginning of the training of the hops. The situation changed with the warming on May 6, when the hops started to grow intensively and the training could start on the same day. Thanks to the sufficient number of the temporary workers the training was successful and finished by the end of May. At the end of the month the hops were taller than average on majority of hop gardens and was four to five days ahead the normal development.

Precipitation and temperature graphs



3. Health condition of hops

Due to the nature of the weather in May, it was recommended to carry out a protective intervention against downy mildew of hops (*Pseudoperonospora humuli* Miy et Takah.) with Alliette 80 WG immediately after the training of the hops was finished. In this year a very strong spring occurrence of hop aphid (*Phorodon humuli* Schrank) was recorded on host plants. That is why a close monitoring was recommended and – where critical number was reached – the treatment with the preparations Teppeki, Afinto or Sivato Prime should have been effected. Warm weather in the second half of May accelerated the population dynamics of the red spider mite (*Tetranychus urticae* Koch). Therefore, consistent monitoring was recommended also here and where a critical number of 5 mites per leaf in the lower floors of the plant was reached, the treatment with Nissorun 10 WP was performed. On the areas of hop gardens where the incidence of alfalfa snout weevil (*Otiorrhynchus sulcatus* F.) or the spring generation of flea beetle (*Psylliodes attenuata* Koch) was found, the Actara 25 WG preparation was applied.

4. Photo gallery



hop garden view 31.5.2022



hop garden view 31.5.2021



hop garden row 2022



start of shootings 2022

Žatec June 2, 2022
Ing. Jaroslav Hájek



Hop report

3/2022

June 2022 (Saaz region)

1. Weather conditions in June

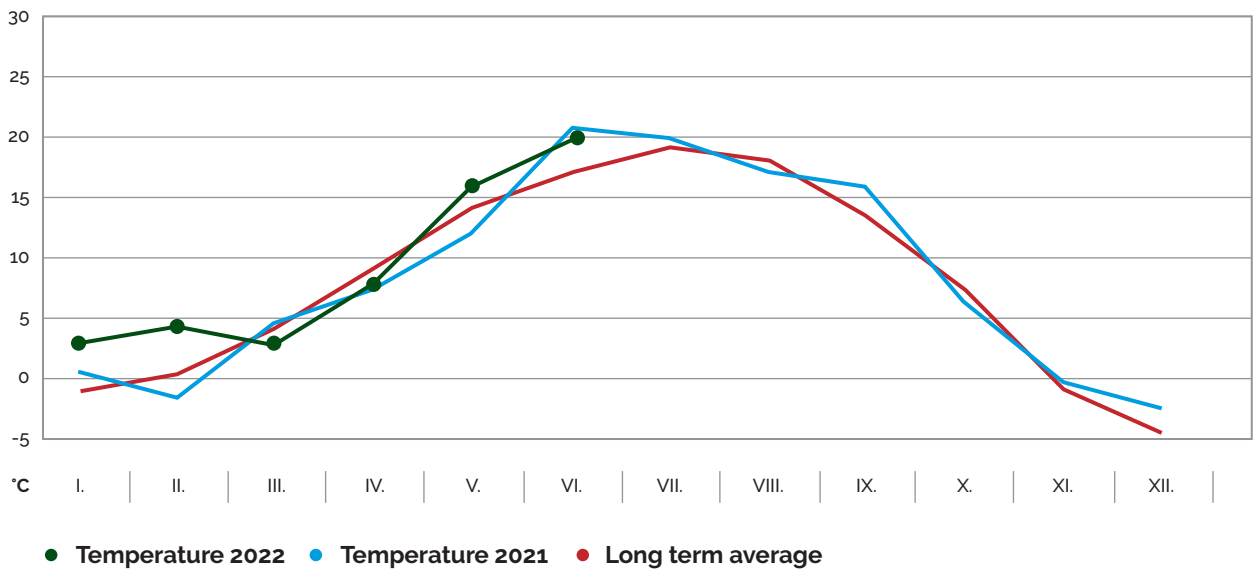
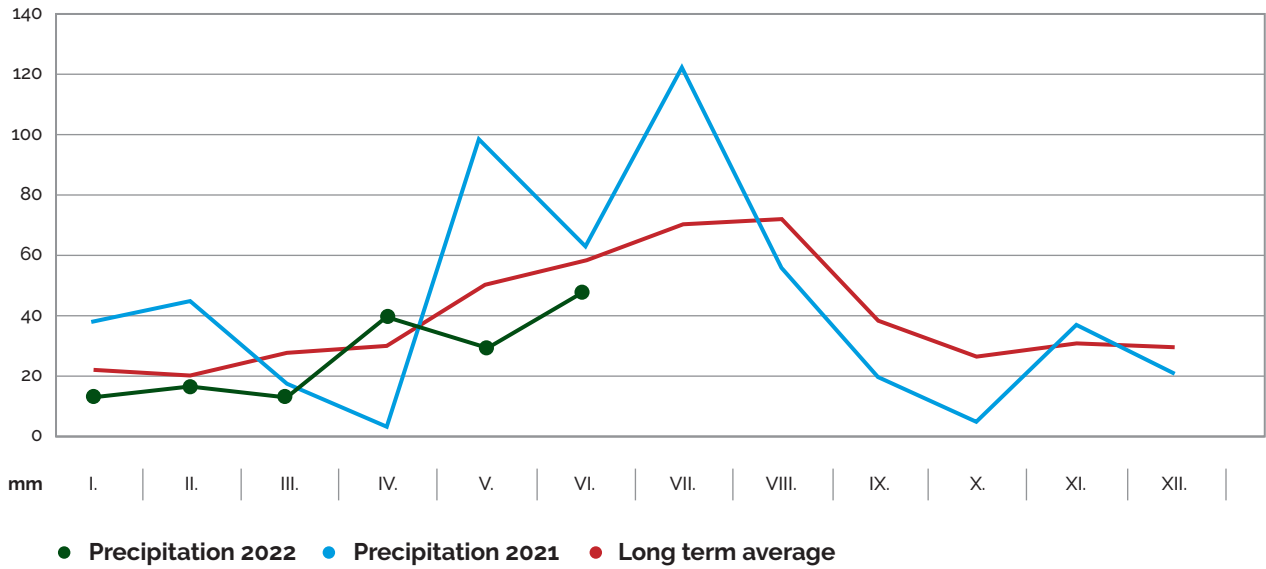
Temperature & precipitation	2022	2021	30 year averr
Average temperature (°C)	19,9	20,3	17,0
Precipitation (mm)	47,0	64,6	59,1
Total precipitation since 1. 1.	158,6	271,0	209,2
Max. temperature (°C)	37,3 (19. 6.)	37,7 (19. 6.)	
Min. temperature (°C)	4,0 (3. 6.)	1,3 (1. 6.)	
Max. precipitation (mm)	21,2 (27. 6.)	20,6 (29. 6.)	
Number of dry days	16	18	

Very dry weather prevailed throughout the period of the first two decades of June. It was not until the end of the month that in some places there appeared heavy rainfalls of stormy character. In some locations (Zlonice, Šlapanice, Senice na Hané) the hop gardens were damaged by hailstorms. Some municipalities in the Auscha region (Radovesice, Vojkovice, and Dušníky) were affected by rains which brought over 100 mm of the precipitation during three days and the soil there became heavily soaked. The temperatures during the first two decades of the month were at the normal level, then in the third decade there came a significant warming and the daily temperatures exceeded 30°C. This warming had a negative effect on the development of hops.

2. Growth report

The growth and development of hops was very good until the end of the second decade of June. High temperatures on June 19 and June 20, which ranged from 37°C to 39°C slowed down the stretching growth of plants. On some hop gardens the stretching growth completely stopped. For this reason part of the hops will not reach the height of the trellis. Given the current climatic conditions, especially high temperatures, we do not expect a significant continuation of the stretching growth. The hops started to flower at the beginning of the third decade. At the end of month the cones of hops could already be seen on some of the hop plants where early pruning had been done.

Precipitation and temperature graphs



3. Health condition of hops

The first treatment against the secondary infection of downy mildew of hops (*Pseudoperonospora humuli* Miy et Takah.) was carried out within the period between June 21 and June 30, 2022. The preparations Bellis, Orvego and/or Ortiva were used. It was recommended to treat the hops with the curative fungicide Cerial Flex on hop gardens with the occurrence of the spike-like shoots.

Hop aphids (*Phorodon humuli* Schrank) - due to the early occurrence of this pest in this year the hop aphid was eliminated sooner. Taking into account the development stage of the hops it was recommended to use Movento 100 SC at the turn of June and July, so that the active substance is sufficiently distributed through the conductive tissues of plants.

Red spider mites (*Tetranychus urticae* Koch) – warm and dry weather in the second half of the month was optimal for the development of this mite. Consistent monitoring was carried out and where a critical number was reached (5 mites per leaf) the treatment was performed with Nissorun 10 WP and/or Ortus 5SC. At the end of the month the product Movento 100 SC was also used in some locations. The rules of the use against red spider mite are the same as those against the hop aphid.

4. Photo gallery



hop garden view 2021



hop garden view 2022



blooming of hops



first hop cones

Žatec July 1, 2022
Ing. Jaroslav Hájek



Hop report

4/2022

July 2022 (Saaz region)

1. Weather conditions in June

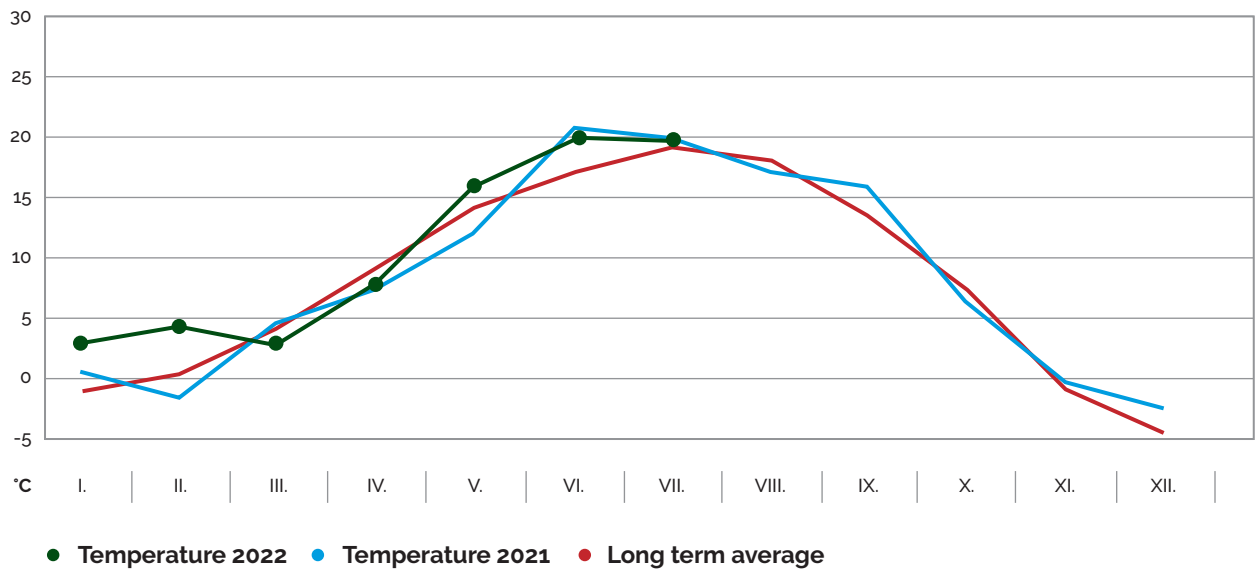
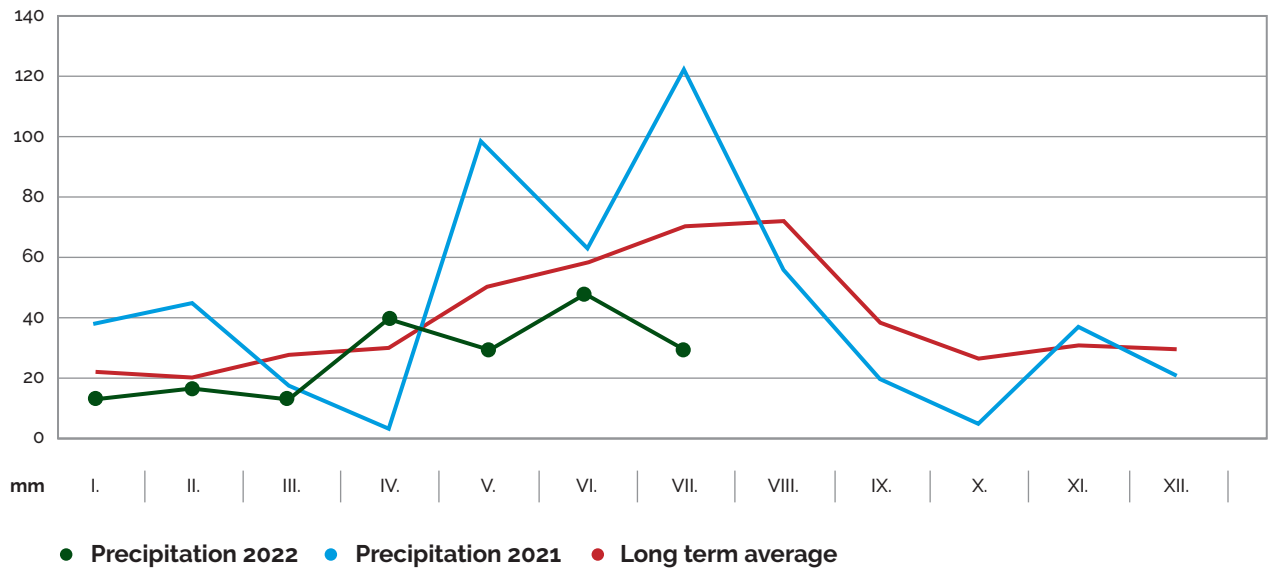
Temperature & precipitation	2022	2021	30 year averr
Average temperature (°C)	19,8	19,9	19,0
Precipitation (mm)	27,7	123,2	69,4
Total precipitation since 1. 1.	186,3	394,2	278,6
Max. temperature (°C)	35,9 (20. 7.)	33,3 (6. 7.)	
Min. temperature (°C)	5,3 (17. 7.)	10,0 (21. 7.)	
Max. precipitation (mm)	5,2 (27. 7.)	59,0 (13. 7.)	
Number of dry days	18	15	

The development of climatic conditions in July was very unfavourable for hops. The average monthly temperature exceeded significantly the long-term average thanks to very high maximum temperature levels during the third decade of the month. The maximum daily temperatures did not decrease below 30°C between July 18, 2022 and July 25, 2022. The amount of precipitation in the Saaz region was very low, in July 2022 it reached only 47 % of long-term average.

2. Growth report

The phase of the elongation growth of Saaz semi-early red-bine hops was practically zero. The elongation growth persisted only in hybrid varieties. The habitus of the plants is weaker in this year, on some hop gardens the plants are pointed and do not reach the height of the trellis. Following the given development of hops, the hops started to flower very early this year, as we already announced in the vegetation report for June. Flowering is relatively weak. Most of the hop gardens are already in the stage of cones creation. Based on the current state of hops a below-average harvest can be assumed.

Precipitation and temperature graphs



3. Health condition of hops

The preparation Movento 100 SC was applied this year at the end of June and beginning of July. The protection of hops against the hop aphid (*Phorodon humuli* Schrank) was therefore solved. Due to the optimal climatic conditions for the reproduction of the red spider mite it is necessary to give especial attention to this pest. The preparations Ortus 5SC and Vertimec 1,8 EC are available for use against the red spider mite (*Tetranychus urticae* Koch). Wetter weather at the beginning of July was optimal for the development of downy mildew of hops (*Pseudoperonospora humuli* Miy et Takah.). The hop gardens were therefore treated with the preparations Bellis, Orvego and/or Ortiva.

4. Photo gallery



hop garden view



hop row view



hop cones



hop cone detail

Žatec, August 1, 2022
Ing. Jaroslav Hájek



Hop report

5/2022

August 2022 (Saaz region)

1. Weather conditions in August

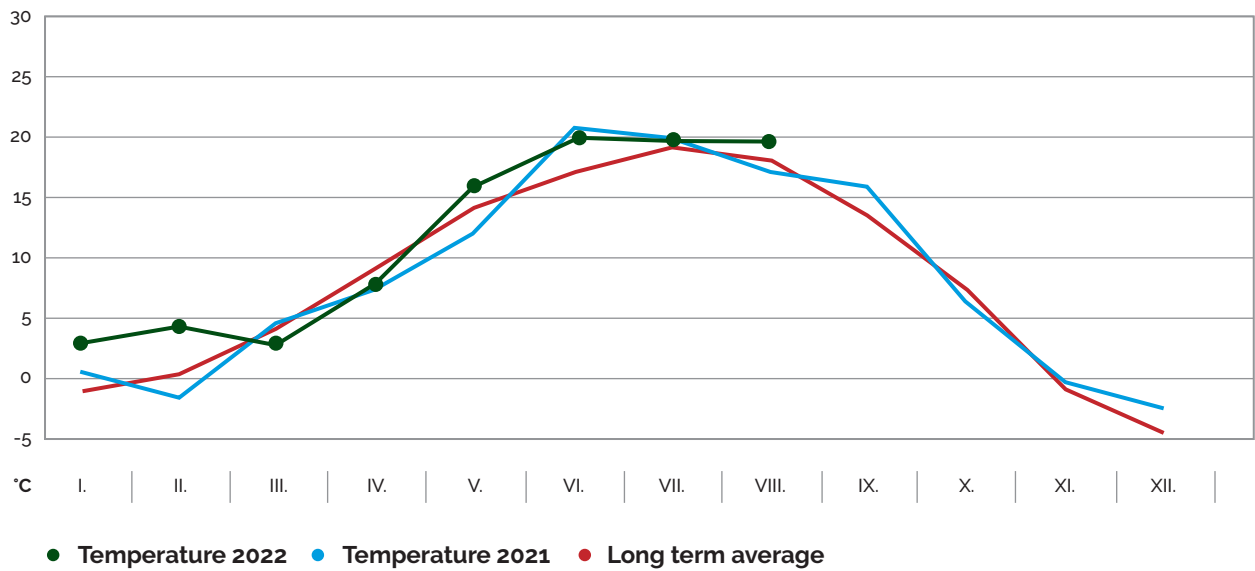
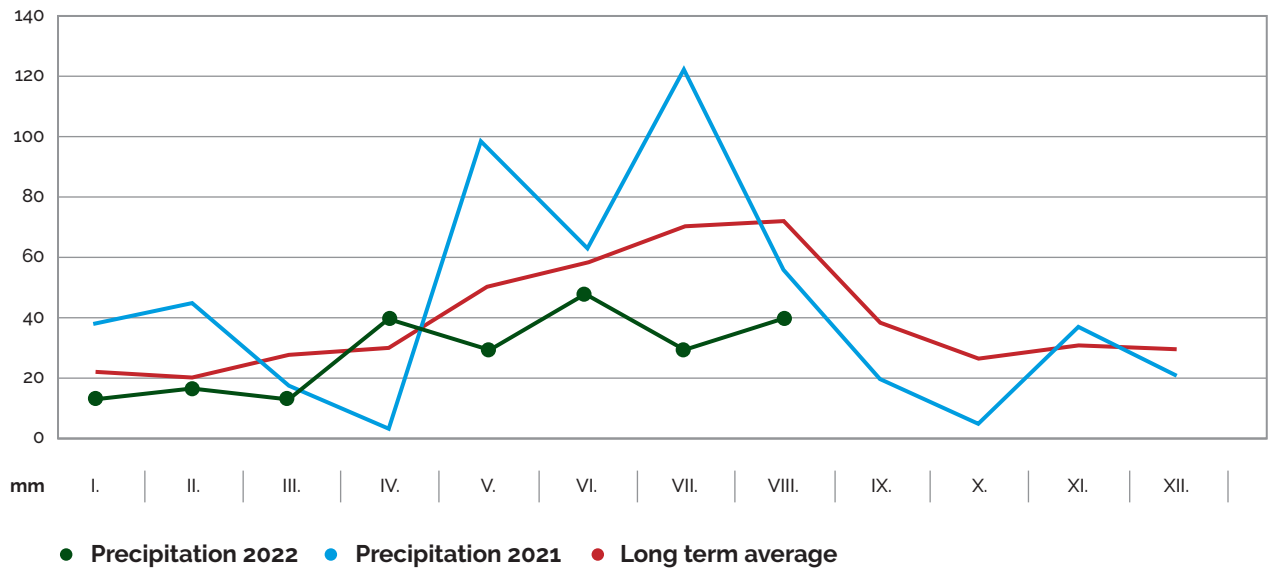
Temperature & precipitation	2022	2021	30 year averr
Average temperature (°C)	19,8	17,5	19,8
Precipitation (mm)	40,5	56,6	70,8
Total precipitation since 1. 1.	268,5	450,8	349,4
Max. temperature (°C)	34,8 (4. 8.)	33,7 (13. 8.)	
Min. temperature (°C)	6,5 (7. 8.)	6,3 (25. 8.)	
Max. precipitation (mm)	14 (20. 8.)	12,2 (1. 8.)	
Number of dry days	21	13	

In August 2022 the rains came at the beginning of the third decade. The rains at the end of the month were predominantly of the stormy character and so they were different in different localities. E.g. the precipitations in Žatec (Saaz) were 19 mm, but in Kozlovice (Úštěk – Auscha region) they reached 80 mm at the same day. The rains caused worries to growers during the harvest. The average monthly temperature in August was 19,8°C and so it exceeded the long-term average by 1,5 °C.

2. Growth report

The condition of hops in terms of habit did not improve since previous month and it remains weak. The deployment of flowers, influenced by high temperatures, was very bad – part of the flowers did not even develop. The harvest started by individual growers in the time horizon from August 13, to August 25, 2022. Majority of the growers decided to start the harvest between August 19 and August 21, 2022. Based on the assessment of the state of the hops the harvest is expected deeply below average. The first results of the laboratory tests of the content of alpha acids in Saaz Semi-early Red-bine hops show also below-average values. Concerning hybrid varieties, we still do not have sufficient data for a reliable assessment, but according to the state of growth we expect that the decrease of the alpha bitter compounds should not be so expressive like in case of Saaz Semi-early Red-bine hops variety.

Precipitation and temperature graphs



3. Health condition of hops

The health state of hops was relatively good also in August. The main problem was to maintain good health state of hops view to the occurrence of red spider mite (*Tetranychus urticae* Koch).

4. Other information

The ÚKZÚZ – Central Institute for Supervising and Testing in Agriculture in Saaz specified the hop gardens acreage to be harvested in 2022. Current structure of individual varieties is shown by the table.

The area of hop gardens to be harvested up to 20. 8. 2022

Variety	Saaz	Auscha	Terschitz	Czech Rep..
Saaz hops	3 244,0	413,0	478,6	4 135,6
Agnus	57,9	11,1	1,5	70,5
Blues	0,6	0	0	0,6
Bohemie	0,4	0	1,0	1,3
Boomerang	0,3	0	0	0,3
Country	0,8	0	0	0,8
Gaia	0,3	0	0	0,3
Hallertauer Magnum	2,7	0	0	2,7
Harmonie	6,8	0	0	6,8
Kazbek	13,6	4,8	3,9	22,2
Most	1	0	0	1
Perle	1,4	0	0	1,4
Premiant	127,4	36,6	48,8	212,8
Rubin	1	0	0	1
Saaz Brilliant	0,8	0	0	0,8
Saaz Comfort	0,4	0	0	0,4
Saaz Late	30,3	0	1,7	32,1
Saaz Shine	0,8	0	0	0,8
Saaz Special	41,2	0	0	41,2
Sládek	257,2	54,2	86,0	397,4
Vital	3,1	0,8	0	3,9
Others	8,7	0	0	8,7
Total	3 800,7	520,4	621,4	4 942,6

5. Photo gallery



hop garden view



hop row view



hop plant detail



hop cones growth

Žatec, September 1, 2022
Ing. Jaroslav Hájek