

SUPPLEMENTARY MATERIAL RELATED TO THE ARTICLE

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Volatile compounds and selected qualitative parameters of apples from organic and integrated farming – can we evaluate the difference?

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**DETAILED INFORMATION ON CLIMATIC CONDITIONS
TAKEN FROM THE 2015 AND 2016 ENVIRONMENTAL REPORTS
OF THE MINISTRY OF THE ENVIRONMENT OF THE CZECH REPUBLIC**

According to the Report on the environment of the Czech Republic 2015 [1], the year 2015 was exceptionally above normal in terms of temperature in the Czech Republic, the average annual temperature of 9.4 °C was 1.9 °C higher than the 1961–1990 normal (According to Report on the environment of the Czech Republic 2016 [2], record 26 tropical days were measured in 2015, compared to the normal from 1961–1990, which is 5 tropical days per year). In terms of rainfall, 2015 was strongly below normal, the annual total rainfall was the second lowest since 1961, the average rainfall of 532 mm represented 79 % of the 1961–1990 normal. January was in temperature strongly above normal, the average January temperature reached 0.9 °C, which is 3.7 °C higher than normal 1961–1990, rainfall was normal. The months of February to June were in temperature normal. February was with rainfall strongly below normal, in the Czech Republic the average rainfall was only 12 mm (32 % of normal). March was normal in rainfalls, April, May and June had rainfalls below normal. At the beginning of June the Czech Republic was hit by the first hot wave, which culminated on 13 June, then there were heavy thunderstorms with torrential rains and subsequent cooling. Significantly above-average temperatures were recorded during the summer months. The average temperature for the summer months June–August (19.2 °C) was after the year 2003 the second highest in the observation period since 1961. In July, there were two hot waves in the Czech Republic, the first from July 1 to July 8, another from July 16 to July 25 and up to 18 tropical days (days with maximum temperature above 30 °C) were recorded. In terms of rainfall, July was strongly below normal, it was the fifth driest July since 1961, the sum of surface rainfall for the period from January to July was the lowest since 1961 (289 mm). The month of August, with an average temperature of 21.3 °C and a deviation from the normal of +4.9 °C, was the warmest August since 1961. At the beginning of August, the

Czech Republic was hit by a significant hot wave which lasted from August 3 to August 16. Regarding rainfall (86 % of normal), August can be considered as normal with intensive rainfall on August 16 and August 18. The months of September and October were generally normal in temperature. November was strongly above normal, it was the third warmest November since 1961. September was dry, but November was above normal in terms of rainfall. December was extremely above normal temperature, it was the warmest December since 1961. The warmest period occurred around Christmas, when in the days on 22 and 26 December, the average daily air temperature in the Czech Republic was more than 8 °C above the long-term one average. In terms of rainfall, December was below normal.

According to the Report on the environment of the Czech Republic 2016 [2], the average 2016 annual temperature of 8.7 °C was 1.2 °C higher than the normal in 1961–1990, 7 tropical days were recorded. In terms of rainfall, 2016 was a normal year in the Czech Republic, however the rainfalls were unevenly distributed, the deficit in the annual total was mainly in Eastern Bohemia. At the beginning of the first and at the turn of the second and third decades of January, there were periods with temperatures significantly below normal values. At the end of January and in February, above-average temperatures prevailed. The highest deviation from the normal +4.1 °C was recorded in February. During the spring, the warmer and colder seasons alternated. The first half of April, with an average temperature of 8.7 °C, was 2.3 °C warmer than the second half of this month. In the last decade of May, there were two very warm periods with a maximum daily temperature significantly exceeding 25 °C, for the warmest day May 22 a maximum temperature above 30 °C was recorded. During the summer months, the average daily temperature in the Czech Republic fluctuated considerably. The last decade of June was warm, on 25 June, the maximum air tempera-

ture reached in some areas 35 °C and above. The highest maximum daily temperature in July (as well as in the whole year 2016) was measured on 11 July (36.8 °C). The temperature-normal August was followed by a very warm beginning of the meteorological autumn, September with an average temperature of 15.8 °C and a deviation from the normal +3.0 °C was the second warmest September since 1961. The months October to December as a whole were temperature normal (in October -0.6 °C below normal). In terms of rainfall, 2016 was normal, with an average annual rainfall in the Czech Republic of 637 mm represents 95 % of the 1961–1990 annual normal. The average monthly total rainfall for most months of 2016 is assessed as normal. Only the months of August and December were below normal rainfall, when the monthly total rainfall was 53 % and 56 % of the normal 1961–1990. On the contrary, the months of February (161 % of the 1961–1990 normal), July (146 % of the 1961–1990 normal) and October (155 % of the 1961–1990 normal) were above normal rainfall. The spatial distribution of rainfall in the Czech Republic in 2016 was uneven. In eastern Bohemia in the regions Hradec Králové (apple

trees of organic production from Borohradek, Sachov are located in this area) and Pardubice (apple trees of organic production Radim, district Chrudim are located in this area) 75 % and 80 % of the annual normal occurred.

REFERENCES

1. Kratina, J. – Luka, V. – Mertl, J. – Pernicová, H. – Pokorný, J. – Ponocná, T. – Rollerová, M. – Vlčková, V.: Zpráva o životním prostředí České republiky 2015. (Report on the environment of the Czech Republic 2015.) Praha : Ministerstvo životního prostředí, 2015. ISBN: 978-80-87770-10-8. <https://www.cenia.cz/wp-content/uploads/2019/03/Zprava-o-zivotnim-prostredi-Ceske-republiky_2015.pdf> In Czech.
2. Mertl, J. – Myšková, T. – Pernicová, H. – Pokorný, J. – Ponocná, T. – Rollerová, M. – Vlčková, V.: Zpráva o životním prostředí České republiky 2016. (Report on the environment of the Czech Republic 2016.) Praha : Ministerstvo životního prostředí, 2016. ISBN: 978-80-87770-29-0 <https://www.cenia.cz/wp-content/uploads/2019/03/Zprava-o-zivotnim-prostredi-Ceske-republiky_2016.pdf> In Czech.