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Summer and tropical consecutive days in normal periods 1961-1990 and 1991-2020.

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Summer and tropical days were and are part of the processing of historical observations. Their processing was the content of each monthly report of meteorological observations as well as the annual processing in the form of a yearbook. Changes in temperature (especially positive deviations from normal values) also cause their more frequent occurrence. This would not be unusual or unexpected, even if the regularity of these periods cannot be predicted. Higher air temperatures often cause health problems, especially for older and more sensitive people. Nausea and loss of concentration occur especially during longer periods of hot days. In this contribution, we decided to process the occurrence of periods of summer days ($t_{\max} \geq 25$ °C) and periods of tropical days ($t_{\max} \geq 30$ °C). The term period here means consecutive days (minimum 2). Professional and aerial meteorological stations covering the territory of Slovakia well were selected. Their length was considered for two normal periods, namely 1961-1990 and 1991 - 2020. The mutual comparison gave us a clear idea of the redistribution of periods of different lengths and the territorial unit (places in Slovakia). While for summer days we observe a decrease in shorter periods and an increase in longer periods, especially in lowland areas, in the rest of the territory, especially in the north, or in mountainous areas, rather an increase even from the shortest periods.

On tropical days, or when comparing the periods of tropical days in both normal periods (1961 - 1990 and 1991 - 2020), we find the fact of a very strong increase from the shortest periods of consecutive tropical days at all selected meteorological stations. Since it is impossible to compare the frequency of periods as well as the number of tropical days themselves in absolute terms, we helped ourselves with a percentage evaluation. The fact is that, especially for tropical days, the biggest increase is in the north of the country, the shortest periods (2-3 days in a row) increased by up to 250%. They even began to appear in places where they could not be observed in the period 1961 - 1990. The results conceived in this way will help not only the tourism industry, but also the adaptation of man and his environment to changes in the climate system.