



Analysis of dryness and drought periods in Cluj County, in the 1971-2000 period

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Abstract. – Drought is defined as a natural phenomenon that occurs when the fallen rainfall amounts are less than the multi-annual average; coupled with high temperatures, it emphasizes the process of evaporation-transpiration. In the summer months, when the maximum temperatures recorded on consecutive days exceed 32 degrees Celsius, due to the lack or to the insufficient quantities of rainfall and lack of soil water, the negative effects on crops are increased- plants wilt and crops are compromised. The study of dryness and drought phenomena was based on daily data of precipitation (annual, semester and seasonal) between 1971-2000 from 6 weather stations in Cluj County, which is located in Transylvania, Romania, being crossed at the center by the 46°50' north parallel and 23°30' east longitude. The 1971-1981 period was characterized by excess precipitation, followed by a period of deficient rainfall, 1982-1994, when several drought years were registered (1982, 1983, 1986, 1990, 1992 and 1994). The years 1997-1999 were rainy, and in the year 2000 drought was widespread throughout the country, with different intensities. The distribution of drought periods according to seasons, for the hilly regions stations, in summer, reveals that the number of drought periods is higher than in the cold season: 14% in Turda, 28% in Cluj-Napoca, 50% in Huedin and 60% in Dej. In the mountain region the trend is reversed, with the number of cases of dry periods in the winter being higher. Most of the absolute maximum values were recorded in the months of August, particular situations being the summers of 1994 (August, 11) and 2000 (August, 22). The results lead to the conclusion that climatic change in the period 1971-2000 caused increased water requirements of the grown crops, thereby also higher water deficit in soil and the demand for providing larger quantities of suitable irrigation water.

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