

Drought, its expressions and evaluation in Danubian upland in conditions of climate change

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In response to climate change within happens to gradual changes of energetic, but also hydrological balance in global, but especially in local, is justified the evaluation of water regime also in the form of dry periods occurrence in concrete agroclimatical conditions. The dry period is defined as period without precipitation with duration 5 days and longer. The dry period is not interrupted with precipitation lower than 1 mm (Collective, 1960) from physiological point of view is valid – period without precipitations until 5 days the plants survive mostly without negative effects. For gradual extension of dry period with gradual decreasing of usable supply of soil water to wilting point, the plants react by disturbance of photosynthesis rate and respiration, decreasing of new organic mass production, decreasing of turgor, wilting and necrosis.

Occurrence of drought periods longer than 5, 10 and 20 day during the years 1961 -2000 on Danubian Lowland is evaluated in this paper. On the base of analyses can be concluded that 68% of droughts are of 5 days period and more, 27% of 10 days period and only 5% of 20 days period and more. 5 days drought periods are the most frequent during spring time (March to April), 10 and 20 days drought periods are usually recorded during the autumn part of year (September to November). During the years 1961 – 2010 occurrence of drought periods increased about 4% in each decade of year by 20% in total. Results of this research can be utilized for irrigation management as well as for the other field of agriculture.

Biography

Jan Cimo has completed his PhD. study at the age of 28 on Slovak Agriculture University in Nitra, Faculty of engineering, Department of Physics. He is the professor assistant on Slovak Agriculture University in Nitra, Horticulture and Landscape Engineering Faculty, Department of Biometeorology and Hydrology. He has published more than 60 papers in reputed journals and other publications (80 citations). He is a member of the Slovak Bioclimatic Company, cooperating with Slovak Academy of Sciences. His research is oriented especially to climate change, renewable energy resources, biometeorology, hydrology and land production potential.

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