Influența secetei prelungite asupra unor procese fiziologice la diferiți hibrizi de floarea soarelui

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Drought is one of the most important stress factors in sunflower growing. Although sunflower is a well-adapted species to drought, due to its efficient root system, the negative effects of the climatic stress are shown by low growing rate, morpho-anatomical, physiological and biochemical troubles, which result in diminishing the crop yield. The paper presented the results of primary bio-synthetic processes that have differentiated five sunflower hybrids (P.I 2001, Select, P.I.2002 ,P.I.2004 and Performer), cultivated at the Agricultural Research and Development Station of Podu-Iloaiei, by cytological, biochemical and physiological determinations, according to sowing period, under climatic conditions of year 2007. The special weather conditions of year 2007 have been studied by determining the average monthly values of temperature and rainfall, correlated to quantitative and qualitative values of the yield. The biochemical and physiological determinations concerned the aspects of water regime and photosynthesis process. The determination of the rate of leaf dehydration may be an indicator of the intensity in the transpiration process; water content and forms from leaves and stems may estimate the activity of assimilates transportation, and the content of leaf pigments may be correlated to the intensity of photosynthetic activity of studied hybrids. The indicators of water regime have been analysed by gravimetric methods carried out at the current balance, and the content of photosynthetic pigments was analysed spectro-photometrically and assessed through light adsorption capacity by acetone extract in red (663 nm) and blue (432 and 453 nm) areas of visible spectrum, typical of the main components of photosynthetic systems.