Menţinerea integrităţii funcţionale - premisă a rezistenţei la secetă a plantelor de Zea mays l.

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It was studied the dynamic of changes of water state, respiration, quantitative an qualitative content of phosphor compounds and easy soluble protein pattern in Zea Mays L. organs, M425 and M456 hybrids in optimum and water deficit conditions. It was established, that maize plants resistance to water stress at organism level is achieved through the keeping of water exchange correlation between organs and maintenance of water homeostasis in the most important for surviving ones: the growing tissues, generative organs. A high attraction capacity and the absorption possibility against water.s chemical potential gradient, typical of young leaves, are closed related with high netaccumulation of active osmotic substances, especially, of amino acids and with the keeping at relative stable level of easy soluble protein pattern (ESPP). The accumulation in cells of easy soluble proteins at adaptation stage is associated with the growing of cytoplasmic water: vacuolar water ratio, with the increase of water restraint capacity and with the stabilization of hydration degree, especially, in organs with unfinished growth. There is correlative, interdependent relation between the modification degree of acropetal and horizontal gradients, respiration intensity exchange, as well as easy soluble proteins content and phosphor compounds with energy function. Both stabilization of water gradients in limitative situation confirm the hypothesis in accordance with the water is the factor, that limits growth and metabolic activity of whole plant, contributes to maintenance of coordinative relation between and fulfills with other factors the integrity function not only at cellular, but also at organism level.