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STUDY OF INTERRELATION OF HYDROTHERMAL SOIL CONDITIONS WITH INTEGRATED CHARACTERISTICS OF ENERGY AND MASS TRANSFER IN «SOIL – PLANT – ATMOSPHERIC SURFACE LAYER» SYSTEM

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The paper presents the results of studying complex parameters of energy and mass transfer processes of an agricultural field and their relationship with the heat flux and moisture content in the soil. The Bowen ratio, evaporation fraction and the value of thermal inertia were chosen as indicators characterizing the evaporating, heat-emitting and heat-accumulative capacity of soils in the energy processes of the system «soil – plant – atmospheric surface layer». Experiments to study the interrelation of the selected indicators with the thermal diffusivity and volumetric soil moisture content were carried out in 2019 on the agricultural field of Menkovo experimental station sown with vetch and oats. The paper presents the data on the dynamics of change and the results of statistical analysis of conjugate heat, water and energy indicators of an agricultural field.

***Keywords**:* energy balance, Bowen ratio, thermal inertia, evaporation fraction, thermal diffusion coefficient.