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Manifestation of climate changes in the central part of the Republic of Belarus

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The Analysis of the amount of precipitation, changes in air temperature and the nature of their spatial distribution in the territory of each country, including in the Republic of Belarus, are necessary to justify the orientation of adaptation of natural ecosystems to changing climatic conditions and to take measures to adapt the national economy to a new climate situation. The evaluation of changes in certain climatic factors (the number of atmospheric precipitation by years, the seasons of the year (spring, summer, autumn, winter) and ten-year periods (1981-1990, 1991-2000 and 2001-2010), the number and total duration of the rain-free period, change in air temperature and the hydrothermal coefficient) was realised in the central part of Belarus over the period 1981-2015 (the lysimeter station of the RUE "The Institute for Soil Science and Agrochemistry", 53051′03′′ N., 27030′26′′ E, Minsk). The station has been functioning since 1980, and currently comprises 48 bulk lysimeters of cylindrical form formed from precast concrete rings with the depth of the soil profile 1.0 (24 lysimeters) and 1.5 meters (24 lysimeters). Wells of the lysimeters have an internal diameter of 2.0 m, an area of 3.14 m2. All the major varieties of soils of Belarus are represented in the lysimeters (from sod-podzolic soils of different granulometric composition to soddy-gley, peaty-gley and peat). The data show that all the studied factors varied differently during the years of research, but it can be concluded that over the last 35 years (1981-2015) in the central part of the Republic of Belarus there has been a change in climatic conditions: there has been a reduction in the amount of precipitation (by 100 mm), the intensity of rainfall, with the increase of the average air temperature (both for the whole period of study (on 0.8 oC), and for the seasons of the year) and the number of rain-free periods during cultivation of crops; there have been changes in concentration and loss of chemical elements on the soil surface, in the regime of infiltration of moisture in agricultural soils, and as a consequence took place the change in their concentrations in surface and groundwaters and the loss of chemical elements in the environment, as compared with the period 1961-1990.

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