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Seasonal variations in the size and zeta potential of organic substances of humic nature in the lysimetric waters of the humus horizon

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Changes in the physic-chemical parameters of humus acide of lysimetric waters (in the period spring (May)-summer (July)-autumn (October)) of horizon A0-A1 of the territory of the Valdai Upland have been studied.
The lysimetric waters were evacuated from a lysimeter installed at a depth of 0.17 m below the soil horizons A0-A1, which are an intensely humified zone of sod-podzolic soils, the lysimeter was located in an open forest area between crowns of trees to record vertical percolation of sediments through the soil layer
In early spring and late autumn, in the process of acidification of water samples , a decrease in size on average by 20-25%, due to the formation of a larger number of individual fragments, more capable of dissociation of the proton, was found. In the same period, the zeta potential move to a more negative part (with the effect of lower pH) as was found. Higher summer air temperatures led to an increase in pH and a potential moves to zero, as was found.
The different content of metals in the structure of natural humic substances of lysimetric waters, depending on the season, causes different molecular weights, sizes and surface charges of colloids as studied.

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