# Evaluation of logs in pine plantations of Kyiv Polissya

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***Introduction.*** Mortmass of forests is dead organic matter of woody plants that has an important role in the circulation of substances in forest ecosystems. It consists of a number of components: snags, logs, rough branches of trees, forest litter, and dead roots of plants. These components are formed under the influence of biotic, abiotic and anthropogenic environmental factors. The components of mortmass differ by origin, size, placement in space, speed of degradation and so on.

Logs, as a rule, formed as a result of destruction of dead trees or under the influence of abiotic factors on living trees, which leads to their extinction. Logs include trunks, holistic or broken, with branches or without, that lost natural position and are, usually, on the ground. Stumps and wood residues of lumbering belong here too.

***Material and Methods.*** Selection of experimental material took place in the separated unit of the National University of Life and Environmental Sciences of Ukraine «Boyarka Forestry Experiment Station", where lies 17 temporary plots. For trees and logs conducted continuous list on each temporary plots. Logs during the accounting at the temporary plots were distributed into classes of destruction. The trunks, whose heights were 1.3 meters lower, were classified as stumps.

***Results and Discussion.*** The statistical indicators of the basic wood density of logs are calculated to five classes of destruction. Traced a gradual decrease in the basic wood density from live condition of tree (class is 0) to the fifth class of destruction. The monotonous the Z-like decrease of basic wood density with increasing class of destruction well approximated by a polynomial of 3rd degree.

Comparison of the own arithmetic average values of basic wood density into different classes of destruction and averages values other authors, allowed to find out the their similarity, although studies have different methodological approaches.

The basic wood density of mortmass logs for classes of destruction are characterized by the lowest values at own research.

The nonparametric correlation analysis showed the link of the average closeness the mortmass of logs and average height, average diameter, and age of stand. The nonparametric correlation analysis indicates no statistically significant links between mortmass of stumps and mensuration parameters of stand.

Numbers of observations for building regression equation represent a small sample. U-Mann-Whitney test was used to the authentication of the modeled values and empirical values.

***Conclusions.*** The obtained following average values of basic density the mortmass of logs by classes of destruction: I–386±6,4; II– 298±7,0; III–218±5,0; IV–129±3,6; V–92±3,2 $kg \cdot m^{-3}$ respectively.

The regularities change the basic density from class of destruction mortmass reliably approximated by a polynomial of 3rd degree.

Regression equation for estimating mortmass of logs can be used to establish of the ecosystem functions and determining the volume of combustible materials in the pine plantations of Kyiv Polissya.