

WATER-PHYSICAL PROPERTIES OF SOIL OF PARK STANDS

V.V. Minder, competitor^{},*

V.M. Maluga

It's displayed the results of studies of soil moisture and hardness affecting meliorates properties of parklands for example Goloseevskogo Park of Culture and Rest name Rytskyi.

The purpose of research is to establish the dependence of physical properties of water and soil parklands stages of their digression. The increase of hardness due to soil compaction affects the spreading of root systems of woody plants (especially with surface placement) and their effective functioning. Water permeability determines the possibility of regulation of surface runoff (often destructive), thus transferring it into the ground to facilitate the manifestation of ensuring impossibility erosion and enhance maintenance of plant moisture, emphasizing the relevance of such research.

To characterize the parklands special types of forest inventory were used. The hardness of the soil was determined using Solid Golubev in a 10-fold repetition. Determination of soil moisture by drying was performed using the drying oven. Permeability of soil was studied by using steel cylinders with a diameter of 80 mm, height 100 mm triple repetition. The density and porosity of the soil were determined by methods given in the soil science. Simultaneous determination of the water permeability and density assembly soil under plantations of different ages revealed that a close correlation between these parameters observed only in the upper 10-cm layer, in the lower distress communications significantly reduced. This phenomenon is due to the fact that the top layer is concentrated the bulk of the root systems.

Park stands, evaluated the results of plots, have high quality indices of productivity, grow for the first class of site index. Quantitative measures, characterized by a supply of stem wood, are differing: in mixed stands of $240 \text{ m}^3 \cdot \text{ha}^{-1}$ (60 years), 290 (70 years) to $328 \text{ m}^3 \cdot \text{ha}^{-1}$ (80 years), and in a pure 70-year-old plantation stock was the

^{*} Supervisor - Doctor of Agricultural Sciences, Professor V. Yukhnovsky

biggest - $440 \text{ m}^3 \cdot \text{ha}^{-1}$, due to differences density. Expositions of research areas are: the northern (plot number 1), Northeast (plots number 2 and 4) and eastern (plots number 3 and 5) and steepness of slopes is from 5 to 12 degrees.

In the absence of significant variability of soil moisture increase its hardness was from 11.2 to $17.1 \text{ kg} \cdot \text{cm}^{-2}$ due to an increase in density from 1.14 to drawing $1.30 \text{ g} \cdot \text{cm}^{-3}$ and a decrease in duty cycle from 54.0 to 50 %, which is reflected in a decrease in water permeability of almost 2.5 times. Changing the parameters of hardness and soil water permeability was due to digression parklands. The hardness of the soil is directly dependent on the stage of digression plantations and water permeability in reverse.

Park stands, degree of digression, soil properties: hardness, permeability, moisture content, porosity, density assembly.