TAXATION STRUCTURE OF MATURE COPPICE OAK STANDS OF LEFT BANK FOREST STEPPE

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Introduction. Currently the important task for forestry is to develop high sustainable forest stands and improve their commodity structure. Oak stands occupy almost 50% of the area covered with forest vegetation at forest-steppe areas of the Left Bank of Ukraine, among which 66% are of natural origin, 90% - coppice. A significant proportion of forests is premature, mature and overmature stands. Coppice oak stands substantially differ from seed ones on features of growth, structure and marketability. It is necessary to refine cutting age in oak forests, the system of accounting, and marketability standards.

Within forest areas trees size, their shape, volume and other taxational indicators are characterized by variability caused by natural conditions, age, influenced by management and other reasons.

Despite of many studies, taxation structure of coppice oak stands is poorly studied. The stand structure under intensive forest management and significant human impact may significantly differs from the average data. Also stands of different age groups differ significantly in their structure and therefore it is necessary to develop special standards for their assessment.

The aim of the study is assessment the indicators of distribution of the stem diameters as theoretical bases of standards marketability of coppice oak stands.

Materials and methods. Study of the diameter distribution of trees in mature oak stands was carried out on the basis of 43 temporary inventory plot, located in areas designated for main felling. Plots were located in mature oak stands of State enterprises "Lebedinske forestry" and "Konotop forestry" of Sumy region and "Hutyanske forestry" of Kharkiv region. Field data collection, primary data

processing and statistical processing was carried out using programe-software complex Field-Map.

Building a series of theoretical diameter distribution were conducted by the method elaborated at the department of forest inventory and management NULES of Ukraine. By using the program STRUK parameters of stand structure were obtained. To construct the series of distribution of tree by diameter classes Pearson curve type 1 (β-distribution) was used.

Results. Coefficient of diameter variation of the total number of stems in the experimental stands varies 15,7-37,8%. Indicators of asymmetry and excess experimental series the diameter distribution of trees are characterized by considerable variability. Stands asymmetry index has mostly positive value varies - 0.37 - 0.82, the majority of trees are characterized by higher diameter classes. Excess index varies from - 0.96 to 1.27. Positive values are dominated, indicating that peaked curve of distribution and increased concentration of values around the average value.

Statistical analysis of experimental data showed that in most cases it can be accepted hypothesis on conformity of sample distribution curve to β-distribution. On this basis, the rows of trees distribution by diameter were built depending on the average diameter of the stand. Variability with age and with increasing of average diameter is slightly reduced. Index of diameter ratio variability of merchantable trunks to the total variability diameter trunks and the ratio of the diameter of the fuel-wood trunks variability to the variability of the diameter of the total number of trunks were modeled depending on the share of merchantable trees in stands.

Rank of medium tree ranges from 51.4 - 61.3, and the average is 55.7. Share of merchantable trunks is 57.4% and increases with the average diameter.

Indexes of variability, minimum and maximum reduction rates were modeled as a function of the average diameter of the stand, and the variability of merchantable and fuel-wood parts of the merchantable share of trunks.

Conclusions. Analysis of the structure of forest stands by diameter on the basis of inventory plots and production lists showed that the distribution of oak trunks in

mature coppice oak stands is characterized by considerable variability. Coefficient of variation in average is 25.7%, the rate of asymmetry - 0.12, the rate of excess — 0.02. Based on the developed mathematical models theoretical rows of distribution of tree trunks by diameter were built, that in combination with assortment tables will help to develop new standards of marketability of mature oak coppice stands.