DPM observed temperature by pressing - pressing 200oS and duration - 1.2 min / mm.

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Effect of additions tehnycheskoho established in parafyna DIFFERENT temperatures and Duration pressovanyya DPM. C. Increase CONTENT tehnycheskoho parafyna vodostoykost DPM grows. Maksymalnыe Limit Indicator prochnosty at statycheskom yzhybe observed at tehnycheskoho Contents parafyna 5,0-7,5%. C. Increase temperature and Duration pressovanyya in yssleduemыh Limit Indicator prochnosty and vodostoykosty DPM rastut.

Wood-Polymer materials, tehnycheskyy parafyn, vodostoykost, prochnost.

The effect of the addition of technical wax at different pressing temperatures and durability WPC were investigated. The increase of technical wax content leads to increase water resistance of WPC. Maximum values of MOR were observed at technical wax content 5.0-7.5%. The increase of pressing temperatures and durability leads to increase water resistance, MOR and screw withdrawal resistance of WPCs.

Wood-polymer materials, technical paraffin, water resistance, strength.

UDC 674.09: 674,093

THE RESULTS OF RESEARCH VALUE COST OF RAW MATERIALS IN THE PRODUCTION OF RADIAL TIMBER GIVEN SPECIFICATION

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The experimental results consumption of raw materials in the manufacture of radial lumber. With developed and proposed simulation model, which takes into account the actual size-qualitative characteristics

of raw data obtained timber volume output purely radial lumber from logs provided cutting their rozvalno-pie and pie charts.

Radial lumber, logs, cutting plans, grade wood volume of logs, logs coincidence specification

At the present stage of development of the theory of cutting wood was found that resource materials possible with the intensification of sawmill production specialization by enterprises for other purposes [1].

The modern theory of cutting boards for raw pylovochnoyi can solve many practical problems, but it is not enough decisions related to theoretical justification of some special methods of sawing. In addition, today there are many computer programs for calculating schemes sawing logs for lumber without clear delineation of their output depending on the type of cutting, ie radial, plain or mixed. So now urgent task is the development of timber sawing convenient for practical use software for forecasting timber surround output given specifications (size, type section,

quality and quantity) and improvement processes lumbering aimed at obtaining the maximum possible output of useful timber [2, 3].

It is known [4] that the radial lumber and sawmill napivradialnoho kind of give the best result for the shape stability and balance internal stresses that occur in structures, namely bars for window and door manufacturing, carpentry large format panels, wooden beams and more. For example [5], transverse shrinkage in the radial direction approximately half that of plain. After drying almost all boards other than purely radial, deformed in the transverse direction. For most indicators wood resistance against abrasion better in radial section, for pine - 0.31 mm and 0.28 mm; for ash - 0.17 mm and 0.14 mm; for larch - 0.17 mm and 0.14 mm and more.

The materials used in construction, wooden structures, measured by the ratio of strength and mass. Strength ratio () to density () is called at the appropriate humidity factor of quality wood (K). Since the strength of wood in the radial direction is higher than in plain (in softwood 10-15% for deciduous 20-70%), then, respectively, and the quality factor of radial sawing timber for joinery and building orientation will be higher.$\sigma_w \rho_w$

The study ways to radial lumber and blanks and size of the output volume of logs at one time was engaged many researchers [6, 7].

Most of them celebrate rozvalno segment and sectoral cutting plan as the most rational for the radial lumber and blanks [8, 9]. Others in his writings offer technologically more complex and more expensive ways to get pyloproduktsiyi radial cutting type [10].

Application of the developed simulation model (Fig. 1), which takes into account the actual size-qualitative characteristics of raw data timber allowed to get out purely radial surround lumber from logs. In addition, all the factors that are really unmanageable, were included in the model as manageable. This made it possible to conduct a series of active experiments using experimental design, which greatly increased the efficiency of research. Yes, it is possible to simulate some of the same cutting logs for different cutting plans from comparing the results.

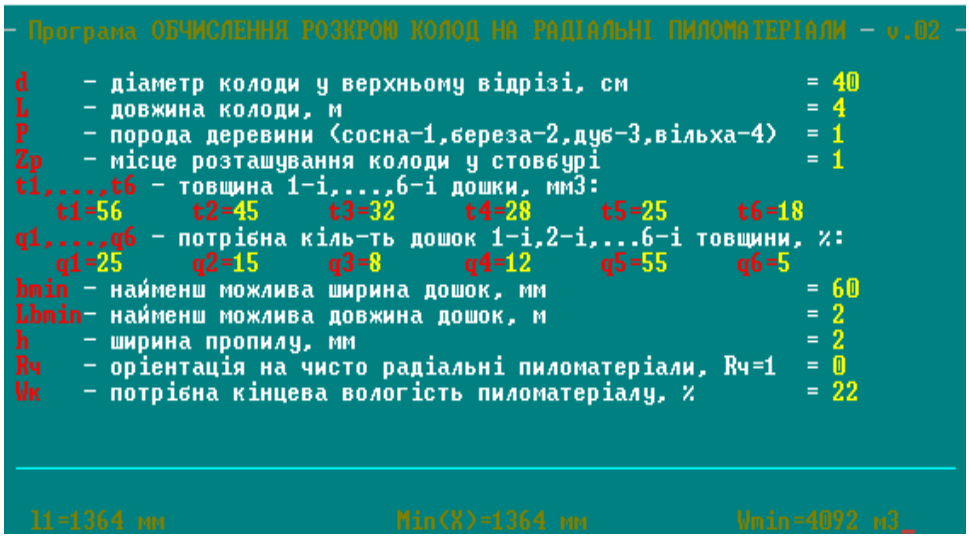


Fig. 1. The program interface Radial_GM.exe - block data entry.

Experiments were put on two approaches: using sector-cutting plan and using rozvalno pie-cutting plan. For each model was carried out 20 series of experiments. Thus, the number of duplicate observations on the model of cutting a pie chart in 1020 amounted to log diameters 14 cm - 46 cmOn models with rozvalno pie-chart - 840 logs diameters 20 cm - 46 cm. Variables were: volume of timber that was taken into account in accordance with GOST 2708-75 [11], and varied in the range of 0,073 m3 to 0.77 m3; grading factor that takes into account the quality of raw varied within 1.101 - 1.388; reclaimable volume ratio in the logs, which varied within 0.9 - 1.3. As a response entered value pylovochnoyi costs of raw materials that the reciprocal of the bulk timber out of logs. Prior to the main experiment was set separate series of experiments, the results of which were tested hypothesis of normality of the distribution of the initial value of the experiment and identified the required number of duplicate experiments. Check rejection of homogeneity of variances and blunders performed by Student t-test and Cochran G-criterion.

According to the preliminary study series size pine wood costs in producing a given radial timber specifications were received:

- If cutting logs on a pie chart calculated value of G-criterion Cochran (Grozrah.) Was 0.1565, grid - 0.36;

- If cutting logs for rozvalno pie-chart Grozrah. = 0.1622, Gtabl. = 0.24.

The results answered ratio Grozrah. <Gtabl., Allowing to accept the hypothesis of homogeneity of variances experiments.

Mean values of the cost of wood for the manufacture of radial timber for a pie and pie rozvalno-cutting plan compared with the consumption of wood for mixed timber shown in Fig. 2.

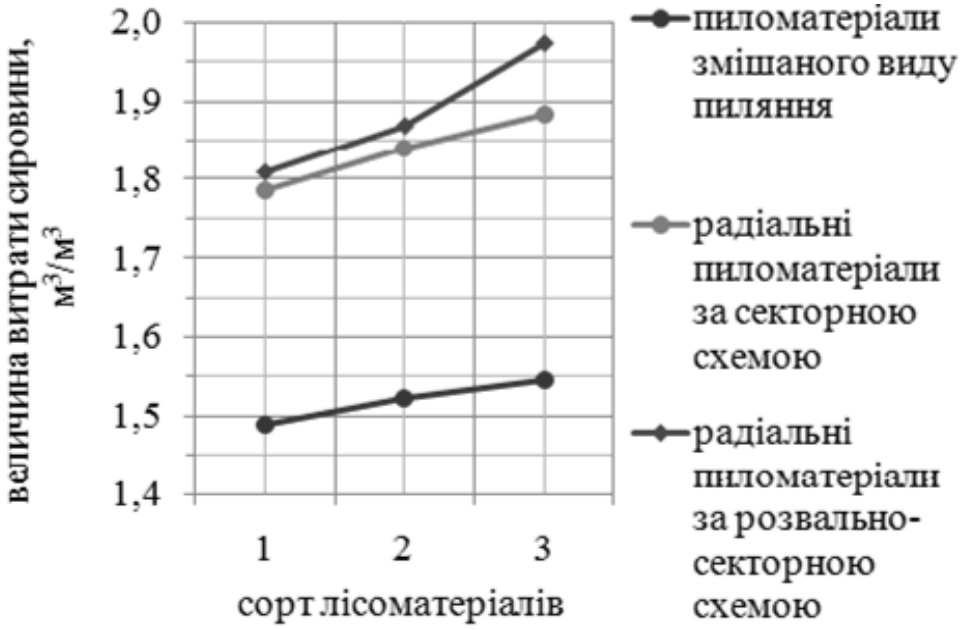
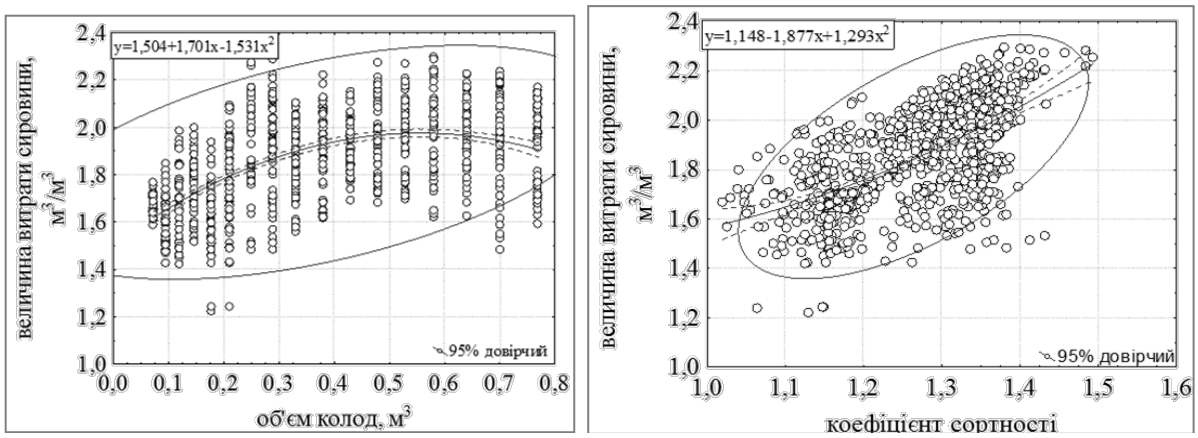


Fig. 2. Experimental values of the cost of wood in the manufacture of lumber from logs diameters 26 cm and more.

It can be seen that the higher costs of wood in radial lumber observed when used rozvalno pie-cutting plan compared to a pie. This can be explained by differences in cutting plans, more cuts at rozvalno pie-cutting plan and significant influence on the spatial coincidence log out timber. However, as there is a significant increase (from 22% to 28%) values for all expenses wood varieties for the production of radial timber compared to Lumber sawmill mixed type.

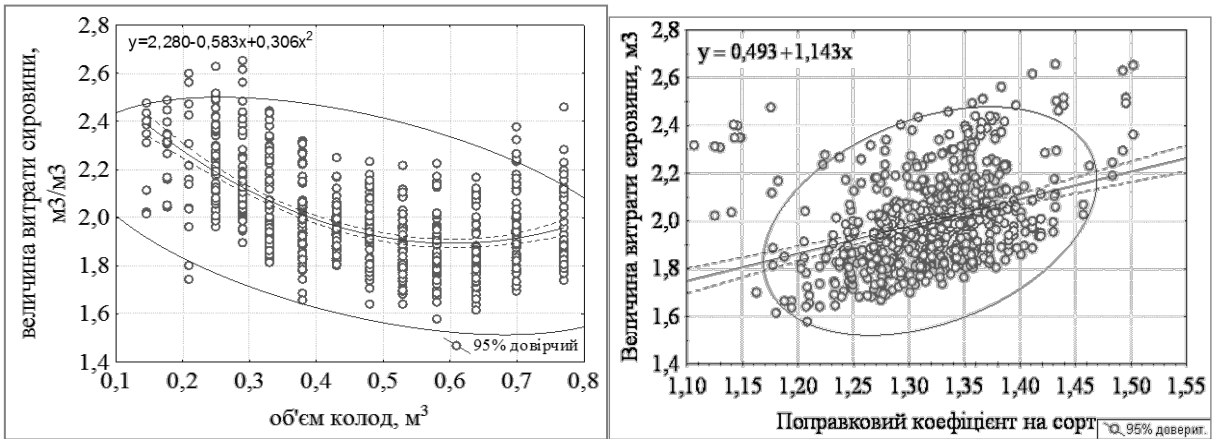
The dependence of pine wood costs in manufacturing radial lumber, received by the pie and pie charts rozvalno-cutting logs of variables are, respectively, in Fig. 3 and Fig. 4.

From these dependencies can be seen that the magnitude of the cost of raw materials in the production of radial timber when used either selected wood cutting plans most influenced by factors such as coincidence log characterized correction factor for the volume and quality of logs, which in terms of the ratio grade.



and to

Fig. 3. The dependence of pine wood costs in the production of radial timber by cutting a pie chart of: A - volume of logs; b - quality logs.



and to

Fig. 4. Dependence of pine wood costs in the production of radial timber for rozvalno-cutting of the pie chart, and - volume of logs; b - popravkovoho factor for the variety.

So, with the use of sector-cutting plan for the radial lumber, the value of the cost of raw materials increases with decreasing and increasing convergence coefficient grade. Subject to the application rozvalno-pie cutting plan, the value of the cost of raw materials increases with grade factor (ie, worsening grade logs) and increased convergence logs.

The balance of raw materials for production simulation model of radial timber shown in table. 1 - 2.

1. Balance pylovochnoyi raw material for the production of radial pine lumber for sector-cutting plan.

Product name	Volume of production,%	Volume of production, m3
Pyloproduktsiya including:	54.3	203.876

board length 1.0 m and more	54.3	203.876
Waste	45.7	171.58
including:		
lump	26.5	99.492
sawdust	13.2	49.56
drying and sawing	6	22.53
Total resources:	100	375.442

2. Balance pylovochnoyi raw material for the production of radial pine lumber for rozvalno pie-cutting plan.

Product name	Volume of production,%	Volume of production, m3
Pyloproduktsiya	50.8	179.897
including:		
board length 1.0 m and more	50.8	179.897
Waste	49.2	174.23
including:		
lump	26.8	94.906
sawdust	16.4	58.077
drying and sawing	6	21.248
Total resources:	100	354.127

From the experimental data on the simulation model balances pylovochnoyi material shows that in the production of radial lumber Special cutting plan received a large number of lump waste that can be used on their own production needs.

As a result of the development of a simulation model and her series of studies and applications of the quantities of raw material costs give opportunity to the operation of cutting wood predict volumetric yield of lumber and sawmill waste, taking into account actual size-qualitative characteristics of logs and lumber existing specifications that will increase the efficiency of manufacturing radial lumber.

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Results of research Pryvedenы эksperymentalnыh velychynы rashoda raw materials in the production radyalnыh pylomateryalov. C pomoshchju razrabotannoy and predlozhennoy ymytatsyonnoy model, kotoroj uchteno faktycheskuyu razmerno-kachestvennuyu characterization of raw materials and specification pylomateryalov, poluchenы Surround Out radyalnыh purely pylomateryalov IZ breven Cutting on the conditions at s on razvalno-sektornoy and sektornoy schemes.

Radyalnыe pylomateryalы, logs, Cutting scheme, sort of timber, Volume breven, sbeh breven, SPECIFICATION.

The results of experimental researches of raw materials costs in the manufacture of radial sawn timber are given. With the help of developed and proposed simulation model, which takes into account the actual dimensional and qualitative characteristic of raw materials and specification of lumber, received voluminous output purely radial sawn timber from logs provided by segment and cleaving-segment cutting patterns.

Radial lumber, the saw log, the diagram of cut, the type of wood, the volume of logs, the run of logs, the specification

UDC 674.093.26