consumption, contains a mechanism for such assessment and valuation on the basis of implementation of necessary measures to achieve quality standards of drinking water as well as recommendations for systematic gathering of information on the process of water consumption and frequency of review of the established standards. The results of the evaluation and regulation of technological expenditure of water are used to calculate the limits of water intake from water sources, issuing permits for special water use, development of measures on rational use and reduction of water losses.

The result of the calculations of the standard process of water flow in the municipal water supply of the city of Grodno in 2014 showed that the total amount of the technological costs amounted to approximately 2089 thousand m^3, the volume of submitted network of water is equal to 29725 thousand m^3, and the standard of technological losses of water in the system is about 7 % of the volume served in network water.

TECHNO-ECONOMIC ANALYSIS OF WASTE MANAGEMENT AT THE ENTERPRISES OF THE REPUBLIC OF BELARUS

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In this work the analysis of the data of the state waste cadastre, which is maintained according to the state statistical reporting 1-waste (Minprirody). The analysis allowed us to systematize the data, including quantitative and qualitative characteristics of wastes, the formation and movement of waste, including the use, treatment, storage, and disposal, to identify the dynamics of volumes of production waste, and develop activities aimed at the prevention or reduction of waste generation volumes.

Keywords: state waste cadastre, state statistical reporting form 1-waste (Minprirody), waste production.

Form 1-waste allows you to enter accounting of formation and movement of wastes at the enterprises carrying out activities associated with the circulation of waste in the Republic of Belarus. [1; 2]

According to the 2015 in the Republic of Belarus was formed about of 49,9 million tonnes of waste. Of the total amount are the most significant large-capacity waste: halite wastes and halite slimes clay-salt – approximately 33,7 million tons of phosphogypsum and – 660,1 thousand tons.

However, due to the increase in production of potash fertilizers the amount of halite wastes and halite slimes clay-salt increased compared with the previous year by 0,81 million tonnes (the waste in 2015 accounted for 68 % of the total mass of generated waste in Belarus). The level of use halite waste remains low and in 2015 amounted to only 2 %; halite slimes clay-salt were not used. In the dumps were taken about 29,85 million tons of halite wastes generated and their accumulation was 932,72 million tons, halite slimes, and the accumulation of halite slimes clay-salt – approximately 110,5 million t

Given the large-capacity waste in 2015 used 12164 tonnes of waste and use of waste products amounted to 24,4 %. Excluding large waste volume usage made in 2015 11452,12 kt, and the level of use of production waste was 74 %.Found that 54,5 % of the total quantity of waste used is used for needs of the enterprises themselves, and a 45,5 % transferred to other enterprises, implemented or exported for further use.

The volume of accumulated waste in storage facilities (in the departmental storage locations and facilities) increased for 2015. 3,4 % and amounted at the end of the year about 1094,2 million tons of the total volume formed in 2015, the number of buried waste amounted to 1278 thousand [3; 4]

Currently, the solution of problems of utilization and recycling is not only environmental, but also technological challenge. The properties of most waste do not allow with sufficient efficiency to return them in the sphere of production or safe disposal. In this regard, required the application of different methods of waste disposal. In 2015, Belarus neutralized 210тыс.t waste production. The most used method is thermal decontamination (this method neutralized with 64,6 % of the total volume of neutralized waste 135,7 thousand tons).

It is established that in 2015 enterprises of the Republic of Belarus 805 made efforts to reduce the amounts of education and (or) accumulation of waste products, including:

- 153 measures to improve technological processes leading to a reduction of waste production;
- 146 – on creation of storage facilities, temporary storage of waste;
- 12 – for the construction, reconstruction, modernization of facilities for the use of waste;
- 6 – for the construction, reconstruction, modernization of facilities for the disposal of waste;
- 10 – for the construction, reconstruction, modernization of facilities for the disposal of waste;

- 283 – purchasing and manufacturing of containers for collection of waste and VMR;
- 195 – other.

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THE TRACHEID FEATURES OF PINE TREES FROM DIFFERENT GROWING

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In the article the features of the anatomical structure of the tree layers of Scots pine wood from dif-ferent growing conditions are considered, the significance of the investigated cellular parameters is estimated.

Keywords: annual layers, Scots pine, wood anatomy; tracheid dimensions; early wood; late wood.

Although layers width is widely used in research on dendrochronology, the range of parameters characterizing annual layers and their use as environmental indicators has notably increased in the last decades (for example, content of macro and microelements, stable isotope ratio, anatomical features) [1].

Differences in tracheid dimensions reflect the changes occurring in the environment.

The objects of the research were pine plantations in different part of the Berezinsky biosphere reserve. The trees used as samples are relatively old trees, 95–150 years old, 16–27 meters high. Wood samples were taken in six plots. Forest types are Pinetum pieridiosum (sampling area № 1), polytrichosum (sampling area № 2), Pinetum sphagnosum (sampling area № 3).

The anatomical parameters of the annual layers of earlywood (EW) and late latewood (LW) tracheids were studied in the direction from the bark to the core using a scanning electron microscope of high resolution "MIRA3" from the firm "Tescan" at an increase of x100, x200, x500, x1000.

For this purpose, the number of tracheids in the last 80-year layers of each wood sample was counted, the cavity size and wall thickness were measured separately for EW and LW, and the diameter of the vertical resin courses. Statistical software (Statistica 10) was used for estimating descriptive statistics.

From the work, it is shown that an increase in the number of early tracheids is observed for trees on sampling area №2 (50,2±2,96), late – sampling area №3 (42,4±3,11). The measurements showed that all the pine trees are characterized by wider early tracheids with thin walls and wide cavities and narrower late tracheids with thick walls and narrow cavities. At the same time, it should be noted that the tracheid size in the radial direction is less than in the tangential direction.

Comparative anatomical study of tracheids of annual layers on sampling area revealed significant differences. Thus, the largest radial and tangential dimensions of the tracheid cavities of both EW and LW are characteristic for pine trees from sampling area №1 (107,6±6,21; 29,9±5,99), and tracheids with narrower cavities are characteristic for Pinetum sphagnosum (107,4±5,34;21,5±3,44). The thickness of the walls of the late tracheids varies from 5,2 to 6,9 microns, maximum on the sampling area № 3 . The thickness of tangent walls of early tracheids varies from 1,8 to 2,6 μm, maximum on sampling area № 2. Both the radial and tangential diameters of the vertical resin pitch are relatively stable and vary slightly depending on the degree of moisture. For the specified reason, in the future it is possible to refuse measurements of this parameter.

As a result of the study, depending on soil moisture some features of the anatomical structure of the annual layers of Scots pine have been revealed. All the above differences in the anatomical structure of the annual layers can serve as an illustrative example of the effect of environmental factors on the stand and are important distinctive