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ANALYSIS OF THE EFFECT OF THERMALLY PROCESSED OAK ON VINOMATERIALS MADE FROM LOCAL GRAPE VARIETIES OF SMALL COMBS.

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Annotation. The article investigated the coining of oak combs in the process of maturation of red wines from various grape varieties grown in the Bukhara region, such as Saperavi, Kaberne, Hindogni, Tavkveri. Various thermally processed tshep of oak wine has been analyzed for its effect on physicochemical indicators, taste, smell, color.
Keywords: oak combs, red wines, local grape varieties, smell, color, taste, physico-chemical indicators, products of oak combs

Introduction. Oak was chosen for the production of barrels for a reason. First of all, it is appreciated for its ability to retain liquids due to the structure of the wood, mainly due to the formation of tyloses (growths inside the vascular system of the tree, preventing it from drying out during drought) and multilevel medullary rays. Also, oak wood is quite durable and elastic, which makes it possible to form curved barrel parts from it. But more importantly, oak wood, after heat treatment, contains many different compounds that somehow affect the color, taste and aroma of the drink. Aromas commonly associated with oak: vanilla, caramel and spices are created by changing the chemical composition of oak through exposure to the open air and roasting. These processes are crucial in the development of flavor and extraction. There are four key components of oak, which are called "oak constituents": Cellulose, hemicellulose, lignin, tannin. As for the macrochemical composition, oak consists of approximately 45% cellulose, 22% hemicellulose, 25% lignin and 0.8% to 10% tannins. All these components are contained in the cellular structure. The way to combine these compounds is extremely complicated. There are both chemical bonds and hydrogen bonds between and within the constituent polymers. It is important to note that many bonds need to be broken in order to release the extractive substances of oak. This is achieved by outdoor exposure, mechanical preparation (cutting wood to the desired size and shape) and roasting. Most of the flavors and aromas typical of oak-aged beverages are obtained from the decomposition of lignin, which, after depolymerization, forms aromatic compounds such as vanillin, vanillic acid and sinigaldehyde. Lignin breakdown products have low sensory thresholds and therefore have a great influence on the development of sensory qualities (taste and aroma) of the aged drink. It was found that some compounds desirable for the organoleptic qualities of bourbon are found deep in charred wood, up to 6 mm under a layer of coal. Hemicelluloses, after hydrolysis under the influence of acids and other factors, form monosaccharides that make drinks soft. In other words, without the influence of oak, many drinks lose most of the flavors and aromas for which we value them so much. But taste is not everything. Oak contains tannin group substances,

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which are an important component of any wine. They prevent the oxidation of white and red wines during their maturation, make them stronger, and also contribute to lightening after the completion of alcoholic fermentation. Tannins are also an important element of the "structure" of taste – thanks to them, the wine seems "dry". After all, aging in an oak barrel contributes to the oxidation of certain compounds in "raw" drinks, making their taste more holistic and rounded. Oak chips are segments of oak wood prepared according to a special scheme. A small number of such segments in a drink can enrich it with typical oak-aged flavors and aromas in a fairly short period of time. And time plays a very important role in this case. During industrial processing, oak wood blanks are crushed into oblong segments, small chips, cubes or other shapes are made from them, for example, spirals. After that, they are soaked in water, then in water with soda, then steamed and dried. Such treatment is necessary for complete disinfection of wood and removal of excessive amounts of tannins from it, which negatively affect the taste of beverages. After that, the chips are either left in this form, or fried. The degree of roasting affects the taste of the aged drink, as well as its color:

• light roasting – thin vanilla, fruit and floral aromas;
• medium roast – pronounced vanilla, almonds, coconut, spices, caramel;
• strong roasting – smoky and chocolate flavors. Unburned chips or light roast chips are used during the processing of grapes and alcoholic fermentation of wine – it increases the tannin content and brings fruit, almond, vanilla and woody undertones to the drink. For aging beer, wine and distillates, it is recommended to use medium and strong roast chips. It is advisable to prepare the chips before use. To do this, dip it in boiling water for 5-10 minutes for sterilization, and then insist on raw alcohol for 1-2 days to remove excess tannins. During the aging of any drinks, samples should be taken regularly, since excessive infusion of the drink on chips can lead to not the most pleasant taste sensations. Methods. The following research objects are used in the work: - washing water; - blended red wine materials. - oak chips of selected oak wood. Oak chips were processed using a special technology, including soaking, drying and heat treatment. Oak chips were plates up to 2-3 cm long and 1-2 cm wide and 1-1.5 mm thick.

The chemical composition of red wine materials is shown in Table 1.

Volumetric proportion of name	given alcohol of vinomaterials, %	Titrable plants, G/dm3	volatile plants, G/dm3	SO2, mg/dm3	given extract quantity, G/dm3
Xindogni	12	4,3	1,2	200	16,0
Kaberne	12	4,6	1,1	199,6	15,9
Saperavi	13	4,2	1,1	199,7	15,8
Tavkveri	11	4,4	1,0	199,2	15,8

The experimental part. In order to study the effect of aging of red table wine materials in contact with heat-treated oak chips on their physico-chemical composition and organoleptic parameters, an experiment was conducted on red wine materials, to which oak chips were added in an amount of 4 g/dm3 and laid for aging at a temperature of 12-17 ° C. Wine materials, in which oak chips were not introduced, served as control. The wine material was kept in contact with wood chips for 4 weeks. The studies used oak chip variants with optimal

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temperature and time processing parameters set in the previous sections: 200 °C, 20 min; 200 °C, 30 min; 200°C 40 min; Before and after contact with oak chips, the physico-chemical composition of wine materials was studied. The experimental samples were samples of wines aged in contact with oak chips that had undergone preliminary water and heat treatment. The control samples were wine samples that did not come into contact with oak chips. The quality of the treatment was determined by differences in physico-chemical and organoleptic parameters between experimental and control samples. The effect of heat treatment of oak chips on the change in the physico-chemical parameters of red wine materials during aging is presented in Table 2

Indicators	Control	Aging in an Dub barrel	200 0C, 20 min	200 0C, 30 min	200 0C, 40 min
OV potential, mV	328	337	330	332	334
Reduced extract, g/dm3	15,7	16,0	15,8	15,9	15,9
Polyphenols, mg/dm3	2147	2228	2299	2334	2338
Catechin tannins, mg/dm3	526,4	530,2	527,8	527,9	528,0
Color intensity,I	1,007	1,147	1,120	1,128	1,139

The total concentration of phenolic compounds during aging of red wine material in contact with oak chips increases slightly - up to 6%, the concentration of catechin tannins increases to 2.0 mg / dm3 compared with the control, depending on the modes of heat treatment of oak chips. At the same time, due to the extraction of phenolic compounds, there is also an increase in the reduced extract in the experimental samples compared with the control. According to organoleptic indicators, the prototypes differed from the control one with an exquisite aroma, incomparable taste, their bouquet ennobles, and approached cask-aged wine. Their tasting score was on average 0.2-0.3 points higher, compared with the control and 0.4-0.5 points lower, compared with wine aged in oak containers. According to the results of the organoleptic analysis, the optimal modes of heat treatment of oak chips for red wines were selected: roasting at 200 0C for 40 minutes. Based on the results obtained, it can be concluded that the aging of red table wines in contact with oak chips significantly affects their physico-chemical and organoleptic characteristics, which has a beneficial effect on improving their quality compared to non-aged wines and contributes to their approximation to cask-aged wines.

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