

## Features of the application of natural filter material in distillery production

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**Introduction.** In the technology of water filtration and water-alcohol solution (sortivky) in accordance with current regulations is using quartz sand, anthracite filtrants, flint, garnet, rock crystal.

**Materials and methods** The objects of research were prepared water and sortivka after filtration with using of filter material (FM): natural materials such as obsidian, a solution of equal proportions of rock crystal, morion, rauhtopazu as control - quartz sand.

In this research were used experimental commonly accepted in distillery production methods of controlling, planning and processing of research results.

**Results and discussion.** Today many distillery plants use quartz sand for mechanical water filtration and previous and final filtration of sortivky. Quartz sand requires significant expenditures during the preparatory phase for mechanical water filtration and previous and final filtration of sortivky.

The study aim is to improve technology of distillery production with using of different types of materials during water preparation and filtration of sortivka

Obsidian – is a natural glassy gray-white, yellow-brown and black material. A mixture of natural quartzes such as — rock crystal, morion and rauhtopaz — has zonal colorless, blue, pink, bluish-pink color.

In comparison with the control sample, the chemical resistance and mechanical strength of obsidian particle size of 0,5 — 1,0 mm and mix of quartz is higher in 2 — 5 %, resulting in decreases in 1,2 — 2,5 times the water consumption during preparation, backwashing and quick washing out. It is established that the use of the studied materials in comparison with the use of silica sand enables for one filtration cycle increase the relative amount of prepared water at 100 — 200 vol./vol. FM.

The application of obsidian or a composition of rock crystal, morion, rauhtopazu in comparison with quartz sand on the stage of mechanical filtration allows to improve the transparency of prepared water by 5 — 10 % and overall assessment of tasting in 0,5 — 1 points, and also the cleaning effect of initial water is higher in 10 — 25 %.

The results of the tasting evaluation indicate that the vodka, cooked in water, that was prepared using obsidian, or a mixture of minerals improves transparency by 0,5 points; flavor - by 0,1 points; taste - by 0,5 points.

**Conclusions.** Based on the analysis and synthesis of theoretical data, results of experimental studies was found prospects in use of obsidian and a composition of natural minerals in equal proportions — rock crystal, morion, rauhtopaz as filter material for water, which positively affects the quality of distillery products.