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METHODS OF DISTINGUISHING ALCOHOLIC PRODUCTS FROM COUNTERFEIT DRINKS.

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Abstract: This article analyzes the methods of distinguishing alcoholic beverages from counterfeit beverages, the criteria for determining their quality, and their importance in protecting consumer health. It also discusses the causes of the appearance of counterfeit alcoholic beverages, the external signs used to identify them, the quality of labeling, packaging, and the role of laboratory analysis. The article also provides practical recommendations for consumers to avoid counterfeit beverages.

Keywords: alcoholic beverages, counterfeit beverages, quality control, labeling, packaging, laboratory analysis, consumer safety, counterfeiting, certification, control methods.

Alcoholic beverages are beverages containing ethyl alcohol. Vodka, liqueur-vodka products, wines made from grapes and berries, and cognac are alcoholic beverages. Ethyl alcohol serves as the main raw material for vodka, liqueur-vodka products. It is obtained by fermenting various products containing starch (potatoes, grains, etc.) or sugar with the help of yeast. For consumption, well-purified or rectified alcohol with an alcohol content of at least 95-96.5% is used. Unpurified alcohol is used only for technical purposes. In the scientific research work, modern chemical methods were used to determine the composition of alcoholic beverages. Today, counterfeit beverages are widely available in stores, which not only negatively affect people's lives and health, but can also cause premature death.

Based on the above, the quality of alcoholic products in the research work was carried out using the following methods.

Determining the quality of wine - To determine the quality of wine at home, open the wine cork, hold the mouth of the bottle tightly with your thumb, put the bottle in a container of water, and slowly remove your finger from the mouth of the container. If the wine does not mix with water, it is considered a pure, natural quality wine without any additives; if the opposite is true, that is, it mixes with water, it is a fermented drink. Because when alcohol, dyes, and sugar are added to the drink, it becomes heavier than water.

Determining the quality of vodka - We add 20-25 ml of sulfuric acid to the flask, the same amount of vodka that we want to determine, and mix. If the mixture turns black, such vodka is fake. Among the people, such vodkas are called vodka prepared in a "handmade" way. In addition, litmus paper can be used to determine the quality of vodka. If the color of the litmus paper is red, it indicates a high content of acid in its composition, poor quality vodka and a health hazard. Determining the quality of beer - To determine the quality of beer, acetic acid is dripped into half a glass of beer until a precipitate forms. If the liquid tastes bitter when tasted, it indicates the presence of various bitter additives. Because if the beer is of high quality, it should not be bitter when acetic acid is added to it. In some cases that negatively affect the composition of beer, picric acid is added. To determine this, the beer is boiled for 10 minutes. A white woolen

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cloth is placed in the liquid. If the cloth turns yellow, the beer is of poor quality. If the cloth is very yellow, it indicates a high content of picric acid.

Determination of the concentration (strength) of ethyl alcohol and beverages made from it. In scientific research, the concentration of ethyl alcohol and its beverages is determined using alcoholometers. Alcoholometers are usually of two types - metal and glass. Glass alcoholometers are often cylindrical in shape, with the upper part divided into scales and a heavy load installed in the lower part. Before determining the concentration of alcohol, glass alcoholometers were washed in hot water and wiped dry. A thermometer and a glass container were prepared. Alcohol was poured into a glass container (cylinder) and mixed, then the prepared alcohol was slowly poured into the cylinder. The alcoholometer should not fall to the bottom of the cylinder. The alcoholometer should be 2-3 mm above the alcohol in the cylinder. After 2-3 minutes, the scale of the alcoholometer was checked visually, while it was required that the eye and the alcoholometer were at the same height. At the same time, the lowest scale of the alcoholometer was determined and the temperature of the alcohol was determined using a thermometer. The percentage of anhydrous alcohol and the concentration of the solution were determined on the scale of the alcoholometer. Often, the concentration of alcohol at a temperature of 200 ° C was determined using tables. For example, the scale of the alcoholometer showed 90 at a temperature of 29 degrees. Using the appropriate table, we can find out that in this case the concentration of the solution is 87.59%. For example, the scale of the alcoholometer showed the number 60 at minus 100 ° C, in this case the concentration of the solution is 69.90%. To accurately determine the concentration of alcohols, alcoholometers (areometers) were used, which are much more compact and have a smaller volume than glass alcoholometers. Metal alcoholometers, according to the laws of physics, displace an amount of liquid equal to their volume. Due to their small volume, the degree of its detection increases. The principle of operation of a metal alcoholometer is similar to the principle of operation of a glass alcoholometer [94;].

Determination of the alkalinity of vodka - the volume of hydrochloric acid in ml consumed to titrate 100 ml of vodka is called its alkalinity. In the research work, the determination was carried out by two methods: chemical and potentiometric methods.

Determination of the amount of sivush oils in vodka - 1 ml of methyl alcohol was measured in a 100 ml flask and made up to the mark with a 40% ethyl alcohol solution. A degree graph was drawn. To prepare standard solutions in 50 ml flasks, 1.25 measurements; 2.50; 3.75; 5.00; 6.25; 7.50 and -8.75 ml of the main standard solution of methanol were made up to the mark with a 40% ethanol solution. The resulting solutions, in turn, were 0.025; 0.050; 0.075; -0.100; 0.125; 0.150 and 0.175 vol. % methyl alcohol. 0.25 ml of each solution was measured into test tubes with a crushed stopper, then 2 ml of potassium permanganate solution was added to each test tube, mixed and left for 3 minutes, shaking the liquid occasionally. Then 2 ml of oxalic acid solution was added to each test tube, shaken until the precipitate dissolved, and sodium or potassium metabisulfite or sodium bisulfite solution was added dropwise until the liquid was completely decolorized. 1 ml of the solution was taken from each test tube, transferred to other dry test tubes, 1 ml of sulfuric acid was added to each, the mixture was allowed to cool, then another 1 ml of sulfuric acid was added, mixed and cooled to room temperature and all the tubes were combined.

Two drops of a 2% solution of sodium salt of chromotropic acid were added. Immediately, the tubes were placed in 15 ± 60 glasses of water at 60 ± 1°C. After cooling to room temperature, the optical density of the obtained standard solutions of methanol was measured in a photocolorimeter with a green light filter (| Acax = 540 nm) in a cuvette with a 5 mm light-absorbing layer. The reference solution was prepared in the same way as the standard solutions,

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only instead of 0.25 ml of methanol solution, the same amount of 40% ethanol solution was taken. Before the test, cognac or cognac alcohol was diluted with distilled water to 40 vol.

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