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EVALUATION OF ORGANOLEPTIC PROPERTIES OF SOFT DRINKS PREPARED FROM PLANT MATERIALS

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Abstract: The article discusses the indicators affecting the quality of soft drinks, namely appearance, transparency, color, aroma, taste, and the amount of sediment on the quality of the product. Methods for determining the organoleptic indicators of drinks according to GOST 28188-89 and GOST ISO 6658-2016, as well as their color indicators, are presented.

Keywords: Transparency, color, aroma, taste, sediment content, bitter, sweet, sour, salty, kvass and syrup.

Introduction. Providing consumers with quality food products, protecting their health, fully processing raw materials, reducing the cost of production through the use of energy-efficient technologies are some of the main pressing issues of our time. For this purpose, there are certain methods for assessing the quality of consumed products, which are determined by determining their composition using chemical methods and forming certain ideas about the quality of products through express testing. At the same time, the organoleptic indicators of products, namely their appearance, transparency, color, aroma, taste, sediment content, are indicators that determine the quality of products. For each type of product, there are separate organoleptic indicators that differ sharply from each other depending on the type of product. With the adopted Appendix 3 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated 28.02.2011 No. 122 "Regulations on the procedure for notifying the manufacturer of compliance with the quality and safety requirements of products manufactured in the Republic of Uzbekistan."

The Resolution states,that the manufacturer is responsible in accordance with the law for ensuring the accuracy of the information specified in the notification of compliance of the safety and quality indicators of manufactured products with the mandatory requirements of regulatory documents, as well as for compliance with the mandatory requirements of regulatory documents regarding the quality and safety of manufactured products [1].

Research part. Organoleptic characteristics of drinks usuallyGOST 28188-89and the tested drink must meet a certain set of requirements defined by GOST ISO 6658-2016. For this, a rating and scoring system is used with the involvement of experienced industry experts - tasters [2; 3].

The taster must have the appropriate professional skills and know the criteria for assessing the quality of food products. The following methods are commonly used in the laboratory:

1) Visual inspection – light transmission, shape, surface condition.
2) Acoustics is the study of the sound produced when food is broken into pieces (chewing) and the observation of the resonance of the sound.
3) Assessing the smell of food ingredients and additives.
4) Consistency – used to determine internal consistency and surface properties.
5) In terms of taste characteristics, it is compatible with other food products of this type.

These indicators are determined by different methods for different types of food products. When preparing drinks, the color and consistency of the product depend on the type of raw materials and processing methods. Thermal treatment in technological processes to a certain extent affects the color intensity of the processed product [4; 16-17].

The following descriptive terms are used for organoleptic evaluation of beverages:

Color - colorless, light yellow, yellow, orange, light brown, brown, dark brown, yellow-green, light green, green, pink, red, dark red, ruby, dark ruby, raspberry, beetroot, turquoise, light blue, dark blue in appearance;

Taste – bitter, sweet and sour, salty, clean, harmonious, clear (bright, weak), tasteless, characteristic, inherent to the corresponding fruits, berries, herbs and other raw materials, malty, honey, bitterish, with a caramel tone, harmonious, salty-sour-sweet, with an unpleasant aftertaste;

Transparency – transparent, shiny, opalescent (strong, weak), cloudy, without suspended matter, with sediment.

The smell is weak due to the use of additional raw materials;

Turbidity – a certain level of sediment is allowed depending on the type of raw material.

When assessing the appearance and intensity of coloring of products, it is determined visually in accordance with the requirements of the normative and technical documentation for finished products in glass cylindrical cups. The intensity of coloring is assessed in accordance with the requirements of the normative and technical documentation for finished products.

Liquid beverages and non-alcoholic beverage concentrates must meet the following appearance requirements:

Transparency - transparent liquid without sediment and foreign inclusions. Depending on the characteristics of the raw materials used, slight turbidity is allowed.

Transparent - opaque liquid. The product may contain particles, suspensions or sediments of raw materials without foreign inclusions. For transparent syrups - a transparent, viscous liquid without sediment, turbidity and foreign particles. Depending on the characteristics of the raw materials used, slight turbidity is allowed. Transparent -

for opaque viscous liquids, the presence of seeds and suspensions or sediments of fruit pulp without foreign inclusions not characteristic of the product is allowed.

The organoleptic properties of dry mixes for making drinks are assessed after dissolving tablets or powders in water. They should completely dissolve in cold water within two minutes. The presence of insoluble sediment is not allowed. When dissolving carbonated drinks, a large amount of carbon dioxide should be released.

The aroma and taste of soft drinks, concentrates, kvass extracts, commercial syrups and dry drinks (after dilution), artificially mineralized waters, kvass and drinks based on grain raw materials are determined by the organoleptic method at a temperature of 10-14°C. The aroma and taste of the drink are assessed for compliance with the requirements of regulatory and technical documents for finished products. The color, taste and aroma must correspond to the color, taste and smell of the original raw materials. The color may change during heat treatment of drinks.

Organoleptic assessment of the quality of soft drinks, mineral waters and low-alcohol drinks is carried out according to the following quality indicators:

transparency, color, appearance – from 1 to 7 points;

taste and aroma - from 6 to 12 points;

CO2 saturation - from 2 to 6 points.

The highest score for transparency is given to drinks that are clear and light; if they are absent, the drink's score is reduced by 5 points. The highest score (10) is given to taste and aroma if the drink has a full taste and distinct aroma characteristic of that drink. The highest score for CO2 saturation (6) is given to a drink that releases carbon dioxide quickly, strongly, and for a long time after filling the glass. If carbon dioxide is released quickly but for a short time, the drink's score is reduced by 1 point. The table below uses a 25-point rating system for soft drinks [5; 198-205].

A guide for tasters on assessing the quality of soft drinks

Quality indicators	Grade			
	Great	Good	Satisfactorily	Not satisfactory
1. The appearance of color	7	5	4	1
Taste, aroma	18 The drink is rich, with bright characteristics.	15 Regulatory characteristics of the drink	12 Incomplete taste, weak smell	9 Unpleasant taste, unusual smell
CO_2 saturation	6 Active bubbling, gentle spray on tongue, long lasting CO_2 release	5 Active but short-term, weak splashing, foaming	4 Short-term release of a weak CO_2 taste	3 No indicators are visible.

Based on the overall score, the quality of soft drinks is assessed as follows: “excellent” – 23–25 points; “good” – 19–22 points; “satisfactory” – 15–18 points; “unsatisfactory” – less than 15 points.

No.	Name of the drink (mineral water)	№ code number	Name of quality indicators			Overall score in points	Note
			Transparency, color, appearance	Taste and aroma	CO_2 saturation		

Quality indicators of non-alcoholic refreshing and thirst-quenching drinks

Quality indicators	**Organoleptic properties**	**Rating points**
Appearance		
Transparent	Complies with regulatory requirements, transparent, without sediment and foreign inclusions,shines	5 points
	Complies with regulatory indicators,transparent, slightly different, slight clouding of fillers and a small sediment are allowed	4 points
	Does not meet standard specifications, noticeable differences in the form of slight turbidity, loss of filler after slight shaking, a small amount of floating paint particles is allowed.	3 points
	Does not meet regulatory standards,a large amount of foreign particles in the form of sediment	2 points
	Does not meet regulatory standards,with significant turbidity, with foreign inclusions, sediment, mold, a large number of foreign particles in the form of mucus.	1 point
Turbidity	Complies with regulatory standards, cloudy homogeneous	5 points
	Complies with regulatory documents, slightly different, slight filler sediment, uniform after shaking.	4 points
	Does not comply with standard indicators, with significant differences: increased sedimentation of added fillers and dyes, low degree of dissociation, the filler is homogeneous after shaking, the presence of a small number of particles is allowed.	3 points
	Does not comply with regulatory documents, presence of foreign particles	2 points
	Out of specification, significant separation, more sediment, moldy slime	1 point
Color	The colour and intensity of colouring correspond to the colour of the fillers used in accordance with regulatory documents.	5 points

	The color is characteristic of the color of the added fillers and varies;	4 points
	The color is specific to the drink, the intensity of the color varies slightly (weaker or more intense color)	3 points
	The color does not correspond to standard norms, is unnatural, unpleasant, has a slightly discolored shade	2 points
	The color does not correspond to regulatory documents, unnatural.	1 point
Aroma	Complies with regulatory documents, harmonious, intense, corresponds to the leading properties of added fillers.	5 points
	Complies with regulatory documents, harmonious, medium intensity, corresponds to the properties of added fillers.	4 points
	Complies with regulatory documents, suitable for stars with loose added fillers.	3 points
	Faint smell, does not comply with regulatory documents	2 points
	Does not comply with regulatory documents, stale, unpleasant, presence of foreign odors in perfume	1 point
Taste	Complies with regulatory documents, full-fledged, harmonious, pleasant, matches the taste of added fillers.	5 points
	The taste qualities characteristic of the type and name of the drink are not fully expressed and comply with regulatory documents.	4 points
	Complies with regulatory documents, weak, characteristic of the taste of added fillers	3 points
	Does not comply with regulatory documents, weak taste	2 points
	It does not comply with regulatory documents, the taste is no different, it is unpleasant, and when used it has a foreign taste.	1 point

Tasting chart for assessing the quality of non-alcoholic beverages

Taster's name _____

Tasting date _____

Name of the organization _____

Position held _____

Conclusion: By conducting ongoing research, it is possible to obtain certain scientific results and conclusions about the properties of beverages, as well as to obtain a theoretical understanding of the methods of their evaluation by organoleptic indicators and certain quality indicators. This plays a key role in the preparation of high-quality food products, including beverages, from the point of view of consumers.

Links:

1. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated 28.02.2011 No. 122 “Procedure for the manufacturer to declare conformity of products manufactured in the Republic of Uzbekistan with quality and safety requirements”.

2. GOST 28188-89. International standard, Non-alcoholic beverages, General specifications.
3. GOSTISO 6658-2016 Sensory analysis.
4. Oganesyan L.A., Ponasyuk A.L., Garnett M.V., Zainulin R.A., Kunakova R.V., “Technology of soft drinks” St. Petersburg 2015, Textbook for universities. 16-17 st.
5. Domaretsky V. A. Technology of extracts, concentrates and drinks from plant raw materials; Study guide. Moscow, 2011; 198-205 pp.

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