

JUSTIFICATION OF THE PRACTICABILITY OF CREAM LIQUEUR "ALCHEMY OF THE NIGHT" PRODUCTION

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The global alcoholic beverage market exhibits a steady demand for premium beverages, particularly in the cream liqueur segment, as evidenced by the sustained growth of this category [1]. Modern consumers, particularly the younger generation, are actively seeking beverages that offer not only a deep flavor profile but also a unique experience and visual appeal. Therefore, the concept of the "Alchemy of the Night" liqueur, with its rich black color and complex aromatic composition, is relevant [1].

The purpose of this study is to provide a technological and marketing justification for the advisability of producing a cream liqueur, while focusing on the selection of components that ensure both high-quality organoleptic properties and high emulsion stability in the finished beverage.

It is necessary to consider several factors that affect the quality of liqueur products, which will enable us to predict the stability of their organoleptic and physicochemical properties even at the development stage of a new beverage.

These factors should be considered when preserving the nutritional and biological value of the beverage over its guaranteed shelf life, as well as when selecting process materials for filtration, purification, stabilization, and packaging. There is a technological classification of raw materials for liqueur production:

- aromatic (herbs, flowers, roots, tree bark, dried and juicy fruits);
- non-aromatic (herbs, roots, tree bark);
- fruit and berry (fresh and dried) [2].

When developing the flavor and aroma of various liqueur and vodka compositions, it is necessary to ensure a combination of ingredients that most fully and harmoniously reflects the characteristic properties of the particular beverage. However, off-flavors from individual ingredients that disrupt the overall tone of the liqueur composition, such as excessive sweetness, pungency, or the release of a sharp aroma, must be avoided [3].

The feasibility of producing the "Alchemy of the Night" cream liqueur is based on the interaction of selected components, which possess both structural and functional properties.

The organoleptic profile is based on alkalized cocoa powder and condensed milk. The use of highly pigmented cocoa powder not only provides the necessary black color, a central element of the product's aesthetics, but also imparts functional value to the drink. Even after alkalization, cocoa powder remains an important source of polyphenols, primarily flavanols (catechin and epicatechin). These compounds are known for their potent antioxidant properties, which research has linked to potential cardioprotective and anti-inflammatory effects [5].

Condensed milk is a key component, ensuring the structural integrity and quality of the liqueur. It supplies high-quality milk proteins (casein and whey proteins) and lipids, which provide the necessary full flavor and a thick, velvety texture.

Most importantly, milk proteins act as an effective natural stabilizer in the alcohol matrix. They interact with phenolic compounds, preventing coagulation, separation, and sedimentation, which is critical for the long-term stability of the emulsion product [4].

To ensure reliable homogeneity of the fat and aqueous-ethanol phases, the use of effective emulsifiers is necessary. It is advisable to use sunflower lecithin (E322), a natural phospholipid that provides the necessary reduction in surface tension and prevents separation.

The blend of spice extracts (cinnamon, vanilla, and nutmeg) not only creates a unique flavor profile but also enriches the liqueur with functional components. Cinnamaldehyde, the primary active compound in cinnamon, is recognized for its ability to enhance insulin sensitivity, thereby positively supporting metabolic health; simultaneously, it exhibits potent antimicrobial activity, which contributes to product stability.

Vanillin, the key aromatic component of vanilla, acts as a powerful natural antioxidant, protecting cells from oxidative stress. Furthermore, myristicin from nutmeg is being studied for its neuroprotective and anti-inflammatory properties, which together enhance the functional potential of the liqueur [6].

Thus, the production of the Alchemy of the Night cream liqueur is entirely feasible, given current market trends and technological capabilities. The product successfully combines the marketing appeal of its unique black color and aesthetics with the high quality and stability provided by its functional ingredients.

The use of condensed milk and alkalized cocoa powder guarantees not only a rich flavor and desirable texture, but also a beverage with antioxidant potential, positioning it as a product with a delightful taste and high nutritional value.

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