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Impact of Including Winemaking By-product on the Properties of A2A2 Milk and Probiotic-made Petit Suisse Cheese

Costa Jea*

Department of Food Science and Technology, Federal University South Border, BR 158, km 405, Laranjeiras do Sul 85319-899, PR, Brazil

Introduction

The dairy industry is increasingly exploring sustainable and innovative ways to enhance the nutritional and sensory properties of dairy products while minimizing waste. One such approach is the inclusion of winemaking by-products in dairy production, particularly in the manufacture of cheese. Winemaking by-products, such as grape pomace, seeds, and skins, are rich in bioactive compounds like phenolic compounds, antioxidants, and dietary fiber. These by-products, often discarded after the wine production process, can be repurposed for use in food products, offering both environmental and nutritional benefits. Petit Suisse cheese, a soft, creamy, and mild cheese, traditionally made from cow's milk, offers a unique opportunity to explore the effects of such by-products. The increasing interest in A2A2 milks a specific breed of milk with a particular type of beta-casein protein adds another layer of complexity and potential benefit. This article discusses the impact of including winemaking by-products on the properties of A2A2 milk and probiotic-made Petit Suisse cheese, focusing on the nutritional, sensory, and technological aspects [1-3].

Description

The inclusion of grape pomace, seeds, or skins in the cheese can significantly boost its antioxidant capacity. The phenolic compounds in these by-products can help protect cells from oxidative damage and reduce the risk of chronic diseases, such as heart disease and cancer. This could make the cheese more appealing to health-conscious consumers. Grape seeds and skins are excellent sources of dietary fiber. Including these by-products in cheese production could increase its fiber content, which is important for digestive health. Additionally, fiber can help regulate blood sugar levels, improve cholesterol profiles, and contribute to overall satiety, making it a more healthful product. However, careful formulation is needed to ensure that these additions do not compromise the desired smooth, creamy texture of Petit Suisse cheese. The organic acids and antioxidants from winemaking by-products may help improve the shelf life of Petit Suisse cheese. The acidity could act as a natural preservative, while antioxidants might reduce spoilage caused by oxidative processes, thereby extending the product's freshness. The incorporation of phenolic compounds may also contribute to a slightly astringent or tannin-like taste, which could appeal to consumers looking for novel, gourmet cheese experiences. The addition of grape pomace may affect the texture of the Petit Suisse cheese. Grape seeds, rich in fiber, could enhance the creaminess of the cheese, while the skins might add a slight graininess or more robust texture [4,5].

Conclusion

The inclusion of winemaking by-products in the production of A2A2 milk-based Petit Suisse cheese presents an exciting opportunity to enhance the nutritional properties of dairy products while reducing waste from the wine industry. By enriching the cheese with antioxidants, fiber, and organic acids from grape pomace, seeds, and skins, this approach offers potential benefits for digestive health, inflammation reduction, and overall wellness. As the food industry continues to prioritize sustainability and health, such innovative strategies in smart food production are likely to become more widespread, paving the way for healthier, more functional dairy products. The combination of probiotic bacteria and the bioactive compounds from winemaking by-products could have synergistic effects on gut health. Probiotics help balance the gut microbiome, while antioxidants and fiber from the grape by-products support digestive health by acting as prebiotics and promoting the growth of beneficial gut bacteria. Winemaking by-products, particularly grape skins, may impart subtle fruity, wine-like flavors to the cheese, enhancing its complexity.

Acknowledgement

None.

Conflict of Interest

None.

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***Address for Correspondence:** Costa Jea, Department of Food Science and Technology, Federal University South Border, BR 158, km 405, Laranjeiras do Sul 85319-899, PR, Brazil; E-mail: jeanc@gmail.com*

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