

The Effect of Apple Cultivar and Apple Pomace Ratio on the Composition of a Probiotic Beverage Fermented with *Levilactobacillus brevis*

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Abstract

This research explores the incorporation of apple pomace into a non-dairy probiotic beverage, employing fermentation with *Levilactobacillus brevis*.

Apple pomace derived from the "Golden Delicious" and "Topaz" cultivars were introduced at different ratios (1:3, 1:5, and 1:10), and fermentations were conducted at laboratory scale using two distinct approaches. Throughout the process, various physicochemical indicators were closely monitored. Beverages containing apple pomace demonstrated decreased pH values, increased titratable acidity and elevated levels of polyphenols, with more pronounced effects in higher addition of apple pomace samples. Higher pomace concentrations led to lighter coloration. Additionally, analysis of volatile compounds indicated notable aroma differences based on fermentation method and pomace ratio.

Overall, the inclusion of apple pomace improved both the acidity and nutritional attributes of the beverage, while contributing to sustainable food processing.

Keywords

Apple pomace, fermentation strategies, probiotic beverage, *Levilactobacillus brevis*.

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