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Development of a non-dairy Probiotics drink from egg white-based product mixed with different fruit juices

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The use of probiotics in dairy products has been intensive for a long time. However, they cannot be consumed by many people who are lactose intolerant and milk protein allergic. As egg white drink comprises high-quality proteins, it is considered to be an alternative protein source. Since there is a growing interest in non-dairy probiotic drinks, the growth of *Lactocaseibacillus casei* 01 in a 3:1 mixture of egg white drinks to fruit juices (peach, pineapple, strawberry) was investigated. Moreover, the viable cell counts, the pH, and the rheological characteristics of the final products were monitored during 24 hours of fermentation.

L.casei 01 was eligible to propagate in the mixtures of egg white drinks with different juices, the log₁₀CFU/mL reached nearly 9 after 24 hours. Even though the microbial population was at its highest after 16 hours of fermentation when pineapple and strawberry juices were added, the number of cells in samples that contained peach juice was greater after 24 hours. Additionally adding peach juice resulted in a pH value of 3.77 significantly lower than in pineapple and strawberry samples. The fermented egg white drink mixed with peach, or strawberry showed shear thickening behaviour while adding pineapple showed pseudoplastic behaviour.

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STUDYING THE SHELF-LIFE OF PROBIOTICS FERMENTED EGG WHITE DRINK USING PREBIOTICS

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As health and lifestyle changes become more important, functional foods have become more popular and essential. It includes foods containing probiotics and prebiotics however, most probiotic foods are dairy products, that can't be consumed by lactose-intolerant and milk protein-allergic people. Egg white is also considered one of the richest sources of functional proteins, which could be useful as an alternative food matrix. In this study, egg-white drink with different carbohydrate sources, including monosaccharide (fructose) and oligosaccharide (fructooligosaccharide) was fermented by *Lacticaseibacillus casei* 01. After 24 hours of fermentation, the total cell count was higher than 8 log₁₀CFU/mL thus, the egg white drink was suitable for *L.casei* 01 to grow. Additionally, the viability of *L.casei* 01, pH value, and rheological characteristics during three weeks of refrigerated storage was investigated. Throughout the storage period, the control samples had considerably lower cell count and higher pH values compared to the samples with carbohydrate sources, as there was no significant difference during time storage when the comparison was made on the same sugar used. Viscosity measurements of the studied samples indicated a shear thickening behaviour during the time.