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Improving the quality of free-fat bifidus milk using some plants' seeds

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Abstract:

Synbiotics are food products that contain both prebiotics and probiotic microorganisms, wherein prebiotics encourage the growth of probiotics. In this study, The free-fat synbiotic Bifidus milk was improved by adding flaxseeds (FS), sunflower seeds (SS) or pumpkin seeds (PS) in powder form as prebiotics for Bifidobacteria (Bifidobacteriumlactis and Bifidobacteriumbifidum). Chemical analysis, microbiological examination including the viability of Bifidobacteria, synersis and sensory attributes were determined. The lowest fat, protein and fibers content were recorded by the control while, the highest fat content was for fermented milk supplemented with 4% SS. The highest protein content was reported for treatment supplemented with 4% PS followed by milk supplemented with 4% SS. The pH value decreased as the seeds concentrations increased and the lowest pH value was for Bifidus milk enriched with 4% FS powder at 21 days

The viability of Bifidobacteria increased during storage to reach the highest levels at day 14, and then it decreased. The biggest count was for treatments enriched with SS powder. All treatments which contained seeds have lower TVC numbers than control when fresh and either across the storage. The treatment supplemented with 4% FS recorded the lowest Syneresis value (2 ml/100ml). Sensory evaluation's results showed that the highest total scores were recorded by Bifidus milk enriched with 2 and 4% pumpkin seeds.So, it can be recommended to enrich fermented dairy products with plants' seeds as prebiotics to enhance the nutritional value, overall acceptability and the viability of probiotics used in fermentation.

Keywords:

Bifidus milk, flaxseeds, sunflower seeds, pumpkin seeds, prebiotic