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DEVELOPING INULIN INCORPORATED YOGHURT SWEETENED WITH SUCRALOSE: A PRELIMINARY STUDY BASED ON SENSORY EVALUATION

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Demand for yoghurt has increased as it contains not only nutrients but also functional constituents and viable bacteria, which provide health benefits. Value of yoghurt can be further improved by incorporating inulin, a non-digestible fructo-oligosaccharide, which has gelling and stabilizing properties. In the present study, the potential of inulin as a functional food ingredient for replacing or reducing skimmed milk powder (SMP), sucrose and gelatine in manufacturing set-yoghurt was investigated.

The potential for replacing SMP by 0, 50 and 100% with 0, 1 and 2% (w/w) inulin, respectively was tested by evaluating the preference for flavour and texture of the three yoghurt samples using a ranking test and 42 panellists. The inulin level significantly ($P<0.05$) affected the preference for flavour and texture. Most preferable flavour was evident in the sample containing 2% inulin whereas the most preferable texture was evident in the samples containing 1% inulin. As inulin provides soluble solids and one of the objectives of the study was to replace sucrose with sucralose, 2% inulin was selected for further developing the product. The potential for replacing sucrose by 0, 50 and 100% with 0, 0.75 and 1.5% (w/w) sucralose, respectively was tested by evaluating the preference for sweetness and overall acceptability using a ranking test and 36 panellists. Sucralose level significantly ($P<0.05$) affected the overall acceptability, but not the sweetness. The best overall acceptability was evident in the sample having 1.5% sucralose. Therefore, 1.5% sucralose was selected for developing the product further. Two levels of gelatine, 0.72 and 0.54% (w/w), were used as treatments, and the potential for reducing the gelatine level was tested by comparing the two samples with a commercial set-yoghurt sample based on degree of liking for texture and flavour, and overall acceptability using 50 panellists and a 5-point hedonic test.

The commercial sample was not significantly different ($P>0.05$) from the samples containing two levels of gelatine. As the gelatine level did not significantly ($P>0.05$) affect the degree of liking for texture and flavour, and overall acceptability, 0.54% gelatine could be used instead of 0.72%, which is the level usually used for manufacturing set-yoghurt. Set-yoghurt possessing acceptable sensory properties can be produced by replacing SMP with 2 % (w/w) inulin, sugar with 1.5% sucralose (w/w) and using 0.54% (w/w) gelatine.

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