EFFECT OF NATURAL COLOURANT ON QUALITY ATTRIBUTES OF CREAM CHEESE

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Colour is a vital and sensorial criterion that influences consumer perception by increasing the attractiveness and acceptance of a food product. A recent trend has evolved to replace artificial colourants with natural colouring agents. Hence, the study was aimed to assess the colour stability of aqueous plant extracts, namely 4% (w/v) Roselle (*Hibiscus rosa-sinensis* L.), 3% (w/v) Beetroot (*Beta vulgaris* L.), 7% (w/v) Carrot (*Daucus carota*), and 2% (w/v) Blue pea (*Clitoria ternatea* L.) in cream cheese product. Further, the addition of colourants was tested for the physicochemical properties such as pH, titratable acidity, syneresis, total phenolic content (TPC), crude protein, crude fat, ash, total solids, and colour, over the storage period of 14 days at 4°C. Sensory attributes were tested using 30 untrained panellists while the viable count of coliforms, yeast, and mould was detected on day 1, 7, and 14. Authenticated control was made without adding any colourants. Data were statically analysed, using the SAS version 9.0 and MINITAB software. Adding plant materials resulted in varying pH, syneresis, flowability, colour (L*, a*, b*), crude protein, and TPC. A decrease of the L* value on the 14^{th} day was observed in all samples indicating that pigment degradation occurred throughout the storage. Significantly ($p<0.05$) the highest (61.42 µg GAE mL^{-1}) and lowest (24.04 µg GAE mL^{-1}) TPC was observed in Beetroot and Roselle incorporated cream cheese, respectively, at the beginning of the storage and end of the storage. The product safety was ensured as the coliform level was at the standard level (<10 cfu mL^{-1}). Carrot-incorporated cream cheese scored the highest sensory ranking for colour, aroma, texture, and overall acceptability. The findings of the current study confirmed that there is a potential to use these four natural colourants as commercial food colourants.

Keywords: Artificial food colourants**,** Fermented dairy products, Food quality attributes, Pigment degradation