

OPTIMISING THE NUTRITIONAL PROFILE OF BUTTER THROUGH ENRICHMENT WITH CACTUS POWDER: AN INNOVATIVE SOLUTION FOR THE FOOD INDUSTRY

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Abstract

In the context of growing concerns around health and nutrition, this research focuses on enhancing the nutritional profile of butter by incorporating cactus powder, an ingredient known for its high fibre and antioxidant content. The study compares the chemical, nutritional, and phytochemical composition of plain butter with butter enriched with cactus powder, assessing the impact of this addition on various physical and chemical properties. The results show that the enriched butter exhibits higher protein content (1.48%) and non-fat solids (4.34%), while the fat and moisture values remain similar to those of plain butter. Phytochemically, the addition of cactus powder led to a significant increase in carotenoids (81.43 $\mu\text{g/g}$ d.m.), flavonoids (1.16 mg EC/g d.m.), and polyphenols (1.91 mg GAE/g d.m.), thus improving the antioxidant potential of the final product, with a free radical inhibition capacity of 60.11%. These findings suggest that cactus powder-enriched butter could contribute to the diversification of healthy food products available on the market, offering a food item with enhanced nutritional value and functional benefits.

Key words: cactus powder, antioxidant potential, nutritional value, enriched butter, food enhancement