

ZINC AND IRON FORTIFICATION OF DAIRY FOODS: IMPACT ON QUALITY AND SENSORY ATTRIBUTES

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Food fortification has been commonly used to improve mineral and vitamin status in the diet and to eradicate deficiencies. Nutritional deficiencies are not unique to populations that are in under developed or developing parts of the world, but also it is seen in the developed world, particularly among the elderly, those with gastrointestinal disorders, pregnant and lactating women, alcoholics, those with sickle cell disease, and those on restrictive diets, such vegetarians. The food to be fortified and the nutrient selected for fortification must be selected carefully. The food selected must be a suitable carrier for the nutrient, and a common food in the diet of the target population. Furthermore, the nutrients used for fortification should be stable during the storage of the food selected and not impact food quality and its properties. Over the last three years, our lab has investigated fortification of dairy foods with zinc and iron, and the impact on quality. We investigated incorporation of zinc sulfate into cheese milk for manufacture of zinc-fortified Cheddar cheese without impacting quality and sensory attributes of the cheese. Our results indicate that fortification of cheese milk with 16mg/kg zinc sulfate is a suitable approach to fortifying Cheddar cheese without impacting quality and sensory attributes. We also investigated fortification of yogurt and pasteurized liquid milk with ferrous bisglycinate, ferrous lactate and ferrous sulfate microencapsulate. Ferrous sulfate microencapsulate was the best option for fortifying both yogurt and pasteurized milk. Overall, dairy foods are suitable for fortification with these nutrients.

Keywords: Zinc and iron fortification, Cheddar cheese, microencapsule

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