

ROLE OF DAIRY INGREDIENTS IN QUALITY AND SAFETY OF SOME FOOD PRODUCTS

By

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ABSTRACT

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Due to the technological development in the field of food industry, in addition to the interest of health aspects in the recent period, and put strict condition on the export and import of food, their has been an attention to the role played of dairy ingredients and their effects on the quality and safety of food produced, dairy ingredients used in food industry are considered to be rich in nutritional value due to the protein content of high biological value, essential fatty acids, phospholipids, and mineral and vitamins.

This research aims to study the role played by dairy ingredients which may be added in the manufacturing of ice cream and chocolate and their effects on quality and safety of these food products. A full concept for applying hazard analysis and critical control points (HACCP) during the manufacturing stages of these products was also carried ant. The study was done in two parts:

The first one was carried out to evaluate the effect of dairy ingredients in quality and safety of powdered ice cream. All dairy ingredients and the other materials were tested for its microbiological and chemical quality. The results of chemical analysis for these samples indicated that all ingredients were of high quality while the microbiological quality was low, especially of full cream milk powder.

Samples of powders ice cream showed different chemical and microbiological quality. The chemical results showed lower fat ratio in all samples of ice cream powders, ranging from (12.8–13%) which is lower than standard specifications of ice cream powders is (not

lower than 30%). Microbiological examination also showed lower microbiological quality due to of the lower quality of dairy ingredients used, especially full cream milk powder.

Swabs of tools, devices and hands of workers were taken and showed positive results which moony affect the safety and quality of produced ice cream.

The microbiological results showed also presence of large number of yeasts & fungi in most samples of retrieval ice cream. All produced recombined ice cream treatments showed acceptable sensory quality and vanilla type was the most acceptable one. Sensory quality was acceptable for all samples.

Application of hazard analysis and critical control points (HACCP) during the manufacturing stages of ice cream products to identify the most important sources of pollution cleared four critical control point (CCPs), which were (i)Receipt stage of ingredients (ii) Sieving (iii) Metal detection (iv) Freezing machine.

Part II of this study was carried out to evaluate the role of dairy materials in quality and safety of chocolate. Samples of dairy materials and other materials used in chocolate industry were tested for chemical, microbiological examination and sensory quality. The results of chemical analyses of row ingredient samples showed high quality for all samples, while the microbiological examination was low, especially, in sample of full cream and skim milk powders. Swabs of tools, devices and also hands of workers and the results showed positive results and this affects safety and quality of the chocolate produced.

Chemical, microbiological and sensory properties of chocolate showed high quality of the samples, while microbiological examination was acceptable for all sample.

Application of hazard analyses and critical control points (HACCP) system to identify the most important pollutants during

manufacturing steps of chocolate has been detected there points as critical control points (CCPs), which were (i) Receipt step of ingredients, (ii) Conch, (iii) Metal detection.

Key words:

Dairy ingredients – (HACCP) – Hazard – Ice cream – Chocolate
– Safety – Quality – Food products.

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