SINGAPORE STANDARD

CP 95 : 2002

(ICS 67.100)

CODE OF PRACTICE FOR

Cold Chain management – Milk and dairy products

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Foreword

This Code of Practice was prepared by the Working Group on Cold Chain Management – Milk and Dairy Products under the direction of the Food Standards Committee.

The establishment and sustaining of the Cold Chain are essential ingredients for upholding the safety of consumers and the protection of public health while preserving the nutritional and sensory qualities of perishable food products such as milk and dairy products. Furthermore, the Cold Chain adds on an additional dimension in extending the much desired shelf-life of food products without increasing health risks, by holding back microbial spoilage while maintaining the original intrinsic characteristics and qualities of the product.

The advent of sophisticated modern technologies which are employed in food processing, manufacturing and packaging have revolutionised the whole concept of food preparation and delivery. These have a significant impact on the perception and expectations of consumers towards food safety and quality. Twining of sophisticated food production techniques with attendant proper management of the Cold Chain for perishable food products is an inseparable and natural outgrowth of recent advances in sciences and technologies. Proper management of every link of the Cold Chain constitutes an integral part in the production and delivery of wholesome milk and dairy products to the consumers.

Commencing from the milk farm to the shelves of retail outlets, every sector of this chain must faithfully observe the stringent safety and hygienic practices accompanied by complete implementation of the Cold Chain in order to forestall hazards associated with poor farm and manufacturing practices, and temperature abuse. Any breaches along the links of the chain would be hazardous and pose a serious threat to the health of consumers. Thus activities undertaken and devices utilised with respect to the temperature profile along the chain stretching from the dairy barn, milking parlour, piping system, storage tanks, refrigerated transport/distribution containers for land, sea and air transportation, warehousing, manufacturing plants, chillers and deep freezers at retail outlets plus the mode of handling and storage from the retail outlets, right back in the home will be taken into consideration in preparing this Code of Practice. This is to ensure that safety, wholesomeness and quality of the milk and dairy products available to the consumers are of the highest integrity.

A review of TR 2 : 2000 by the original working group was undertaken on 10 May 2002 subsequent to a two-year trial (pilot) implementation of the Technical Reference by participating sectors of the Cold Chain. The review Working Group was expanded to include additional participants from the "pilot" implementation group. It comprised members of diverse backgrounds, representative of the various sectors of the Cold Chain.

It is the responsibility of this Working Group to review and elevate TR 2 : 2000 to a Code of Practice (CP) in the light of available temperature profile data gleaned from the "pilot" implementation studies and the current status of the Cold Chain as a whole. This Code of Practice will incorporate recommendations and guidelines principally on a performance basis which are deemed to be essential for consumer and public health safety and product quality while reducing unnecessary wastage. It should be beneficial to participants involved in the Cold Chain management of milk and dairy products, and prepared with the objective of widespread application by all parties concerned. Furthermore, it also aims to establish a benchmark for Cold Chain Management – Milk and Dairy Products.

In preparing this Code, reference was made to the following publications:

1. Australian Standard AS1162 : 1991 Cleaning and sanitizing dairy factory equipment.

2. British Standard BS EN 12830 : 1999 Temperature recorders for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream – Tests, performance and suitability.

3. Code of Federal Regulations, Title 7 – Agriculture, Volume 3, Part 58 – Grading and inspection, general specifications for approved plants and standards, Subpart A – Regulations governing the inspection and grading services of manufactured or processed dairy products, revised as of January 1, 1999.

4. Code of Federal Regulations, Title 7 – Agriculture, Volume 3, Part 58 – Grading and inspection, general specifications for approved plants and standards, Subpart B – General specifications for dairy plants approved for USDA inspection and grading, revised as of January, 1999.

5. Control of the Cold Chain for quick-frozen foods handbook by Institut International du Froid/International Institute of Refrigeration, 177 bd. Malesherbes, 75017 Paris, France.

6. Dairy Book Carriers : A food safety guide for the transport of bulk milk, by Victorian Dairy Industry Authority, June 1999.

7. Dairy Industry Act 1992, Code of practice for the quality assurance of milk and dairy produce, by Victorian Dairy Industry Authority, effective 1 December 1995.

8. General specifications for dairy plants approved for USDA inspection and grading service, by United States Department of Agriculture (USDA), effective January 24, 1995.

9. Guidelines for enforcement of temperature controls in the food hygiene (amendment) regulations 1990, by Ministry of Agriculture Fisheries & Food – Department of Health.

10. Guidelines for the handling of chilled foods, 2nd edition, by The Institute of Food Science & Technology (UK), 1990.

11. Milk for manufacturing purposes and its production and processing – Recommended requirements, by United States Department of Agriculture (USDA), effective November 12, 1996.

12. National dairy regulation and code processing sector interpretive guidelines, by Canadian Food Inspection System (CFIS), September 1998.

13. Official journal of the European Communities, Council Directive 93/43/EEC on the hygiene of foodstuffs, 14 June 1993.

14. Official journal of the European Communities, Council Directive 92/46/EEC on laying down the health rules for the production and placing on the market of raw milk, heat-treated milk and milk-based products, 16 June 1992.

15. Production and processing regulations, by Canadian Food Inspection System (CFIS), October 1997.

16. The Australian Cold Chain guidelines 1999 – For the handling, storage and transport of frozen foods, ice cream and chilled foods for retail sale and in food service outlets.

Acknowledgement is made for the use of information from the above publications.

NOTE

1. Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.

2. Compliance with a Singapore Standard does not exempt users from legal obligations.

Code of practice for Cold Chain management – Milk and dairy products

1 Objectives

The objectives of this Code are to establish and provide benchmarks for the management of temperature profiles in the links of the Cold Chain for milk and dairy products manufactured under hygienic and sanitary conditions. It also aims to uphold the safety, quality and wholesomeness of these products, safeguard public health, provide protection for consumers and reduce unnecessary wastage.

2 Scope

This Code is intended for the application and observance of temperature controls in each sector of the Cold Chain for milk and dairy products. It sets out recommendations and guidelines for the proper management of these during the production, storage, transportation, manufacturing, distribution, handling, treatment, at point of sale, and thereafter purchase by consumers of milk and dairy products. The exclusive dairy animal referred to in this Code is the cow.

This Code is meant for the following categories of Cold Chain products:

a) Chilled milk and dairy products

These include pasteurised and homogenised full-cream milk, skimmed milk, flavoured milk, creams, cheeses, butters and yogurts which should be kept at a temperature of 4°C or below except when displayed in open-concept designed chillers where the temperature should not exceed 5°C.

b) Frozen dairy product

This incorporates ice-cream which should be stored at or below -18°C except when displayed in open-concept designed chest-type freezers where the temperature should not exceed -15°C.

c) Fermented/acidic/cultured milk or drink

This comprises the lactobacillus-fermented milk or drink which is of high acidity and could be kept at or below 10°C. It could alternatively be stored at or below 4°C.

3 Definitions

3.1 Abnormal milk

Milk from cows known to be infected with mastitis or milk containing residues of antibiotics or other drugs, or milk containing pesticides or other chemical residues in excess of the established limits shall not be sold or offered for sale for human food. The milk shall be disposed of as the regulatory agency may direct.