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CODE OF HYGIENIC PRACTICE FOR THE MANUFACTURE OF FRUIT AND VEGETABLE PRODUCTS (PROCESSED)

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BUREAU OF CEYLON STANDARDS

SRI LANKA STANDARDS INSTITUTION
CODE OF HYGIENIC PRACTICE
FOR THE MANUFACTURE OF FRUIT AND VEGETABLE PRODUCTS
(PROCESSED)

SLS 209 : 1973

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BUREAU OF CEYLON STANDARDS
53 DHARMAPALA MAWATHA
COLOMBO 3.

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This Standard does not purport to include all the necessary provisions of a contract.

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SRI LANKA STANDARD CODE OF HYGIENIC PRACTICE FOR THE MANUFACTURE OF FRUIT AND VEGETABLE PRODUCTS (PROCESSED)

FOREWORD

This Ceylon Standard was prepared by the Drafting Committee on the Code of Hygienic Practice for the Manufacture of Fruit and Vegetable Products. It was approved by the Agricultural and Chemicals Divisional Committee of the Bureau of Ceylon Standards and was authorised for adoption and publication by the Council of the Bureau on 27th September 1973.

This Standard was prepared at the request of the Export Promotion Secretariat for licencing manufacturers of processed fruit and vegetable products meant for export.

Assistance gained from the publications of the Codex Alimentarius Commission FAO/WHO and the Fruit Products Order 1955 of India is acknowledged.

1. SCOPE

This Standard recommends a Code of Hygienic practice that should be adopted in the manufacture of processed fruit and vegetable products.

2. RAW MATERIAL REQUIREMENTS

2.1 Fruit and Vegetables—The fruit and vegetables shall be sound, suitably ripe/mature as the case may be, free from infestation, contamination and harmful pesticides.

3. PLANT FACILITIES AND OPERATING REQUIREMENTS

3.1 Plant Construction and Layout

a. Location, size and sanitary design —The building and surrounding area should be such as can be kept reasonably free of objectionable odours, smoke, or other contamination; should be of sufficient size for the purpose intended without crowding of equipment or personnel; should be of sound construction and kept in good repair; should be of such construction as to protect against the entrance and harbouring of insects or birds or vermin; and should be so designed as to permit easy and adequate cleaning.

b. Sanitary facilities and controls

(i) **Separation of processes**—Areas where raw materials are received or stored should be so separated from areas in which final product preparation or packaging is conducted as to preclude contamination of the finished product. Areas and compartments used for storage, manufacture or handling of edible products should be separate and distinct from those used for inedible materials. The food handling area should be completely separated from any part of the premises used as living quarters.

(ii) **Water supply**—An ample supply of hot and cold water should be available. The water supply should be of potable quality.

(iii) **Ice**—Ice should be made from water of potable quality and should be manufactured, handled, stored and used, so as to protect it from contamination.

(iv) **Auxiliary water supply**—Where non-potable water is used for such purposes as fire control it must be carried in completely separate lines, identified preferably by colour and with no cross-connection or back-siphonage with the lines carrying potable water.

(v) **Plumbing and waste disposal**—All plumbing and waste disposal lines (including sewer systems) must be large enough to carry peak loads. All lines must be watertight and have adequate traps and vents. Disposal of waste should be effected in such a manner as not to permit contamination of potable water supplies. The plumbing and the manner of waste disposal should be approved by the Director of Commerce.

(vi) **Removal of solid or semi-solid wastes**—From the product preparation and canning areas should be on a continuous or near continuous basis using water and/ or appropriate equipment so that these areas are kept clean and there is no danger of contaminating the product. Also they should be disposed of in a way that they cannot be used for human food. Waste materials should be disposed of in a place and in such a manner that they cannot contaminate food and water supplies and cannot offer harbourages or breeding places for rodents, insects or other vermin.

(vii) **Lighting and ventilation**—Premises should be well lit and ventilated. Special attention should be given to the venting of areas and equipment producing excessive heat, steam, obnoxious fumes or vapours, or contaminating aerosols. Good ventilation is important to prevent both condensation (which may drip into the product) and mold growth in overhead structures—which growth may fall into the food.

(viii) Toilet rooms and facilities—Adequate and convenient toilets should be provided. Toilet rooms should be well lit and ventilated and should not open directly into a food handling area. They should be kept in a sanitary condition at all times. There should be associated hand washing facilities within the toilet area and notices should be posted requiring personnel to wash their hands after using the toilet.

(ix) **Hand washing facilities**—Adequate and convenient facilities for employees to wash and dry their hands should be provided wherever the process demands. They should be in full view of the processing floor. Single use towels are recommended where practicable, but otherwise the method of drying should be approved by the Director of Commerce. The facilities should be kept in a sanitary condition at all times.

3.2 Equipment and Utensils

a. **Material—** All food contact surfaces should be smooth; free from pits, crevices and loose scale; non toxic; unaffected by food products; and capable of withstanding repeated exposure to normal cleaning; and non-absorbent unless the nature of a particular and otherwise acceptable process renders the use of a surface, such as wood, necessary.

b. **Sanitary design, construction and installation**—Equipment and utensils should be so designed and constructed as will prevent hygienic hazards and permit easy and thorough cleaning. Stationary equipment should be installed in such a manner as will permit easy and thorough cleaning.

e. **Equipment and utensils**—Equipment and utensils used for inedible or contaminating materials should be so identified and should not be used for handling edible products.

3.3 Hygienic Operating Requirements

a. **Sanitary maintenance of plant, facilities and premises**—The building equipment, utensils and all other physical facilities of the plant should be kept in good repair and should be kept clean and maintained in an orderly, sanitary condition. Waste materials should be frequently removed from the working area during plant operation and adequate waste receptacles should be provided. Detergents and disinfectants employed should be appropriate to the purpose and should be so used as to present no hazard to public health.

b. **Vermin control**—Effective measures should be taken to protect against the entrance into the premises and the harbourage on the premises of insects, rodents, birds or other vermin.

c. **Exclusion of domestic animals**—Dogs, cats and other domestic animals, should be excluded from areas where food is processed or stored.

d. **Personnel health**—Immediately a person engaged in the handling of the product becomes aware that he is suffering from, or is the carrier of, any infectious disease he shall inform the person carrying on the business and that person shall immediately notify .the appropriate medical officer of health accordingly

No employee who is suffering from any skin infection or clinically recognisable infectious disease or who is wearing a bandage, plaster or other protective covering for a skin infection shall be allowed to handle the product or raw materials used in the preparation of the product.

e. **Toxic substances**—All rodenticides, fumigants, insecticides or other toxic substances should be stored in separate locked rooms or cabinets and handled only by properly trained personnel. They should be used only by or under the direct supervision of personnel with a thorough understanding of the hazards involved, including the possibility of contamination of the product.

f. **Personnel hygiene and food handling practices**

(i) All employees should maintain a high degree of personal cleanliness while on duty. Clothing including suitable head dress should be kept clean.

(ii) Hands should be washed as often as necessary to conform to hygienic operating practices.

(iii) Spitting, eating and the use of tobacco, betel or chewing gum should be prohibited in food handling areas.

(iv) All necessary precautions should be taken to prevent the contamination of the food products or ingredients with any foreign substance.

(v) Minor cuts and abrasions on the hands should be appropriately treated and covered with a suitable waterproof dressing. Adequate first aid facilities should be provided to meet these contingencies so that there is no contamination of the food.

(vi) Gloves used in food handling should be maintained in a sound, clean and sanitary condition; gloves should be made of an impermeable material except where their usage would be inappropriate or incompatible with the work involved.

3.4 Operating Practices and Production Requirements

a. Raw Material handling

(i) **Acceptance criteria**—The raw material should not be accepted by the plant if known to contain decomposed, toxic or extraneous substances which will not; be removed to acceptable levels by normal plant procedures of sorting or preparation.

(ii) **Storage**—Raw materials stored on the plant premises should be maintained under conditions that will protect against contamination and infestation and minimize deterioration.

(iii) **Water**—Water used for conveying raw material into the plant should be from a source or suitably treated.

b. Inspection and sorting—Prior to introduction into the processing line, or at a convenient point with it, raw materials should be inspected, sorted or culled as required to remove unfit materials. Such operations should be carried out in a clean and sanitary manner. Only clean, sound materials should be used in further processing.

c. Washing or other preparation—Raw materials should be washed as needed to remove soil or other contamination. Water used for such purposes should not be re circulated unless suitably treated to maintain it in a condition as will not constitute a public health hazard. Water used for washing, rinsing or conveying final raw products prior to processing should be of potable quality.

d. Preparation and processing—Preparatory operations leading to the finished product and the packaging operations should be so timed as to permit expeditious handling of consecutive units in production under conditions which would prevent contamination, deterioration, spoilage, or the development of infectious or toxigenic microorganisms.

e. Packaging of finished product

(i) **Materials**—Packaging materials should be stored in a clean sanitary manner and should not transmit to the product objectionable substances and should provide appropriate protection from contamination.

(ii) **Techniques**—Packaging should be done under conditions that preclude the introduction of contamination into the product.

f. Preservation of finished product

(i) **Heat processing**—Products packaged in hermetically sealed containers should be so processed by heat as to result in a product that is safe and will not spoil under normally expected temperature of non-refrigerated storage and transportation.

Processing conditions should be based on the recommendations of competent technical specialists. Such processing should be supervised in the cannery by technically competent personnel. Processing records adequate to identify the processing history should be kept and made available for inspection.

(ii) **Cooling of processed containers**—Where processed containers are cooled in water, the water should be of potable quality or suitably treated so as not to constitute a public health hazard. If cooling water is recirculated it should be effectively disinfected by chlorine or otherwise before use of each re-use.

(iii) **Decrating and handling of processed containers—** After processing and cooling, containers should be handled in such a manner as to avoid contamination of the product. Rough handling of processed cans, especially while they are still wet, should be avoided. Belts, runways and other processed can-conveying equipment should be maintained in good hygienic condition.

(iv) **Inspection of processed containers**—Containers should be inspected before labelling and casing and defective containers withdrawn.

g. Storage and transport of finished product — The finished product should be stored and transported under such conditions as will preclude the contamination with, or development of pathogenic or toxigenic micro-organisms or infestation and protect against deterioration of the product or of the container.

3.5 Sanitation Control Programme—It is desirable that each plant in its own interest designate a single individual, to be held responsible for the cleanliness of the plant. He and the staff under him should be well trained in the use of special cleaning tools, methods of dis-assembling equipment for cleaning, and in the significance of contamination and the hazards involved. Critical areas, equipment and materials should be designated for specific attention as part of a permanent sanitation schedule.

3.6 Laboratory Control Procedure—In addition to any control by the Director of Commerce it is desirable that each plant should exercise laboratory quality control of the sanitary quality of products processed. The amount and type of such control will vary with the food products as well as the needs of management. Such control should reject all foods that are unfit for human consumption. Analytical procedures used should follow recognized or standard methods in order that the results may be readily interpreted.

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SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

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All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

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