



**ASEAN CRITERIA FOR ACCREDITATION OF MILK PROCESSING
ESTABLISHMENT
(FINAL DRAFT)**

NO.	CONTENTS	PAGE
1.	PREAMBLE	3
2.	SCOPE	3
3.	DEFINITION	3
4.	VETERINARY PUBLIC HEALTH CONSIDERATIONS	4
5.	ORIGIN OF MILK FOR PROCESSING	4
6.	INFRASTRUCTURES AND FACILITIES (SEVICES)	5
	6.1 Location	
	6.2 Services	
	6.2.1 General	
	6.3 Amenities	
	6.3.1 Water supply	
	6.3.2 Ice	
	6.3.3 Steam	
	6.4 Storage	
	6.5 Drainage	
	6.5.1 General	
	6.5.2 Sanitary Drainage	
	6.5.3 Processing or Trade Waste drainage	
	6.6 Wastewater Treatment	
	6.7 Waste disposal	
	6.8 Sanitary facilities	
	6.8.1 Personal Hygiene Facilities	
	6.8.2 Equipment Cleaning and sanitizing Facilities	
	6.9 Temperature Control	
7	STRUCTURES AND CONSTRUCTIONS	9
	7.1 Design and layout	
	7.2 Walls	
	7.3 Floors	
	7.4 Ceilings	
	7.5 Coving	

	7.6	Doors	
	7.7	Windows	
	7.8	Air Quality and Ventilations	
	7.9	Lighting	
	7.10	Insect, Rodent and Vermin Proofing	
8		TRUCK WASHING AREA	12
9		CHILLERS AND FREEZERS	12
10		WRAPPING AND PACKAGING	13
11		HYGIENE AND SANITARY PRACTICES	13
	11.1	Personal Hygiene	
		11.1.1 Health Status	
		11.1.2 Personal Cleanliness and Behaviour	
		11.1.3 Visitors	
	11.2	Operational Hygiene	
	11.3	Pest Control Program	
12		EQUIPMENT	15
	12.1	Type	
	12.2	Material requirement	
13		TRANSPORTATION	16
	12.3	Food Carrying Vehicle	
	12.4	Temperature Control	
14		REGISTRATION OF MILK PROCESSING PLANT	17
15		QUALITY ASSURANCE PROGRAM	17
	15.1	Manual	
16		HACCP PLAN AND IMPLEMENTATION	19
17		STAFF COMPETENCE	19
18		MICROBIOLOGICAL AND OTHER CONTAMINANTS MONITORING	19
19		PRODUCT IDENTIFICATION	20
20		SPECIFIC REQUIREMENT BY MEMBER STATES (COUNTRIES)	20

1. PREAMBLE

These criteria are prepared to meet the requirement of ASEAN Accreditation Program. They shall be used as a guideline for the competent authorities of ASEAN Member States for the accreditation of milk processing establishment for the purpose of trade in milk and milk products within ASEAN.

2. SCOPE

These criteria shall be applied to any establishment for production of milk and milk products that are intended for export within ASEAN countries.

3. DEFINITION

- 3.1 **Cleaning** means the removal of soil, food residues, dirt, grease or other objectionable matter.
- 3.2 **Contaminant** means any biological or chemical agent, foreign matter, or other substances not intentionally added to food which may compromise food safety or suitability.
- 3.3 **Contamination** means the introduction or occurrence of a contaminant in food or food environment.
- 3.4 **Controlling authority** in relation to an establishment means the official authority charged by the government with the control of hygiene including inspection of milk and milk products.
- 3.5 **Disinfection** means the reduction, by means of chemical agents and/or physical methods, of the number of micro-organisms in the environment, to a level that does not compromise food safety or suitability.
- 3.6 **Establishment** means any premises approved and registered by the controlling authority in which milk products are prepared, processed, handled package or stored.
- 3.7 **Ingredient** means any substance including food additives used in the manufacture or preparation of a milk product.
- 3.8 **Raw Milk** means milk which has not been heated beyond 40⁰C or undergone any treatment that has an equivalent effect.

- 3.9** *Milk product* means a product obtained by any processing of milk, which may contain food additives, and other ingredients functionally necessary for the processing.
- 3.10** *Packaging material* means containers such as cans, bottles, cartons, boxes, cases and sacks, or wrapping and covering material such as foil, film, metal, paper, wax-paper and cloth which are directly and indirectly contacted with milk and milk products.
- 3.11** *Potable water* means water that is pure and wholesome in accordance with WHO requirements contained in the 'International Guidelines for Drinking Water Quality'.
- 3.12** *Processed* includes all methods of manufacture and preservation
- 3.13** *Protective clothing* means special garments intended to prevent the contamination of milk and/or milk products and used as outer-wear by persons in an establishment and includes head coverings, footwear and gloves.

4 VETERINARY PUBLIC HEALTH CONSIDERATIONS

When reviewing the suitability of an establishment in a foreign country, the areas of considerations shall include:

- a) the animal health status of the domestic animals from which the milk is derived and wildlife in the country of origin, particular attention being paid to animal diseases which will endanger human and animal health.
- b) the legislations of the country for the prevention and control of animal diseases.
- c) the organization structure of the veterinary inspection services in the country.
- d) the implementation of measures to prevent and control contagious/notifiable animal diseases.
- e) the regularity and rapidity of the information supplied by the country relating to the existence of contagious/notifiable animal diseases in its territory.

5 ORIGIN OF MILK FOR PROCESSING

- a) The establishment is not permitted to receive raw materials (milk or milk products) originated from or have been transported through a country not approved by Competent Authority of the importing country.
- b) The raw materials (milk or milk products) shall be listed and approved by the Competent Authority of the importing country.

6 INFRASTRUCTURES AND SERVICES

6.1. LOCATION

Shall be suitably located and provided with essential services to facilitate the hygienic processing of safe and wholesome milk and milk products as follows:

- i) Well drained ground.
- ii) in area free from objectionable odours, smoke, dust or other contaminants.
- iii) Suitably taking into consideration future habitation and development so as not likely to create a nuisance or public health hazard.
- iv) The surroundings should not be suitable for breeding and harboring pests and other disease carriers.
- v) provided with access road ways suitable for all weather.
- vi) saved road entrances and exits and well maintained, dust-free environment.
- vii) adequate water supply and also potable with sufficient pressure for overall efficient operations.
- viii) a reliable energy supply for efficient and uninterrupted operations.
- ix) an adequate waste disposal and treatment system.

6.2 SERVICES

6.2.1 General

- a) Services required for plant operations shall be installed in accordance with appropriate standards and the regulations of all relevant authorities.
- b) Materials used in the construction shall be suitable for the area in which they are to be installed.
- c) Design and installation shall provide for adequate access for maintenance and sufficient room to work once access has been gained and for cleaning as well as sanitation.
- d) At all times, product hygiene shall not be put at risk and consideration shall also be given to safety aspects of installations.
- e) Establishments shall provide adequate working space for the satisfactory performance of all operations.
- f) The construction shall be sound and ensure adequate ventilation, good natural or artificial lighting and easy cleaning.
- g) The buildings and facilities of the establishment shall be kept in good repair at all times and ensure safety of personnel and good working environment.
- h) The establishment shall be of such construction as to protect against the entrance and harboring of insects, birds, rodents or other vermin.

6.3 AMENITIES

6.3.1 Water Supply

- a) An adequate supply of potable water with appropriate facilities for processing, cleaning, storage, distribution, and temperature control, shall be available whenever necessary to ensure the safety and suitability of milk and milk products.
- b) All hoses, taps or other similar sources of contamination shall be designed to prevent back-flow or back siphonage.
- c) Where used, water treatment chemicals shall be from the relevant authority's approved list. The chemical treatment shall be monitored and controlled to deliver the desired concentration and to prevent contamination.
- d) Water supply shall be analyzed by the processor at a frequency adequate to confirm its portability.
- e) Where it is necessary to have a supply of hot potable, water provided for purposes of sterilisation must be not less than 82⁰C at point of use.
- f) Non-potable water (for use in, for example, fire control, steam production, refrigeration and other similar purposes where it would not contaminate) shall have a separate system.
- g) Non-potable water systems shall be identified and shall not connect with, or allow reflux into, potable water system.

6.3.2 Ice

- a) Ice shall be made from water that complies with section 6.3.1. Ice shall be produced, handled and stored to protect it from contamination.

6.3.3 Steam

- a) The steam generating plant shall be located so that exhaust gases and fuel receiver and storage facilities do not create a nuisance or a hazard to product hygiene.
- b) Steam shall be produced, handled and stored to protect it from contamination.
- c) Steam used in direct contact with food or food contact surfaces shall not constitute a threat to the safety and suitability of food.

6.4 STORAGE

- a) Where necessary, adequate facilities for storage of finished products, incoming materials and ingredients, packaging materials and non-food chemicals e.g. cleaning materials, lubricants, fuels, shall be provided.
- b) The type of storage facilities required will depend on the nature of the products. Where necessary, separate and secure storage facilities for food and non-food chemicals such as cleaning materials and hazardous substances shall be provided.

- c) Ingredients requiring refrigeration shall be stored at 4°C or less and appropriately monitored with humidity 80% to 90%.
- d) The temperature of milk and milk products shall be maintained at or below the following temperature:
 - Chilled - + 4°C to - 4°C
 - Frozen - - 8°C to -12°C
 - Deep frozen - -18°C and below
- e) Milk for processing should maintain in temperature equal to or below 6°C.
- f) The temperature of the storage of the ingredients shall be monitored.
- g) Ingredients and packaging materials shall be handled and stored in a manner to prevent damage and/or contamination.
- h) All materials and products shall be stored 150 mm above floor on racks or shelves or pallets and not contact with the wall.
- i) The storage room shall be dry and shall not have any condensation on the ceiling.
- j) First-In-First-Out stock rotation shall be practiced.
- k) Any defective products shall be placed at clearly identified designated area and as far as possible, separated from the finished products and products that are to be used for further processing, prior to appropriate disposition or other action.
- l) Records to allow full traceability of distributed stocks, documentation and SOPs.

6.5 DRAINAGE

6.5.1. General

- a) Three entirely separate drainage systems shall be provided for sanitary (sewage) drainage, processing or trade waste drainage, and storm water drainage. All drainage systems must comply with the requirements of the relevant authority.
- b) Effluent or sewage lines shall not pass directly over or through production areas unless they are controlled to prevent contamination.
- c) All drains in the milk processing areas, milk and milk product storage area must be covered.

6.5.2. Sanitary Drainage

- a) Lines from toilets and urinals shall be directed to the sewage system.
- b) The sanitary drainage system shall be designed to eliminate any possibility of drainage backing up and flooding the floors of any processing area.

6.5.3 Processing or Trade Waste Drainage

- a) The drainage system from processing areas shall be designed to enable rapid removal of wash down of other water from the processing floors. The system shall ensure the effective and expeditious removal of plant effluent from the premises.
- b) Adequate drainage inlets shall be strategically located to remove waste water in processing areas and in chillers.
- c) Each drainage inlet/ outlet shall be at least 100mm in diameter and be fitted with perforated or grilled drain covers.
- d) Drains shall be equipped with effective P, U or S shaped deep seal traps and be adequately vented to the outside atmosphere.
- e) Floors shall be evenly graded to the trapped drainage inlets.
- f) Floor drainage valleys shall be provided with approved covers over walkways and the direction of flow of the drains must be from clean areas to dirty area.

6.6 WASTE WATER TREATMENT

- a) Waste water (effluent) treatment facilities shall be located so as not to pose a hazard to food or create an odour or other nuisance to processing areas.
- b) They shall be designed and constructed so that the risk of contaminating food or the potable water supply is avoided.

6.7 WASTE DISPOSAL

- a) Adequate facilities and equipment shall be provided and maintained for the storage of waste and inedible material prior to removal from the establishment. The facilities shall be designed to prevent contamination.
- b) Waste shall be removed and containers shall be cleaned and sanitized at an appropriate frequency to minimize contamination potentials.
- c) Waste materials or inedible products shall be placed in non-corrosive watertight containers that are clearly labeled to indicate that the contents are unfit for human consumption.

6.8 SANITARY FACILITIES

6.8.1 Personnel hygiene facilities

- a) Adequate hand washing facilities shall be available. They shall include hands free operated taps, and wash basin with a supply of water and sanitizer, disposable paper towel dispenser and covered, foot operated dustbins.
- b) Suitable and adequately equipped changing rooms for workers shall be provided.

- c) Personal clothing must be kept separately from protective clothing used in the processing area.
- d) Lockers shall be provided for workers to store personal clothes and items.
- e) Adequate number of toilets of appropriate hygienic design shall be provided.
- f) Where appropriate, canteen shall be available.
- g) Toilets, changing rooms and pantries/ canteens/ staff rest areas shall be separated from and do not open directly into food processing areas.
- h) Such facilities shall be suitably located and designated.

6.8.2 Equipment cleaning and sanitizing facilities

- a) Adequate facilities, suitably designated, shall be provided for cleaning utensils and equipments.
- b) Such facilities shall have an adequate supply of hot and cold potable water where appropriate.
- c) Chemicals for sanitation purposes shall be approved by the relevant authorities.
- d) There shall be a written cleaning program for each area and equipment including CIP (clean in place) or COP (clean out place).

6.9 TEMPERATURE CONTROL

- a) Depending on the nature of the milk processing operations undertaken, adequate facilities shall be available for chilling, refrigerating and freezing of milk and processed milk products, for storing refrigerated or frozen products, monitoring product temperatures, and when necessary, controlling ambient temperatures to ensure the safety and suitability of products.
- b) Rooms in which the processing of milk and milk products are carried out shall have ambient temperatures of not more than 15°C.
- c) Processing room temperature may just be ambient provided the area is sanitary, well ventilated and lighted because normally these are closed systems to prevent product contamination.

7 STRUCTURES AND CONSTRUCTION

7.1 Design and layout,

- a) The processing area of milk and milk products must be totally enclosed.
- b) The building shall be designed and constructed so that there is sufficient space to allow for processing, storage, movement of personnel and effective cleaning.
- c) There shall be footbaths, hand washing facilities and appropriate sanitary procedures for all staff and visitors before they are allowed to enter the milk processing areas.

- d) The layout shall be designed in a manner to minimize possible contamination of the finished products. The flow of raw material to finished product during processing, where appropriate shall be unidirectional.
- e) Loading and unloading bay shall be designed to allow fast transfer of products between chilled store and refrigerated vehicle with least exposure to ambient temperature and with least possible handling.
- f) There shall be complete separation between clean and dirty areas.
- g) There shall be separate entrances for workers in clean and dirty areas.
- h) There shall be no mixing of workers and equipment between clean and dirty areas.
- i) There shall be no criss-crossing of products and waste lines.
- j) The interiors of food processing areas shall be of sanitary design and construction using acceptable non-toxic materials. Light coloured finishes shall be used.
- k) There shall not be platforms or structures above the product line.

7.2 Walls

- a) Smooth interior walls shall be constructed of materials which are impervious to moisture, rust resistant, resistant to or protected from impact and not readily subject to chipping or flaking.
- b) Joints and fixing devices shall be sealed to effectively prevent entry of moisture.
- c) Horizontal ledges occurring in wall construction shall be sloped down at an angle of at least 45⁰.
- d) Where internal panel type construction is to be incorporated other than in chillers or freezers, wall panels shall be placed on a concrete plinth raised a minimum of 150 mm above floor level. Such wall panels shall be suitably protected from impact damage.
- e) Internal wall or ceiling surfaces are painted, paint shall be non-toxic and the painted surface shall not contact food. Paint shall be light in colour and give a smooth finish that is impervious to moisture. Finished surface shall be able to withstand hosing with detergents and 82⁰C water, and withstand a reasonable degree of impact.

7.3 Floors

- a) Floors shall be durable, non-slip, without crevices, constructed from non-toxic and impervious material and kept in such good conditions as to enable them to be thoroughly cleaned and disinfected.
- b) Where tiles are used they shall be laid on a firm water-proof concrete foundation.
- c) Floor joints shall be sealed with material impervious to liquids and finished flush with the surface.
- d) Floors shall be evenly graded to drainage inlets so no stagnation of water will occur. Sufficient floor gradient as follows:
 - i) Wash areas - 1:25
 - ii) Wet areas - 1:50
 - iii) Other areas - 1:100

7.4 Ceilings

- a) All ceilings shall be constructed and finished as to minimize condensation, mould development, flaking and the lodgment of dirt and shall be kept in such good conditions as to enable them to be thoroughly cleaned.
- b) Joints and fixing devices on the ceiling shall be effectively sealed.
- c) The minimum height of a ceiling in all processing rooms shall be 3 m (or not less than 1 m above rail height).

7.5 Coving

- a) Walls and curbs shall be covered to the floor with a radius of at least 75 mm.
- b) Wall to wall junctions shall be covered with a radius of at least 25 mm.

7.6 Doors

- a) Doors shall be constructed with smooth and non-absorbent surfaces
- b) Where sheeting is used, joints shall be effectively sealed against moisture entry by continuous welding or other equally effective means.
- c) Doorways through which product are transferred by rail or trolley shall be of sufficient width to prevent contact of the product.
- d) Where appropriate, doors shall be self-closing and close fitting. Strip type Polyvinyl chloride (P.V.C.) type curtains shall only be used on openings through which packaged products pass.
- e) Doors that lead to the exterior shall not have any gaps.

7.7 Windows

- a) Minimal openings from the processing areas to the exterior areas
- b) Windows and other openings shall be constructed so as to avoid accumulation of dirt and those which are to be kept open shall be fitted with removable and cleanable insect-proof screens.
- c) Window sills within processing and packing shall be kept to a minimum size and sloped. (This serves to prevent any article or item to be placed on the window sills within the processing and packing area which may cause accidental contamination to food).

7.8 Air Quality and Ventilation

- a) Ventilation shall be provided which allow sufficient air exchange to prevent unacceptable accumulation of steam, odour, condensation or dust and to remove contaminated air.
- b) Ventilation shall be designed and constructed so that air does not flow from contaminated areas to clean areas.

- c) Adequate ventilation to the processing areas shall be provided.
- d) Ventilation openings shall be equipped with close fitting screens or filters to prevent the intake of contaminated air. Filters shall be cleaned or replaced as appropriate.
- e) In microbiologically sensitive areas, positive air pressures shall be maintained.

7.9 Lighting

- a) Lighting provided at product inspection stations shall be 800 lux and at production areas 540 lux and at other areas at 220 lux.
- b) Shatter proof protective shields shall be provided over exposed lights, particularly where there is exposed food or packaging materials.
- c) Artificial lighting must not alter food colors.

7.10 Insect, Rodent and Vermin Proofing @

- a) Exterior openings leading directly or indirectly to production areas shall be insect proofed.
- b) Buildings shall be constructed to be rodent and other vermin proof. Doors shall be tight fitting.

8 TRUCK WASHING AREA

- a) Where appropriate, adequate truck washing facilities shall be provided.

9 CHILLERS AND FREEZERS

- a) Adequate chillers and freezers shall be provided for storage of milk and milk products and ingredients at a constant temperature not greater than those specified in section 6.4(d).
- b) Chillers and freezers shall be suitably located to minimize the risk of contamination of the materials stored.
- c) A direct or remote thermometer or temperature recorder shall be provided to each chiller or freezer.
- d) Refrigerated rooms shall be designed and operated in a way that prevents the formation and accumulation of condensation on overhead structures and ceilings.
- e) There must be a provision for plastic curtain to prevent temperature fluctuation of the cold storage area
- f) The interior of each door shall be provided with a mechanism to allow personnel to escape if personnel are accidentally locked inside

10 WRAPPING AND PACKAGING

- a) Wrapping and packaging shall take place in hygienic conditions and packaging shall be carried out in the area provided for the purpose, where the design of the flow line makes this necessary to prevent contamination of the products.

- b) Packaging materials shall be non-toxic and those in direct contact with the food product shall be of food grade.
- c) Materials used shall be strong enough to protect the milk and milk products during the course of handling and transportation and shall not:-
 - affect organoleptic character of the milk and milk products; or
 - transmit to the milk and milk products any substance harmful to human health.
- d) Wrapping shall not be re-used for other milk products.
- e) The packaging of milk and milk products which are not regarded as having undergone complete treatment and are not therefore shelf stable, must bear a clear and legible indication of:-
 - The maximum temperature at which the product may be transported or stored; and
 - The period during which preservation may be assured by maintaining the product at such temperature.
 - Batch number/production date to enable trace back and recall.
- f) In general, milk and milk products shall be labelled in accordance with Codex standards, e.g. Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1; 1985), the Codex General Standard for the Use of Dairy Terms (CODEX STAN 206) and the relevant labelling section of Codex commodity standards for individual milk products. Unless the product is shelf stable at ambient temperatures, a statement regarding the need for refrigeration or freezing shall be included on the label of the product.

11 HYGIENE AND SANITARY PRACTICES

11.1 PERSONNEL HYGIENE @

11.1.1 Health status

- a) Persons known or suspected, to be suffering from or known to be a carrier of a disease transmissible by food shall not be allowed to enter any food handling areas if there is likelihood of their contaminating food.
- b) Any person so affected shall immediately report illness or symptoms to the management.
- c) Medical examination of food handlers shall be carried out as per required by relevant authorities.
- d) No person with open wounds shall handle milk and milk products or other ingredients.

11.1.2 Personal cleanliness and behaviour

- a) Persons engaged in the handling of milk and milk products shall wear adequate, clean

- protective clothing, footwear, facemask and head covering.
- b) There shall be no mixing of workers and equipment between clean and dirty areas. Clean and dirty workers shall wear different colored uniforms.
 - c) Personnel shall wash and disinfect their hands each time work is started and resumed and whenever their hands have been soiled and immediately after using the toilets.
 - d) Persons engaged in the handling of unwrapped milk or milk products shall not handle any material likely to cause contamination of the milk or milk products.
 - e) Waterproof gloves shall be worn where the handling of exposed milk and milk product is unavoidable. The gloves shall be frequently disinfected or frequently replaced in the course of a working day. Whenever possible mechanical methods shall be used to avoid milk products being touched by hand.
 - f) Persons engaged in food handling activities shall refrain from behavior which could result in contamination of food eg. smoking, spitting, chewing, eating, drinking, sneezing or coughing over unprotected food.
 - g) Personal effects such jewellery, watches, pins or other items shall not be worn or brought into food handling areas. These items shall be stored in the lockers.

11.1.3 Visitors

- a) Visitors to milk processing or handling areas shall wear protective clothing and adhere to the personal hygiene provisions in this section.
- b) Visitors shall be accompanied by establishment staff especially in milk processing areas.
- c) Visitors shall always proceed from clean to dirty areas.

11.2 OPERATIONAL HYGIENE

- a) A high standard of cleanliness shall be maintained throughout the premise.
- b) The processor shall have a cleaning and sanitation program for all the equipments , premises, production and storage areas which specifies areas or equipment to be cleaned, method of cleaning, frequency , types of cleaning chemicals used and the name of responsible person .
- c) Operational hygiene where cleaning programs to be implemented shall be continually and effectively monitored for their suitability and effectiveness and where necessary, documented.
- d) The establishment shall avoid sweeping and wet cleaning during processing of milk products.
- e) All equipment and implements used in the preparation of milk products shall be cleaned and disinfected as necessary during each working day and at the end of each shift or each working day and before being used again if they have been contaminated. Continuous production machines shall need to be cleaned at the end of each working day and whenever contamination is suspected.
- f) All materials and equipment for maintenance and cleaning shall be when not in use, be kept in rooms provided for the purpose.

11.3 PEST CONTROL PROGRAM

- a) There shall be an effective pest control program for the premises and equipment.
- b) The pest control program shall include the following:
 - the name of person in the establishment responsible for pest control program
 - Where applicable, the name of pest control company or the name of person contracted for the pest control program
 - The list of chemicals used, concentration, the location where applied, method and frequency of application
 - A map of trap locations
 - The type and frequency of inspection to verify the effectiveness of the program
 - Records include pest control activities eg pesticides used, method and location of application, date of fumigation
 - Minimum pest control records include results of inspection programs, corrective action taken, findings in traps, location of insect infestation
 - Date, person responsible
- c) Pesticides used shall be registered by relevant authority
- d) Pesticides used shall be in accordance with the label instructions
- e) Treatment of equipment, premises or ingredients to control pests shall be conducted in a manner to ensure that the maximum residue limit of the Codex Alimentarius Commission is not exceeded.
- f) Insect traps must not be installed in the processing areas.

12 EQUIPMENT

12.1 Type

- a) Equipment shall be located in accordance to its intended use.
- b) Equipment shall be designed and installed such that as far as possible dead ends or dead spots in milk pipelines do not occur. In case, these occur special procedures should ensure they are effectively cleaned or otherwise do not permit a safety hazard to occur.
- c) Type of equipment used shall permit adequate maintenance and cleaning and facilitate good hygienic practices.
For example equipment that are durable or movable or capable of being disassembled would allow for maintenance, cleaning, disinfection, monitoring and facilitate inspection.
- d) Milk processing equipment like the pasteurizer must have a temperature/time monitoring and recording device.
- e) There shall be no mixing of equipment between clean and dirty areas.
- f) Equipment used to cook, heat treat, cool, store or freeze food shall be designed to achieve the required food temperatures as rapidly as necessary in the interest of food safety and suitability, and maintain them effectively. Such equipment, where necessary,

shall have effective means of controlling and monitoring humidity, air –flow and other characteristics likely to have a detrimental effect on the safety or suitability of food.

- g) Containers used for waste and inedible materials shall be clearly identified, leak proof, and where appropriate are covered.
- h) Supply of non-corrosive watertight containers clearly labeled to indicate that the contents are unfit for human consumption shall be adequately provided for holding waste milk or milk products.
- i) Procedures (SOPs) must be documented.

12.2 Material requirement

- a) All fixtures, fittings, implements and equipment used in the manufacture of milk products including those which come into contact with milk and milk products during storage shall be made of durable, impervious material, non-corrosive, non-toxic and easy to clean and disinfect.
- b) All equipment for handling milk and milk products and for storing containers shall be so constructed that neither the contents nor the containers come into direct contact with the floor or ground.

13 TRANSPORTATION

13.1 Food carrying vehicles

- a) The processor shall verify that food carrying vehicles are suitable for transportation of food or milk and milk products.
- b) The processor shall have a program in place to verify the adequacy of cleaning of the food carrying vehicles.
- c) Milk and milk products shall be dispatched in such a way that they are protected from contamination or damage during transportation.
- d) Incoming materials (milk, non-food, packaging) shall be received in an area separate from processing.
- e) Where appropriate, material used in food carrying vehicle's construction is suitable for food contact.
- f) Proper loading and unloading facilities to be provided.
- g) The milk transportation must be provided temperature monitoring device. In cases or refrigerated products, the vehicle product compartment should be cooled prior to loading and the products compartment should be kept at an appropriate temperature at all times, including during unloading.
- h) Where appropriate, adequate truck washing facilities shall be provided.
- i) Finished products shall be transported in proper hygienic conditions.
- j) Vehicles shall be clean, free from pest infestation and other contamination.

13.2 Temperature control

- a) Temperature of milk and other frozen ingredients used in the manufacture of milk products shall be transported in a suitably equipped vehicle at temperature that limit/prevent microbial growth or do not permit thawing.
- b) Ingredients requiring refrigeration shall be transported at 4°C or less and are appropriately monitored.
- c) Upon arrival at the milk processing plant, the milk and other ingredients shall be stored at temperature as specified in section 6.4(c & d).

14. REGISTRATION OF MILK PROCESSING PLANT

Milk processing plant shall be approved and registered by controlling authority of the country.

15. QUALITY ASSURANCE PROGRAM

The quality assurance program shall be implemented, managed, maintained and reviewed regularly by the management.

15.1 Manual

The establishment shall have operating manuals which at least described the following elements:

- 15.1.1 Commitment by management
- 15.1.2 Quality objectives
- 15.1.3 Management structure and responsibilities
- 15.1.4 Quality assurance manuals

15.1.1 Commitment by management shall be in the form of:

- a) Quality policy authorized at highest level
- b) The statement shall give the quality aims and the authority to follow procedures stated in manual
- c) The policy statement shall be displayed at strategic locations throughout the establishment.

15.1.2 Food Safety Objectives

To ensure foods of animal origin are safe and wholesome for consumers.

15.1.3 Management structure and responsibilities:

- a) organization chart particularly the senior management, production and quality personnel
- b) responsibilities for quality checks, monitoring and corrective action
- c) Job description for each personnel

15.1.4 Quality assurance manuals shall describe the following elements:

- a) Product Description
- b) Each product shall be described clearly of raw material such as:
 - Specifications of raw material required
 - Sampling and testing
 - List of suppliers
 - Agreement on quality with supplier of raw material.
 - Inspection and test method for each specification.
- c) Process control for each product
 - Layout plan of each establishment
 - Flow charts for each process
 - Describe procedures in each process
 - Laying standard for product at each stage
 - Identify parameter for each process and ensure compliance to standard
- d) Hygiene and sanitation
 - Swab test and sample
 - Cleaning and sanitation procedures
 - Pest control
 - Waste disposal procedures
 - Storage of dangerous substance
 - Controls of personnel
- e) Finished product control
 - Standard for finish product
 - Sampling and testing
 - Product/batch coding system
 - Storage control procedures
 - Product release system
 - Product recall system
- f) Document and data control
 - Veterinarian officials have authorized to call for document and data control at all time.
 - Authorization on release of document and data
 - Control on distribution of document and data
 - Amendment of system and procedures

- g) Equipment and Maintenance
 - Guideline on use of equipment installation and maintenance
 - Documentation and records (log sheets, production charts, etc)
 - Product/batch code system
 - Type of equipment being used to monitor the process, such as thermometers, gauges, etc and procedures and responsibilities for the testing and calibration of these instruments.
- h) Documentation and Record
 - Forms recording and log sheets shall be mentioned in the manual. This section shall also contain a summary table of all forms included.
- j) Internal Review and Audit
 - Procedures for review and auditing of the quality system internally.
- k) External Audit and suppliers Audit
- j) Monitoring procedures and corrective action
- k) Training of Personnel
 - Increase knowledge and skill of personnel at all level
 - Training on quality improvement

16. HACCP PLAN AND IMPLEMENTATION

The plant shall have effective HACCP System in place and operational before consideration for accreditation. HACCP plan shall be in accordance with the Codex Guidelines for the Application of the Hazard Analysis Critical Control Point (HACCP) System. The HACCP shall be implemented, managed and maintained and reviewed regularly by the establishment. The HACCP system has to be certified by relevant authority/ agency.

17. STAFF COMPETENCE

- a) Key personnel such as Plant Manager, Quality Assurance Officers and Floor Supervisors shall be qualified and trained in GMP, quality assurance and HACCP system.
- b) All other personnel shall be adequately trained for the functions they perform.
- c) Any Personnel Training program shall be documented and recorded.

18. MICROBIOLOGICAL AND OTHER CONTAMINATION MONITORING

- a) Where microbiological, chemical or physical specifications are used in the milk product control system, such specifications shall be based on sound scientific principles and

state where appropriate, monitoring procedures, analytical methods and action limits.

19. PRODUCT IDENTIFICATION

a) Product identification and trace back mechanisms :

- Labeling shall cover at least product description, EST. No., Batch No. and production date.
- The establishment shall have an effective system to trace back the finished products to origin of milk as raw material in the milk processing.

20. SPECIFIC REQUIREMENT BY MEMBER COUNTRIES

Notwithstanding the above criteria, any member states may have the right to include additional conditions.

