



Technews

**National Dairy Development Board
For Efficient Dairy Plant Operation**

January-February 2002

No.36

CODEX GUIDELINES ON FOOD HYGIENE - II

This bulletin includes technical and latest development on products, systems, techniques etc. reported in journals, companies' leaflets and books and based on studies and experience. The technical information on different issues is on different areas of plant operation. It is hoped that the information contained herein will be useful to readers.

The theme of information in this issue is **Codex Guidelines on Food Hygiene-II**. It may be understood that the information given here is by no means complete.

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INTRODUCTION

The last issue of the Technews presented the guidelines on the application of hygienic measures related to 'Primary Production' and 'Establishment: Design and Facilities' as detailed in the Codex 'Recommend International Code of Practices - General Principles of Food Hygiene'.

This issue presents recommended measures related to some more areas covered in the Codex Code. The next issue would present the recommended measures in the remaining areas covered in the code.

CONTROL OF OPERATION

Risk of unsafe food can be reduced by taking preventive measures to assure the safety and suitability of food at an appropriate stage in the operation by controlling food hazards.

1. CONTROL OF FOOD HAZARDS

- * Food business operators should control food hazards through the use of systems such as HACCP. They should:
 - identify any steps in their operations which are critical to the safety of food;
 - implement effective control procedures at those steps;
 - monitor control procedures to ensure their continuing effectiveness; and
 - review control procedures periodically, and whenever the operations change.
- * These systems should be applied throughout the food chain to control food hygiene throughout the shelf-life of the product through proper product and process design.

- * Control procedures may be simple, such as checking stock rotation calibrating equipment, or correctly loading refrigerated display units. In some cases a system based on expert advice, and involving documentation, may be appropriate.

2. KEY ASPECTS OF HYGIENE CONTROL SYSTEMS

A. Time and temperature control

- * Inadequate food temperature control is one of the most common causes of food-borne illness or food spoilage. Such controls include time and temperature of cooking, cooling, processing and storage.
- * Systems should be in place to ensure that temperature is controlled effectively where it is critical to the safety and suitability of food. Such systems should also specify tolerable limits for time and temperature variations.
- * Temperature control systems should take into account:
 - the nature of the food, e.g. its water activity, pH, and likely initial level and types of micro-organisms;
 - the intended shelf-life of the product;
 - the method of packaging and processing; and
 - how the product is intended to be used, e.g. further cooking/processing or ready-to-eat.
- * Temperature recording devices should be checked at regular intervals and tested for accuracy.

B. Specific process steps

- * Other steps which contribute to food hygiene may include, for example:

- chilling
- thermal processing
- irradiation
- drying
- chemical preservation
- vacuum or modified atmospheric packaging

C. Microbiological and other specifications

- * Management systems described in paragraph 1 offer an effective way of ensuring the safety and suitability of food.
- * Where microbiological, chemical or physical specifications are used in any food control system, such specifications should be based on sound scientific principles and state, where appropriate, monitoring procedures, analytical methods and action limits.

D. Microbiological cross-contamination

- * Pathogens can be transferred from one food to another, either by direct contact or by food handlers, contact surfaces or through the air. Raw, unprocessed food should be effectively separated, either physically or by time, from ready-to-eat foods, with effective intermediate cleaning and where appropriate, disinfection.
- * Access to processing areas may need to be restricted or controlled. Where risks are particularly high, access to processing areas should be only via a changing facility. Personnel may need to be required to put on clean protective clothing including footwear and wash their hands before entering.
- * Surfaces, utensils, equipment, fixtures and fittings should be thoroughly cleaned and where necessary disinfected after raw

food has been handled or processed.

E. Physical and chemical contamination

- * Systems should be in place to prevent contamination of foods by foreign bodies such as glass or metal shards from machinery, dust, harmful fumes and unwanted chemicals. In manufacturing and processing, suitable detection or screening devices should be used where necessary.

3. INCOMING MATERIAL REQUIREMENTS

- * No raw material or ingredient should be accepted by an establishment if it is known to contain parasites, undesirable micro-organisms, pesticides, veterinary drugs or toxic, decomposed or extraneous substances which would not be reduced to an acceptable level by normal sorting and/or processing.
- * Where appropriate, specifications for raw materials should be identified and applied.
- * Raw materials or ingredients should, where appropriate, be inspected and sorted before processing. Where necessary, laboratory tests should be made to establish fitness for use.
- * Only sound, suitable raw materials or ingredients should be used.
- * Stocks of raw materials and ingredients should be subject to effective stock rotation.

4. PACKAGING

- * Packaging design and materials should provide adequate protection for products to minimise contamination, prevent

damage, and accommodate proper labelling.

- * Packaging materials or gases where used must be non-toxic and not pose a threat to the safety and suitability of food under the specified conditions of storage and use. Where appropriate, reusable packaging should be suitably durable, easy to clean and, where necessary, disinfect.

5. WATER

A. In contact with food

- * Only potable water, should be used in food handling and processing, with the following exceptions:
 - for steam production, fire control and other similar purposes not connected with food; and
 - in certain food processes, e.g. chilling, and in food handling areas, provided this does not constitute a hazard to the safety and suitability of food (e.g., the use of clean sea water).
- * Water recirculated for reuse should be treated and maintained in such a condition that no risk to the safety and suitability of food results from its use. The treatment process should be effectively monitored.
- * Recirculated water which has received no further treatment and water recovered from processing of food by evaporation or drying may be used, provided its use does not constitute a risk to the safety and suitability of food.

B. As an ingredient

- * Potable water should be used wherever necessary to avoid food contamination.

C. Ice and steam

- * Ice should be made from water that complies with section 4 A of 'Establishment: Design and Facilities' covered in the previous issue of the Technews. Ice and steam should be produced, handled and stored to protect them from contamination.
- * Steam used in direct contact with food or food contact surfaces should not constitute a threat to the safety and suitability of food.

6. MANAGEMENT AND SUPERVISION

- * The type of control and supervision needed will depend on the size of the business, the nature of its activities and the types of food involved.
- * Managers and supervisors should have enough knowledge of food hygiene principles and practices to be able to judge potential risks, take appropriate preventive and corrective action, and ensure that effective monitoring and supervision takes place.

7. DOCUMENTATION AND RECORDS

- * Where necessary, appropriate records of processing, production and distribution should be kept and retained for a period that exceeds the shelf-life of the product. Documentation can enhance the credibility and effectiveness of the food safety control system.

8. RECALL PROCEDURES

- * Managers should ensure effective procedures are in place to deal with any food safety hazard and to enable the complete,

rapid recall of any implicated lot of the finished food from the market.

- * Where a product has been withdrawn because of an immediate health hazard, other products which are produced under similar conditions, and which may present a similar hazard to public health, should be evaluated for safety and may need to be withdrawn. The need for public warnings should be considered.
- * Recalled products should be held under supervision until they are destroyed, used for purposes other than human consumption, determined to be safe for human consumption, or reprocessed in a manner to ensure their safety.

ESTABLISHMENT: MAINTENANCE AND SANITATION

Effective systems should be established to facilitate the continuing effective control of food hazards, pests, and other agents likely to contaminate food.

1. MAINTENANCE AND CLEANING

A. General

- * Establishments and equipment should be kept in an appropriate state of repair and condition to:
 - facilitate all sanitation procedures;
 - function as intended, particularly at critical steps (see Section 1 of Control of Operation);
 - prevent contamination of food, e.g. from metal shards, flaking plaster, debris and chemicals.
- * Cleaning should remove food residues and dirt, which may be

a source of contamination.

- * The necessary cleaning methods and materials will depend on the nature of the food business.
- * Disinfection may be necessary after cleaning.
- * Cleaning chemicals should be handled and used carefully and in accordance with manufacturers' instructions and stored, where necessary, separated from food, in clearly identified containers to avoid the risk of contaminating food.

B. Cleaning procedures and methods

- * Cleaning can be carried out by the separate or the combined use of physical methods, such as heat, scrubbing, turbulent flow, vacuum cleaning or other methods that avoid the use of water, and chemical methods using detergents, alkalis or acids.
- * Cleaning procedures will involve, where appropriate:
 - removing gross debris from surfaces;
 - applying a detergent solution to loosen soil and bacterial film and hold them in solution or suspension;
 - rinsing with water which complies with section 4 A of 'Establishment: Design and Facilities' covered in the previous issue, to remove loosened soil and residues of detergent;
 - dry cleaning or other appropriate methods for removing and collecting residues and debris; and
 - where necessary, disinfection with subsequent rinsing unless the manufacturers' instructions indicate on scientific basis that rinsing is not required.

2. CLEANING PROGRAMMES

- * Cleaning and disinfection programmes should ensure that all parts of the establishment are appropriately clean, and should include the cleaning of cleaning equipment.
- * Cleaning and disinfection programmes should be continually and effectively monitored for their suitability and effectiveness and where necessary, documented.
- * Where written cleaning programmes are used, they should specify:
 - areas, items of equipment and utensils to be cleaned;
 - responsibility for particular tasks;
 - method and frequency of cleaning; and
 - monitoring arrangements.
- * Where appropriate, programmes should be drawn up in consultation with relevant specialist expert advisors.

3. PEST CONTROL SYSTEMS

A. General

- * Pests pose a major threat to the safety and suitability of food. Pest infestations can occur where there are breeding sites and a supply of food.
- * Good hygiene practices should be employed to avoid creating an environment conducive to pests.
- * Good sanitation, inspection of incoming materials and good monitoring can minimise the likelihood of infestation and thereby limit the need for pesticides.

B. Preventing access

- * Buildings should be kept in good repair and condition to prevent pest access and to eliminate potential breeding sites.
- * Holes, drains and other places where pests are likely to gain access should be kept sealed.
- * Wire mesh screens, for example on open windows, doors and ventilators, will reduce the problem of pest entry.
- * Animals should, wherever possible, be excluded from the grounds of factories and food processing plants.

C. Harborage and infestation

- * The availability of food and water encourages pest harborage and infestation.
- * Potential food sources should be stored in pest-proof containers and/or stacked above the ground and away from walls.
- * Areas both inside and outside food premises should be kept clean. Where appropriate, refuse should be stored in covered, pest-proof containers.

D. Monitoring and detection

- * Establishments and surrounding areas should be regularly examined for evidence of infestation.

E. Eradication

- * Pest infestations should be dealt with immediately and without

adversely affecting food safety or suitability.

- * Treatment with chemical, physical or biological agents should be carried out without posing a threat to the safety or suitability of food.

4. WASTE MANAGEMENT

- * Suitable provision must be made for the removal and storage of waste. Waste must not be allowed to accumulate in food handling, food storage, and other working areas and the adjoining environment except so far as is unavoidable for the proper functioning of the business.
- * Waste stores must be kept appropriately clean.

5. MONITORING EFFECTIVENESS

- * Sanitation systems should be monitored for effectiveness, periodically verified by means such as audit pre-operational inspections or, where appropriate, microbiological sampling of environment and food contact surfaces and regularly reviewed and adapted to reflect changed circumstances.

**Next Issue : Codex Guidelines on Food
Hygiene - III**

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I think the format of this bulletin needs/does not need changes.

I would like information in any subsequent issue on _____

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