



# Water Quality

FSKN 4

# GFSI Basic Level

- The organisation shall ensure the quality of water, ice or steam in contact with food product shall be suitable for intended use at the facility. All food contact water, ingredient water, and water used in cleaning and sanitizing operations shall be determined to be from a potable source.

# Outline of Presentation

- Importance of Water Quality
- Regulations and Codex Recommendations
- Proper Construction of Wells and Plumbing Systems
- Management

# The Importance of Water Quality

- Contaminated water is a major global source of gastrointestinal and other illnesses.
- Pathogens in contaminated water can potentially contaminate and proliferate in foods.
- Chemical contaminants in water sources also can be a public health concern (e.g. Arsenic contamination of well water).



# Legal Requirements

- Laws and regulations in countries or trading blocks typically address water quality requirements e.g. Egyptian Water Standards
- Allowed uses for non-potable water may vary across jurisdictions – refer to local regulations.
- The World Health Organization publishes guidelines for drinking water quality and other guidance documents. These may be adopted as national standards.

# Codex Requirements – Facilities

- An adequate supply of potable water with appropriate facilities for its storage, distribution and temperature control, should be available whenever necessary to ensure the safety and suitability of food.
- Potable water should be as specified in the latest edition of WHO Guidelines for Drinking Water Quality, or water of a higher standard.

# Codex Requirements – Facilities

- Non-potable water (for use in, for example, fire control, steam production, refrigeration and other similar purposes where it would not contaminate food), shall have a separate system. Non-potable water systems shall be identified and shall not connect with, or allow reflux into, potable water systems.



# Codex Requirements – Water 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
  - 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).





# Codex Requirements – Water in Contact with Food

- 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.

# Codex Requirements

- Water Used as an Ingredient
  - Potable water should be used wherever necessary to avoid food contamination.
- Water Used to Make Ice and Steam
  - Ice should be made from potable water. 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.



# PROPER CONSTRUCTION OF WELLS AND PLUMBING SYSTEMS



# Facility Requirements

- Potable water must come from an approved source, either through a municipal supply or private well.
- The water supply must be constructed, properly maintained and tested routinely to ensure safety.
- In general, wells must be tested at least once per year. Water testing frequency needs to be based on a risk assessment.



# On-Site Water Treatment

- May be necessary to ensure availability of an adequate supply of potable water.
- Various approaches to purify water, often used in concert, for example:
  - Sand filtration
  - Membrane filtration
  - Charcoal filtration
  - Reverse osmosis
  - Ion exchange



# Facility Requirements

- Hot and cold potable water must be available in all processing areas.
- Sufficient volume and water pressure must be available to dislodge particles of fruit and film from all surfaces. A high-pressure washer is highly recommended.
- Plumbing systems must be installed and maintained according to law.



# Cross Connections and Backflow

- A cross connection is defined as any connection or structural arrangement between a potable water system and a non-potable source, liquid or otherwise, through which backflow can occur.
- Backflow is defined as the flow of water or other liquids, mixtures, or substances into a potable water system from any source, other than the intended source.



# Management

- Develop a routine monitoring system to ensure water safety for the various uses in the food manufacturing facility.
- Routine monitoring of plumbing systems for cross connections.
- Formal approval process for new construction and installation of new equipment.
- Maintain water test results and other monitoring records.



# QUESTIONS?



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