



هيئة أبوظبي للزراعة والسلامة الغذائية
ABU DHABI AGRICULTURE AND FOOD
SAFETY AUTHORITY

CODE OF PRACTICE

No. (29) of 2019

Food Hygiene for Retail Business



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ABBREVIATIONS

ADAFSA	Abu Dhabi Agriculture and Food Safety Authority
EFST	Essential Food Safety Training
FAO	Food and Agriculture Organization
FSMS	Food Safety Management System
GHP	Good Hygiene Practice
HACCP	Hazard Analysis Critical Control Point
SOP	Standard Operating Procedure
WHO	World Health Organization

I. Introduction

This Code of Practice has been developed to provide best practice guidance on how retail businesses can produce safe food and comply with ADAFSA legislation. In particular it takes account of the requirements of Regulation No (6) of 2010 - Food Hygiene throughout the Food Chain and international best practice.

The structure of this Code of Practice is similar to the five pillars of food safety management, cold display, cross contamination, reheating and cooking and cleaning. In each section the relevant Articles of Regulation No. 6 are quoted for reference, the important food safety reasons explained and guidance on best practice identified.

Following the best practice in this Code will improve food safety standards, minimise the risk of outbreaks of food borne disease and protect consumers. It will also reduce customer complaints and the regulatory actions received from ADAFSA Food Inspectors.

Whilst this Code sets out recommended means by which retailers may comply with Regulations it is advisory in nature. It is therefore possible for a business to demonstrate to ADAFSA that they have achieved the objectives of the Regulations in other ways.

As latest technology becomes available, operational procedures and equipment standards in a retail premises may vary from that described in the Code.

II. Related documents

The following legislation as amended or updated are relevant to this code of practice.

- Law No. (2) for the year 2008 in respect of Food within the emirate of Abu Dhabi.
- Regulation No. (1) For the year 2008 Description of Violations Related to Food & its Handling.
- Regulation No. (3) For the year 2008 Recall and Traceability of Feed & Food.
- Regulation No. (6) For the year 2010 Food Hygiene throughout the Food Chain.
- Code of Practice No. (1) for the year 2010 Food and Feed Product Traceability and Recall.
- Code of Practice No. (13) for the year 2011 food hygiene for catering food service.

III. Scope

Taking into consideration the business classification within the international standard industrial classifications of all economic industries (ISIC) This Code of Practice shall apply to establishments that are collectively referred to as 'retail businesses'. These are described as food business establishments (whether permanent or temporary/mobile stalls) that sells food whether in retail form for one or more food item, whether dry, refrigerated or frozen food It also includes food business activities that serve and sell bakery and confectionary .

Retail businesses sector therefore may include:

1. Fresh Meats selling (Butchery)
2. Selling Frozen Meats
3. Poulterer; Fresh Poultry
4. Poulterer; Frozen Poultry
5. Fishmonger; Fresh
6. Fisheries; Cleaning
7. Bakery- Manual
8. Bakery & Confectionary
9. Delicatessen
10. Ice cream seller
11. Hot/Cold Drinks Place
12. Co-operate Association
13. Supermarket
14. ADNOC oasis(groceries only not including fast food restaurants)
15. Grocery/ Minimarket
16. Chocolatier
17. Roast Shop
18. Spice & Herb Grind shop
19. Greengrocer
20. Agriculture Cooperation
21. Selling Alcoholic Drinks
22. Bread shop
23. Food Vehicle/stall; High Risk pre-packed RTE
24. Food Vehicle/stall; Low Risk RTE
25. Vending machine; Ready to Eat (RTE) foods

The scope of this code excludes:

- Manufacturing of bakery products, i.e. baking on premises.
- Food service establishments as covered under code of practice "Food hygiene for food service".
- Retail sale of prepared food for immediate consumption (mobile food vendors).

Hyper market and cooperative association:

- The scope of this code is focused on small size retails but large retail establishments (e.g. hypermarkets), may find it useful for application within some section of retail activities. For operations within hyper markets that include additional activities (e.g. cooking, hot holding, chilling, bakeries ..etc). Food business operator shall refer to ADAFSA Code of Practice No. (13) For the year 2011 “food hygiene for food services” and Regulation No. (8) for the year 2012 technical and hygienic requirements for animal production establishments.

Baqala requirements (Grocery store):

- Groceries should take into consideration Abu Dhabi Agriculture and Food Safety Authority (2011) licensing and operational requirements for retail grocery in Abu Dhabi :Baqala .ADAFSA .Abu Dhabi which is considered Mandatory starting 2013.

IV. Definitions:

- In this code of practice the terms and expressions of the food Law in respect of Food within the emirate of Abu Dhabi , 6 Regulation No. (6) For the year 2010 Food Hygiene throughout the Food Chain and the relevant regulations shall apply, in addition to the following, unless the text indicates otherwise:

The Authority	Abu Dhabi Agriculture and Food Safety Authority
The competent	Any national / International authority designated or otherwise recognized as such for any purpose in connection with this code.
Retail	Retail : the handling and/or processing of food and its storage at the point of sale or delivery to the final consumer excluding all food service operations(catering).
Ready-to-eat food	Food that is intended to be consumed without any further biocidal steps.
Perishable food	Food which is subject to rapid decay, spoilage and/or growth of pathogenic microorganisms with or without the production of toxins or metabolites in quantities that may present an unacceptable risk to human health.
Food Hygiene	All conditions and measures necessary to control hazards and ensure the safety and suitability of food at all stages of the food chain.

Food Handling	Any operation in the preparation, processing, cooking, packaging, storage, transportation, distribution, selling and service of food or donating for the purpose of human consumption
Food safety management system	A risk management system that controls both specific and general operational hazards, using the seven principles of Hazard Analysis Critical Control Point (HACCP) and Good Hygiene Practice (GHP) as described by the Codex Alimentarius Commission.
Cross Contamination	The transfers of harmful substances or disease-causing microorganisms to food by hands, food-contact surfaces, cloths, utensils that touch raw food, are not cleaned, and then touch ready-to-eat foods. Cross contamination can also occur when raw food touches or drips onto cooked or ready-to-eat foods.

1- Management

Managing your business effectively is vital for your food safety. This section contains information on different management issues.

1.1 Responsibilities of food business operator

1.1.1 Food control permission

Regulation No. (6/2010), Article 3

The food business operator within the Emirate shall abide by the licensing requirements issued by the Authority.

The food business operator must obtain a permission from ADAFSA in order to commencing the food business in Abu Dhabi Emirate.

In addition to the general license the operator is required to seek an additional permits for any extension to the scope of activities. This includes but not limited to (1) the handling of non-Halal food and (2) the use of temporary premises or mobile vehicles

1.1.2 Traceability (one step backward)

Recent food scares, both nationally and internationally, have make it essential for Governments to be able to trace food quickly if they receive evidence of unsafe food anywhere in the supply chain. ADAFSA have issued requirements for traceability in line with international best practice as can be seen in Article 4 Regulation 6 of 2010.

Whilst most operators in the food chain have to be able to identify both their suppliers and customers (referred to as one step back and one step forward) it is not feasible for retailers to keep detailed records of their customers. However, it is required to keep full details of all suppliers with contact details, so that they can be contacted in case of emergency.

The following details represent a minimum of information required to comply with the Regulations:

- Supplier name.
- Address of supplier.
- Full contact details (including out of hours emergency numbers).
- Nature and description of the food supplied.
- Any supplier batch codes.
- The delivery date.

1.1.3 Training Requirement

Regulation No. (6/2010), Article 5

The food business operator shall ensure that food handlers are trained and demonstrate knowledge and skills in food safety & good hygienic practices, as applicable to their assigned tasks, and have further obtained the official food safety training programs certification.

ADAFSA requires that all food handlers to have minimum training in any aspect of food safety levels.

This may be followed by more specific training requirements, for those with greater responsibility in the business.

The (EFST) program is based on international best practice and is a mandatory training requirement for all food handlers in Abu Dhabi Emirate. This program is ran by governmental body called Abu Dhabi Quality and Confirmatory Council (QCC).

1.1.4 Food Safety Management Requirement

Regulation No. (6/2010), Article (99)

The food business operator is required to ensure the proper implementation of Good Hygienic Practices and ensure the effective implementation of traceability in accordance with regulation pertaining to food traceability and recall issued by the Authority.

Regulation No. (6/2010), Article (100)

The food business operator shall develop, implement and maintain a food safety management system based on the Hazard Analysis and Critical Control Point (HACCP) principles.

Regulation No. (6/2010), Article(101)

When any modification is made in the product or the process, the food business operator shall review and revise the relevant procedure accordingly.

Regulation No.(6/2010), Article (103)

The food business operator shall:

Provide the Authority with evidence of their compliance to food safety management systems, taking into account the nature and size of the food business.

Ensure the continuous update of any documents describing the operational procedures.

Regulation No. (6/2010), Article(104)

The food business operator is required to follow the protocols and codes issued by the Authority when developing their food safety management systems.

The implementation of a HACCP-based food safety management system (FSMS) is internationally agreed as the most effective business intervention to protect the public from food borne disease. ADAFSA has therefore included a requirement for such systems in all food businesses in the Emirate.

A food safety management system essentially requires all food safety practices to be documented (as SOPs) with appropriate record keeping. All food handlers have to understand and follow these practices and be supervised to ensure that standards are maintained.

This is how the food business operator demonstrates They are managing food safety in their food business.

ADAFSA will be providing support to enable Retail businesses to implement and maintain an effective food safety management system. This will include training and the provision of tools and guidance designed to meet the specific needs of different sectors of the Abu Dhabi Retail industry

1.2 External Requirement

1.2.1 Location

Regulation No. (6/2010), Article 12

- a-The food establishment shall be located in suitable location, kept clean and maintained in good condition.
- b- The establishment shall not be located anywhere where, after considering such protective measures, it is clear that there will remain a risk to food safety or suitability. In particular, establishments should normally be located away from:
 - 1-Environmentally polluted areas and industrial activities.
 - 2-Areas prone to infestations of pests.
 - 3-Areas where wastes, either solid or liquid, cannot be removed effectively.

1.3 Internal Requirement

1.3.1 Structure requirements:

1.3.1.1 Design and layout

The internal design and layout of the business should permit safe practices, including protection against cross-contamination. Examples of important points for consideration include:

- A. Physically separate areas where raw products, such as meat and poultry, are handled.
- B. Wash up areas and staff amenity areas should be separated from food display areas.
- C. Facilitating cleaning, cleaning equipment should be stored close to the areas where it is used.
- D. Equipments and facilities should be located where staff can readily use them.
- E. Ventilation exhaust outlets are located to minimize contamination of food.

1.3.1.2 Construction

Materials used to construct premises should be appropriate for the retail operation. They should be durable, non-absorbent and easy to clean. Light colours, if practicable, are preferred so the contamination with the dirt and grease can easily be seen.

1.3.1.3 Space requirement

It is essential to provide adequate space for the activities to be conducted in the business. It is difficult to determine space requirements at the design stage unless the business can estimate the volume of trade accurately. However, there are some factors that could be considered whether there is sufficient space such as space to permit free movements employees storages, equipments, food flow tracks and waste flow tracks etc...

1.3.1.4 Floor surface

Floor surfaces would be made of impervious, non-absorbent, non-slip, washable and non-toxic materials, allowing adequate cleaning and surface drainage. Where appropriate, floors would slope sufficiently for liquids to drain to trapped outlets. (e.g. in Baqala: floor surface should be made of heavy-duty full body polished porcelain tiles with straight edges that are homogeneous in size, colour and condition. Figures 2 and 3 below:



figure 2: maintained floor surface



figure 3: adequate floor slope

1.3.1.5 Walls and ceiling

Wall surfaces and partitions should be made of impervious, , non-absorbent, sealed, washable non-toxic and of light colour materials. Where appropriate, walls should have a smooth, easy to clean surface. (examples are illustrated in figure 4 and figure 5)



figure 4:non absorbent ceiling



figure 5:well maintained walls

1.3.1.6 Display surface

Display surface should be made of washable, corrosion-resistant and non-toxic material and maintained in a sound condition, be durable and allow for easy cleaning (figure 6 below). Absorbable surfaces are not allowed. Also, surfaces should be always be free of any damage or rust.



Figure 6: suitable display shelves

1.3.1.7 Windows

Regulation No. (6/2010), Article (47)

- a. Windows and other openings shall be constructed to prevent the accumulation of dirt. Where open windows would result in contamination, windows must be fixed or remain closed.
- b. Where appropriate, windows that open to the outside environment shall be fitted with easily removed and cleanable insect-proof screens.
- c. Internal window sills, if present, should be sloped to prevent them from being used as shelves.

Windows should be easy to clean, be constructed to minimize the build up of the dirt and where necessary, be fitted with removable and cleanable insect-proof screen.

1.3.1.8 Drainage facilities

Regulation No. (6/2010), Article 19

Drainage facilities shall conform to the following conditions:

- a. Shall be of adequate size and design and appropriately installed and maintained for the intended purposes to avoid the risk of contamination and foul odors.
- b. Drainage channels, including any removable perforated baskets and anti-slip grating, shall be so constructed from suitable materials and be kept in such good order, repair and condition as to minimise any risk of contamination.
- c. Where drainage channels are fully or partially open, they shall be designed so as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where high risk food is handled.

Adequate drainage and waste disposal systems and facilities should be provided in all retail businesses. All sewage and waste water should be conveyed from all buildings on the site so as not to cause ponding or backflow into the building. Sewage and waste water disposed of on-site must be disposed of so as not to jeopardize food safety.

The disposal system should also be constructed so that there is no likelihood of the liquid waste polluting the water supply or contaminating food. This is intended to ensure that the standard of workmanship is such that the system is not likely to leak, block, overflow or allow access by vermin into the premises.

1.3.1.9 Water supply

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.

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

1.3.2 Storage

Regulation No. (6/2010), Article 58

Raw materials and all food ingredients stored at the food establishment shall be stored in appropriate conditions necessary to protect from contamination and prevent harmful deterioration and shall be stored off the floor and away from walls.

Retails stores should provide suitable temperature- controlled conditions for storage of food items and allow those temperatures to be monitored and where necessary recorded, while ensuring that food is protected from direct sunlight. Cleaning and other hazardous chemicals should be stored where there is no likelihood of contaminating food items (fig: 7 below). Also, the storage room should be adequate in space. The storage room floor should be fitted with anti-slip heavy duty ceramic floor tiles and the entrance shall be fitted with a door made of smooth and non-absorbent surfaces, self-closing, easy to clean, and where necessary disinfect.(figure 8 below: illustration of plastic palettes) Moreover, special designated area shall be used to temporarily hold expired food items (e.g. in locked cabinets) to be labeled 'Expired Goods'.



figure 7 chemical storage space sign

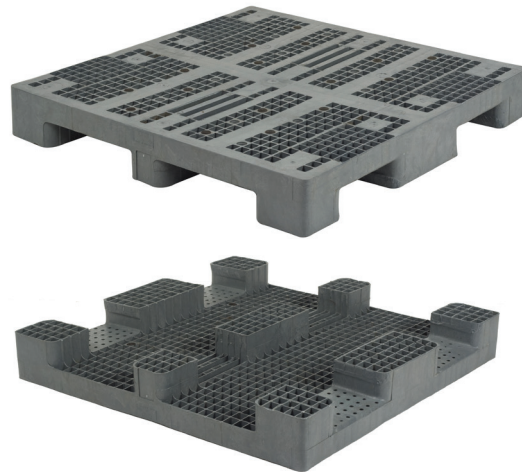


figure 8: illustration of plastic palettes

1.3.3 Hand washing facilities

Regulation No. (6/2010), Article 16

Adequate and conveniently located facilities for hand washing and drying shall be provided, and, where necessary, for disinfection purposes that are designated for cleaning hands with the following conditions:

- Facilities are provided with suitably temperature controlled, running, potable water.
- Facilities for washing food are separate from the hand-washing facilities.
- It is preferred that hand washing sinks are of the non-hand operable type.

The food business operator should ensure the access to hand washing facilities within areas where the source of food contamination.

Also, Food business operator are required to maintain the supply of warm running water (usually between 23-46 oC), provide non hand operated type of hand wash, and a supply of single-use towels, or other means of effectively hand drying equipment , at or near each hand washing facility. Moreover, the food business should ensure hand washing facilities are not used for other purposes such as cleaning equipment.

1.3.4 Working environment

1.3.4.1 Ventilation

Regulation No. (6/2010), Article 17

Ventilation shall abide with the following conditions:

- a. Suitable and sufficient means of natural or mechanical ventilation shall be provided while avoiding any mechanical airflow from a contaminated area to a clean area.
- b. Ventilation opening should be provided with a screen or protecting enclosure of non-corrodible material with an easy access to filters and other parts that require cleaning.
- c. The ventilation shall be adequate to minimize air-borne contamination of food and to control ambient temperature, odors and humidity.

Ventilation provides fresh air in place of air containing unwanted fumes, smoke, an Ventilation in retails Stores should provide suitable and sufficient means of natural or mechanical ventilation while avoiding any mechanical airflow from a contaminated area to a clean area.

The ventilation should be adequate to minimize air-borne contamination of food and to control ambient temperature, odors and humidity. Ventilation opening should be provided with a screen or protecting enclosure of non-corrodible material with an easy access to filters and other parts that require Cleaning.

1.3.4.2 Lighting

Regulation No. (6/2010), Article 18

Lighting shall conform to the following conditions:

- a. Adequate natural or artificial lighting shall be provided to enable operating in a hygienic manner. The lighting intensity should be adequate to the nature of the operation.
- b. Lighting fixtures and electrical wires shall be protected to allow for easy cleaning and prevention of cross contamination.

The retails stores should have adequate lighting to enable to see whether areas and equipment are clean, to detect signs of pests and to clearly see the food and equipment they are handling. The light emitted by the bulbs shall be either warm-white or daylight color. Lighting fixtures should, where appropriate, be protected to ensure that food is not contaminated by breakages.

1.3.5 Equipment

Regulation No. (6/2010), Article (22)

All equipment and containers other than one-only use (disposable) containers and packaging material, which comes into direct contact with food shall:

- a. Be made of material which does not transmit toxic substances, odours or taste to the food, be non-absorbent, resistant corrosion and be durable to allow frequent cleaning and disinfection.
- F. Equipment used to cook, heat treat, cool, store or freeze food shall be designed to achieve the required temperature as rapidly as necessary and maintain it effectively.

Regulation No.(6/2010), Article (23)

Equipment referred to in article (22) above must be fitted with appropriate temperature control devices which aim to record the air temperature in the coldest part of the equipment and, where necessary, control and monitor humidity, air-flow or any other parameter that is likely to have a detrimental effect on safety and suitability of food. Temperature indicators must be clearly visible, calibrated and monitored.

Regulation No.(6/2010), Article (40)

All refrigeration spaces shall be equipped with temperature measurement devices with an accuracy of (+/- 1o) C.

Regulation No. (6/2010), Article (41)

Food business operators shall maintain and hold records of food temperatures and maintenance and calibration records of temperature recording devices for a period of three years.

Equipment and containers coming into contact with food should be designed and constructed to ensure that they can be effectively cleaned and disinfected. This will ensure that they are more likely to be kept clean and therefore provide fewer opportunities for contaminating food.

Surfaces should be smooth, free of cracks, chips, crevices, ridges or grooves that could harbour bacteria and impair the surfaces' ability to be easily and effectively cleaned.

The provision and maintenance of the correct equipment in food retail business occupies a key position in controlling the hazards of microbiological and physical contamination. Equipment should be constructed and kept in a state of good repair to reduce the risk of the contamination from the foreign bodies.

1.4 Operational requirements:-**1.4.1 Purchasing (using approved supplier)**

Suppliers should always deliver food of an acceptable standard. How the business identifies and manages a 'safe supplier' can vary, (small businesses will not be expected to follow the practice of larger businesses) but the following principles are relevant to most businesses:

- A. Check that the supplier's business is legitimate (e.g. do they have a license from Department of Economic Development (DED), fully traceable contact details, receipts and invoices?)
- B. Check that the supplier has the facilities to deliver food safely.
- C. Carry out regular spot checks on deliveries.
- D. Request details of the supplier's food safety management system.
- E. Request advice from the food Inspector if necessary.
- F. Develop a written agreement with suppliers (a specification) that identifies food safety requirements. For example:
 - i. Transport requirements such as temperature control, delivery times.
 - ii. Metal detection, prior to delivery.
 - iii. Product requirements (composition, expiry by date etc)

1.4.2 Receiving

For all saleable goods supplied to the retail store, the business operator should systematically check and control the following:

- A. Expiry dates.
- B. Temperature.
- C. Physical condition.
- D. Visual appearance and cleanliness.

1.4.3 Products Display

Business operators should avoid excessive stacking of saleable goods on the top of the shelves and old stock from the back of on shelves should be checked for expiry dates periodically. "Expired" items should be removed and replaced with new stock. Display of saleable goods or any other promotional material hanging, directly or indirectly, from the ceiling or attached to walls or fixtures should not be permitted. Also, the business operators should avoid display of saleable goods in the staircases, whether on the stairs, stair railing or on the walls.

1.4.3.1 Non Halal food products

Regulation No. (6/2010), article 43

Where non-HALAL food is handled, areas must be completely separated from those where HALAL food is handled.

Non-Halal food and drink (for example pork products and alcohol) can only be displayed and handled in 'licensed' premises, as described earlier. There are a number of specific requirements that have to be met. These include:

- A. storage, display and vehicles
- B. Practices that ensure complete control of cross –contamination of Halal from non-Halal food.
- C. Clear labeling so that non-Halal food cannot be consumed unknowingly.
- D. Segregated food handlers for Non-Halal products.



Figure 9: Non food items are displayed separately from food items

1.4.4 Stock rotation

Regulation No.(6/2010), Article 91

Food that has passed its marked “expiry”, “use by” or “best before” date shall be removed from display, and where appropriate, disposed of.

The correct stock rotation of food is fundamental to a safe and profitable food business. Stock rotation applies to all food types and failure to rotate stock can cause; the product to become unmarketable due to:

- (1) staleness or changes in texture or colour eg rancidity, and slime and off odours.
- (2) mould growth.
- (3) infestations by insects.
- (4) Growth of harmful bacteria.

Considerable savings in time and money can be made if stock rotation is well managed in the business. This starts with ordering only to meet requirements and then using the first-in-first-out policy (FIFO) in all food storage areas.

It is essential that the storage instructions on any purchased ingredients or foods are followed correctly. This is particularly important for foods that require temperature control to ensure safety.

1.4.5 Home delivery

Home delivery services shall comply with ADAFSA requirement. All the items should be in a good condition and with the safe temperature when the customers receive it.

1.5 customer complaints

Customer complaints

Receiving and appropriately investigating complaints from unsatisfied customers will help identify and prevent further problems. Records of complaints and action taken should be documented and kept in the business.

Tips for Business Owner:

Record in the Diary at the time that the complaint is being made:

- Customer details (name, address, telephone number) - so you can contact them after we have investigated the problem.
- What the complaint is about (the product, what the customer is concerned about).
- Date/time the item was purchased (so to identify what batch/delivery/supplier might be involved).

Also write down what action has been taken to investigate the issue, what was found and what was done to fix the problem

Investigating customer complaints

Investigating customer complaints

Customer complaints are investigated to determine the cause of the complaint. Where a problem is identified, action is taken to prevent it happening again.

Recalls

Food products can be recalled by manufacturers if they have been found to be unsafe or unsuitable. When information is received from a manufacturer, supplier, the authorities or the media that a food is being recalled, the food business operator roles are clearly stated in **Articles (9), (10), (11) Abu Dhabi Regulation No (3) of 2008 on the traceability and recall.**

2- Cold display

Regulation No.(6/2010), Article (29)

Food likely to support the reproduction of pathogenic microorganisms or the formation of toxins, should be maintained in an uninterrupted cold chain and be kept at temperatures that will prevent any risk to health.

2.1 Ready to eat food

A. It is particularly important to handle unwrapped ready-to-eat foods safely. To do this:

If you think that unwrapped ready-to-eat food has not been kept separate from raw meat/poultry or eggs, throw the food away

- Protect food from dirt and bacteria, by covering it or keeping it in suitable display equipment.

List the types of unwrapped ready-to-eat food you prepare and sell

- How you handle ready to-eat foods is particularly important because they will not be cooked or reheated before selling.
- B. Follow the manufacturer's instructions on how to store the food, if these are available. The manufacturer's instructions are designed to keep the food safe.
- C. Make sure you keep ready-to-eat foods cold enough. 'If these types of food are not kept cold enough, harmful bacteria could grow.
- D. Do not use or sell ready-to-eat foods after the expiry delete date,

If you slice cooked meat:

- *Make sure you follow the manufacturer's instructions when you clean the slicer
- *Avoid handling the meat as much as possible. It is a good idea to slice meat straight onto the display tray or the plastic film or paper you will use to wrap it.
- *Avoid bare hand contact. (e.g :Use clean tongs). Hands can easily spread harmful bacteria onto food

Meat slicers need careful cleaning and disinfecting to prevent dirt building up and to stop harmful bacteria growing, in particular on the slicing blade. figure 10



Figure 10: Deli meat slicer

2.2 refrigerated storage and display

- A. -The refrigeration and cold display unit should be adjusted to hold food temperatures below 5 OC degrees.(figure 11,13 and 14 below)- In home delivery services nothing mentioned about hot food refrigerated food should be delivered as soon as possible Maximum of 2 hours in danger zone”

Reject or return goods to the supplier if any of the following happens:

- Chilled, readily perishable ready-to-eat products are too warm (at or above 5 OC),

B. Remove food from sale when it passes its expiry date

C. It is illegal to sell food after its expiry date. It might not be safe to eat when a food has passed its 'expiry date.

Ideally, store raw meat/poultry in a separate fridge. If this is not possible, store raw meat/poultry below ready-to-eat foods. this helps to prevent harmful bacteria spreading from raw foods to ready-to-eat foods

-Store eggs in a the fridge and keep them apart from other foods.

D. Store and display wrapped raw meat/poultry separately from other foods. This helps to prevent harmful bacteria spreading from raw foods to ready-to-eat foods, which could happen, e.g. through drip juices(figure 12 shows a display refrigerator at a retail shop)

E. Food is kept covered and labeled

Regulation No. (6/2010), Article (30)

Foods shall maintain the following temperatures:

- a. Maintaining refrigerated /chilled food below (5)°C.
- b. Maintaining frozen food at or below (-18)°C.
- c. All other foods, including shelf stable, shall be maintained at suitable temperature that prevent risk to human health, as appropriate for the particular food.

Regulation No. (6/2010), Article (37)

Any ready-to eat potentially hazardous food, if it has been at temperatures between (5)°C and (63)°C;

- a. For a total of less than two hours, shall be refrigerated or reheated to be used immediately.
- b. For a total of or longer than two hours shall be disposed of immediately.

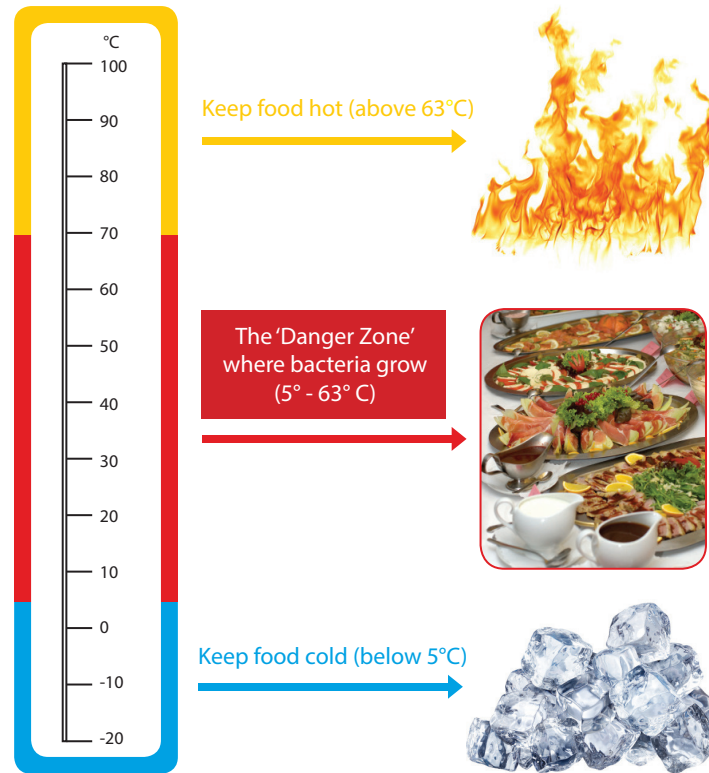


Figure 11: danger zone



Figure 12:display refrigerator

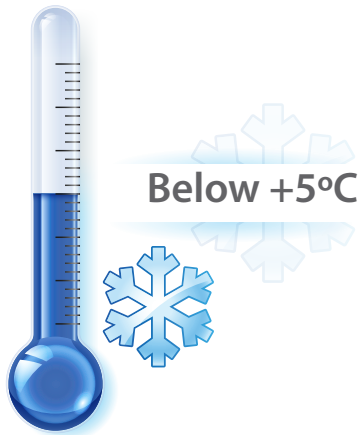


Figure 13: Refrigeration temperature



Figure 14 Refrigerator temperature reading from local market

2.3 Safe use of refrigeration unit

- A. Follow the manufacturer's instructions on how to position, use and maintain refrigeration units. incorrect positioning of equipment, e.g. next to doors, heaters or in direct sunlight, may stop it working effectively.
- B. Allow air circulation and avoid overloading.
- C. Make sure refrigeration units are at the correct temperature before you put refrigerated food in it.

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Figure 15:demo

- D. Check and record refrigerated foods at regular intervals, if you are not sure how long a food has been out of refrigeration unit, throw it away.

Regulation No. (6/2010), Article (38)

If the temperature of chilled foods is not maintained, the following action shall be taken:

- a. If the temperature of the chilled food at any time is at or above (5)°C and below (8)°C, the food shall be immediately chilled to below (5)°C.
- b. If the temperature of the chilled food at any time is above (8)°C, the food shall be disposed of immediately unless substantial science-based food safety evidence is submitted to the Authority.

It is essential that all refrigeration units are working at the correct temperatures

If the refrigeration unit breaks down the following actions are recommended:

- A. Check the temperature of the food.
 - i. If it is still at a safe temperature, it should be moved to another refrigeration storage unit.
 - ii. If not at a safe temperature, throw it away.

- B. The equipment should be repaired or replaced.

2.3.1 Tips for storing and displaying refrigerated food safely

- A. Check that it is working properly.
- B. Improve staff training
- C. Ensure adequate staff supervision
- D. Use display cabinets that have doors, plastic curtains or other ways of containing cold air.
- E. Keep the shop cool and avoid high temperature ,so that the display cabinet motors will not have to work as hard to keep food cool
- F. Keep air vents clear of stock to allow refrigeration unit working efficiently.
- G. Avoid overloading to keep the temperature below 5 °C degrees.
- H. Regularly clean dust from heat exchange and motor surfaces to help display cabinets run more effectively.

2.4 Freezing storage & display

Regulation No. (6/2010), Article (30)

Foods shall maintain the following temperatures:

- a. Maintaining refrigerated /chilled food below (5)°C.
- b. Maintaining frozen food at or below (-18)°C.
- c. All other foods, including shelf stable, shall be maintained at suitable temperature that prevent risk to human health, as appropriate for the particular food.

Regulation No. (6/2010), Article (39) (where applicable)

If the temperature of frozen foods is not maintained, the following action shall be taken:

- a. If the temperature at any time is (-15)°C to(-18)°C, food shall be brought back to minimum of (-18)°C as rapidly as possible.
- b. If the temperature at any time is higher than (-15)°C but lower than (-10)°C, food shall be subjected to comprehensive field examination and laboratory testing.
- c. If the temperature at any time is (-10)°C, food shall be used immediately.
- d. If temperature at any time rises above (-10)°C or showed signs of thawing, food shall be disposed of; unless substantial science-based food safety evidence is submitted to the Authority.

Regulation No. (6/2010), Article (88)

Chiller/refrigerator temperatures should be maintained at all times and sufficient precautions should be in place in case of power failure.

2.4.1 Safe use of the freezer

- A. Follow the manufacturer's instructions on how to position, use and maintain freezing equipment It is important to use equipment properly to make sure food is below -18 °C .(illustration ,16,17 and 18 below)
- B. The incorrect positioning of equipment e.g. next to doors, heaters or in direct sunlight may

stop it working effectively

- C. Frozen food should be placed in a freezer as soon as it is delivered. If frozen food starts to defrost, harmful bacteria could grow.
- D. Make sure equipment is at the correct temperature before you put frozen food in it. If you overfill equipment and food is above load lines it might not be kept cold enough
- E. Ideally, foods marked with a expiry date should be removed from sale by the end of that day.
- F. Temperature of the freezers should be Check and record at regular intervals. Most freezers will have a digital display or dial to show what temperature it is set at. Check regularly that the temperature shown on the display/dial is accurate, using a freezer thermometer.
- G. Keep door seals free from ice build-up as this will stop cold air leaking out.
Follow manufacturer's instructions for defrosting.



Figure 16: Frozen display



Figure 17: temperature of frozen foods



Figure 18: actual freezers temperature control device reading

2.4.2 Tips to store and display frozen food safely

- A. Check that freezer is working properly.
- B. Re-organize freezers so there is more space and make sure they are kept closed as much as possible.
- C. Train staff.
- D. Improve staff supervision

2.5 Management responsibilities

To ensure that food is always stored correctly food handlers should follow the advice described in this Chapter. However, it is also necessary for the owner/manager to provide appropriate equipment and to ensure adequate training & supervision.

The food business operator should:

- A. Provide suitable equipment to enable safe cold and freezing display (see Section 1.3.5.)
- B. Ensure that any refrigerated or frozen food delivered to customers is kept at or below the required temperatures (see Section 1.4.5).
- C. Ensure a system of preventative maintenance is in place for all refrigeration units and freezers (see Section 5.5).
- D. Train and monitor food handlers to ensure that the SOPs are followed (see Section 1.1.3.)

3. Cross Contamination

Cross-contamination occur when bacteria are spread between food, surfaces or equipment. It is most likely to happen when raw food touches (or drips onto) ready-to-eat food, equipment or surfaces. So, if raw meat drips onto a cake in the fridge, bacteria will spread from the meat to the cake. So, good product handling is an essential element in controlling each of the three major hazards. Great care should be taken during all the stages of the handling that the food undergoes such as delivery, storage, display and sale to ensure that they have been carried out as hygienically as possible.

Regulation No. (6/2010), Article (42)

At all stages of food chain, food must be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed.

Regulation No. (6/2010), Article (52)

Effective measures shall be taken to prevent cross contamination to ensure separation of raw food, food in process and ready-to-eat food, including utensils and cutting boards.

Regulation No. (6/2010), Article (86)

When displaying food, practicable measures shall be taken to protect food from the likelihood of contamination with the provision of separate serving utensils for each food or other dispensing methods that minimize the likelihood of the food being contaminated.

Regulation No. (6/2010), Article (87)

Raw food displayed in chillers and freezers shall be adequately separated from ready to eat food to prevent contamination.

3.1 Types of Contamination:

3.1.1 Physical contamination:-

Physical contamination with foreign objects will usually result in it being unreasonable to expect the food to be consumed in that state. In addition, physical damage to foods or their containers can result in contamination. If cans or vacuum packs become punctured the food inside will rapidly deteriorate.

3.1.2 Biological contamination:-

Caused by bacteria, viruses or parasites that are present in air, food, water, soil, animals and humans. Food infections and food intoxications can cause severe vomiting, diarrhea, nausea, abdominal pain and fever to one or lots of people, they can even result in death in some serious cases.

3.1.3 Chemical contamination:-

Chemical contamination can include cleaning chemical residues which are used for cleaning and sanitizing food contact surfaces and Agricultural residues which are Pesticides, fertilizers, fungicides, antibiotics and growth hormones.

3.2 Food Handler

A high standard of personal hygiene is essential in food business, especially where any open foods are involved. Many potential contaminants of food come directly from the person handling that food e.g. hair. The handler can act as a means of transferring bacteria from their bodies or some other sources onto foods. Staff with bad habits will not only distress the customer but could also cause physical harm, or illness.

Regulation No. (6/2010), Article (25)

- a. Food handlers suffering from or being a carrier of a disease likely to be transmitted through food shall not be permitted to handle food or enter any food-handling area if there is any likelihood of direct or indirect contamination.
- b. Personnel with cuts and wounds, who are permitted to continue working, shall cover them by suitable waterproof dressings.

3.2.1 Fitness to work

Staff should be “fit for work” at all time. They must not be suffering from, or carrying, an illness or disease that could cause a problem with the food safety. Anyone not ‘fit for work’ should not be allowed into areas where unwrapped food is handled where they could spread harmful bacteria to food. Also, any member of staff who has diarrhea and/or vomiting should report it to their manager immediately. People suffering from these symptoms often carry harmful bacteria on their hands and can spread them to food or equipment they touch.

Advice on good practice:-

- Now food handling staff should be asked whether they have any history of the relevant illnesses and if in doubt at medical report should be obtained before commencing work.
- Staff should also tell their manager if they have any cuts or sores Cuts and sores should be completely covered with a brightly colored waterproof dressing. This is to prevent bacteria from the cut or sore Spreading to food

3.2.2 Action if symptoms occur at the food business

- A. If staff are not ‘fit for work’, move them out of food handling areas or send them home.
- B. Throw away any unwrapped foods they have handled.

3.2.3 Personal Hygiene

Regulation No. (6/2010), Article (28)

Food handlers shall refrain from behaviors that may result in contamination of food such as wearing of jewellery, smoking, spitting, chewing, eating, sneezing, coughing over uncovered food or any other related behaviour.

Staff should not smoke, drink, eat or chew gum while handling food. Staff should also avoid touching their face or nose, or coughing and sneezing. All of these lead to staff touching their face or mouth. Harmful bacteria can be spread from someone’s face or mouth to their hands and then onto food.

Advice on good practice:-

- It is good practice for staff to have clean hair and to keep it tied back and/or wear a suitable head covering, e.g. hat or hairnet, especially when handling unwrapped food. If hair is not tied back or covered, it is more likely to fall into food and staffs are more likely to touch their hair. This can spread bacteria to food, especially if it is unwrapped.

Watches and jewellery can collect and spread dirt and harmful bacteria, or fall into food. (illustrated in figure 19)



Figure 19:safe hand hygiene

3.2.3.1 Hand washing

Regulation No. (6/2010), Article (27)

Food handlers shall always wash and, where necessary disinfect their hands, including the start of food handling activities, immediately after using the toilet and after handling raw food or any contaminated material.

To keep food safe, it is essential for you and your staff to have high standards of personal hygiene. Effective hand washing is extremely important to help prevent harmful bacteria from spreading (figure 20). Make sure that all staff that works with food washes their hands properly:



Figure 20: Four easy steps for hand washing

- A. before handling food
- B. after breaks
- C. after going to the toilet
- D. after cleaning
- E. after handling raw meat/poultry or eggs
- F. after touching a cut or changing a dressing
- G. Before putting on clean, single-use gloves for working with food and between glove changes
- H. After touching bare human body parts, for example, parts other than clean hands and clean, exposed portions of arms.

3.2.3.2 Uniforms:

Regulation No.(6/2010), Article (26)

Food handlers shall maintain a high degree of personal cleanliness and shall wear suitable, clean and protective clothing while handling food such as hair nets, gloves, masks, beard covers.

The food hygiene regulation requires every person working in a retail store to maintain high degree of personal hygiene and to wear suitable, clean and where appropriate, protective uniform.

Advice:-

Protective clothing should generally be light coloured and washable.

Also, all staff should wear clean clothes when handling food. Ideally, staff handling unwrapped food should put on a clean apron, tabard or something similar over their clothes. uniforms can bring dirt and bacteria into food handling areas. Moreover, wearing clean uniform, aprons etc. helps to prevent this (and gives a good impression).



figure 21: employee protective clothing

3.3 pest control

“Effective pest control is essential to keep pests out of food premises and prevent them from spreading harmful bacteria to food .

3.3.1 Prohibit animals

A food business must not permit live animals in areas in which food is handled, other than seafood. B. Live seafood is permitted in areas in which food is handled to allow food businesses to keep decorative fish in tanks and to allow businesses to keep and sell live seafood on the premises.

3.3.2 Prevent access to pests

The food business operator should do all that it practical to prevent pests from entering the food premises by taking the following steps:

- A. Provide a suitable location, design and construction for the food premises.
- B. Provide screens to doors and openings and repair screens if they become damaged.
- C. Provide self-closing doors, double doors or air curtains at door entries.””figures 22,23,24
- D. Ensure there are no holes or gaps in ceilings, walls and floors.
- E. Ensure all food and ingredients are stored in pest proof containers, away from walls and off the floor.



Figure 22:self closing equipment



Figure 23:self closing doors



Figure 24: Air curtains

3.3.3 Ensure preventative maintenance

The food business operator should ensure that the premises, fixtures, fittings and equipment (and those parts of vehicles that are used to transport food) are properly maintained to ensure pests do not gain access or find places to breed (see Section 3.5).

3.3.4 Good preventative practices

Ensure a high standard of cleanliness to prevent the accumulation of materials that will attract pests such as food waste recycled materials and other garbage (see also Section 5.2)

- B. Ensure food is stored correctly and spillages are cleaned immediately. Food should never be left out at the end of the day.
- C. Ensure that there is no unnecessary equipment stored on the food premises.
- D. Check premises regularly for signs of pests.
- E. Check deliveries thoroughly for signs of pests. Do not accept any foods that show signs of pests e.g. gnawed packaging or insects.

3.3.5 How to identify pests

The pests that are commonly associated with food borne disease are cockroaches, rodents, flies, ants and birds. It is important all food handlers are trained to identify pests and signs of pests (see Figure 25 and 26)

3.3.6 Action if pests are found

- A. Call a pest contractor to eradicate the problem. Physical (traps) and chemical control (baits) methods can be used.

- B. Any surfaces, equipment or utensils that could have been contaminated should be washed, disinfected and dried.
- C. Chemicals to be used by specialized personnel.
- D. If food may have been contaminated in any way, it should be disposed of.

3.3.7 Pest Control

- A- electric insect killers can be installed by the food business. Pest control chemicals, however, should only be used by qualified pest control specialists .
- B- Employing a waste management centre approved pest control company is required to ensure effective and safe control of pests in food businesses in Abu Dhabi. Approved companies are required to visit the business twice per month, provide a 24/7 contact telephone number, maintain a log book in the business etc. further information can be obtained from Abu Dhabi waste management centre.

3.3.8 Contamination from pest control chemicals

- A. It is important that all pest control chemicals are approved for use in the food industry. Manufacturer's instructions for the use of equipment/chemicals should always be followed.
- B. Care should be taken to prevent pest controls chemical do not contaminate food. Chemicals should not be used near exposed food. If this is unavoidable, non-spray chemicals should be used.
- C. If food does become contaminated or is likely to have become contaminated by chemicals it must be disposed of. If eating or drinking utensils or food contact surfaces are contaminated during treatment, they will need to be washed and disinfected before they are used(see Chapter3)

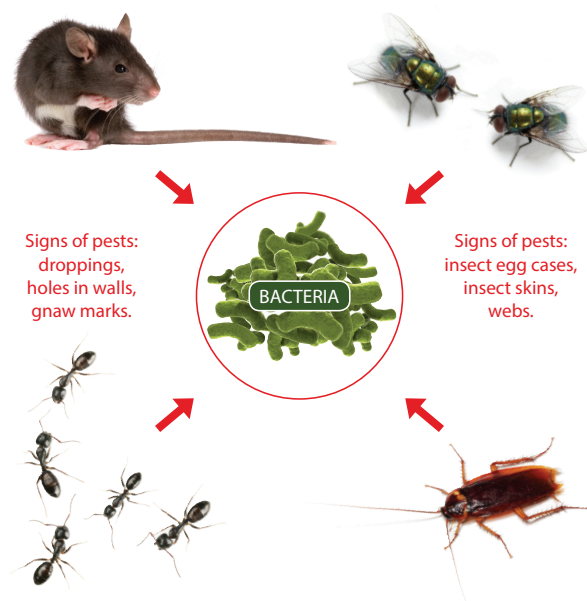


Figure 25 Examples of common pests

3.4 Wastes:

Waste can be regarded as any item of food, ingredients, and packaging materials etc. Which are not suitable for further use and which are intended to be disposed of. Waste needs to be controlled carefully since it presents a risk of physical contamination of foods intended for sale. Additionally, foods which are damaged, out of code or rotting, or are themselves contaminated, or food contact materials may present a risk of microbiological cross-contamination.

Rubbish bins and other receptacles to be cleaned regularly as part of the cleaning schedule.



Figure 26 present an example of recommended rubbish bins to be used

If rubbish/recyclable material is not being stored appropriately, check to make sure there are enough bins and that they are located appropriately.

Review staff work habits and refresh staff training as necessary.

Resolve any problems with the waste collector as they arise. If problems persist and can't be fixed use another, more reliable waste collector.

Regulation No. (6/2010), Article (95)

Food waste, non-edible by-products and other refuse shall be deposited in closable containers and disposed of appropriately. Containers shall be constructed of suitable leak-proof, impervious material that is easy to clean or disposable.

Regulation No. (6/2010), Article (96)

Containers used to hold dangerous substances should be labeled and, where appropriate, be lockable to prevent malicious or accidental contamination of food.

Always' clear and clean as you go' and take care to throw away packaging, string etc. as soon as you remove it. Keeping surfaces clear and clean will help prevent objects getting into food, as well as preventing the spread of bacteria

- A. Effectively manage the hygienic storage and collection of waste and recyclable material. rubbish and recyclable material that is not stored appropriately and collected regularly can:

- i. prevent effective cleaning
 - ii. encourage pests
 - iii. contaminate food and food handling areas
- B. Waste and recycling material is stored so that it is clearly identifiable and cannot be mistaken as usable.
- C. Bins and other equipment used for waste and recyclable material are not used for any other purpose.

3.5 Management responsibilities:

To ensure that practices to prevent cross-contamination are always carried out the food handlers should follow the methods described in this Chapter. However, it is also necessary for the owner/manager to

- A- provide appropriate facilities and equipment to enable effective measures to be taken to prevent cross contamination(section 1.3)
- B- Ensure that preventative maintenance is carried out on the building, facilities and equipment to prevent access and harborage of pests(see section 5.5)
- C- Develop SOPs to ensure that cross contamination is avoided (see Section 1.1.4).
- D- Suitable training & supervision will also be necessary, with further details in `the Management Chapter (see Section 1.1).

Regulation No. (6/2010), Article (21)

Cleaning agents, disinfectants or any other materials or articles that can reasonably be expected to come into contact with food or to transfer their constituents to food:

- (a) Shall meet food grade specifications.
- (b) Shall be identified, held and stored in separate areas from where food is handled and in a manner that protects against contamination of food, food-contact surfaces, or food packaging materials.

Regulation No. (6/2010), Article (24)

Where chemical additives are used to prevent corrosion of equipment and containers, they shall be used in accordance with the manufacturer's instructions for its intended use. They must not contaminate the food or affect its stability to make it unfit for human consumption

Regulation No. (6/2010), Article (61)

Hazardous and/or inedible substances, including animal feed, shall be adequately labelled and stored in separate and secure containers.

Regulation No. (6/2010), Article 96

Containers used to hold dangerous substances should be labeled and, where appropriate, be lockable to prevent malicious or accidental contamination of food.

4. Cooking and Reheating

This section is related to retail businesses that practice selling product not requiring temperature control. Heating of the food is done for quality reasons only upon customer request due to food palatability reasons and according to customers preferences

By no means heating process is related to safety reasons of the products for temperature control reasons since the served food could often be consumed safely without the need of reheating process as long as the food complies with instructions mentioned in and storage requirement for that particular food (e.g. :some bakery products, bread, tea and coffee for immediate consumption ...etc)

Most frequently equipment used for such process are microwaves, toaster ovens, grills and conventional oven.

Food business operator in this process should:

- 1- Protect food from cross-contamination by using clean utensils and equipment during any handling
- 2- Assure minimal times of warming up any food item.
- 3- Food should not be warmed up more than once.
Any food establishment or part of establishment practicing cooking or reheating should refer to ADAFSA Code of Practice No (13) of 2011 Food Hygiene for food service

5. Cleaning

Cleaning is an essential part of any food business operations and has the benefits of both promoting a favorable image to customers and making a pleasant and safe environment for staff to work in and keeps food safe from contamination.

5.1 The purpose of cleaning:

- A. To remove dirt and food waste.
- B. To prevent the spread of contamination or transfer of food borne illness organisms from article being cleaned to food about to be prepared or eaten.
- C. To have a clean work place and provide a good image to customers

5.1.1 Chemicals used in cleaning:

- **Detergent:** A chemical (e.g. washing-up liquid) used to remove grease and dirt. Detergents are used for general cleaning.
- **Disinfectants:** Are chemicals that reduce harmful bacteria on surfaces to a safe level.

Regulation No. (6/2010), Article 21

Cleaning agents, disinfectants or any other materials or articles that can reasonably be expected to come into contact with food or to transfer their constituents to food:

- a. Shall meet food grade specifications.
- b. Shall be identified, held and stored in separate areas from where food is handled and in a manner that protects against contamination of food, food-contact surfaces, or food packaging materials.

Regulation No. (6/2010), Article (22)

All equipment and containers other than one-only use (disposable) containers and packaging material, which comes into direct contact with food shall:

- b. Be effectively cleaned and, where necessary after cleaning be disinfected, with the exception of non-returnable containers and packaging. Cleaning and disinfection shall take place at a frequency sufficient to avoid any risk of contamination.
- c. Be maintained in good condition and easily repaired to minimise any risk of contamination.
- d. Be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area.
- e. Equipment shall be durable and movable or capable of being disassembled to allow for proper maintenance, cleaning, disinfection, and monitoring for pests. Where necessary, cleaning of large-sized equipment shall be in separate washing facilities.

5.2 Effective cleaning:

- A. The manufacturer's instructions are followed when using and storing cleaning chemicals and equipment.
- B. The detergent should be food grade if used on food contact surfaces.

- C. Store cleaning chemicals separately from food and make sure they are clearly labeled
- D. Staff are trained how to use chemicals safely.
- E. Chemicals are never stored in a food container.
- F. Cleaning equipment is kept in good repair and not used for any other purpose.
- G. Cleaning equipment should be cleaned and, if necessary, disinfected wherever possible items are left to air dry.

5.3 Cleaning of surfaces (high & low risk surfaces):

Regulation No. (6/2010), Article (50)

Working surfaces (including surfaces of equipment) in food contact areas shall be made of washable corrosion-resistant and non-toxic material and maintained in a sound condition, be durable and allow for easy cleaning and disinfection.

Wood surfaces and cutting boards made from wood are not allowed.

Regulation No. (6/2010), Article (90)

All equipment and serving utensils used at food display counters must be food grade, inert, easily cleaned and disinfected prior to use.

Kitchen surfaces that come into contact with either food, or the hands of those preparing food, should be disinfected after washing, in order to stop harmful bacteria spreading around the kitchen. These surfaces are referred to as high risk. Surfaces that do not come into contact with food are described as low risk. Examples are provided below

All equipment and serving utensils used at food display counters must be food grade, inert, easily cleaned and disinfected prior to use.

All equipment and serving utensils used at food display counters should be food grade, inert, easily cleaned and disinfected and should not pose a risk of contamination.

5.3.1 Low risk surfaces:

Items that do not come into contact with food should be washed effectively to remove dirt, grease and any food:

- A. Dry store areas
- B. Floors
- C. Ceilings, walls and doors.
- D. Service counters
- E. Microwaves and equipment that will get hot (and kill harmful bacteria) during use.

5.3.1.1 Cleaning low risk surfaces:

Thorough cleaning can be achieved by:

- A. Pre-scraping the utensil or surface to remove most of the food residue present.
- B. Using warm water, detergent and agitation to remove food residue.
- C. Rinsing the detergent and food residue away.

D. Air-drying or use of clean cloths.

5.3.2 High risk surfaces

- Equipment such as chopping boards, knives, temperature probes, tongs etc.
- Equipment such as chilled storage units, fridges and freezers.
- Work preparation surfaces.
- Surfaces that food handlers frequently touch such as sinks, taps, door handles, switches and can openers.



figure 27



figure 28

cleaning of cutting boards

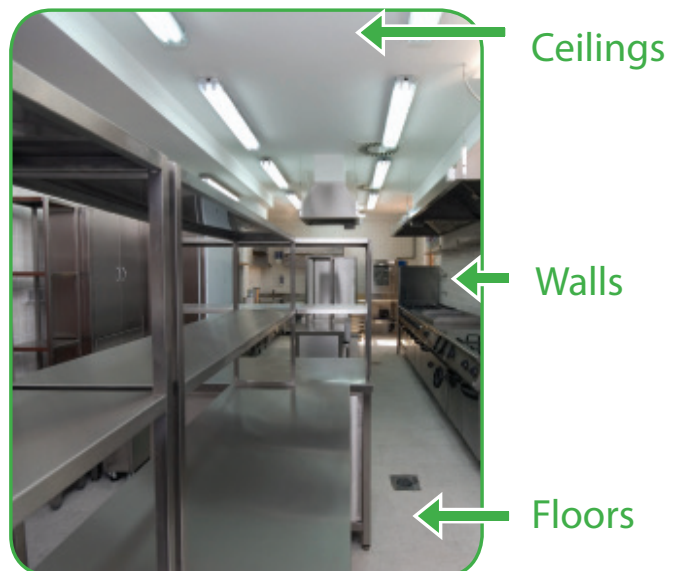
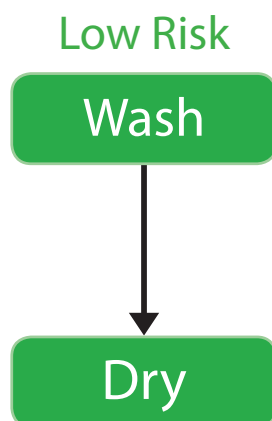


Figure 29: example of low risk surfaces

5.3.3 Cleaning high risk surfaces

The cleaning of food contact surfaces involves an extra step of disinfection. This can be achieved using hot water, steam, chemicals or equipment such as dishwashers.

5.3.4 Methods of disinfection

5.3.4.1 Hot water, steam or chemicals are usually used in commercial kitchens to disinfect high risk surfaces. The following section describes the methods in common use: Hot water / steam disinfection.

Hot water can be used to disinfect surfaces. However, this requires a minimum temperature of 82°C posing personal safety issues for the food handlers in the business. With the exception of the cleaning of small equipment, such as the removable parts of mixers and mincers, this method is therefore not used extensively. Steam is a very effective disinfectant as it not only kills harmful bacteria but also most bacterial spores. However, it is not practical or safe in most situations and specialist equipment is required.

5.3.4.2 Commercial dishwashers can be used to effectively disinfect equipment provided the manufacturer's instructions are followed. Dishwashers should be used whenever possible, especially for chopping boards and knives.

5.3.4.3 Chemical disinfectants can be used to effectively and cheaply disinfect food contact surfaces. Advice on which chemicals are safe for use in a food environment can be obtained from the supplier or manufacturer.

Disinfectants will only be effective if they are used in the correct concentrations and the manufacturers' instructions are followed. The effectiveness of chemical disinfectants can be directly affected by the temperature, pH, concentration of the disinfectant solution used (too little or too much) and the hardness of the water.

It is important to wash before disinfection for the following reasons:

- A. Food residue or other soil left after the cleaning process will protect the bacteria from the disinfection step.
- B. Food residue or other soil left after the cleaning process will react with the disinfectant, making the disinfectant less effective against microorganisms.
- C. Thorough cleaning will physically remove most of the microorganisms present.
- D. The heat used to clean is critical in contributing to the total heat needed to effectively disinfect (by heat).

The method of drying is also important. After the disinfectant has been applied for the necessary time, the instructions should indicate whether the disinfectant needs to be rinsed off or air dried. It is very important to avoid re-contamination by using dirty cloths etc.

Chemical "sanitizers":-

Detergents containing disinfectants (often referred to as 'sanitizers') are not required in retail premises. They are expensive and mostly ineffective on surfaces where there is significant grease. If such products are used, they are unlikely to be able to clean and disinfect a surface to the standard required. Therefore, a separate disinfecting step is still likely to be needed, so further increasing the cost.

[Advice on whether a sanitizer (detergent that contains a disinfectant) can adequately clean and disinfect in a commercial kitchen should be sought from the manufacturer or supplier of the product.]

Equipment that is used for long periods to prepare high risk foods may need to be cleaned and disinfected during use. If an appliance is used continuously or intermittently for food preparation residues remaining on this surface may become a source of contamination to foods that will later come into contact with the equipment.

Advice :

- Chemicals that are used to disinfect surfaces should be, food grade.
- You should follow manufacture instructions



Figure 30: Typical disinfection steps.

Good Practices:

The amount of cleaning, and the potential for cross contamination can be reduced if food handlers work in an organized manner. For example:

- A. Removing outer packing and boxes before bringing food into the establishment will keep reduce the amount of floor cleaning that is required.
- B. Keeping work surfaces free of clutter and making sure that dirty equipment is moved directly to the wash up area after use will make cleaning easier.
- C. Removing waste regularly from waste containers will reduce cleaning and pests
- D. Cleaning up spillages immediately prevents the food drying onto surfaces. (figure 31)



Figure 31: Cleaning up spillages

5.4 Cleaning schedule:

Cleaning schedule is a useful tool to help you clean effectively in your business.

5.4.1 Making a cleaning schedule

The cleaning schedule is to be used to keep a record of all the equipment, fixtures and fittings that need to be cleaned in your premises and to record how they should be cleaned.

5.4.2 Completing the cleaning schedule

- A. Walk through your premises and make a list of everything that needs cleaning.
- B. List all surfaces and equipment that needs to be cleaned in the item column of the schedule. You will then need to detail against each item (or group of items) how they should be cleaned. This will include:
 - . How often you clean the item(s) /equipment.
 - . Any precautions that your staff should take when cleaning e.g. should they wear gloves or goggles.
 - . How you clean the item(s) and what equipment you use.
 - . What chemicals you use and how to use them.
 - . The person(s) responsible for cleaning.
- C. Review your schedule regularly and check that all the cleaning is being done properly.
- D. Staff should then sign that they have completed cleaning it. You can therefore check, for example at the end of the day, that all areas as detailed in your schedule have been cleaned.

5.5 Maintenance

Regulation No. (6/2010), Article (15)

Buildings should be kept in good repair and condition to prevent pest access and to eliminate potential infestation sites. Holes, drains and other places where pests are likely to gain access should be kept sealed

Regulation No. (6/2010), Article (24)

Where chemical additives are used to prevent corrosion of equipment and containers, they shall be used in accordance with the manufacturer's instructions for its intended use. They must not contaminate the food or affect its stability to make it unfit for human consumption.

5.5.1 Preventative maintenance

Food premises, fixtures, fittings and equipment and those parts of vehicles that are used to transport food need to be properly maintained to prevent food safety problems. This is to:

- A. Stop contamination of food from flaking plaster, paint, timber, broken glass, leaking pipes, lubricants etc.
- B. Enable effective cleaning and, if necessary, disinfection.
- C. Ensure pests do not gain access to the building or vehicle from holes in ceilings, walls, etc.
- D. Ensure the equipment works as intended.

It is important that a food business should not use any chipped, broken or cracked utensils or equipment for handling food. Such items cause a food safety risk for the following reasons:

- A. They cannot be effectively cleaned and disinfected and therefore may allow the transmission of infectious diseases.
- B. They may contaminate food directly if broken or chipped pieces of the utensil fall into the food.

Important points to consider

- A. Repair structural damage as soon as it happens, e.g. holes in walls or windows. Structural damage can make your business harder to clean and allow pests to enter.
- B. Repair or replace any equipment or utensils that are damaged or have loose parts. Dirt and harmful bacteria can collect in damaged equipment or utensils. Loose parts may fall into food.
- C. Make sure your refrigerating and frozen display and storage equipment is well maintained and working properly. If it does not work properly, food may not be kept cold enough
- D. Temperature probes should be checked regularly to make sure their readings are accurate. If your probe is not accurate, then it will not give a reliable measure of whether food is at a safe temperature.
- E. Following maintenance, any surfaces that could have become contaminated are cleaned (and disinfected if necessary).
- F. If you think that equipment might not be working properly, check it straight away. Do not wait until it has broken down. Check that staffs are using the equipment properly.
- G. Look at the manufacturer's instructions to see if there is a troubleshooting section.
- H. Contact the equipment manufacturer or your maintenance contractor, if you have one.

Good Practices:

- A. Ensure maintenance checks are followed.

- B. Encourage staff to report any structural damage or problems with equipment, so you know about problems early.
- C. Ensure repairs and maintenance are done in a timely manner.
- D. Ensure Maintenance and service personnel follow all relevant procedures (including personal hygiene).

Making a maintenance schedule

The person in charge of the business should walk through the premises and make a list of all items that require regular 'preventative' maintenance.

A schedule can be constructed after the full list of items has been identified.

The maintenance schedule should describe:

- A. The items that need regular maintenance checks.
- B. How the maintenance checks will be done.
- C. The frequency of the maintenance checks.
- D. The equipment that is needed.
- E. The person who is responsible for the maintenance check.

5.6 Management Responsibility:

The food business operator should:

- A. Provide suitable equipment and safe chemicals to enable effective cleaning and preventative maintenance (see Section 1.3).
- B. Ensure that the regular maintenance on all temperature control equipment includes calibration checks.
- C. Train and monitor food handlers to ensure that the SOPs are followed (see Sections 1.1.3).
- D. Develop SOPs for all cleaning and maintenance activities (1.1.4)

V. References

- 1) Australia New Zealand Food Authority (2001), Safe Food Australia. ANZFA: Canberra.
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- 4) Abu Dhabi Agriculture and Food Safety Authority (2011) food hygiene for food service code of practice. ADAFSA:
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- 5) Food Standards Agency (2006) Safer Food Better Business. FSA: London.
- 6) U.S. Department of Health and Human Services Food and Drug Administration Centre for Food Safety and Applied Nutrition (2006) Managing Food Safety: a Manual for the Voluntary Use of HACCP Principles for Operators of Food Service and Retail Establishments. FDA: Washington.
- 7) World Health Organization (2006) Five Keys to Safe Food Manual. WHO: France.
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- 9) World Health Organization/Food & Agriculture Organisation (2006) Guidance to Governments on the Application of HACCP in Small and/or Less Developed Food Businesses. FAO: Rome.
- 10) New Zealand Food Safety Authority (2009). food control plan. NZFSA: Wellington.
- 11) Food Safety Authority of Ireland (2008). safe handling and serving of soft ice cream. FSAI: Dublin .
- 12) Codex Alimentarius CAC/RCP 11-1976, Rev. 1 (1993) RECOMMENDED INTERNATIONAL CODE OF HYGIENIC PRACTICE FOR FRESH MEAT.
- 13) Codex Alimentarius CAC/RCP 58-2005 CODE OF HYGIENIC PRACTICE FOR MEAT.
- 14) Canadian Food inspection System Implementation Group (CFISIG) amended February 2001 Food Retail and Food Services Code.
- 15) The Canadian Food inspection System Implementation Group (CFISIG) amended January 2003 Food Retail and Food Services Code.
- 16) Abu Dhabi Agriculture and Food Safety Authority(2011) licensing and operational requirements for retail
grocery in Abu Dhabi :Baqala .ADAFSA .Abu Dhabi
- 17) United Nations 2009 rev.4 International Standard Industrial Classification of All Economic Activities (ISIC 4.0)

This code of practice represents Abu Dhabi Agriculture and Food Safety Authority advice on this topic. Food Business Operators FBOs can use an equivalent approach if this satisfies the requirements of the applicable statutes and regulations. "To discuss an alternative approach or any inquiries regarding this code, contact Legislation Division in ADAFSA."

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