



# **HYGIENE AND FOOD SAFETY IN THE HANDLING AND PRESERVATION OF MEAT AND FISH**

**COVID-19**



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# | PROLOGUE |

To support hotel and restaurant professionals with their hygiene and safety practices in the COVID-19 situation, ARAVEN has prepared five guides that focus on the importance of hygiene and food safety in this sector.

- Cleaning and disinfection of food containers and utensils.
- Hygiene and food safety in the handling and preservation of vegetables.
- Hygiene and food safety in the handling and preservation of meat and fish (animal proteins).
- Hygiene and food safety in the handling and preservation of dry foods.
- Hygiene and food safety in the preservation of prepared foods.

Professionals from BCC Innovation, the technology center of the Basque Culinary Center have taken part in preparing the contents of these guides. Additionally ARAVEN has also sponsored the “Food hygiene and safety guidelines” published by the Basque Culinary Center and Euro-Toques.

This initiative clearly highlights the commitment of both institutions to help catering businesses improve their health and safety measures, by proposing general and specific hygiene and food safety measures applicable in restaurants that will help them regain the confidence and trust of their customers.



# 1

## FOOD SAFETY AND COVID-19

To prevent infections and food poisoning in the current situation of maximum hygiene requirements due to COVID-19, it is necessary to reassess the risks in order to identify and incorporate preventive measures and additional control points to increase food safety.

Throughout the food chain foodstuffs undergo different preparation processes and situations where there is a risk of contamination. To avoid food contamination, it is absolutely essential to control the risks affecting food safety and to manage food correctly to minimize the majority of these risks.

**Food safety must be guaranteed throughout the entire food chain.** In the HORECA sector the following phases in managing and treating foods in the kitchen are identified:



Reception of goods



Food storage and preservation



Food handling and preparation



Food presentation or serving

“

Hygiene measures must be stepped up in all food handling phases.

”

Prior to these four phases, food service establishments must apply the necessary measures to prevent workers becoming infected with COVID-19, to avoid exposure and the spread of the virus, by reinforcing, in particular, food handling hygiene practices. <sup>(1)</sup>

The following guide focuses on hygiene and food safety measures relating to the handling and preservation of meat and fish (animal proteins).

Hygiene measures are the best barrier to prevent the spread of coronavirus.

# 2

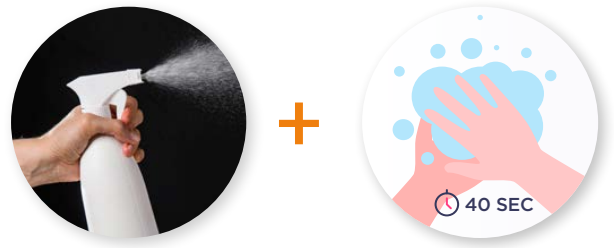
## HYGIENE MEASURES WHEN FOOD IS RECEIVED

It is important to ensure that all raw materials received comply with the health and quality requirements laid down to prevent foodstuffs endangering consumers' health. For this purpose, the provisions set out in the Hazard Analysis and Critical Control Points (HACCP) system must be followed.



When receiving a delivery of raw materials at restaurant facilities, the following is recommended <sup>(2)</sup>:

- » **Designate a specific zone for exchanging goods.** There should be an area set aside for receiving/returning goods (specific zone, table, marked floor area...) located near to the goods entrance door, separated physically or provisionally from the rest of the establishment.
- » **Remove the packaging** of the raw materials received (cardboard box, plastic bag) whether or not the food is packed inside. This packaging is the outermost wrapping, used during distribution and transport.
- » **Packaging that cannot be removed** and that has been in contact with the exterior during the delivery process **should be disinfected.**
- » Delivery notes should be left on the table to avoid contact with the supplier and should always remain in this reception zone.
- » All devices that are used (thermometers, pens, etc.) should always be used preferably by the same person. If they are shared, they should be disinfected after each use.
- » After receiving and/or handling packages/orders **the zone should be cleaned and disinfected and staff must wash their hands with a disinfectant soap and water.**



#### OTHER CONSIDERATIONS:

- » The establishment must have a **supplier control plan** to guarantee product quality.
- » All foods received must be checked to ensure that the containers and packaging are intact, the food temperature is correct, food labeling and shelf-life is correct, it has been transported in adequate hygiene conditions and that the delivery notes are correct.
- » Before the products received are placed in the establishment's own **containers**, check that they are **clean and have been disinfected.**
- » **Mark** the containers used for preserving and storing foods with the necessary information to enable all the products to be **traceable.**



ARAVEN containers have a permanent traceability label integrated in the container to identify the contents and keep track of information related to their origin.

You can record the origin of the food, type of product, preparation, preservation conditions, best-before date, etc.

## 2.1 SPECIFIC MEASURES WHEN MEAT AND FISH ARE RECEIVED

When receiving delivery of meat and fish it is essential to ensure that they are received at the correct temperature (See Annex).<sup>(3)</sup>

Foodstuffs are mainly altered by the action of bacteria which are very active at room temperature. Cold does not destroy microorganisms but it does slow down or stop their development.

After receiving raw foodstuffs, it is essential **to maintain the cold chain** by transferring them to cold room as quickly as possible.



## 3 HYGIENE MEASURES FOR PRESERVING MEAT AND FISH

Correct storage and preservation of food serves a dual purpose:

1. Ensuring optimal hygiene and food safety quality.
2. Reducing the quantity of waste due to food spoilage.

Correct preservation of protein-rich foods is essential for several reasons:

- ✓ It guarantees hygiene and food safety and the health of diners as well as compliance with regulations. **It prevents the risk of bacterial contamination**, which in the case of proteins can be serious.
- ✓ It **reduces wastage** of this type of food that, in general, is the most expensive food kept in store in a kitchen.
- ✓ It guarantees the quality of preparations and the end result. **It maintains all the organoleptic properties of the food** (colour, taste, texture...) so that after preparation it is in perfect conditions for serving to customers.



Meat and fish must be stored in cold rooms (chilling or freezing). Ideal temperatures for preserving food depend on the type of product or preparation (See Annex).<sup>(3)</sup>

- » **Cold rooms should be at temperature of between 0 and 8 °C**, depending on the type of product. Ideal refrigerating temperatures are between 0 °C and +4 °C, but a cold room in which various products are stored should be kept at the temperature of the product that requires the coldest temperature.



- » **Freezer chambers must be at a temperature of below -18 °C.**



Certain measures to be taken into account for cold storage/freezer rooms:

- » The interior of the storage rooms must be clean and dry.
- » Do not fill the storage rooms beyond their capacity.
- » **Separate foods properly** so that there is an air flow between them.
- » Record the temperature of cold storage room/freezer to check that they are operating correctly.
- » **Prepared food products, products of animal origin and of vegetable origin should be stored in different storage rooms.** If separating them in different cold rooms is not possible, keep them physically apart.
- » Do not place food containers directly on the floor.
- » Make sure **products are identified with labels** showing the name of the product, origin, date of entry in the cold room/freezer, weight, etc.



To prevent cross-contaminations, it is important to maintain a physical separation between raw and cooked foods and between different types of foods.



- ✓ **ARAVEN's containers help prevent cross-contamination** thanks to their colour identification system (ColorClip) that ensures that color coded containers are always used to store the same kind of food.



## CONSIDERATIONS FOR CORRECT FREEZING

- ✓ Adjust the amount of frozen food to the consumption unit.
- ✓ **Use suitable containers** to protect frozen products and to keep them separate.
- ✓ Use freezers that guarantee quick freezing.
- ✓ **Prevent ice and frost from forming** as this hampers freezing and impairs the correct functioning of freezer.
- ✓ **Keep** frozen products at a **temperature of -18 °C or lower**.
- ✓ Frozen food can only be stored for a limited time. At freezing temperatures metabolic activity continues slowly and long freezing periods can alter the taste, colour and texture of foodstuffs, and “freezer burn” can appear on them. <sup>(4)</sup>

“Freezer burn” is an alteration that dries out the surface of food, with the formation of dry spots and a change in colour. It causes a loss of nutrients and affects the quality of the product.



Protecting food during freezing helps prevent “freezer burn”

It is important that all food that is going to be frozen is tightly lidded. Use of plastic film is not recommended as it tears easily, and food can become unprotected.



## ORGANISING MEASURES FOR FOOD PRESERVATION

**Correct organisation** of cold storage/freezer helps lessen any hygiene and health risks as well as improving productivity in the kitchen.

Placing food in airtight containers optimises the use of space, control of packaging dates, preparation and pre-processing, identifying food, and implementing an HACCP and efficient management system.

Organisation of food storage rooms:



**TOP SHELVES:** Prepared foods should be placed at the top part of cold rooms. This avoids any risk of cross-contamination of heat-treated foods by other foodstuffs that may drip onto them.

**MIDDLE SHELVES:** Raw meat and fish should be placed on the middle shelves of cold rooms.

**BOTTOM SHELVES:** They should be kept for foodstuffs that release big quantities of liquids so that, if liquid spills it does not cause cross-contamination in other foods.

To preserve meat and fish correctly they should be placed in containers that adapt to the quantity or sizes that will be used in the final preparation.

The following table provides a rough guideline to estimate container requirements based on the volumes of food to be stored. This quantity will depend very much on the type of foodstuff, its shape and also if it is fresh or frozen.

## PROTEINS



### Chicken wings or thighs

- ▶ Frozen and neatly arranged: 1  $\text{KG}$   $\rightarrow$  2 liters  $\diamond$
- ▶ Fresh joints, in bulk: 1  $\text{KG}$   $\rightarrow$  3,2 liters  $\diamond$



### Chicken breasts

- ▶ Frozen and neatly arranged: 1  $\text{KG}$   $\rightarrow$  2 liters  $\diamond$
- ▶ Fresh joints, in bulk: 1  $\text{KG}$   $\rightarrow$  2,8 liters  $\diamond$



### Beef

- ▶ Frozen fillet in bulk, not arranged: 1  $\text{KG}$   $\rightarrow$  2,8 liters  $\diamond$
- ▶ Fresh joints, in bulk: 1  $\text{KG}$   $\rightarrow$  2,6 liters  $\diamond$



### Pork

- ▶ Frozen fillet in bulk, not arranged: 1  $\text{KG}$   $\rightarrow$  2,8 liters  $\diamond$
- ▶ Fresh joints, in bulk: 1  $\text{KG}$   $\rightarrow$  2,6 liters  $\diamond$



### Fish

- ▶ Frozen fillet in bulk, not arranged: 1  $\text{KG}$   $\rightarrow$  2,8 liters  $\diamond$
- ▶ Fresh fillets, in bulk: 1  $\text{KG}$   $\rightarrow$  2,4 liters  $\diamond$



“ ARAVEN's products include features geared towards operational excellence, which make managing storage of raw materials easier and guarantee optimal preservation of all the organoleptic properties of foodstuffs. ”

To ensure that meat and fish are preserved correctly we recommend using:

- ✓ Systems that allow the drip loss released by fresh meat and fish, or during thawing, to drain away.
- ✓ Containers with lids to prevent cross-contamination between different types of food. This is a more sustainable system than using plastic film or aluminium foil. In addition, it stops food drying out or absorbing or releasing odours that affect its quality.
- ✓ In the case of meat and fish in joints/portions/filleted, use an airtight container with a drain tray to prevent the surface of the foodstuff drying out
- ✓ Systems for classifying and organising stored meat and fish, based on the date of storage, processing or thawing....
- ✓ Containers with smooth walls, without any nooks or crannies, to make cleaning easier.

**Fresh meat and fish release a liquid called exudate or drip.** Drips contain nutrients and a large amount of moisture **that encourage the growth of bacteria** and cause rapid spoilage of food.

To preserve this type of food correctly, **use drain trays and perforated pans that keep drips separate from the foodstuff** itself.



**ARAVEN's perforated food pans and drain trays allow meat and fish to be stored without any contact between the food and drip loss.** Using them correctly to preserve foods that release liquids, reduces levels of wastage due to spoilage.

**Placing the drain tray at the bottom of the container to drain off liquids** stops the food and liquid coming into contact and reduces the risk bacterial proliferation.

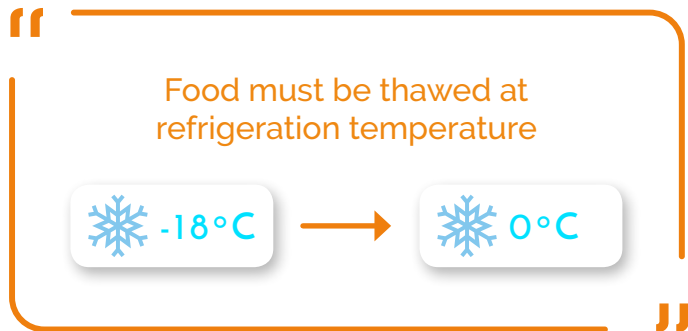


**ARAVEN drain trays are designed to fit ARAVEN food containers** (both GastroNorm and other sizes), and drain off drip loss to preserve food quality.

## MEASURES FOR CORRECT THAWING

To thaw meat and fish transfer the products from the freezer to the cold room. Thawing out at temperatures of 5-7 °C or less reduces the rate of proliferation of microorganisms.

Under no circumstances should a product be thawed on a surface at room temperature since bacteria causing food-borne diseases can reproduce rapidly in meat and fish.



When thawing food it should be placed on the bottom shelf of the cold room, in a container with a lid to prevent the liquids released during thawing from dripping onto other food. The original food packaging should be removed and food should preferably be thawed on a drain tray or in a perforated food pan to separate it from the drip loss.

Estimated thawing time is approximately 10h/kg of foodstuff and the thawed product should be consumed within the following 24-48 hours. <sup>(4)</sup>



ARAVEN's containers, food pans, drain trays and lids have been designed based on hygiene and food safety criteria, allowing drip loss to be drained off and animal-origin proteins to be correctly lidded and preserved.

# 4 HYGIENE MEASURES FOR HANDLING MEAT AND FISH

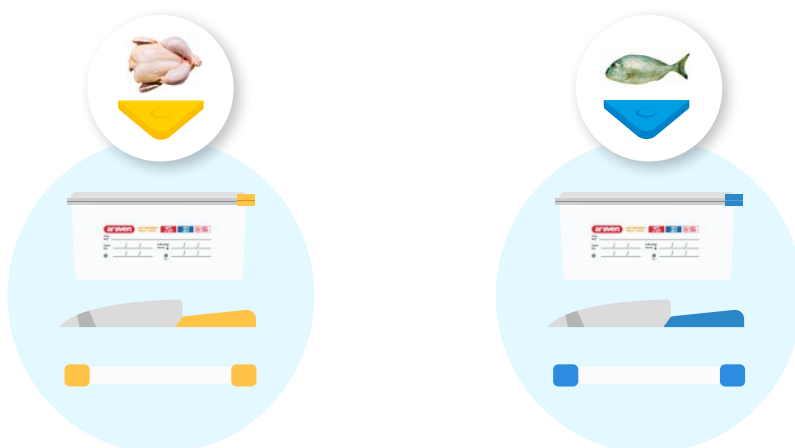
Special care must be taken **when handling meat and fish** to ensure they **remain outside the temperature danger zone (8 °C to 65 °C)**. They must be kept cold or be cooked as soon as possible. Avoid working with meat and fish in excessively hot environments.

If cooked food is not going to be consumed immediately it should be kept hot using appropriate means to ensure that all parts of the food are at temperature of 65 °C or more , otherwise it should be immediately cooled using a blast chiller so reaching a core temperature of 8 °C in the food in maximum 2 hours.

Always separate raw food from cooked food and from food that has been cleaned and is ready to be eaten raw.

Raw food work zones should always be separate from cooked and pre-cooked food work zones.

**Use different kitchen utensils** (forks, knives, plates, chopping boards, etc.) to work with raw foods. Using different chopping boards for each food type prevents cross-contamination.



ARAVEN's chopping boards with different **coloured corners identify the type of food for which they are used**. These fixed coloured corners identify chopping surfaces according to food groups to prevent cross-contamination.

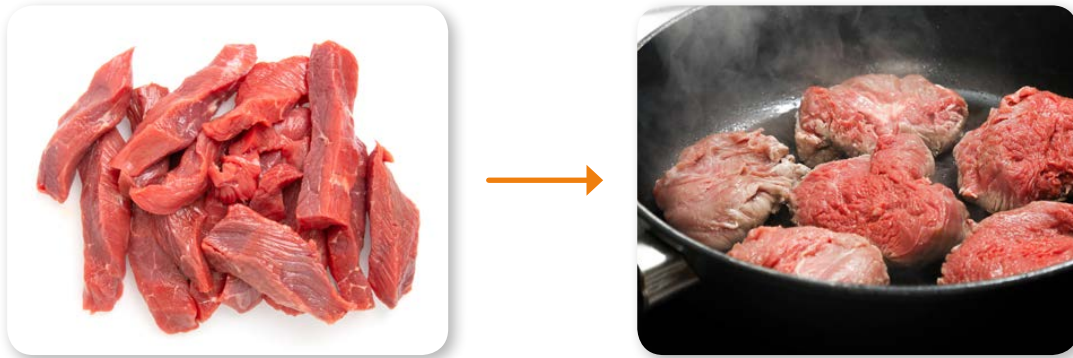


Food should be cooked sufficiently, especially meat, chicken, eggs, and fish. Roast meat and chicken should be cooked to core temperatures of more than 75 °C. Heating up food thoroughly destroys any microorganisms that develop during storage.

Certain types of foods require special handling precautions:

### MINCED MEAT

- » Mincing meat makes it susceptible to contamination and the danger of food poisoning due to extended meat surface coming into contact with air. For this reason, it is important to take special hygiene precautions when handling minced meat.
- » Although current regulations allow the meat you mince yourself to be kept for 24 hours at temperatures below 2 °C (3), the recommendation is to avoid storing it and to cook it immediately after mincing.



### FISH

- » Fish entrails (guts) must be removed immediately after receiving fish (although preferably they should be delivered already gutted), except in certain cases in which, for gastronomic reasons, gutting is not required.
- » Fish products must be totally frozen throughout at a temperature of -20 °C or less, for at least 24 hours.<sup>(5)</sup>
- » If fish is for cooking, then it should be cooked to a core temperature of 60-70 °C, for a minimum of one minute.



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3. Spanish Royal Decree 1376/2003, of 7th November, laying down the health requirements for the production, storage and sale of fresh meats and meat products in retail establishments. Official State Gazette, 7th November 2003, no. 273, p. 40094-40101.
4. Generalitat de Catalunya. Thawing. Catalonia Food Safety Agency. May 2019.
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## - ANNEX -

Regulatory temperatures for the storage of meat and fish.

TYPE OF PRODUCT	STORAGE TEMPERATURE
Fresh mutton, lamb, pork, beef, veal, goat, and horse meat.	$\leq 7\text{ }^{\circ}\text{C}$
Fresh chilled meat of chicken, turkey, guineafowl, duck, goose and rabbit, wild birds bred, reared and slaughtered in captivity and wild small game.	$\leq + 4\text{ }^{\circ}\text{C}$
Minced meat and minced meat preparations.	$\leq + 2\text{ }^{\circ}\text{C}$
Chilled offal.	$\leq 3\text{ }^{\circ}\text{C}$
Frozen meat and offal.	$\leq - 12\text{ }^{\circ}\text{C}$
Minced meat.	$\leq 2\text{ }^{\circ}\text{C}$
Fresh and chilled fish.	$\leq 0\text{ }^{\circ}\text{C}$ (Temp. Close to the melting point of ice)
Live bivalve molluscs.	At the minimum temp. guaranteeing their viability (around $8^{\circ}\text{C}$ ).
Cooked meat dishes: to be consumed within less than 24 hours.	$\leq 8\text{ }^{\circ}\text{C}$
Cooked meat dishes: to be consumed later than 24 hours after cooking.	$\leq 4\text{ }^{\circ}\text{C}$
Frozen cooked meat dishes.	$\leq - 18\text{ }^{\circ}\text{C}$
Hot cooked meat dishes.	$\geq 65\text{ }^{\circ}\text{C}$
Thawing of products with subsequent heat treatment.	$\leq 8\text{ }^{\circ}\text{C}$
Thawing of products without subsequent heat treatment.	$\leq 4\text{ }^{\circ}\text{C}$