

Dear Customer,

Zernike wants to thank you for the confidence you placed in us with a brief document aimed at providing important information about the curing process and the use of our QS 700/900/1500 technology.



## SALAMI CURING

Curing represents the most important and delicate part of charcuterie making, during which it is crucial to control the microclimate through a continuous adjustment of **temperature, humidity, ventilation, pauses** and **air change**.

It is important to bear in mind that the natural casing, once pressed and pierced, must be left immersed in a solution of mild water and vinegar for some hours. After that, before starting the curing process inside the cabinet, the casing must be hung to drain as much as possible the water it absorbed.

It is rather difficult to establish in advance the duration of a curing process, as it may vary according to the type of product one wants to obtain and whether natural or artificial casing is used.

Nonetheless, this process can be split into three different phases:

- heating,
- drying,
- maturation.

During the **heating** phase the salami loses water and thus weight: the temperature in the cabinet is kept higher than 20°C for about 24-30 hours. The duration and the max temperature required depend on the salami size and on whether preservatives are used or not.

From a chemical point of view, in this phase a process is triggered by which the microflora present in the casing will develop in a few days. This will block the formation of potentially dangerous bacteria. The heat will turn the raw salami darker, as the nitrites-nitrates join the muscles myoglobin.

During the **drying**, which may last from 5 to 7 days, the water loss must be as even as possible all through the meat dough in order to avoid an hardening of the salami. In this phase too the temperature must be carefully adjusted: temperature must decrease by 1-2°C each day until stabilizing at 12°C, while humidity will initially go down to around 70% and then rise again to around 80%.

It is very important that the salami do not bear quick temperature and humidity variations, in order to ensure a gentle and constant drying. The water loss plus the salt, which is a natural preservative, will facilitate the preservation process without making it necessary to store the product in a fridge. During this phase the salami colour changes again: it will turn bright red due to the myoglobin transformation into a stable chromogen compound which the product will retain until the end of the curing process. In this phase the ingredients spread evenly, penetrating in every part of the casing, while the salami external part will start being covered by “noble” white moulds, which help the curing process. This white mould, also called “plumage”, must not be excessive and must not be colonized by other grey or green moulds. The type of casing considerably influences the mould formation: natural casings retain more humidity and favours the pluming, while the artificial ones retain less water and therefore cause the mould to detach more easily from the dough.

The third and last phase is the **maturation**. It is the longest one and its duration depends on the type and dimension of the product. This phase is characterized by a very stable microclimate, with a temperature around 12°C and a 75-80% humidity level. During this phase the mould will proliferate until entirely covering the casing surface. In order to let the casing perspire correctly the salami must be manually brushed periodically. This will ensure an optimal curing process.

## **CURING WITH THE QS CABINETS: TECHNOLOGY SERVING THE USER**

Our curing cabinet QS700/900/1500 is designed for who wants to obtain a quality product during all year, without having to concentrate all the production in winter. The cabinet marks the difference in terms of structure and performance: the refrigeration system has been purposefully created to manage all the phases of the curing process, thanks to the possibility **of both heating and cooling the chamber**. To help the user we created several recipes for giving more production

choices: from natural salami to those with preservatives, from small to big sized ones, from coppa to bresaola.

The **patented ventilation system** has an adjustable air flow which allows to channel the air inside the chamber both horizontally and vertically, without directly hitting the product and creating an even and constant microclimate. With our QS cabinet, the user will not be obliged anymore to periodically change the products position inside the chamber in order to avoid encrustation or the formation of harmful mould on the casing. A strong ventilation may in fact dry the product too much and create cavitation inside it. A weak ventilation, together with an high humidity level, may on the contrary soften the casing too much and trigger the proliferation of unwanted moulds.

The formation of good moulds is rather helped by **air exchanges**, which our cabinet schedule automatically 5-6 times per day. Without oxygenation the moulds would die, giving the salami a bad acid taste. Finally, our cabinets alternate drying periods to pauses, during which the so called **revival** occurs. The product revival occurs when the machine completely stops every 3 hours for 60 minutes. This action lets the humidity out from the core of the product, preventing an excessive dehydration of the casing surface which may cause cavitation.

Thanks to the possibility of precisely controlling the temperature and humidity level, of having an even ventilation, automatic air exchanges and settable periodic pauses, the QS cabinets create the ideal microclimate for curing salami.