

What if we have frozen food badly all our lives without knowing it?

- The freezer, the great unknown of the kitchen, is required to freeze properly when its main function should be another
- 10 mistakes you make when you freeze (and thaw) food

MARC CASANOVAS 02/18/2020 07:02 | Updated 02/18/2020 18:28

"It is not opinion, it is scientific evidence. People who spend more time in the kitchen preparing food are associated with indicators of a better quality of life thanks to a richer diet. As expected, the study published in the American Journal of Preventive Medicine upheld this claim. A fundamental part of spending hours in the kitchen includes mastering the operation of each and every one of the appliances that facilitate our work. But there is an appliance that is the exception that confirms the rule. The freezer is the great unknown of our kitchen. It is required "only" to freeze well when its main function is rather another. "

A look at the definition of freezer in the Dictionary of the Royal Academy of the Spanish Language adds more crumb. The freezer is "an independent appliance or integrated in a refrigerator that serves to freeze and store food." The problem comes when the preservation always does well, but freezing leaves much to be desired in the eyes of an expert in the field.

Data

The Spanish consumer freezes 80% of the fresh product that he buys in the market to have reservations during the week

"People should understand that at home you have to freeze as little fresh food as possible." It is the informed opinion of Manuel Ayllon, owner of the Innovation Fish frozen fish sales company. "The main mistake of the Spanish consumer is that it freezes 80% of the fresh product that has just been bought in the market or the supermarket. Instead of consuming it at the moment, it makes the purchase thought of foods that it will freeze to have reserves for the rest of the weeks. What they don't know is that at home, their freezers will make a bad freeze because they don't have the right technology to take on the right freezing process. "

It is the same conclusion reached by Japanese engineers who have registered a new freezing technology based on magnetic energy. Its objective is not small: they intend to erase the border between fresh produce and thawed product. And, as strange as it may seem, they ensure that the main function of the freezer is not to freeze but to preserve previously frozen foods by professionals.

If we review the daily actions throughout the day, it could be counted that we open and close the refrigerator dozens of times in less than 24 hours. Instead, the freezer is a separate galaxy. A mysterious drawer with a different rules. Few consumers have ever wondered how their freezer freezes and what technology it uses to freeze food. Investigating the best fish freezing techniques, Ayllon inevitably came to the country with the best culture of freezing fresh produce in the world, Japan. "What the consumer does not know is that we currently do not have enough technology in our homes to properly freeze food. The main problem of domestic freezers, and even many industrial ones, is that they freeze extremely slowly, and this causes water crystals to be created in food cells. "

According to his criteria there is a reason why the freezer is the kitchen appliance that receives less attention. "Here people associate frozen food with food of inferior quality. On the other hand, in Japan there is no difference between fresh produce and frozen product. There is a

difference between good quality product and poor quality product. And the fault of the current situation is those of us who are dedicated to the freezing sector and not the consumer ". The historical error that has led us to this erroneous perception can be explained with a very simple example: "If I had to sell frozen Palamós shrimp I should charge it more expensive than the fresh one, because after buying it for auction I should spend light, amortization of the freezing machine and the cost of a good frozen. That is why the frozen prawn is never from Palamós or from Huelva. It is prawn from Mozambique or wherever and is sold simply as frozen shrimp. "

Japanese engineers

They have created a technology with which they intend to erase the border between fresh produce and thawed product

To make it clear, all food goes through three very defined stages in the freezing process. First, the temperature is reduced to the freezing point. Second, the food's water turns to ice, it is the phase known as latent heat. And third and last, the temperature is reduced even further to the final freezing point, usually at -18 degrees Celsius, which is the ideal maintenance temperature.

What most people do not know is that the success or failure of the freezing of a food depends on the first phase: "The transition from fresh product to frozen product is what current freezers do wrong. It's like when you're cooking and you add too much salt. If this first step is done badly, there is no turning back or a worthwhile remedy. " In other words, all current freezers are prepared to properly preserve food, but not to freeze it properly.

There are currently three types of freezers: mechanical, cryogenic and air jet. Any freezer in the home is based on one of these technologies. When we put a fresh product or leftover dinner in the freezer we all follow the same routine steps. Whether vegetables, meats, fish, sauces or sweets, we just wrap the food with film and assume that the next day that food will be in perfect condition when you open the freezer. By giving little or no importance to the freezing process, the consumer does not know that most of the time that food can be damaged. "It is continuously recommended to the consumer that the key is to wrap the food well before freezing it. Of course it helps if we freeze a food under vacuum, but the key is good freezing technology, "says Ayllon.

The new generation of freezers, based on magnetic fields, began to be introduced in Japan in 2003, when fish salesmen were not satisfied with the conservation methods so that frozen fish arrived in optimal conditions anywhere in the country . Since then, magnetic energy freezing technology has spread throughout Asia. In China, Singapore, Malaysia or South Korea it is already a widely used method by all types of frozen product sales companies, since it is the only technology capable of freezing sushi perfectly, with all the difficulty of freezing well rice.

Extended by Asia

Magnetic energy freezing is the only one that allows you to freeze sushi perfectly

The great drawback for its implementation in Europe is that all the machinery necessary to introduce this new freezing technology requires changes in the electrical system and to review the safety regulations to comply with European regulations. But then, what are the main problems of current freezers? Are there more complicated foods to freeze than others?

On the website of the Ministry of Agriculture, Fisheries and Food they have an impact on packaging correctly before freezing, on following the criterion "the first thing that comes in is the first thing that comes out", on the durability of the food in the freezer, on avoiding the freezing and Let cool before freezing. All good advice, but omitting any reference to possible

freezing errors, recommended freezing technologies or that vegetables and fruits are the most complicated fresh products to freeze at home because they are not previously dehydrated.

According to the Japanese engineers who created the Proton freeze, these are the 6 big common mistakes of current freezers published in their report:

1. Damage to muscle structure. "The water that is outside the fibers freezes before that inside, generating an osmotic force that causes liquid to flow from the inside to the outside."
2. Moisture losses. "It decreases the juiciness and leaves the meat harder. Even freeze burns and size changes occur."
3. Microbial development. "Much of the flora is damaged in defrosting and they are foods that are more susceptible to growth and microbial alteration"
4. Changes in texture. "There is a protein denaturation due to the presence of oxidation products that serve as a bridge between functional groups of amino acids."
5. Changes in taste and color. "Decreased flavor intensity due to the loss of flavor precursors and aromas in exudates. In addition, there is a possible collection of aromas from the outside during freezing, storage and defrosting. And oxidative thickening of fats and discoloration of pigment during storage."
6. Changes in nutritional value. "If there is oxidation there is also loss of nutrients susceptible to oxidation reactions."

To avoid any of these problems, there is a home freezing service in Japan. This means something very rare in Europe: the Japanese consumer buys the fresh product that he knows will freeze and hires the service of a freezing company. A vehicle adapted with magnetic freezing inside, delivers to the customer the product well frozen so that it can (now yes) keep it properly in the traditional freezer of your home. There are even Japanese freezing companies like Rioho Freeze Systems that have opened a restaurant so that their potential customers can check the quality of their food once it has been thawed.

All so that situations that are not uncomfortable for the restaurateur and the client do not occur: "As a supplier of frozen fish to good restaurants, I can assure you that in many places they do not freeze fish. They prefer to offer fresh fish knowing the risk they run than to freeze a good product badly because they know that they cannot ensure maximum quality with current freezing technology." Ayllon says. "That is why with Japanese restaurant owners in Barcelona I am organizing blind tastings where I have served fresh meat and fish without freezing and frozen meat and fish with magnetic technology. And they are unable to differentiate fresh bull tuna from thawed bull tuna. The border between fresh produce and thawed product will end up completely erasing".

Something that seems far away if we consider that the next generation of freezers is still far from democratizing to be accessible to all audiences and pockets. "I don't think magnetic freezing technology reaches homes around the world. Magnetic freezing machines cost around 45 or 55 thousand euros. It is a very high budget and it is understandable that many people consider that it is too much money for the freezing game. What I do believe is that producers and manufacturers will conclude that investment in something as important as good food freezing is necessary. That will imply that in the not too distant future people will be able to buy high quality frozen products".

The investment is necessary

The consumer must be able to buy quality products well frozen by specialized professionals

In the end, the only thing that the consumer is that can and should claim that if you buy a frozen food is well frozen by specialized professionals. "We accept as normal all the liquid that the food loses when defrosted. We mistakenly think that it is water left over from the natural defrosting process when what is being lost there are essential vitamins and proteins due to a slow freezing of our freezer. And the worst part is that it is something as common as avoidable. "