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Whitepaper Meat

# Transporting fresh meat: don't give harmful bacteria a chance

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In the Netherlands, we eat an average of 77.8 kg of meat and meat products per person per year (based on carcass weight). Fresh meat has a long way to go before it reaches the consumer. However, when transporting and storing meat, environmental conditions and practices are crucial to maintaining quality. And since eating spoiled meat can be very harmful to your health, it is very important to pay attention to this. This article explains how you can slow down the spoilage of fresh meat as much as possible and what tools you can use to do so.

### Meat consumption in the Netherlands

In 2019, we consumed 77.8 kilos of meat and meat products in the Netherlands based on carcass weight (thus including bone, fat and rind), which comes down to about 39 kilos of meat and meat products per person. That is 13 kilos more than the recommended amount. Most of this is pork, but chicken and beef are also popular. It is striking that men on average eat more meat than women. Research shows that we can expect a shift in meat consumption: among the younger generation (18-29 years), more people are vegetarian and the willingness to consume less meat is also higher, compared to older generations.

About half of the meat we eat each week in the Netherlands is so-called processed meat.

This is meat that has been smoked, cured or dried, or to which preservatives have been added. The aim is to improve the taste or extend the shelf life. However, processed meat does carry health risks: eating it increases the risk of colon cancer. This also applies to red meat, but to a lesser extent. Het Voedingscentrum (Nutrition Centre) and the Wereld Kanker Onderzoek Fonds (World Cancer Research Fund) recommend a maximum quantity of 500 grams of (red) meat per week. Lean unprocessed meat is the only meat you will find in the Schijf van Vijf (My plate guide to eating healthy).

### Preventing meat from spoiling

Meat spoilage means micro-organisms make the food unfit for consumption. Micro-organisms can be seen as a kind of little nippers that are present everywhere. All our food is susceptible to spoilage because its composition attracts micro-organisms. So is fresh meat. Fortunately, there are many measures you can take to minimise the chance of micro-organisms and thus delay spoilage. Meat can spoil quickly due to bacteria.





To prevent bacteria from having a chance, you can take the following actions:

- **Ensure a clean environment.** Meat can be contaminated by direct or indirect contact with micro-organisms. By creating a hygienic environment in places where meat is processed or prepared, you can limit the presence and growth of micro-organisms. As human beings, we also carry these micro-organisms with us. They can even multiply rapidly in humans. Ideally, therefore, you should not let the meat come into contact with the skin if you want to store it for a while.
- **Pack the meat products well.** By packaging the meat properly, you protect it from contamination and moisture, among other things.
- **Store the meat refrigerated or frozen.** Refrigerating your fresh products stops the growth of micro-organisms. So, as it were, spoilage is paused. Different micro-organisms have different characteristics, but almost all of them grow at a temperature between 10 and 40 degrees Celsius. Storing them in the fridge significantly slows down decay. Freezing stops the growth of micro-organisms completely.

### Storing and dispatching chilled or frozen meat

During the entire process that fresh meat takes from slaughter to consumption, measures must be taken to prevent spoilage. For example, hygiene, insulation and refrigeration are of great importance at all stages. Depending on the animal from which the meat originates, the meat must be processed, stored and



transported at a different temperature. For poultry, for example, this is a maximum of 4 degrees Celsius, whereas for game meat it is a maximum of 7 degrees Celsius.

Transporting the meat in cooling conditions can be quite a challenge. Usually, use is made of refrigerated vans. However, with smaller quantities of meat delivered directly to the consumer, for example, other solutions can be more attractive.

### Appropriate packaging materials for chilled shipments

By combining refrigerants with a well-insulated packaging box, you can create a kind of mobile refrigerator. This solution is usually used for transports of up to 24 hours. When your transport procedure is one-way, it is best to choose refrigerants that are suitable for one-way use. After all, you will not get the packaging materials back for reuse.







To cool the meat products at a temperature of 2 to 8 degrees, you can use gel packs. Gel packs are leak-proof polypropylene bags filled with a refrigerant.

Beforehand, you cool the gel packs to the desired temperature. For optimal cooling results, transport your products in a well-insulated packaging box. A popular variant is the EPS box: a light polystyrene box with a thick, insulating wall. A newcomer to the landscape of insulating packaging boxes is the EcoCoolBox. This box is made entirely of compostable materials so that it can be disposed of with waste paper after use. For example, the insulation material in the walls is made of paper fibre and absorbs moisture well.

If you want to transport the products below freezing point, you can use gel packs filled with the so-called Phase Change Material (PCM). By changing the composition of the cooling gel in the gel packs, the freezing point can be lowered, allowing you to transport your goods up to a temperature of -23 degrees Celsius.

#### **Durable transport materials suitable for reuse**

For transports with a return procedure, where you can reuse the packaging materials, other tools are more interesting. For example, you

can choose to use shape-retaining cooling elements. These are made of strong material and therefore have a long life. It is also important when transporting meat that the shape-retaining cooling elements are easy to clean. Moreover, you can fill them with regular cooling gel or PCM as you wish, in order to determine the temperature at which you want to transport the meat products.

The insulated packaging box that lends itself perfectly to transports with a return procedure is the EPP box. This packaging box is made of Expanded Poly Propylene, which makes the box light, strong, easy to clean and insulating. The EPP boxes are easily stackable and have a long life. This way you are assured of a sustainable shipping solution!

#### **Custom made solutions**

Are you curious about the possibilities for your specific issue? At De Ridder Packaging, we have over 25 years of experience in supplying the best cooling materials. Our product range varies from standard to customised refrigerated packaging, gel packs, ice packs, absorption mats and EPS boxes to total solutions for refrigerated and conditioned transport. Everything to ensure that your meat products and other goods arrive at their destination in optimum condition. Our experts will be happy to provide you with specialised advice.

Thanks to our own on-site production facilities, we can deliver custom made solutions, designed specifically for your application. The products of De Ridder Packaging are of excellent quality, and meet all the requirements of the law.

Do you have any questions, would you like to order, or do you need advice? Feel free to contact us. Our experts will be happy to help you.





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