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Maintenance of the cold chain

- UECBV Position -

In March 2014, EFSA published a scientific opinion on the public health risks related to the maintenance of the cold chain during storage and transport of meat [meat of domestic ungulates].

UECBV would like to state that it welcomes very much this opinion, in particular when concluding that surface temperature is a more relevant indicator of the effect of chilling on bacterial growth. It is indeed convinced that alternative chilling methods are available today without increasing safety risks.

UECBV will therefore support an evolution of the hygiene package allowing alternative carcass chilling.
These alternatives will be indeed a good impetus for the industry towards even more efficient ways to monitor the cold chain and ensuring a high level of food safety. Amending the Regulation so as to make it possible to transport not fully cooled carcasses i.e. carcasses with a core temperature higher than 7 degrees but a surface temperature below 7 degrees, makes it possible to supply the final consumer with a fresher product with a lower microbiological load.

Please find here-after suggestions concerning practical feasibility and suggestions for possible control tools related to transport of not fully cooled carcasses i.e. carcasses with a core temperature higher than 7 degrees but a surface temperature below 7 degrees.

In addition to the EFSA opinion, references and inspirations were used from recent studies and experiences from different Member States e.g. France, Denmark, The Netherlands.

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Key points to be taken account into the revision of Regulation (EC) No 853/2004 (Annex III, Section I, Chapter VII) on the temperature of carcasses during transport:

1. As the vast majority of bacterial contamination occurs on the surface, the carcass surface temperature -and not the core temperature- is a key determinant of bacterial growth.
2. Carcass surface temperature is a more relevant indicator of the effect of chilling on bacterial growth than core temperature.
3. As soon as the surface temperature is stabilized to temperatures limiting bacterial growth, the following hours do not really impact bacterial growth. The best prevention from the increase in surface contamination is therefore a quick decrease in surface temperature associated with the respect of the cold chain allowing a continued decrease in core temperature.
4. Studies showed that at a temperature of 7°C or below, most of the relevant pathogenic bacteria (such as salmonella and VTEC) development on the surface of the meat is under control.
5. The performance obligation for the meat safety is the respect of the cold chain, from the moment that there was a quick decrease in surface temperature. This performance obligation can be satisfied in chilling room or in refrigerated truck.
6. It is possible to have different combinations of slaughterhouse-transportation time-temperature chilling scenarios that result in equivalent or less bacterial growth than that obtained using the currently mandated chilling requirements.
7. An earlier transport of carcasses/part of carcasses for all animal species can be carried out without compromising food safety, from the moment that the surface temperature remains below 7°C at all times as this can only be achieved if the unbroken cold chain is respected.
8. To ensure, that the surface temperature is kept below 7 °C at all times during transport FBO's should know the performance of their chilling systems and the systems used for transport. I.e. the FBO's must know (initial monitoring) how long time it is necessary to chill carcasses (or cuts) under a given set of physical conditions to avoid a raise in surface temperature to > 7 °C during transport given the performance of the material used for transport. FBO's should be able to prove that the surface temperature is below 7°C before loading (for example by performing measurements of surface temperature before loading), and the transporter should measure and record air temperatures in the vehicle during transport in order to document, that the physical conditions are/have been supporting a surface temperature < 7 °C during the entire transport
9. To ensure the decrease of the core temperature until 7°C, carcasses should stay on the professional circuit which is the alone to guarantee a continuum cold chain.

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It is for all those reasons that UECBV is suggesting the following writing:

Regulation 853/2004, Annex III, Section I

CHAPTER VII: STORAGE AND TRANSPORT

~~1. (a) Unless other specific provisions provide otherwise, post mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3ºC for offal and 7ºC for other meat along a chilling curve that ensures a continuous decrease of the temperature. However, meat may be cut and boned during chilling in accordance with Chapter V, point 4.~~

1) Food business operators must ensure that the storage of meat of domestic ungulates takes place in accordance with the following requirements.

a) Unless specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling to ensure the following temperatures are reached along a curve that guarantees a continuous decrease of the temperature:

i) for offal, the temperature shall not exceed 3°C at all points ;

ii) for carcases and primal cuts, the core temperature shall not exceed 7°C. However, meat may be cut, boned during chilling in accordance with Chapter V, points 3 and 4.

(b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat.

2. Meat must attain the temperature specified in point 1 and remain at that temperature during storage.

~~3. Meat must attain the temperature specified in point 1 before transport, and remain at that temperature during transport. However, transport may also take place if the competent authority so authorises to enable the production of specific products, provided that:~~

~~(a) such transport takes place in accordance with the requirements that the competent authority specifies in respect of transport from one given establishment to another; and~~

~~(b) the meat leaves the slaughterhouse, or a cutting room on the same site as the slaughter premises, immediately and transport takes no more than two hours.~~

3) Food business operators must ensure that transport of meat of domestic ungulates takes place in accordance with the following requirements:
The surface temperature of 7^0 C or below must be kept at all times during transport[1].

[1] Equal to references like EFSA scenarios (EFSA opinion: EFSA Journal 2014 ; 12(3) :3601, Scientific Opinion on the public health risks related to the maintenance of the cold chain during storage and transport of meat. Part 1) e.g. maximum surface temperature on leaving the slaughter premises 6°C (chilling 9 hours) and transportation at 6°C for maximum 37 hours or other equivalent scenarios or studies

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4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing.

5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.

The **European Livestock And Meat Trades Union (UECBV)**, founded in 1952, is the mouthpiece of national federations representing livestock markets, livestock traders (cattle, horses, sheep, pigs), meat traders (beef, horsemeat, sheep meat, pig meat), and meat industry (slaughterhouses, cutting plants and meat preparation plants).

Brought together within the UECBV are:

- an international association i.e. the **European Association of Livestock Markets (AEMB)**;
- a **Young European Meat Committee (YEMCo)**;
- the **European Natural Sausage Casings Association (ENSCA)**
- the **Organisation of European Ship Suppliers (OCEAN)**
- fifty-six national or regional federations in twenty-two of the twenty-seven Member States of the European Union and also Morocco, Norway, Russia, Serbia, Switzerland, and Turkey.

In total, some 20,000 firms of all sizes and 230,000 jobs are represented within the UECBV through its national member federations.

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