

## **CARBON FOOTPRINT OF GELATINE**

As part of our commitment to sustainable development, the Gelatine Manufacturers Europe (GME) initiated a project to gain insight in the development of the carbon footprint of gelatine and hydrolysed collagen produced by the GME members over the years 2006 to 2015.

### **Scope:**

In order to obtain representative results, the assessment was made with the cooperation of all GME members and includes all different types of raw materials and all types of processing.

The study was performed in line with international standards on lifecycle assessment (ISO14040/44: 2006), taking into account recent international developments on carbon footprinting (e.g. the GHG protocol of the WRI and WBCSD and the British carbon footprint specification PAS2050, both published in October 2011), and was carried out by an independent consultancy bureau.

### **Cradle-to-gate and gate-to-gate principles:**

The cradle-to-gate principle for gelatine and hydrolysed collagen has been chosen for the assessment of GME. This means the carbon footprint represents the total greenhouse gas emissions, in CO<sub>2</sub> equivalent, starting from raw material for production of gelatine and hydrolysed collagen, through raw material processing, up to final production and packaging of the gelatine and hydrolysed collagen by the GME members.

The overall cradle-to-gate carbon footprint assessment has shown that the agricultural supply chain for raw materials is responsible for a significant part of the overall carbon footprint of gelatine and hydrolysed collagen.

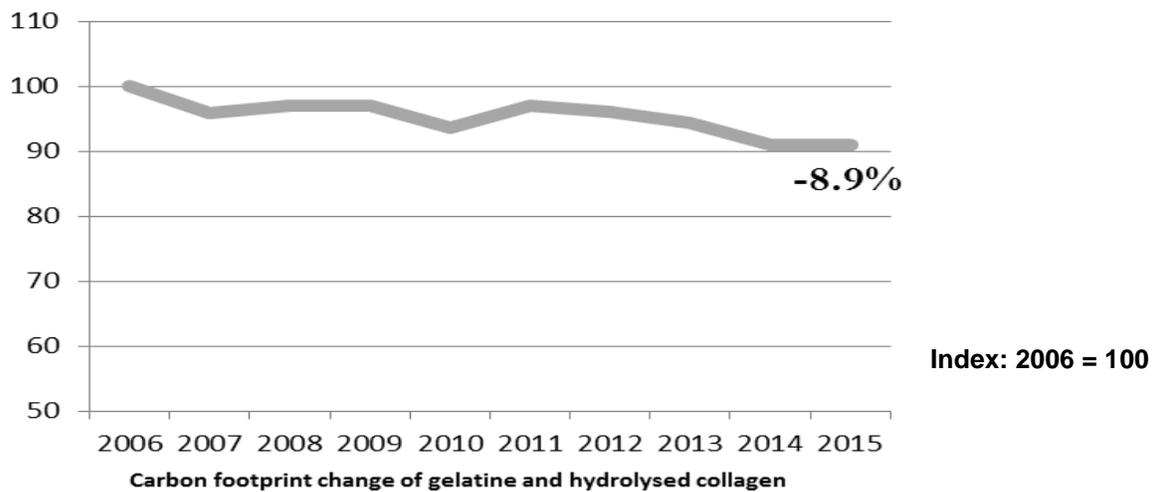
The animal husbandry sector itself has been undertaking significant action to better understand and reduce the carbon footprint of the sector and has in this way also helped to reduce the overall carbon footprint of gelatine and hydrolysed collagen. However, this has not been quantified in the GME study. In this context, it is also noted that, through creating added value out of by-products of the meat industry, also GME contributes positively to this industry's sustainability and the circular economy concept.

Since this upstream emission is out of the span of control of the GME members, further assessment was done on the carbon footprint excluding the supply chain for the raw materials: gate-to-gate principle.

## Results (gate-to-gate principle):

### Carbon Footprint:

The results show that between 2006 and 2015, the carbon footprint, excluding the supply chain of raw material, has been reduced by 8,9%.

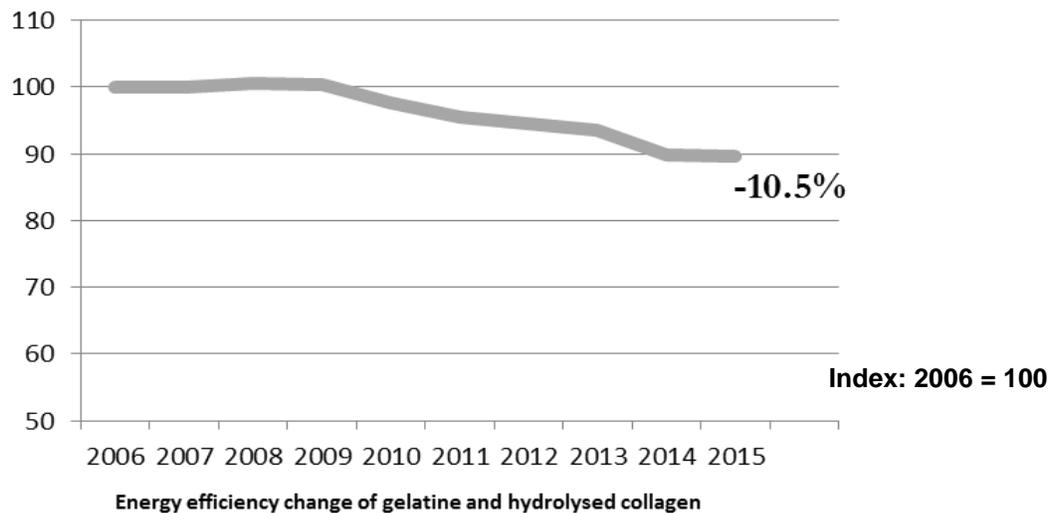


**Figure 1:** Weighted average carbon footprint per kg of gelatine, excluding raw materials (supply chain), of gelatine between 2006 and 2015 (relative to the total value of 2006 = 100); economic allocation based on 2011-2015 average prices.

Exceptions in the downward trend are the years 2009 and 2011. In 2009, this trend was caused by a significant change in the quality of the available raw material, resulting in relatively lower yields (amount of collagen present in the raw material for extraction). The development of the carbon footprint is thus seen to be sensitive to the quality of the raw material; however this aspect is largely influenced by general market conditions which are outside the span of control of the GME members. In 2011, the upward trend was mainly caused by a shift in the fuel mix used in the production plants for economic reasons.

### Energy consumption:

The 2006 to 2015 results show a continuous reduction in energy consumption in the last six years with a total reduction of 10,5%.



**Figure 2:** Weighted average energy use per kg of gelatine, of GME members between 2006 and 2015 (relative to the total value of 2006 = 100) economic allocation based on 2012-2015 average prices.

The continued reductions in the range of 9 % show GME members' positive contribution to the European Climate policies "20-20 by 2020" (set in 2008), including a reduction target of 20% in greenhouse gas emissions in 2020 compared to 1990.

The members of GME are working towards continuous process efficiency improvements and have agreed to track the evolution of the energy use and carbon footprint in the following years.

Validation period: until 31 December 2017