



## **Executive summary**

### **Activities and progresses:**

The following activities were carried out:

- An inventarisation of the current situation in the Belgian consumption milk industry is made by the organisation of inquiries.
- A detailed kinetic study is executed on intrinsic indicators of milk as a basis for the development of indicators for processing authenticity and the development of a mathematical model.
- A mathematical model based on kinetical data, that allows formulating the process conditions, which cause the desired microbial inactivation with minimal fouling of the heat exchangers, is developed for different types of the heat treatment systems.
- Methods for the determination of potential intrinsic indicators are optimised and developed.

### **Results:**

The following results were obtained:

- The organisation of 2 inquiries among the most important Belgian consumption milk producing plants provided an inventory of the current situation in the Belgian dairy industry.
- Improved methods were developed for the determination of lactoperoxidase, hydroxymethylfurfural, and alkaline phosphatase (quantitative).
- Mathematical models for different heat treatment systems were formulated
- The kinetics of physico-chemical changes of milk as a basis for processed milk authenticity indicators or relevant for fouling of heat exchangers were experimentally determined.