

Influence of the farm size on the uncertainty of milk life cycle inventory data

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Life Cycle Assessment (LCA) has proven to be a valuable tool to document and analyse environmental considerations of product and service systems that need to be part of the decision-making process towards sustainability [1]. The first definition was established in 1993 as follows: an LCA is “a process to evaluate the environmental burdens associated with a product, process, or activity by identifying and quantifying energy and materials used and wastes released into the environment; to assess the impact of the energy and materials used and released into the environment; and to identify and evaluate opportunities to affect environmental improvements” [2].

This complete analysis, also called “from the cradle to the grave”, has been used since the end of the seventies to analyse a huge number of products and processes: food industry points out as an important sector among them. In particular, milk has been studied in different countries within this complete perspective [3-7] and farms have been found to be responsible for a high percentage of the environmental load of the total process.

The LCA study related to the Spanish sector was based on the inventory of two representative dairy farms [7]. Now, an expanded inventory has been carried out including seventeen farms with different size and degree of technology in order to improve the quality of the data collected by reducing the uncertainty involved.

Diverse classification criteria are proposed to group the farms studied:

- a) By size, where six segments are presented
- b) By technology degree, distinguishing low, medium, high and very high
- c) By feeding regimen, where internal based regimen (maize and silage) and external based regimen (fodder) are differentiated.

Preliminary results show that uncertainty can be decreased to a certain degree by grouping farms according to specific parameters.

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