

AIMPLAS coordinates the research to obtain biodegradable packages for dairy products

The Plastics Technology Centre coordinates the two-year BIOBOTTLE European project in which eight partners participate in the obtaining of a new biodegradable and resistant to thermal treatments material to manufacture dairy products.

Europe is the biggest consumer of dairy products in the world, but only among 10% and 15% of the 2 million tons of high density polyethylene bottles used for packaging are recycled, so it is especially useful having biodegradable products.

The Plastics Technology Centre (AIMPLAS) is coordinating the research carried out by seven companies and technological centers. Along with its own researchers, they develop new materials to manufacture biodegradable packages for dairy products. The project is called BIOBOTTLE and its aim is creating multilayer and monolayer plastic bottles, as well as bags to package dairy products which are not required to be separated of the rest of the organic wastes at the end of their brief lifespan.

Nowadays, the European countries are the biggest consumer of dairy products in the world, with an average of 261 kg per year, according to the data provided by FAO in 2011. It supposes the generation of an important volume of wastes, principally high density polyethylene bottles. This material is completely recyclable and its post-consumption management should not be a problem, but, in fact, only between 10% and 15% of it is recycled, according to data in 2012.

Milk bottles and bags are packages which can be use only once, so a big volume of wastes are generated. In addition, an exhaustive high temperature washing is required in its recycling to eliminate any waste of products and subsequent odors. So, it is especially interesting for the dairy industry and an added value for the manufacturers, the elaboration of packages which can be thrown away when they are used, along with the rest of the organic wastes. For this, AIMPLAS and the rest of BIOBOTTLE's partners work on developing a biodegradable material which allow manufacturing big multilayer bottles or bags, like the ones of milk or milkshakes, as well as the monolayer bottles, which are smaller, used to package probiotic products.

Biodegradable and resistant to sterilization and pasteurization

One of the main difficulties with which the researchers of this project must deal is getting a biodegradable material which complies with the same requirements than the traditional packages used nowadays, including the resistance to thermal treatments such as the sterilization or pasteurization. For this, it is expected to modify the current commercial biodegradable materials through the reactive extrusion to overcome the thermal limitations in the current biodegradable ones available in the market.

BIOBOTTLE is a European Project in the Seventh Framework Programme, with a fund of €1 million. Seven companies and technological centers from five different countries work with AIMPLAS: Germany (VLB), Bélgica (OWS), Italy (CNR), Portugal (VIZELPAS y ESPAÇOPLAS) and Spain (ALMUPLAS y ALJUAN).