

Dairy products: Winners in the biotechnology stakes

Dairy products offer enormous market potential for the industrial application of biotechnology, from the development of new processes to the introduction of new products.

In particular, biotechnology will make it possible to adapt cottage industry processes such as cheese-making to production on an industrial scale. This was recently the case in the production of cheddar cheese. With the

collaboration of university researchers, the coopérative agro-alimentaire Agropur of Granby, Quebec, Canada's largest cheddar cheese manufacturer, has developed a new process that can reduce the ripening period of old cheddar.

The Agropur development, based on the selection of a special *Lactobacillus* bacteria strain and its use for cheddar cheese production, cuts the length of the ripening period by half. In addition, the new process makes it possible to use pasteurized milk. Agropur's

innovation considerably improves the quality of the cheese in terms of both taste and texture and has also allowed Agropur to save several million dollars.

In general, biotechnology has contributed toward great improvements in milk processing techniques to the point where milk can be used for virtually everything. The three main ingredients of milk — lactose, fat and protein — can also be used to manufacture a wide range of products.

Protein is undoubtedly the most useful ingredient in milk. Protein hydrolysis is used to segment the proteins with the help of enzymes, thus providing smaller protein fragments that can be more easily assimilated by the organism. Milk proteins are of high quality and contain special characteristics that make them invaluable to the food, cosmetics and pharmaceutical industries.

Milk proteins are already used in a wide variety of products such as diet foods, frostings, soup mixes, foaming agents, nutritional supplements, cereal foods, etc.



Basin used for cheddar cheese manufacture.

(Coopérative agro-alimentaire Agropur)