

Protein

- a key element in dairy product innovation

Product innovation is key in a highly competitive market and is frequently driven by changing consumer trends. Protein-rich dairy products are a good example of products that appeal to the health and wellness customer segment, who continue to seek for new, improved high-protein variants. Protein is money, and that's why it's interesting for processors to be able to control, standardize and utilize the protein of their product streams to secure the highest revenue.

By Tetra Pak Filtration Solutions

From fat standardization to protein standardization

Milk has been recognized as an important nutrient for thousands of years. Since the Industrial Revolution and many years onward, milk fat has been considered the most important and valuable fraction of milk. Milk was collected and separated into skim milk and milk fat, the latter being used for butter. Since the late 19th century it has been common to standardize fat content in liquid milk.

In the late sixties it became possible to standardize protein content as well. It started in cheese dairies, where protein standardization compensates for seasonal fluctuations in the protein content of milk. As a result, the cheese process is easier, yield is higher, and costs are lower.

Protein standardization is defined as the changing of ratio of protein and

dry matter and is most often done by membrane filtration, a completely mechanical process that separates milk components by molecule size into fat, protein, and water. Membrane filtration is used in nearly all dairy processes to get the highest value out of each milk component, protein being by far the most valuable.

Cashing in on the protein

Protein standardization is a common process in most cheese making dairies in Europe. In addition, protein standardization is used in liquid milk, milk and whey based powders and fermented dairy products like Greek style yoghurts and milk drinks. Protein standardization by membrane filtration is the most effective way to adjust the protein content to the required level, ensuring the highest revenue. Surplus protein can be allocated to products that yield the

highest profit to fully cash in on the value of the protein.

Gaining from the by-product

A valuable by-product from the filtration process is lactose-rich permeate. Large dairy processors are likely to be able to utilize the lactose for other products in their portfolio. Others can profit from selling the surplus lactose for further processing, for instance into flavoured milk.

Next step possibilities with membrane filtration

Protein standardization is only one of the nearly limitless possibilities with membrane filtration. Filtration and separation with new types of membranes offer an abundance of new applications that will continue developing over the next years, processes that can take nutrients apart – and put them together in entirely new ways. ■

PROTEIN STANDARDIZATION BY ULTRAFILTRATION – THE NATURAL WAY TO OPTIMIZE THE VALUE OF YOUR DAIRY PRODUCTS

Standardization by ultrafiltration protects proteins and brings out the best in your fermented dairy products: native proteins with excellent emulsion properties.

Ask our experts - we have the solutions.

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