

Tetra Pak membrane filtration – a game changer

The more than 60-year membrane technology continues to contribute to innovation. Combined with Tetra Pak's initiatives such as a water competence center and strategic partnerships, the technology can help improve dairies' green profile and create new, highly refined products.



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Since the Danish Sugar Factories began experimenting with membrane filtration in the 1960s, the technology has undergone rapid development. Today, the technology is an integral part of many dairy processes because it can precisely separate the milk components, thus offering the dairies opportunities to combine them into new products and expand their markets.

Lactose-free milk, cost-efficient production of skyr, concentrated yoghurt, feta cheese, and a wide range of ingredients have seen the light of day due to membrane filtration. And the development continues.

We are going to see even more specialty products, e.g. with increased protein content, and further refinement of ingredients for the food industry based on whey and milk, which is our core

business – and a fast-growing market. Also, we examine the possibilities of filtrating plant-based drinks.

In-house Water Competence Center

The dairy industry is a heavy user of water. The old, small dairies, which in most cases are history now, were located close to streams for easy access to fresh water and drainage of sewage. However, as dairies grow and are challenged by more environmental requirements, focus on sustainability is increasing.

Milk consists of 87 % water, and the Nordic dairies are now good at exploiting the surplus water they generate. Worldwide, however, there are untapped opportunities for saving water; especially in countries where the cost of drinking water and wastewater is high.

Food safety legislation in relation to water recycling in the production is, however, a challenge in many countries, as the legislation has not kept up with the technological development. Therefore, we have established a water competence center, which focuses on servicing our customers with sustainable solutions, an important part of which is optimizing water consumption.

Continuous optimization creates new opportunities

The heart of the filtration technology is the membranes. In the 1960s, plate and frame membranes were the preferred

solution. Today, they are used primarily for high-viscosity products, while spiral-wound membranes, which were introduced a few decades later, generally is the preferred solution. Both types are continuously tested and optimized.

Part of the test is to install different suppliers' membranes with customers and follow the output over time. The test provides Tetra Pak with the data needed to choose the right membrane and thereby optimize the utilization of the raw material and membrane life. In the future, we will see even more precise membrane pores leading to higher efficiency.

There is no indication that competing technologies will replace the membrane technology. In return, there is a need to complement the technology with others such as chromatography and electro dialysis to offer the food industry opportunities to develop still more sophisticated products. In other words, projects are becoming more complex. Therefore, we have established strategic partnerships with other technology suppliers.

As part of Tetra Pak, we also provide end-to-end solutions and thus have a large interface with the market. This is an advantage both when it comes to building new dairies as well as in connection with counseling of existing dairies. And on all fronts, Tetra Pak is working on innovation and sustainability along the value chain.

About Tetra Pak

- Tetra Pak has more than 25,000 employees.
- Customers are served locally by market companies in Europe, the Middle East, Asia, Oceania, and the US.
- Membrane filtration can be installed in all dairies, either for production of specialty recipes or for reuse of water from various product streams.

OPTIMIZE THE VALUE OF YOUR DAIRY PRODUCTS



EASY-TO-USE MEMBRANE FILTRATION PLANTS FOR RENTAL

Tetra Pak's pilot plants are ideal for developing new products, testing altered process parameters, new concentration levels, and different membrane types, as well as for making product samples to be used in consumer tests.

Ask our experts – we have the solutions.

www.tetrapak.com/processing/membrane-filtration/

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