

A close-up photograph showing a metal spoon filled with white liquid, likely milk or a plant-based alternative, set against a background of numerous soybeans.

# PLANT-BASED CONCENTRATION PROCESS

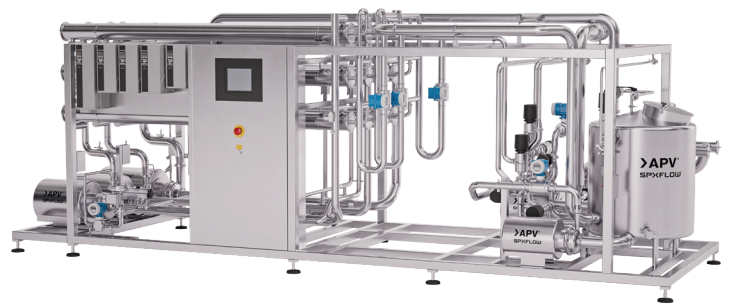
Take your plant-based products to the next level

## Plant-based Products with Higher Clean Label Protein Content

APV membrane filtration solutions for plant-based concentration provides clean label products of higher nutritional value. Benefits include a greater yield, higher single-source protein content and a more sustainable process compared to traditional methods using evaporation and chemicals.

The traditional plant-based concentration involves chemicals or evaporation and can result in a 10% loss in valuable proteins, which is significant. Our specialised membrane systems allow gentle separation and concentration of product proteins without damage and less than 1% loss. This process also means fewer filler ingredients to maintain the nutritional value of a plant-based product.

The concentrated plant-based beverages can be used as a protein-enriched base for yoghurt and cheese alternatives, food additives, and other nutritious ingredients.

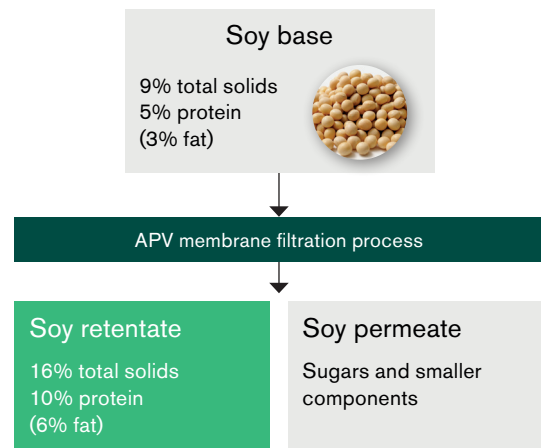
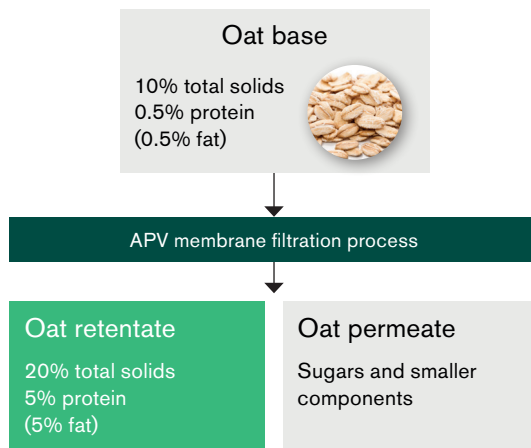
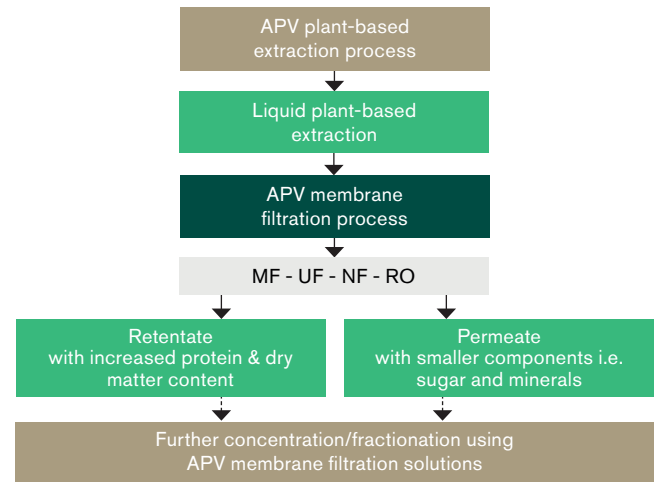


*APV Membrane Filtration, Ultrafiltration System*

## Plant-based Concentration Process Description

The APV membrane filtration technology features a wide range of solutions designed to fit a variety of plant sources, including soy, oat, nut, rice, pea and more. The solutions, which are designed based on processing needs, include microfiltration (MF) and ultrafiltration (UF) for fractionation, concentration and standardisation of plant proteins and other nutritional components. Additionally, nanofiltration and reverse osmosis systems for solids concentration, valorisation of subproduct, and recovery of water are available.

With the APV plant-based concentration process, boundless technology opportunities are available. One example of oat process and one example of soy process is presented below.



## Innovate with Us

SPX FLOW can support your ideas for other possibilities in our Innovation Centers. Our APV membrane filtration team is ready to provide expert technology and application support in finding the optimal membrane filtration solution for your desired products. To ensure successful piloting of your new membrane filtration solution, we can help performing your very first application trials in our innovation centers. We can also offer pilot plant rentals so you to do your own trials. We will help you all the way to full-scale commercial production. SPX FLOW can also help with both upstream and downstream process lines for full optimised plant-based extraction down to the latest evaporation and drying equipment solutions.

## Benefits of using APV Membrane Filtration for Plant-based Concentration

- Clean, versatile and sustainable process
- Gentle separation and concentration process without damage of nutritional components and preservation of protein functionality
- Higher single-source protein content
- Higher yields compared to traditional concentration methods (less than 1% loss)
- Less filler ingredients to maintain the nutritional value of a plant-based product
- Green technology and energy efficiency
- Reduce loss of valuable product by re-use of extracted carbohydrates (sugars) for use later in the process
- High water recovery from the process
- Reduce transportation cost
- Easy to implement into current installation

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