

## Alcohol-free enjoyment: Finnish brewery opts for membrane dealcoholisation from GEA

There are various processes available for the production of dealcoholised or non-alcoholic beer. From the very outset, the Finnish brewery Laitilan Wirvoitusjuomatehdas Oy wanted to achieve optimum results in terms of taste and quality, while avoiding the use of wort aromas. The ability to retain the unadulterated taste and original character of their "Laitilan Kukko" beer was the all-decisive factor when it came to choosing GEA's AromaPlus membrane filtration system.



Now also alcohol-free: Laitilan Kukko beer, produced with AromaPlus from GEA.  
(Photo: Jani Lappalainen)

### From testing on the pilot plant to in-house dealcoholisation

Having started operations in 1995, Laitilan Oy is an independent brewery that has since grown to become Finland's fourth largest brewery. Its Kukko beer was the world's first purely malt-based beer to be awarded the international gluten-free seal in 2005. The company also produces specialty beers, cider, sparkling wine, soft drinks, water and long drinks – in 2019, the total volume will exceed 20 million litres. When the company installed a separator at Laitilan Oy Brewery in 2017, Plant Manager Tommi Suutari approached GEA about possible solutions for the dealcoholisation of beer.

At that time, the German plant manufacturer had just launched its newly developed membrane filtration-based AromaPlus process. This sparked Laitilan's interest, and Suutari had a closer look at this solution. A visit to the Schönbuch brewery in Stuttgart, which was one of the first

to use AromaPlus for dealcoholisation of its beer, as well as dealcoholisation trials of its own beer on a pilot system convinced the Finnish brewers. GEA Product Manager Ralf Scheibner explains: "We have invested a considerable amount of effort in the development of the new AromaPlus process and we are now beginning to observe that the demand for non-alcoholic beer is increasing. Our solution has been well received and is highly appreciated by breweries and consumers alike".



AromaPlus employs the principle of reverse osmosis membrane filtration to remove the alcohol to achieve a concentration of up to 0.05 percent by volume. (Photo: Mike Henning)

## Cold processing preserves aromas

AromaPlus employs the principle of reverse osmosis (RO). This allows alcohol and water to flow through while preserving ingredients that are vital for aroma, colour and turbidity. The system achieves the 0.5 percent content required for non-alcoholic beverages, but also allows the alcohol content to be reduced to 0.05 percent. Due to the operation at low temperature, membrane filtration has less influence on the flavour of the beer and preserves the aroma substances in comparison to other dealcoholisation processes based on thermal processes.

## System design and layout

The dealcoholisation system is constructed ready-to-install on a frame. It includes the filtration modules with the special AromaPlus reverse osmosis membranes, the pumps for media transfer and for ensuring required system pressure, full internal piping, a CIP dosing unit installed next to the system and the control technology for semi-automatic operation.

Besides the dealcoholisation process, the control system also handles the clean-in-place (CIP) cleaning of the system, which ensures hygienic operation and safe cleaning of the membranes.

The systems feature a standardized layout and, depending on their size, are designed to batch process from about 50 hectolitres up to more than 600 hectolitres per day. GEA also offers larger dealcoholisation systems for the continuous processing of more than 50 hectolitres per hour.

### Further information and contact

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