



Don't waste a drop

Recover beer from surplus yeast with the BRUX 510 separator module



Get the most out of your yeast

Breweries often produce as much as 2-4% more yeast than they actually require. Such yeast – the yeast slurry left behind in fermentation vessels – usually still contains 40 - 70% beer.

Recovery and payback

Many different techniques are available to recover the valuable beer component from this yeast. Each provides different results in terms of beer quality, ease of handling and financial payback.

If the beer recovered is of good quality, you can rapidly recoup an investment involved. In the first instance, this payback stems from reducing the amount of saleable beer lost.

Greater concentration of the yeast by making it drier is a secondary benefit, boosting revenue because the yeast then has greater resale value.

Blend recovered beer back in

Depending on how your particular brewery processes are structured, you can blend the recovered beer back into the wort (alternatively into the green beer), at a ratio of less than 5% of the main flow stream.

Innovative solution

The Alfa Laval beer recovery module consists of a special BRUX 510 nozzle separator, complete with automated control of inlet flow concentration (based on turbidity measurement) and the requisite interface systems – all skid-mounted as one complete unit for easy, rapid installation and system integration.

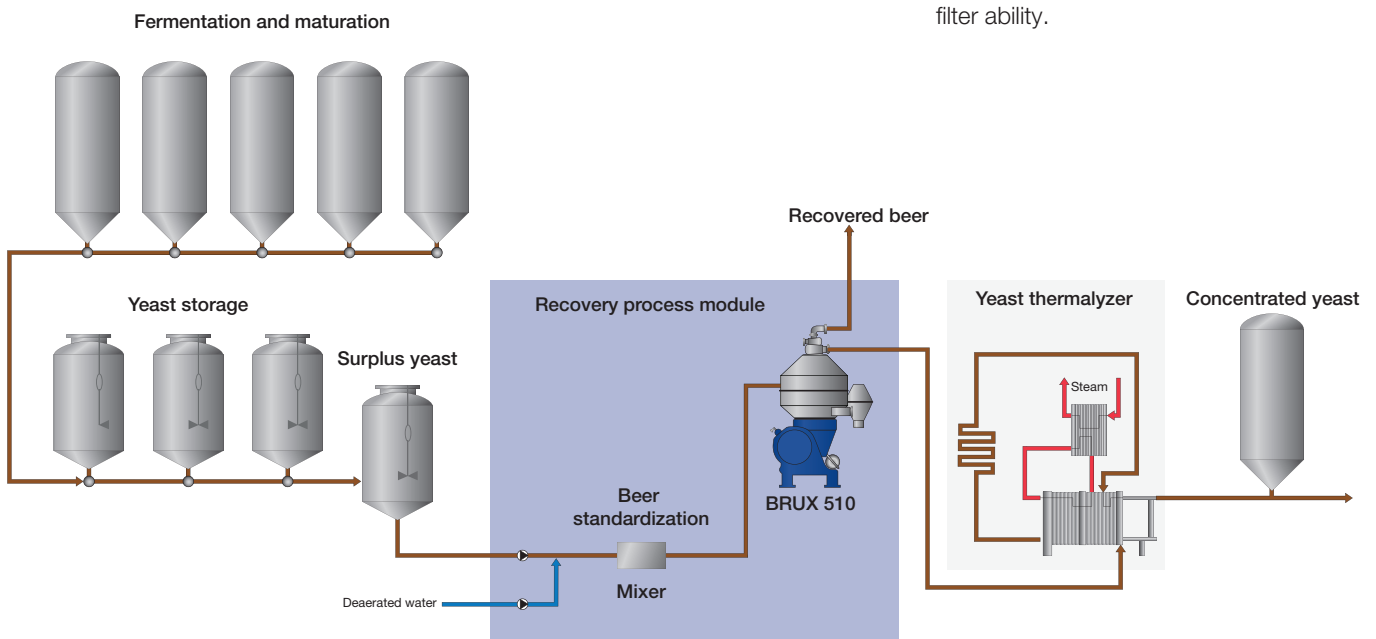


The benefits of the BRUX 510 module include

- excellent beer quality and no increased yeast autolysis due to the gentle yeast treatment
- high beer clarification
- high yeast concentrate as solids outlet
- in-line CIP – no dedicated CIP required
- continuous process
- yield increase with second pass as an option
- easy operation
- simple design
- small footprint
- low power consumption
- low maintenance costs
- short payback



Beer recovery process flow chart



Recovered beer quality

- no increased yeast autolysis
- 50,000 yeast cells/ml at 40 hl/h
- O₂ pick-up up to 20 ppb
- concentrated yeast 75-80% v/v
- dosing up to 5% to the beer main stream, without affecting beer flavour and beer filter ability.

Traditional separators only discharge the separated yeast intermittently by opening the bowl for short intervals. By contrast, in the well proven Alfa Laval system, the yeast leaves the separator in a continuous flow, which means that a much smaller separator is sufficient.

Less space, greater capacity

The Alfa Laval process module therefore takes up much less space than a traditional separator. Nevertheless, it can process greater volumes (20–60 hl/h) of beer-saturated yeast, with substantially better beer recovery as well as improved concentration of the yeast (20% dry matter content and more).

The BRUX 510 is equipped with Oxy-Stop, the hydro-hermetic seal for minimum oxygen pick-up of the clarified beer.



How it works

The yeast is forced to the periphery of the BRUX 510 separator. From there, it is pushed through special concentrate tubes towards the centre to vortex nozzles, from which it leaves the separator under pressure, via a built-in paring tube. Special vortex nozzles automatically regulate the flow of the concentrate (see diagram on the right). Thus yeast is treated very gently.

The beer is clarified on the disc stack and leaves the separator under pressure through paring disc and Oxy-Stop.

Dilution ensures consistency

Because of the way this nozzle separator works, it is important that the flow intended for separation has a relatively stable consistency. To ensure this, a beer standardization unit is installed upstream to dilute the incoming yeast/beer mixture to approx. 25–45% by volume, using deaerated water.

Dilution ensures high yield

An important effect of higher dilution is a greater recovery yield, because more of the beer gets washed out of the yeast slurry.

Recovery yield and thus extract recovery can be further increased by letting diluted concentrated yeast from the first pass to pass the BRUX 510 recovery module for the second time BRUX recovery module twice.

Vortex nozzle

Outlet yeast concentration is kept constant at small variations of inlet yeast concentrations at constant inlet flow.

Reduced yeast throughput

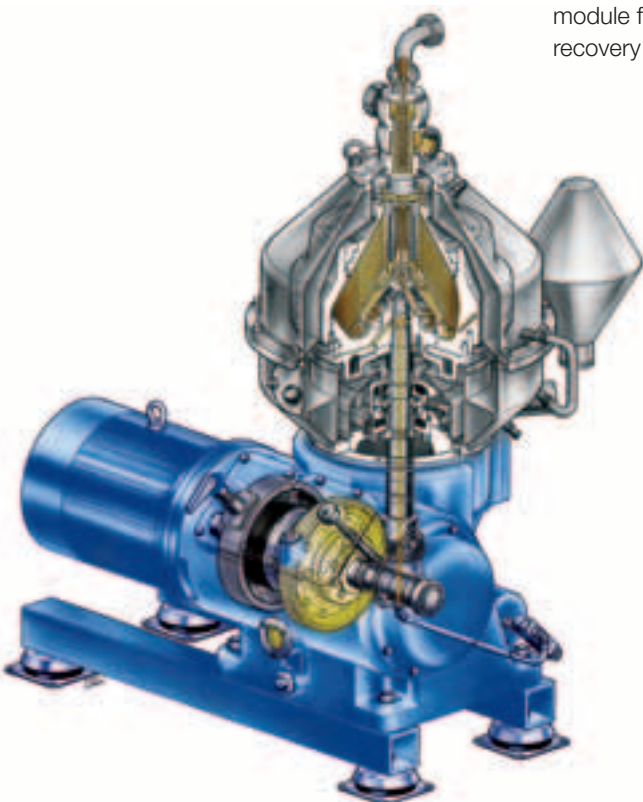


Lower Inlet concentration

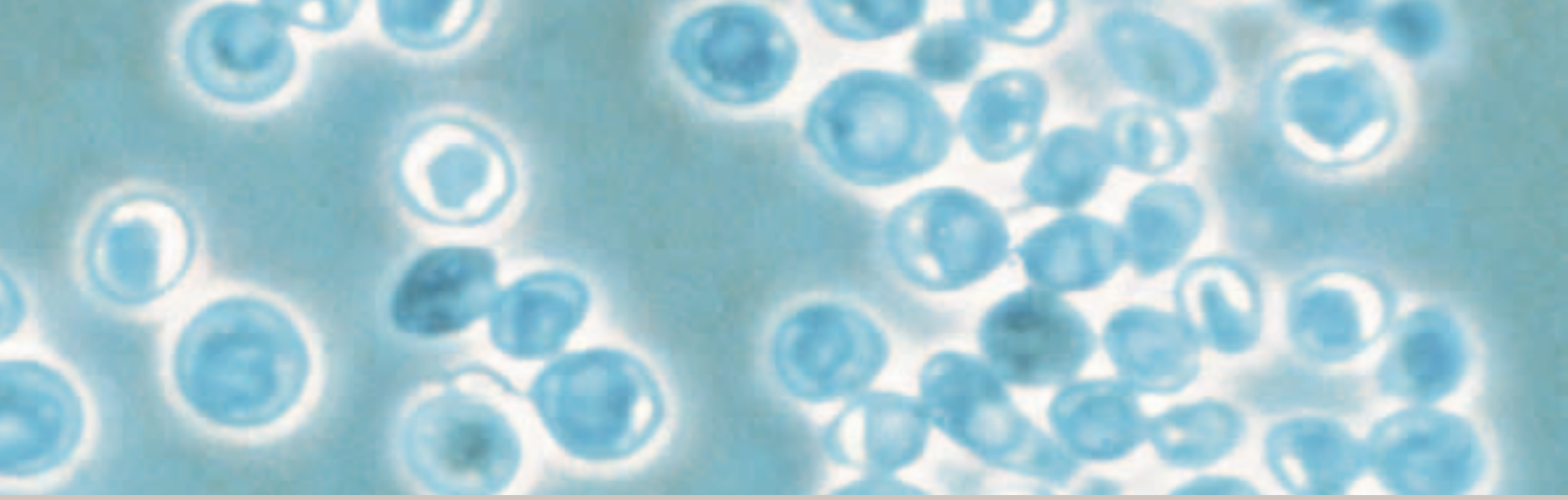
Increased yeast throughput



Higher Inlet concentration

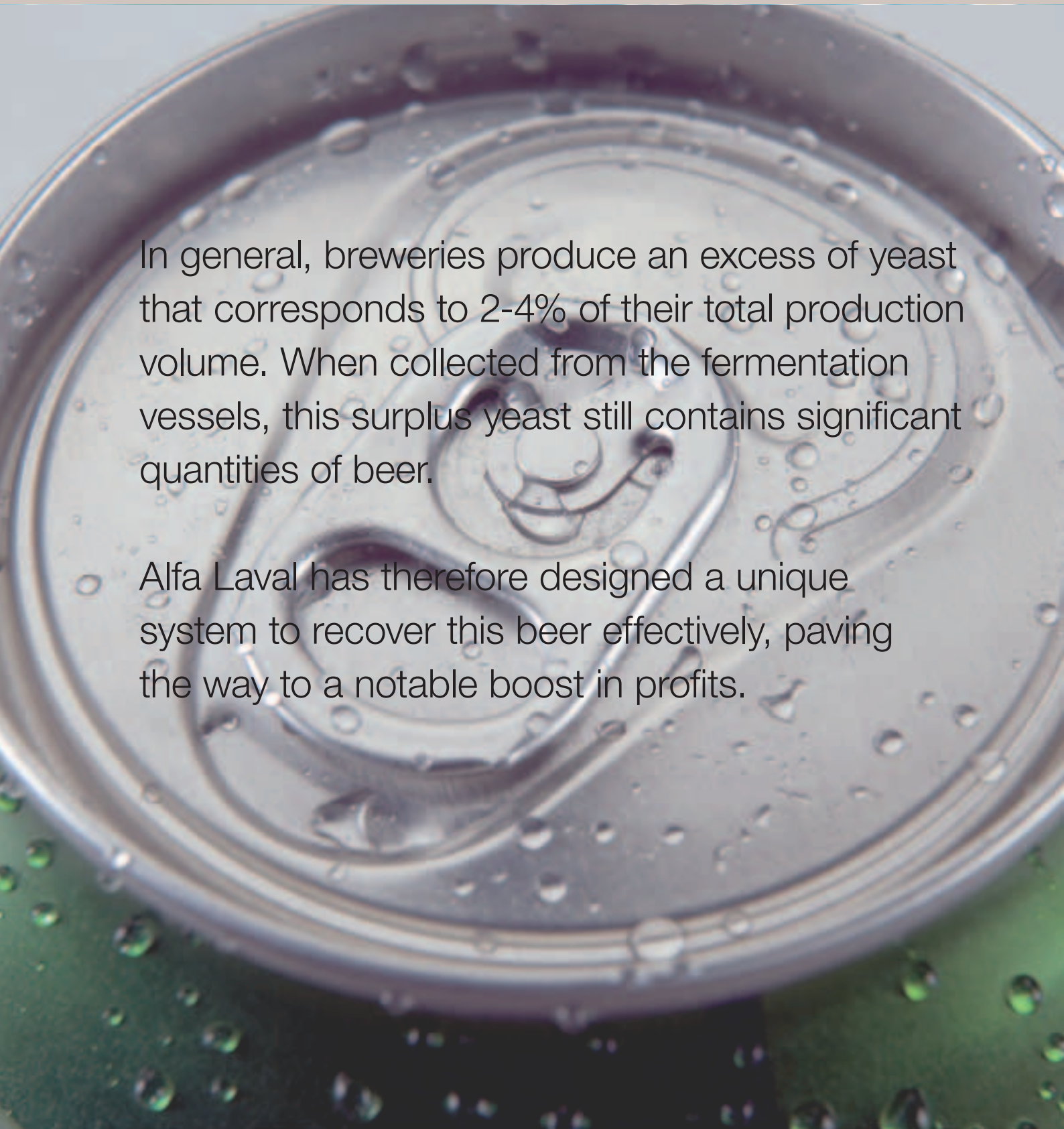


BRUX 510 bowl



In general, breweries produce an excess of yeast that corresponds to 2-4% of their total production volume. When collected from the fermentation vessels, this surplus yeast still contains significant quantities of beer.

Alfa Laval has therefore designed a unique system to recover this beer effectively, paving the way to a notable boost in profits.



Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Up-to-date contact details for all countries are available on our website at www.alfalaval.com.

