Handling of surplus yeast with rotary jet mixer technology

Carlsberg, Denmark **Case story**

Surplus yeast
During storage of surplus yeast, the yeast settles and creates a compact layer at the bottom of the tank. This makes it difficult to empty and clean the tank. The Alfa Laval Iso-Mix rotary jet mixer can be used to prevent yeast sedimentation at the tank bottom.

Client
The Danish brewery Carlsberg A/S, producer of beer, cider and soft drinks.

Problem
Carlsberg experienced on a regular basis the breakdown of agitators formerly used to keep the yeast in suspension. Due to the corrosive nature of the CIP liquids and wear environment, the agitators had a limited lifetime and failed regularly. This resulted in heavy yeast sedimentation, which required physical entry into the tank to shovel out the yeast and manually clean the tank. Carlsberg therefore wanted a new and more reliable technology in order to reduce maintenance costs and time-consuming man-hours.

Solution
The solution was retrofitting the tanks by replacing three traditional agitators with two Iso-Mix rotary jet mixers. An existing centrifugal pump re-circulates surplus yeast back into the tank. The jets from the rotating nozzles continuously stir the yeast and prevent sedimentation. As an added feature, the Iso-Mix rotary jet mixer can be used for effective tank cleaning between batches.

Result
A reliable, non-stop low maintenance system, which reduces maintenance costs and man-hours.

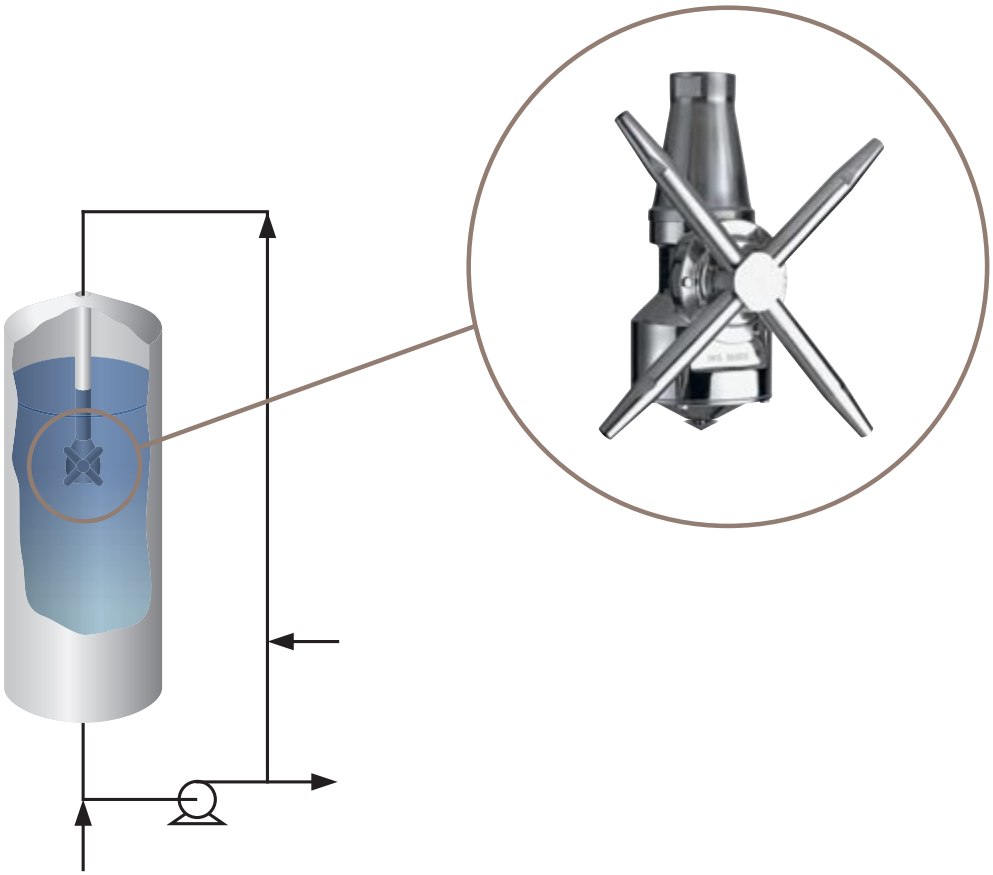
Facts
- Effective suspension of surplus yeast
- Reduced maintenance costs and man-hours
- Fast and efficient cleaning of the empty tank

System data
Volume: 1,000 hl
Tank diameter: 3.5 m (horizontal)
Tank height: 10 m
Mixer type: 2 x IM 20 with 4 x 10 mm nozzles
Temperature: 30˚C
Pressure, pump: 3–4 bars
Density/Viscosity: 1.2 kg/l, 2,000 cP

Technology and operation

The Alfa Laval rotary jet mixer has either two or four rotating jet nozzles positioned under the liquid surface at the top of the tank. A variable speed pump circulates the liquid to be mixed through the tank in a closed loop system. The resulting flow drives a gearing system in the rotary jet mixer, which causes the nozzles to rotate around both the horizontal and vertical axes.

This double rotation enables the jets to produce mixing action and extend its reach throughout the entire tank volume. This results in fast and efficient mixing of the injected liquid, gas or powder. The rotary jet mixer may also be used for cleaning the tank; cleaning fluids are then fed through the nozzles of the rotary jet mixer into the tank.



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