



SEPARATION

ADDING VALUE TO A BY-PRODUCT

**INDIRECT DRYING OF BREWER'S
YEAST WITH ANDRITZ GOUDA DRUM
DRYING TECHNOLOGY**

ANDRITZ

ENGINEERED SUCCESS

Added value instead of by-product



ANDRITZ Gouda double drum dryer

When brewing beer, yeast is produced as a by-product. This product is usually treated as waste. Brewer's yeast, however, contains valuable ingredients, such as amino acids, proteins, and minerals. These ingredients can be re-used in several food products. For this purpose, ANDRITZ has developed an efficient drying process.

DESCRIPTION OF THE YEAST-DRYING PROCESS

First of all, the yeast is dewatered mechanically to the highest achievable dry solids content and then dried on an ANDRITZ Gouda contact drum dryer, thus ensuring low energy consumption. This process can also be used for the yeast by-product from large-scale alcohol production facilities. The wet yeast is collected and processed in a decanter. In the decanter, the yeast is separated to 30% dry solids content and then fed to a holding tank. From there, the product is fed to the contact drum dryer by means of a pump. As a result of the dryer's heat treatment process, no further treatment is needed to break down the yeast cells. After the yeast has been dried to a dry solids content of 95%, it is transported by a pneumatic conveyor, passes through a mill-sifter, and finally arrives in a storage silo. After this, the dried yeast is prepared for packaging.

HIGHEST EFFICIENCY WITH INDIRECT DRYING

Compared to direct drying processes, indirect drying on an ANDRITZ Gouda contact drum dryer requires less hot air to achieve evaporation. The heat is generated by steam, for instance, and the (metal) wall of the drum transfers the heat to the product. The wall of the drum ensures that all the heat is used to dry the product and does not leave the machine or chimney unused. This makes indirect drying a much more efficient process. An added advantage is the fact that large dust recovery systems (such as filters) are no longer necessary because there are no large amounts of drying gas. To ensure low emission values, it is recommended to clean the exhaust vapors in a small biofilter before releasing them into the atmosphere.



Dried yeast on the drum dryer

The heart of the process: ANDRITZ Gouda drum dryer

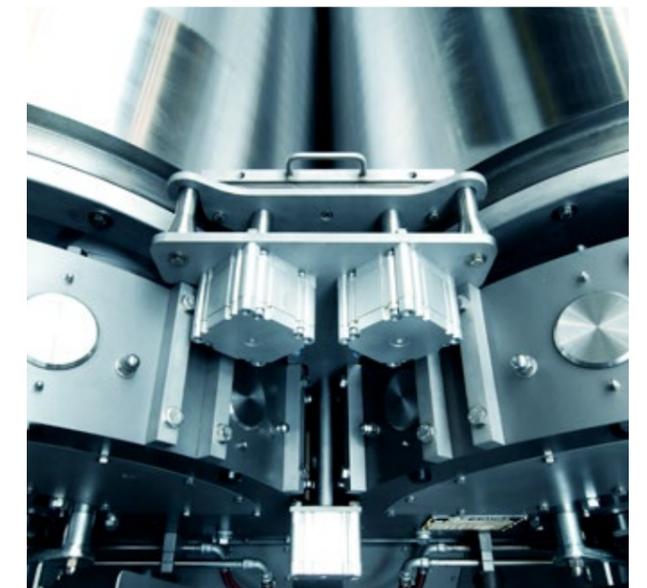
The heart of the installation is the ANDRITZ Gouda double drum dryer. The dryer mainly consists of two cast iron cylinders that are heated inside with saturated steam. The thickened yeast concentrate is fed between the rotating drying cylinders so that the product can form a so-called hot "sump". From this sump, the yeast is distributed over the rollers in a thin layer. Inside the drum dryers, the cylinders are heated with saturated steam, which then condenses on the wall of the drum.

The condensate is removed continuously from the drum so that the largest possible surface area remains available on the inside of the drum for condensation of the steam. The steam system is a closed loop, which means that the product cannot come into contact with the steam or condensate. As a result of its contact with the hot cylinder surface, the water in the thin yeast layer evaporates. When the cylinders have rotated through two-thirds of a revolution, the dry, solid matter is scraped off the cylinders with a knife.

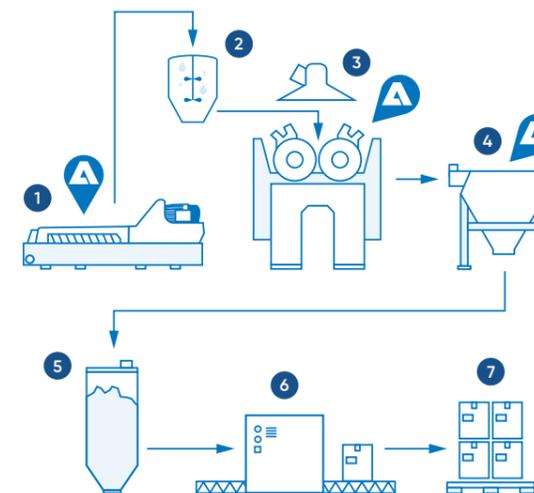
KNIFE HOLDER FOR EVEN KNIFE PRESSURE

The clever design of the knife holder guarantees even knife pressure over the entire length of the drum. The use of specific materials prevents vibrations that result from scraping and guarantees uniform product removal. The knife pressure can be controlled easily from outside the process area.

Two discharge screws and a pneumatic conveying system transport the dried yeast to the downstream process steps. This drum dryer is available in a variety of sizes, from 1.5 m² up to 38 m². A large number of ANDRITZ Gouda drum dryers for this application are operating around the world.



Double drum dryer end dams



Yeast drying process

- 1 Decanter 2 Holding tank 3 Drum dryer 4 Mill sifter
- 5 Storage silo 6 Packaging machine 7 Storage

YOUR BENEFITS

- Compact, safe, and simple
- No additional autolysis necessary
- High energy efficiency due to pre-evaporation



WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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