



SEPARATION

HIGH THROUGHPUT AND EFFICIENT SEPARATION FOR VEGETABLE MILK PRODUCTION

DECANTER CENTRIFUGE F

ANDRITZ

ENGINEERED SUCCESS

The vegetable milk market is booming because of ethical, environmental, health, religious or dietary reasons. Even if soy milk remains the reference, other vegetables are gaining a larger part of the market, producing oat, rice, or almond milk for example. Whatever vegetable dairy you are handling, there is one solution that can help you with your separation process: the ANDRITZ decanter centrifuge F. With more than 15,000 decanter centrifuges installed around the world, this centrifuge specially designed for the food industry meets the most demanding requirements of vegetable dairy experts.



Efficient separation technology for high protein throughput

Created by combining the best of Guinard Centrifugation and KHD Humboldt Wedag decanter technologies, the decanter centrifuge F is a new generation of decanter that has proven its efficiency and reliability over decades in various industries, and also in vegetable milk globally. At ANDRITZ, we know your process and we pay attention to your needs, so each application has its own specially designed decanter with specific features to achieve the best performance and meet your requirements.

SEPARATION AT ITS BEST

Running at 3,500 g-force in vegetable milk applications, the ANDRITZ decanter centrifuge F allows a high capture rate and achieves good dewatering performance with high dryness (up to 25% dryness depending on the vegetable to be handled). This efficient separation stage is a real must to obtain the clarification you need and achieve a high protein throughput with the milk quality you are expecting.

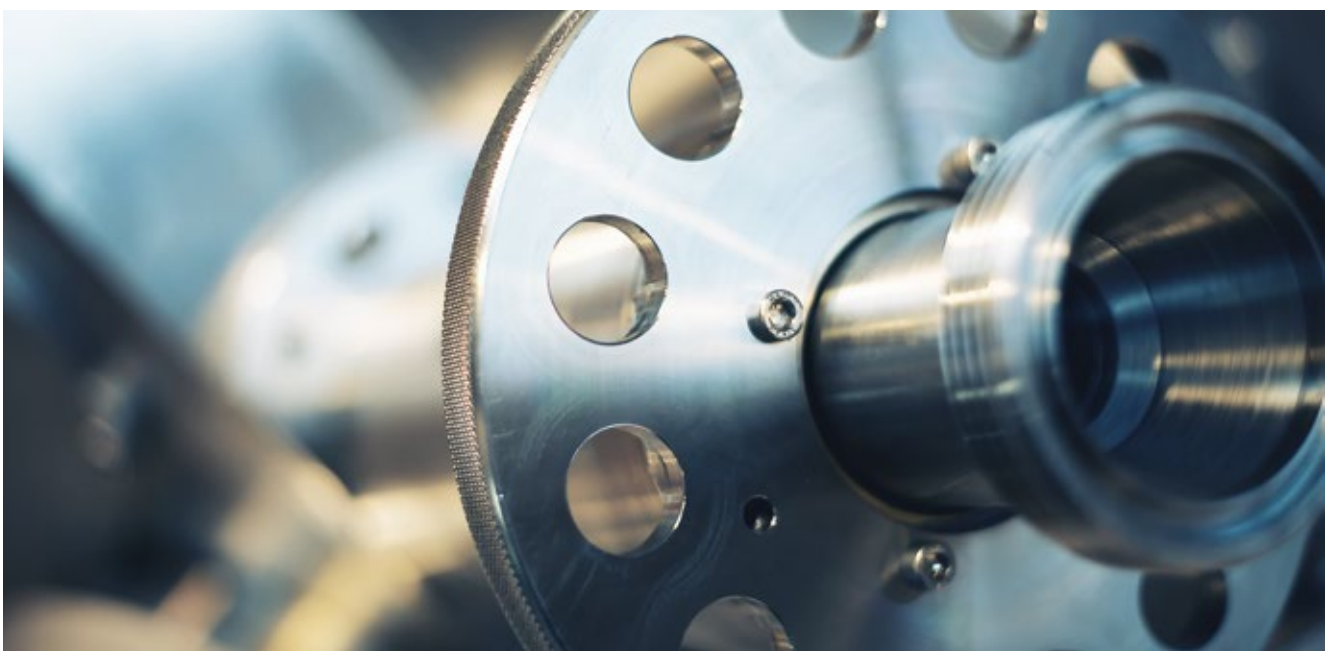
THE TAILOR-MADE DECANTER FOR IMPROVED FLEXIBILITY

Vegetable milk can have different aspects, qualities or characteristics depending on its origin and seasonality. For perfect clarification and optimum solids dryness, we adjust the design of the rotor: standard or low angle, L/D ratio, open or plain flight scroll. The scroll speed can be

adjusted very accurately thanks to the various possible designs of our gearboxes, which are available in different materials. The ANDRITZ decanter centrifuge F is provided with a gravity (tangential or vertical) or pressure discharge (centripetal pump or adjustable skimmer) to ensure the most suitable liquid discharge for your application.

ADJUSTABLE SKIMMER IN OPERATION

The liquid phase of the ANDRITZ decanter centrifuge F is discharged under pressure (1.5 to 2 bar) in both two- and three-phase configurations by means of a skimmer (also named "pipette") that can be adjusted per millimeter during operation. This device ensures better clarification, optimizes the yield when the feed is variable, and avoids downtime because there is no need to stop the machine in order to change the set-up.



Adjustable skimmer in operation

Advantages of ANDRITZ high-performance decanter centrifuges

Washing ramp of CIP system for excellent cleanliness

ANDRITZ has thousands of satisfied operators with a decanter centrifuge F, not only because of its standard characteristics, but above all for the specific features and advantages added in the course of the time:

- Optimum yield efficiency thanks to double drive in combination with pipette system
- G-force of up to 3,500 for best separation efficiency
- Excellent performance and clarification due to optimized scroll design
- No need for defoamer due to a centripetal pump with special discharge system at the liquid end
- Reduced foam formation due to discharging the clarified milk under pressure
- 40% less antifoaming agent required thanks to foam reduction design
- Optimum product quality thanks to integrated washing device
- Optimum cleanability in compliance with regulatory guidelines as a results of fully automated CIP (with Metris addIQ control system linked to your SCADA system)
- Robust design and high-grade materials for long service life
- Low maintenance cost and easy dismantling with unique inline design



Centripetal pump with special discharge system that reduces foaming

A complete range for the best fit to your production capacity

ANDRITZ large range of decanters provides you with a solution to meet your specific demands in the vegetable milk industry. The application-driven design, combined with the features in the full range of machines, can handle the capacities you need. From low-end flows with low solids content up to high flow rates with high solids content, ANDRITZ can assist you in all your separation challenges. Depending on the vegetable you are handling and the destination of the final product, ANDRITZ experts will recommend you a different level of finish:

- **Performance**, the ANDRITZ food-grade standard machine. Plain carbon steel frame with stainless steel interior, cover in stainless steel, wash ramps for top-performance CIP, and polished if needed for the application.
- **Sanitary**, designed to ensure maximum cleanliness. Same design as Performance except for frame, which is made of plain stainless steel with integrated casing and with polishing up to $RA < 0.8 \mu m$ if needed.

Model	Feeding capacity (l/hr)
F2000	1,000–1,500
F3000	2,000–3,000
F4000	4,000–6,000
F5000	8,000–10,000
F6000	12,000–15,000

ENSURE FINEST CLARIFICATION

To complete the first separation phase performed with a decanter, ANDRITZ specialists recommend a second separation phase with a separator to ensure finest clarification of your vegetable milk. ANDRITZ high-speed clarifiers are the right solution to separate the finest solids and ensure a higher clarification rate. The second separation stage guarantees excellent removal of the suspended solids, giving your vegetable drinks a smoother and more pleasant texture.



Decanter centrifuge F7000 for removal of liquid phase from fruit



ANDRITZ separator CA131V for fine clarification



Intelligence for machine and process control

Metris addIQ control systems

With Metris addIQ, you get a well-proven, intelligent control solution for industrial processes and machines. Our solid/liquid separation specialists use their in-depth expertise to provide scalable solutions that are individually tailored to regional and application requirements. Whether you're automating new equipment or upgrading to extend the lifecycle of existing systems, we find the ideal solution for you.

Our tailored turnkey systems from a single supplier can improve entire plants or individual machines. By providing state-of-the-art automation technologies and digitalization, we ensure best-in-class performance. Automating machine and plant equipment measurably reduces gaps in many different production process steps. By using automation from ANDRITZ, you can reduce downtime thanks to features such as predictive analysis that allow you to optimize productivity.

Metris addIQ covers all levels of automation, starting at basic automation (machine, process, and plant control), to upgrades, and add-ons for process optimization. Together, you get a full range of optimized solutions that help reduce maintenance efforts and ensure preventive service for your machines and plants. These are all delivered from a single source and always individually tailored to your business demands. Metris addIQ control systems are part of the ANDRITZ brand for Digital IIoT (Industrial Internet of Things) Solutions.

For the vegetable milk application, the mid-sized addIQ Dynamic package brings a 9" widescreen touch panel, intuitive operator design, and a safety-integrated controller:

- Monitoring and control of machine and machine auxiliaries
- 9" touchscreen as standard with an option to upscale
- Advanced control and optimization functions
- Full process line control system
- Flexible control of 8x CIP valves in 30-second steps
- CIP sequence with recipe handling, storage, and reload



Your full-service provider

With ANDRITZ, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation systems, including such well-known brands as 3Sys Technologies, Bird, Delkor Capital Equipment (Pty) Ltd., Escher Wyss dryers, Frautech, Guinard Centrifugation, KHD Humboldt Wedag, Krauss-Maffei centrifuges, dryers, and filters, Lenser, Netzsch Filtration, Rittershaus & Blecher, Royal GMF Gouda, Sprout Bauer, and Vandenbroek.

Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ is your true full-service provider. From initial consulting through to service agreements, process optimization, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. Wherever you operate, our network of 550 service specialists and global service centers ensures we'll always be there to support you for many life cycles to come. Let's sit down and see how we could take your operations to the next level.



LOCAL SUPPORT

Responsive local service centers and field service technicians



REPAIRS & UPGRADES

Optimization of machine and process performance, repair work, retrofitting, and modernization



SECOND-HAND & RENTALS

Certified second-hand and rental machines



TRAINING

Operator training and tailored seminars for operating and maintenance personnel



OEM SPARE PARTS

Filter cloths, spare and wear parts from OEMs or with OEM level quality, all readily available



SERVICE AGREEMENTS

Preventive maintenance, contracts for spare parts, maintenance, inspections, repairs, upgrades, operation, and equipment monitoring



PROCESS OPTIMIZATION

Automation tools and process expertise to boost your profit



LAB AND ON-SITE TESTS

Lab and testing capabilities for process optimization and machine upgrades



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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