



### **ANDRITZ**Separation

## What's next for your business?

What new products are in your pipeline? How will you stay efficient enough to fend off growing competition? What will be the future trends in tastes and textures? And how will you capitalize on these fast-changing market demands?

### Your goals come first

Having served the food industry for 100 years, such challenges are not uncommon to us. In fact, we're working to respond to them every day for customers ranging from niche local producers to vast multinational operations. Take baby food, for example, where we partner with most of the major global players to realize product innovations, optimize products in our test labs, or develop new recipes that meet the evolving tastes and preferences of consumers across the globe.

### **Optimizing the process**

Naturally, not everyone has the global muscle of a Cadbury, Danone, or Cargill, to name but a few of our clients. Many are small or midsized dairies, vegetable oil, palm oil or juice producers,

breweries, or wine manufacturers. And all of them want to improve product quality, boost efficiency – or ideally, to achieve both at the same time. In one instance, we worked with local casein producers to develop a low-foam decanter feature capable of saving producers up to 25,000 euros a year. The result? A purer, more profitable product, and a more efficient use of resources.

### A promise backed by resources

As a global organization with 24,000 employees in 40 countries, the ANDRITZ GROUP not only welcomes such solid/liquid separation challenges – we have the experience and resources to tackle them. So what's next for your operation?







## The strength to support your needs

## We call it 360 degrees of separation

Nowadays, the demand for new taste sensations and food products is limitless. As meeting these demands in the global market becomes more complex, we believe it's time for a simpler, more comprehensive approach. One that places your needs at the center of everything.

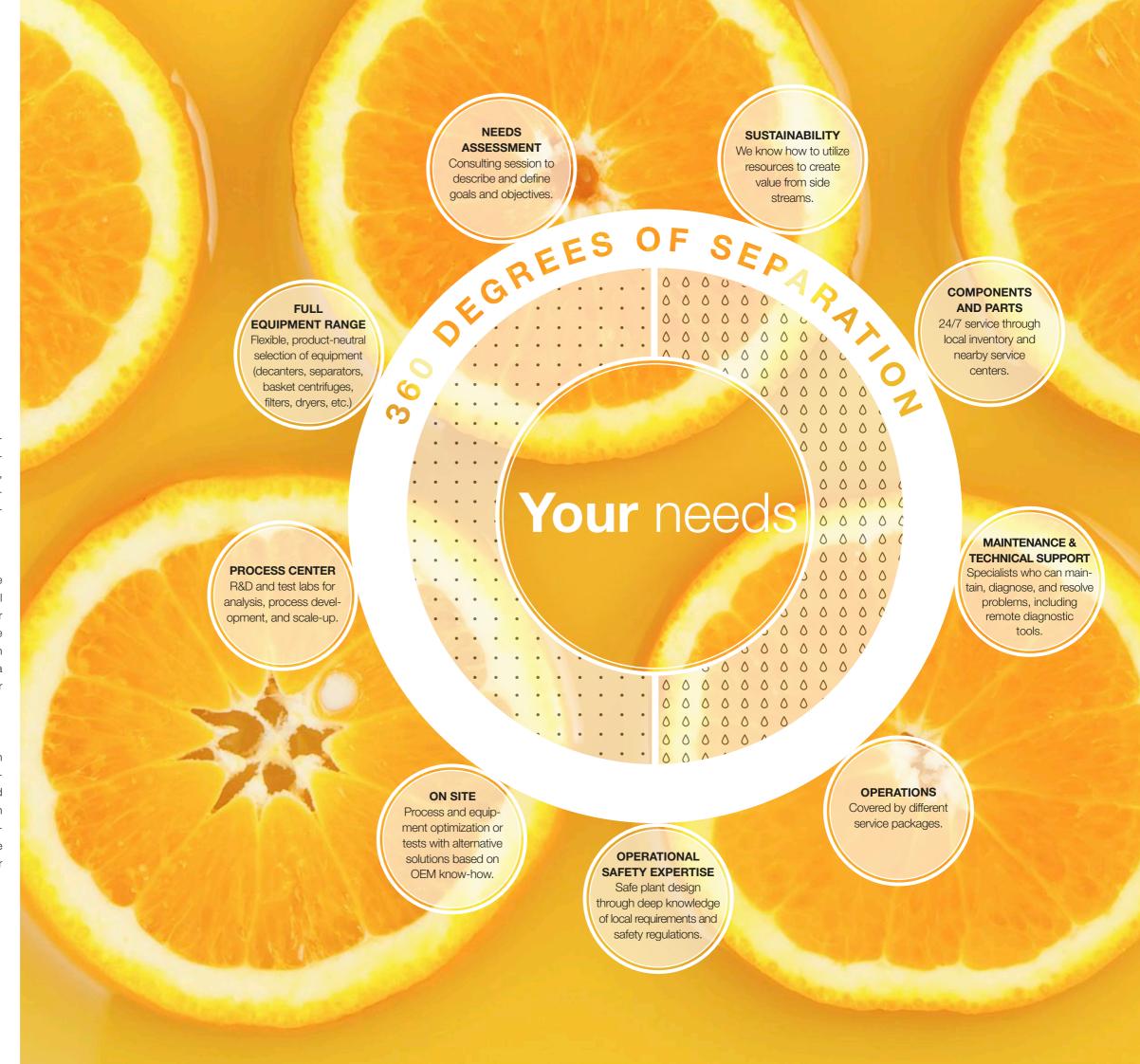
Irrespective of end products, our customers demand a customized solution for their solid/liquid separation and automation challenges. An approach where the starting point is not a separator, decanter, or filter press, but rather a careful evaluation of their objectives. And it all starts with a frank discussion about end product quality, efficiency, capacity, processes, and local support.

### Complete range of solutions

With ANDRITZ SEPARATION, you gain access to one of the world's most complete portfolios within mechanical and thermal solid/liquid separation. Whether you are looking for a particular separator, clarifier, decanter, filter press, or dryer, we offer a range of solutions. As a result, we can serve as a neutral advisor in selecting the technology best suited to your process. It's a 360-degree approach that gives you all the right ingredients for your success in the food industry.

### We've got you covered

From food processing to environmental challenges, our ambition is to give you full access to a selection of quality solutions, service, and support. Backed by the strength of a global R&D and automation backbone, the ANDRITZ GROUP has 250 production and service sites, together with 24,000 employees in 40 countries. With the power of our parent company behind us, we are continuing to innovate to help you keep a step ahead – wherever you and your customers happen to be.





With more than 100 years' experience in the food industry, ANDRITZ SEPARATION is one of the world's largest suppliers of mechanical and thermal solid/liquid separation and automation. Whether you're an international group or a family company, our mission is the same: to provide reliable, hygienic, and efficient solutions that improve the quality of your end products.

Our new customers are sometimes surprised to hear about the sheer depth of our experience in separation technology. Or that we've actually delivered more than 2,000 separators and 1,000 filter presses, not to mention more than 500 units for baby food alone. Or that we're adding hundreds of new references every year.

### Well-respected, quality names

This is not so surprising since the ANDRITZ GROUP has grown substantially through acquisitions. As part of this growth, we've acquired some of the best brands in the business (see above).

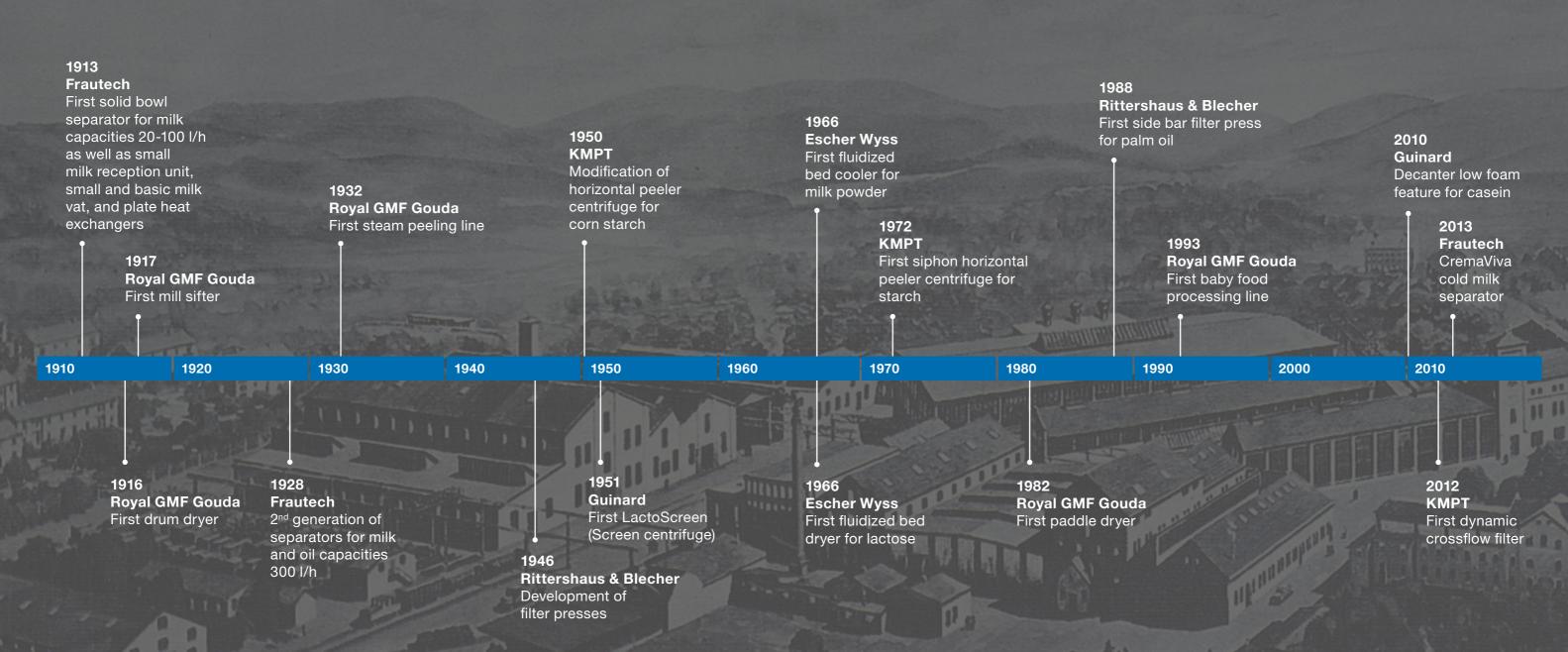
### Your partner in innovation

When it comes to solid/liquid separation, you can rest assured of getting the optimal choice for your needs – whether it's presses, centrifuges (e.g. filtering centrifuges, separators or decanters), filters, screens, or drying/cooling systems. We also have the ability to develop and tailor the right solution with you using our lab and test capabilities located throughout the world. Once installed, ANDRITZ SEPARATION equipment comes with the support of a strong global service network for the food industry and all its applications.

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## We have a long history of separation in the food industry







Quark, cheese, milk, cream, whey, WPC/WPI, lactose, casein, milk powder for chocolate, hydrolyzed whey proteins, and specialty products like lactoferrin



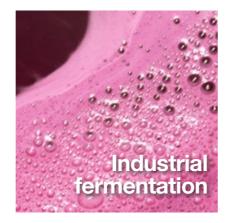
Dried infant food, dried baby food, and breakfast cereals



 $\Omega$ -3, tocopherol, polyphenol, pectin, xanthan, sugar substitutes (stevia), antioxidants, vitamins, glutamate



couleur



Amino acid, citric acids, succinic acid, bakers yeast, green and white biotech



Beer, wine, juice, spirits, prosecco, champagne, cider, smoothies, ketchup, soy milk, coconut water, coconut oil, mango pulp, instant and RTD coffee and tea, essential oils



Olive oil, palm oil, sunflower oil, soy oil, canola oil, coconut oil, cotton oil, biodiesel, and byproducts such as glycerin, soap, fatty acids, stearin, olein, surfactants, and other oleochemicals



Animal fat and oil, biodiesel, fish oil, protein and hydrolysate, gelatin



Stillage, corn oil, Distillers' dried grains with solubles (DDGS)



Native and modified starch from corn, wheat, potatoes, tapioca, cold-soluble starch, HFCS, glucose syrup, dextroins, polyols (sorbitol, mannitol), gluten, and other proteins from starch sources and soy

## The right ingredients

### for your success

Need to maximize yield from your raw materials? Improve the purity of your product? Whatever your specific need, our aim is to put all the right solutions at your fingertips to ensure success. With one of the broadest ranges of experience in the global food industry, we have a full array of tools for optimizing both performance and quality. How can we help you?

### **Expertise that comes full circle**

Whatever your food production needs, we most likely have both the technology and process knowledge to help you create it. Whether it's baby food or instant coffee, daily items like juice and olive oil, or even fine cheeses and champagne. It might be a white-label product that hits the right price point with the highest

margin, or an enriched sterile byproduct. Or maybe you want to create a niche product with uncompromising purity and an unforgettable taste. From the supermarket shelf to the local delicatessen, our expertise is always close at hand.

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A complete range for all your food separation needs









### A broader approach

### to tackling tomorrow's dairy challenges

What's the next big opportunity for your business? Despite having worked with thousands of dairy customers over the years, the answer to this question is never quite the same. Whether it's boosting your margin on white-label products or ensuring the superior quality of a branded product, it all comes down to your ability to choose from one of the industry's broadest ranges of separation solutions. Solutions that meet the fast-changing needs of today, and for years to come.

### A century's worth of insights

Under the Frautech, Gouda, and other brand names, we've applied our global resources to serving dairy producers of all sizes and applications throughout the world. This includes upgrades, process optimization, mechanical audits, and more. It's this know-how that we apply to some 150 dairy installations every year for customers like Nestlé, Arla, Fonterra, and other more local producers. Whether it's gentler treatment that preserves the quality of ingredients or a higher output with lower operating costs, it's all about providing the expertise you need to create pure, natural products that give you an edge on the supermarket shelf.

### Comprehensive range of solutions

You might be producing casein, lactose, or whey proteins. Or maybe it's cream, cheese, or probiotic yogurt. Whatever your business, you need reliable solutions that produce optimal taste and texture – together with a local partner who knows your production unit, the ideal machine for the job, and how to service it. Our solutions cover everything from clarifying separators, debacterizers, and skimmers to decanters, membrane filters, and dryers, among many others. With deep knowledge of the full range of dairy production processes, we provide some of the market's most efficient and reliable equipment for virtually any application.



### Key process steps

- Clarification of milk and whey
- Bacteria removal
- Skimming of milk and whey
- Cream concentration
- Membrane filtration
- Drying processes

- IVIIIK
- Cream
- CheeseQuark
- Soft cheese
- Butter
- Butter oil
- Baby food
- Whey protein
- Lactose
- Casein









### Gentle treatment, flawless hygiene Superior taste

It goes without saying that the manufacture of food for babies and infants needs to be of the highest quality, with absolutely no risk of contamination. At the same time, the process has to be highly efficient while producing that distinct, memorable taste. These are just a few of the reasons more producers around the world choose to partner with us.

Through our acquisition of Royal GMF Gouda of the Netherlands, we gained a market-leading storehouse of knowledge in all aspects of dried baby food manufacturing. This includes technologies covering the complete process line for drying, milling, mixing, and more - many setting new industry standards in hygiene and efficiency.

### **Unmatched expertise**

Under the name ANDRITZ Gouda, we continue to bring reliable and efficient solutions to leading baby food producers throughout the world. To date, we've installed more than 500 drum dryers and dozens of turnkey lines for baby food production. Capabilities range from design, engineering, and pilot plant testing to installation, commissioning assistance, and after sales service for single process steps on up to complete process lines.

### Setting the global standard

In the food industry, we are well known for our proprietary drum drying technology for dried baby food. It's a technology known for the unique taste, full gelatinization, and consistent quality of its end products. Over the years we've raised the benchmark even further, continuously optimizing our machines to set new hygiene standards and developing new process solutions to meet specific customer challenges. From our "kitchen" in Waddinxveen in the Netherlands, we can test baby food and cereal applications or even optimize your recipes to produce the roasting effect, bulk density, or film thickness your products demand.



### Key process steps

- Reception and raw ingredient preparation
- Recipe mixing
- Holding/buffer tanks
- Slurry pre-cooking
- Drum drying
- Millina
- Storage
- Weighing
- Packaging

- Dried infant food
- Dried baby food
- Breakfast cereals









### **Driven** by innovation

Seasonal microbrew? Soy milk? Or coconut water? The world of beverages is a crowded one to say the least. Whether you're producing beer, wine, juices, coffee, tea, or soy drinks, the pressure is on to create new, exciting sensations – and to keep them coming faster than ever before.

For customers like AB InBev and Eckes, quality and innovation go hand-in-hand. Backed by the most reliable equipment – which ensures optimal flavor, extraction, recovery, and uptime - they have the freedom to continuously innovate new product lines. This is where our 150 years of expertise in solid/liquid separation comes in.

### Wine

Within wine production, we have numerous installations and several test labs across the globe. This amounts to a full range of innovative solutions, including our dynamic crossflow (DCF) filter system. Flexible enough for red, white, or sparkling wine, the DCF makes it possible to achieve twice the throughput of comparable systems, with an unsurpassed 95% recovery rate.

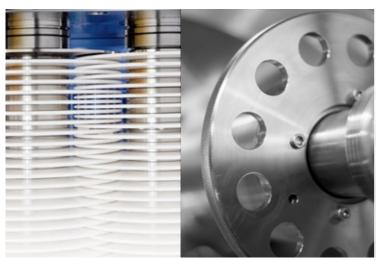
### Beer

Thanks to a partnership with renowned German brewery supplier Ziemann, you can engage the biggest and most efficient mash

filter press for the brewing industry. Our high-speed clarifier provides maximum separation efficiency at low operating costs in applications ranging from hot wort separation to final clarification before filtration. In addition, our beverage center in Vierkirchen, Germany, is equipped with the latest test devices, pilot machinery, and industrial-scale units to help you develop new processes - or upgrade age-old traditions.

### Fruit juice

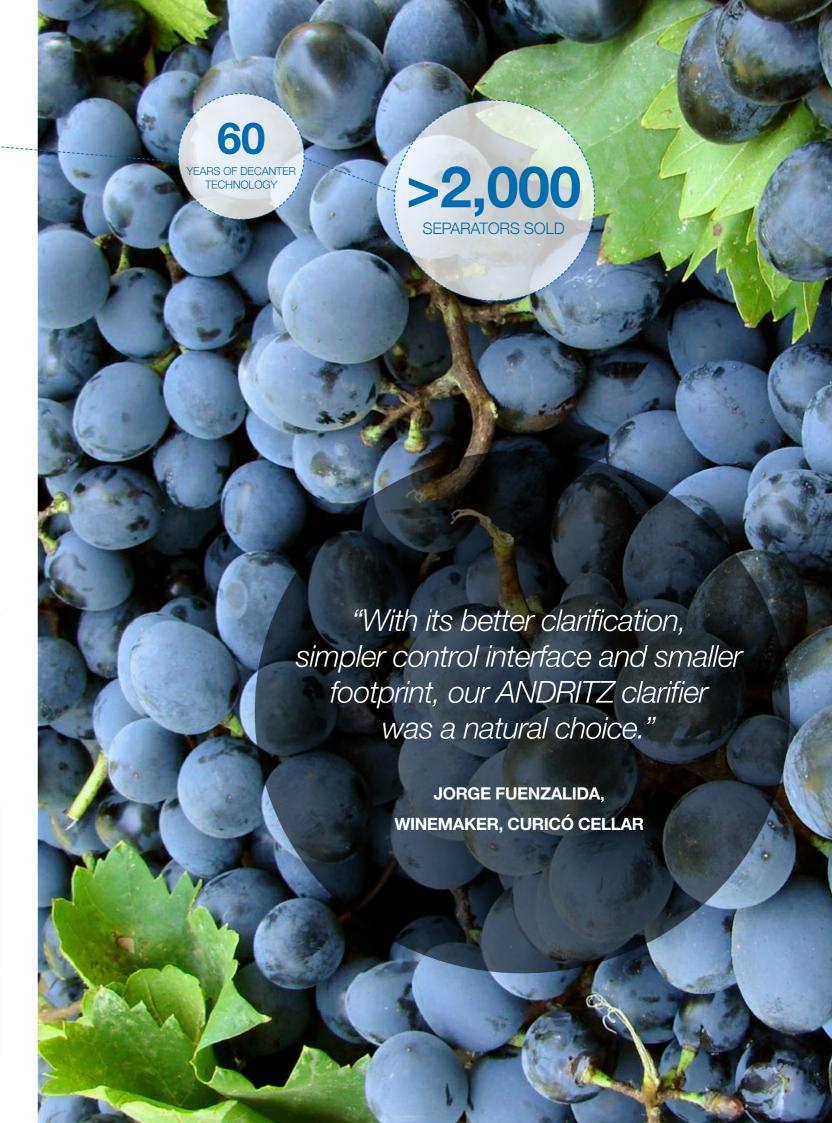
From international groups to family companies, the challenge is essentially the same: to boost yield and extract the best characteristics from fruits and byproducts. With pilot plants, service staff, and engineers near you, we're always nearby with industryleading solutions and process developers to support you.



### Key process steps

- Extraction
- Clarification
- Filtration
- Stabilization
- Recovery
- Dewatering

- Wine
- Beer
- Fruit juice Coffee
- Tea
- Soy milk



▲ Dynamic crossflow filter







### Vegetable oil

### Higher margins, lower costs

Whether you are producing palm oil, rapeseed oil, olive oil, or other edible oils, you want to be more competitive. Margins are tight. Taste is key. Sustainability is important. The challenges are as diverse as the industry itself. Which is why you need a separation partner that understands your process and can offer a wide range of solutions.

### Extending a lifetime by 30%

Innovative thinking is essential to meeting the future demands of vegetable oil producers. Take palm oil, for example, the world's most widely used vegetable oil and a business with razor-thin margins. Here, the challenge is to ensure 24/7 production, extracting as much from the palm fruit as possible. To support palm producers, we offer an innovative filter press plate design that avoids membrane breakages and extends membrane lifetime by up to 30% compared to conventional center-feed designs.

### Sustainable production

We are the only company in the world that can offer decanters, separators, filter presses, and a way to save 80% on hydraulic oil expenditures, thanks to our innovative Palm Olein Power Pack.

In addition, we can help manufacturers convert waste solids to energy. How? By installing one of our closed-loop biomass torrefaction plants. This gives you added energy while reducing greenhouse emissions.

### Global track record

Whether you are an olive oil producer looking for a specific type of decanter, a seed oil producer in search of an efficient separator, or a palm oil producer looking for a filter press, we have a diverse range of solutions. For more than 70 years, we've been supplying names like Cargill, Wilmar, Sime Darby, and Golden Agri. Our experience has not only made us wiser – it means we can act quickly.

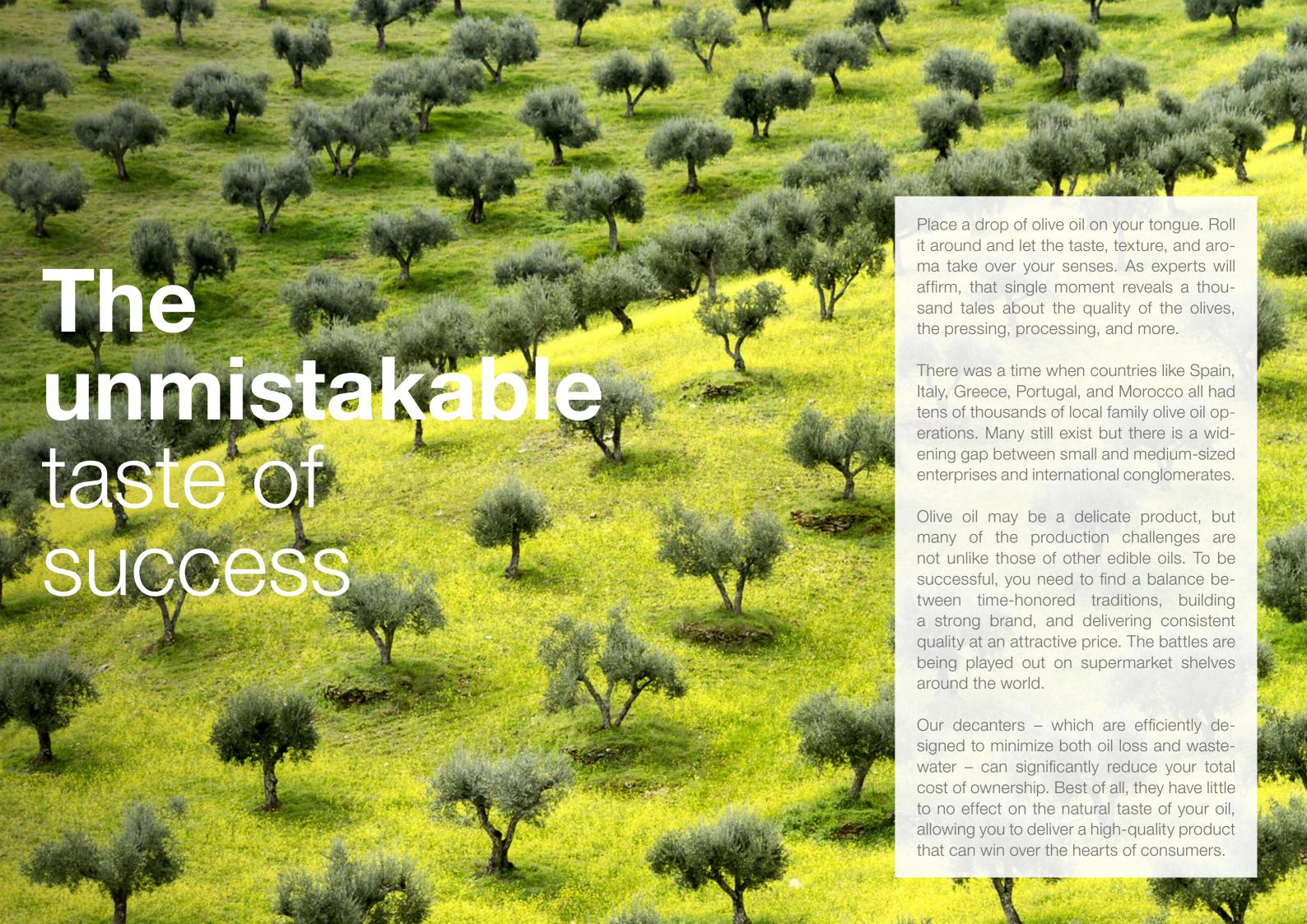


### Key process steps

- Pressing
- Extraction
- Clarification
- Purification
- Degumming
- Neutralization
- Fractionation
- WinterizationDewaxing
- Recovery

- Crude palm oil
- Palm olein
- Palm stearin
- Ouper ordin
- Hard stearin
- CBE
- CBS
- Oleochemical
- Hydrogenated oils/
- fatty acids
- Soybean oilRapeseed oil
- Sunflower oil
- Olive eil
- Olive oil







Ever since our first research and development test in 1913, we've been partnering with customers in the food industry to improve their success. Today, we offer a wide range of global, regional, and mobile R&D test capabilities to support dairy, vegetable oil, beverage, baby food, and other types of customers. In total, our 40 different labscale machines are performing dozens of tests for new applications – 365 days a year.

### Better before cheaper

We believe that investing in R&D in solid/liquid separation is critical to meeting the demands of tomorrow's food industry. We are not alone. According to a study of 25,453 global businesses published in the Harvard Business Review, the most successful companies are those who are innovating to make things "better before cheaper".

Whether you are producing yogurt, vegetable oil, or a new type of beer or baby food, you can find ways to do it better. How do we know? Because we do this every day for our customers, many of whom are discovering ways to improve the purity, texture, and taste of their products. Others are more focused on finding ways to optimize their processes. The secret to success is often based on trust, creative collaboration, and goal-oriented thinking – not to mention a 360-degree range of possible solutions.

### R&D close to you

Because many of our customers work in perishable food industries, we understand that shipping of samples to our labs is not always possible. That is why we provide mobile test equipment close to you. It means you can test your end product on site – and be assured of scaling up easily to industrial scale.

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# Put 150 years of **OEM** experience

to work

Need to optimize your process? Boost availability? Ensure non-stop productivity? When you work with ANDRITZ SEPARATION, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation. Put our in-depth knowledge of separation equipment and processing to work for you.

### Vast experience through large installed base

With an installed global base of more than 55,000 solid/liquid separation solutions and systems, you can imagine that we take service seriously. Wherever these customers are located, we work very closely with them to maximize uptime and boost efficiency.

### Well-known OEM brands

Some customers know us as the people with ANDRITZ SEPARATION on our overalls. Others have come to understand that we are the OEM behind former brand names like Netzsch Filtration, 3Sys Technologies, Bird, KHD Humboldt Wedag, Rittershaus & Blecher, Guinard, Lenser, KMPT, Escher Wyss, Royal GMF Gouda, Frautech, Vandenbroek and Sprout Bauer, companies who all have been acquired by ANDRITZ. But frankly, we are capable of servicing and supplying spare parts for nearly all brands of solid/liquid separation equipment on the market.

### Local support backed by global expertise

Our service philosophy is simple: One phone call, one contact person, one dedicated team that speaks your language and knows your equipment and process. This is not an empty promise. It is backed by a network of 550 service specialists for solid/liquid separation equipment and systems as well as service centers all around the world.

### A true full-service provider

Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ SEPARATION is a 360-degree service partner. From initial consulting through to service agreements, plant optimization, automation, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. In short, we've got you covered.







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