



FEED AND BIOFUEL

ANIMAL FEED TECHNOLOGIES

HOW CAN WE HELP FEED YOUR BUSINESS?

ANDRITZ

ENGINEERED SUCCESS



Feeding and fueling the planet

Dedicated to feeding and fueling the planet

ANDRITZ is vital to ensuring a reliable global supply of aqua feed, animal feed, pet food, and biofuel. With full process lines accounting for half the world's production of aqua feed and biomass alone, we continuously support leading producers in achieving the highest levels in safety, quality, and control from feedstock to final product.

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LET'S FEED AND FUEL YOUR BUSINESS

The future of food and energy is full of ambitious ideas such as novel nutrient blends, unique feed properties that boost conversion rates, and high capacity process lines that virtually eliminate waste. To seize upon these opportunities, feed and biofuel producers demand a partner they can trust to deliver the right production capacity with the right service and expertise today – and for decades to come.

As a partner with more than 180 years of industry experience, no one knows more about these opportunities than ANDRITZ. From initial feedstock analysis to grinding, conditioning, and drying. From extrusion and pelleting all the way through to the largest parts and service supply chain on the planet. Together with leading producers in all major markets worldwide, our knowledge, services, and solutions continue to drive the evolution of tomorrow's feed and biofuel production.

Your know your product. We know productivity

The ability to produce high quality, high-performance feeds efficiently and effectively, comes from the use of specialized processing technology and it is best when it comes from a company with an in-depth understanding of each step in the process.

ANDRITZ manufactures and supplies all the machine in the feed pelleting line and partners with each of our customers to design a solution that best matches their specific processing needs.

ADVANCED TECHNOLOGIES

We are strongly committed to excellent performance and the quality of our products, thus making us a strong partner for our customers. Our focus is on innovation and keeping up with the technological developments. We always strive to provide our customers with the newest technologies that will result in:

- Better and more efficient production
- Minimizing operation cost
- Maximizing energy efficiency
- Environmental protection considerations

We give our customers the advanced technologies that will ensure them a competitive advantage.

FEED PROCESSING TECHNOLOGIES

Our pelleting plants are designed to provide the best food safety and traceability results, assisting production operations in meeting the hygiene and regulations requirements that assuring animal health and welfare.

ANIMAL FEED

Our animal feed processing technologies appeal to both commercial feed millers producing for onward sale, as well as to farmers making feed for their animals.

Our pelleting technologies enable our customers to create their own unique recipes and combinations of ingredients – making sure that the animals are given the right amount of vitamins and protein.

COMPLETE PLANT SOLUTIONS

Our solutions are simple and effective. We strive to be a "one-stop" all-round supplier for all pelleting needs. Whether it is individual process machines, complete processing lines, or spare parts and services that you

need – ANDRITZ will take you smoothly from raw material intake to finished feed bulk loading.

PROJECT MANAGEMENT

Our easy-to-operate plants, adaptable systems, short implementation times and proven performance make us the stand out partner for the animal feed processes. Our core competencies, leading technologies, and international business units work together in perfect unison. The ANDRITZ staff commitment and dynamics truly distinguish us from other suppliers. Experienced project managers teamed with specialized, subject area experts ensures that we exceed your expectations every time. Through outstanding performance, mastery of key process technologies, and engineering capabilities, ANDRITZ has become a leading global supplier of pelleting equipment and systems.

Being the largest supplier worldwide of equipment to the feed industry with more than 180 years of experience, five manufacturing facilities, and a global network of sales and service companies, plus a supplementary worldwide distribution network, we are confident in claiming that ANDRITZ is able to supply the optimum technology solution for any possible need in animal feed plants.

WE OFFER

- Process line solutions
- Unit machines
- Technical consultancy
- Engineering services
- Aftermarket service and support



MAIN MACHINES IN THE ANIMAL FEED PROCESSING TECHNOLOGY

Optimill



SPROUT Gear mill



US 43"



PM615



US 38"



FeedMax



Optimix



Paladin



Conditioner CM



501 Ace



Supplier of key machinery and complete process plant solutions

BULK INTAKE SYSTEM WITH ASPIRATION FILTER

Bulk intake hopper and conveying system.

INGREDIENTS SILOS AND HOPPER SCALES

Hopper scales for weighing of individual ingredients in formula mixtures.

LIVE BIN

For pre-mixing of feed ingredients prior to grinding to ensure optimum hammer mill performance and homogeneous particle size distribution.

OPTIMILL HAMMER MILL

1500/1800 rpm grinder in a variety of sizes for low-fat raw materials and high capacities. Capacity range: up to 60t/h

MULTIMILL HAMMER MILL

3000/3600 rpm hammer mill with small hammer-to-screen clearance. Screen perforations as small as 0.75 mm (1/32"). Capacity: up to 25 t/h.

ROLLER MILL

Roller mills in 1, 2, or 3 layers with easily adjustable and efficient size reduction of grains to provide narrow particle size distribution.

ASPIRATION FILTERS

Fully automatic, continuously operating bag filters cleaned by compressed air. A variety of filters support any need for process air filtration throughout the entire pelleting plant.

PREMIX AND MICRO-INGREDIENTS WEIGHING UNIT

Micro-ingredients weighing unit for weighing/metering of premix and micro-ingredients in formula mixtures.

OPTIMIX PADDLE MIXER

OptiMix paddle mixer for dry mixing in connection with addition of high amounts of liquids. Capacity: up to 40 t/h. Batches: up to 6 t.

CONDITIONER

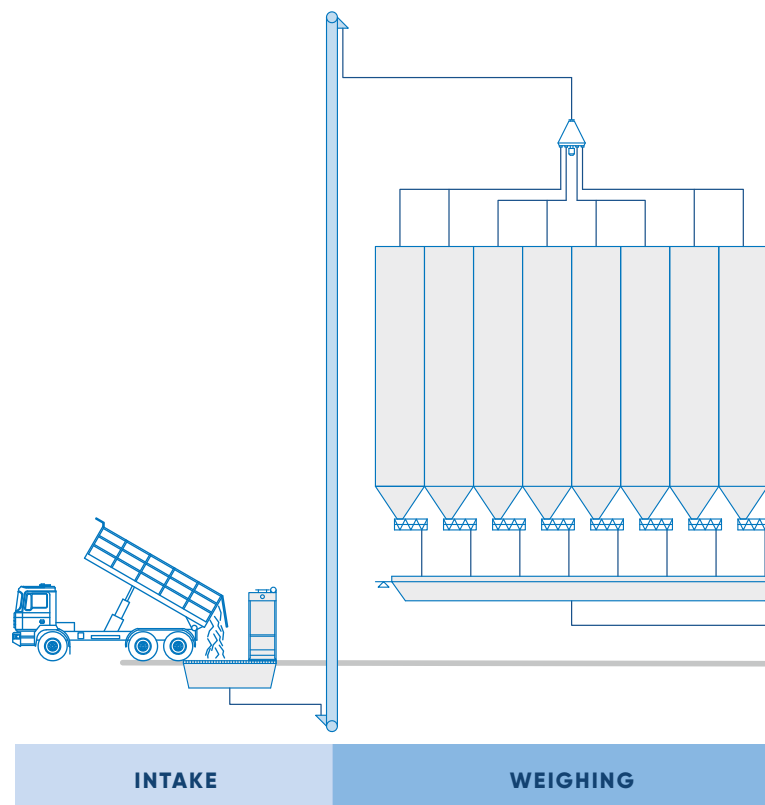
CM series for pre-conditioning with addition of liquids and steam, providing optimum mixing and retention time. CRT series for controlled temperature and time, including first-in-first-out solutions for unmatched feed hygiene. Hot start conditioning also available.

FEED EXPANDER

Mechanical/thermal super-conditioning and stabilization of feed mixture. Capacity: up to 80 t/h.

PELLET MILL

Pellet mill design with focus on high performance, reliability, feed hygiene, ease of maintenance, controllability, and low energy consumption. Complete range of belt-driven and gear-driven models available, matching any possible feed plant preference. Capacity: up to 100 t/h.



COOLER

Vertical counter flow coolers in several models, suitable for the exact types of feed from any feed mill.

Capacity: up to 60 t/h.

CRUMBLER

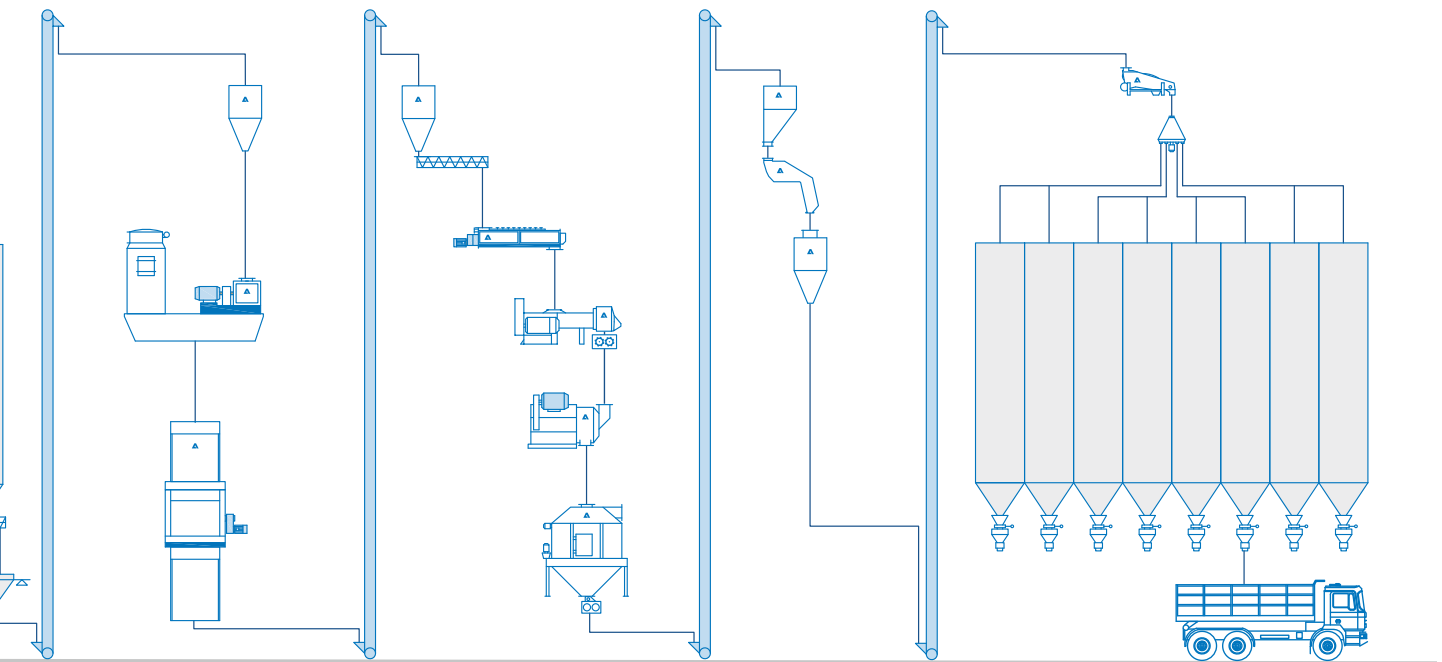
Crumbler for controlled crumbling with optional automatic feeding and with roll adjustment. Capacity: up to 40 t/h.

MICRO-FLUID ADDITION

MFS micro-fluid system for accurate addition of liquid enzymes, vitamins, aromatics, and pigments, for stand-alone use or use in combination with oil/fat coating.

PROCESS AUTOMATION

Automation systems are available as basic control systems or as fully automatic systems for control of each process machine or of complete process lines. The system ensures cost-effective processing and consistent feed quality. The plant design with integrated automation solutions provides full traceability of ingredients and process parameters.



GRINDING & MIXING

PELLETING & COOLING

COATING

SILO / OUTLOADING

Efficient feed processing technology

Industrially produced feed is undergoing a continuous quality improvement process to keep pace with the needs of the agricultural industry. ANDRITZ pellet mills represent state-of-the-art technology, ensuring high-quality feed at minimum operating costs.

ANDRITZ OFFERS A CLOSE CO-OPERATION BASED ON:

- State-of-the-art technologies
- Complete product range to fulfil every need for process lines
- High performance
- Superior product quality
- PC-based automation and process monitoring

CUSTOMIZED SOLUTIONS

Products from ANDRITZ ensure process consistency and flexibility. With multiple design features and modular systems as a starting point, our engineers are capable of designing a solution that meets the demands for high production capacity and quality.

FORMULA MANAGEMENT

After a formula has been entered into the advanced process control system, the complete process – from intake of ingredients to finished product – then begins. The operator can follow the entire process on-screen. The continuous

data logging system ensures full process and product traceability, and the automation equipment includes preventive maintenance systems.



A The Optimill consists of a hammer mill for raw material grinding of normal to coarse structured feed products, such as cattle, pig and poultry feeds.

B The OptiMix series combines the best of current mixing technology with proven features from our long-established family of mixers, offering short and efficient mixing time.



Keep your business growing with our global service network

Our excellent aftermarket service and support is what sets us apart from our competitors. Our cooperation with our customers does not end with the sale – or the machine installation. The good customer relationship is extended through important after-sales service and support.

OUR SERVICES

Our highly skilled and motivated employees stand ready to help you with:

- After-sales services, support, and follow-ups
- Spare and wear parts, maintenance, and repairs
- Process optimization
- Training of plant operators

FIELD SERVICES

We offer our customers excellent field services, where our service technicians come to you and your plant for assistance. The depth and experience of our field service specialists is unmatched – backed by the full knowledge and technical support that only the equipment manufacturer can provide.

BENEFITS

There are several benefits to be gained from continuous upgrades, optimizations, and services on your equipment:

- Maximum production
- Process knowledge and experience
- Reliability and cost efficiency
- Reduced life cycle costs
- Short and effective shutdowns
- Improved energy efficiency



AFTERMARKET

Service and support by
ANDRITZ Aftermarket



ANDRITZ: Iceland's top feed factory rises from the sea

LIFLAND

Lifland, Grundartangi, on the coast of an inlet just north of Reykjavik.

In 2006, an Icelandic compound feed company decided to make a major investment in the future. The goal: To build the country's most modern, flexible and productive feed mill for a wide range of livestock. With support from ANDRITZ, this 100-year-old company is now successfully leading the way into a new era of growth.

When Thorir Haraldsson decided to modernize his operation, he knew he needed an engineering partner he could trust. "I contacted a number of suppliers," explains Haraldsson, Director of the Lifland animal feed mill, "and ANDRITZ was the only one able to come to our site to design, deliver and commission a complete process line factory from the ground up. No one else had all the capabilities I needed."

TAILORING THE DESIGN

The ANDRITZ team arrived in Grundartangi, on the coast of an inlet

just north of Reykjavik. Together with Haraldsson, they discussed the barley, wheat and vitamin formulations Lifland intended to use. Raw material storage, silo sizes, and cooler systems were defined, and ANDRITZ proceeded to design a state-of-the-art feed facility, including all of the elevators, conveyor systems and ancillary equipment necessary for a fully integrated factory.

Regrettably, in 2008 the global financial crisis struck Iceland with full force, putting the project's finances on hold. Through it all, a strong collaborative





partnership ensued, knowing that new financing would eventually be secured and the project moved ahead as planned.

THE RISE OF A MODERN FEED MILL

When the team of engineers and electricians arrived from Denmark, Lifland had constructed a new quay in Grundartangi harbor from crushed lava stones, and less than a year later, in October 2010, the completed plant was inaugurated with a celebration of 400 visitors, including several government ministers. Together, Lifland and ANDRITZ built Iceland's largest feed mill, capable of producing 12 tons of feed per hour.

With the help of training and commissioning assistance from ANDRITZ, Lifland's technicians were soon producing at full capacity. An advanced double cooler system made it possible to change recipes in minutes – a significant advantage for processing a broad range of feed products for Icelandic horses, cows, sheep, pigs, broilers, and layers. By the end of the first year, Lifland had produced a full 24,000 tons of feed.

Growing capacity, enhancing control. Fortunately, Haraldsson had the foresight to request a facility with sufficient space to expand, and in 2015 an additional process line was designed and installed. Other fine-tuning and upgrades were done simultaneously on the first line, which had been operating around the clock, five days a week. "This meant that any maintenance work had to be completed on the weekends," says Haraldsson. "With the second line, we can now produce almost twice the volume while working just two 16-hour shifts per week."

Thanks to the combination of high performance, low energy consumption, and rapid changeover times, the Lifland factory's products are now extremely competitive in terms of price and quality. The new line is used primarily for broiler and layer feed, while the first line continues to change recipes for additional products including, most recently, cattle feed.

"I'm very pleased with how this partnership worked out. When I first stood here and pointed to where I planned to build, the ANDRITZ staff looked at me and said, 'But it's just the sea! Where is the land?' Here we are today in that same spot, producing 40,000 high-quality tons per year in the middle of a fast growing new seaport. It's a very exciting time."

THORIR HARALDSSON

Director, Lifland animal feed mill, Iceland





GLOBAL SUPPLIER – LOCAL PRESENCE

With sales, service, engineering, manufacturing and production sites located all around the world, ANDRITZ Feed and Biofuel is truly a global organization with a local presence. ANDRITZ is vital to ensuring a reliable global supply of aqua feed, animal feed, pet food, and biofuel. With full process lines accounting for half the world's production of aqua feed and biomass alone, we continuously support leading producers in achieving the highest levels in safety, quality, and control from feedstock to final product.

How can we help grow your business?

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