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SOLUTIONS.
TOGETHER.

CONVEYING | DRYING | SEED PROCESSING | ELECTRONIC SORTING | STORAGE | TURNKEY | SERVICE

CIMBRIA NEWS 2017/18

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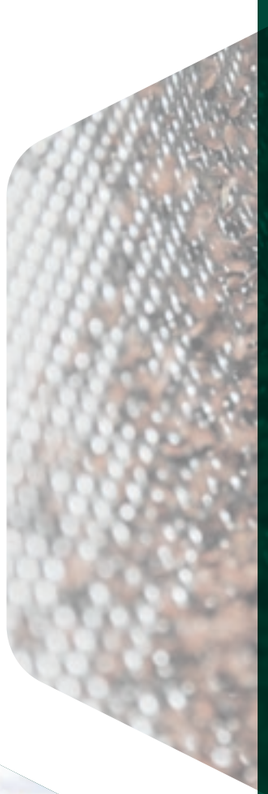
TABLE OF CONTENTS

YOUR PRODUCT OUR KNOWHOW

CIMBRIA NEWS 2017/18



GLOBAL PERSPECTIVE – LOCAL FOCUS

Søren Overgaard, CEO - sov@cimbria.com

GLOBAL PERSPECTIVE – LOCAL FOCUS

Cimbria is an international enterprise whose headquarter is in Thisted, Denmark. The firm was founded in 1947, which meant that in 2017 we were able to celebrate our 70th anniversary as one of the world's leading suppliers of projects, products and services to the grain, seed, animal feed and food industries. During the past 70 years we have accumulated a product portfolio and knowledge base that make Cimbria a relevant partner for our customers with regard to the delivery of good, reliable solutions based on internal technology. Our employees' knowledge, our customer focus and our ability to execute projects internationally have made us the global supplier we are today. Our global reach has been further boosted since Cimbria became part of the AGCO Group in 2016. Work has subsequently focused on collaboration with other AGCO brands such as GSI, which occupies a leading position in the delivery of round steel silos used for the storage of grain.

Cimbria's mission is to contribute to the creation of a sustainable link between efficient production and optimum utilisation of agricultural crops, whilst at the same time ensuring due consideration of man and the environment. We achieve maximum mechanical utilisation with minimal environmental impact, and our equipment and projects play a significant role in terms of securing the global food supply.

Thousands of Cimbria plants are in operation in many parts of the world, running in vastly different conditions and handling a wide range of products. This versatility has resulted from research and development over a period of 70 years. This is the best reference for our expertise and competitiveness in a global market.

Cimbria's core business areas are the grain and seed segments, where our primary markets are grain, seed, animal feed and foodstuffs. Cimbria has been a market leader in the seed corn segment for many years, and, as a member of the AGCO family, we now enjoy a position at the forefront of the grain segment. Our plants and equipment, however, also have applications in other markets, such as breweries, malting houses, fertiliser storage facilities, biomass treatment plants and cement factories, in addition to the handling of other bulk goods.

Credibility, quality, efficiency and flexibility are just some of the criteria that have made Cimbria a relevant partner for many of our customers all over the world.

We design, develop, manufacture and install customised solutions, ranging from stand-alone machines, through complete processing lines and finally to major turnkey plants that feature advanced automation and information systems. Our after-sales service ensures that Cimbria solutions generate optimum yield for our numerous customers for many years, whilst constant innovation ensures that our customers always enjoy the benefits of the latest technology.

Knowledge of our customers' business areas – including their needs, wishes and requirements – enables Cimbria to deliver fully integrated and efficient solutions. Over the decades, Cimbria has acquired the requisite skills and knowledge of crops and agricultural logistics, with these skills and knowhow then being applied to develop our solutions in consultation with our customers. Our experience within agriculture, combined with reliable solutions in terms of manufacturing, engineering and project management, means that Cimbria is a strong and credible partner for customers for whom it is crucial that their projects are completed on time, stay within budget and deliver maximum return on their investment. Cimbria's expertise within agricultural production and processing is part of the service we provide in order to optimise plant performance and to ensure that the operators are trained to exploit the full potential of Cimbria products or solutions. We have the same goals as our customers, as reflected in our core values: "Solutions Together".

Our vision remains unchanged: that Cimbria shall maintain and further develop its position as a global, innovative and leading supplier of high-quality products and processing equipment for the treatment of grain and seeds, as well as the handling of animal feed, foodstuffs and other bulk goods. Cimbria's automated integrated solutions and our knowledge of our customers' applications enable us to support our customers with further information in terms of their production. This information is increasingly being made available in Cimbria's automation and information systems, and our customers use this information to optimise their value chain. Cimbria can therefore help our customers with regard to conversion to Industry 4.0 and help these customers to reap the rewards of new information technology.

In addition to our more than 950 dedicated employees, we are represented by a large number of Cimbria and AGCO offices, dealers and agents throughout the world, meaning that we are always close to our customers and in a position to provide service. Their dedication and capabilities are among the key factors in our success.

In this magazine you can read about a selection of our recent market activities and latest technology.

The Cimbria Group has offices in:

Denmark · Austria · Czech Republic · India · Italy · Spain · Kenya · Egypt · Turkey · Malaysia · Morocco · Russia · Thailand · Ukraine · United Kingdom · Germany · Kazakhstan

As well as Partners in:

Argentina · Australia · Bangladesh · Belgium · Brazil · Bulgaria · Canada · Chile · China · Colombia · Ethiopia · Finland · France · Germany · Greece · Hungary · Iraq · Ireland · Israel · Italy · Japan · Kazakhstan · Lithuania · Mexico · Montenegro · Netherlands · Pakistan · Peru · Philippines · Poland · Portugal · Romania · Russia · Serbia · Slovakia · Slovenia · South Africa · South Korea · Sweden · Switzerland · Taiwan · Turkey · United Kingdom · USA · Vietnam

SOLUTIONS. TOGETHER.

Lars Nørgaard - lno@cimbria.com

THE COMPLETE CIMBRIA AND GSI PRODUCT RANGE REFLECTS OUR ROLE AS GLOBAL LEADER

For many years, Solutions Together has been Cimbria's slogan. The message carried in this slogan is that the optimum customised solution is best achieved via close collaboration between us and our customers. Cimbria is an expert in developing and manufacturing equipment and complete plants of the highest quality, whilst together with our customers we individually define the requirements, expectations and particular wishes they may have to individual processes and thereby the final product.

In 2016, Cimbria became part of AGCO, the world's leading agro-industrial enterprise, which boasts brands such as Fendt, Massey Ferguson and Valtra. Alongside another globally recognised AGCO subsidiary, the silo manufacturer GSI, Cimbria has thus become the world's leading supplier of equipment, complete solutions and technologies for the industrial grain and seed sector today.

This adds yet another dimension to the concept of Solutions Together.

The activities of Cimbria and GSI alone within AGCO result in a total of more than 20 production sites all over the world and a sales and service presence that provides global coverage and enables professional insight into the local conditions that apply in each and every market. We know that the idea of one size fits all does not apply to our customers.

The complete product range reflects our role as global leader. Developed and optimised over the decades by the industry's most experienced experts, our range covers everything from stand-alone machines to fully-fledged plants, including automation, project management, installation, supervision and training, as well as subsequent service and continuous optimisation of the plant concerned.

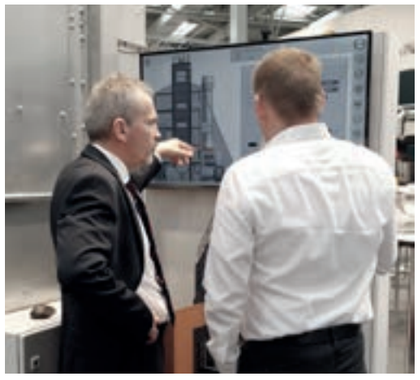
The agro-industry is in a constant state of development, the clearest evidence of which can be seen at the world's biggest trade fair within the industry: Agritechnica in Hannover, Germany. This trade fair, which is held every two years, attracts around 450,000 visitors and 2,800 exhibitors from all corners of the globe.

At this year's Agritechnica in November, Cimbria & GSI presented a string of new, ground-breaking technologies, including our new, unique Eco-Logic continuous flow dryer, which is a state of the art, energy efficient and technologically advanced dryer.

Another new announcement that won Agritechnica's coveted silver medal for innovative technology and which attracted a great deal of interest at the fair was the new GSI Flexwave concept, which is set to be launched in 2018. To a great extent, this solution makes previous solutions for final emptying of silos redundant, in addition to which the need for expensive substructures in connection with silos with hopper outlets is eliminated.

Furthermore, a number of exciting new products and optimisations in terms of colour sorting and mechanical handling, cleaning and sorting were presented. An overwhelming number of visitors at the GSI/Cimbria stand were also invited to take part in technical and professional discussions of current and future wishes and possibilities, thereby taking the first step towards Solutions Together.

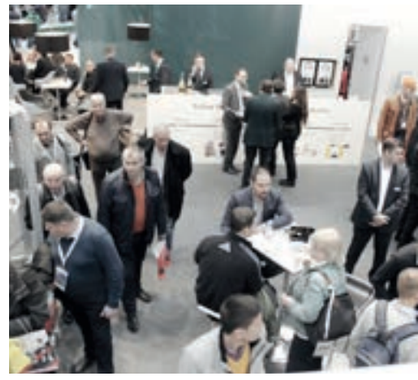
ECO-Logic - intelligent drying technology launched at Agritechnica



Olav Knudsen, R&D manager, explains the important features of the ECO-Logic Dryer Control System

Cimbria SEA Chromex color sorter with a 10 m diameter GSI silo demo unit in the background

The GSI FlexWave system was awarded a Silver Medal at Agritechnica for innovative technology



Busy activity on the Cimbria & GSI booth

TEAMWORK FROM DAY ONE

Andreas Fröhlich - afr@cimbria.com

“Marrying the right one” is one of the most important aspects of life, and GSI and Cimbria can happily report that our merger was absolutely the best thing that could have happened to both parties, which are now serving the worldwide grain market hand-in-hand with the best products and solutions available. In good times, and in even better times to come …

Within a period of just one year since cooperation began, GSI and Cimbria have realised a number of silo installations for European customers, such as, for example, Bulgarian sunflower producers “Brevis” and “Ilchovski”.

This season we installed a 6,000-tonne silo plant for BayWa Rohrbach in the south of Germany. Cimbria supplied the reception unit with intake pit and pre-cleaner, which is an air sifter, the feeding and pre-suction unit of Delta with air recirculation. The pre-cleaner and loading chute are installed in a very clever and compact manner within the intake drive right above the intake pit. The 150-t/h conveying equipment is also produced by Cimbria and includes chain conveyors and bucket elevators.

The GSI silos are all flat-bottom type. There are six in total, each with a holding capacity of 1,000 tonnes. Load-out conveyors and the aeration system have been installed in the bottom ring of the silo, which is filled with concrete up to a height of 900 mm, with integrated channels for chain conveyor and aeration. This clever design keeps all the essential systems above ground level, which is vital for keeping them clean and dry in the event of heavy rainstorms.

On top of the world - together ...

Ilchovski Bulgaria

Baywa - pre-cleaning & outloading

BayWa Germany - View over Silo top

Brevis - Cimbria and GSI silo and cleaning installations

CONTINUED SUPPLY FOR THE RUSSIAN MARKET

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THE QUALITY SEED IS HIGHLY VALUED NOT ONLY IN THE STAVROPOL REGION, BUT ALSO IN THE NEIGHBORING CIS COUNTRIES

New Seed Processing Plant in Stavropol Krai, Southern Russia

In August 2017, OPH "LUCH" launched the second Cimbria plant for the preparation of seeds of various crops. The ceremony was attended by the Governor of the Stavropol Region, Mr. V. Vladimirov, who clicked on the symbolic button.

The company was founded in 1992 on 1,044 hectares of arable land. Over the years, the company has grown, with the total area of farmland now standing at 22,000 hectares. The quality seeds from OPH "LUCH" are highly valued, not only in the Stavropol region, but also in the neighbouring CIS states of Armenia, Turkmenistan, Azerbaijan, Tajikistan and Kyrgyzstan.

OPH "LUCH" approached Cimbria and the first discussions on the subject of a new seed plant took place. In spite of political and financial challenges, Mr. Dontsov G.F., General Director of OPH "LUCH", decided to give the go-ahead for the new project.

Cimbria was awarded the design contract to develop the design and layout of the new complex, including drawings for the steel structure to be manufactured locally.

The equipment contract was signed in 2016 and installation of the new plant started in late 2016.

The new plant provides a full cycle from reception and intake, through pre-cleaning, drying and storage and finally to seed processing. It is a universal design capable of working with seeds from many cultures – the seed line (10 TPH in wheat) includes fine cleaner, indented cylinder, grader for grading into 3 grades, gravity separator, colour sorter and treater, whilst for gentle handling of the seed material, Cimbria Z-elevators are used. The complete facility is operated from a Cimbria PLC and PC control and automation system, in addition to which the silos are equipped with Cimbria Unitest System for monitoring seed quality during storage. The order follows a previously supplied order for a 10 TPH grain seed line with fine cleaner, indented cylinder, gravity separator and treater.

Second Huge Silo Project for "Sigma" Group, Russia

In 2017, Cimbria completed the second major silo plant for the Russian "Sigma" Group. The new 162,000 m³ silo plant is located in Mayachny, 250 km south of Ufa in the Republic of Bashkortostan, and acts as a storage facility for their new 1,500 TPD sunflower oil extraction plant.

The first stage of the plant, consisting of intake & pre-cleaning, drying and the first four silos, was installed in 2016, with another fourteen silos being supplied and installed during the couwww-Wrse of 2017.

The complex is equipped with Cimbria Chain Conveyors and Bucket Elevators, 2 pre-cleaning lines, each with a Cimbria Drum Scalper and Mega screen cleaner, and 2 continuous flow dryers. The entire facility is operated from a Cimbria PLC and PC control and automation system, in addition to which the silos are equipped with a Cimbria Unitest System for monitoring seed quality during storage. Cimbria has provided design and engineering of mechanical and electrical works, as well as supervision of installation.

Cimbria began cooperation with "Sigma" Group in 2012, with the supply of a Cimbria ECO Master Dryer, a Drum Scalper and 2 Mega cleaners. In 2014, a 90,000 m³ silo facility was commissioned and handed over to "Sigma" Group.

OPH "LUCH" seed cleaning line

Silo plant for Sunflower located in Mayachny, 250 km south of Ufa in the Republic of Bashkortostan,

NEW FORAGE & TURF SEED PLANT IN CANADA

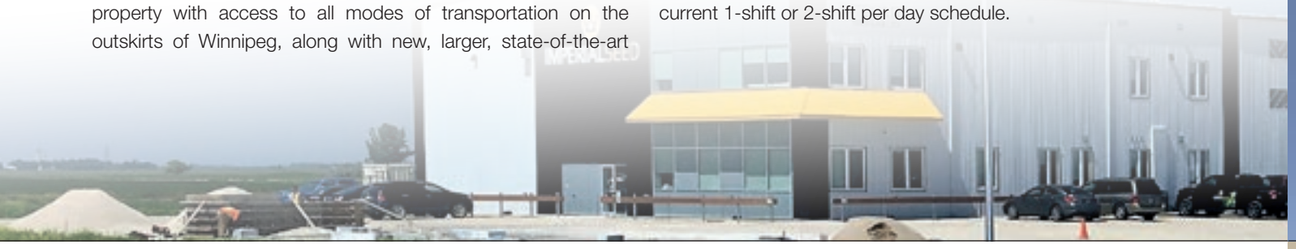
Mark Metcalfe - mmetcalfe@nexeed.ca

Imperial Seed has been a Winnipeg-based operator in the global seed trade for over 60 years and is one of the longest tenured seed establishments in Canada. The company concludes contracts with Western Canadian growers for the production of a wide range of forage, turf and oat seed varieties. Imperial then processes, packages and distributes its seed product worldwide to customers in Asia, South America, Europe, New Zealand and, of course, within North America. The company has also maintained an accredited seed laboratory as part of its operation over the years.

Imperial Seed was based in a facility in the heart of the city of Winnipeg for over 60 years. The company's original facility was a coal shed, repurposed for seed processing and storage. Facilities at the site were expanded many times between the 1950s and 2016, evolving to increase storage and processing capabilities. Following a change of ownership in 2008, renewed focus on growth led to the final extension of the facility that took place in 2012. This increased seed cleaning capacity approximately two-fold, thanks to the addition of a new Cimbria Delta 107 Super Cleaner.

Following the 2012 expansion and experiencing yet further growth, planning for a new facility in a new location commenced. This would give Imperial the opportunity to use a piece of vacant property with access to all modes of transportation on the outskirts of Winnipeg, along with new, larger, state-of-the-art processing and storage capabilities. Imperial Seed President, Kurt Shmon, had great confidence in Cimbria based on equipment performance and local service, and wanted to explore what else Cimbria might be able to contribute to this project. Nexeed Inc., as Cimbria's local dealer in Canada, was invited to the discussions with a view to broader adoption of Cimbria solutions throughout the process flow. Nexeed was able to provide advice on process flow and plant layout during the planning phase.

The resultant facility has 1,300 square metres of indoor floor space for offices, seed laboratory, seed processing and warehouse storage. In particular, we note that there are three separate processing lines capable of cleaning a wide variety of seed types to the highest standard. Cimbria equipment in the plant includes a total of three Delta 107 Super Cleaners, one Cimbria 184 de-awner, one Cimbria Heid GA210 and one Cimbria Heid GA310 gravity separator, as well as three Cimbria cyclofans for air supply and dust separation. In-line seed conveying is handled by Cimbria EC5 bucket elevators and an RL3 drag conveyor. The design and supply of many of the machine stands and operator platforms shown in the photos were also contributed by Nexeed for the project. The plant was successfully commissioned late in 2017, allowing Imperial Seed the desired additional capacity as planned, as well as the opportunity to grow by adding to its current 1-shift or 2-shift per day schedule.



New Seed Plant in Winnipeg, Canada
Topic Imperial Seed – a new plant built with Cimbria cleaning & conveying equipment.

ECO-LOGIC – INTELLIGENT DRYING

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The ECO-Logic dryer was introduced to Cimbria's customers at the recently held Agritechnica exhibition, with the ECO-Logic as one of the main exhibits for Cimbria. During the exhibition many approving remarks from customers was given to the new design and the ways the customer requirements are incorporated in the new design.
For customers, gentle and uniform drying with optimum energy consumption are essential, in addition to a high level of automation and remote control, low dust emission and low noise levels. These requirements are augmented by demands for high reliability and availability, as the dryer has to operate without interruption during the harvest and drying season. A continuous flow dryer consists in principle of three sections: The heating section, the dryer column and the exhaust section. In the heating section the ambient air is heated and mixed with the recirculated air and is led into the drying column via hot air ducts. In the drying column the heat of the drying air evaporates the moisture in the grain, whilst at the exhaust section the drying air is expelled through the exhaust fan and the dust separation devices.

Gentle and uniform drying

The main objective in the heating section is to obtain a completely uniform temperature at the dryer column inlet. For the ECO-Logic™ dryer a hot air mixer was designed by utilising Computational Fluid Dynamics (CFD) analysis and this air mixer ensures a maximum +/- 5° C tolerance of the drying air to guarantee even, accurate and gentle drying of the grain.
The discharge device of the dryer column ensures an even discharge of the grain across the entire outlet area of the dryer. The discharge principle is based on Cimbria's well-known volumetric discharge system, which provides a very accurate indication of capacity, since each discharge has a certain fixed volume. With the continuous discharge system of the new ECO-Logic™, the kernels are present in hot or cold air for a very limited amount of time. High grain quality is maintained, thus assuring germination ability and grain quality.
The ECO-Logic™ grain mixing device has been designed to redirect the hottest grain so that it changes place with the colder and wetter grain at the colder part of the dryer in order to ensure even drying of the grain.

Energy efficient solution

A prerequisite for achieving high dryer efficiency is to ensure that the exhaust air humidity level is as high as possible and the volume flow of the exhaust air is as low as possible. With the very even temperature distribution and accurate control of the dryer, the drying temperature can be increased and kept at a high level without damaging the grain, thus ensuring high humidity in the exhaust air and hence high efficiency. To reduce the volume flow of exhaust air and to utilise the fact that the exhaust air at the lowest drying sections is not fully saturated and is relatively warm, the number of recirculation sections has been optimised and is controlled by a sliding valve.
In general, the new dryer is approximately 20 % more efficient than a traditional dryer such as the A-dryer and 10 % more efficient than a dryer like the ECO-Master.

Low dust and noise

The ECO-Logic™ is provided with fans of the centrifugal fan type with limited noise emission. For control of dust emission, a dust guard is designed to capture the dust particles, thus ensuring that the ECO-Logic™ dryer complies with environmental regulations.

Easy operation

An overall vision for the ECO-Logic™ dryer was to implement a control system incorporating Cimbria's process knowledge in grain drying. With the newly developed control system, users are provided with an automatically controlled drying process, where changes in operational parameters are made to comply with changes in drying conditions – e.g. higher moisture content of the incoming grain – by means of feed forward control of the dryer. This means that users will be able to operate the dryer virtually unattended.

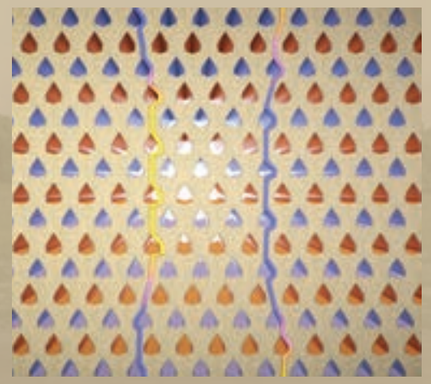
Easy installation

The structural design of the dryer complies with Eurocodes, and manufacture of the structural steel is carried out according to EN1090. This ensures straightforward approval from local authorities.

Range of products

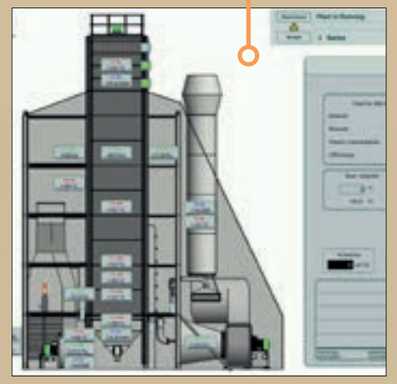
ECO-Logic™ is manufactured in standard capacities covering drying requirements from 20 to 250 t/h wheat based on a moisture reduction of 19-15% and is capable of drying all major cereals. Larger capacities are available upon request.

HOT AIR MIXER

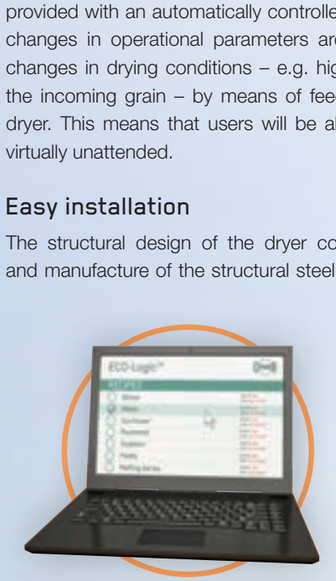


AIR GRAIN MIXER

SLIDING VALVE



INTELLIGENT CONTROL SYSTEM



FIRST BIG CIMBRIA SILO FOOD PRINT IN KAZAKHSTAN

Franz Franer - ffr@cimbria.com

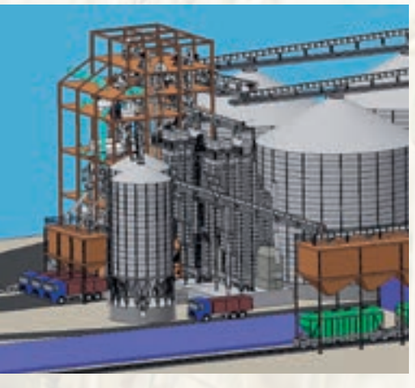
After repeated orders from Agrocompany TNK from Kazakhstan, the degree of mutual confidence has risen to the next level in the form of a 60,000-tonne silo plant, mainly for wheat. Cimbria's numerous references in terms of silo plants all over the world have thus been extended to the Aqmola region in the heart of Kazakhstan.

After many carefully executed meetings with TNK regarding design, selection of the correct equipment at the right capacities, etc., we ended up with a very modern configuration of Cimbria equipment. Two 200 tph truck receptions feed two lines, each equipped with Cimbria's Drum Scalper for rough cleaning followed by Cimbria's well-proven Combi Delta Cleaner 159 to refine the product to an industrial level. TNK has gained very good experience with their Cimbria Continuous flow Dryers that were installed two years ago. Once again equipped with Cimbria's highly efficient indirect heating system fired by diesel, this time two similar dryers ensure a total drying capacity of 100 tph (19%-15%). TNK's recognition of energy-saving effects from working with their existing Cimbria dryers helped to focus our meetings and consultations on other issues, such as designing the perfect configuration of the silo plant: 12 flat-bottom silos (diameter 21.92 m and eave height of 17.69 m) represent an overall storage capacity of 60,000 tonnes of wheat. The silos are fed by Cimbria chain conveyors and unloaded by Cimbria belt conveyors. The attached railway and truck loading station achieves 130 tph.

Furthermore, at the same location Cimbria provided an 80-tph reception section with five commercial hopper silos, each of 625 tonnes, for a brand new grits plant.

The silo plant is the latest in a long line of other interesting projects supplied to TNK. This year TNK also built a new milling plant with all necessary transport equipment manufactured by Cimbria in Thisted. A preliminary start-up is planned by the end of this year. This year, and in time for the new season, Cimbria likewise commissioned the sixth 10-tph seed processing plant for TNK in Belagasch. This consisted of a proven successful working concept with a Cimbria Combi Cleaner for pre-cleaning 100 tph on wheat and seed cleaning with declined screens, followed by a Cimbria Indent Cylinder and Cimbria Gravity Separator.

CIMBRIA'S NUMEROUS GLOBAL REFERENCES IN TERMS OF SILO PLANTS HAVE THUS BEEN EXTENDED TO THE AQMOLA REGION IN THE HEART OF KAZAKHSTAN



TWO ALG-25 Performance, wheat 19-15% moisture reduction: Ambient temperature 15°C/Drying air temperature 85°C / Capacity 50 tph wheat

Cleaning tower under construction. Two Drum Scalpers DS1250 and two Combi Cleaners Delta 159, 60,000-tonne wheat storage capacity

NEW DRYER INSTALLATION AT ATR LANDHANDEL

Niels Christensen - nch@cimbria.com

ATR Landhandel is a longstanding partner of Cimbria. ATR operates in northern, central and eastern Germany, Poland and Denmark. ATR is a traditional partner for the agricultural sector with regard to the trade of grain, seeds, animal feed, fertilisers and plant and seed protection. The company has more than 800 employees on its books. The general technical level at ATR's facilities is high, with energy consumption and gentle handling of products being particularly important factors.

In Lübeck, ATR owns a silo system located at the pier in the harbour. The brickwork in which the premises are built is very attractive, offering a very solid and complete appearance. The central section contains a machine building with thirteen floors and is flanked on both sides by huge silo systems. In the machine tower an old dryer was present. In fact, it was so old that nobody knew when it was installed, nor did anybody know the identity of the manufacturer.

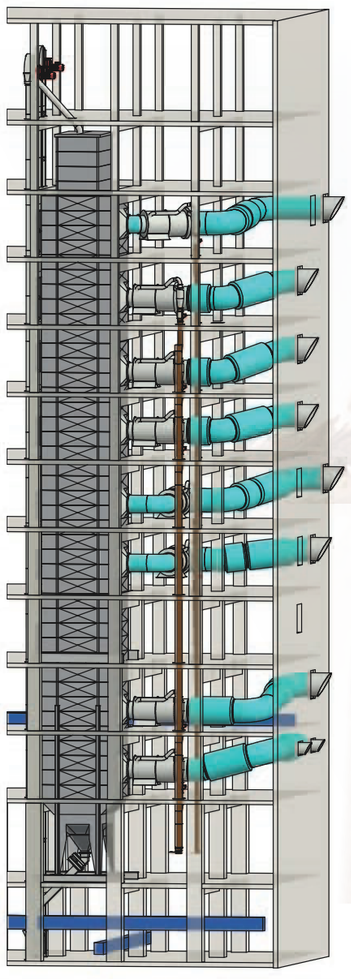
Cimbria submitted the initial quote for a new dryer to ATR in Germany on 22 March 2017 and by the beginning of July the dryer was ready for commissioning!

The Continuous Flow Dryer type ADC 42 dryer was designed in collaboration with ATR. The dryer is equipped with more extraction fans than usual in order to optimise energy consumption and to ensure gentle, low temperature drying with more controlled airflow.

As for the cooling section, eight modules are installed and they are fitted with two CF 30 Cyclofans, whilst there are six CF 20 Cyclofans for the upper sections. Above the cooling sections, a number of the subsequent sections can also be used for cooling. Thanks to the smaller fans, flexibility is very high. The dryer is heated by steam.

The installation of the dryer was carried out by ATR's technical staff supported by HAG Stahl- & Anlagenbau GmbH. Owing to very confined space on site and on the individual floors, logistics were a challenge.

On site, they managed to demolish the existing dryer before the new one was delivered. The new parts were pre-assembled in two-section units and the individual elements had to be lifted onto the right floor, starting from the top and continuing downwards. All parts had to be at the right level before installation could commence from the bottom.



The Continuous Flow Dryer type ADC 42

ATR silo system located at the pier in the harbour.

SCANDINAVIAN SQUARE SILO SUPPLIES

Niels Christensen - nch@cimbria.com

2017 has once again been a busy year with many interesting silo installations around the world. Also on the Scandinavian market, there has been increased activities and enterprise, and Cimbria has supplied a number of silo constructions for the feed and food industry.

Marine Harvest – Norway

In recent years we have received a regular number of orders for the extension and completion of silo and conveyor systems originally built in 2013 and 2014. Over the last year we have had the pleasure of extending the second finished product silo with an extra 3,100 m³ of storage capacity for fish feed pellets.

The silo block was extended with five rows of silo cells. First of all, we removed the gable cladding and secured it in a safe place for reinstallation after extension was complete.

The steel work and service floor below the silo bins were extended for the new cells, after which the silo extension was built up, including new roof frames.

After installing the silo, we completed the job with cladding of the new silo extension and refitted the existing gable.

Cargill – Norway

At the EWOS fish feed factory at Bergeneset in Norway, which now belongs to Cargill, we finished the installation of a new bulk silo for fish feed pellets.

The silo consists of 27 storage bins mounted on a tall steel structure, which enables flat storage for big-bags below the silo.

The filling of the silo bins takes places by means of an X-Y robot-car moving along and across the silo deck on specially designed rails. Underneath the silo deck, we installed reception bins with the same volume as the moving car, thus enabling them to be emptied very fast. The bins are connected to cascade chutes. Emptying of the silo takes place by means of belt conveyors connected to the existing conveyor system running to the quay for loading onto ships.

The silo walls have a hot-dip galvanized finish which is approved for the storage of fish feed.

The parts for both the Marine Harvest and Cargill orders were delivered directly to the sites by ship from the port in Thisted.

BKI – Denmark

At BKI in Aarhus, Denmark, we completed the installation of a new silo block for the storage of coffee beans. The new silo plant is an extension of an existing silo block, which had already been extended a couple of times previously.

Two tunnels between the silo decks connect the old silo and new silo. These tunnels ensure good accessibility and are also used to connect the conveying systems.

The new silo is installed above an existing warehouse that continues to be used as a warehouse.

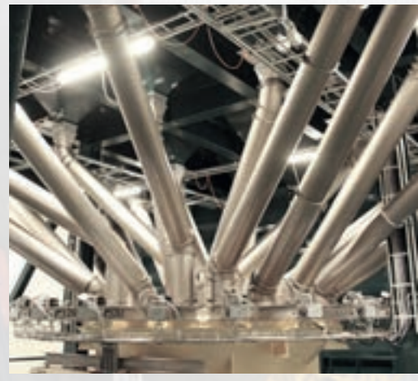
The new silo block consists of 14 silo bins for quarantine, 28 bins for raw coffee and 28 bins for roasted beans. All the bins are fitted with speed-retarding, cascade chutes in order to handle the beans as gently as possible.

Together with the silo plant, we installed conveyor systems for filling and emptying that were all integrated into the existing plant. At the same time, a new dosing and weighing system for the new silo plant was installed and connected with stainless steel pipes.

The silo bins and conveyors were all delivered as equipment certified for food and specially configured for coffee beans.

Marine Harvest – Norway
Storage of fish feed pellets

Cargill – Norway
New bulk silo for fish feed pellets.



BKI – Denmark
Storage of coffee beans

ELECTRONIC SORTING SECURES GLUTEN-FREE GRAINS

Michela Pelliconi - mip@cimbria.com

In recent years, the demand for sorters for gluten-free grains has increased. The use of our electronic sorting machines in the cleaning process guarantees healthy products. Due to the growing number of people suffering from gluten sensitivity and celiac disease, the gluten-free industry is becoming increasingly important on a global scale.

Gluten-free products have a tolerance close to zero, which is why grains need to be processed to separate any grain containing gluten. Even the most sophisticated mechanical cleaners cannot ensure the separation of all the grains with gluten, which may be very similar in terms of weight, dimension and shape.

Full-Colour technology is nowadays applied in the gluten-free industry and SEA CHROMEX has become increasingly popular in the modern cleaning process. After the pre-cleaning process, grains are checked by our Full-Colour sorters in order to separate the gluten grains.

This challenging application leads us to utilise the latest inspection devices, combined with the most sophisticated software to assure the highest efficiency and performance in the separation. The basic version of SEA CHROMEX makes use of Full-Colour RGB 4096-pixel cameras that ensure the highest optical resolution in the market of 0.06 mm. The combination of real Full-Colour technology with infrared cameras (NIR and InGaAs) and shape-sizing systems optimise the separation of gluten grains and other foreign bodies.

The set-up of SEA CHROMEX is realised through photographic acquisition, comparing a grain to a user-defined accept or reject, identifying it as a real defect or as an accepted element. For this challenging application, it is extremely important to create multiple filters through the HSI (hue, saturation, intensity) and shape-sizing systems to identify all the smallest colour and shape differences.

For this purpose, the EXAGON graphic interface allows user-friendly programming of the SEA CHROMEX, with the chance to use the sorting recipe on multiple sorting units and to acquire real-time statistics.

SEA CHROMEX is one of the few electronic sorters on the market that can recognise similar grains of different nature, such as distinguishing an oat from a barley grain. This can be done with extremely high efficiency when real RGB Full-Colour technology is combined with InGaAs and, if necessary, NIR vision systems.

Many gluten-free producers already know that SEA CHROMEX is the ideal solution to guarantee the highest purity of final products to meet the strictest food hygiene and health requirements. Our customers in Italy, Denmark, France, Spain, Germany, US, Canada and in many other countries already benefit from SEA CHROMEX, producing results representing the highest purity and food-safety of the final products.

Besides the separation of grains with gluten, SEA CHROMEX guarantees the most efficient removal of other contaminants such as fusarium, ergot, foreign seeds, vetch, etc. Grains that have not been hulled are sorted from the hulled grains (oat from groats or similar kinds of separations).

Allergenic grains can also be separated thanks to SEA CHROMEX technology and the combination of ultimate RGB Full-Colour with InGaAs and NIR technologies. In gluten-free applications, as in any other grain cleaning process, it is very important to obtain a highly concentrated reject. This is why CIMBRIA has focused on and developed a very precise ejection system that provides the highest reject concentration.

All the models are available in single pass, reject resort or reverse sorting. SEA CHROMEX is available in versions from 0.5 to 7 chutes and divided into 1, 2, 3 or even 4 independent sections in order to meet the production needs and expectations of the customer concerned.

The design features of our sorters make them ideal for installation in any grain cleaning system. The exclusive system of optical boxes, including conditioning, tightness under pressure and particular attention to mechanical details, makes SEA CHROMEX the ideal sorter to be installed even in a harsh working environment.

At the Agritechnica exhibition in Hannover, the world's largest trade fair for agricultural machinery & equipment (2,803 exhibitors and 450,000 visitors), CIMBRIA SEA colour sorting technology proved to be the most complete in the world. At present, none of our competitors worldwide can offer such high optical resolution and combination of real Full-Colour technology with NIR and InGaAs cameras.

In 2018, CIMBRIA SEA will continue to exhibit passion and dedication as it strives to focus on the research and development of new industrial solutions dedicated to gluten-free seeds, grains and food applications.

What is celiac disease?

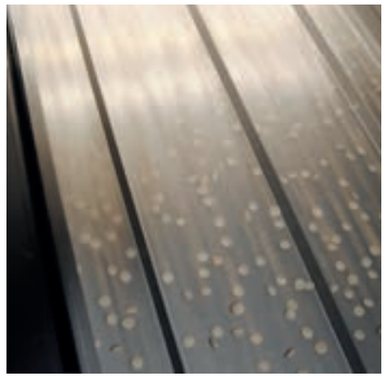
Celiac disease is an autoimmune disorder that can occur in genetically predisposed individuals where the ingestion of gluten leads to damage in the small intestine. When people with celiac disease eat gluten, their body mounts an immune response that attacks the small intestine. These attacks lead to damage to the villi, small finger-like projections that line the small intestine and which promote nutrient absorption. When the villi are damaged, nutrients cannot be absorbed properly into the body.

(Celiac Disease Foundation website - USA)

What is Gluten?

Gluten is the general name for the proteins found in wheat (wheat-berries, durum, emmer, semolina, spelt, graham, KAMUT® Khorasan wheat and einkorn), rye, barley and triticale – a cross between wheat and rye. Gluten helps foods maintain their shape, acting as a "glue" that holds food together.

(Celiac Disease Foundation website - USA)



INTRODUCING COLOR SORTING TO SERBIAN MARKET

Franz Franer - ffr@cimbria.com

With commissioning completed in October 2017, Cimbria is finally able to boast the first “SEA CHROMEX” optical sorter in the prestigious “HERBA DOO” seed plant in Serbia, a prime reference for the Balkan peninsula.
Several meetings, explanations, presentations, tests and a client who knew exactly what he needed with the right understanding of quality made it possible to reach an agreement for integration of the first Chromex optical sorter installed along with a Cimbria Super Fine Cleaner D102.
Thanks to plant specialisation and the sheer multitude of products (fennel, pepper, radish, pumpkin, rocket, aniseed, dill and parsley), Herba Doo is a flagship for the Serbian seed business. Subsequently, a very accurate cleaner and colour sorter have become necessary in order to remain ahead of the competition. A suitable gravity separator and indent cylinder are also planned. The colour sorter is a SEA CHROMEX 2 T + TN model, equipped with RGB full colour 4,096 pixels & infrared cameras to detect foreign bodies such as stones, wooden sticks, glass and metal.
Thanks to this very important reference, Cimbria has established the foundation for more activity in the optical/electronic business in the region.

ELECTRONIC SORTING IN UNITED KINGDOM

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Wells of Edwalton, Nottingham

In spring 2017, Wells of Edwalton, Nottingham, decided to add a colour sorting plant to their already impressive grain processing site. The primary goal was high capacity ergot removal from contaminated cereals which may face rejection from mills or stores.
The company incorporated colour sorting into an existing Cimbria dryer & storage facility that had been commissioned for the 2016 harvest.
With high capacity being one of the chief requests from the customer, we needed to achieve 50 tph on wheat and barley. To accomplish this, we chose to use two Cimbria SEA True 7, and one SEA True 3-chute machine on resort.
This design now allows a customer to deliver a load to the site and have it processed, reloaded onto the lorry and be back on the road in less than an hour.

AGRII

Seed producer AGRII purchased the first Cimbria SEA electronic colour sorter that Cimbria in the UK sold back in 2012. This machine was a SEA Next 5 machine with InGas cameras, which at the time represented the best available technology for their application. This year saw the purchase of their second machine for another of their processing sites. Once again, they were looking for a high specification machine and chose the new SEA Chromex 5 in 4+1 configuration, as this will give them 15-20 tph sorting, depending on contamination levels, as well as the flexibility to sort most products to the very highest standards.

PX Farms Ltd

PX Farms based in Cambridgeshire is at the very heart of the major cereal production area in the UK and has been a Cimbria customer for the last 10 years. They decided that there was an opportunity to expand their 80,000-tonne storage and drying business by offering customers a facility for cleaning. The “Grain Hospital”, as it is known, was commissioned in February 2017 and has been very busy since that time cleaning a variety of products from wheat and barley through to mustard and linseed. The choice of machine for this project was a Delta 184 de-awner mounted on a Delta 107 feeding a SEA Chrome 5 in 4+1 configuration. The project was challenging due to the fact that the plant had to be integrated into an existing facility, but there is still plenty of scope for more machines to be added with the expansion of both the cleaning and the storage sides of the business. The “hospital” plant was also designed to be able to take distressed rejected loads which need to be turned around in a short space of time. Mr Peck, who owns the business, was extremely impressed with how the project came together. This applied to all aspects and parties, from supply of the equipment to design and build over such a short space of time – order date to commissioning was just 12 weeks.

SEA CHROMEX 2 T + TN model

Cimbria Super Fine Cleaner D102

Agrii, scope of supply:: SEA Chromex 5 in 4+1 configuration

Wells, scope of supply: Two Cimbria SEA True 7, and one SEA True 3-chute

PX Farms Ltd, Scope of supply:a Delta 184 de-awner mounted on a Delta 107 feeding a SEA Chrome 5 in 4+1 configuration.

11TH CIMBRIA DRYER FOR ALEXANDER INGLIS & SON

David Thompson - dth@cimbria.com

Alexander Inglis & Son purchased their 11th Cimbria Dryer – a Continuous Flow Dryer type AMG-22 – for the 2017 harvest.

Based in Scotland, with sites ranging from Northumberland to Perthshire, A Inglis & Son dries and stores approximately 120,000 tonnes of malting barley per year, predominantly for the distilling industry.

The new dryer, which is the third Cimbria dryer to be installed at their site at St. Boswells, was designed to handle 15 tph of malting barley drying from 18% - 12% moisture at a temperature of 55° C.

Colin Wright, Technical Director at Alexander Inglis, said: “We have continued to purchase Cimbria dryers, as they are quality machines suited to the drying of malting barley where the uniformity of the drying temperature and gentle drying of the product is vitally important. Cimbria dryers are also reliable and achieve the quoted capacity”.

Working with Edwards Engineering Ltd of Perth, the dryer was delivered, erected and commissioned on time and ready for the start of the harvest.

SEED PROCESSING LINE FOR SPROUTS

Simone Malaguti – malaguti@cimbria.it

In recent years a significant number of Italian seed companies have been gravitating towards the edible seeds segment, a trend that also applies to Cooperativa Agricola Cesenate, a well-organised company located in northern Italy.

Our goal was to provide them with a plant that could process seeds for human consumption oriented towards the sprout market.

We designed a small but complete line that includes a Delta, Super Cleaner, De-stoner, Indent Cylinder, Gravity Table and Pixel Optical Sorter. Four elevators and one belt conveyor integrate the line, and these have been produced with FDA belts and FDA-approved paint for the legs, bottom and top of the bucket elevator. The elevators have also been provided with pneumatic blast cleaning so as to enable varieties to be changed every 4 hours, whilst at the same time avoiding undesired seed contamination.

We once again installed our big-bag metal structure, while for the first time we provided the line with one TN3 aspirator in order to remove dust after the initial phase of the process. Results are excellent and keep the area most at risk of explosion in a relatively safe state.

The entire line processes different varieties of seeds: alfalfa, cabbage, radish, watercress, rocket, etc.

The selection line was put into operation two months ago, returning excellent results in terms of seed cleaning performance.

Spout seeds before cleaning

Spout seeds after cleaning

FINGER MILLET CLEANING REVITALISES INDUSTRY

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Stockfeed Enterprises Ltd – Finger Millet cleaning revitalises industry

Finger millet (Eleusine coracana) is a cereal crop believed to be native to East Africa and traditionally cultivated on smallholdings. Finger millet grain is nutritious with high protein content, a rich source of minerals such as calcium, iron and phosphorous and has a good content of energy compared to other cereals. The grain can be ground and used for preparation of various types of food that include porridge and bread. Finger millet grain can also be used for making beer.

Cultivation of finger millet is labour intensive. Harvesting, post-harvest conditioning, drying in the sun, handling and threshing are manual tasks and are carried out on earth floors. The very small size of finger millet grains makes handling of the crop very difficult at all stages of processing. Therefore, the separation of the seed coat from the endosperm has been a major challenge in the development of a mechanical commercial milling technique for finger millet.

When in the year 2000, Unga Ltd, the oldest and largest wheat and maize miller in East Africa, decided to venture into mechanical commercial milling of finger millet, the firm approached Cimbria in East Africa to discuss the possibility of Cimbria supplying equipment that would handle thoroughly clean millet and grind the finger millet to their stringent quality standards. The biggest challenge was, in fact, cleaning the finger millet – to ensure that 99.9 % of stones were removed. In the end, Cimbria supplied a 1.5 t/h milling plant for milling finger millet complete with intake, conveying equipment, Delta fine cleaner and de-stoner that met Unga's strict quality requirements. In this way, mechanical commercial milling of finger millet began in Kenya. Several other commercial grain millers have since set up finger millet milling plants as part of their business, leading to increased demand for finger millet being imported from the major finger millet producing countries of Uganda, Ethiopia, Tanzania and Zambia.

During the last 5 years Cimbria has supplied and installed two finger millet cleaning plants in Nairobi to meet the increasing demand for clean finger millet by the millers.

In April this year, Cimbria East Africa built the third finger millet cleaning plant in Kenya. This followed the confirmation of an order by Stockfeed Enterprises Ltd to Cimbria for the supply, installation and commissioning of a finger millet cleaning plant. The 5-6 t/h plant includes intake, conveying by screw conveyor and bucket elevators, Delta fine cleaner, de-stoner, a bagging station, an aspiration system by Jet Filter and electronic control. Stockfeed Enterprises Ltd cleans its own stocks of millet for supply to millers and also offers grain cleaning services to its customers.

Cimbria installation for finger millet cleaning

CAPWELL INDUSTRIES LTD

Anthony Nielsen - anthony@cimbria.co.ke

Despite the market being very competitive in terms of service and high quality machines, our client CIL Capwell Industries Limited, henceforth referred to as CIL, engaged us in a massive project this year for an intake, pre-cleaning & wheat storage plant (13,000 MT) which kicked off in July 2017.

Over the past couple of years, we have been able to cement our relationship with CIL through various projects and services offered. CIL began operations in 1999 with a modern maize milling factory in Thika, one of the largest regions in Kenya. Its core business is to manufacture wheat and maize flour, rice, pulses and porridge using Cimbria machines and technologies. Our main interest is to offer high quality and long-lasting machines that improve productivity and efficiency in the organisation.

During time, we carried out the installation of four maize silos with a capacity of 5,400 tonnes. In addition to a temperature monitoring system, the order included conveyors/elevators, belt weighers and a Delta 145 cleaner. This gave us a platform to showcase experience acquired over the years and deliver the project in line with the master schedule.

Progress on site

LOADING COMMODOTIES INTO SHIP AND WAREHOUSES

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During the course of 2017 Cimbria Unigrain received a record number of orders for loading chutes for discharging goods into ships and warehouses. These orders include loading chutes of various size and models designed for a wide range of products, including titanium, lead and zinc concentrates, fertiliser, sulphate, cement clinker, fly ash, coal, wood pellets, maize and grain. The vast majority of loading chutes are constructed using standard components, but are of course adapted to the conditions at each plant. Furthermore, they are designed to meet the specific application, in addition to a solution – drawn up in consultation with Cimbria – that meets the specific needs of the customer concerned. The loading chutes are sold both directly to end-users and via a number of distributors and dealers.

V400FF/29 to Tizir, Tyssedal, Norway

Tizir in Norway contacted Cimbria Unigrain with an enquiry for a loading chute for discharging titanium. Due to the fact that there was insufficient built-in height on the existing belt, the loading chute had to be able to be pulled up under the belt when it was extended over the side of the ship. The capacity was specified as 800 t/h, the length of the loading chute was approx. 20 m and it had to have a built-in filter. The solution to this task was a V400 with filter outlet which, following some development work, was provided with a tilting mechanism such that it could be pulled up under the belt, after which it could be run out to the ship. Since titanium is a very abrasive material, all parts coming into contact with titanium are executed in Hardox steel. The loading chute is also equipped with a universal joint, in such way that it always hangs vertically when the derrick is raised and lowered. In conjunction with installation and subsequent commissioning, Cimbria Unigrain had a supervisor present at the customer's premises.

Loading chute with tilting mechanism V650FF/29 to Bolidan, Rönskär, Sweden

From Bolidan in Skelleftehamn, Sweden, Cimbria Unigrain received an enquiry for a loading chute for loading lead and zinc concentrates onto ships. The capacity was stated at 1000-1500 t/h, in addition to which the material was very fine and dusty. The length of the loading chute was to be 15-20 m and had to have an integrated filter. The main challenge was that the solution had to be able to cope with ambient temperatures as low as -35° C. The chosen solution was a V650 with filter outlet in which all the electrical components are designated to be able to cope with an ambient temperature of -40° C. In addition, the loading chute is equipped with an extended inlet and chutes in Hardox, as the material is abrasive. The loading chute was delivered in August 2017 while the total price included a supervisor from Cimbria Unigrain and a service visit one year after commissioning.

V500FF10 to Telestack, Northern Ireland, end-user Nibolon, Ukraine

From Telestack, a Northern Irish manufacturer of mobile ship-loaders, Cimbria Unigrain received an enquiry in December 2016 concerning a solution for the loading of grain at a rate of 500 tonnes per hour. The solution had to include an integrated filter, as well as two loading chutes. We arrived at a solution featuring a V500FF10 model and "intake" for Telestack's mobile ship-loader. The loading chutes are produced as an OEM project, delivered in colours that match Telestack's. Finally, the order was for 6 units, delivered in 3 stages. In conjunction with the first delivery, Cimbria Unigrain carried out a test of the loading chute fitted to the ship-loader at Telestack's factory in Northern Ireland. The final 2 loading chutes are due to be delivered in November 2017.
Loading chute executed as OEM unit fitted in mobile ship-loader

V300F/39 TBMA Europe bv, Netherlands, end-user Eurochem, Kazakhstan

In August 2016 Cimbria Unigrain received an enquiry for 4 loading chutes for stockpiling from our dealer TBMA Europe in the Netherlands. The end-user, Eurochem, needed a plant for the discharge of phosphate under special temperature conditions (product temperature ranging from -30º C to +80º C, with ambient temperature down to -38º C).
The chosen solution was four V300F/39s with all electrical components designated to cope with ambient temperatures as low as -40º C. The control units were supplied with a heating element, whilst the skirt on the outlets was specially produced in silicone rubber.
All parts in the loading chutes that come into contact with the material are fabricated in Hardox 400 due to the fact that phosphate is very abrasive. As the loading chutes are relatively long, they are equipped with a 4-m-long inlet pipe in order to be able to better concentrate the product in the centre of the chute.

Unloading of phosphate into a warehouse V650FF/17, Bühler in collaboration with Kushiro, Japan

In August 2016, Cimbria Unigrain received an enquiry from Bühler, Uzwill in CH. They had received an enquiry from Kushiro, Japan, which needed a loading chute of approx. 15 metres for loading 815 tonnes of maize an hour. As the loading chutes were due to be used in very salty air near the sea, a special C5M coating was required, a specification that was subsequently revised to a galvanised finish. The Moduflex loading chute is to be used close to a built-up area, and thus the outlet on the filter was chosen to ensure the best possible filtration of dust.

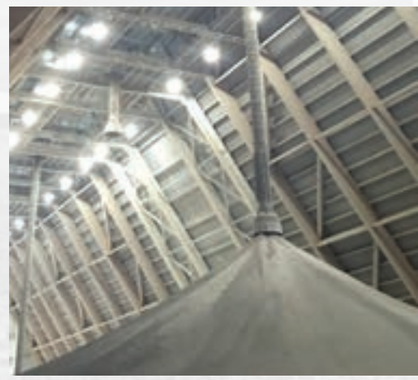
V650F with trimmer, Firma Luicija in collaboration with RIMO, MUUGA terminal, Tallinn, Estonia.

Cimbria Unigrain's dealer in the Baltic, Firma Luicija, received an enquiry from RIMO, which was looking for a loading chute with trimmer for a newly-developed ship-loader which the dealer was charged with drawing up for the MUUGA terminal at the Port of Tallinn, where wood pellets were due to be unloaded.
After one or two preliminary proposals, RIMO and Cimbria Unigrain agreed on a newly-developed trimmer with slewing bearing in stainless steel. The purpose of the ship-loader is that it is "fed" by trucks with a tipper. The wood pellets are conveyed via a belt up to the loading chute, after which they can be distributed over a larger radius than normal due to the rotating trimmer at the outlet.

Loading chute with tilting mechanism

Loading chute with trimmer at the outlet

Loading chute executed as OEM unit fitted in mobile ship-loader



Unloading of phosphate into a warehouse

FURTHER PROGRESS IN UKRAINE

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INCREASING HARVEST IN GRAIN CROPS DEMANDS MORE AND BIGGER SILOS AND TRANS-SHIP TERMINALS

The volume of cereals grown in Ukraine exceeds the capacity of storage facilities currently available. According to grain market experts, the harvest of grain crops in Ukraine in 2017 is expected to be 63.45 million tonnes. Such a situation aggravates the problem of crop preservation for a lot of agrarian companies. Despite the gradual improvement of the country's economy and increasing investment in the agricultural sector, a dilemma still exists for many agricultural producers: to use the services of private and state silo plants or to purchase their own and sell products when prices are at their highest? How much investment will be needed and how quickly will this investment pay off?
Our customers' solution is "to build" and "to purchase".

Khortytsya branch

A grand opening ceremony of a new trans-shipment terminal took place on June 15 at the village of Bilenke (Zaporizhzhia region) with the participation of the Prime Minister of Ukraine, Mr. V. Groysman. This terminal for shipment of grain and oilseeds by river transport was built in the best traditions of Nibulon – high quality and on time – in just three months.

The newly built complex has the following technical characteristics:

- Storage volume of grain - 77 thousand tonnes;
- Daily capacity of dryers - 4 thousand tonnes;
- Daily outloading to river transport - 12 thousand tonnes.
- The total capacity of the complex is 300 thousand tonnes/ year.

Cimbria has supplied the following conveying equipment for this project: belt conveyors chain conveyers, bucket elevators and Moduflex loading chutes.

Holoprystans'ka branch

Another new trans-shipment terminal for grain and oilseed crops for river transport was opened on July 14 in Hola Prystan (Kherson region).
The technical characteristics of the fully automated complex operated from a central control panel are as follows:

- storage volume of grain - 77 thousand tonnes;
- daily capacity of dryers - 4 thousand tonnes;
- daily outloading to river transport - 12 thousand tonnes.
- The total capacity of the complex is 300 thousand tonnes/ year.

Cimbria has supplied the following conveying equipment for this project: belt conveyors, bucket elevators and Moduflex loading chutes.

New Nibulon trans-shipment terminals at Khortytsya branch

New Nibulon trans-shipment terminals at Holoprystans'ka branch

TERRABIO – MULTI-PRODUCT DEBRANNING LINE

Ugo Balestrieri - balestrieri@cimbria.it

Terrabio, a valuable company close to Urbino, is a client of Cimbria Heid Italy. Seven years ago it installed a seed cleaning line dedicated to a number of bio products such as legumes and cereals. The growing demand in the market for peeled products has led to the company improving its facility with a debranning line, suitable for processing a huge number of different products.
The challenge was to correctly process products that range from spelt to sunflower, and from wheat to barley, whilst achieving a final result that meets the specifications required by the food industry. Scrutiny of the flow sheet has been important to double check all the different processes and to correctly match the budget of the customer for validation of its business plan.
What has emerged from the engineering dept. is the flow sheet represented in figure 1:
The proposed flow is suitable for working on products that need only an impact action on the kernel (e.g. sunflower, for example), on products that only need to be peeled (e.g. wheat, barley) and on products that need both (e.g. spelt).
The flow sheet includes capacity for future developments to increase the precision of cleaning of the finished products, based on the likely increase in market demand.
The plant, which is an electromechanical turnkey solution, has been designed to fit the existing warehouse just in front of the existing seed cleaning line. Erection of the plant took 2½ months to complete and to begin commissioning of the different tests
Commissioning of the plant has been an exciting experience, spent understanding the optimum adjustments on the different parts of the line to better meet the customer's needs. In two days of tests, wheat, barley, spelt, lentils, chickpeas, peas, etc., were processed. Some of the excellent results obtained are shown in the figures below
The plant commissioned in Terrabio represents an important step towards a new product field; the debranning process for all these kinds of products is still at a stage where most of the producers are "trying" to implement a standard process. Cimbria Heid Italy has installed an important reference for a flexible industrial plant that can provide stability in terms of results at a capacity that matches market demand.

Pearl spelt *Broken peas*

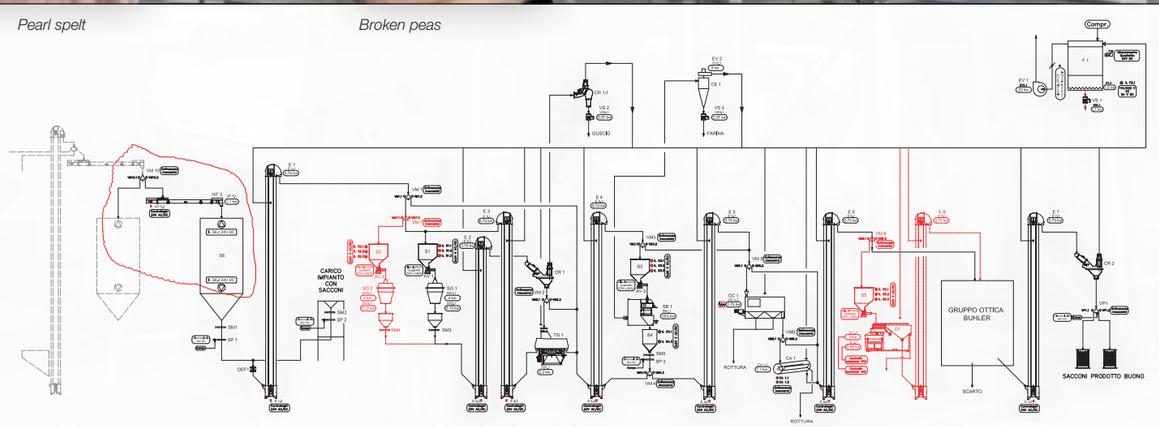


Figure 1 - Debranning line: General Flow sheet

SUNFLOWER PEELING IN BULGARIA

Andreas Fröhlich - afr@cimbria.com

Ilchovski Bulgaria – Further improvement within the process of sunflower peeling

Operating a sunflower peeling plant in the most economical way means that each and every fraction coming out of the sorting and cleaning plant must have optimum purity. This enables a good market price for each of the products to be achieved without any loss of material into undefined waste streams.
Bulgaria is the no. 1 producer of sunflower in Europe ex aequo, whilst Romania has a high demand for excellent processing facilities of sunflower seed, enabling the country to finalise its no. 2 export commodity (after wheat) at top quality for sales all over Europe, as well as to North America and to the East.
The main output of these kinds of processing facilities is of course whole peeled kernels, without any brokens, shell fragments, discoloured or foreign kernels. This premium product can then be sold for snackfood and confectionary – either roasted or unroasted – but also to bakeries as an ingredient in whole-grain bread.
However, due to splitting up of the various parts of sunflower seed during peeling, the other fractions coming out of the process also need to be strictly separated from each other, thus ensuring the highest possible purity of each.
Lights, sticks and shells for pellet pressing: The importance lies in low oil content, meaning a low quantity of broken kernels and oily dust in this fraction in order to keep the heating value of the final pellets as high as possible. Higher oil content would mean faster burning and less final energy output.
Oily dust and undersized kernels for oil production: The content of the shells needs to be at a certain level to give sufficient resistance to the presses. Empty shells must not be lost to this fraction, due to their higher value for pellet pressing.
In close cooperation with our customer, Mr. Ilchovski, from Knezha in Bulgaria, Cimbria developed a plant setup with optimised yield and throughput, as well as precise separation of the different fractions in order to utilise the plant at the absolute maximum.

Plant with Cimbria and GSI installations

Plant, view of peeling section

Site, view with GSI silo plant in the background

SILO PLANT FOR RAIFFEISEN IN AUSTRIA

Andreas Fröhlich - afr@cimbria.com

Raiffeisen Lagerhaus (RLG) is the major player in the Austrian grain business. Its constant ambition of striving for improvement in terms of economic efficiency and increased vigour for grain handling and storage, led to it merging two sites in southeast Austria that were getting a bit long in the tooth to create a brand new greenfield installation right in the heart of the relevant catchment area.

The first section of the plant consists of two parallel reception lines, each with intake pit and pre-cleaning unit. One Delta 146 and one conical wind-sifter have been installed inside the pre-cleaning tower. The product is subsequently transported to the silos by Cimbria chain conveyors and bucket elevators at a capacity of 100 t/h, corresponding to a reception capacity of four trucks per line per hour. Automatic foot cleaning systems at the elevator boot help the customer keep the plant clean and prevent cross-contamination of crops.

Within the silo section with a total holding capacity of 7,750 tonnes, there are four blocks with the following configuration:

- 2 hopper silos with a holding capacity of 125 tonnes each, mainly used as wet cells prior to drying or as load-out bins for the bulk loading unit
- 6 hopper silos, 250 tonnes each, for storage of smaller batches or as load-out bins
- 4 hopper silos, 500 tonnes each
- 4 flat-bottom silos, 1,000 tonnes each.

The drying section consists of a Continuous dryer for indirect heating with oil, as well as a box dryer for smaller quantities of niche products.

Cimbria has mastered the rather unusual surrounding conditions – which include a relatively high earthquake zone in the area and strict levels for noise emissions – in a supreme manner, providing the customer with a plant ready for full operation just in time for this year's harvest, which coincided with an opening ceremony attended by more than 400 guests.

THREE SESAME PROCESSING PLANTS AT ONE BLOW

Franz Franer - ffr@cimbria.com

Olam International has a leading position as one of the largest agricultural businesses in the world, operating from seed to shelf in 70 countries and supplying food and industrial raw materials to more than 16,200 customers worldwide. Olam is one of the world's largest suppliers of cocoa beans and products, coffee, cotton and rice.

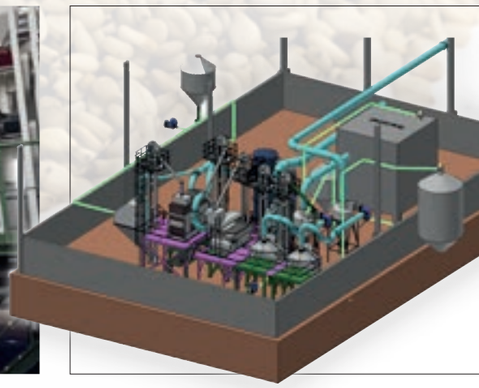
During the past few years, Olam and Cimbria's paths have crossed on several occasions. The food market is a very sensitive market, and high quality is a must, a criterion which Olam International is able to satisfy. Due to Olam's importance to Cimbria, not least thanks to Cimbria's extensive product range (together with GSI), Cimbria decided to elevate Olam to an extraordinary key account. This year, Olam Ghana and Nigeria chose Cimbria to install three tailor-made sesame processing plants.

Specialities of the plants:

- For Nigeria, a 1-2 tph sesame plant was supplied with the following equipment: Cimbria Brushing Machine Delta 181.2 with a specially fabricated drum inside, followed by Cimbria air sifter STS 1000 in order to lift up loosened shells. Furthermore, the order contains a Cimbria Super Fine Cleaner Delta 104, high-end cartridge filter system, pipe magnet and metal detectors.

- For another customer in Nigeria, a 2-5 tph sesame plant was supplied with the following equipment: Cimbria Super Fine Cleaner Delta 106, Cimbria De-stoner TS 360 and pipe magnets.

- In Ghana, we supplied a 5 tph sesame plant with a Cimbria Super Fine Cleaner Delta 106, a Cimbria Gravity Separator GA 210, two Cimbria De-stoners TS 360 in series, a high-end cartridge filter system and a pipe magnet.



FULL PACKET SUPPLY

Jørgen T. Nielsen - cimbria@africaonline.co.ke

Felix Aringo - felix@cimbria.co.ke

Silo plants for Africa Improved Foods Ltd in Rwanda

By Jørgen T. Nielsen

DSM Company, Africa Improved Foods Ltd (Rwanda), has invested in a full packet solution consisting of silo installation and additional service agreement to secure a smoothly running 24 hr operation all year round.

AIF is a manufacturer of highly nutritious quality fortified foods intended to address malnutrition amongst vulnerable population segments such as pregnant and breast-feeding mothers, older infants and young children. This smooth operation is brought about by their strict adherence to scheduled preventive maintenance, keeping an inventory of critical spare parts, constant training in operation and strict adherence to occupational health and safety standards. In so doing, they have been able to live up to their brand promise of Bright Science. Bright Living.

Cimbria East Africa has designed and installed two plants for the Ministry of Agriculture in Rwanda: one 10,000-tonne plant outside Kigali and the other in Kigali itself, situated close to the airport, with a capacity of 20,000 tonnes.

In order to privatise the industry in Rwanda, the government sold the plant to DSM from the Netherlands, Africa Improved Foods, in Rwanda. AIF constructed a fortified food plant next to the silo in 2016. Cimbria East Africa was again contacted and in the end chosen to connect the 20,000-tonne silo plant to the fortified food plant. The scope of supply included conveying, weighing and day bins – all from Denmark – as well as a conveyor catwalk fabricated in our workshop in Nairobi, electrical supply and configuration of the control system to work with the mill control.

After-sales service – managing your operations flawlessly

By Felix Aringo

After-sales service has become an essential element in the operation of a company. It does not end with the warranty period, but continues throughout the operational life of the plant.

In endeavours to contribute to the creation of a sustainable link between efficient production and optimum utilisation of agricultural crops, Cimbria East Africa has put emphasis on constant and continued support. This involves ensuring that together with the client a partnership is established that ensures flawless operations to achieve maximum machine utilisation and hence higher return on investment.

Elements that we have taken into consideration include scheduled preventive service, timely provision of spare parts, rapid response to breakdowns, continuous training in terms of operation and maintenance, as well as consultancy services offering advice on improved and up-to-date processes.

Every machine manufacturer defines a period of operation, after which service should be carried out to maintain its efficiency and effectiveness. Depending on the machine, a service contract is established that is either annual or bi-annual. During this service period, worn out components are replaced and a comprehensive report is written that entails details of the service performed, parts to be replaced during the next service and any other recommendations.

Flawless operation requires that component failures are anticipated through Mean Time To Failure analysis. For unexpected failures, Mean Time To Repair should be as short as possible. CEA thus ensures that there are standby technicians able to respond to breakdowns in the shortest time possible. We also encourage keeping an inventory of critical parts, i.e. parts that when suffering a breakdown either stop operation completely or severely affect production. After installation, Cimbria carries out criticality ranking, which is a risk ranking system that takes into account the impact of a failure on production, quality, safety and environment, combined with the probability of such a failure occurring. This helps to generate a critical parts list of components that should be kept at the client's inventory.

Knowledge of best practices during machine operation is also essential to the life of a plant. Operation and maintenance staff need regular training to help reduce deterioration of equipment.

For performance beyond expectation, therefore, every plant requires constant attention. Cimbria's unparalleled, innovative, high-quality products and integrated solutions for grain, seed, animal feed and other sectors come with a guarantee of continued support throughout the life of the plant.

Jorgen T. Nielsen and Cimbria's CEO Søren Overgaard attended the official opening of the plant in Rwanda

STARTING UP MOROCCAN ADVENTURE

Christian Wielander - cwi@cimbria.com

First two Cimbria Seed processing lines in successful operation in Morocco

As the main player on the Moroccan Seed market, SONACOS, with a market share of over 90%, has major focus on the quality of its final seed and thus on the whole production process.

In 2016, two of their more than 15 seed processing facilities across the country were fully reconditioned with Cimbria technology, thus providing a new dimension of final purity and hourly throughput, combined with ease of operation and reduced energy consumption.

The two seed processing plants, each for 10 t/h grain, have now been in operation since the beginning of 2017 and are delivering high quality processed grain to the full satisfaction of SONACOS at their sites in Sale and Fkih ben Salah.

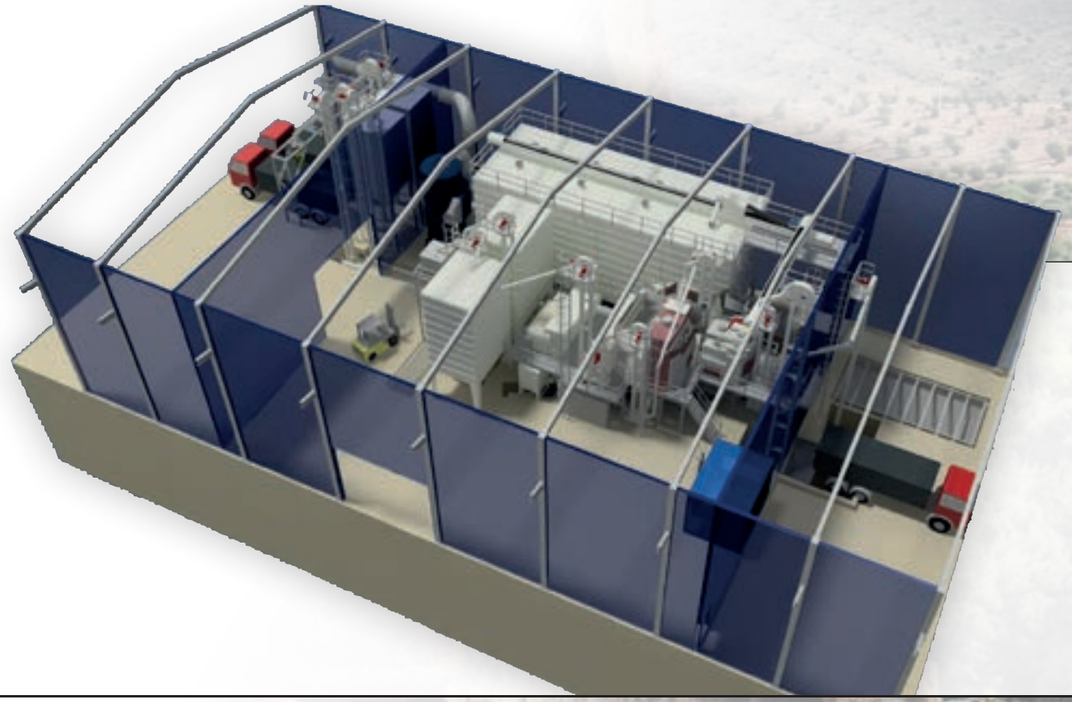
The journey in Morocco has just begun

In October 2017, Cimbria succeeded in winning another order for the supply of two further seed processing plants for SONACOS to be installed in early 2018.

In Morocco, one can feel “the wind of change” in the seed business, and we are proud to be working with SONACOS on their way to implementing and realising new processing and storage concepts in the local seed processing market.

In addition to the excellent performance of Cimbria’s processing equipment, a pre-storage unit (400 tonnes silo storage) will be installed. This will enable the client to receive and process grain at the same time. The PLC controlled processing plants connected to the ERP system will enable full overview and control, thus keeping headcounts low.

The two processing plants, each for 14 t/h grain, will be installed in Berkane and Sidi Kacem in the first quarter of 2018.



Seed processing plant in Berkane

Seed processing plant in Sale

Seed processing Fkih ben Salah

SUCCESS WITHIN ETHIOPIAN COFFEE BUSINESS

Christian Wielander - cwi@cimbria.com

Ethiopia, the country from which coffee originates and one of the biggest suppliers of green coffee to the European market, has played a major role in Cimbria's story of success within the coffee processing industry. As the no. 1 producer of coffee in Africa, Ethiopian coffee exporters nowadays use their Cimbria plants as a kind of guarantee to their customers, proving that they are capable of producing the highest possible quality. Indeed, European importers even ask which brand of machinery has been used to process the coffee they wish to buy – hoping that the answer will be "Cimbria".

Recently, Cimbria succeeded in winning the order to deliver the 36th coffee processing plant to Ethiopia.

Cimbria´s precise and efficient coffee processing equipment, with compact design and dust-free operation, meets the exacting demands of coffee producers and their clients.

Finally, 3 new installations, each for 5 t/h green coffee, have been installed for Ethiopian companies "Romina", "Moplaco" and "Moredocofe".

NOTHING LESS THAN EXCELLENCE

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Christian Wielander - cwi@cimbria.com

"Seeing is believing", is a well-known saying that gains even greater credence when we look at the Brazilian market. It is an interesting contrast to see that this agricultural giant has so much technology in the field and yet such a large technological gap in terms of seed processing and seed treatment.

To demonstrate the technological progress that is available, MOMESSO has invested in the acquisition and installation of CIMBRIA machines for seed processing at MOMESSO's Centre of Excellence (CEM) in Birigui/SP/Brazil. CEM allows the demonstration of machines and – even better – enables clients to bring their own seeds for testing and to see these machines working at full operating capacity, thereby creating a truly personalised experience. After all, Cimbria's superior seed processing technology is unprecedented in the country.

CEM is managed by a dedicated MOMESSO staff and features all of the required infrastructure for training and meetings, such that we can welcome guests with great professionalism. Training rooms are also used for special events such as workshops focusing on excellence in seed production. For these workshops, MOMESSO brings together experts and scientists to present relevant content to our customers and prospects. Of course, best practices in seed processing and treatment using Cimbria machines are a highlight of these presentations.

Greater proximity to the scientific community was achieved with the launch of CEM. That is why we are pleased to announce that, as of 2018, MOMESSO will be recognised as a partner of EMBRAPA, the Brazilian government institution for research and development of new technologies in the agricultural business.

Even after only a few months of operation, CEM has been visited by several renowned seed producers that are now able to witness and experience what Cimbria technology really means. And when it comes to excellence, seeing really is believing!

Moredocofe installation

Romina installation

Moplaco installation

Cimbria gravity table, and Cimbria indented cylinder separator

Cimbria SEA Chromex

Cimbria Centricoater

GRAIN STORAGE PROJECTS IN EGYPT

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In 2013 the Egyptian government signed a soft loan agreement with the Saudi Fund for Development (SFD), according to which the Egyptian government received a loan equivalent to 500 million L:E to finance the construction of 14 X 30,000 T silo projects.
The government was represented by the Ministry of Supply & Home Trade via its fully-owned Egyptian Holding Company for Silos & Storage. EHCSS announced a prequalification round for bidding for the construction of 14 X 30,000 T of vertical metal silo complexes on a turnkey basis.
EHCSS received 24 bids for prequalification, with Cimbria Unigrain having joined forces with Arab Contractors as the biggest civil contractor in Egypt. EHCSS determined the criteria for selecting qualified bidders, resulting in a shortlist of 6 bidders for the submission of technical & commercial bids in accordance with the tender document.
Cimbria Unigrain and Arab Contractors submitted their technical & commercial bids for the construction of the following silo projects on a turnkey basis:

- EL-Kharga Silo - New Valley Governorate, 45,000 T
- Fayed - Ismalia Governorate, 30,000 T
- Arab EL Olikate Silo - Qualyiobya Governorate, 90,000 T

The bid submitted by Arab Contractors & CUN secured the highest technical score amongst the 6 bidders.
After opening of the bid envelopes, Arab Contractors & CUN were awarded the silo projects for EL Kharga, 45000 T/ Fayed, 30,000 T/ Arab EL Olikate, 90,000 T. At this stage, it is worth mentioning that CUN was the only bidder that managed to design Arab EL Olikate with a capacity of 90,000 T within the permitted overall height of just 15 metres, the same restriction also applying to Fayed.
Cimbria has furthermore won an order for a 60,000 T siloproject in Bani Salama, and thus Cimbria have executed more than 95% of the silo projects operated by EHCSS, providing a total contribution of 2.5 million tonnes of modern storage capacity and serving Egypt's infrastructure with regard to the Egyptian government's national grain storage projects.

SUPPLYING THE NORWEGIAN MARKET

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Mysen Kornsilo and Moelle

Some years ago we commenced a pilot project with Mysen Kornsilo og Mølle, the aim of which was to find a solution for the future expansion of their animal feed production, whilst at the same time ensuring that production could continue uninterrupted during a period of construction and that the first step, which involved new finished goods silos, could be taken.
Following further preparatory work and a number of discussions, a solution was found with two main elements: a new production line for animal feed, built in a "tower" with the mixer at the top and the cooler at the bottom, such that it was only the ground raw materials that needed to be lifted before the finished pellets were produced, and a new finished goods silo providing efficient loading of trucks without the trucks having to be moved. The solution in this case is a battery of silos located above a weigh-bridge on which the trucks stop, while underneath the silos a mobile discharging unit ensures rapid and dust-free loading of the trucks.
The new finished goods facility has been built and was commissioned in summer 2017. An important detail for Mysen was to ensure that the pellets were as far as possible dust-free, and as such a screen is mounted on the top of the silo battery. This screen is located facing the future production tower, such that the residue that has been filtered out is returned directly to production.
The total capacity of the silo is 940 m^3. The unloading conveyors have a capacity of approximately 120 tonnes per hour, and the loading chutes are equipped with powerful extraction in order to prevent dust emission.
Following completion of the facility, a new weigher and dosing unit have been installed such that the previous finished goods silos are now used as raw material and weighing silos in the factory, which means that the raw material side has also been upgraded at the same time.

Felleskjoepet Agri, Larvik

Organic produce is gaining considerable traction on the part of farmers and downstream industries in Norway, and Felleskjøpet has therefore decided to convert a small part of its large port facility in Larvik into an organic grain facility, such that the organic grain that is taken in here is kept separate from conventional grain.
In order to be able to achieve this, both the conveyor system and dryer had to be modified. Cimbria was chosen to perform this task, which was under considerable time pressure right from the start as it needed to be finished in time for the harvest, which fortunately began a little late.
Thanks to a comprehensive overview of the existing facility on the part of the silo manager, a well-functioning facility has been successfully developed, in part with the help of the existing silos and through the establishment of new flow routes and existing discharge silos being taken into operation, supplemented by a new dryer that solely dries organic grain.
In order to underline the "green" aspect of the organic facility, Felleskjøpet decided to implement the heating unit with direct heating based on electricity. Cimbria has previously delivered dryers with electric calorifiers, and in this case heating takes place by means of an electric calorifier with an output of 770 kW, naturally with a control option for adjustment of the desired drying air temperature.

Moduflex loading chutes for dust-free outloading of pellets at Mysen Moelle

Felleskjøpet: Electric calorifier with an output of 770 kW

Silo ceiling at Mysen Moelle

INCREASED ACTIVITES IN THE BALTIC STATES

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2017 was particularly intense for the team of Cimbria‘s partner and dealer “Dotnuva Baltic“, which was involved in implementing grain storage projects in the Baltic States. Most of the installations were built in Lithuania. In Estonia there was great deal of interest in Delta 146 and Delta 159 cleaners, a few of which were successfully installed, where they received good ratings from customers.

Record-breaking grain yields in the last few years have encouraged farmers and companies engaged in the trade of grain to invest in grain silo plants. Three new silo installations were completed in Lithuania in 2017, augmented by extensions to four previously installed facilities. A lot of orders were received from farmers, with more than twenty grain handling projects of various size and capacity being built.

Furthermore, two turnkey silo plants were successfully implemented in which Dotnuva Baltic was responsible for everything from design/engineering, construction of the foundations, equipment supply, installation and automation.

The capacity of grain silos built by Dotnuva Baltic UAB in 2017 exceeded 130,000 tonnes, while the total capacity of grain stores established by the company since 1999, when the company was first involved in the business, is almost 1 million tonnes. In recent years, the total quantity of grain harvested in Lithuania has been more than 6 million tonnes – which means that almost one fifth of total grain yield in Lithuania is stored in grain stores built by Dotnuva Baltic.

The year ahead will be no less intense – 4 contracts for industrial grain elevators have already been signed and construction work was commenced this autumn. Difficult harvesting conditions this year have encouraged grain growers to continue to invest in grain dryers, silo projects and cleaning machines.

Cimbria equipment has a good reputation and is well known in the Baltic, and we thus expect that grain growers will continue to choose this equipment, since it is recognised as being amongst the best in the market.

ALMOST ONE FIFTH OF TOTAL GRAIN YIELD IN LITHUANIA IS STORED IN GRAIN STORES BUILT BY DOTNUVA BALTIC

EFFICIENT AND GENTLY CLEANING OF MALTED BARLEY

Darin Stutler - darin.stutler@bratney.com

Bratney Companies provide Cimbria cleaning systems for Proximity Malt in Laurel, Delaware, and Monte Vista, Colorado

In 2015, Bratney Companies began confidential discussions with Proximity Malt and their representatives for cleaning / sizing of raw and malted barley to meet their exacting specifications for the growing home and craft beer brewing markets in North America.
We were approached by this new company based on our experience with most of the malt houses in North America and our long tradition of quality equipment and local sales support.
Proximity Malt is a start-up malt company, designed to take advantage of under-utilised barley supply chains to bring regional grains to malt users looking for quality, consistency and regional production. Proximity Malt now produces a full range of malted grains, from pale to roasted. Proximity Malt will build, maintain and sustain access to local grains for quality malt processing on a scale that provides consistency, efficiency and variety in malt sourcing for the malt user.
Proximity Malt was looking for a gentle handling system that would efficiently move and clean the malting barley for their two regional malting facilities in Colorado and Delaware. With plants located in the heart of barley-rich agricultural production areas, Proximity Malt was looking for equipment that would efficiently and gently clean the grain while maintaining husk integrity, which is important for the malting process.
The scope for the plants consisted of:

- Cimbria Model 159 raw and load-out cleaners.
- Cimbria Model 163.15 aspirators.
- Cimbria Model TS360 de-stoning systems.

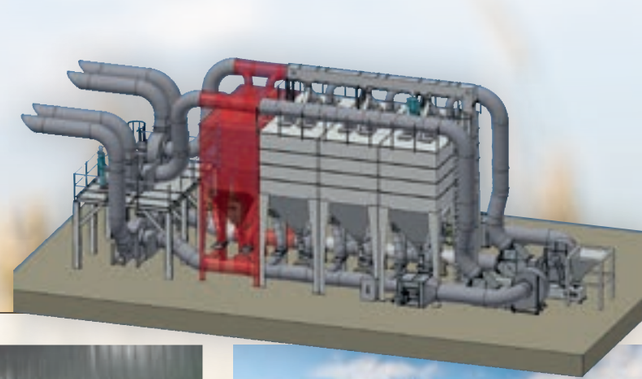
Cimbria JCC metal cleaners for screening of malt prior to bagging.
In the summer of 2017, Monte Vista was brought on line, whilst Laurel is currently being commissioned. An important part of the vital craft beer supply in North America, Proximity Malt is using the cleaning systems to provide their customers with clean and consistent malt shipments.

UNIQUE DRYING SOLUTION FOR VNR SEEDS

Michael Petzmann - mpe@cimbria.com

Box Dryer for Vegetable Seed and other kinds of Seed

It all started with a simple discussion during a visit to Raipur, India, at our valued customer VNR Seeds. VNR Seeds is one of the leading seed companies in Central India and has a very long and very good business relationship with Cimbria in Austria.
After several general discussions, Mr. Rajkumar Kundu, Plant Manager at VNR Seeds, said during one visit: “Now we need this special dryer for vegetable seed and other kinds of seed!” No sooner said than done!
The main challenge for Cimbria’s design team was the variation in terms of capacity. Drying capacity needed to range from 200 kg of vegetable seed up to 3 tonnes of paddy or okra seed. To dry such a low capacity of 200 kg was definitely not possible with the standard dryers available in the market. Another challenge was the special climate characterised by high temperatures and high ambient humidity. As a result, the Cimbria team commenced the design of a unique drying solution for VNR Seeds.
The result is a Box-Dryer with six bins and a capacity of 3 tonnes of paddy each. Feeding of the product takes place manually with gunny bags through an intake pit in a Cimbria Pendulum Bucket Elevator PBE 10. The bins have been arranged in 2 rows of 3 bins and the PBE has been placed between these rows. The operator can manually adjust to either fill the left bin row or the right row. All bins can be discharged manually and are equipped with a bag holder. The whole Box-Dryer has been equipped with manual gates and valves to keep the design very economical. All 6 bins are equipped with a perforated flat-bottom flap system which allows the operator to completely empty the bins without losing one single seed. This flat-bottom flap system can be controlled manually by means of a chain-wheel. A manhole guarantees access to the silo for proper fine cleaning and for taking samples for testing in the laboratory. Additionally, the operator has the possibility of distributing the seed evenly for an equal seed pillow, which guarantees uniform drying.
LPG Gas Burners were installed for each bin row. The operator is able to control the airflow either bottom-up or top-down by means of manual slide gates. This guarantees even and homogenous seed drying.
The main task and challenge for the design team was to create an economical drying solution. The result is a manually controlled and flexible Box-Dryer with the option of upgrading to a semi-automatic or fully automatic drying system at a later stage, as well as having the potential to extend the drying capacity by increasing the quantity of drying boxes.



DELIVERIES TO SEMILLAS FITÓ IN SPAIN

Ignacio Pons - ipl@cimbria.com

Preferred supplier to the Spanish market

Semillas Fitó is a Spanish multinational company founded in 1880 in Sant Martí de Provençals, Barcelona. During the last 130 years, it has developed from a small seed company into one of the leading multinationals in the field of genetic improvement, production and distribution of seeds of agricultural and horticultural plant species.

In 2017, Cimbria delivered the following 3 facilities to Semillas Fitó:

- A plant for the treatment of weight-gain of alfalfa, clover, etc., and coating of sunflower, corn and beans, composed of a CC150 Centricoater, with a jog conveyor 1250-4 dryer, burner, filter and aspiration and elevator PBE20.
- Installation of a colour sorting machine, CHROMEX 4 + 1 TN + TN, with elevators PBE-20 and PBE-10, mainly for beans, sunflower seeds and corn.
- A centre for the selection and calibration of seeds for beans, sunflower seeds and corn, composed of a cleaner D108, a grader D128 “special”, an indented cylinder HSR16010, a gravity table GA310, 2 CF920s, PBE20 elevators and structural work.

LABORATORY EQUIPMENT FOR BELARUS TEST CENTER

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Laboratories and Research Centres upgraded with Cimbria Lab Machines

RUE, “The Research Practical Centre of Arable Farming of N.A.S. Belarus”, ordered laboratory equipment for seed processing machines from Cimbria in order to upgrade their research centres to the next level.

It is no secret that competition with regard to the quality of seeds (germination, crop yield per hectare, etc.) is acquiring ever greater importance. Seed breeding and developing parent seed are key factors. The Belarusian government holds a very strong stake in this regard. In order to satisfy international standards and to ensure Belarusian internal agricultural value, it was decided to equip Belarusian research centres with the latest, state-of-the-art equipment. Cimbria was awarded the contract to deliver three Laboratory Universal Seed Cleaner Delta 101s and one Lab Gravity Separator to the Belarusian government facilities.

SUCCESSFUL MARKET LAUNCH OF DESTONER TS 400

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The increased demand for food for human and animal consumption, as well as an increased demand for seed itself – and consequently higher capacity processing lines – requires machines with more capacity and higher efficiency. Cimbria’s obvious answer is the De-stoner TS 400.

Compared to existing models, the TS 400 works using a pressurised system, which results in higher throughput, even more precise separation and improved scope for adjustment. The entire machine is based on Cimbria’s venerable Gravity Table GA 210, which guarantees that the De-stoner is a fully mature product.

Once the first order for the new De-stoner TS 400 had been placed and successfully put into operation, more orders followed shortly thereafter. It is thus no surprise that in the meantime Cimbria has sold several machines on 3 continents. The first machine was delivered to France to process soybeans from the silo for shipment and finally to produce animal feed. Another TS 400 was supplied to Bulgaria to a customer who carries out sunflower hulling. Before the sunflowers, which are designed for human consumption, enter the huller, stones will be completely separated, so as not to damage the subsequent peeling machines. The next TS 400 was delivered to Africa to upgrade an existing coffee processing plant for higher throughput – yet another application for an industry with high quality standards. 3 more units were shipped to the North American market to separate stones from different varieties of lentils, soybeans, wheat, barley, oats, flaxseed, chickpeas, peas, etc.

By using the TS 400, customers in Canada are now in a position to fully utilise the capacity of machines installed further down the line, such as the Super Fine Cleaner Delta 108 and Indented Cylinder Separator HSR from the 16010 series. Thus the whole Cimbria product range is perfectly matched to current market requirements, whilst also taking future demand into account.

CENTRICOATER NOVELTIES

Oliver Jan - oja@cimbria.com

By Michael Augustin - mau@cimbria.com

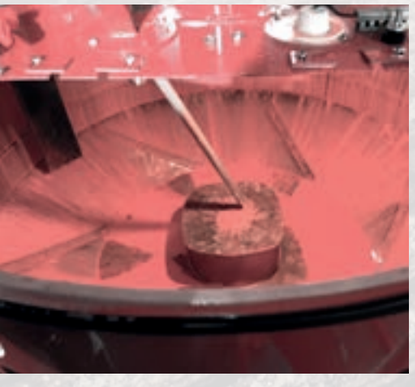
FLOW and MASS dosing lines in a new design

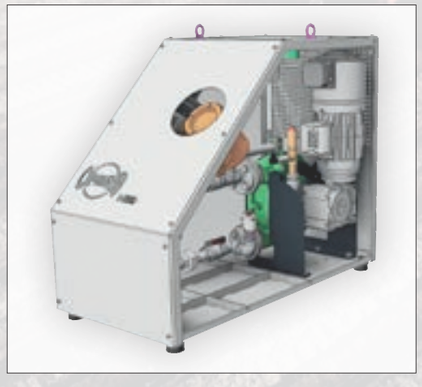
Cimbria is introducing a new design for the FLOW and MASS dosing units that offers remarkable benefits for seed companies. The unit has a very compact design, with sufficiently sized access openings on both sides. The operator will normally see the user-friendly display of the flow/mass meter on the front side. Worthy of particular mention is the integrated safety pan at the bottom of the unit. All connections to the slurry piping are now on the rear of the unit. These connections are prepared for connecting SUPERTOP hoses using special sleeves, allowing quick disconnection for maintenance purposes or cleaning. All 3 sizes of the pumps available (D10, D15, D25) can be installed in the same frame. The internal piping has quick-locks to provide easy disassembly for maintenance and cleaning. The pump suction filter is located close to the outside, providing excellent access for cleaning the filter basket. The flow and mass meter are now both from ABB, a well-reputed company operating around the globe. Furthermore, the new mass meter allows gravimetric as well as volumetric measurement of the slurry (switchable by the operator in the Centricoater menu), so it can be used not only for gram based slurries, but also for millilitre based slurries with or without electrical conductivity.

New Age of CENTRICOATER CLEANING

The cleaning of centricoaters has taken a big step forward in terms of automation. Cimbria has developed a new cleaning technology to flush the coating drum with a special cleaning system to automate the cleaning process, reducing downtime and minimising the amount of water used for washing, as well as limiting human contact with the chemicals. This represents a big improvement in terms of safety, since there is no longer any contact for the operators or cleaning team with toxic chemicals. In addition, the cleaning interval is flexible, supported by PLC-controlled activation and can be performed at the end of a seed batch or all x batches with a short cleaning time to prevent accumulation of residue.

The system works using high-end spraying nozzles located inside the drum that are able to spray at a 360° spraying angle. The water builds up and floats the rotor bottom until the PLC gives the signal for discharging through the standard discharge door. Water ingress to the bottom of the rotor is prevented by the standard gap-sealing system, which utilises a powerful airstream between the rotor and stator. An additional watertight flap below the discharge housing automatically switches between seed flow and return pipe to the washwater tank. Recirculation of the washwater helps reduce the quantity of water used.





COLOR SORTING ON AFRICAN GROUND

Jørgen T. Nielsen - cimbria@africaonline.co.ke

Kenya

First there was one; and then there were two

Following discussions and adjustments, in December 2014 Cimbria East Africa entered into a contract with Servicoff Ltd in Nairobi for the supply and installation of a SEA Chrome 3 T+T Colour Sorter for sorting of green Arabica coffee.

The machine was supplied in 2015 with an intake hopper above ground level, where the 60 kg bags bought by the company are dropped and then elevated into the colour sorter via a vibrator feeder and a bucket elevator. A second elevator is used for circulation of the coffee that is due to be resorted. All machines are aspirated with a small JKF filter and electronic control unit designed and delivered here from our Nairobi workshop.

On the ground floor below the colour sorter the coffee is re-bagged and readied for export.

Servicoff was happy with the performance of our delivery and satisfied with our service support. Therefore when it was time for expansion in June 2016, the company asked us for a new quote for a similar setup, prior to signing a new contract in October 2016 for delivery and installation. The second machine was installed and commissioned in early 2017.

Tanzania

Cotacoff Tanzania, which operates from just outside the main port of Dar-es-Salaam, contacted Cimbria East Africa as they had problems with the quality of the coffee purchased and needed an upgrade. We thus quoted them for a gravity separator and colour sorter. The contract was signed and we delivered a GA 110 gravity separator and a CHROME 3 T+T colour sorter with elevators, aspiration and platforms.

Today the plant delivers high quality Robusta and Arabica coffee at 5-6 TPH that is ready for export.

Servicoff Ltd in Nairobi

Cotacoff Tanzania