



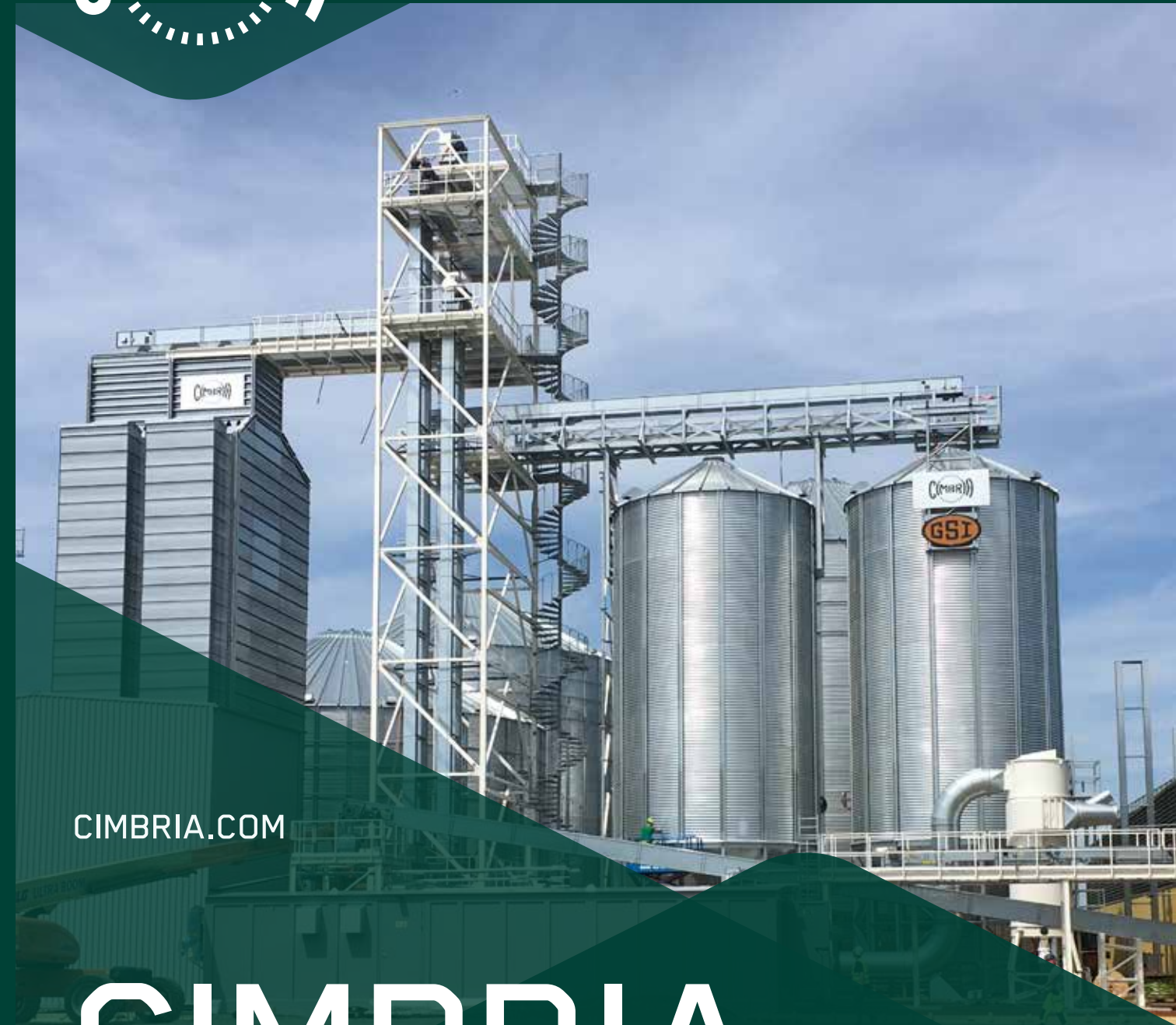
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CIMBRIA NEWS 2020

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**YOUR
BUSINESS
OUR
KNOWHOW**

TOGETHER, WE FEED THE WORLD

GLOBAL PERSPECTIVE – LOCAL FOCUS

Gary Rollinson
Vice President - Grain & Seed - EAME at AGCO Corporation



Cimbria, with its headquarters in Thisted, Denmark, is an international company founded in 1947, supplying reliable solutions based on in-house knowledge and technology. During the past 70 years we have accumulated a product portfolio and experience that make Cimbria a relevant partner for our customers with regard to the delivery of high-quality technological solutions.

Cimbria's expertise within agricultural production and processing is part of the service we provide in order to optimize 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".

Cimbria's mission is to contribute to the creation of a sustainable link between efficient production and optimum utilization of agricultural crops, whilst at the same time ensuring due consideration of man and the environment.

Our vision is clear: 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 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 together with GSI we now hold a global leader position as the world's largest supplier of equipment, complete solutions and technologies for the grain and seed market.

ГРУППА КОМПАНИЙ CIMBRIA ПРЕДСТАВЛЕНА В:

Дании • Австрии • Чешской Республике • Индии • Италии • Испании • Кении • Египте • Турции • Малайзии • России • Таиланде • Украине • Великобритании • Германии • Казахстане

ПАРТНЕРЫ ПРЕДСТАВЛЕНЫ В:

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Together, we feed the world

Cimbria was acquired by the AGCO Group in 2016. AGCO is a global leader focused on the design, manufacture and distribution of agricultural solutions. Through well-known tractor brands including Challenger, Fendt, Massey Ferguson and Valtra, AGCO Corporation delivers agricultural machineries to farmers worldwide.

AGCO offers high-tech solutions to the farmers who are feeding the world. To meet the world's growing need for quality grain and responsibly-raised protein, AGCO's Grain and Protein business has evolved through strategic acquisition and continued innovation, that made AGCO become global leaders in grain systems and seed processing solutions. AGCO is also among the world leaders in swine production systems, poultry production and commercial egg systems.

As part of the Grain and Protein business, Cimbria makes a perfect match with the GSI brand to become the world's biggest and most technologically advanced supplier of products and systems for the grain storage and seed processing industry.

We are committed to far-reaching technology solutions that increase efficiency and productivity, pushing the limits of agricultural innovation. We continuously invest in research, development and acquisitions because the demands of a growing population and the challenge of food security deserve unrelenting focus.

Feeding the world is a major challenge worldwide, that will continue to grow as population increases in coming years. To meet this challenge, the agriculture industry needs innovations that make today's farms more productive, profitable and efficient. That's exactly what we deliver.

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

CIMBRIA

NEWS 2020

NEW GATES FOR UKRAINIAN EXPORT



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In October 2018, the first – symbolic – pile was driven on the shore of the shallow and rush-filled Ploska Osokorivka River, which is a tributary of the Dnipro River, in the small village of Ternivka in the north of the Zaporizhzhia region. By the following spring, the leading company in the Ukrainian agrarian market – NIBULON – had commenced major construction works here. Only a further one hundred days passed before the 12th river trans-shipment terminal and 27th Nibulon infrastructure project received its first grain from a new crop into its silos.

On 2 July 2019, a ceremonial commissioning of this trans-shipment river terminal took place. It is considered to be one of the most eagerly anticipated investment projects in the region,

efficient and absolutely crucial to the agrarian sector in Ukraine. Terminal capacity will enable the reception of up to 300 thousand tonnes of grain per year. After the launch of this terminal, the total capacity of all elevators at Nibulon's disposal will reach 2 million tonnes of one-time storage.

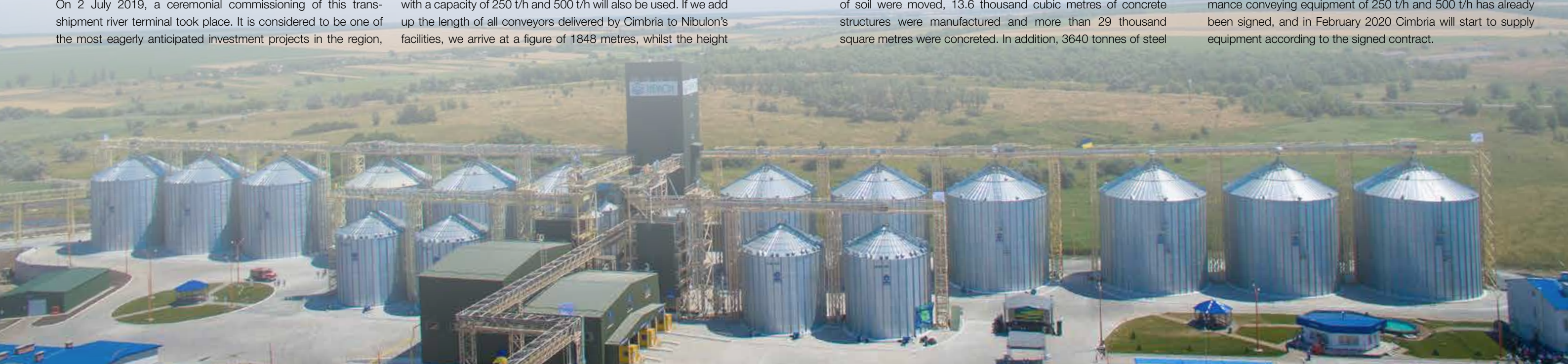
Cimbria and NIBULON have been working together since 2003. 22 facilities have been built as a result of this collaboration, with Cimbria supplying conveyors and elevators for Nibulon's projects. At Ternivka's terminal, Cimbria conveying equipment with a capacity of 250 t/h and 500 t/h will also be used. If we add up the length of all conveyors delivered by Cimbria to Nibulon's facilities, we arrive at a figure of 1848 metres, whilst the height

of all installed elevators is equal to the height of four Cheops pyramids! However, whilst the pyramid of Cheops took almost twenty years to build, the terminal in Ternivka was built within a traditionally short space of time for NIBULON – just 100 days. All site works were accurate, well-organized and professional, despite the very problematic terrain, geological specifics of the site and adverse weather conditions.

During the construction of the new terminal in Ternivka more than 3500 piles were driven, more than 400 thousand cubic metres of soil were moved, 13.6 thousand cubic metres of concrete structures were manufactured and more than 29 thousand square metres were concreted. In addition, 3640 tonnes of steel

structures were assembled and a 150 m cargo pier was built. In total, around 1500 people provided by 70 contractors were involved in construction from almost every part of Ukraine. During the first two months of operation, the new trans-shipment terminal in Ternivka has received about 100 thousand tonnes of the new crop.

In addition, Cimbria will participate in the next Nibulon project, which is due to be installed in the village of Marianske in the Dnipropetrovsk region. A contract for the supply of high-performance conveying equipment of 250 t/h and 500 t/h has already been signed, and in February 2020 Cimbria will start to supply equipment according to the signed contract.



Ceremonial opening of the trans-shipment river terminal in the village of Ternivka, Zaporizhzhia region.

Oleksiy Vadatursky, hero of Ukraine, CEO of Nibulon LLC, and Oksana Stretovych, director of Cimbria Unigrain's representative office in Ukraine, during the opening ceremony in Ternivka.

THE LARGEST SEED PROCESSING FACILITY IN UKRAINE



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NEW STATE-OF-THE-ART SEED PROCESSING FACILITY - THE LARGEST IN UKRAINE

Cimbria's client, Bayer, has invested in a state-of-the-art corn seed processing line that is the largest in Ukraine and one of the largest in Europe. The total investment amounts to 200 million US dollars and the facility is situated in one of Ukraine's most productive agricultural regions.

The project is the largest single order that Cimbria has ever handled, with the contract being signed back in 2014. The original design facilitates three production lines. To date, we have supplied equipment for 2 lines which are already installed and in operation.

Corn cobs are received directly from the farmer's harvest by truck and filled into the receiving/intake equipment. After this, the cobs are transported by belt conveyors to the husking and sorting building. Leaves on the corn cobs are removed and the corn cobs are sorted by colour sorter and manually.

The corn cobs enter the drying facility, in which the radiators are heated by warm water produced from the burning of waste from production. After drying the cobs, the corn is removed from the cob itself in the sheller area and transported to the bulk area. The corn has many different hybrids, but with 150 bins it is easy to ensure that the variants are not mixed.



From the bulk area, the corn goes to the conditioning tower for sorting according to size, weight and appearance. Centriccoaters perform the final and most important operation: applying a protective layer to the corn seeds. This will guarantee high quality seeds for Ukrainian farmers.

After passing through an automatic packing and palletizing system, the finished product is placed in a refrigerated warehouse for storage prior to delivery.

A few facts concerning the greenfield supply from Cimbria (figures for each line):

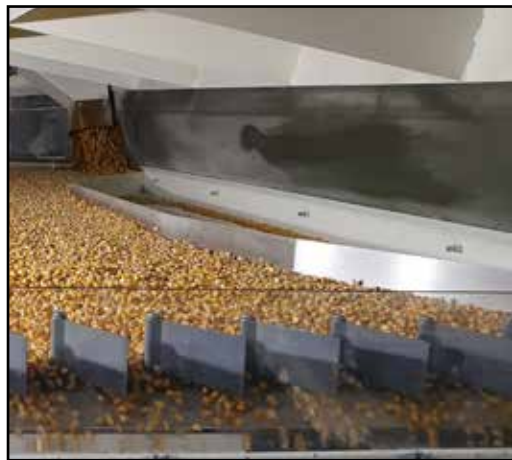
Reception:	60 TPH
Husk and sort:	60 TPH
SWO husk and sort to dryers:	60 TPH
Dryer holding capacity:	18 bins 100 MT + 8 bins 60 MT. 2280 MT (92 x 36 m) in total
SWO dryers to sheller:	100 TPH
Shelling:	76 TPH
Bulk storage:	76 TPH in; 30 TPH out
Bulk storage holding capacity:	150 bins 20000 MT in total

Conditioning tower:	20 TPH
Bayer storage capacity for finished seeds	35,000 m2
Bayer administration	3,200 m2 two storage buildings.
Approx. 80 people employed.	Approx. 200 in season.

Both Cimbria Heid and Cimbria Unigrain have – along with our longstanding suppliers – contributed with high yield equipment. Cimbria Heid has supplied: gravity tables, cylindrical screening machines, sample takers and centriccoaters, incl. mix system. Cimbria Unigrain has supplied: intake walking floor, transport equipment, bucket elevators, pendulum elevators, belt, chain and screw conveyors, bellow feeders, chain and belt weighing devices, cleaners and graders, complete vacuum cleaning system, complete aspiration system.

After almost 5 years of overall design works followed by supervision of the completion of the installation, all capacity tests have been performed to the satisfaction of Bayer, and we expect to finalize the handover procedure shortly.

The Curimapu site is located some 100 km southwest of Kiev in the city of Pochuicky in the Zhytomyr region.



THE LARGEST RUSSIAN AGRO-INDUSTRIAL COMPLEX



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Cimbria supplies equipment to the largest agro-industrial complex in Ural, Russia

Today the Sigma group is the largest agro-industrial complex in the Ural region and the Republic of Bashkortostan. Its core business is the manufacture and sale of vegetable oils and processed products within the Russian Federation, as well as export to neighbouring countries and markets further afield.

At the beginning of 2019, four contracts for the supply of equipment and silos equipped with temperature monitoring system, sweep augers and automation were concluded. Supervision and commissioning were also included in the terms of these contracts. The scope of supply included RM10 chain conveyors, EE14 bucket elevators, Delta 159 cleaners, DS1250 Drum scalper and DMG 34 Dryers.

3 more contracts were signed during 2019 that saw a DMG 34 Dryer and two Drum scalpers being supplied.

The cooperation between Sigma and Cimbria dates back to 2012, when Cimbria supplied an ECO Master dryer, Drum scalper and two Mega Cleaners. A contract for the supply of a silo plant with a storage volume of 90,000 m3 was also concluded in 2012.

Contracts for the supply of a DMG 34-R Dryer and the construction of a silo plant in Mayachny were signed in 2015.

2016 - Expansion of the silo plant in Mayachny.

2018 - Cleaning equipment supply.

As can be seen from the chronology of these contracts, the professional relationship between the two companies is growing year-on-year. We hope that 2020 will be equally fruitful and interesting for both parties.



GREEN COFFEE PROCESSING PLANT IN INDONESIA



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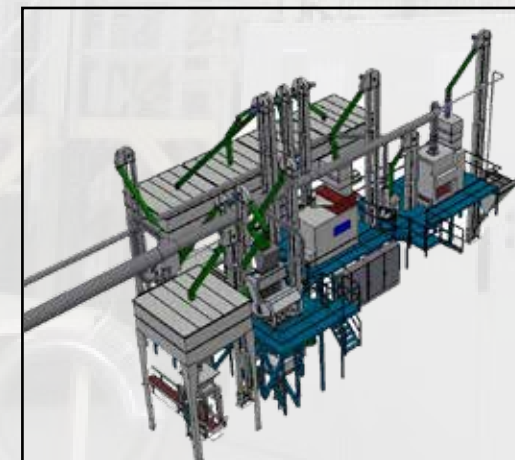
Green coffee processing plant in collaboration with industrial giant

Rieckermann, a global expert in various industries, provides process technology technical services and engineering solutions within the pharmaceutical, plastic, metal, oil & gas and, not least, food industries.

At the beginning of 2019, Rieckermann and Cimbria completed a 3-t/h green coffee processing plant for PT. Kopi Prima in Indonesia.

This state-of-the-art coffee processing line uses mechanical separation technologies such as a Cimbria Delta cleaner and dry-stoner for the best cleaning results. These are followed by our Cimbria Delta grader for accurate sizing and the Cimbria gravity separator to sort different qualities according to specific weight. In addition, we use Cimbria electronic colour sorting technology in order to meet the highest quality demands required by the export market.

This efficient plant with its compact design and dust-free operating environment represents yet another successful project with our partner in the Indonesian coffee market.



150,000 T STORAGE FACILITY IN DENMARK



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In 2018, Buttimer Engineering Poland signed a contract for the delivery of a port grain terminal at Masnedø, near Vordingborg in Denmark. Buttimer Engineering Poland is Cimbria's dealer in Poland. The company has years of experience of delivering port terminals with Cimbria equipment. Buttimer and Cimbria worked closely together on this port terminal, and by the summer of 2019 the plant was ready for grain intake.

Eco-Logic dryer in Vordingborg, Denmark

Buttimer and Cimbria agreed on the use of the new Eco-Logic dryer, including the automated system for self-adjustment. The Eco-Logic is a state-of-the-art dryer featuring the most advanced technology on the market. The initial performance test turned out very well, with noise and dust emissions exceeding expectations, whilst the calculated capacity was achieved without any problems.

The new plant is an extension of an existing plant and increases the holding capacity from a total of 40,000 to 150,000 tonnes.

Buttimer Engineering Poland designed the plant, which includes 2 x 330 tph conveying transport, 1000 tph intake and outloading from/to ship. This plant also includes pre-cleaning of up to 800 tph and a drying process from 19-15% moisture on wheat at 125 tph. Overall, it was a very successful project by Buttimer Engineering Poland that included a variety of AGCO equipment.

Scope of supply:

Cimbria acted as a sub-supplier for Buttimer Engineering Poland. Cimbria's supply consisted of 4 x 32 m diameter silos (GSI silo), 4 x 22 m diameter silos (GSI silo), two 11 m diameter wet bins (GSI silo), one 3 m diameter outloading silo (GSI silo), one Eco-logic dryer, two drum scalpers, 261 metres of bucket elevators, 744 metres of belt conveyors and 922 metres of chain conveyors.



The new plant is an extension of an existing plant and increases the holding capacity from a total of 40,000 to 150,000 tonnes.

ECO-LOGIC

INTELLIGENT DRYING





NEW PACKAGING AND PALLETIZING LINE

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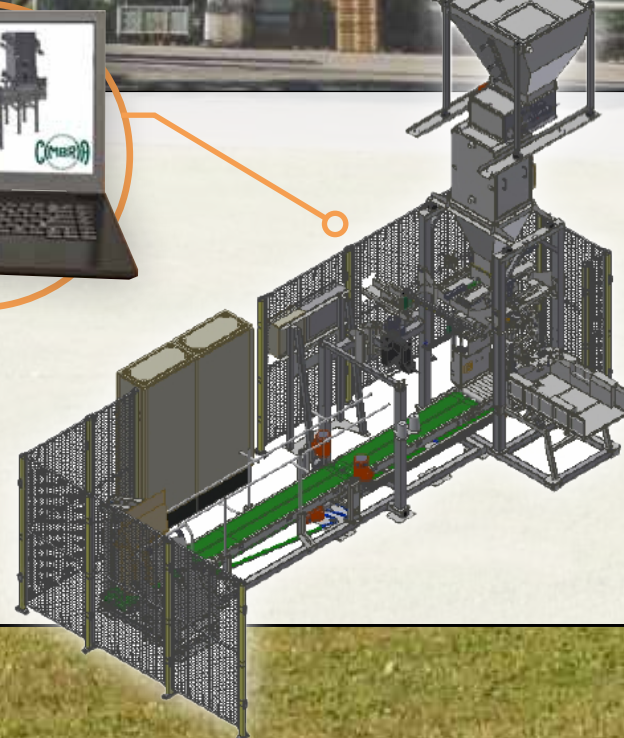
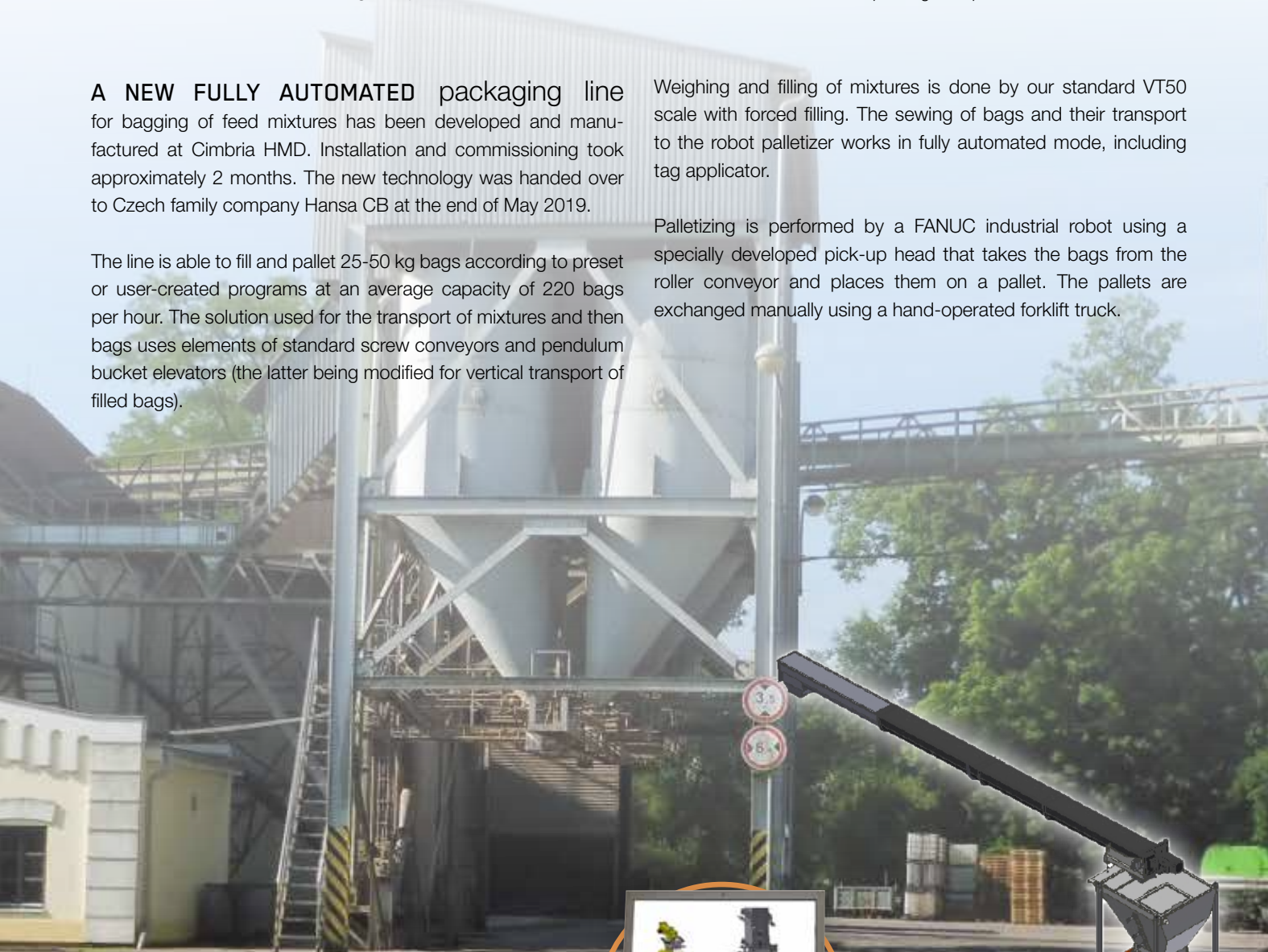
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A NEW FULLY AUTOMATED packaging line for bagging of feed mixtures has been developed and manufactured at Cimbria HMD. Installation and commissioning took approximately 2 months. The new technology was handed over to Czech family company Hansa CB at the end of May 2019.

The line is able to fill and pallet 25-50 kg bags according to preset or user-created programs at an average capacity of 220 bags per hour. The solution used for the transport of mixtures and then bags uses elements of standard screw conveyors and pendulum bucket elevators (the latter being modified for vertical transport of filled bags).

Weighing and filling of mixtures is done by our standard VT50 scale with forced filling. The sewing of bags and their transport to the robot palletizer works in fully automated mode, including tag applicator.

Palletizing is performed by a FANUC industrial robot using a specially developed pick-up head that takes the bags from the roller conveyor and places them on a pallet. The pallets are exchanged manually using a hand-operated forklift truck.



SILO SYSTEM FOR THE CONCRETE INDUSTRY



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For more than three years, Cimbria Unigrain has had the pleasure of delivering silo systems to Haarup Maskinfabrik A/S, Silkeborg, Denmark, which is one of the world's leading manufacturers of silo, dosing and mixing systems for the production of concrete, including concrete elements.

Haarup is a specialist in:

Best mixing/dosing system for constituents used to make concrete

- Process knowledge of manufacturing of concrete to be used on building sites and manufacturing of building elements, i.e. walls, decks, incl. load-bearing constructions such as columns and girders
- High-quality equipment specially designed for these types of applications
- International experience – from Europe via USA to Australia
- Haarup has extensive experience in concrete technology and is looking for the best suppliers
- Haarup currently has the most well-developed and long-lasting mixer for mixing of batches up to 6,000 kg
- Haarup's expertise within reception and traceability is unique.

As a result, Cimbria Unigrain is grateful to be able to contribute to this type of plant with its expertise, not least in terms of silo buildings.

In late 2018 and 2019, two projects in Germany were implemented and completed.

In autumn 2019 we also had the pleasure of delivering a silo system to Haarup for installation in Australia. The installation of this plant will be executed during the first half of 2020.

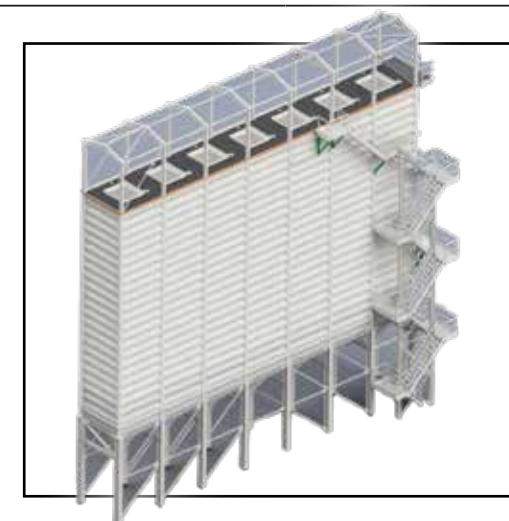
The plants in general consist of a number of silo cells. In addition, they have a raised roof construction with enough space for feed conveyors, whilst below there is a steel structure incl. machine floors for weighing and placing of mixers and for carrying conveying equipment.

Silo bins are specially designed for heavy and abrasive raw materials used in the correct mixing of concrete for the purpose concerned.

As the bins contain raw materials such as sand and stone – in many cases with high moisture content – and are filled and emptied continuously, the heavy-duty silos are reinforced in order to withstand intensive use.

The installation of the silo plants is executed in close collaboration with Haarup's own installation crew, since lifting and positioning of the heavy equipment must be coordinated in great detail in order to achieve smooth and fast installation.

This business area is an extension of our normal target segment and a natural extension of the fact that over the years we have supplied several similar silo blocks for plants used in the manufacture of products for the construction industry within flooring, waterproofing of wet rooms, as well as grouting of tiles and natural stone.





DRYER NO. 13 STARTED IN KAZAKHSTAN

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Some say 13 is an unlucky number, but Cimbria can definitely say it brings good luck with the installation of dryer no. 13 in Kazakhstan. We now have exactly 300 sections of A-Type dryer located in this huge agricultural country.

LLC "Agrofirma TNK" is a company that uses high-end technology in order to produce high-quality and natural products that are required in the current market.

In 2019, the company's senior management decided to conduct an upgrade of outdated equipment that was built during the days of the Soviet Union. In order to do this, they decided to procure reliable and productive grain dryers to modernize old equipment. As a result of trust and experience built up over many years, the company once again decided to rely on Cimbria's grain drying equipment. "Agrofirma TNK" thus currently owns 7 dryers manufactured by our company.



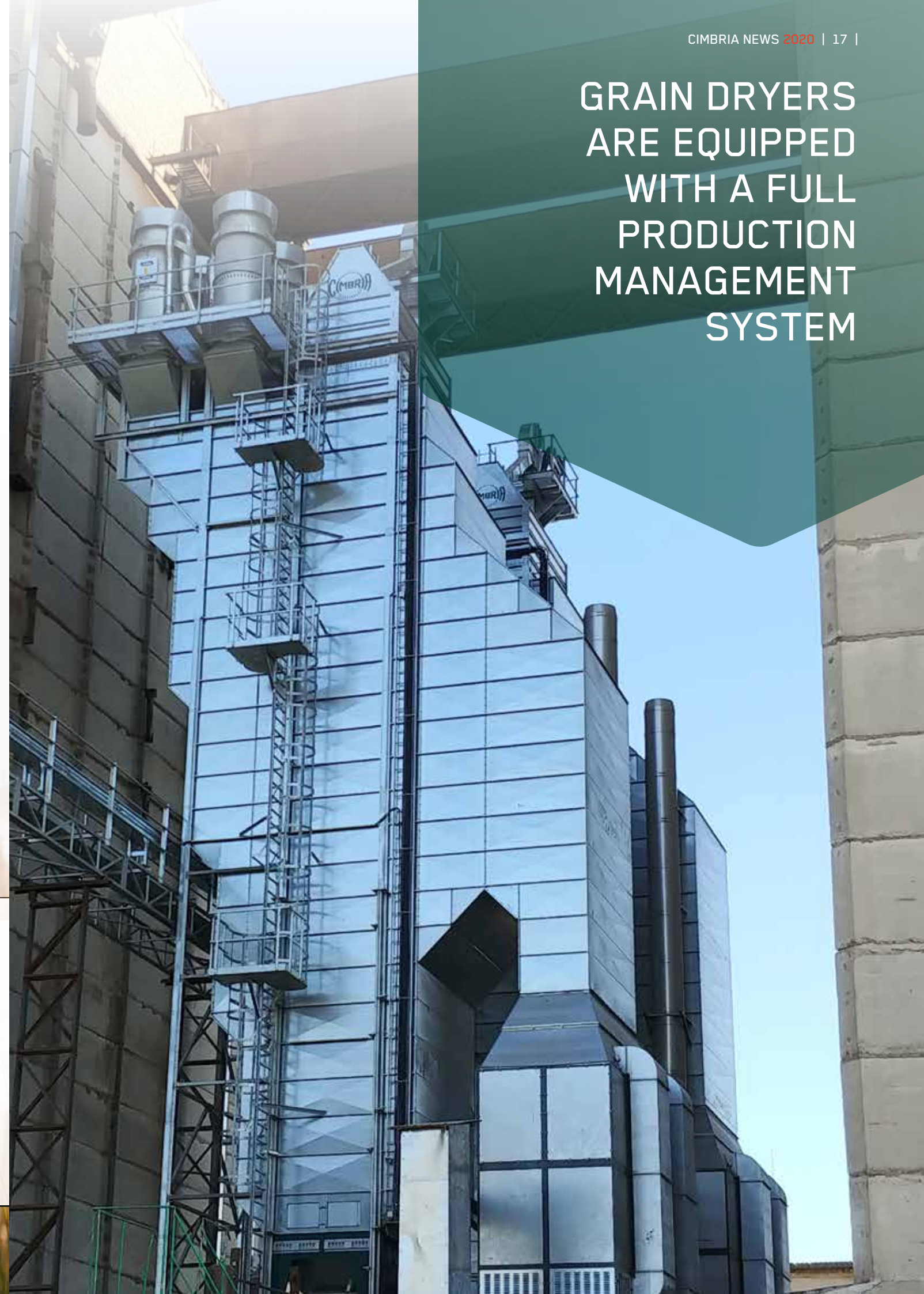
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LLC "Agrofirma TNK" purchased 2 ALG25 grain dryers with a capacity of 50 tonnes/hour and moisture reduction in the end product from 19% to 15%. Due to environmental concerns, the dryers are equipped with CF30 cyclofans, which provide efficient dust and husk emission control. Cimbria's grain dryers are equipped with a full production management system, which includes control of parameters such as use of air volume, temperature and speed of product movement.

Immediately after commissioning the installed equipment, the new grain dryers proved their quality, reliability and leadership in the grain processing area. We hope that this project will provide a great example for other companies in the market which are still using outdated installations. Our local representative office provides all required consultations, service and maintenance of equipment, thus ensuring continuous functionality of all equipment.



GRAIN DRYERS ARE EQUIPPED WITH A FULL PRODUCTION MANAGEMENT SYSTEM



ITALIAN CHICKPEA RECEIVING AND PROCESSING PLANT



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GE.CA Legumi is probably the biggest dried legumes (& cereals) producer for food consumption in Italy.

In 2016 the company expanded the property – purchasing a new area close to the existing one – by building a dedicated chickpea plant.

The aim of the customer was to store up to 4,000 tonnes of harvested product and process it directly on site. To achieve this aim, Cimbria Heid Italia designed a turnkey plant to be built in two stages.

At the end of 2017, CHI began the assembly of pre-cleaning and storage sections that are located in the outside area. The intake pit is placed inside the building itself, whilst the pre-cleaner, Delta 146 and the 50,000 m³/h main filter are situated above the building for the waste product.

Finally, 14 steel hopper silos of 400 m³ capacity each – corresponding to an approximate storage capacity of 300 T each – are positioned in two rows along the wall of the building.

In order to fulfill customer requirements of achieving the best cleaning of the product in storage operation and minimizing possible product breaks, the CHI project includes round silos made with smooth walls and a couple of bean-ladders for each of the bins.

In spring 2018, CHI commenced the installation of the cleaning line.

With the proviso that the complete removal of stones, widely collected during harvest activities, is a crucial factor in chickpeas for human consumption, the line was designed according to the following flow.

Pre-cleaned product stored in the external silos is transferred to the internal buffer where, via a low speed elevator EC8-LS, it reaches a Delta 107. Chickpeas coming out of the Delta pass through a magnetic grid and are divided into two different streams, each of which is processed by a TS180 dry stoner. The whole product is then collected in a single buffer and delivered to a GA310 gravity table. The heavier product is processed once again by a TS90. Afterwards, the entire product is conveyed to an optical sorter Chromex 7 TN+TN working 3+3+1: this means that the first 3 chutes send the good product to the next 3 chutes, with the double passage ensuring the best cleaning process; the waste product emerging from the first 6 chutes is processed by a seventh chute in order to recover any good product.

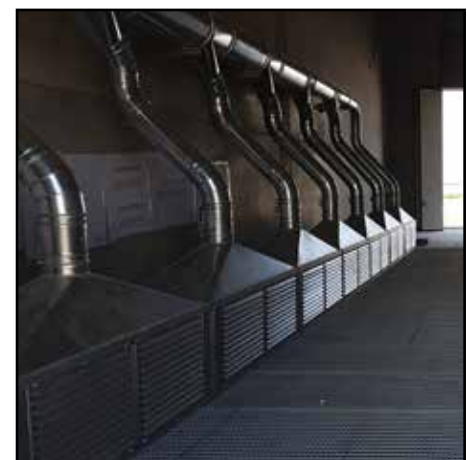
A single Delta 128 grader separates chickpeas into 3 different sizes, including a final check that removes split seeds. The different sizes are stored in a corresponding number of buffers. Once ready for packing, graded chickpeas are conveyed from the bins to a final X-ray check, placed directly above the bagging square buffers.

The whole plant is controlled by a powerful PLC connected directly to the corporate ERP (Enterprise Resource Planning) in order to ensure correct remote supervision of the entire process.

This state-of-the-art facility provides several economic and product quality benefits, thus ensuring supremacy in relation to our competitors.

The customer demonstrated their loyalty and gratitude by confirming a new project consisting of a further 15 hopper smooth wall silos that will increase the capacity of the existing storage plant. Assembly has just commenced (October 2019).

THE BIGGEST DRIED LEGUMES (& CEREALS) PRODUCER FOR FOOD CONSUMPTION IN ITALY



NEW PORT GRAIN TERMINAL IN ROMANIA



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Cimbria has signed a contract and order to execute a new port terminal for S.C. UMEX SLR at the Romanian port of Constanta.

The Port of Constanta has secured a leading position as one of Europe's major bulk centres, with its port currently handling a multitude of dry bulk such as iron ore and non-ferrous ore, grain, coal, coke, phosphate, cement and other building and construction materials.

These types of cargo operate in specialized terminals located next to the river-maritime basin that can facilitate both maritime and river vessels with direct trans-shipment on barges.

Project at a glance:

Cimbria will design and engineer the mechanical, electrical and structural steel works on the project, as well as managing onsite supervision of the local installation and authority from the completion of commissioning all the way through training.

4 Intake Systems:

1. There will be a railway truck intake system for unloading incoming railway trucks and conveying grain into silos. This intake system includes Cimbria chain conveyors, bucket elevators, and an enclosed GSI conveyor belt. The system also includes

an overhang magnet for the removal of ferrous material and a bulk scale for recording the weight of incoming material. Once completed, this conveying system will be capable of transporting up to 600 TPH of grain into storage silos.

2. Barges sailing down the Danube for trans-shipment will be able to unload grain by means of existing shore cranes onto a moveable grab hopper. The grain will then be conveyed via the GSI enclosed conveyor belt, Cimbria bucket elevators and through the overhang magnet for removal of ferrous material, after which it will pass through the bulk scale for recording the weight of incoming material. This conveying system is designed to transport 800 TPH of grain into storage silos.

3. Domestic trucks will unload grain via a truck dump hopper. The grain will then be transported by Cimbria chain conveyors to storage silos, with material flow being recorded via a truck weighbridge.

4. Existing warehouses will unload by means of an existing belt conveyor with hopper, via a GSI enclosed conveyor belt, Cimbria bucket elevators and through the bulk scale for recording the weight of incoming material. This system is designed to transport grain from the storage silos at a capacity of 600 TPH.

Once completed, all 4-intake systems will be able to operate simultaneously.

The scope of the port terminal:

- Silo storage consists of eight GSI silos of 25.6 m dia. and 10,000 MT, thus making up a total of 80,000 MT. The silos are equipped with an aeration system and sweep augers with a capacity of 300 TPH.
- Reclaim from silos with GSI enclosed belt conveyors from silos to ship loader at 1,500 TPH
- Rail-mounted ship loader, 1,500 MT, for loading ocean going Panmax and post-Panmax vessels
- All structural steel galleries and main elevator building (43 metres high)
- Cimbria MCC-PLC and SCADA control system
- Power and control cables, including main supply cables from MDP to all MCC Panels
- Onsite supervision and complete installation, crane, tools, etc.

Commissioning and training of operators

Tentative Schedule

Design and engineering Q4 /19, Q1-2/20

Civil works Q2-3 2020

Start of delivery Q3-4/20

Expected completion Q3-4/21



NEW SEED PROCESSING PLANT IN CANADA



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New high quality seed processing plant

When the Watson family of Avonlea, Saskatchewan, began considering building a new cleaning plant, they looked for ideas and information in many places. They soon found the Cimbria name in many successful facilities in the region, as well as finding Nexeed, Cimbria's dealer in Canada at a local agricultural exhibition. With more than 25 years' experience helping customers like the Watsons, Nexeed was able to work closely with the Watson organization to determine what their future plant would need to include and how to best realise that goal. It was determined that a turnkey solution would be the best fit, and Nexeed put together the necessary group to manage the project from the detailed design and planning phase all the way through to commissioning.

The resultant plant includes a Cimbria Delta 107 Super Cleaner, HSR12020 Indent Cylinders, a GA310 Gravity Separator and a Chromex 5 Optical Sorter. Structural steel and operator platforms were supplied directly by Nexeed for quick erection onsite. The plant is capable of processing multiple commodities, including

durum, winter wheat, chickpeas, green and yellow field peas, kabuli chickpeas, large green lentils, small green lentils, red lentils, brown mustard and fenugreek. Capacity varies, but is within the 9-11 TPH range, depending on the product and the job that is needed. With most commodities being cleaned to pedigree standard, the capacity of the machines is not critical, since purity is one of the main goals.

Calvin Watson, Co-Owner and Vice President commented: "We knew what we wanted the plant to be able to do, and Nexeed helped us determine how to do it. The project went smoothly and we are very happy with the reliability and functionality of the plant". He went on to say, "We have been extremely happy with the precision of the Cimbria machines and their durability. The precision has allowed us to have a high quality of seed with a low clean out amount. The follow-up service has been great. We would definitely recommend any of the Cimbria machines we have used."



GERMAN PIONEER IN PLASTIC RECYCLING

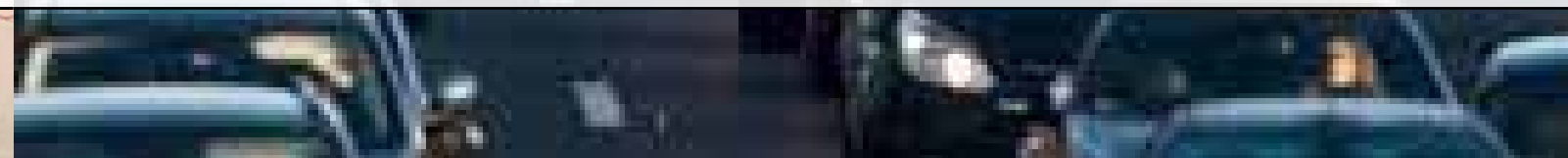


Matthias Zank
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GID – General Industries Deutschland – Pioneer in plastic recycling

Germany has always held a leading role globally in the development and production of high-end automobiles, manufacturing approximately 5 million cars a year. Strict quality regulations within the production facilities of leading manufacturers result in a reasonable amount of rejected plastic parts that do not comply with internal quality standards. It is at this point that GID steps in. It is therefore no surprise that a leading company in plastic recycling also comes from Germany.

Cars consist of numerous parts made from various different plastic materials. It is vital that each of these raw materials, once they have been rejected from production, is recycled in a genuine way, thus saving resources and keeping our environmental footprint as small as possible – and thereby giving our descendants a chance to take over a clean world for their future.



DLG DANTOASTER INSTALLATIONS



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In 2019, two Dantoaster plants have been completed for DLG in Denmark, boosting the ability to dry grain – even with high moisture content – at a good capacity.

The plants have been installed at DLG Aars, approximately 50 km southwest of Aalborg, and at DLG Gredstedbro, approximately 25 km southeast of Esbjerg, in North and South Jutland respectively.

Both plants are installed in existing buildings, with all necessary conveying systems and, not least, aspirators to ensure the minimum content of dust in the grain going into the Dantoaster. The Dantoasters are equipped with a state-of-the-art Cimbria control system, ensuring trouble-free operation of the process

and maintaining high levels of safety when running the plant. In addition, CimSafe® spark detection systems are installed that will shut down the process if sparks are detected after the Dantoaster. To help minimize the risk, a specially built chain conveyor is part of the solution. The conveyor has a two-layer design, whereby the dried – and still hot – material is conveyed on top of the intermediate bottom and then back again in the bottom of the conveyor. This has proved to help minimize the risk of sparks reaching the cooler.

The coolers on both plants are grain dryers with cooling function only.



MAIZE SEED PROCESSING PLANT FOR THAILAND



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Maize Seed Processing Plant for Southeast Asia (Thailand)

For Pacific Seeds (Thai) Company Limited, Cimbria has installed a maize seed processing plant that can handle no less than 14 grades of maize due to the widespread use of mechanical planting technology in South America, to where the seed is due to be exported.

It is not the first line and machine Cimbria has installed at Pacific Seeds (Thai), which is a member of Advanta, in recent years. Performance, ease of handling and the practically maintenance-free qualities of Cimbria equipment convinced Pacific Seeds to once again engage Cimbria as general contractor on the construction of a complete plant.

The high export rate to South America and the demand for up to 14 grades were the driving forces behind investment in a complete maize cleaning and grading plant 3 hours north of the capital city of Bangkok. The existing machinery, a mix of Cimbria and locally made equipment, was far too small for the new demand, whilst the design of the new plant enables processing of at least 8 t/h

at 14 different grades. Following intake, a Delta 116 functions as a fine cleaner and creates the first 2 grades. The 2 grades obtained run in parallel to the next process through 2 Delta 127 graders. Each of these precise graders creates 4 more grades which are buffered in silos after processing. The final 2 grading sections consist of 3 Cimbria Indent Cylinders in 2 sections (HSR) to obtain the final length grades. These Indent Cylinders will split one grade again into a short and a long fraction. Before each grade is finally packed in jumbo bags, a Cimbria Gravity Separator gives the product the final required purity. Based on demand, maize runs through a Cimbria batch treater to protect the valuable seed from external impacts.

For gentle seed handling and in order not to harm the seed kernels, all Cimbria bucket elevators run at low speed. Our experience in gentle seed handling gives our customers additional value – and in the end a satisfied and happy end-user. As a result of the customer's experience of Cimbria equipment, Plant Manager Mr. Denpong Patta and the local and Cimbria team, the seed processing and grading line was installed in just 5 weeks! Khop khun khap Pacific Seeds!



FROM THE UK: A YEAR IN REVIEW



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In the past year our work in the UK has taken us into some new and exciting projects, while also reinforcing and strengthening our position within some more familiar and traditional markets.

In the seed processing sector we have supplied several Chromex Colour Sorters this year. Limagrain purchased a Chromex 5 machine which they have installed onto the end of two of their seed lines at the Holton le Clay site in Lincolnshire. This machine will be used for processing pulse and cereal seed; up to 20 tonnes per hour.

AF Monk also purchased a Chromex machine for processing small batches of specialized seeds and they have been utilizing shape and size sorting on their Chromex 3, which can run in 2+1 resort configuration or in single section.

In the commercial sector, DG Preece started the 2019 harvest with a Chromex 7 to compliment their pulse cleaning and further upgrade their operation in conjunction with a major merchant they are currently in contract with.

Limagrain has also installed a GA310 late in the season to replace a machine which had reached the end of its service life. This machine was on the same line where the new aforementioned Chromex 5 was installed. The new GA310 has been installed and is now fully operational.

On a traditional note: we have an order for two Delta 118 machines and also transport equipment for the handling of Spelt, an ancient grain. These components will form part of a milling plant supplied by others.

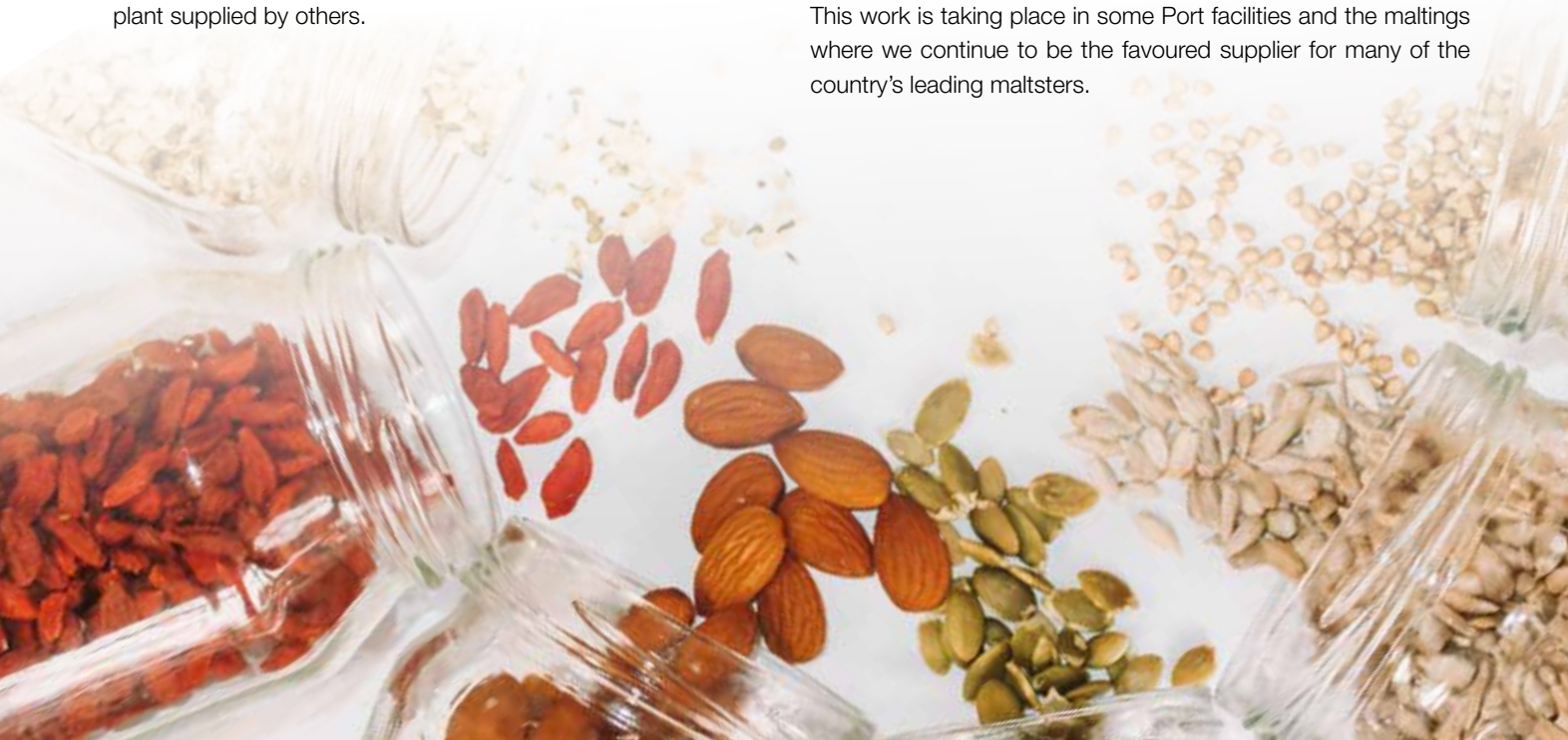
Ancient grains, unlike modern wheat, have largely remained unchanged for several hundreds of years and are soaring in popularity with artisan bakers and restaurants due to their delicious flavour and nutritional values. The plant is due to be commissioned in Spring 2020.

Other cleaning equipment we have supplied are several Delta 146 cleaners which will be used for cleaning Oats in Scotland to remove short straws and other miscellaneous objects before drying. This process will also clean after the drying process to improve the quality of the crop before being sent to the Oat processors.

In the storage sector we have sold several projects this year, one of these being Agrii. They are a long standing seed processing customer of ours who have chosen to replace several old silos at their Finmere Seed plant. The replacements consisted of 7 profiled walled silos with a galvanized finish and roof structure. We are pleased to report these projects were completed 4 weeks ahead of schedule.

Within the food sector this year we have also supplied a Pendulum Bucket elevator and a jog conveyor to a coffee roasting business. These were chosen due to the more gentle handling capabilities of the machines to minimise breakage in the product.

Dryers and transport equipment continue to be a large part of Cimbria UK's business. Around the country over the last few years several sites have been re-equipping with long running replacement projects using Cimbria dryers and handling equipment. This work is taking place in some Port facilities and the maltings where we continue to be the favoured supplier for many of the country's leading maltsters.





SOYA PROCESSING PLANT IN CROATIA

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Right in the heart of Croatia, Cimbria installed a brand new seed processing plant for cereals

Agromais is a well-known company in Croatia and south-eastern Europe. It is an extremely reliable partner, with almost 25 years of seed production experience.

Agromais' main activity is trade, warehousing, production and representation of foreign companies, both on the Croatian market and abroad. Agromais also specializes in the creation and introduction of new seed sorts and hybrids, making it one of the leading agricultural companies in the region.

Agromais cultivates over 200 hectares of its own land, which is mainly represented by seed production. The company primarily produces cereals and soybeans, but also processes corn and rapeseed.

It has had fewer dealings with seed processing to date, but due to market conditions, personal needs and business expansion, Agromais recognized that investing in a new seed processing line would be a great business move that would contribute to the company's growth and better positioning in the market.

Cimbria was honoured to be entrusted by the owner of Agromais, Mr Ilija Ivančić, with the design and realization of the investment of a complete multifunctional line primarily for the processing of wheat seeds.

Completion of the complete plant and commissioning is scheduled for March 2020.

This new plant with a planned intake capacity of 10 TPH will also be the largest privately-owned seed facility in Croatia.

The possibility of processing different cultures (wheat, soybeans, barley, corn and sunflower) will make this plant very flexible and able to meet different market demands.

The material will be delivered for processing in two ways: either by delivering materials directly from existing seed storage silos, or from a separate Cimbria receiving pit with a length of 10m, which allows seed material to be received directly from trucks or big bags. Cleaning, separation and sorting will be done with the help of a Cimbria Delta 142 pre-cleaner, Cimbria Delta 116 fine cleaner, Cimbria HSR 10020 R-L indented cylinders, Cimbria GA 210 gravity separator, Cimbria TS 180 de-stoner and the latest highly sophisticated machine in the Cimbria series, a SEA Chromex 4T+TN optical sorter.

Coating will be carried out with the help of a Cimbria CC 50 Centricoater with one direct dosing line.

To complete the finishing process, the coated material will be stored in two square modular silos of an individual volume of approx. 7m³, from which the final product will be delivered directly to the filling and weighing line for big bags and the semi-automatic line for bagging the seed material into paper or plastic bags ranging from 5 to 50 kg.

As a next step, Agromais intends to upgrade the plant with a fully automated bagging line with palletization. Cimbria will be more than happy to support and guide Agromais in its growing and expanding seed business.



NEW ECO-LOGIC DRYERS FOR LANTMÄNNEN SWEDEN



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Coinciding with the completion of a project by Lantmännen in Hargshamn, Cimbria commenced a similar installation of a grain terminal for Lantmännen in Hammenhög in the south of Sweden. The system in Hammenhög consists of an intake system with pre-cleaning and silos for storage of wet grain before drying, an ECO-Logic™ dryer, storage silos and connection to existing flatbed storage.

A major part of the incoming grain is for malt, with the grain being handled very gently and dried under specific conditions at lower drying temperatures in order not to damage the characteristics of the grain. After drying, the malt grain is cleaned to a very high level of purity.

The dryer in Hammenhög is the new ECO-Logic™ dryer, which represents absolute state-of-the-art technology and is Cimbria's latest continuous flow dryer. The plant is equipped with the latest generation of automatic operation control and process control, as this is an essential part of the drying process. In addition, a variable number of cooling sections and dust extractors are highlighted in the integrated tangentially-acting dust guards. The dryer is heated with water from a boiler plant fired with renewable fuel.

The fans for aspiration are equipped with frequency converters, such that the power consumption of the large fans is controlled according to exact requirements. The dryer is equipped with automatic control of the airflow, which can be infinitely adjusted depending on the product, as well as the temperature and humidity of the grain and dry air.

Design and technical features: Intelligent drying with optimum energy consumption

The ECO-Logic™ dryer was introduced to Cimbria's customers at the Agritechnica exhibition in 2017, where it was one of Cimbria's main exhibits.

For customers, gentle and uniform drying with optimum energy consumption is 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 recirculated air and then 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 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 ensures maximum +/- 5° C tolerance of the drying air to guarantee uniform, accurate and gentle drying of the grain.

The discharge device on 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. High grain quality is maintained, thus assuring good germination capacity 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 humidity level of the exhaust air is as high as possible and the volume flow of the exhaust air is as low as possible. With 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.

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 centrifugal fans 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.

The structural design of the dryer complies with Eurocodes, whilst manufacture of the structural steel is carried out according to EN1090.



THE NEW DRYER IS
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The ECO-Logic™ is provided with centrifugal fans with limited noise emission



The system in Hammenhög consists of an intake system with pre-cleaning and silos for storage of wet grain before drying, an ECO-Logic™ dryer, storage silos and connection to existing flatbed storage



NEW FOR MODUFLEX RANGE OF LOADING CHUTES



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New accessories and loading solutions enhance the Moduflex range of loading chutes

As an ongoing process, a number of new accessories and loading solutions have been added to the Cimbria Moduflex range of loading chutes. Some of these solutions have been constructed to solve a specific task in a loading application, whilst others have been designed for more general use to form part of the constantly growing range of accessories that can be offered to customers. In several cases, Cimbria Unigrain has been the “first mover” in terms of developing solutions for modernizing loading stations within industrial sectors that hold great potential. One example of such development is the optimization and upgrading of systems for loading fertilizer into train wagons. Two of these solutions are described in the following articles.

Cardan joint for ship loading

On several occasions, Cimbria Unigrain has designed and supplied a cardan joint for ship loading chutes on various projects. Many ship loading applications require a conveying boom with

the ability to pivot up and down in conjunction with the loading scenario. The purpose of the cardan joint is – in all instances – to keep the loading chute in a vertical position.

This may apply in the loading situation, where due to a difference in the size of the ships or due to large differences in tidal water, there is a need for different heights of the loading chute position. However, it is also required in the parking situation. It is clearly necessary to keep the loading chute in a vertical position during loading in order to enable the correct flow of the product, whilst keeping the wear factor on the inlet and guide cones of the loading chute to a minimum.

Earlier, the design and construction of these cardan joints had very much taken place as one-off solutions based on Cimbria’s vast experience of manufacturing such equipment. These units have been constructed with a combination of Cimbria’s knowledge and the demands of the customer, whilst taking into account the specific parameters of the location, product and

wishes of the end user. This has spawned a desire to develop a standard programme of cardan joints in the product range in order to quickly and efficiently be able to offer a complete solution including cardan joint and loading chute. Nevertheless, it will of course still be possible to offer bespoke solutions in terms of cardan joints in cases in which the standard range does not suffice.

Furthermore, in this development phase it was decided to design a cardan joint for the existing V-series, as well as the new A-series of loading chutes.

Focus was applied to two factors that needed to be achieved in the development project: one was to achieve as low a height as possible and the other was the ability to insert various wear plates in the hopper of the cardan joints. Both these goals were achieved, in addition to a decrease in weight also being realised.

This means that the cardan joint can be easily adapted to virtually any dry bulk material, with the option of inserting wear plates in standard steel, Hardox or Vautid. Furthermore, it means that maintenance of the cardan joint is very service friendly and replacement downtime is relatively short.

The cardan joint can naturally also be constructed with all product contact in stainless steel, if this is required by the end user. The cardan joint is available for all sizes of chute and includes a counterbalance system.



MODULFLEX SHIP AND RAIL LOADING



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Radial trimmer for ship loading

The latest addition to the range of accessories for the loading chute for ship loading is the radial trimmer. This trimmer comes in a variety of options depending on the application and the requirements of the end-users.

The radial trimmer is fitted to the outlet of the loading chute, and can be used permanently or intermittently as and when required. The main purpose of the radial trimmer is to ensure that the hold of the ship is filled under deck sides with the minimum of machine movements, thereby maximizing the stowed volume. The radial trimmer can be supplied in a stainless steel version, or constructed with wear-resistant steel plates. An adjustable counterbalance is part of the radial trimmer, which ensures a stable loading situation.

The radial trimmer is mounted on a precision slewing ring with electric motor drive controlled either from the operators' cab or through the use of a hand-held remote pendant control station.

Special outlet for loading of train wagons

Over the last couple of years a number of orders for loading fertilizer into train wagons have been delivered. A particular challenge when loading into train wagons is always the variety of hatches present on the different wagon types, although nearly all of them are rectangular in shape. In order to ensure dust-free loading, it is necessary to cover the hatches, and for this purpose a number of special outlets have been implemented.

After receiving information from the customer with regard to the size of the hatches on the train wagons to be loaded, a rectangular steel plate is designed in a way that will contain the dust inside the wagon.

These outlets can be combined with either FlexClose, which seals the outlet when the loading chute is not in use, or with FlexFill, which is designed to disperse the product into the train wagons to ensure maximum filling. In addition, the loading chutes can be configured for operating in environments in which temperatures can fall to -40° C.

Apart from the added value to the customer of filling the train wagons to the maximum capacity, the system provides operators with a dust-free and thereby clean working environment.

Quick loading of different fertilizers into closed containers
A customer has developed a concept for quick loading of fertilizers such as DAP, MAP and all kinds of NPK into special closed containers.

Cimbria Unigrain was asked to deliver six chutes for this new project. Initially, price was a key factor, as we were competing against a couple of other loading chute suppliers. In the end, Cimbria Unigrain managed to convince the customer that we had a better technical solution, and we won the order.

The customer was satisfied with the delivery of the first six chutes, subsequently ordering another six chutes with more features. We therefore agreed that the customer should visit us, and together we developed a K400THEX/4 in AISI304 with FlexFill and GOST and ATEX certificates.

Furthermore, the motors were to be made in cast iron due to the fact that the fertilizer is highly corrosive.

The customer had an issue with 6-7 cubic metres of empty space in the container at that time. Another issue was the structure of the granulate, with the customer particularly concerned that rough treatment could damage the granules against the walls of the container.

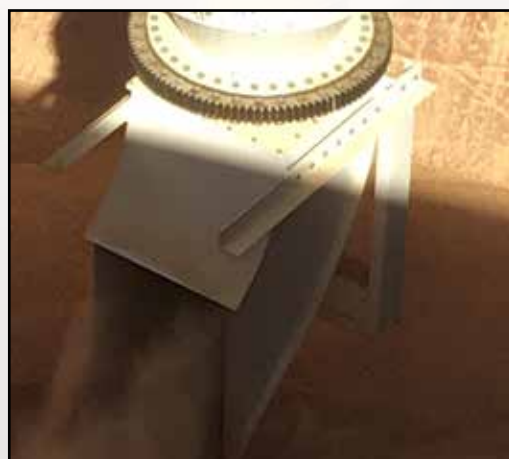
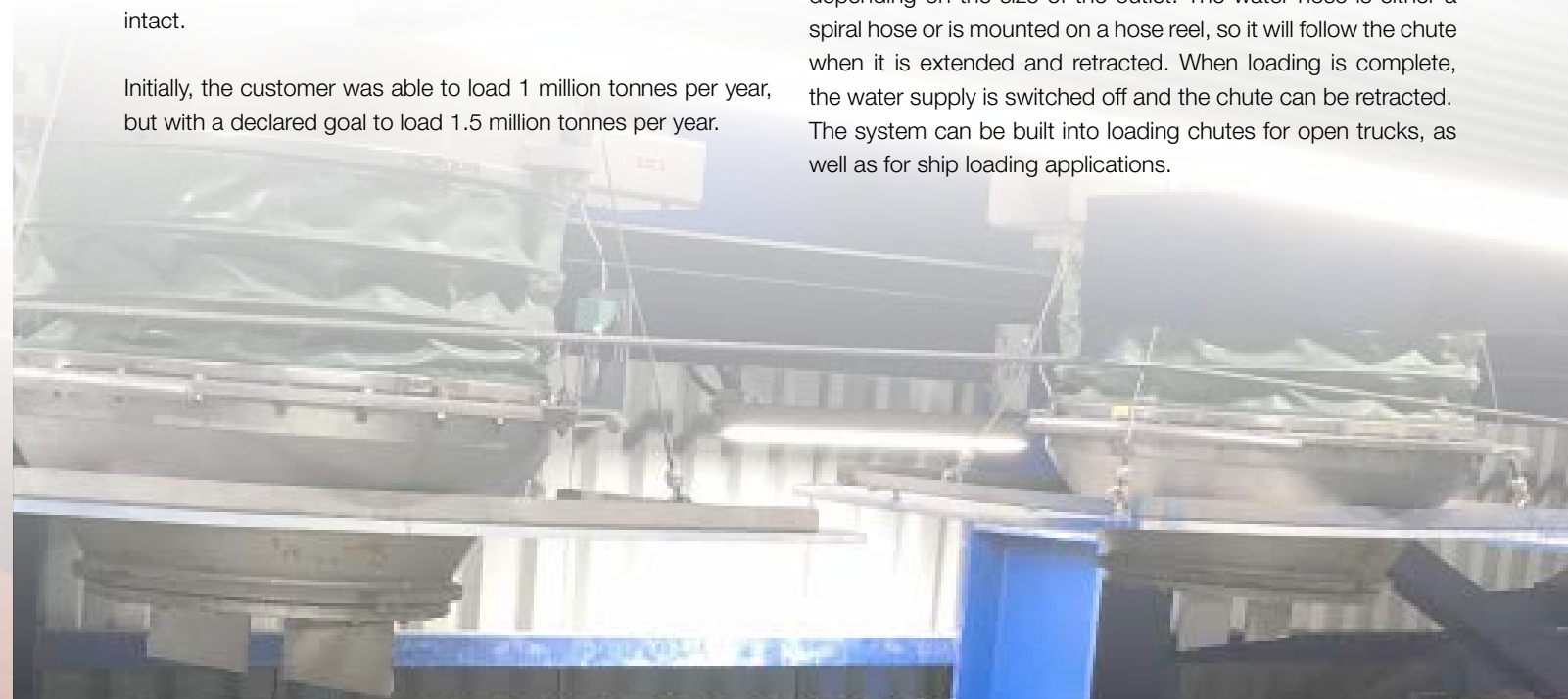
After developing the chute with a new wing for FlexFill, the amount of material loaded into the container was increased by several percent, whilst the structure of the granulate remained intact.

Initially, the customer was able to load 1 million tonnes per year, but with a declared goal to load 1.5 million tonnes per year.

Water spray system for the outlet

In some applications, problems with dust can be solved by spraying water onto the product during loading. A prerequisite is of course that the product can withstand the water and does not change characteristics during the process. Examples of products where this is viable are coal, coke and iron ore. The advantage of this method is that no aspiration system is required and the risk of dust explosion is minimized.

This water spray system has been implemented and supplied on both smaller loading chutes, typically for loading into open trucks/dumpers, as well as for bigger stockpiling chutes. The systems consist of a manually operated ball valve or a valve fitted with a solenoid valve that is connected to the water supply. By opening the water flow when loading starts, the water runs through a hosepipe along the loading chute and into a spray ring at the outlet. This spray ring is fitted with a number of nozzles, depending on the size of the outlet. The water hose is either a spiral hose or is mounted on a hose reel, so it will follow the chute when it is extended and retracted. When loading is complete, the water supply is switched off and the chute can be retracted. The system can be built into loading chutes for open trucks, as well as for ship loading applications.





RECYCLING PLASTIC WITH HYPERSORT

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"Plastic – and, in particular, the recycling thereof – is becoming more and more of an issue these days, where protecting the environment and creating a sustainable lifestyle are the order of the day and a generally declared development objective."

Dedicated to the above, Mr Malay Patel and Mr Parth Pansuriya decided to establish a company whose main goal was to make the plastic recycling process more efficient. As such, their future-oriented and family-owned company, Placity Recycling, was established in September 2018.

The main aim of this young company is to regulate the type of material which is blocked at one point or another in the recycling process of a particular polymer. In addition, the company also helps to recover materials which are mixed together, such as HDPE, PET, PVC, PP, PE or other polymers.

A SEA HYPERSORT electronic sorter is used extensively to minimize impurities and other foreign polymers from the main product. It has always been a challenge to separate different polymers that have the same colour, as the polymers cannot then be separated visually. This is the main reason for the development of HYPERSORT, which represents a state-of-the-art solution in plastic flake sorting. This sorter plays a pivotal role in separating all HDPE, PVC, PET or other polymers. All these materials can be recycled in order to conform to the purity standards required in the market today.

Mr Malay Patel, who is a young visionary, visited the CIMBRIA SEA factory in Imola two times with different sets of samples that were processed by HYPERSORT with an advanced NIR Hyperspectral camera to produce a digital bio-fingerprint. HYPERSORT L delivered successful test results conforming to industry purity standards, as a result of which an order was placed.

CIMBRIA is proud to contribute to a reduction in the need for disposal of valuable materials – or indeed the need for disposal of them at all. This will benefit not only Placity Recycling, but also the city of Rajkot, the state of Gujarat – and indeed the planet as a whole.

"Based on our extensive experience in sensor-based sorting technology, Cimbria is able to present the new SEA HYPERSORT series of machines, specially designed for plastic flake sorting. SEA HYPERSORT technology strengthens Cimbria's leading role in the recycling industry worldwide, where several SEA colour sorters are installed for added value processes and to make the recycling of different polymers possible. The separation of different polymers that have the same colour has always been a challenge in dry processing, as the polymers cannot be distinguished visually. Now, thanks to SEA HYPERSORT, all PET, PVC, PE, PP, PS, HDPE or other polymers can be recycled in order to conform to the purity standards required in the market today."



THE ALFALFA SORTING SOLUTION AGAINST CUSCUTA



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SEA CHROMEX: THE ALFALFA SORTING SOLUTION AGAINST CUSCUTA spp. AND RUMEX spp.

ALFALFA AT A GLANCE

Medicago Sativa, commonly known as alfalfa, is a perennial flowering plant in the Fabaceae family. The etymology of alfalfa is connected to the Spanish “alfalfez” and to Arabic “al-fisfisa”, meaning “fresh forage”.

Alfalfa is native to warmer temperate climates. It has been cultivated as livestock fodder since the time of the ancient Greeks and ancient Romans.

Nowadays, it is cultivated as an important forage crop in many countries around the world. It is used for grazing, hay and silage, as well as a green fertilizer and cover crop.
(Source: wikipedia.org)

CUSCUTA AND RUMEX: THE ENEMIES OF ALFALFA

Dodder (Cuscuta spp.) is a parasitic plant belonging to the Convolvulaceae family. The genus is found throughout temperate and tropical regions of the world.

Dodder attaches itself to a plant and wraps itself around it. If the host contains beneficial nourishment, the dodder produces haustoria that insert themselves into the vascular system of the host. It can grow and attach itself to multiple plants, including several agricultural and horticultural crop species, such as alfalfa, flax and clover seeds.

Docks and sorrels (Rumex spp.) are a genus of herbs in the Polygonaceae buckwheat family. Some of them are nuisance weeds (dockweed). Due to their great adaptability, they are widespread in ditches, meadows, vegetable areas and gardens.
(Source: wikipedia.org).

The maximum content of Cuscuta spp. and Rumex spp. in certified seeds is regulated by law. Some seed companies, such as our client Continental Semences S.p.A., have stricter internal standards for Cuscuta spp. and Rumex spp. in order to guarantee high quality seeds to their customers.

CIMBRIA SEA sorting technology is the best-performing solution when it comes to cleaning alfalfa seeds.

ALFALFA IN ITALY

“Erba Medica” (alfalfa in Italian) is considered the “queen of forage”, as it is widely cultivated in Italy, especially in the Emilia-Romagna, Lombardy, Marche and Veneto regions.

In July 2019, CIMBRIA SEA completed the commissioning of a SEA CHROMEX 7 T+T at Continental Semences S.p.A. in Traversetolo, close to Parma in Italy.

The business activity of our historical client is closely connected to the Guarnieri family, which has carried out cleaning of forage seeds since 1874. Today, Continental Semences operates in the seed import & export business on a global basis, with seed cleaning, stocking and packing operations being carried out over an area of more than 30,000 m2. Moreover, the company can count on other agricultural areas dedicated to the research and multiplication of certified seed varieties.

BENEFITS OF THE FULL-COLOUR VISION SYSTEM

SEA CHROMEX represents the top of the range with a Full-Colour vision system that identifies and sorts even the slightest differences in colour, shade and shape.

Full-Colour RGB 4096 pixel cameras ensure the highest optical resolution on the market of 0.06 mm. Moreover, the integrated shape-sizing function is a fundamental tool used to separate contaminants having a similar colour, but different shape – such as Rumex spp., which has a triangular shape.

For this challenging application it is important to combine multiple filters through HSI (hue, saturation, intensity) vision systems in order to identify the smallest differences between alfalfa, Cuscuta spp. and Rumex spp.

The SEA CHROMEX setup is realized through photographic acquisition, comparing each seed to a user-defined accept or reject criteria, identifying it as a real defect or as an accepted element.

The EXAGON intuitive graphic and multilingual interface allows user-friendly recipe setup and editing, with the chance to use the same recipe on multiple sorting units and to acquire real-time statistics.

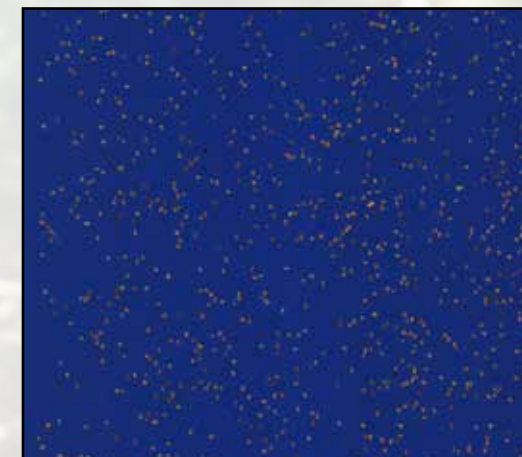
Until now, the separation of Cuscuta spp., Rumex spp. and other harmful contaminants of forage seeds has been performed by mechanical separation, in particular for Cuscuta spp. through electromagnetic machines using iron powder.

Today, the installation of SEA CHROMEX Full-Colour technology is highly strategic, as it provides a boost to final product quality and purity, as well as considerable simplification of the manufacturing process.

CIMBRIA, SEA, AGCO. In a fast-moving world, our company will continue its passionate and unstinting research and development of new industrial solutions tailored to seed, food and grain applications.



SEA CHROMEX 7 installation at Continental Semences S.p.A.



SEA Chromex photographic acquisition



In the “Heidi” cartoon the little girl is gathering some alfalfa to feed her goats. Her goal is to enrich the goat’s milk with nutrients, thus making breakfast for her and her friend Clara much more substantial!
(Source: sorgentenatura.it)

PROJECTS FROM KENYA



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CAPWELL INDUSTRIES LIMITED

The consumption of pulses in Kenya has increased tremendously during the last few years. Capwell Industries Ltd is a leading processor which pioneered commercial processing of pulses after commissioning of their 1.5 TPH pulse processing plant that supplies local retail outlets. To cope with increased demand, various upgrades have been carried out on the plant.

Capwell recently turned to Cimbria to carry out improvements to ensure high quality of the product. Cimbria's assessment led to the upgrade and improvement of the entire aspiration system of the plant, which will not only enhance product quality but also ensure a safe and clean environment free of dust pollution. The equipment is expected to arrive by week 51, with installation work due to be carried out in January 2020.

MAM: GICHEHA FARM LTD SEED MAIZE PROCESSING PLANT - Kenya

Seeds are the foundation of crop husbandry. Day-to-day operations on farms have to a great extent been modernised by greater use of technology; but without a steady supply of high-quality seed, yields and crop quality would be greatly reduced.

Seed quality plays an important role in the production of cereal and horticultural crops. Characteristics such as integrity of

variety, germination percentage, purity, vitality and appearance are important to farmers and homeowners in the establishment of lawns and gardens. Achieving and maintaining high seed quality is the goal of every professional seed producer.

Situated a few kilometres northeast of the foot of the highest mountain in Africa – Mount Kilimanjaro –GFL has combined careful breeding and selection with excellent irrigation techniques and the choice of Cimbria as a renowned seed processing equipment manufacturer and supplier to enhance its processing capability and product quality – and hence turnover and profitability. Based on in-house technology and experience, Cimbria, as the main supplier, was able to carry out the design and supply of the seed processing project.

Cimbria scope of supply:

Maize sheller Cimbria MR20

Pre-cleaner type 191.2

Air sifter

Destoner type TS90s

Various low-speed bucket elevators and belt conveyors

Buffer storage silos

Continuous flow dryer BEG10

Bagging scale

Control panel PLC Scada

PROJECTS FROM UGANDA



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Two upcoming projects for cleaning, drying & storage are as follows:

1. Totco Millers – Cleaning, drying & storage 3,000 MT in Lira.

2. Agroways (U) Ltd – capacity 5,200 MT in Mbarara

Uganda's grain production has increased over the last few years, thereby creating a need for proper drying and storage in order to ensure grain quality.

The annual production of cereals in Uganda is growing at an average of 3.3 %, thanks in part to Uganda having the competitive advantage of 40 % of East Africa's arable land. As a result, Cimbria has continued to be awarded projects for post-harvest grain handling solutions for this market.

Maize production in 2018 stood at 2.8m tonnes, sorghum 0.45m tonnes and pulses 1.08m tonnes. These figures are expected to increase due to favourable climatic conditions that enable two planting seasons every year.

Coffee sector

The coffee sector is forecast to experience growth in the coming years. Green coffee export stands at 4.5m tonnes per annum. The government is focusing on the sector in order to enable the country to earn much-needed foreign currency.

The Ankole Coffee Producers Cooperative Union, ACPCU, has a coffee bean storage project that is scheduled to be completed next year. The equipment has already been delivered, and installation will commence in January.

LDC project

Louis Dreyfus Company (LDC) is one of the leading commodity traders in the world, with branches across the globe. Cimbria secured the opportunity to provide a coffee drying solution for their Ugandan operation, which mainly involves dry milling of the coffee beans for export; expected quality standards are thus high. The agreed scope of supply was a 20 TPH intake and cleaning section, two wet bins of 100 tonnes each, 10 TPH dryer and two hopper storage units. The main Cimbria machines supplied included a cleaner type 143, dryer type BLG-13, GT400 belt conveyors and EC6 bucket elevators. The value of the plant was around five hundred thousand Euros.

After agreeing on all specifications and securing the down payment, we embarked on planning to deliver the project together with other subcontractors. The project delivery time was 30 working days. In order to meet this target, our project department mobilized sufficient resources to undertake the task. Safety standards at the client site were very high, but our team was well prepared. We delivered on our promise, which has subsequently led to more business.



Gicheha Farm KE - Seed plant



Gicheha Farm KE - Seed plant maize sheller



Moplaco installation



CIMBRIA CORNERS EGYPTIAN SILO PROJECTS



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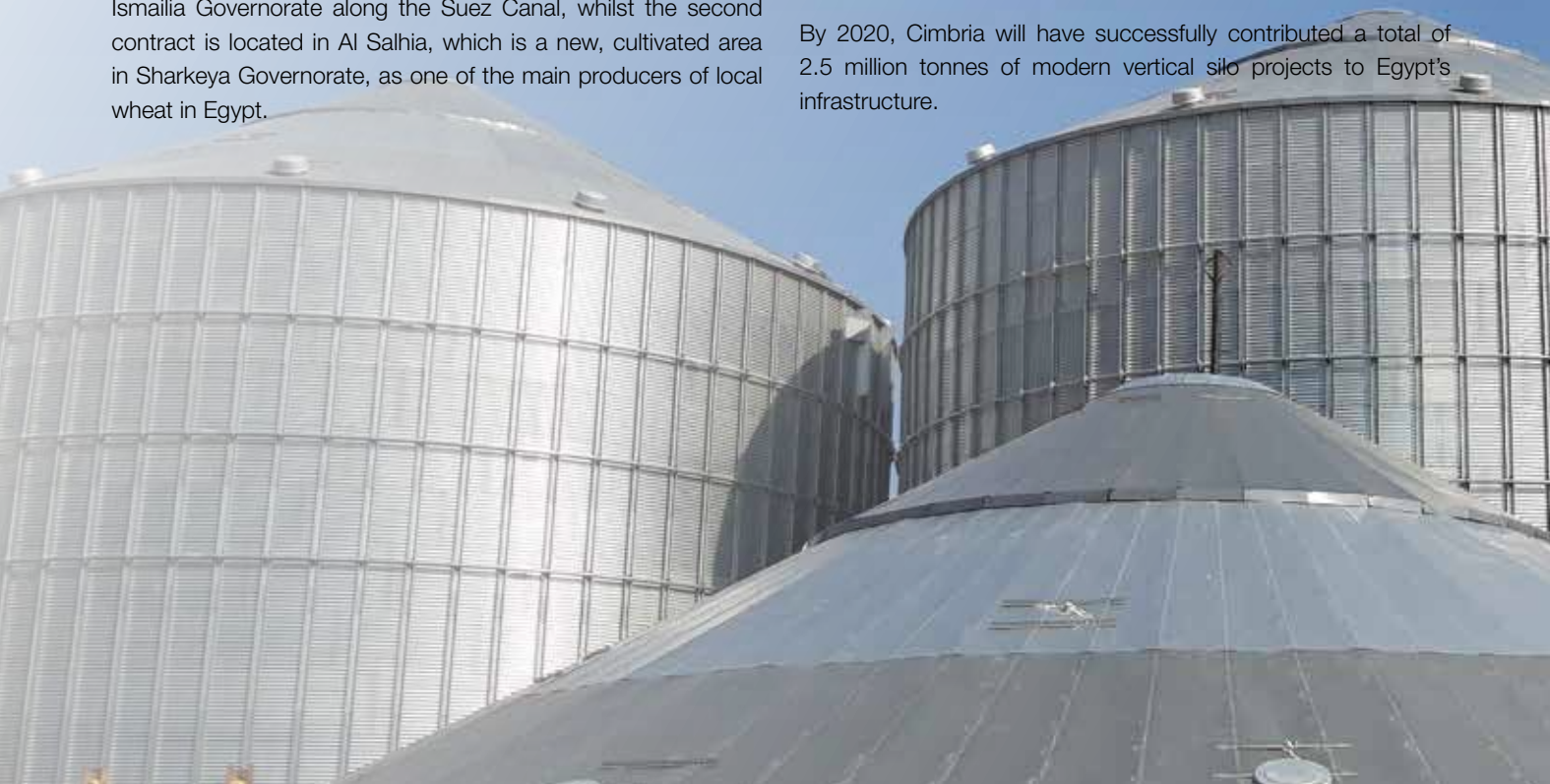
Cimbria corners 100% of silo projects under the Saudi Fund For Development in Egypt

In February 2019, we managed to reactivate two silo project contracts for the account of Cimbria's main client in Egypt, namely The Egyptian Holding Company for Silos & Storage, EHCSS, which is the main operator in Egypt for the storage of imported & locally cultivated wheat. The two reactivated silo project contracts are Abu Sowir – 30,000 tonnes – located in Ismailia Governorate along the Suez Canal, whilst the second contract is located in Al Salhia, which is a new, cultivated area in Sharkeya Governorate, as one of the main producers of local wheat in Egypt.

The two silo projects above were part of a chain of 14 x 30,000-tonne silo projects with a total funding soft loan by the Saudi Fund for Development, "SFD", amounting to 90 million US Dollars for 420,000 tonnes of modern metal silos on a turnkey basis.

By completing the last two projects under the SFD, we can claim that Cimbria has cornered 100% of silo projects funded by SFD1&2 Soft Loans to Egypt.

By 2020, Cimbria will have successfully contributed a total of 2.5 million tonnes of modern vertical silo projects to Egypt's infrastructure.



THE TS 400 PROUDLY PRESENTS ITS LITTLE BROTHER



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NEW TS 200

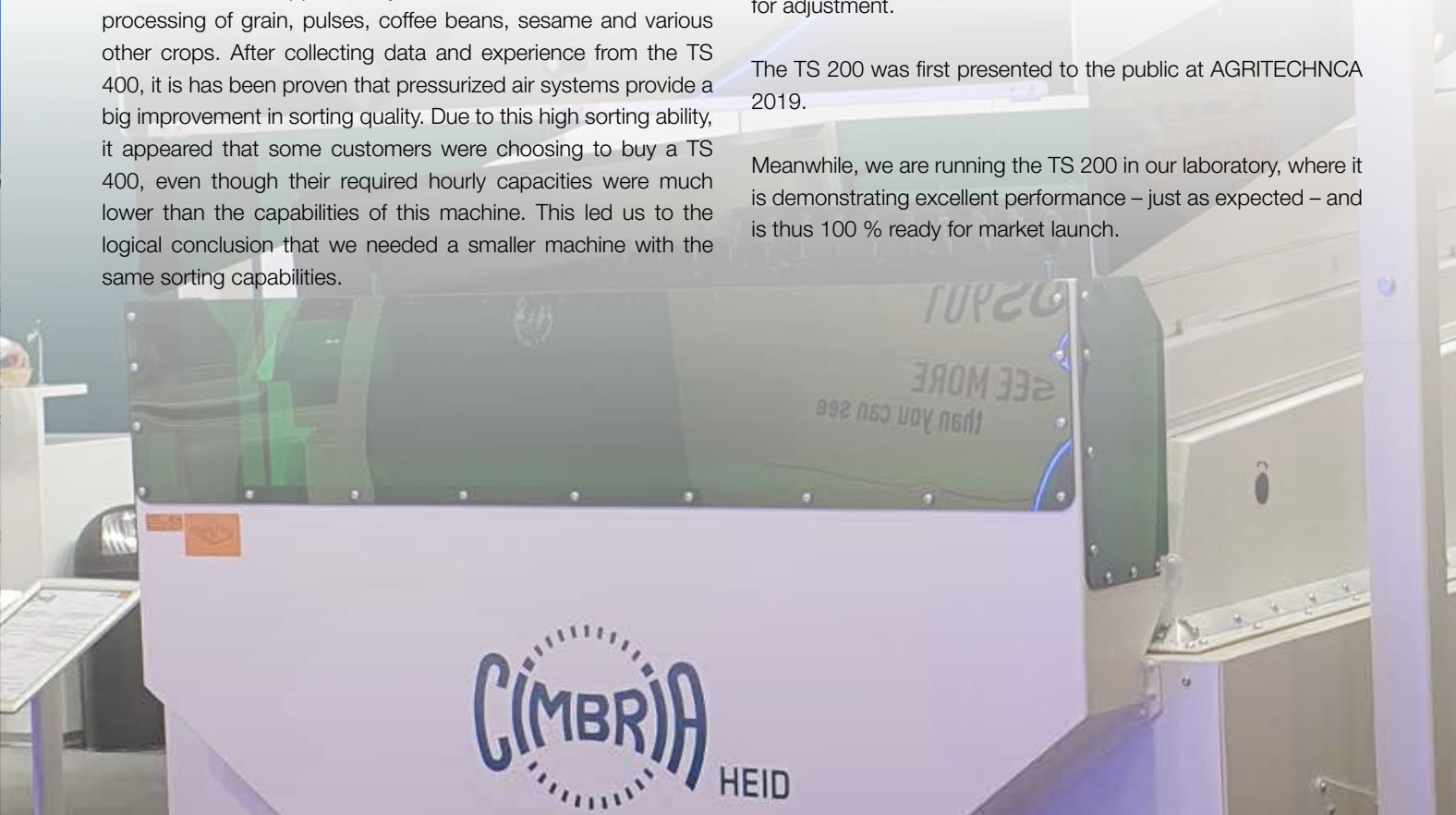
The range of pressurized de-stoners is growing, with the latest member of the family being the new TS 200 with a capacity of up to 15 t/h in grain.

Cimbria has now supplied thirty TS 400s all over the world for the processing of grain, pulses, coffee beans, sesame and various other crops. After collecting data and experience from the TS 400, it has been proven that pressurized air systems provide a big improvement in sorting quality. Due to this high sorting ability, it appeared that some customers were choosing to buy a TS 400, even though their required hourly capacities were much lower than the capabilities of this machine. This led us to the logical conclusion that we needed a smaller machine with the same sorting capabilities.

The TS 200 is based on the same principle as the TS 400, but has only half the width. Therefore all the features of the TS 400 can also be found on the TS 200. The decks of the TS 200 can be used on the TS 400, and vice versa. The TS 200 works by means of a pres-surized air system, which results in higher throughput, even more precise separation and improved scope for adjustment.

The TS 200 was first presented to the public at AGRITECHNCA 2019.

Meanwhile, we are running the TS 200 in our laboratory, where it is demonstrating excellent performance – just as expected – and is thus 100 % ready for market launch.



NEW ORGANIC GRAIN PROCESSING PLANT IN AUSTRIA



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Organic grain for healthy food – New processing plant for Raiffeisen Ware in Austria

Raiffeisen Ware Austria (RWA) is the major player in the Austrian grain and seed business, also holding a strong market position in surrounding countries in Central and Eastern Europe. Its constant ambition for improvement in terms of economic efficiency and increased vigour for the production of organic crops for the food industry resulted in the company deciding to install a brand new seed processing plant for organic grain and bakery seeds in Korneuburg close to Vienna, where the new headquarters will be opened in 2021 and staffed by more than 600 employees.

The first section of the plant consists of 2 reception lines, one with an intake pit for trucks tilting sideways and one with an intake pit for trucks tilting backwards. Reception capacity is set at 30 t/h. Subsequently, belt conveyors and pendulum bucket elevators gently convey the product to the pre-cleaning unit, which contains an aspirator AS 1.250. In fact, this is a genuine machine, consisting of the feeding and pre-suction unit of our Delta cleaner, enabling the client to quickly remove light impurities from the incoming product, and without the need to clean the machine when changing varieties in the plant. Subsequently, the pre-cleaned product is filled in boxes or goes straight to the fine cleaning section.

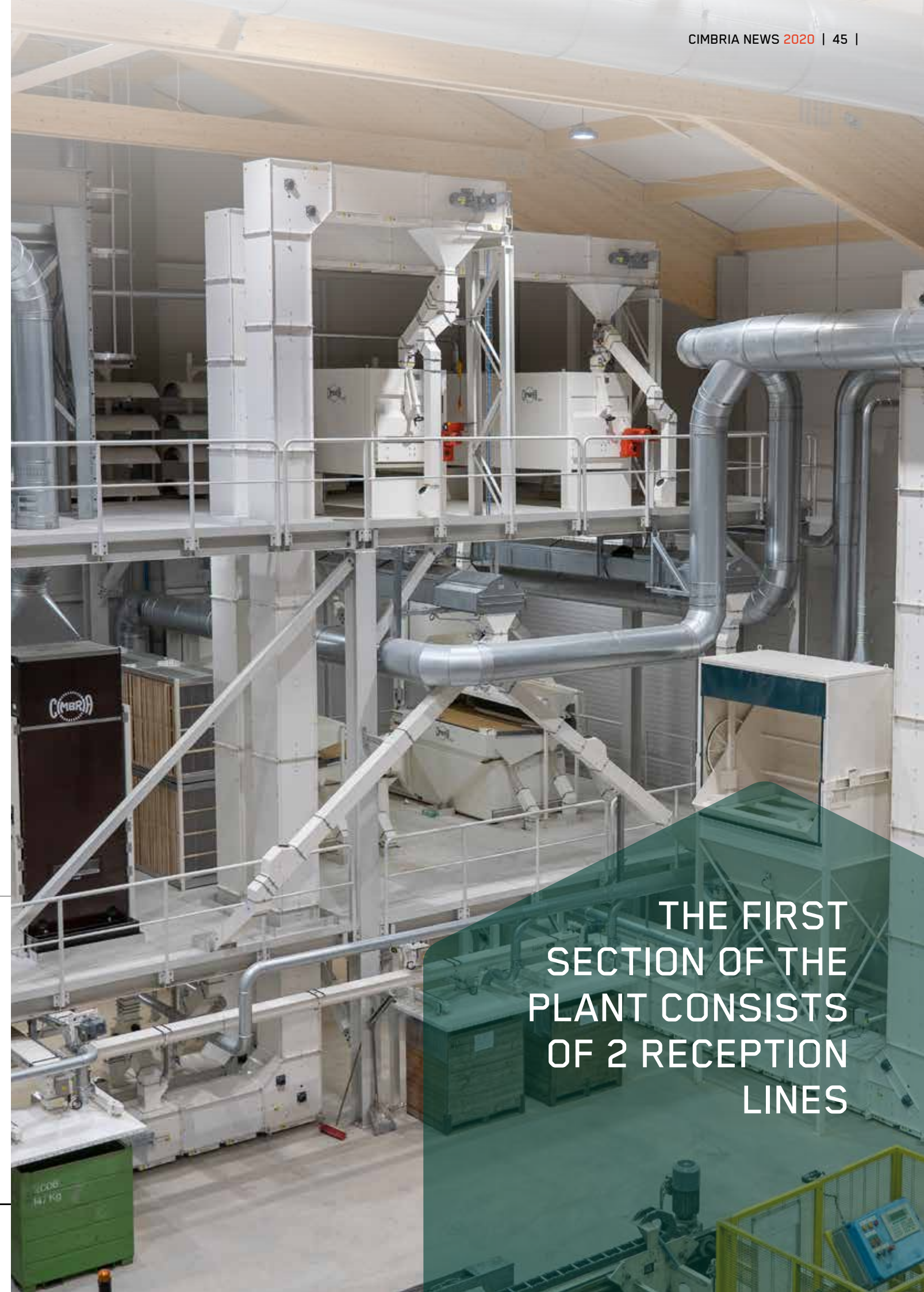
The latter is built up with a Delta 184 de-awner, a Delta 118 fine cleaner, two special TR 1290 indent cylinders (with vibratory trough) and 2 GA 210 parallel gravity separators. The complete

line is capable of processing 20 t/h in wheat. The line is laid out in a steel tower with 2 floors, thus ensuring quick access and sufficient space for cleaning and maintenance around each machine. Cimbria screen racks, as well as special racks for segments of indent cylinders and decks of gravity separators, round off the installation and optimize storage and access for these vital accessories.

After the fine cleaning process, the product can be filled in boxes or big bags, all controlled by platform scales combined with a large and fine flow dosing system. Another option is to automatically bag off and palletize the seeds in paper or plastic bags. Bulk loading of pre-cleaned seeds is the third option for load-out of product in this facility.

The aspiration system of the plant consists of 4 single lines, each with a bag filter with automatic cleaning system and the option of either exhausting the cleaned air to the atmosphere during summertime (to prevent heat accumulation in the building) or back into the building in wintertime (→air recycling to keep the working area warm). The cleaned air after the filter is guaranteed to contain no more than 1 mg dust per m³ of air, thus making it absolutely suitable for human inhalation.

Cimbria succeeded in installing the plant ready for full operation just in time for the 2019 harvest, where an opening ceremony with more than 400 guests was held.



THE FIRST
SECTION OF THE
PLANT CONSISTS
OF 2 RECEPTION
LINES

GROWTH IN THE AMERICAN AND ARGENTINIAN MARKETS



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Bratney Companies growing in the USA vegetable seed market

Western USA facilities have been pushing for more efficient processing to run multiple species of vegetable seeds with quick clean out and efficient plant staffing.

In late 2018 we were engaged to design and build a new state-of-the-art vegetable seed facility to process over 10 different species of seed with capacities ranging from 270 – 750 kg/h. A major focus of this design was high quality process equipment, machine automation and “kernel-clean” quick access features.

After an in-depth review of global equipment suppliers, Cimbria process equipment was chosen for this facility, consisting of:

- Cimbria JCC flat screen scalper
- Cimbria de-awner
- Cimbria Delta Super Cleaner
- Cimbria Heid gravity table with remote automation system
- Cimbria SEA Chromex colour sorter
- Cimbria Heid Length Sizers

The facility has been in full operation and the plant has exceeded the goals of the system thanks to Cimbria and Bratney design.

Family-owned company expands its Oat Feed Milling Business

Yaggies, a family-owned company located in Yankton, South Dakota, recently built its new facility with Bratney to meet their needs for the growing feed market.

The push for high quality oats and de-hulled oat groats extends into the feed market and is just as demanding as human food

grade facilities. After discussions and review, Bratney was chosen to meet this need with a new 3.5 million USD facility.

With this new facility design, Bratney was able to provide best-in-class storage and conveying systems utilizing GSI bins and Intersystems Conveyors. These storage and conveying systems feed the plant where product is precision-cleaned on a Cimbria Delta 118.1 with recirculating air, as well as the Cimbria JCC metal screener for oat groats. With the process equipment, Cimbria Contec specialty stainless screw augers were integrated into the process stream. All of this quality product cleaning allowed the downstream oat de-hulling systems to process at top performance.

The “start-up of the plant and quality of the equipment has exceeded our expectations”, says Dan Delforge, General Manager.

Pepper to go with salt and other spices on our daily table

Food quality continues to be a major push in North America. A large Midwest black pepper seed processor wanted to increase its production and quality by moving to a new facility. Bratney was engaged to design this process line and make a pure product free from all foreign material prior to grinding, process sifting and packaging.

Black pepper has its own unique challenges, and with Cimbria experience the system was designed with much input from the client. The new Cimbria Model metal cleaner was chosen as the primary unit for removing the bulk of the waste. The new metal design provided a very hygienic and easy to clean system. After this design, the Cimbria Heid de-stoner was chosen for any heavy waste material similar in size, but of different density, such as rocks, stones and glass.

During the design process with the end user, they realized the easy clean design features of the slow speed Cimbria EC5 elevator legs, and these were chosen to convey the entire product up to primary grinding and packaging.

Cimbria process equipment continues to push into the food industry.

Bratney Companies feeding the “birds” in Argentina for Phalaris Serranos S.A.

One of our large customers grows grains and seeds in one of the most fertile areas of central Argentina, known in particular for high quality wheat, grass seeds, alfalfa, clover and sunflower.

The Bratney Argentina office of Jorge Garcia, Gustavo Mino and Walter Gomez was contacted to provide a system for upgrading the newest crop venture for the pet canary seed export line, which is a growth market based on global demand. Capacity needed to exceed 50 t/h, while making 99.8% purity for global specifications.

After reviewing and testing the levels and types of impurities in the product with help from Cimbria Denmark, a complete system was developed. The system consists of a Cimbria Model 157 with precision screening and recirculating air system and a Cimbria Heid Model 16010 indent for long foreign material as needed for certain high lots.

A distinct advantage and cost saving for the client was the recirculating air system developed on the Cimbria cleaner, as well as the quick adjustment of the air setting via actuators. The Cimbria indent provided unique advantages, as we were able to accomplish with one large drum and fit it in the facility as an option for extremely bad lots.

The system has been operational for several months and has achieved all global export specifications to help the growing pet bird population.



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2ND SEED PLANT FOR AGROPRODSERVICE IN UKRAINE

Agroprodservice launches the second line of its seed plant

In July 2019, the Agroprodservice company launched the second line of its seed plant in the village of Nastasiv (Ternopil region), which will double the volume of seed production.

A contract for equipment supply for the first seed line with a capacity of 10-12 t/h was signed between Cimbria and Agroprodservice in 2012. After the successful implementation of the project and high-quality operation of the equipment,

Agroprodservice's management decided to increase the existing capacity and sent a request to Cimbria to supply equipment for the second seed line. As is the case for the first stage of the seed plant, the second line can be used for processing legumes, grains and cereals. The scope of supply includes: D184 De-awner, D106 Fine Cleaner, D128 Delta Grader, HSR16020 Indented Cylinder, GA310 Gravity Separator, CC150 Seed Treater Centriccoater and SEA Chromex colour sorter. The maximum capacity of the new line is 10 tonnes per hour of finished seeds.

