



Providing LatAm the leading  
technology to feed humanity

# REVIEW

LEADERSHIP  
INNOVATION  
INTEGRITY  
COMMITMENT

**30**  
YEARS





## EDITORIAL

### Dear family in the industry, customers and suppliers:

30 years ago, I was thinking about what I could do to be closer to my family, my country and my region (Latin America), and how I could use my studies in Agricultural Economics to contribute to the field I love, which is agriculture, particularly the poultry and swine industry. This is how the idea to create CBH International came about.

In this new year, 2020, we will be celebrating our 30th anniversary and we continue getting stronger and better preparing ourselves for the future. This journey has been fantastic and I feel very proud. I am thankful to God and life for allowing CBH International to become a leading company in the market, a company engaged in the supply of cutting-edge technology for food production to feed mankind, always seeking the best solutions with the best profitability.

In this anniversary review I would like to share with you articles presenting the latest technologies offered by factories that we represent, and which are pillars of our business units.

In the *Processing Unit*, we have the meat processing specialist **MAREL** and the experts in sausage cooking and baking **REICH**.

In the *Animal Production Unit*, we work with **FANCOM** forward thinkers in ventilation; **VDL** with integral solutions for poultry breeding and production and **ROTECNA** one of the worldwide main producers of swine equipment.

In the *Grain Storage and Feed Milling Unit* we present **OTTEVANGER** with innovating systems for the feed mill and cereals processing; **PREMIERTECH** as a specialist manufacturer in bagging and palletizing equipment and finally **SILOS CORDOBA** with special galvanizing for storage systems.

In recent years, CBH International has also devoted itself to supporting and carrying out social work with a cultural scope with the Atlanta Symphonic Orchestra, and the Foundation for the Ecuadorian Youth Orchestra ("Fundacion Orquesta Sinfonica Juvenil Ecuatoriana). In the field of Fine Arts, with German Escanta, an outstanding Ecuadorian painter, and in the field of Education, by working with the University



of Georgia in the College of Agriculture and Environmental Sciences. In the social field, it has worked with the Foundation for Prostate Cancer in memory of my husband Bas, and in the area of sports, it has supported programs carried out by our customers such as "The El Cortijo Health Challenge" in Honduras, and my favorite sport which is the "Dressage". We provide this support because we believe that in so doing, we promote our corporate values and culture throughout society.

I would like to thank the great team of people that surround me, who through their effort and commitment leave their mark and turn CBH International into a market leader with a clear vision of what our purpose is: "To provide Latin America the leading technology to feed humanity."

Thank you to our suppliers and strategic partners, most of whom have been with us for the last 30 years, such as Marel, Kuhl, VDL, Fancom, Ottevanger, Gasolec, Farm Supply, Thor, Mayekawa, Scanio, among others. CBH International is very proud to be a LatAm extension of each of them. They are market leaders and their goal is to manufacture the best technology for our customers to be able to produce more kilos of meat per square meter, and to supply food to their different market segments in an efficient, humane and sustainable basis, at reasonable and competitive prices.

Thank you to our customers for their trust in CBH International, because they are always seeking to fulfill their needs within the framework of our principles of Integrity, Leadership, Innovation and Commitment, which has helped us forge a strong relationship with solid foundations.

Thanks to my father, Luis J. Bakker Jr., to whom I owe my education. I am thankful for his vision and wisdom when he gave me advice on how to be successful in life, and for his motto: "Doing it right means doing good."

I am thankful to my daughter Nicole, who in every way makes me proud to be her mother, particularly now, that she is following our family's footsteps by studying Agricultural Engineering and Environmental Sciences.

Finally, I would like to wish each of you and your families a year full of happiness, health and many blessings in 2020.

Sincerely,

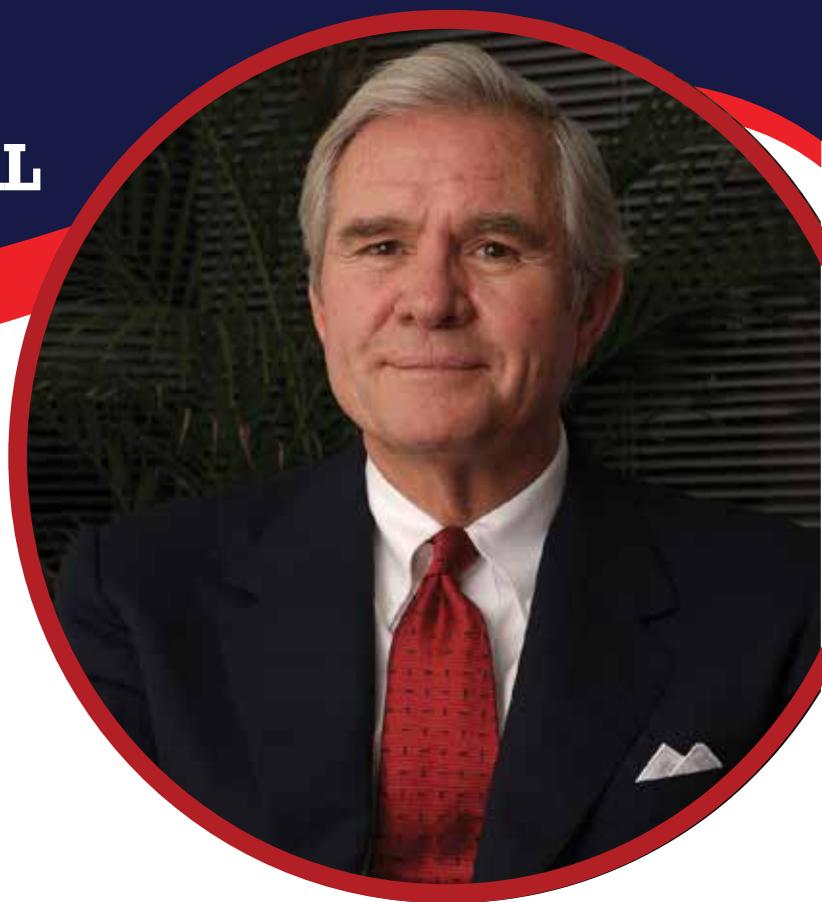
A handwritten signature in blue ink that reads "Caroline Hofland".

Caroline B. Hofland  
(CEO CBH INTERNATIONAL)

# THE HISTORY OF CBH INTERNATIONAL

**Luis J. Bakker Jr.**

Founder  
Chairman of the boards  
of Directors  
Pronaca



Caroline has asked me to write a few lines for her CBH News Bulletin now that her company has reached the 30th anniversary of its foundation, which I am happy to do!

Sitting at my desk here in Puenbo, Ecuador, I started thinking on how I could go about doing this and what I would write about in this article. Ultimately I decided that's best to recount how this all began how the dream of creating a fine and reputable company came to be.

Caroline went to study at the Georgia University, to major in Agricultural Economics, a program recommended to her by the then agricultural attaché to the Embassy of the United States. She would be the first of my six children to leave home to study abroad. We were all sad to see her go, especially Pepita, her mother. Time went by and Caroline graduated as an Agricultural Economist. She would then decide to continue her studies at Georgia University, where she earned a Master's Degree in Agricultural Economics. Those years of school went by and she graduated with honors. Sometime later she met a Dutch young man named Sebastiaan W. Hofland, "Bas" to many of his acquaintances. They were married in Quito and set up their home in the State of Georgia, United States.

Caroline and Bas were blessed with a daughter; her name is Nicole. In addition to her good looks, she is smart, friendly, studious, and fond of sports, and above all she is a wonderful daughter, a loving person and a beloved granddaughter. Nicole is currently in her fourth year at Georgia University, the same university her mother and father graduated from, and is majoring in Agricultural Sciences and Environmental Systems Engineering. I wish her many successes!

Caroline held several jobs that were unrelated to her field of studies, but she learned quite a bit from each of them. First, she worked in the Business Development and Sales department of Atlanta's Ivan Allen, selling quality office furniture. Next, she worked for a company exporting poultry products, and subsequently she started her first company called European Plant Design. The company struggled at first, but consolidated its position with time. Regrettably, the main warehouse where all her plants were stored caught fire and she lost everything she had.

Sometime later and after several conversations, I suggested she start her own business, as my father used to say that in work, you have to have two employment options: one is to be your own boss, and the other is to work as an employee.

Both have pros and cons. When you are your own boss, if things go well, you pat yourself on the back. If things go poorly, you kick yourself in the butt. There is success to be as someone else's employee too, you will, however, be working for somebody else's company and will not be your own boss.

Well, the Caroline we all know took the recommendation to heart and started her own company known as CBH International, which has two meanings:

- 1.- Caroline & Bas Hofland;
- 2.- Caroline Bakker Hofland

It is now the 30th anniversary of CBH's foundation. The company has an exemplary track record based on honesty, sterling work and service. This way it has built a company with a unique reference in the local market serving and attending to the agricultural and livestock industries in Latin America.

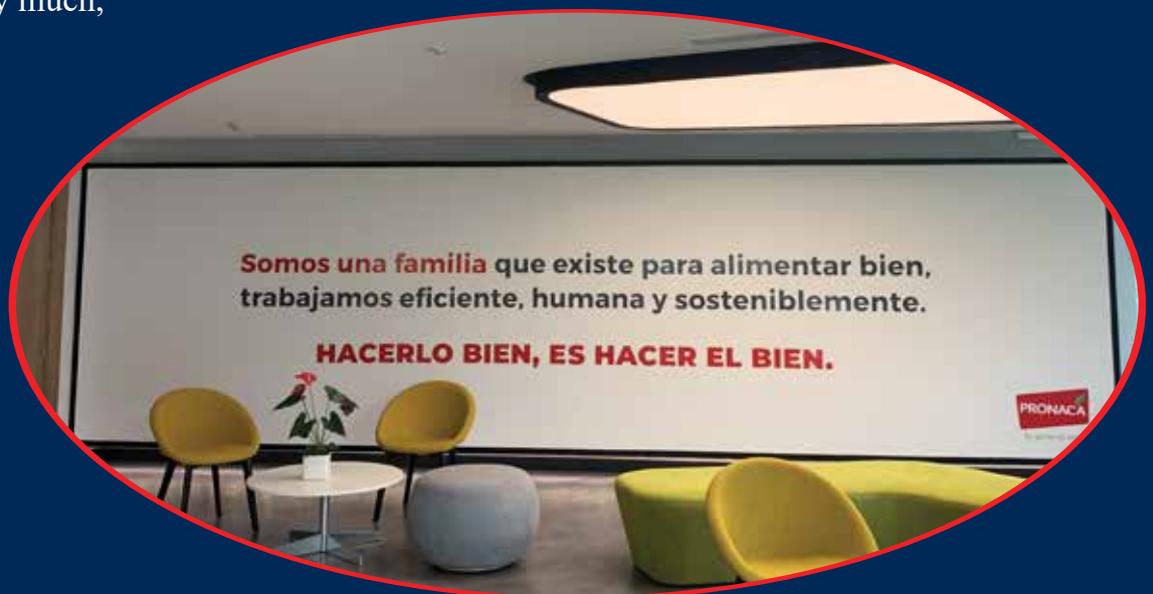
Caroline and her company irradiate warmth and friendliness, which attract optimism and confidence. And this is reflected in their aim to be an example of ethics and respectability.

As her father, I am proud of how much she has accomplished in a relatively short time, with the team she has put together and is represented by. For all of the above, CBH International is a highly regarded company.

Congratulations to you, Caroline, and to all those who made and continue to make CBH International great and well known.

I admire and love you very much,

Dad



## THE FUTURE OF MIXING AND GRINDING

Introducing the new SensorX Magna - Marel's newest high-capacity, inline trim inspection system designed to keep trim bone free and chemical lean (CL) ratio precisely on target.

Processors who perform high-volume mixing and grinding, face an extremely competitive marketplace. It is essential that processors secure contracts by offering end-products that are the highest quality and meet the most stringent levels of food safety. At the same time, they need to protect their margins by seeking opportunities to save on material costs and streamline their processes.



### KEY FEATURES AND BENEFITS OF THE NEW SENSORX MAGNA

Higher quality,  
more consistent end  
products

Precision CL  
ratio measuring and  
superior contaminant  
detection

Advanced  
reject mechanism,  
minimal waste

Processes both  
fresh and frozen,  
beef and pork, trim  
and muscles

Compact  
turnkey solution

## CHANGING THE WAY MIXING AND GRINDING IS PERFORMED

The SensorX Magna enables processors to make vast improvements to their mixing and grinding operations, improve their efficiency for both product quality and food safety while maximizing the value of raw materials with the new features in SensorX Magna.

## PRECISE AND EFFECTIVE CL MEASUREMENT

What sets the SensorX Magna apart is its superior X-ray technology. All raw materials are scanned for density variations and measured for a precise CL ratio. This gives processors maximum control over product quality and consistency. The SensorX Magna is positioned directly before the mixing and grinding process where it delivers the most impact of monitoring and controlling the CL ratio as the raw material enters the system.

## SUPERIOR CONTAMINANT DETECTION

The SensorX Magna will identify, and reject, hazardous materials such as bone, metal or glass when they are detected. Frequently, the solution for dealing with contaminants has been to grind the raw material more finely in conjunction with mechanical bone eliminators on the final grinders in an attempt to minimize the risk of bone contaminants. This influences the structure and texture of the raw material and the final product. The detection and rejection of any hard contaminant before mixing and grinding allows the SensorX Magna to eliminate costly claims and product recalls while ensuring a brand's reputation and providing a superior end product.

## STATE-OF-THE-ART REJECT AND REWORK

Unrivaled in the industry, the SensorX Magna has a state-of-the-art reject and re-work process that ensures the volume of meat rejected is minimized to approximately 300 grams for bones, and 1500 grams for hard contaminants.

## REAL-TIME MONITORING

Innova Food Processing Software monitors the SensorX Magna operations in real-time and collects historical data on CL ratio and the rate of hard contaminants. By doing this, it is possible to benchmark suppliers and make data-driven purchasing decisions. Innova provides live dashboard views that allow actual performance to be monitored. By monitoring KPIs such as throughput and contaminant rate, opportunities can be immediately identified to streamline processes and enhance operational performance.

## SOLUCIONES PARA CARNE SENSORX

Marel's SensorX solutions for trim handling are all based on extensive knowledge of X-ray technology, the most efficient way to measure CL accurately. They range from the simplest solution - the SensorX Omnia through the fully automatic SensorX Electus up to the advanced SensorX Accuro.

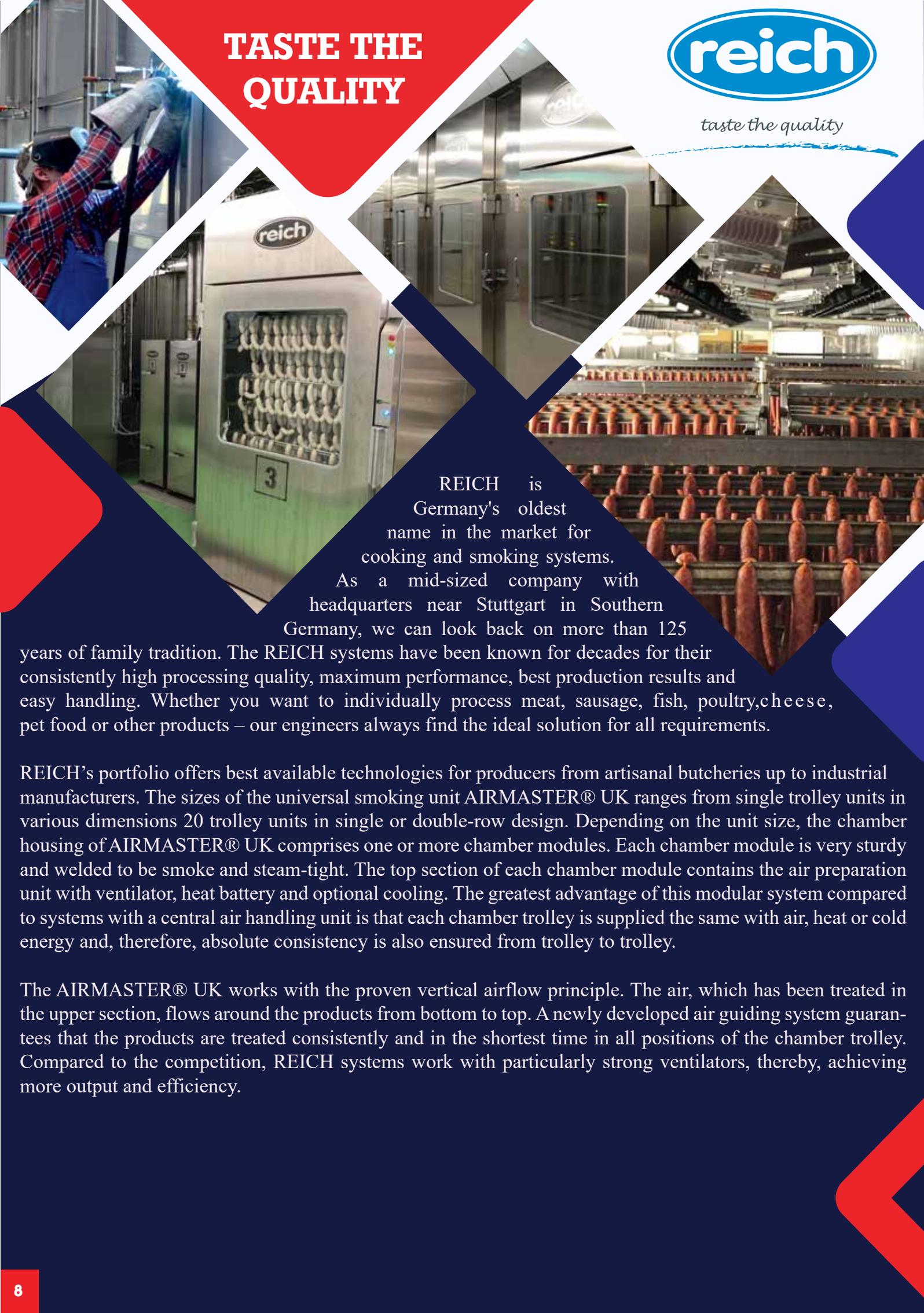
The solutions all analyze red meat trim for fat/lean ratio and give you the ability to manage your trim, achieve your target fat percentage and get optimal value for the raw material.



**TASTE THE  
QUALITY**



*taste the quality*



REICH is Germany's oldest name in the market for cooking and smoking systems.

As a mid-sized company with headquarters near Stuttgart in Southern Germany, we can look back on more than 125 years of family tradition. The REICH systems have been known for decades for their consistently high processing quality, maximum performance, best production results and easy handling. Whether you want to individually process meat, sausage, fish, poultry, cheese, pet food or other products – our engineers always find the ideal solution for all requirements.

REICH's portfolio offers best available technologies for producers from artisanal butcheries up to industrial manufacturers. The sizes of the universal smoking unit AIRMASTER® UK ranges from single trolley units in various dimensions 20 trolley units in single or double-row design. Depending on the unit size, the chamber housing of AIRMASTER® UK comprises one or more chamber modules. Each chamber module is very sturdy and welded to be smoke and steam-tight. The top section of each chamber module contains the air preparation unit with ventilator, heat battery and optional cooling. The greatest advantage of this modular system compared to systems with a central air handling unit is that each chamber trolley is supplied the same with air, heat or cold energy and, therefore, absolute consistency is also ensured from trolley to trolley.

The AIRMASTER® UK works with the proven vertical airflow principle. The air, which has been treated in the upper section, flows around the products from bottom to top. A newly developed air guiding system guarantees that the products are treated consistently and in the shortest time in all positions of the chamber trolley. Compared to the competition, REICH systems work with particularly strong ventilators, thereby, achieving more output and efficiency.

The units can be equipped with optional features depending on the processes required for the treatment of the product, such as reddening, drying, hot-smoking, cold-smoking, cooking, hot-air cooking, baking, roasting, blanching, sweating, thawing, showering, ripening and many more. The systems of the REICH AIRMASTER® IC InterCooler series combine the functions of a universal unit with those of an intensive cooling system. The special thing about this hybrid is its ability to realize all thermal processes and, in particular, intensive cooling processes in a single unit.

While AIRMASTER® UK and IC are the experts for hanging products, REICH has developed the AIRMASTER® UKQ AIRJET universal cross-flow unit for the treatment of lying products. This machine works with an alternating horizontal airflow. The process air is blown gently into the unit from one side using specially developed air guiding walls. The air is sucked in again on the opposite side and transported to the air preparation unit. Sturdy air exchange flaps with large free airways change the direction of blowing and suction once a minute. With the vertically arranged air outlets, the number of levels in the chamber trolley or the distance can be varied, depending on the product, without a negative effect on consistency.

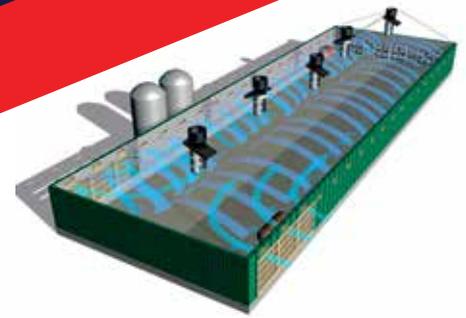
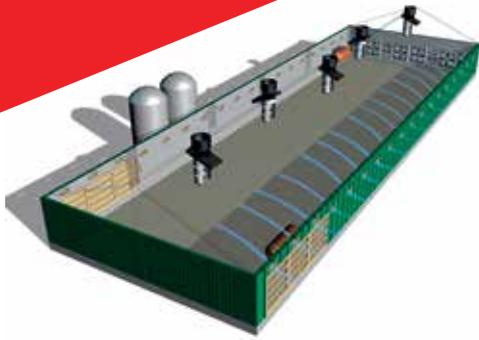
The AIRMASTER® UKQ AIRJET has been designed specifically for lying products in the areas of meat, poultry, fish, convenience and vegan products. Production capacities far above the normal levels can be achieved with its extremely high power reserves. Depending on the product, up to 35 levels are possible per trolley. With many products, double the capacity can be achieved per trolley compared to standard systems. Combination of larger capacity with a reduced processing time due to the enormous airflow makes the AIRMASTER® UKQ AIRJET to the world's best performing cross-flow universal unit.



AIRMASTER® UKQ units are also manufactured in the modular design like the vertical universal units. This means that each chamber module is equipped with its own air preparation unit. The AIRMASTER® UKQ AIRJET is available as a cross-flow roasting unit with process temperatures of up to +300 °C. This unit type is called the AIRMASTER® BKQ AIRJET can be supplied as one or two trolley version.

The AIRMASTER® units can be combined with any of the available smoke generator systems such as smoldering smoke generators (saw dust or wood chips), friction smoke generators and steam smoke generators. Depending on the type of smoke generator, the system can be operated in either the eco-friendly closed Circo-System® or with reduced exhaust air. The installation of liquid smoke systems is also feasible. All REICH systems, without exception, are manufactured at our headquarters. The units are made of 100% chromium-nickel steel, material no. 1.4301 (AISI 304). Only high-quality products from German brand manufacturers are used for all heavily used parts such as motors, ventilator impellers, valves, cylinders and more. REICH systems are quality products "Made in Germany".

**THE PERFECTLY CONTROLLABLE  
CLIMATE PROVIDED BY THE MTT**



### **AN EVEN CLIMATE THROUGHOUT THE WHOLE HOUSE**

The first phase of the MTT ventilation concept is minimum ventilation. All ventilation concepts previously invented by Fancom perfectly integrate as a minimum ventilation concept within MTT. Whether the system is cross ventilation, stair-step cross, ridge ventilation with Exavent or tunnel ventilation with EC-fans, you will benefit from perfectly controllable minimum ventilation. Temperature differences in the building are minimised. In the second phase the tunnel fans are activated and the air inlets opened further. A balanced combination of minimum ventilation and tunnel ventilation creates an optimal spread of air during this growth period and ensures that air speed is kept low enough to avoid causing problems for the birds while their feathers are still developing.

In the final phase the air inlets are closed and full tunnel ventilation is activated. A typical feature of tunnel ventilation is the cooling effect of the wind speed (wind chill). This colder breeze ensures sufficient cooling even during the hottest days of the year, without resorting to extra misting or cooling. In a tropical climate, where extra cooling is standard, the cooling is gradually activated by automatic controls based on settings made by the user.

### **QUICKENS THE PRODUCTION PROCESS**

Minimum Transition Tunnel is the new name for Fancom's ventilation concept that has been especially developed for broiler houses in locations where the day/night and summer/winter climates show wide fluctuations. The principle is based on a gradual transition from minimum to maximum ventilation in 3 phases. The result is a controllable production climate throughout the entire growth process, from one-day old chicks to adult birds with identical conditions for all animals in the house. Trials show that birds raised using this regulated climate control reached their end weight 10% quicker than previously.

### **SUITABLE FOR EVERY HOUSE**

Fancom's MTT ventilation concept is available in various versions with circulation fans or exhaust fans for walls or ridges. There is an MTT system to suit every type of poultry house. A specially developed computer automatically safeguards the entire process. The MTT concept is a simple and effective way to speed up the production process, and profit at the same time from a perfectly controllable house climate.

## RESCUECARE LIQUID FEEDING SYSTEM BY VDL AGROTECH



The RescueCare liquid feeding system supplied by VDL Agrotech helps pork producers increase the growth and life expectancy of their piglets from day one until they are ready to wean. The increasingly popular system is designed to supply two types of liquid feed. The specially formulated milk replacer can be supplied as of day one, to meet the piglet's protein and energy requirements. The unique liquid pre-starter is fed to improve growth rates through better feed intakes and to stimulate the development of the digestive system. The piglets take the feed in by use of RescueCups that uniquely make the fresh liquid feed available 24/7.

The advantage of the RescueCare liquid feeding system is the ability for producers to rear larger litters without or with less need off foster sows, enhancing piglet's growth and health, and dropping the number of underweight piglets by 30%. As a result, the piglets show better performances in the nursery period. The system has also a positive effect on the sow productivity, the sow has less back-fat losses, as well as higher live born in the following rounds, thus resulting in higher sow herd profitability.

The liquid feed is mixed in a tank of 100, 200 or 400 litres and circulates permanently in a hygienic, closed system. The RescueCups that are installed in the farrowing pens are self-regulating which means that the piglets can operate the patented nipple to always get fresh feed. An overflow protection avoids spillage by playful piglets and a backflow protection ensures that no feed will re-enter the closed circuit. The total system is automatically controlled with the RescueCare Touch controller.

The intuitive touchscreen operation is very user-friendly and avoids mistakes in operation. The controller is prepared for plug & play connection of two mixer tanks with temperature and level sensors. An automatic water dosing panel is also available.





**PIG FARMING IN ECUADOR IS GROWING AT A DYNAMIC SPEED:**

The Ecuadorian agricultural and livestock census conducted last year showed that pig population in the country has increased over the last ten years. However, Ecuadorian swine production declined by 15% during 2017, although Ecuador has proven to be an important pork producing country. This increase in pork production results from using technology in the different processes and demystifying the properties of this type of meat.

SOURCE: Association of Pig Farmers of Ecuador (ASPE by its acronym in Spanish)

## PRODUCTION AND CONSUMPTION

A few decades ago, pig farming in Ecuador was a rudimentary job that consisted in raising pigs in backyards, the pigs being fed with leftovers from the pig owners' kitchens. For this reason, animals in this type of production method were carriers of several diseases, including trichinosis and swine flu. Backyard pig raising in Ecuador exceeds 30,000 Tm/year. The last agricultural and livestock census was in 2017 and showed that the number of pigs in Ecuador was 1,115,473. The estimated consumption of pork in 2010 was 7.3 kg/person/year. This figure increased to 10 kg/person/year in 2016.

By the end of 2010, the first geo-referenced pig census was conducted by a collaborative work between the Ministry of Agriculture, Livestock, Aquaculture and Fishing (MAGAP by its acronym in Spanish), the Ecuadorian Agency for Quality Assurance (AGROCALIDAD) and the Association of Pig Farmers of Ecuador (ASPE), aimed at gathering the information needed to build a baseline for the industry, understand its current status as much as possible, draw a characterization of the sector and accurately define disease prevention, control and eradication programs. The census results showed that at present there are 1,737 pig farms in Ecuador with 20 or more animals or at least 5 sows. The greatest percentage of farms and animals is found in the Highland and the Coastal regions, which have 79% of the registered farms and 95% of the pig population. The results show an average production/sows of 16.83, which means that one sow produces 16.83 piglets per year. In pig farms with technology, the average is 22.4 pigs/sow/year, while pig farms lacking technology have an average of 9.6 pigs/sow/year. The ratio between sows and pigs is one pig per 15 sows.

“There are 1,737 pig farms in Ecuador with 20 or more animals or at least 5 sows.”

## DEMAND

The growing demand for pigs in Ecuador goes hand in hand with a growing increase in consumption, which prompts a need for an increased production. However, traditional pig raising in backyards should be isolated and replaced by a more efficient production method, with better nutrition for animals. In 2011, 1.8 million heads of pig livestock were registered in Ecuador, i.e. 22.9% more than that reported in 2010, according to the last results from the Continual Agricultural and Livestock Production Survey (ESPAC by its acronym in Spanish) of the National Institute of Statistics and Census.

“Meat consumption per capita is 10 kilos”

## PORK IN THE DIET

There are currently multiple studies indicating that pork consumption in the daily diet is considered as a factor preventing several diseases. Red meat is an important source of iron, zinc and calcium, which are major components in the formation and recovery of bones, muscles and the immunological system. Over the last years, consumption behavior and pig production have experienced an important turnaround: For years, the average consumption of fresh pork did not exceed 3.3 kg/person/year, and production targeted mainly the agro-industrial sector.

### ECUADOR DATA

<b>Capital</b>	<b>Quito</b>
<b>Surface</b>	<b>283.560 km 2</b>
<b>Population</b>	<b>17.096.789 population</b>
<b>Density</b>	<b>65.78 population / km 2</b>
<b>PIB</b>	<b>108.398 millions \$</b>
<b>Economy</b>	<b>Natural Resources</b>



## CSF ERADICATION PROJECT

A Project for Eradication of the Classical Swine Fever (CSF), one of the most feared diseases, is being developed in Ecuador. The main objective of the Eradication Project is to declare Ecuador as a country free from CSF, for the purpose of increasing internal production and productivity. The Project also seeks to open up a possibility for exporting pork to other countries, with the beneficial result of creating jobs and increasing production, which will be advantageous for all pig farmers in the country. Ecuador participates in a continental plan for the eradication of this disease jointly with the World Organization for Animal Health (OIE), the Food and Agriculture Organization of the United Nations (FAO) and the Andean Community of Nations. This prevention project has a vaccination process in place, and a follow-up with mobilization and monitoring controls, which help eradicate this disease.

# SYSTEMS FOR THE PROCESSING OF CEREALS AND BALANCED COMPOUNDS IN THE INDUSTRY



**OTTEVANGER**  
MILLING ENGINEERS

Ottevanger Milling Engineers is a leading global supplier of equipment for the cereal processing and compounding industry.

Operates for more than 100 years as a reliable supplier of high-quality components in large-scale projects. The best solutions are the result of hand-in-hand collaboration with customers, from the specification of initial requirements to the staff training and startup phase.

Specialized in engineering, design, manufacturing and management for complete production plants or individual production lines with processes such as:

- \* Food factories
- \* Premixes and concentrates factories
- \* Food facilities for fish and pets
- \* Cereal processing lines
- \* Biomass facilities

CBH International as an ally of Ottevanger in Latin America:



CBH International together with Ottevanger has implemented a modular plant for the production of balanced feed for aquaculture for a client. The plant from the beginning was conceived under the modular concept; with equipment, electronic components and control systems installed inside modules of the size of a 20' container, patented by Ottevanger. It allows a substantial saving in the construction of the support structure of the equipment as well as a shorter installation time. Additionally, it offers greater support for seismic zone regions. This project has a capacity of 10 tons per hour of pelleted and extruded food. Due to its conception, the plant has enough flexibility to manufacture food for tilapia and pets.





**INTRODUCING  
PTW**

**AN OPEN MOUTH  
BAGGER THAT HAS NO  
EQUIVALENT ON THE  
MARKET**

**!Discover how  
we make a  
difference in  
automation!**

The PTW-1200 Series Automatic Open-Mouth Bagger (patent pending) is a highly efficient system that has been designed to easily run ANY type of bags, especially the porous polywoven bags, despite their irregular properties. This bagger is equipped with devices that detect bag thickness, bag-on-spout placement and an open bag at every step of the process. These detectors spot a closed or misplaced bag on the spout as well as multiple bag picking, allowing the machine to reject these bags automatically without stopping the bagging process.

The PTW-1200 offers a new, innovative solution for improved bag separation. Its new technology combines two complementary systems to separate bags at both ends. This is a dependable and efficient solution for porous polywoven bags that could stick together because of static electricity, twisted thread and other reasons. The PTW-1200's innovative way to feed bags into an automatic bagger has been merged with the proven robotic full-bag exit system, producing a fully automatic bagging solution that replaces a manual equipment line.



The PTW Series bags granular free-flowing product such as grain, rice, seed and animal feed in any types of bags with a production rate of 20 bags per minute (depending on their weight). This open-mouth bagger offers great benefits: effectiveness and optimum throughput thanks to reliable automatic rejection of defective bags, small footprint to optimize floor space, a compact design that allows shipping in one block and a quick installation. FANUC robot assures reliability and precision and all motors included in the bagger are either VFD or servo-controlled for best precision.

## ABOUT PREMIER TECH

Based in Canada and with offices all around the world, Premier Tech is among the largest packaging equipment manufacturers in the world and well-known in the flexible and the rigid packaging industries for its state-of-the-art machines. At PT Systems and Automation, we integrate innovative and high-value systems leveraging the full potential of robotics. As world leaders in the manufacture of packaging and processing equipment, we are well known for our Chronos and Sloopweg brands. Making a difference, this is what we are all about at Premier Tech. One team driven by a shared passion to deliver solutions that will better the lives of people, businesses and communities. At Premier Tech, People and Technologies connect in lasting, transformative ways, giving life to products and services that help feed, protect and improve our world. We are committed to creating sustainable solutions that help improve the efficiency of manufacturing facilities.

We create solutions for the Nutrition industry. We offer equipment to help automate bagging and packaging operations for producers of food products such as flour, cereals, beverages, meat, and dairy foods. Our line can be equipped with net weigh scales, baggers, case packers, robotic and conventional palletizers, stretch wrappers, and stretch hooders.

PT Systems and Automation is committed to providing you with the most valuable services in the industry, including free lifetime technical support 24/7, 365 days a year, quick spare parts delivery, over 140 field technicians worldwide, equipment retrofits and modernization, periodic maintenance program for efficient production and numerous operator and maintenance staff specialized training program.

# SPECIAL GALVANIZING



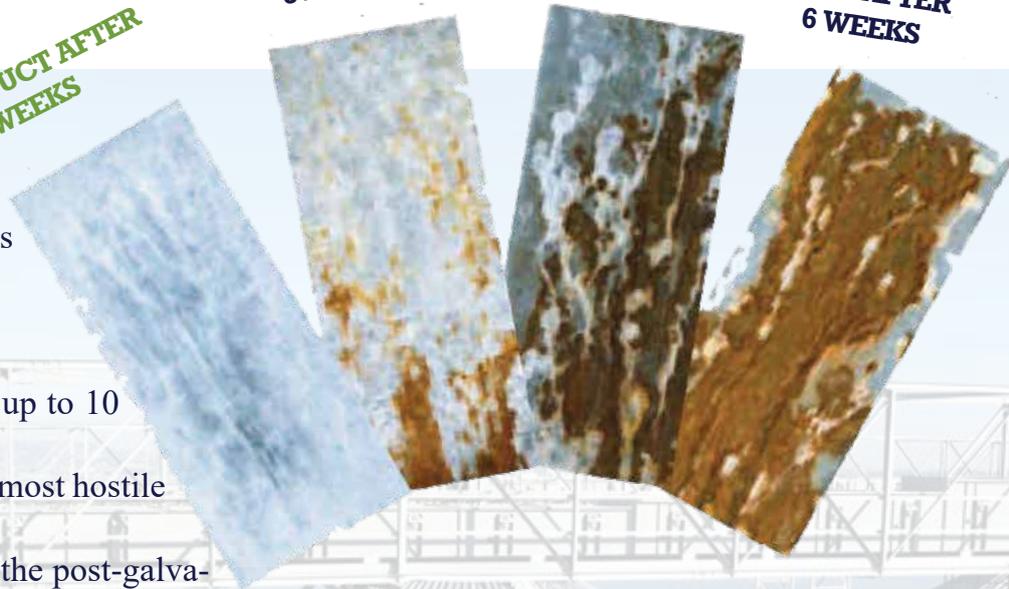
**Silos Cordoba has introduced an innovative metal coating that provides protection in the harshest environments:**

**NEW PRODUCT AFTER  
34 WEEKS**

**ALUZINC AFTER  
34 WEEKS**

**ZA AFTER  
28 WEEKS**

**GALVANIZED BY  
DIP IN  
HOT AFTER  
6 WEEKS**



This unique coating offers a combination of attributes and provides:

- \* The best resistance to corrosion: It is up to 10 times better than galvanized steel
- \* It is the most suitable to withstand the most hostile environments
- \* It is the most profitable alternative to the post-galvanized process

The chemical composition of this coating has been enhanced to offer the best results as regards corrosion resistance:

It is manufactured in a traditional industrial hot-dip galvanizing line, but it is submerged into a fusion bath with a special chemical composition of zinc, at 3.5% aluminum and 3% magnesium. The 3% magnesium is critical because it creates a stable and long-lasting layer over the entire the surface and provides a much more effective protection against corrosion than coatings with a lower content of magnesium. For this reason, this coating offers results that are significantly better than those of alternative European products.

## KEY BENEFITS

### SELF-HEALING PROTECTION AT CUT EDGES

In addition to being reinforced by a cathodic protection equivalent to a zinc coating, this new product protects bare cut edges by means of a thin protective film made with zinc and magnesium that prevents corrosive reactions. The nature of this film varies according to the environment and its properties, according to content in aluminum and magnesium

### EXCELLENT RESISTANCE TO CORROSION

The destruction of the coating occurring in an environment containing ammonia is seven times lower with this coating than with a standard zinc coating. In addition, it ensures an active and longer lasting protection over time.

### ENVIRONMENTALLY RESPONSIBLE

The application of the new product ensures the conservation of natural resources, because it uses less amount of zinc than pure-zinc coatings. Besides, just like Aluzinc, the new product coating significantly reduces the loss of the zinc layer.

### AN ALTERNATIVE TO POST - GALVANIZING

The New product offers a real advantage in comparison with post-galvanized products (with the weight of the ZM coating being higher than 250 g/m<sup>2</sup>) and even compared with high value products such as stainless steel and aluminum.

### EXCELLENT FORMALITY

Thanks to its adherent and highly-resistant metal layer, the new coating can be formed by application of different methods, including folding, cupping and contour forming.

By reducing the amount of metal coating while maintaining the levels of resistance to corrosion, an evident improvement in spot welding is achieved. The weld is covered by a protective barrier against rust, thus preventing the appearance of red rust. The lower thickness of the coating facilitates the transformation process, which translates into substantial savings.

The results of this new coating are three times better than those of standard galvanized steel. The new coating reduces the pulverization effect of the zinc coating, and there is less loss of weight in the transformation tools.

## **MAREL AND CBH INTERNATIONAL: 30 YEARS OF SUCCESSFUL COLLABORATION**

30 years ago, while seeking to strengthen its brand position and boost operations in the poultry industry of Ecuador – Marel – at that time represented by Stork, needed a strategical partner to support its business goals and promote its products in the local market. Marel selected CBH International.

Thanks to CBH's performance and professionalism, as well as the confidence established between both companies at those times, CBH International was once again selected when Marel decided to expand its business to Peru.

Since then, the companies have been working together to provide advanced technologies to all types of poultry processing plants. Marel develops advanced systems and solutions which add greater value at all processing stages: from live bird handling to processing and packing. Focusing on technologies and innovative services, Marel provides solutions to all capacity levels, from 500 to 15,000 bph.

CBH International, in turn, works at several fronts, from logistics and spare parts to components supply for all its machines and process lines with convenient delivery times to benefit customers and their production environment. "The collaboration between Marel and CBH International enables us to provide innovative solutions to the poultry processing industry customers in Ecuador and Peru, and promote excellence in performance, food safety and sustainability", stated Peter Snoeijenbos, Marel Sales Manager Andean Region.





**AGRICULTURE'S  
COMMITMENT TO THE  
FUTURE:  
PREPARING FOR A  
WORLD OF 9 BILLION**

**Sam Pardue, PhD,**  
Dean and Director  
College of Agricultural  
and Environmental  
Sciences  
University of  
Georgia



Congratulations to Caroline Hofland and CBH International on reaching an amazing milestone. Thirty years of creating global partnerships in the poultry industry is certainly an event to be celebrated. Of course, we are proud that Caroline is a University of Georgia “Double Dawg” from the College of Agricultural and Environmental Sciences (CAES); receiving both her BSA and MS degrees in Agricultural Economics.

Caroline currently serves on the CAES Dean’s Advisory Council and is the Council’s Vice Chair-elect. In her role with the Council, Caroline provides the College’s administration with a unique perspective that helps shape our future direction as we seek to conduct research for the agriculture industry, prepare the next generation of agricultural scientists, and serve as objective support for the agriculture industry. She not only gives freely of her time, but also contributes financial support for the College’s entrepreneurial efforts and our world-class Poultry Science Department.

Congratulations on three decades of building a solid foundation for the future.

When I was born in 1955, the world’s human population was less than three billion (2.8B). Many demographers project that the global human population will approach 9.7 billion by 2050. For much of human history, growth in our numbers has been remarkably slow. That has been quickly changing. According to the History Database



of the Global Environment - Our World in Data, it took approximately 10,000 years for modern humans to reach a global population of 1 billion people in 1803 [<https://ourworldindata.org/uploads/2018/11/Time-taken-to-increase-population-by-one-billion.png>]. To reach 2 billion took an additional 124 years. From there, the pace has continued to accelerate. Between 1927 to 1960, the world's population jumped from 2 billion to 3 billion in just 33 years. Subsequent additions of 1 billion more humans took 15, 12, 12, and 12 years, respectively to achieve a population of 7 billion in 2011.

What had taken more than 10,000 years, was now routinely occurring in little more than a decade. During the remainder of this century, global human population growth is expected to slow and, in some regions, actually decline. In much of the developed world, birth rates are at historic lows. In the U.S., births among women [15-44 years old] peaked in the mid-1950s; approaching 120 births per 1,000 women. The 2017 U.S. fertility rate, at 60.3 births per 1,000 women, is the lowest since these data have been recorded (<https://www.thebalance.com/birth-rate-by-state-4684536>).

We are now below the “replacement” fertility rate, estimated to be 2.1 in the U.S., with 2018 rates falling to 1.72, according to the National Vital Statistics System. But in Africa, the trends are quite different.



The United Nations Food and Agriculture Organization's Population Forecasts project a population in Africa approaching 2.5 billion by 2050. In fact, the Pew Research Center estimates that five African nations - Nigeria, D.R. Congo, Ethiopia, Tanzania, and Egypt - will be among the world's Top 10 most populous countries in 2100. Unfortunately, the FAO also has some dire predictions for Africa's ability to feed itself. If we are to avoid famine on a continental scale, we must invest in agricultural research now.

There are perhaps many reasons for the unprecedented expansion of the human population. Certainly, advances in medicine have improved human survival rates. In the last 200 years numerous discoveries such as antiseptics, anesthesia, X-ray imaging, vaccine development, and antibiotics have all made remarkable contributions to our knowledge and ability to diagnosis and treat disease. As a result, more children, thankfully, survive into adulthood.

I would, however, suggest that the human population worldwide is healthier and increasing rapidly as a result of the amazing improvements in agricultural productivity. Milestones such as the Haber-Bosch process for nitrogen fixation in 1918, farm mechanization, hybrid seed technology, and the recent introduction of genetically-engineered crops that possess unique traits such as insect and herbicide tolerance have revolutionized our ability to produce high-quality, nutrient-packed food for the world.

Norman Ernest Borlaug, in his Noble Lecture in 1970, wrote: “Civilization as it is known today could not have



evolved, nor can it survive, without an adequate food supply.” Borlaug and others, most notably UGA’s own Dr. Glenn Burton, helped launch the Green Revolution. Many have estimated that the Green Revolution saved over 1 billion people from starvation.

Today, we are hearing calls for second Green Revolution to better prepare us for a world with 9.7 billion people. To do so will require a commitment to inspire a new generation of agricultural scientists.

Over a decade ago, estimates of the return on investment (ROI) from federal and state-funded agricultural research in the U.S. was 20-60% annually. I can think of few or no other public investments that have had a greater ROI to the public. However, since the early 2000s, public funding for food and agriculture research has declined in real, inflation-adjusted dollars (USDA, ERS). Conversely, private funding during the same time period has more than doubled. At present, private funding for food and agriculture research and development exceeds public funding by nearly three-fold.



Public investment in agricultural research is crucial to support the land-grant mission in American universities. However, one only need to look at the funding levels of the USDA compared to that of the National Institutes of Health to readily see the gap in support. We have a great story to tell. Yields among major crops, corn (maize), soybeans, peanuts, and cotton have all nearly quadrupled since the early 1940s. Similarly, poultry production has seen remarkable performance metrics. Dramatic reductions in “days to market,” increased body weights, and improved feed efficiencies all have occurred since World War II.

In their 2017 study: Comparative analysis of environmental impacts of agricultural production systems, agricultural input efficiency, and food choice, authors Michael Clark and David Tilman also suggest that poultry meat is among the lowest for average land area required to produce one gram of protein. Advantages in carcass yields and feed efficiencies have contributed to the prediction that by 2030, poultry will be the world’s largest source of animal protein consumed on a per capita basis.

I am a poultry physiologist by training. I have witnessed many of the remarkable advances in all aspects of poultry production during my lifetime. We have observed improvements in a) housing: computer aided environmental controls, feed and water delivery systems, and ventilation; b) bird genetics; c) our understanding of nutrition; d) bird health, disease prevention, and vaccine development; and e) processing technology. All of these have contributed to a highly efficient, abundant, and safe source of animal protein.

The past 30 years has been a time of tremendous transformational advances in the poultry industry. I can only imagine what the next three decades will bring. Again, congratulations to CBH International and its 30-year legacy.



## CBH INTERNATIONAL SUPPORTING CULTURE NEXT TO THE ATLANTA SYMPHONY ORCHESTRA



Just as CBH International is celebrating its 30th anniversary, the Atlanta Symphony Orchestra is in the midst of its 75th year. The two organizations are linked through the involvement of Caroline Hofland, who joined the Orchestra's board in 2015 and has served as an active member of the Development and Executive Committees.

Caroline's involvement with the classical music goes back to her childhood in Ecuador. Her music teacher and mentor was Memé Dávila de Burbano. "She was the top pianist in Quito and the organizer of the symphony. She and my grandmother taught me to love the orchestra. When I moved to the U.S., I continued to go to concerts with my husband. My husband would say that I wouldn't be a good usher because I talked too much! So, after my daughter went to college and my husband went to heaven,

I wanted to find a way to give back to the community and establish myself here in Atlanta, because much of my life is overseas for work and family. In 2016, a friend recommended me to Virginia Hepner (Woodruff Arts Center CEO at the time), and the rest is history."

"Caroline has an inspiring vision for the way that music can help shape international cooperation, which is an outgrowth of her passion for feeding the world," said Jennifer Barlament, Atlanta Symphony Orchestra's Executive Director. "Through CBH Caroline's life work is to help develop the world's food supply; I like to think that we are helping feed people's souls. Despite her busy international travel schedule, Caroline is one of our most active and avid ambassadors, attending almost all of our (many!) concerts and introducing her friends, many of whom are also expatriates, to the Atlanta Symphony Orchestra. We can only achieve our mission with the generous financial support and strategic guidance of business and community leaders like Caroline. I am so grateful to her for the way she supports and shapes our work, and I am also grateful to call her a dear friend. Caroline unites her personal and professional worlds in a powerful way, guided by her profound sense of mission."

**Jennifer Barlament**

Executive Director  
Atlanta Symphony  
Orchestra





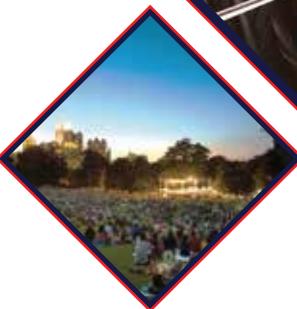
## CBH INTERNATIONAL SUPPORTING CULTURE NEXT TO THE ATLANTA SYMPHONY ORCHESTRA

The ASO began as a youth orchestra during World War II, founded by a group of determined women. It came to international prominence with the arrival of the legendary conductor Robert Shaw, who became Music Director in 1967. Shaw's arrival coincided with the construction of the Atlanta Memorial Arts Center, later re-named the Woodruff Arts Center, which includes Symphony Hall. The center was built as a memorial to 103 of Atlanta's leading arts patrons killed in a plane crash in Paris.

Under Shaw, the Orchestra became a recording powerhouse, winning 18 Grammy® Awards during his era and racking up record sales in the millions. Shaw transformed the ASO into an international ensemble. Perhaps his greatest legacy is the 200 voice, all-volunteer ASO Chorus, whose unrivaled virtuosity has done much to put the Orchestra on the map.

The road has sometimes been rocky for the ASO, which has faced dire financial threats, including in 2014, when supporters came together to stabilize the Orchestra's finances. Since then, the Orchestra has enjoyed five years of balanced budgets and subscriptions have grown steadily, along with attendance. Much of the credit for this success can be attributed to the leadership of the Orchestra's board, and especially to the dynamic personalities, like Caroline, who have done so much to build the Orchestra's finances and reputation.

Caroline has been especially helpful in establishing the Orchestra's international ties and reputation. "My dream," she said, "is to take the Orchestra on a tour of Latin America."



# THE MAJESTY CHARGE

## Fighting Prostate Cancer

CBH values our customers and vendors, so much that we encourage each of them to get tested for Prostate Cancer starting at the age of 40.

Every year CHB International donates a portion of our Net Profit to the Prostate Cancer Foundation (PCF) to fund research of better treatments and a cure for Prostate Cancer.

The PCF funds more than 1,500 programs at nearly 200 research centers in 20 countries.

*This initiative is done in memory of Bas W.Q. Hofland.*

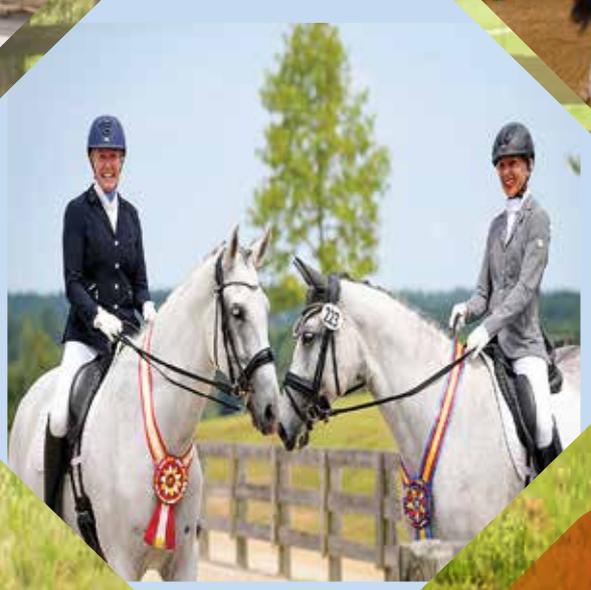
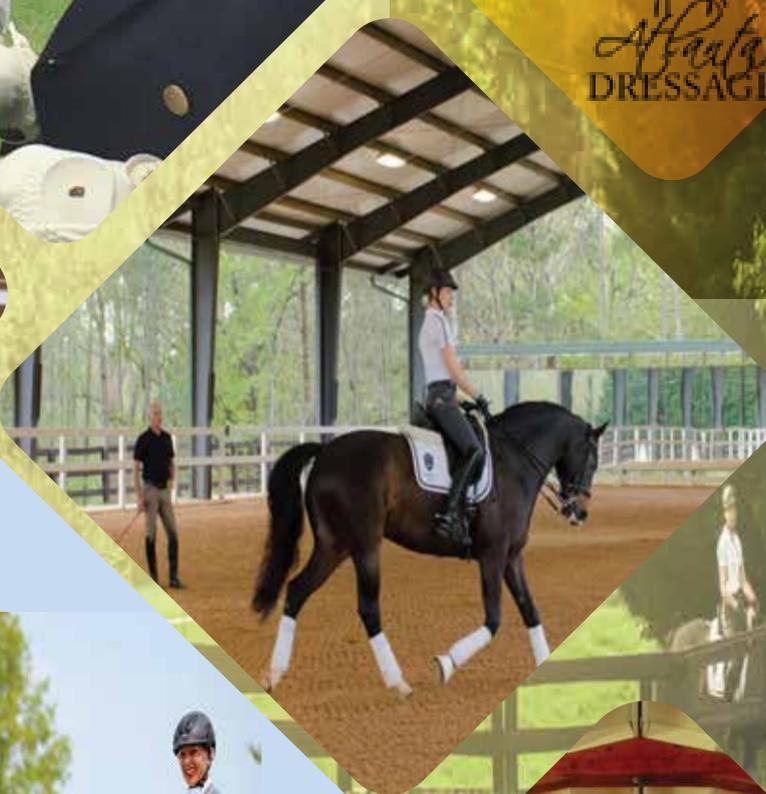
To donate, go to  
[www.pcf.org/BasHofland](http://www.pcf.org/BasHofland)



**Early Detection saves lives. Get Tested.**



CBH INTERNATIONAL SUPPORTING SPORTS  
"DRESSAGE"



# "DRESSAGE"

## ATLANTA DRESSAGE TRAINING CENTER



In June of 2012 CBH's CEO and owner Caroline Hofland got in touch with me, Roel Theunissen, Atlanta Dressage Owner and Trainer and showed her interest in having her horses trained and to educate herself in the Equestrian discipline of "dressage". For those who are not familiar with "dressage" see the description below:

*Dressage is a highly skilled form of riding performed in exhibition and competition, as well as an "art" sometimes pursued solely for the sake of mastery. As an Olympic sport defined by the International Equestrian Federation (FEI), dressage is "the highest expression of horse training" where "horse and rider are expected to perform from memory a series of predetermined movements. Natural movements are executed by the horse and influenced by the weight and aids of the rider with the ultimate goal to show a harmonious and effortless performance".*

Caroline got excited about "dressage" and with her PRE (Spanish) horses she set some high goals to participate and to advance in this challenging sport. As a seasoned professional in this industry I can say that we see lots of highly successful people, of all directions of life and business, who are just intrigued by this sport. There obviously are some parallels similar to running a business successfully. The sport requires passion, commitment, determination as well as a great control over the body and the mind. Creating well-functioning relationships is something we all can relate to; to do this with an animal makes it an extra challenge!

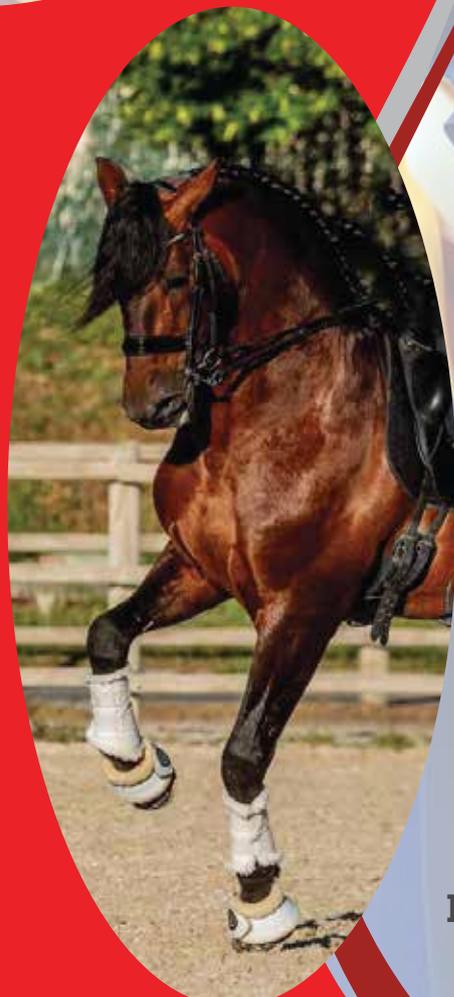
In a relative short time the partnership between Caroline Hofland and Atlanta Dressage trainers, Roel Theunissen and Adam Lastowka grew stronger and together we developed The Atlanta Dressage Training Center in Suwanee, GA. A State-of-the-Art Training Center for talented dressage horses and their riders. The Center is a accumulation of mutual interests: love for the horses and the art of dressage, a place for those who can appreciate the time and effort it takes to build dressage horses and their riders and a social "hang out" place for like-minded individuals.

¡Nos encantaría mostrarte nuestro trabajo y sorprenderle!

*Roel Theunissen*

**President & Owner**

[www.atlantadressage.com](http://www.atlantadressage.com)



## SUPPORTING ART AND CULTURE INTERVIEW: GERMAN ESCANTA

To start a story with the painting of a great horse “Su Majestad Yunque VIII” (His Majesty Anvil VIII), a Spanish purebred horse, is an honor. This led to a meeting with a wonderful person, Caroline Bakker Hofland, who is the chairman of CBH International, Inc. After she saw my work and after a very nice talk where she got to learn about my concerns both in the cultural as well as in the financial sphere, she decided to promote a project with a win-win formula intended to disseminate and immortalize horses through realistic style art, emphasizing specifically the expression in the horse’s eyes.

The goal jointly with CBH is the full promotion of my work, so that I may become internationally known through oil paintings depicting horses that changed the life of important international horse-riding figures from different parts of the world, such as Ecuador, Spain, the United States and the Netherlands. Shortly, we will be presenting an art exhibition and launching a book in Atlanta, U.S.A., where we will show the history of horses, and what they meant for each of their owners, pictures of the work, emotions conveyed and the feelings they prompted in me when painting them.

1) How did you become connected to the art world?

When I was very young, around the time I was in third grade, I began drawing historical Ecuadorian figures, such as Eugenio Espejo, Montalvo, and Eloy Alfaro. I remember I was gifted a book about Dali, which encouraged me to keep painting and to dream about being an artist.

2) How did you get your inspiration to start painting horses?

Horses are noble and beautiful animals that are worthy of admiration and respect. Throughout my childhood, we had a horse called Oscuro, who was part of our family. This allowed me an understanding, a perception of its beauty, and well, I guess God has given me the opportunity to capture this very special creature on canvas.

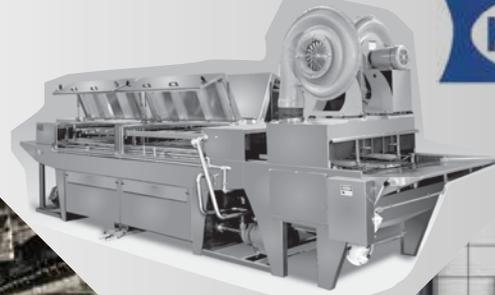


*Germán Escanta*

Life is a short gallop.  
It feels deep and simple.  
A horse represents spirit and strength,  
Freedom and confidence.  
It is what we are with an open heart.

Gabriel Oliverio





Higiene  
Industria  
Alimentaria



LEADERSHIP  
INNOVATION  
30  
YEARS  
INTEGRITY  
COMMITMENT





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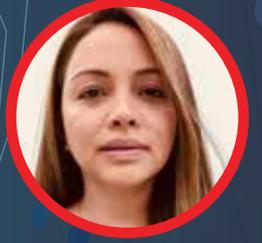
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