

NEWSLETTER

**Providing LatAm the leading technology
to feed humanity**



*Celebrating our
35th
Anniversary!*

WWW.CBHINTL.COM



EDITION # 13 January 2025



Caroline B. Hofland
(CEO CBH INTERNATIONAL)

Dear friends and colleagues,

As we celebrate our 35th anniversary of CBH International, Inc., we reflect with immense pride on the incredible journey we have made together with our represented factories, our customers and the great people of our company that from our humble beginning becoming a trusted leader in the Poultry and Swine Industries.

This milestone is a testimony of hard work and in spite of the difficult circumstances that have been presented along the way, always with the objective of moving forward Providing LatAm with Leading Technology to Feed Humanity under our principles of Integrity, Innovation, Commitment and Leadership.

We have boosted efficiency in several key areas by supplying high technology equipment in the areas of Animal Production, Primary, Secondary and Value-Added Processes, Feed Mill Plants, Grain Storage, Cleaning Systems, Water Treatment Plants, By-products and Odor Control Plants, Turnkey Installations as well as spare parts for the correct operation of the equipment.

In the area of social responsibility, it is our joy to support the Dunamis Foundation with the Equine Therapy program for the rehabilitation of girls victims of Human Trafficking as well as in the world of Art with the Master Painter German Escanta among other projects.

I wish to thank our represented factories for their unconditional support to our customers for their confidence in CBH International throughout this journey, as well as our professional team that every day delivers the best of each one giving an added value to unite the needs of our customers with the technology of our represented factories with a win-win formula where the Final Consumer is the greatest beneficiary of receiving products that are produced with the highest efficiency at the lowest possible cost.

A special thanks and recognition to my father Luis J. Bakker G., leader in the Latin American Poultry Industry for being my dad for his wise advice and ideas that are an example for me to always keep striving forward with honest work and with the passion and joy to do things right.

As we celebrate this monumental anniversary of 35 years, I also renew my commitment to continue working in the industry that I love and am so passionate about.

I wish you and your families a Year 2025 filled with health, success and blessings.

THE HISTORY OF CBH INTERNATIONAL

Luis J. Bakker Jr.

Pronaca
Founder



Caroline has asked me to write a few lines for her CBH News Bulletin now that her company has reached the 35th anniversary of its foundation, which I am happy to do!

Sitting at my desk here in Puembo, 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 graduating from Wageningen University in the Netherlands with a Master's in Circular Economy and Sustainability. She completed her Bachelor's degrees in Agricultural Engineering and Environmental Studies at the University of Georgia, the same university where her mom and dad graduated. I wish her much success!"

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 35th 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



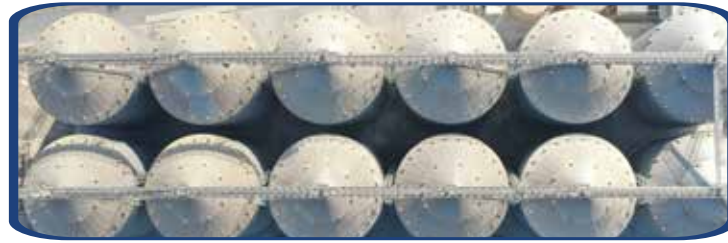
EXPERIENCE EXCELLENCE IN GRAIN STORAGE SOLUTIONS WITH CHIEF AGRI



Chief Agri, a division of Chief Industries, Inc., global leader specialized in the design, manufacturing, and sale of cutting-edge grain storage systems. With a rich history spanning over 60 years.

Chief Agri has amassed a wealth of experience, making them a trusted partner for farmers and agribusinesses worldwide. As an industry frontrunner, Chief Agri offers a diverse range of products tailored to meet the unique needs of each customer, ensuring their grain storage requirements are not just met, but exceeded.





COMPREHENSIVE GRAIN STORAGE SOLUTIONS

Chief Agri's commitment to excellence is reflected in its extensive product lineup, which covers all aspects of a complete grain storage system. Their offerings include:

- 1. STEEL GRAIN BINS:** Chief Agri provides a wide selection of steel grain bins in various configurations, sizes, and capacities. These bins are engineered with precision to ensure durability, protection against the elements, and efficient grain storage.
- 2. GRAIN HANDLING EQUIPMENT:** Efficiently move and manage grain with Chief Agri's range of grain handling equipment. From Belt Conveyors to Chain Conveyors and Bucket Elevators, their solutions optimize the handling process, reducing downtime and improving productivity.
- 3. CONDITIONING EQUIPMENT:** To maintain grain quality, Chief Agri offers top-of-the-line conditioning equipment, such as fans, heaters, and floors. These tools effectively control moisture and temperature levels, safeguarding the stored grain.
- 4. SQUARE FEED MILL STORAGE BINS:** For agribusinesses with specific feed storage needs, Chief Agri offers square feed mill storage bins. These bins are versatile and can be customized to suit individual requirements.

EFFICIENCY AND COST-EFFECTIVENESS

Chief Agri's commitment to efficiency and cost-effectiveness sets them apart from the competition. Their grain storage solutions are designed to maximize space and optimize operations, resulting in reduced storage costs for customers. By combining state-of-the-art technology with competitive pricing, Chief Agri delivers value that aligns with the unique needs of every client.

EXCEPTIONAL CUSTOMER SUPPORT

At Chief Agri, customer satisfaction is not just a catchphrase; it's the driving force behind everything they do. Their dedication to providing exceptional service extends beyond the point of sale. The team at Chief Agri is passionate about supporting their customers throughout the entire process. From initial design to construction, offering professional guidance and technical support, ensuring that every customer receives the best possible grain storage system tailored to their operational requirements.

BUILDING RELATIONSHIPS THROUGH ENGINEERING EXCELLENCE

Chief Agri's motto, "We Engineer Relationships," encapsulates the commitment to building long-lasting partnerships with customers. Beyond delivering top-quality products, Chief Agri strives to foster trust, reliability, and a strong bond with their clientele. This approach has earned them the trust of farmers and agribusinesses worldwide, making them the preferred choice for grain storage solutions.

In conclusion, when you choose Chief Agri for your grain storage needs, you are choosing a partner with a legacy of excellence, a commitment to innovation, and a passion for supporting your success. Experience the Chief Agri difference today and unlock the full potential of your grain storage system.

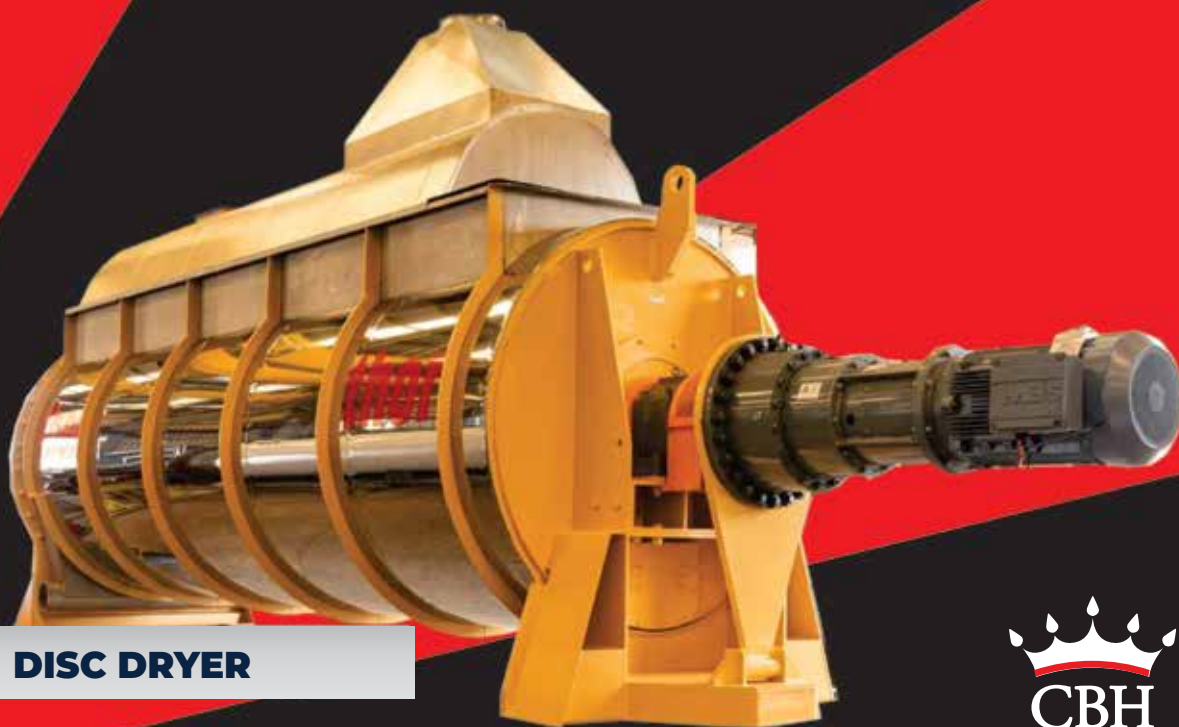


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PROCESSING TECHNOLOGY OF BY-PRODUCTS



CONTINUOUS COOKER



DISC DRYER



THOR MÁQUINAS E MONTAGENS,

Founded on January 2, 1985, our company is 100% Brazilian and positions itself as a leader in the manufacturing of equipment for animal by-product processing in Latin America. The equipment we design, manufacture, and install in Brazil, South America, Central America, and Mexico originates from our headquarters located in Santa Maria, Rio Grande do Sul, Brazil. This strategic location, with excellent road infrastructure, allows us to serve industrial companies throughout the American continent. We have a proprietary industrial park spanning over 12,000 m², which houses not only our organizational structure (administration, commercial, engineering, projects, production control, supplies, and production) but also a modern industrial park equipped with state-of-the-art machinery.



MANUFACTURING:

We are the leading company in Latin America in manufacturing equipment for processing animal by-products. Additionally, we serve industries such as mining, steel, fertilizer manufacturing, port construction, and other key sectors of the primary industry. Our work is essential in designing industrial plants for some of the world's largest companies in our segment.



INSTALLATIONS AND ASSEMBLY:

Our team is highly trained and qualified to manufacture, install, and assemble the equipment we produce, offering support throughout the American continent.

AIR COOLED CONDENSER



CONTINUOUS COOKER



HYDRAULIC EXPELLER PRESS



TECHNICAL ASSISTANCE AND TRAINING:

We employ 300 staff members, including specialized teams in budgeting and sales, development engineering, application, and product engineering, composed of highly qualified designers and engineers. Our manufacturing teams are supported by professionals with extensive experience and training, enabling us to deliver high-performance products and services that meet our clients' expectations and needs.

DIGESTOR



CONTINUOUS HIDROLIZER



MEAL GRINDER



39
ANOS

www.thor.com.br





WE SELL M8

Gas Fired Infrared Heater

M8 = 17,000 BTU

- ✓ Adjustable from 100% to 12% depending on pressure and gas type
- ✓ Directly heats the chickens, creating comfort zone
- ✓ Minimum gas consumption
- ✓ Lightweight for easy handling and less damage



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CBH INTERNATIONAL

¡NEW!



WE SELL G40

Low Profile Poultry Heater

G40 = 40-45,000 BTU

- ✓ Direct Spark Ignition
- ✓ 40 - 45,000 BTU heating capacity
- ✓ 13-meter diameter coverage



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CBH INTERNATIONAL

Poultry Equipment For Farms

We are a leading multinational company in the swine and poultry industry, headquartered in Puebla, Mexico. Our primary goal is to facilitate our clients' work by offering a wide range of high-quality products that ensure optimal performance for their farms.

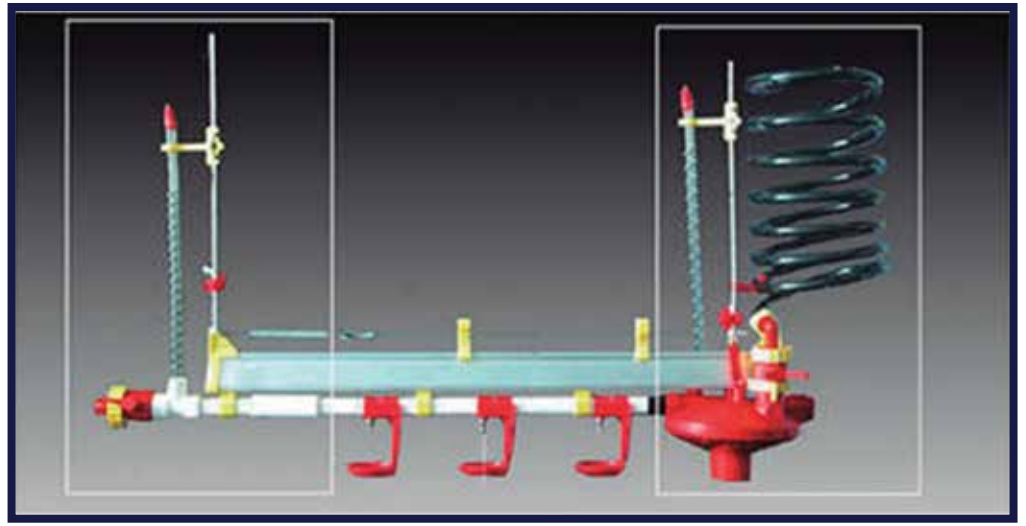
We stand out by providing global solutions that enhance our clients' engagement, profitability, and prestige. Our experience and knowledge have allowed us to expand our operations to Colombia, where, for the past 5 years, we have been collaborating with the leading producers in South America.

We have several specialized units to offer solutions and products tailored to your needs:

At NS AVES, we operate chicken partnerships focused on fattening, with three modules currently handling two million birds. Thanks to our strategic locations and rigorous health protocols, we ensure quality and disease-free poultry.

In addition, we are dedicated to the sale, manufacture, and distribution of specialized equipment for ventilation, feeding, and general equipment, designed to meet the highest operational efficiency standards for small, medium, and large farms. This enables us to provide comprehensive service to our clients.





ABOUT OUR PRODUCTS AND POULTRY EQUIPMENT

1.- Silos:

We develop PRFV silos that stand out for the following features:

- › Corrosion resistance.
- › Reduced transpiration, which lowers food moisture.
- › Lower food temperature compared to metal silos
- › Smooth walls that prevent food adherence, avoiding the formation of mycotoxins.
- › A closing system on the lid that prevents water entry and is highly resistant to strong winds.

2.- Feeders:

The TZC3 Feeder offers immediate access from the first day, preventing chicks from entering the feeder and ensuring that the food stays fresh. It is designed to be easy to handle and clean, made from high-quality virgin plastics that ensure great durability. The results are visible in the excellent performance of the birds.

3.- Drinkers:

We offer a variety of models made from plastic and stainless steel, designed for high-precision sealing. Our nipples are highly sensitive, providing water immediately and precisely, eliminating drips and preventing wet bedding. They are built with high-quality and durable materials, capable of withstanding the various climate conditions that farms face worldwide.



We excel with our engineering and experience in developing turnkey farms. We offer guaranteed delivery times and fixed prices, backed by our fleet and own units, ensuring complete project management. We handle every stage, from initial design to the implementation and installation of all necessary components, with a special focus on after-sales service as an integral part of our client support.



OTTEVANGER

MILLING ENGINEERS

¿THINKING OF GOING MODULAR?

Explore the benefits of fast and agile technology:

THE MODULAR CONTAINERISED FEED MILL BY OTTEVANGER



This containerised concept is a fully working feed mill built using the same high-quality engineering knowledge and equipment as conventional Ottevanger feed mills. It can produce any feed formulation (including aquafeed and premixes) at capacities from 3 up to 60 tonnes per hour, depending on the exact formulation.

It requires no concrete floors; no steel construction and no high towers. Simply build a basic shed or structure. It is a complete solution: it features integrated automation – and connects seamlessly to the dosing system and storage system.

Invented by Ottevanger Milling Engineers in 1971, there are now more than 100 Modular Containerised Feed Mills in operation across 45 countries.





OTTEVANGER

MILLING ENGINEERS



KEY BENEFITS

The Modular Containerised Feed Mill has proven to be especially effective in regions like Latin America, Asia and Africa. The containerised concept is a great solution when transport and logistics are challenging. And because of its reduced complexity, the modular concept can be built in around half the time of a conventional feed mill. This in turn, reduces costs and enables you to start creating a faster feed supply and return on your investment.

1.-Reducing complexity:

The Modular Containerised Feed Mill is pre-assembled at our workshop in the Netherlands and shipped as a container with all loose parts (including mounting materials) included. Our experts will assist you assembling and starting-up the feed mill on-site.

2.-Reducing time:

This total solution enables you to start production faster not having to lay foundations, build steel constructions and conducting surveys. All Modular Containerised Feed Mills are based on fully standardized structural calculations.

3.-Reducing costs:

There are many costs associated with building a conventional feedmill: from construction and facilities to road layouts. The Modular Containerised Feed Mill saves money at almost every stage:

- › Fewer personnel needed for a shorter period of time.
- › Less tools and equipment required.
- › Smaller equipment needed (a 6-metre construction needs a small crane).
- › Less transport costs and footprint.
- › Easy to access for subsequent maintenance.

COMPELLING EXAMPLE

A remarkable illustration of our containerized solution is the factory we constructed for S.I.P.O.R. S.A. de C.V in Mexico (15 tph) and Leong Hup, Philippines, as depicted below:





**Higiene
Industria
Alimentaria**



HYGIENE IN THE FOOD INDUSTRY

Hygienic steps in the Food Industry are an essential part in any area that requires thorough control of staff hygiene. They are usually located between the common areas (changing rooms, canteens, etc.) and the production entry and exit area.

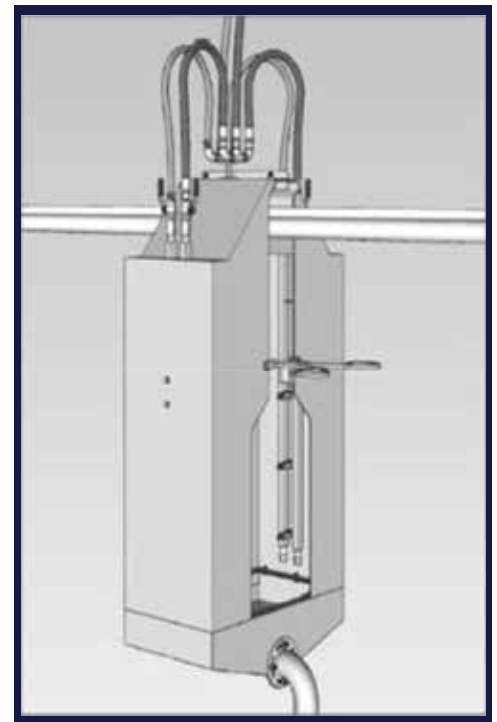
The type of machinery needed, its configuration and the correct distribution depends on the type of food plant, number of employees working in production and space available for the installation. Within the wide range that Scanio Systems offers to its customers, we can find individual solutions for each phase of hygiene or machinery that encompasses different modular functions in a single machine.



DISINFECTION MODULE

Scanio Systems, S.L. has developed a very effective disinfection module that can be combined with other disinfection modules needed in the company, such as the disinfection of belts, hooks, overhead boxes, cooling baths, etc.

- Perfect hygienic effect
- 50% water savings
- Less contamination when scalding and more efficient scalding
- Capacity up to 15,000 channels per hour
- Stainless steel cabin 400 x 660 x 1500
- 2 x Manifold
- 4 x 1/2" Check Valve
- 4 x 1/2" shut-off valve
- 2 x 1000mm high pressure hose + 1/2" connectors
- 2 x Low Pressure Hose 10 bar 1 m + 1/2" connectors x 1/2" water/air distributor
- 1 x Drain Pipe
- 1 x riel G 1700 mm
- 2 x Guide Stirrup
- Water consumption/pressure: 1.40 litres per hour / 10 bar
- Air consumption / pressure: 200 litres per minute / 6-8 bar



Add Value Services



Te alimenta bien



Diego Viteri
GER. PLANTA (AVE)
NEGOCIO PAVOS Y HUEVOS
PRONACA

Yaruqui Plant began its operations in the 1970s, being Pronaca's first processing plant.

Over its more than 40 years, Yaruqui Plant has evolved from its beginnings as a poultry slaughterhouse to what it is today—a plant specialized in heavy birds, while also handling beef, lamb, and multi-species value-added products.



Over the years, CBH has been a strategic partner of the Yaruqui Plant, supporting important investment processes, as well as providing technical support for preventive maintenance and overhauls of various processing equipment.

In recent years, notable investments include a 350 BHP Hurst Boiler, intended to supply the plant's steam demand for the coming years. This state-of-the-art equipment, installed in February 2024, is equipped with a dual burner, allowing for savings in Diesel or LPG consumption. Additionally, due to its cutting-edge technology and greater efficiency, it significantly reduces CO2 emissions.

Hurst Boiler
Intallation





Boiler Intallation Hurst

Regarding technical support, for more than a decade, Yaruqui Plant has worked closely with Hernan Acuña, who with his expertise, has carried out preventive maintenance and major part replacements in injection equipment.

Likewise, thanks to his skills, Hernan has recommended process improvements and provided technical training to the staff, which has helped reduce variation in the injection process, reaching optimal levels. Recently, Hernan also supported the installation and startup of a thermoforming machine transferred from another Pronaca operation center.



Thermoforming line assembly



Practical Training



Intallation Overhaul inyector

In the future, we are confident that CBH will continue to be a strategic partner, providing new technology and technical service to support the growth and continuous improvement of the Yaruqui Plant.

HPP (High Pressure Processing) and its applications

High Pressure Processing (HPP) is a non-thermal food preservation method that inactivates bacteria in food, keeping it fresh, flavorful, and free of preservatives. HPP has many applications in refrigerated foods and beverages, using water as a medium to apply pressure, with foods subjected to pressures of 6,000 bar.

HPP technology is recognized by food safety organizations worldwide. Thanks to 30 years of research and international applications, this technology has become one of the most effective solutions for preserving fresh foods and beverages.

Fruit puree was the first industrial application of HPP, developed in Japan in the early 1990s. Its numerous advantages have led to its expansion into a wide variety of foods and beverages, from early HPP applications like guacamole and fresh juices to the latest trends such as ready-to-eat (RTE) meals, plant-based sauces, baby food, and pet food.

Other applications of HPP include dairy products and seafood. HPP can be used for cold extraction of meat from lobsters and other shellfish, as well as opening shellfish like oysters and mussels.



Let's take a walk through the supermarket to discover where HPP is used:

› Juices and Beverages:

This application has grown due to the variety of beverages developed in recent years. HPP maintains flavor, color, and composition without preservatives, meeting current consumer demands. In the case of fruit and vegetable juices, this technology preserves all nutrients, vitamins, antioxidants, and flavor. It's like consuming freshly squeezed juice, but with a longer shelf life, usually from 45 to 120 days, along with food safety

assurance. Other beverages that benefit from HPP include smoothies, plant-based milk alternatives, cold-brewed coffee and tea, fruit-infused waters, vegetable soups, and functional or probiotic energy drinks.

› Guacamole, Avocado-Based Products, and Other Plant-Based Sauces:

Guacamole was one of the first products to benefit from HPP technology and remains one of the most popular HPP products. Thanks to HPP, guacamole companies were able to market a natural, preservative-free product that could be distributed globally. HPP significantly extends the shelf life of guacamole (60 days under refrigeration) and all kinds of ready-to-eat avocado-based products while maintaining the natural color, aroma, and flavor for consumers.

HPP partially inactivates the enzyme Polyphenol Oxidase (PPO), responsible for the browning of avocado products, helping maintain their natural green color for an extended period. HPP also ensures the safety and extends the shelf life of avocado pulp, avocado halves, and avocado-based beverages. In addition to avocado products, HPP is currently applied to a variety of plant-based sauces, including hummus, cheese, salsa, and other sauces that can be used as salad dressings and marinades. Many of these plant-based sauces include cold-pressed ingredients. Since HPP does not use heat, the cold production process helps preserve freshness and flavor.

› Organic Deli Meats, Marinated Meats:

Meat products, both raw and ready-to-eat (RTE), continue to be one of the sectors most using HPP technology as an alternative to preservatives and additives, while ensuring food safety.

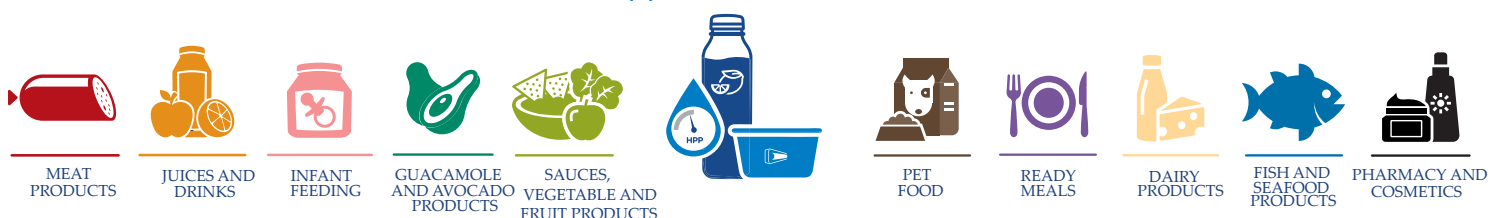
A wide variety of meat products have successfully adopted HPP technology, including cured and sliced ham, roasted chicken and turkey cuts, hand-carved pork, cured sausages, raw and marinated meats, duck and goose delicacies, and much more.

HPP is the best food safety solution against pathogens such as *Salmonella* spp., *E. Coli*, and *Listeria monocytogenes* in meat products. Additionally, HPP inactivates foodborne pathogens and spoilage-causing microorganisms, meeting the regulations required by national food safety authorities in many countries.

› How to find HPP products:

High-pressure processing has long been known by food producers and retailers, but consumers are starting to learn about this exciting food method that gives food a homemade taste. Many HPP-processed products are marketed as "cold pasteurized" or "all-natural, preservative-free." If a food or beverage has an extended shelf life while maintaining a clean label, it is likely to have been processed using HPP. The Cold Pressure Council (CPC), which leads, facilitates, and promotes industry standardization, user education, and consumer awareness about high-pressure processing (HPP), created the High Pressure Certified certification mark to help identify the benefits provided by high-pressure processing. With the High Pressure Certified certification mark, consumers can trust and recognize foods treated with HPP instead of thermal pasteurization or harsh preservatives.

HPP Applications Support & Incubator



FREEZING TUNNELS IN THE POULTRY INDUSTRY

The use of freezing tunnels or Blast Freezers has been implemented in the poultry industry for decades, meeting the operational needs and demand for frozen product distribution with safety throughout the supply chain.

Despite the adoption of newer freezing technologies such as IQF or ultrafast freezers, these systems are not financially efficient when it comes to handling the larger sizes or volumes of pieces that a freezing tunnel can accommodate. Furthermore, the cost of freezing tunnel equipment makes it a more cost-effective option.



Currently, the demand for poultry products is growing at a rapid pace, which many plants are often unprepared to meet. Considering the challenges left by the post-pandemic era and the winds of war, delivery times for equipment have increased dramatically, now taking 4 to 5 months instead of just over 2 months.

This poses a significant challenge for the industry, as they struggle to quickly address these production and freezing bottlenecks in order to distribute products to customers.



100th ANNIVERSARY

MAYEKAWA
MYCOM

That is why the implementation of new freezing tunnels that allow for shorter freezing times and the lowest possible energy consumption becomes a practical, cost-effective, reliable, and proven solution to move forward in these times of crisis.

In freezing tunnel technologies, MAYEKAWA, with the support of CBH Intl., has promoted the use of new technologies in evaporators, which allow for freezing times to be reduced by up to 30%, while also improving temperature standardization in freezing cycles. Coupled with the use of "Compound" or two-stage screw compressors from the engine room, these solutions are highly efficient and reliable when undertaking poultry freezing projects.

Allow us to be part of your future freezing projects, where we not only aim to receive the information or requirements from the client but also to collaborate with you from the project's inception. This enables us to create an efficient solution with the lowest carbon footprint, using only natural refrigerants.

By: **Ing. Luis Gustavo Garcia**
MAYEKAWA COLOMBIA



CHALLENGES TO SUCCESSFULLY FACE THE CHANGE TOWARDS FREE MATERNITY

Several European countries, such as Switzerland, Sweden and Norway, currently forbid the use of cages in farrowing pens. Austria will ban their use from 2033, although it will allow them during the critical survival period of piglets (minimum space of 5.5 m²). In Germany the permanent use of cages will be phased out and is planned to be banned by 2035 (minimum space 6.5 m²). In Denmark from October 18, 2022, Danish producers will be able to apply for the fund for the changeover of farrowing rooms with free sows or temporary restriction cages. Transformation to free lactation is due to be completed by the end of 2024. In the UK, 40% of lactating sows are housed in systems with outside access and the industry has declared a willingness to increase alternative indoor farrowing systems. In New Zealand, the high court declared that as of November 2020, cages in farrowing pens are illegal.

In October 2020, a committee of citizens from various countries of the European Union presented to the European Commission, a European Citizen Initiative (ICE), after collecting 1,397,113 citizen signatures in the 28 countries of the European Union. The initiative, which gets the name End the cages age, urges the Commission to ban the use of individual cages for sows, both lactation and gestation. New EU proposals for a new animal welfare law are expected by 2023.



The Commission intends to propose the gradual withdrawal, and finally, the prohibition, of the use of such cage systems, that in the case of pork production will affect its use in the period between weaning and mating, the first four weeks of gestation and in farrowing. The new legislation is expected to take effect in 2027 and provides for an immediate ban for new farms, with a phase-out period for existing ones, as has been done before when implementing similar restrictions.

Worldwide, however, most lactating sows are still confined in cages during the week before delivery and all lactation. From an economic point of view, this housing system has advantages such as saving space and handling time, ease of maintaining high levels of hygiene in the pen and a lower risk of crushing piglets. However, different studies have shown that farrowing cages negatively influence the sows' physiology and delivery behaviour, causing a stress response that can affect the duration of deliveries and the piglets' survival.



SOW STRESS REDUCTION

Management measures related to the reduction of stress in the lactating sow can contribute to better farrowing and suckling dynamics. Oxytocin release is greater when the sows are relaxed. This hormone stimulates uterine contractions, promotes the expression of maternal behaviour and maximises milk excretion during the lactation period. Longer breastfeeding cycles have been associated with increased oxytocin levels and their relationship to lower levels of stress hormones, such as cortisol.

In this sense, the control of the environmental temperature, the interventions, the noise, the adequate supply of water and food and the provision of nesting material are essential. Likewise, the measures that contribute to increasing the vitality of the piglet are of special importance, mainly with the decrease in the birth weight of piglets in hyper-prolific sows. Ensuring a correct encolostrum of the piglets, the equalisation of the litters considering the weight of the piglet in relation to the average weight of the litter and the appropriate temperature to avoid situations of hypothermia are crucial factors to highlight to improve the piglets' vitality.

TYPES OF FREE FARROWING INDOORS



Temporary confinement: The sow can turn around, but her movements may be temporarily restricted around farrowing. The cage is usually used before and during delivery until a few days after delivery. The cage is then opened until weaning.

Individual pens with zero confinement: The sow is housed individually in the pen and is not restricted at any time.

Group systems: The sows and their litters are mixed before weaning. Most are based on a co-lactation system.

CHALLENGES TO THEIR IMPLEMENTATION

Undoubtedly, if sows are offered the opportunity to express their behavioural needs, their welfare levels increase substantially. However, their freedom to have space to move around in without being locked in a cage brings new challenges that will need to be successfully achieved so that their yield is not affected. Some of them are:

- › Protection for piglets against the increased risk of crushing.
- › Type of floor of the farrowing spaces.
- › Farrowing pen design to optimise space.
- › Provide manipulable material so that the sow can satisfy its need to build a nest (even partially).
- › Management of the feeding system.
- › Staff security.
- › Management of conflicting sows (aggressive, passive or not very maternal, etc.).
- › Hygiene of the pens and the sows

All of them have their importance, but the main one is to protect the piglets. Various comparative studies of non-confinement or semi-confinement accommodation compared to cage systems show stillbirths increase with the former. The risk increases because the piglets are more exposed to being crushed by their mother. However, the system change implies some variations, especially in handling, that if applied with the rigour and with the help of the appropriate equipment, can contribute to reducing their negative impact.

Rotecna, with the innovative spirit at the service of the farmer who has always characterised it, in 2018 already collaborated with FAWEC (Production animal welfare education centre) of the Faculty of Veterinary Medicine of the Autonomous University of Barcelona in their project to test different models of free farrowing stalls by supplying their equipment. Afterwards, these models have been adapted to the different needs of farmers in many projects with free farrowing wards.



Industrial water purification, especially for the food and food related industries



Every wastewater stream is unique. Therefore, knowledge of industrial production processes as well as experience of water treatment are required to effectively manage wastewater from industrial processes. Marel Water Treatment is specialised in treating industrial wastewater and sludge. Furthermore we have up to date knowledge of such production processes, especially in the fields of food processing.

OUR SOLUTIONS

Marel has more than 50 years of experience in wastewater treatment in the food processing industry, specializing in meat, poultry and fish.

Marel Water Treatment offers standard and customized systems to treat wastewater so thoroughly that it can be discharged to surface water or reused in a variety of processes. We can advise you on systems specifically tailored to deliver the best possible results. By implementing effective solutions, we can help you comply with legislation, reduce waste of valuable resources and improve your sustainability outcomes.

OUR SOLUTIONS

As the world's population grows, so does the need for safe and sustainable food. Processing raw materials in vast quantities puts a strain on water supplies, and so we must find ways to use this valuable resource responsibly.

To help you address this challenge, Marel Water Treatment can implement processes to minimize water stress on your local environment. Our internationally recognized water treatment division provides solutions for all types of food processing wastewater. Because every drop of water counts, we help processors minimize wastewater, enhance efficiency and increase sustainability.

FOR FOOD AND FOOD RELATED INDUSTRIES

› MEAT › POULTRY › DAIRY › FISH › BEVERAGE › PETFOOD

TECHNOLOGIES AND INDUSTRIAL PRODUCTION PROCESSES

› PRIMARY TREATMENT › SECONDARY TREATMENT › TERTIARY TREATMENT

› WASTE TO ENERGY

PRIMARY TREATMENT :

Organizations are obliged to ensure that any wastewater they produce can be discharged to the sewer without any adverse effects. Coarse particles and fats can clog sewers, affecting households and other businesses that discharge to the same sewer. Cleaning costs are usually recovered from the party that causes the initial problem.

Minimum measures must be taken to prevent clogged sewer systems. These measures range from using filter baskets in the production process in combination with an elementary static fat trap to mechanical systems that remove between 60% and 80% of the pollutants.

SECONDARY TREATMENT:

In most countries, the requirements for discharging to surface water are established in local legislation. However, there are also countries that link the discharge requirements to the volume and flow rate of the water receiving the discharge. In almost all cases, a biological (anaerobic and/or aerobic) treatment step is required.

Under critical conditions, additional measures may be necessary to be able to handle emergencies. Marel Water Treatment is able to purify the water to any desired degree of purification.

TERTIARY TREATMENT :

Re-use / recycle - lowering water costs and footprint Water is an incredibly valuable resource, and that is why all organizations - regardless of industry - could benefit from lowering water usage and thus costs and water footprint. Therefore, when it comes to food processing operations, the efficient use of water is of paramount importance.

The world's population is constantly growing, and that means the global demand for food is increasing by the second. Producing and processing such vast quantities of food puts additional strain on finite resources such as water, and so finding ways to better manage water use and waste water treatment is vital.

WASTE TO ENERGY:

Waste-to-energy is the process of generating energy in the form of electricity and/or heat from the waste primary treatment, or the processing of waste into a fuel source. On top of that, it's also about reducing the amount of waste that is produced in such a way that the consumption footprint decreases, and avoiding additional treatment costs.





Chicken
UP TO 9,000 bph



Poussin
UP TO 6,000 bph



Quail
UP TO 12,000 bph



Rabbit
UP TO 3,500 uph



VERDERIO

MEAT PROCESSING TECHNOLOGY

100% MADE IN ITALY

Meat processing equipment



TECHNOLOGIES FOR MEAT PROCESSES SINCE 1962... AND WE KEEP COUNTING

Offering complete solutions for chickens, quails, rabbits, that are the result of experience, competence, know-how, technology, development, research, customization.

OUR OBJECTIVES:

Customer satisfaction, quality and productivity, high performance, evolution, progress, automation, long life, maximum efficiency, operator safety, animal welfare, hygiene, reliability, traceability, flexibility, sustainability.

OUR ADDED VALUES:

Professional advice, technical assistance, after-sales service, teleassistance, supervision systems.

Plants and machines for poultry processing up to 9000 birds/ / hour that guarantee high quality final products: at the forefront of technology, for high as well as low production capacities, manual or semi-automatic / fully automatic solutions.

With more than 60 years of experience, our company is specialized in the production of high quality chicken processing facilities, designed and manufactured with long-lasting materials and cutting-edge technologies. Our engineers have always focused on improving the working conditions of operators, increasing hygiene and safety standards, reducing the need for maintenance. We offer multiple solutions ensuring maximum efficiency and safety of processing facilities, ranging from small compact plants (200 / 500 / 1000 birds / hour) to large standard facilities ranging from small complete plants (200 / 500 / 100 birds / hour), to large standard facilities for large hourly productions (up to 9000 birds / hour), then reducing animal stress and guaranteeing the highest rates of hygiene and cleanliness.

ICompact installations for 200/500/1000 heads/hour designed specifically for small production capacities: they consist of highly efficient, reliable, flexible and modern machines that guarantee optimal conditions and high quality products. Standard installations range from 1000 to 9000 head per hour : Complete lines customized to meet the needs of our customers, ensure the highest efficiencies and safety, reduce the workload of operators and animal stress.

Facilities for the processing of quails up to 12000 heads / hour, advanced technology, for high production capacities, fully automated, and high reliability.

Compact installations for 200 and 1000 birds / hour: specifically designed for small production capacities: they consist of highly efficient, reliable, flexible and modern machines that are the result of development and research to guarantee quality products. Standard installations, up to 12000 birds / hour: Complete lines customized to increase the degree of automation of production and make operations safer, more hygienic, efficient and comfortable.

Facilities for the processing of rabbits up to 3500 heads / hour that are the most advanced on the market for the automation of all operations, even the heaviest.

Compact installations, up to 500 heads / hour: specifically designed for small production capacities: they ensure efficiency, reliability, optimal hygienic conditions and high quality products. Standard installations, up to 3500 heads / hour: complete customized lines that increase the degree of automation of production and make operations safer, hygienic, efficient and comfortable.

Facilities for the processing of picantones up to 6000 birds/ hour, of high technological level for a fully automated production, low maintenance and that can be integrated into any existing plant.

Compact installations for 200 and 500 heads/hour: specifically designed for small productions, these machines are highly efficient, reliable, flexible and modern to ensure optimal hygienic conditions and top quality products. Standard installations up to 6000 birds/ hour: complete customized lines that will increase the degree of automation of production and make operations safer, hygienic, efficient and comfortable.



DUNAMIS
foundation



EQUINOTERAPY



In a quiet corner of our shelter, you will find the true heroes of a healing story that knows no boundaries: the horses. These majestic beings, with their deep gaze and calm gait, have become an anchor for the girls. Designed and led by Caroline Hofland, this invaluable program not only heals invisible wounds, but also gives life to new hope.

Imagine a little girl arriving at our shelter, her heart shattered by pain and fear, her dreams extinguished by trauma. She has lost her trust in the world and in herself. She enters the pen, unsure, fearful. But then, something magical happens. A horse approaches her, gentle and respectful, as if it knows it is in the presence of a broken soul. This encounter is not just a first step toward healing; it is the first heartbeat of a new life beginning to blossom.

Thanks to the love and dedication of Caroline Hofland, who has been the heart of this equine therapy program, each session becomes a silent embrace that these animals bring to our girls, reminding them that there is still goodness in the world. In the warmth of that connection, the survivors begin to rebuild what the abuse stole from them: their confidence, their dignity, their ability to dream.

This program not only offers emotional healing but gives life back to those who thought they had lost it. The girls learn to care for the horses, but in reality, it is the horse that cares for them. In every stroke of the mane, in every ride through the eld, a bond is forged that no words can fully describe. It is in this safe space, created by Caroline's vision, where emotional scars begin to fade, where inner cries find silence, and where pain begins to give way to hope.

Equine therapy not only restores, it transforms. From this corral, young women emerge, once scarred by trauma, now empowered, with a strength that surprises even themselves. The world that once hurt them now becomes a place where they can shine, where they can be agents of their own destiny.

It's not just a program; it's a statement that life can be beautiful again. And for those who have lived through the bad on earth, this is not a luxury; it is a necessity. The doors to our shelter open every day, and with them, the doors to a new future for our girls.

Today, more than ever, we need your support. By joining us, you're not just helping a program; you're saving lives. You are holding a child who has been hurt in the cruelest of ways, and you are telling her, "You matter. You are loved. And yes, you can heal.

This is a call to compassion, a call to all those who believe in the power of love to heal. Equine therapy at the Dunamis Foundation, with the invaluable guidance of Caroline Hofland, is more than a path to healing; it is a promise of a better tomorrow. Because when you join us, you're not just being part of a cause; you're being part of a miracle.





Germán Escanta



**Ecuadorian
Master Painter**

More than 10 years ago, a story began with the painting of a great Pure Spanish Breed (PRE) horse named His Majesty Yunque VIII, who started a significant project. To this day, there are more than 200 paintings in private ownership around the world.

In the equestrian world, each of these paintings has its own story, "What My Horse Means to Me," which will be featured in a book in 2025.

We are proud to support Ecuadorian art, especially that of Germán Escanta Master Painter from Ecuador



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luescant@hotmail.com

G. Escanta 2023



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



Early Detection saves lives. Get Tested.

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