

# INSIGHT

VOLUME 7 | EN

MEAT PROCESSING

## SULMAQ ACQUISITION

**SEEING** what  
the human eye cannot

**BEEF UP**  
the software

Better  
**BY-PRODUCT** packing

**marel**  
MEAT

## AUTOMATION – A WINDOW TO THE FUTURE

Marel recently acquired the Brazilian food processing equipment supplier Sulmaq, thereby broadening our reach into the South American meat industry. The global meat industry is constantly changing and consumer demands for diverse food products are increasing. As the market evolves, one of the key topics for our industry is the increase in automation.

In this issue of Insight Meat Processing, we provide you a glimpse of some of the many systems that we supply, as well as some of the red meat projects that we have been involved with developing. The Trim Management System at Foyle Food Group is an excellent example of how consumer demands and food safety are critically interrelated. Also included is an article about the Swedish company, Skövde, which has implemented our Innova Food Processing Software to achieve full traceability of their products.

We hope you will enjoy this issue of Insight Meat Processing.



**DAVID WILSON**  
Managing Director  
Marel Meat

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## SULMAQ ACQUISITION

The acquisition of Sulmaq in 2017 is in line with Marel's strategy to be a full line supplier to the poultry, meat and fish industries globally. Together, Marel and Sulmaq form a powerful provider of full meat processing solutions. The companies continue to work on what both have always prioritized; to be the best provider they can for their current and future customers.

Marel's growth and success in recent years has been driven by investments in innovation, market penetration and through the emphasis on fostering customer relationships. Marel and Sulmaq will work together to further advance the meat processing industry, focusing on helping customers produce safe and affordable food in a sustainable way.

### AT THE FOREFRONT OF RED MEAT PROCESSING

Sulmaq was established in 1971 as a processor of equipment for hog slaughter. Later the product portfolio was expanded to also include lines and solutions for poultry and cattle slaughter. Today the company is present in more than 30 countries and is the largest supplier of equipment to the meat industry in South America.

Sulmaq is headquartered in Brazil, a region which with all of its favorable natural resources, qualified labor force, and constant research in modern production techniques has a unique position in the development of the entire production chain of agribusiness.

In the agribusiness sector, Brazil is one of the largest producers and exporters of meat in the world.

**GO TO:**  
[marel.com/sulmaq](http://marel.com/sulmaq) 

"Both Sulmaq and Marel have played an important role in advancing the food processing industry. Together, we will strengthen our presence in Central and South America and be better positioned to invest in growth and innovation to add value for our customers in this 600 million people region."

– Arni Oddur Thordarson, CEO of Marel





When the time  
**is right** automation in hog  
slaughter has become  
a "must"

With increasing speed, the red meat processing industry is changing their slaughter methods from the conventional manual handling to an automated and robot-driven process.

Over the past 15 years, the primary processing division of Marel Meat (Previously known as MPS Red Meat Slaughtering) has delivered several automated hog kill floor lines (F-Line) These include separation of the pelvic bone, carcass opening, breastbone splitting and neck clipping. The automated F-lines are now used in many hog slaughter plants and run with capacities varying from 300 hogs per hour to 1,280 hogs per hour.

#### SLAUGHTER LINE ROBOTS

Since the first F-line installation, Marel Meat has continued to develop automatic systems and robots for the slaughtering process. Marel's latest development is the M-Line, which is a new generation of hog kill floor automation using articulating arm robots.

The latest techniques in 3D scanning are integrated into the M-Line robots, and ensure a high cutting accuracy. The carcasses are scanned several times with the data converted to a precise movement of the robot and the robotic tools. This action is 100% synchronized with the transport of the carcasses.

#### ROBOTS WITH "TWINTOOL"

The majority of the M-Line robots are equipped with the patented "TwinTool" concept, which results in increased shelf life of the final pork product. In the "TwinTool" concept, each robot has a double-acting tool, meaning that when one tool is in operation, the second tool is being sterilized.

The first M-line system was installed in North America in 2013 at an existing slaughtering line processing 10,000 hogs daily. The system consists of three

automatic carcass openers (pelvic bone, belly and breast) in a side-by-side execution.

This state-of-art kill floor automation has become a huge success partly because of the immediate improved hygienic conditions, the reduced maintenance requirements and spare parts consumption, and the minimised labor force needed for the slaughtering process.

Today M-Lines are found in several slaughter facilities throughout the world and with more added continuously as the benefits are realized.

Proven benefits of the M-Line automation program are:

- Reduction of labor in the slaughtering process
- Reduction of mistakes causing fecal and/or bile contamination
- Yield increase because of extra harvesting of "St. Louis" type of spareribs, extra bacon bellies and added intelligence
- Reduction of B-graded hearts
- Reduction of the Antero counted bacteria (TPC Total Play Counts)
- Improved shelf life of fresh chilled pork products

**GO TO:**  
[marel.com/M-Line](http://marel.com/M-Line)





“One of our new overseas customers has seen and knows the way the system works, the reliability of the information and the quality of the product. Now that customer only wants to buy from suppliers that have a similar system in place.”

– Michael McKay, General Manager, Foyle Food Group, Donegal

# Seeing what the human eye cannot

“It is all about trust” says Michael McKay, General Manager at Foyle Food Group in Donegal, “Our customers know that the meat we supply has a consistent quality and has been produced with the highest attention to product safety and hygiene. The Trim Management System is an important instrument in this.”

Being a player in a market that sees heavy competition and constantly changing consumer demands, Foyle Meat Group in N. Ireland focuses on innovating and setting new standards in product quality and processes.

The company has installed Trim Management Systems in three of their five processing plants and sees big advantages from the systems. They can now measure and verify important key performance indicators such as fat/lean (CL) content in their meat supply.

“The main reason for installing the Trim Management Systems was that we wanted to be able to meet the increasing different requests to CL content. The world market has opened and more different requirements are being made,” McKay explains, “with the Trim Management Systems we can actually verify that we are complying with the requirements, because the system measures all the trim meat and registers all the information.”

**IMPROVING PROCESS MANAGEMENT**  
When the trim meat has passed through

the x-ray inspection, the system registers information about weight, the fat-lean content, bones or other contaminants.. This information is then sent to the grading unit at the end of the system, where the meat is batched into crates, boxes or bags – making up a final batch at a specified weight with a fixed CL.

McKay especially highlights the ability to accurately measure the fat content. “We see this as the human eye versus the machine. And the machine undoubtedly wins. The machine can match CL much

## Trim Management System brings new business to Foyle Food Group in Northern Ireland

better and faster than any human. It has the ability to blend different cl's to make final batches of the most popular CL. If you have for an example 70/30 CL and 90/10 CL – the machine can easily work with making more of those CL in the middle, like 80/20 CL.”

### THE DIFFERENCE LIES IN DATA VERIFICATION

Another benefit of the machine over the human is the ability to find bones and other hazardous contaminants (down to 5 mm). The acceptance bars for bone chips are getting higher as food safety becomes more important to consumers. More and more manufacturers therefore install bone measure systems at the receiving end of

the raw material. This means that bone complaints often go back to the supplier. With the Trim Management System it is possible to remove almost all bone chips, and so avoid bone complaints.

“Once our customers have seen the system and the data verification possibilities and traceability information that it provides they have full confidence in the system.” McKay says, “That is a great benefit and makes a huge difference to profit. We hardly see any complaints about CL content or bones anymore. As a matter of fact, we have gotten new customers onboard because of the system's efficiency and the comprehensive traceability measures for CL and bone frequency.”

## Foyle Food Group

The Foyle Food Group has a long history of supplying quality beef to leading retailers, manufacturers, foodservice providers and butchers across the world.

GO TO: [www.foylefoodgroup.com](http://www.foylefoodgroup.com)



Pre-sorting of the trim increases the CL accuracy of the final batch

## Trim Management System

**The Marel Trim Management System has a throughput of up to 6 tons/hour depending on final batch size. At Foyle Food Group the system works in two ways: small trimming analysis and single piece measuring.**

**1** Small trimmings are conveyed directly from the deboning and trimming systems to a pre-sorting table unit where 2 operators sort the trim into 3-4 different drop bins. The x-ray unit scans the meat for bones (down to 5 mm) and reads the fat-lean content. Based on this the trim is sent to pre-determined packing gates in the packing grader.

**2** Single meat pieces such as flanks and forequarter muscles are weighed in on a stand-alone infeed scale placed in front of the Trim Management System. The single piece meat goes straight to the x-ray unit for measuring and registration. With this single piece process feature it is possible to work with type and lot separation – e.g. flank (type) or Angus (lot).

GO TO: [marel.com/trim](http://marel.com/trim)

Up to 35 tons of trim meat are produced and analyzed daily at the featured Foyle Food Group facility.

# AIM FOR SHORTER SUPPLY CHAIN

When Foyle Food Group in Omagh, N. Ireland, went into the minced meat business in 2015 it was mainly to shorten the supply chain to ready meal and further processors – and make it more efficient.



“We see a growing demand for minced meat, ready meal and convenience products like hamburgers and meat balls. It is a tough market, though, with heavy competition and low margins,” says David Knox, Commercial Manager at Foyle Food Group in Omagh, “The ready meal and further processors have been our customers for many years. As a part of their wish for a shortened supply chain, they had been asking us for a long time to also supply minced meat products, in addition to the whole muscles. And it made sense. Minced meat would just be an additional product in our product portfolio.” Foyle Food Group then chose to install a high-capacity minced meat line from Marel. The line covers the processes of

grinding, fat analysis, mixing, weighing, packing and labeling. With the fat analyzer in the line it is possible to act on specific customized orders when needed and correct fat lean content on small batches. The meat mass – presently 20-30 tons per day - is created based on customer specifications and may change several times during the day.

### FLEXIBLE AND USER-FRIENDLY EQUIPMENT

“It is very easy to work with the Marel line. The fat analyzer registers the fat content and sends feedback to the line infeed based on which more or less fat can be added to the grinder,” David explains, “The change-over process from one type of grind and mix to another is

uncomplicated and requires just a few hand tools for changing the hole-plate in the grinder.”

### VERIFIED TRIM MEAT INFORMATION

The meat used for grinding and mixing in the Omagh facility comes from one of the other Foyle Food Group plants, meaning that the trim meat has already been through the Trim Management System and so is free of bone and of a specific CL. This makes it easy to work with the different meat mass recipes.

GO TO: [marel.com/MeatPreparation](http://marel.com/MeatPreparation)



# BETTER BY-PRODUCT PACKING

Increasing value of by-products with improved handling, faster processing times and better raw material utilization.

Vion Food Group - one of the oldest and largest processors of meat in the Netherlands - has installed a Marel By-product Packing System to increase packing flexibility and accuracy. As an international meat producer, Vion is always looking for opportunities to optimize their production and improve raw material utilization.

### INCREASING THE VALUE OF BY-PRODUCTS

As a company led by the requirements of a dynamic market, Vion's activities are demand-driven. The company strives to respond to changing trends and developments, while producing high value products that suit different market demands. Traditional low-value by-products like pig's feet, tails and intestines now hold great value on the Asian market. To serve this market, Vion decided to move from manual by-product handling to an automated process.

### NEW AUTOMATIC SYSTEM

Vion teamed up with Marel to find a system that was fast and accurate and would help improve their product handling and packing. After looking at options and seeing systems in action at Marel customers in Denmark, it was clear that a By-product Packing System would be the

right solution. Their aim was to maximize value, maintain product quality and gain as much from the by-product processing as possible.

The By-product Packing System is easy to operate, manage and maintain. “There is no doubt that the system adds a lot of value,” says Eric Van Den Langenberg, Production Manager at Vion, Boxtel. “There is less giveaway and a much higher accuracy and flexibility than with the previous manual handling of the products. The system can run a wide range of products and different sized boxes with fast changeovers when needed.”

### FLEXIBLE, ACCURATE BATCHING

A SpeedBatcher is at the heart of the By-product Packing System. It is a very flexible unit that accurately batches products in bulk at high speeds while keeping product handling to a minimum. The system implementation went well and the two companies worked closely together on installation, final adjusting and operator training at Vion. After a short training time, the operators were ready for and fully capable of operating the equipment. The previously labor-intensive task is now run efficiently, reducing giveaway and improving throughput and quality.



GO TO: [marel.com/by-products](http://marel.com/by-products)





Innova Food Processing Software works with existing third party factory equipment at the Skövde slaughterhouse and meat processing company.

# Beef Up the Software

Innova Food Processing software independently provides full slaughter control and traceability at Skövde Slakteri, Sweden

Sweden's largest privately owned slaughterhouse, Skövde Slakteri, has installed Innova Food Processing Software to control their meat processing factory.

Innova Food Processing Software is set up to work with and monitor third party equipment, systems and solutions that were already in place at the company. This was an important issue for Skövde, which sought to install a single system to oversee production and also integrate with their existing ERP system.

### FULL PRODUCTION CONTROL

Skövde Slakteri processes both beef and pork, deboning and packing meat products into consumer packages while also selling full carcasses and quarters to other deboning companies. With Innova, they have gained full overview and

control of their operation from slaughter to packing. "The main benefit is that now we have everything in one system," says Stefan Kylén, Production Manager. "This level of control is a prerequisite for the high quality that is our hallmark. Quality guides our actions in everything from animal husbandry issues and transport to health and follow-up checks in production.

"The main benefit of Innova is that we can now fully manage product traceability with one system." – Stefan Kylén, Production Manager, Skövde Slakteri.

### IMPROVED MONITORING

"We use Innova in every part of the factory. It controls and monitors the animal reception and registration, the production flow and the deboning, packing and dispatching processes, so

creating a direct link between the slaughtered animal and the customer" says Johan Larsson, Skövde Slakteri IT Manager, who oversees the administration of the Innova system.

### SLAUGHTER CONTROL

Innova Slaughter Control is an integrated and flexible software module that controls the slaughter process from the reception of live animals to classification. It allows control and monitoring of key points in real time while ensuring traceability and execution of quality control procedures. Stefan Kylén comments, "We mark the incoming animals with ID's which follow them through the whole system for traceability purpose."

### TRACEABILITY THROUGHOUT

Traceability information is based on purchase orders and lots. All meat items that are registered in Innova can be traced one level back and one level

"Innova gives us a straight traceability line from the slaughtered animals all the way to the finished packs."

– Johan Larsson, IT Manager.

forward. The traceability function relies on the purchase orders in the raw material intake and the lots in the actual production process.

"You can actually see which animal went into deboning, and what is being packed at any point in time," Larsson explains, "That way you can always trace the meat back. You only need the label of the product. There you have all the

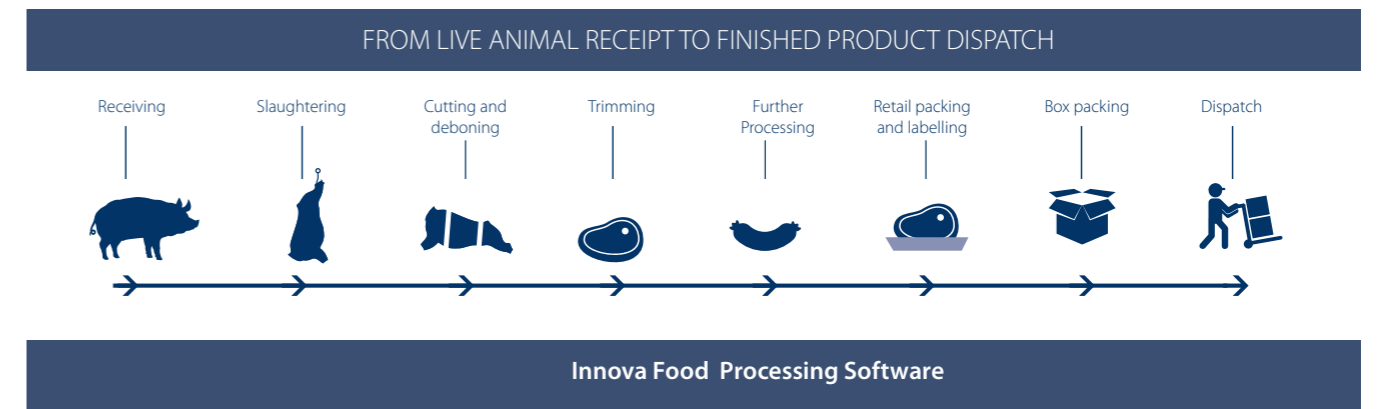
information about the animal from where the product comes."

### EFFICIENT ORDER MANAGEMENT

Innova also offers optimized workflows, cost effective inventory control and efficient order management. The system manages purchase orders, production orders, inventory orders and sales orders. "Innova not only provides full production control and traceability," says Kylén. "It

also helps improve the entire order processing. It makes the life of our sales people easier because they see how much they have sold and the production leaders get accurate information on how much to produce each day."

GO TO: [marel.com/innova](http://marel.com/innova)



# Accurate batching of marinated meat

– EASY WITH A MULTIHEAD WEIGHER AND VALUEDRUM

Dutch meat processor Van Rooi has a long tradition of continuously introducing new products and implementing new processes into their production. Among the products processed at Van Rooi Meat are marinated strips of meat used for shawarma.

Until recently the process of making marinated meat for shawarmas involved a lot of manual labor in both the marinating and the packing process. Marinating was done by manually mixing the herbs and spices, which did not result in an optimal and homogeneous end product. Furthermore, the packing process was laborious, and giveaway higher than acceptable.

"The system is very easy to operate with the intuitive interface and the employees really appreciate working with the Marel equipment."

## AUTOMATIC MARINATING AND BATCHING OF MEAT

Naturally, Van Rooi had a strong desire to raise not only the quality of the end products but also to reduce giveaway significantly. After engaging in talks with Marel, the choice was to implement a full line solution that would handle both the marinating process and the batching of the products. It was clear that a Multihead Weigher combined with a ValueDrum marinating unit would be the right solution for Van Rooi.

"With less give away and a lot higher accuracy than with manual handling, there is no doubt that the Marel system adds a lot of value to us."

– Roel Gilissen, Team Leader

## ALWAYS LOOKING FOR INNOVATION

With over sixty years in the business, Van Rooi is a family business with a long tradition for innovation. Roel Gilissen, Team Leader explains, "One of our big challenges in the industry is that labor is scarce. But because the system is so easy to work with, we do not need skilled meat operators or butchers."

- High quality and uniformity of products
- Superior accuracy with little giveaway
- Very easy to operate

# INTRA-LOGISTICS on the move

"Moving things around... especially forward... is what we are experts at", says Will Gubbels, Business Unit Manager at Marel Food Logistic Systems, with a smile.

Cost-effective intra-logistic systems are needed in most businesses today as part of the move towards automation. The intra logistics systems from Marel are modular making them easy to fit into already existing plants. The systems range from small conveying systems to large integrated turnkey projects. Will Gubbels explains, "Our primary focus is on the red meat processing industry – where automation is key and where tremendous amounts of raw material and end products are conveyed, moved, buffered and stored at several stages of the value chain."

The intra-logistics systems interface seamlessly with the Innova Food Processing Software to ensure full control of the products throughout the complete processing, storage and distribution process.

- Conveying systems (belt conveyors, roller conveyors and accumulation conveyors)
- Material handling equipment (sorters, de-stackers, palletizers and de-palletizers, lifts and robots)
- Automatic storage and retrieval systems (automatic high speed cranes, and racking) including warehouse management systems
- Order picking and labelling systems
- Empty crate buffer systems
- Crate washing systems
- Software solutions

GO TO:  
[marel.com/intra-logistics](https://marel.com/intra-logistics)



(Left) Account Manager - Marel Meat, Hein Pijpe and Team Leader, Van Rooi, Roel Gilissen





# WATER TREATMENT AND SUSTAINABILITY

Marel's cost effective and energy efficient water treatment systems solve some of the most difficult challenges with wastewater disposal.

Today, food processing companies are seeking ways to become more sustainable and improve their water usage; from conserving water to more efficient cleaning processes and improved wastewater treatment. It has become yet another part of the measures food companies take to preserve a precious commodity, protect the environment and lower costs.

#### THE RIGHT SYSTEM

Marel Water Treatment offers primary, secondary and tertiary treatments for all types of food processing wastewater. As a specialist in the treatment of industrial wastewater, Marel provides systems that are efficient, easy to use and characterized by low maintenance.

"The main challenges our customers face include water supply issues, energy usage, rising operational costs, higher concentration of pollutants and the increasing costs of sludge waste disposal," says Maarten ter Woerds, Manager Sales Engineering at Marel. "All these issues require water treatment solutions and systems that deliver the end results that comply with local laws and regulations."

#### COST EFFECTIVE AND ENERGY EFFICIENT

Marel Water Treatment offer systems that can purify water to any desired degree of purification with different systems and solutions, each with their own characteristics. The company offers a variety of systems for pretreatment, biological treatment, advanced purification and sludge treatment for a variety of applications.

"As a supplier of total solutions, Marel Water Treatment delivers not only water treatment systems but also provides expert consultations, which are a core part of our activities," explains ter

Woerds. "We approach all projects by examining the production processes to see where the company can save on water usage, treatment and disposal while creating systems that are environmentally friendly, cost effective and energy efficient."

#### MEET DISCHARGE REGULATIONS

Armed with decades of experience, the Marel Water Treatment team has designed and supplied treatment facilities around the world; from Russia to Argentina and Canada to Australia. Companies across the globe need to meet discharge regulations that vary from country to country and even from region to region. To help meet these requirements, Marel Water Treatment focuses on the production processes and size of each customer to make sure that any solution directly meets their needs.

"We know the customer's process and can adapt the design of the water treatment to each specifically, creating solutions that focus on how to manage effluent effectively," says ter Woerds. "We also urge our clients to maintain an efficient process and be prepared for the future, as requirements can tighten and unforeseen issues arise."

#### FULL SOFTWARE CONTROL

The solutions come with software that is developed specifically to control and monitor wastewater treatment. The software makes it easy to manage the operation, it is user-friendly and helps keep the treatment facility running at optimal capacity.

**GO TO:**  
[marel.com/watertreatment](http://marel.com/watertreatment)





DISCOVER THE LATEST DEVELOPMENTS IN PROCESSING TECHNOLOGY

# MEAT SHOWHOW 7 MARCH 2018

Each year in March Marel host the Meat ShowHow, demonstrating our meat processing equipment and systems in our demo and training center, Progress Point in Copenhagen.

- Discover the latest developments in processing technology.
- See complete systems with ongoing live demonstrations in a hands-on environment.
- Learn how automation can help optimize production and yield, increase food safety and innovate end-products.

## Other places to meet us in 2018

Exhibition Name	Expo dates	City	Country
IPPE	30 Jan - 1 February	Atlanta	USA
Meat ShowHow	7 March	Copenhagen	Denmark
CFIA	13 - 15 March	Rennes	France
Ildex	14 - 16 March	Ho Chi Minh	Vietnam
Agro World	14 - 16 March	Tashkent	Uzbekistan
Anuga FoodTec	20 - 23 March	Cologne	Germany
Foodtech	8 - 11 May	Barcelona	Spain
IFAT (Water Technology)	14 - 18 May	Munchen	Germany
Belagro	5 - 9 June	Minsk	Belarus
Anutec	7 - 9 August	Curitiba	Brazil
Agroprod mash	8 - 12 October	Moscow	Russia
CIMIE	20 - 22 October	Beijing	China
Meat ShowHow North America	October	Lenexa	USA
WorldFood	31 Oct - 2 November	Almaty	Kazakhstan

- Meet our specialists and network with colleagues from the global red meat industry.

Visitors have come from near and far to the Meat ShowHow – and have been truly impressed with the set-up and the many systems and applications they have experienced at the facility.

Lines on display include deboning, trimming, fat analysis, bone detection, grinding, mixing, sausage making, hamburger forming, cutting, marinating, packing, intra logistics, labelling, checking of final packs and software.

**GO TO:**  
[marel.com/meatshowhow](http://marel.com/meatshowhow)

Marel is the leading global provider of advanced equipment and systems for the fish, meat and poultry industries.