TVI

Enhancing profitability

• The SCI 1000 is a process checkweigher and rework station, reducing giveaway to as low as 1%.

UK TVI product manager at Multivac Liam Chapman explains how the machinery supplier's latest portioning system is setting a new benchmark for profitability.

Q. What recent advancements has TVI made in the UK meat industry?

A. Since the Multivac group acquired TVI in 2017, TVI has led the development of next-generation fresh meat portioning systems. In 2023, TVI introduced the GMS 400, followed by the highly anticipated GMS 1000 this year. These innovations build on the success of the GMS 1200, which set a high standard for yield in the industry for both small and large producers.

TVI Machinery's unique market offering includes a three-dimensional press combined with the cutting action. This system ensures that irregularly shaped or round primals, such as beef rumps or pork collars, are uniformly shaped under extremely high pressures. By transforming typically discarded ends of primals into high-value products, and achieving consistent slice thickness and quality, TVI reduces waste significantly.

Q. How are these portioning machines setting new standards?

A. Our latest portioning solutions are designed to reset industry benchmarks in profitability and sustainability. Multivac's focus is on helping our customers achieve the most efficient and sustainable operations possible, even amidst fluctuating market conditions. The machinery can intelligently and automatically switch modes between exact slicing and maximum yield, where trim pieces are redistributed, optimising the usable product from each primal cut. Additionally, TVI offers two process rework stations, the SCI 1000 and GMI 500, which serve as process checkweighers. These stations rework multi-slice packs with banding tighter than fixed weight regulations, often achieving giveaway rates under 1% (for multi-slice trays with four or more steaks). This precision helps manufacturers reduce costs associated with giveaway, ensuring minimal loss of product.

Q. Why is profitability such a significant focus, even for small producers?

A. In recent years, there has been a continuous rise in raw material and labour costs, directly impacting producers' bottom lines. Automation has become crucial as retail prices don't always keep pace with rising meat costs, squeezing margins. Therefore, improving slicing yield, minimising giveaway, and optimising labour efficiency are essential in this competitive market.

TVI machinery enhances production efficiency by automating the transfer of meat portions into final tray layouts, either as single slices or shingles. This capability reduces the need for manual labour, which is increasingly costly and difficult to source in many regions. Typically, TVI machinery can reduce the number of operators needed by three to four compared to manual processes, further lowering production costs and enhancing efficiency.

Q. How do TVI systems increase producers' sustainability?

A. TVI systems increase sustainability in several ways:

1. Giveaway Reduction: By delivering highly accurate portion weights, TVI can achieve much lower giveaway rates than other manufacturers whilst maintaining high yields. This means the least possible amount of meat is used to fulfill customer orders. Even a 0.5-1% reduction in giveaway over 10 years can result in significant savings, both in costs and environmental impact. For example, reducing meat waste can prevent thousands of tons of CO2 emissions annually, considering that beef production generates 27-29 kg of CO2 per kg of meat produced.

2. Yield Improvement: By ensuring the highest primal yields, TVI reduces the need for secondary processing of products, which requires additional energy (e.g. grinding beef into mince or mixing for sausages/burgers).

3. Machine Utilities and Services: All new TVI portioners use highly efficient drives and power systems, avoiding the use of pneumatics, which typically consume 10 times more energy. Our unique press and cutting action design requires half the external crust diameter compared to other manufacturers, reducing energy demand and losses from evaporation.

Q. Can you provide an example of the financial impact of using TVI machines?

A. One UK customer is set to save £1.1 million annually from the GMS 1000. Additionally, paybacks for customers transitioning from hand slicing to the GMS 400 are typically under 12 months.

Q. What changes have you seen in market trends?

A. We've noticed a shift in consumer preferences towards budget-friendly options, moving from premium cuts like sirloin to more economical choices like rump. These cuts are more challenging to process due to their variability in weight and dimensions, making efficient processing essential.

On the other end of the spectrum, there's a growing trend among high-end consumers towards bespoke products offered by SMEs. These consumers are seeking premium options such as dry-aged, organic products, and larger steak weights. These high-value items require precise slicing yield and quality, highlighting the importance of advanced portioning machines.

Q. How do secondary products fit into this picture?

A. Secondary products like trimmings and offcuts can still hold value (20-30% of prime cuts) when used in items like mince, burgers or sausages. However, additional processing is required, involving energy and labour, and typically results in a lower residual value compared to prime cuts. For instance, dry-aged beef can't be used in mince due to its impact on shelf life, emphasising the need for efficient and versatile portioning solutions.

Q. How is Multivac addressing these industry challenges?

A. With TVI's latest innovations, Multivac is meeting industry challenges head-on. Our advanced portioning machines deliver unparalleled yield and efficiency, quality and sustainability, setting new profitability benchmarks and revolutionising the meat processing industry.

The UK team also has a number of TVI applications engineers trained in advising on the right butchery, process temperatures and steps required to deliver the highest yields possible. We regularly work with our customers to ensure that we maintain the very highest performance levels years into the machine's operation.

• The GMS 400 allows customers to transition from hand slicing and achieve huge savings in yield, giveaway and labour.

Both the GMS 400 and TVI's all-new GMS 1000 will be showcased at MULTIVAC UK's event later this year, where these developments can be put to the test and performance seen first-hand. Reach out to Liam today to secure your slot and demonstration of this impressive technology. Join us in leading the charge towards a more efficient and sustainable future for meat processors.

• Multivac UK's production line solutions help to minimise waste while optimising labour efficiency.

TOMRA: process optimisation in the meat industry

The TOMRA corporate group, headquartered in Norway, is a world leader in collection and sorting machines that guarantee optimal use of resources across a number of industries. In the meat industry the company offers high-speed, sensor-based sorting and analysis machines that save time and improve yield.

Below, Chris Begley, sales director of Vanguard Processing Equipment Ltd, TOMRA agent for the UK and Ireland, and Bruno Gabriel, sales manager, TOMRA Food (food sorting solutions), explain how TOMRA machines help the meat industry achieve higher margins and better quality through more efficient use of resources.

Q: Can you tell us about TOMRA's motto 'Leading the resource revolution'?

• The TOMRA QV-P line-detector can detect the muscle myopathy in single chicken fillets or butterflies.

BG: This is the basic idea that drives all our business areas and inspires our extensive efforts in research and development. Global resources are limited, but the world's population is growing steadily. We believe it is essential to use and process raw materials – in this case meat – in the best possible way.

The company was established in 1972 by two Norwegian brothers, Petter and Tore Plank, who developed the world's first automatic bottle collection system. From there, we extended our business to sorting solutions for recycling and mining. Increasingly, we also received requests from the food industry. All our machines boost processing capacity and availability. For us, the resource revolution means cutting food waste while at the same time increasing profit, food quality and food safety.

• Bruno Gabriel, sales manager UK, Spain and France, TOMRA Sorting NV.

Q: Can you give some examples of TOMRA's range of applications for the meat industry?

CB: With our fat analyser we have developed an important piece of equipment that allows burger, sausage and salami manufacturers to optimise quality as well as minimise rejections and waste. For meat products it is important that fat content is under control as this leads to high levels of consistency for the production of minced meat, burgers, as well as cured or dried product. In addition, it ensures compliance with legal requirements regarding fat, moisture, protein and collagen in minced meat, burgers and sausages.

Our solutions are extremely reliable and have low ownership costs, which also makes them attractive to small and medium-sized manufacturers. When a manufacturer does not have a fully automatic line, samples need to be taken to be analysed in a lab, and afterwards, the system has to be adjusted. Valuable product and time are wasted, and line capacity is affected. TOMRA's in-line food analysis and process control keeps manual labour and sorting to a minimum.

Q: What solutions do you offer for the poultry industry?

CB: British consumers eat chicken twice a week, on average, and as a result Britain's poultry sector is among the largest in Europe. This can lead to quality issues due to highly intensive farming. The TOMRA QV-P detects and grades chicken fillets in line according to muscle defects. It results in higher end-user quality, and enables accurate grading for further processing.

Q: How does this help in the detection of wooden breast?

BG: Wooden breast is a problem to all primary and further poultry processors, and it is something that TOMRA has looked at intensively in order to develop a solution. Our in-line equipment and dedicated QVision software accurately grades chicken fillets into multiple grades by measuring the chemical composition of each fillet. The grades are determined by the customer and typically range from no presence of woody breast to a severe presence of the condition. This grading information is vital for processors to decide on the use of the chicken fillets for further processing.

Q: How exactly does the TOMRA system measure fat and other components?

BG: The TOMRA range of process analytics solutions uses Transflectance technology which was developed in-house and is based on conventional NIR spectroscopy. Transflectance was developed specially for the meat industry and is the only solution that can scan the product at high speed, covering full belt width and with deep product penetration. When these scan results are combined with the information from the integrated weighing component, real-time measurement of the entire product is possible.

• Chris Begley, sales director, Vanguard Processing Equipment Ltd, TOMRA agent for the UK and Ireland.

The technology is not sensitive to product presentation e.g. ground, diced, fresh or frozen meat, and enables very high accuracy and capacity.

• QVision: a fat, protein and moisture analysis machine for meat which allows suppliers to provide a consistent product quality.

Q: What are some of the meat industry's challenges that you are responding to?

CB: One important aspect is meeting consumer expectations. Consumer attitudes to farming are changing and in the face of these changes the industry needs to provide products that meet expectations and provide consistency.

For meat processors it is important to ensure smarter purchasing through quality control of raw materials, to reduce human and sampling errors, to enable full quality traceability and documentation of batches, and to increase throughput.

TOMRA equipment delivers consistent product quality that provides large savings by increasing profitability and simplifying daily operation.

Q: How does Vanguard Processing Equipment Ltd fit into this?

CB: We have been supplying high quality food processing equipment for over 30 years to the meat and poultry industry throughout the UK and Ireland and believe that TOMRA equipment can be of great benefit to poultry processing plants by providing a solution to the wooden breast problem. For burger, sausage and salami manufacturers TOMRA equipment is the ideal solution to optimise quality, minimise waste and assure that labelling and ingredient specifications are adhered to.

In short: "The TOMRA technology will play a very important part of the manufactured meat products and poultry industry in the future."

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