Meat, Poultry and Seafood

Product Inspection and Industrial Weighing

26
News
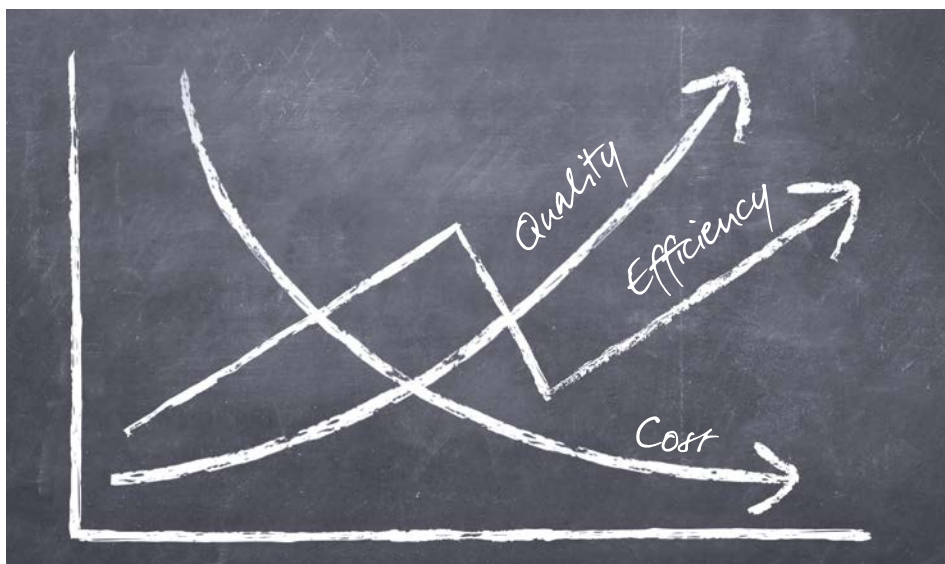
Reducing Total Delivered Cost
How Effective Weighing and Inspection Contribute

Understanding where costs are incurred and taking steps to reduce them is critical to achieve growth in competitive markets. Meat and poultry processors are looking closely at Total Delivered Cost (TDC) data to improve business performance.

Costs for typical meat and poultry plants fit into three main categories: Processing and packing costs; non-manufacturing expenses which includes development and administrative costs; and transport and distribution costs to deliver products to the retailer or consumer. Improving processes in these areas will reduce TDC, increase efficiency and improve profitability.

Reducing processing and packing costs
Processing and packing represent a major proportion of business costs in the meat and poultry industry. Focusing attention on

innovative weighing and inspection solutions can help processors to reduce TDC.

Improved weighing and inspection helps
Advanced weighing solutions improve portion control, reducing waste and giveaway. The latest innovations in inspection provide enhanced levels of contaminant detection and reduced cases of false rejects. In addition, automated set-up processes, along with reduced and simplified testing procedures for inspection equipment, bring further potential to reduce costs. Find out more on pages 2 and 3.

METTLER TOLEDO

5 Ways to Reduce Total Delivered Cost
How Effective Weighing and Inspection Can Help

Advanced weighing and inspection technology installed in meat and poultry processing lines enables improved product quality and enhanced process efficiency. Addressing these areas leads to reductions in Total Delivered Cost (TDC). See how focusing on the five specific process areas below helps.

1. Speed up portioning

Visualizing KPIs on a dashboard can be a first step towards higher throughput. Software solutions such as Data+ or Collect+ support centralized data management and improved process monitoring. ICS bench scales with smart data integration options, connected to these software solutions, allow consequent optimizing of processes to speed up portioning.

▸ **www.mt.com/CollectPlus**
▸ **www.mt.com/DataPlus**

2. Hygienic design

Hygienically designed weighing and inspection equipment has a positive influence on many areas of TDC. It provides compliance fulfilment, reduces cleaning time and minimizes contamination risks. Inspection equipment with high IP ratings, liftable floor scales or ICS bench scales with metal keypads are designed to fulfill the cleaning and sanitation requirements of the meat industry.

▸ **www.mt.com/ind-metal-keypad**

3. Reduced false rejects

Inspecting meat products is challenging with the potential for frequent "false rejections". This is due to product effect, a phenomenon where a signal generated by the product itself creates a reject event. Specialist technology from METTLER TOLEDO masters the product effect, reduces false rejects, and makes a significant contribution to reducing TDC.

▸ **www.mt.com/metaldetection**

Reducing total delivered cost
Establishing the Total Cost of Ownership (TCO) for a piece of equipment can help in the calculation and analysis of Total Delivered Costs.
www.mt.com/pi-tco

4. Labeling correctness

Checking products are correctly labeled ensures compliance with food safety standards and regulations. But high quality, accurate labeling can also contribute to reductions in TDC. Maximizing product quality through the inspection of every label using vision inspection technology avoids in-process waste and the later risk of product recalls after distribution.

▸ **www.mt.com/CiVision**

5. Collecting process data

The accurate documentation of inspection processes is essential to meet food safety compliance. Developments in the ability to network product inspection and weighing equipment, along with the use of advanced software, reduces the need for manual data collection. This improves production process efficiency and supports digitalization.

▸ **www.mt.com/ProdX**

Complete Quality Control and Safety
Product Inspection Solutions

Cost pressure and short shelf life, combined with complex regulatory requirements impact meat, poultry and seafood manufacturers. Packaging trends and market requirements for wider product variety create additional pressure. Advanced product inspection solutions help food processors get the most out of their food safety and production program.

By working with customers to understand their challenges, METTLER TOLEDO provides a range of solutions at different price points, to meet their needs – from standard equipment that is robust and reliable, through to complex and bespoke solutions to meet demanding applications, in each case offering outstanding value for money.

Advanced technology
Metal detectors, such as the Profile Advantage from METTLER TOLEDO effectively cancel out the product signal from difficult-to-inspect products such as meat. This reduces false rejects and makes it easier to detect metal contaminants up to 50 percent smaller than previously possible.

Precision weighing
Inline checkweighers, such as the C33 PlusLine checkweigher from METTLER TOLEDO, ensure packaged meat products are correctly filled to avoid product give-away or underfilling for consumer satisfaction. The C33 is designed for endurance and maximum reliability in wet, dry and harsh environments.

Ensuring the highest quality
Vision inspection systems can check package quality and integrity, as well as correct product labeling and positioning. The V2640 vision inspection system from METTLER TOLEDO is able to check label correctness, verify barcode readability as well as check lot numbers and use before dates.

Hygiene and safety
The risk of biological contamination in facilities that process animal proteins can be reduced by using equipment designed to support demanding hygiene procedures. METTLER TOLEDO equipment features open-frame designs and high ingress protection rates up to IP69 standard for easy cleaning.

▶ **www.mt.com/mp-pi**

> **We can now detect foreign body contaminants that are half the size than with our previous product inspection solution.**

Perfect Burger Patties with the X39

Creating bespoke solutions to meet customer needs

Leading meat processor, Bell Food Group in Switzerland, uses the X39 x-ray inspection system from METTLER TOLEDO to inspect its frozen formed burger patties for physical contamination, product errors and visual defects. Separate integrated reject mechanisms are in place to differentiate between foreign body contamination and product integrity issues. This gives a clear indication of sources of error and reduces product waste by placing defects back into the production line for re-work. METTLER TOLEDO worked closely with the customer to develop a solution to help them meet key challenges.

Watch the video
Discover how Bell Food Group is reaping the benefits of the X39 x-ray inspection system.
www.mt.com/xray-bellfood

Manage Your Production Growth
Mobile Weighing Creates Speed and Efficiency

One of the most important drivers for reducing cost is yield. A large India-based chicken producer found a cost-effective way to increase production flexibility and optimize yield without sacrificing traceability and efficiency.

Increased yield and data transparency

The chicken producer, a pioneer in the Indian chicken industry, produces a complete range of fresh, chilled and frozen products. In order to expand the processed chicken business, the company sought hygienically designed portioning scales that would provide automatic data traceability and yield optimization. Ultimately, management chose mobile ICS689 scales connected to Collect+, a practical software tool for process visualization. Today, the company benefits from increased product traceability, efficient cleaning procedures and improved yield through better process control.

Fast portioning

ISC scales make portioning as efficient as possible for the operator by providing:
- colorWeight® for clarity – full color graphics for less operator exhaustion
- SpeedWeigh functionality to optimize and adapt throughput for each workplace
- High mobility with wireless functionality and long-lasting batteries

Efficient cleaning

ICS scales are designed for wet and harsh areas in meat and poultry production. They support efficient cleaning through:
- Rugged and hygienic construction
- The ability to sustain high-pressure wash-down procedures
- Terminals with a completely flat and smooth metal surface

eBook: 5 Ways to Optimize Performance
See how Collect+ can help you improve process efficiency and material traceability. Download the eBook at:
www.mt.com/ind-collectplus-guide

Order fulfillment status

The amount of over and under filling by work station

Average net fillings per scale or production line

Collect+ – Yield Control

When manually deboning and preparing chickens,
data storage and yield control from each scale is the base for
process optimization. At the India-based chicken factory, weighing and process parameters are captured and displayed with Collect+. The software delivers an overview for each scale covering relevant process parameters such as weighing data, average net filling results and order fulfilment status. All process parameters are graphically displayed and dashboards can easily be adapted for specific user requirements. This facilitates the daily production scheduling process, reduces waste and speeds up manual operating procedures.

▶ **www.mt.com/CollectPlus**

Interview

Lee Smith

Co-chairman of the
OMAC Packaging Workgroup

The Organization for Machine Automation and Control (OMAC) is a body of manufacturing professionals. It is dedicated to supporting the machine automation and operation needs of manufacturing. OMAC provides a platform for members from various industries to collaborate. This facilitates the standardization of solutions to common problems.

Q: How much interest in automation are you seeing in the industry?

A: Manufacturers in the meat and poultry industry are under pressure to make their operations as efficient as possible – it's a way of developing a competitive edge and maintaining profitability. There has been a recent upsurge of interest in plant automation, plant interconnectivity and software solutions that can push the boundaries.

Q: How has OMAC helped in process automation?

A: Production equipment is a large investment for manufacturers. In addition to the initial machine cost, manufacturers then have to pay integrators to "connect" all of the equipment. This can be a difficult, time consuming and costly exercise and is often responsible for projects running behind schedule. PackML is an industry technical standard, created by OMAC, and defines a consistent way to control and automate packaging machinery. Rather than manufacturers investing in costly equipment integration, PackML aims to make integration a "plug and play" exercise.

Q: How does this link to Industry 4.0 and the Internet of Things?

A: Industry 4.0 or the digitalization of the manufacturing industry, describes smart manufacturing and smart factory initiatives where production lines are fully autonomous and self-organizing. The specifics of such solutions are still in the process of being defined by the industry but it's clear that standardized information models and connectivity for machines are a fundamental enabler. This need is supported by PackML and the OPC UA Companion Specification.

Q: How does this support meat processors and packers?

A: The tools I refer to provide an ideal way of consistently quantifying performance, downtime and ultimately the OEE (overall equipment effectiveness) of a machine or line. The set of PackTags are rich enough to allow for complex custom definitions of OEE and can provide actionable insights into reducing unplanned downtime and easing performance bottlenecks.

Q: Can you explain an example of this in action?

A: In a typical meat processing plant, facilitating the efficient and effective transfer of data between locations on the factory floor is critical. When PackML is combined with a protocol like OPC UA, a production manager can monitor the performance of a metal detector on a production line remotely from his location. He is able to stay in control of processes and make informed decisions based on up-to-date information.

Q: What other changes do you see on the horizon for the industry?

A: OMAC and its members have identified and are currently working on a number of areas of interest for future standardization. We are actively evaluating a number of proposed initiatives within the OMAC Packaging Workgroup and are prioritizing according to the perceived needs of OMAC members and the wider industry.

> **Industry 4.0 and the Internet of Things are at the core of increased automation and process improvement.**

The Packaging Workgroup is committed to creating the next PackML revision (PackML 2020) to ensure continued support for the latest Industry 4.0 and IoT initiatives. We are also actively working on standardized HMI designs and OEE definitions, which will be delivered during 2019.

Industry Standards for OEE Improvement
Download our guide to find out more about how PackML, PackTags and OPC UA technology can improve overall equipment effectiveness (OEE).
www.mt.com/pi-omac

Product Safety and Compliance
Overcoming Metal Contamination

Common sources of metal contamination in meat and poultry include hypodermic needles, barbed wire and buckshot as well as the risk of contaminants introduced during processing. It is essential that effective metal detection systems are part of any quality control regime.

METTLER TOLEDO provides high quality, reliable metal detection solutions for almost any industrial application. Our extensive range of systems are ideal for integration at various critical control points – front-end, in-process, and end-of-line.

HDS

Designed specifically for vacuum filler applications such as sausage meat and can be easily integrated with vacuum fillers, linking machines and clipper systems.

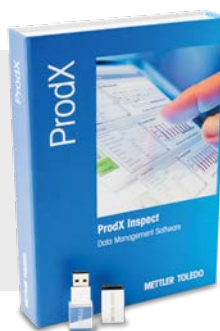▶ **www.mt.com/md-hds-pipeline**

Profile Compact

High detection sensitivity in smaller products such as meat trays and packaged food, particularly where insertion space is limited.

▶ **www.mt.com/md-profile-compact**

Compliance and Productivity

Measurement and recording of data from metal detection systems enables in-depth analysis of your production line.

▶ **www.mt.com/ProdX**

Profile RB

High detection sensitivity in bulk product such as large meat blocks and packs.

▶ **www.mt.com/md-profile-rb**

Profile Advantage Pipeline

High sensitivity performance in challenging applications subject to product effect, due to bubbles or voids in the product flow.

▶ **www.mt.com/md-pipelineadvantage**

Profile Advantage

Superior metal detection sensitivity in frozen, chilled, wet and cooling products to detect smaller metal contaminants and virtually eliminate false rejects.

▶ **www.mt.com/md-profileadvantage**

Metal detection portfolio
Discover METTLER TOLEDO's full metal detection portfolio and find out how it can help you improve product quality and process efficiency.
www.mt.com/metaldetection

Are Your Products Safe and Compliant?
Update Your Know-How

A rise in product recalls and increasing demands from food safety standards mean you can't afford to take risks. Find out more about improving product quality, streamlining manufacturing processes and ensuring compliance with industry standards.

Food safety masterclass: On-demand webinar
This on-demand webinar provides guidance on how to prevent physical contamination, how to identify the causes of product recalls and explains the importance of zero contamination.
▶ **www.mt.com/pi-foodsafetymasterclass**

Avoiding a food safety crisis – are you prepared?
Our Food Regulatory Guide provides know-how in 16 different areas, where weighing and foreign body control helps to ensure your products are compliant with global food standards and are of high quality.
▶ **www.mt.com/ind-food-guides**

www.mt.com/ind-meat

For more information