

Why is metal still the biggest and most likely contaminant of meat?

by Sarah Ketchin, Managing Director, Fortress Technology.

Metal remains the biggest and most likely contaminant risk within a meat processing and packing plant today. But why is that? In the raw ingredient phase, meat products are exposed to different processes – from slicing cooked meats, to mincing beef and handling raw meat which is a reactive product. Later down the line, you may be cutting larger quantities into more convenient single service portions or preparing ready meals or cutting deli sized portions – again introducing a possible metal contaminant into the food supply chain.

The rapid increase in automation uptake on meat processing lines has also had an effect too. Using equipment to improve efficiencies and in some situations product costs, the need for sufficient checks and preventative maintenance practices becomes mandatory. Previously a team of manual operators would visually inspect wear of machine parts and wire mesh from sieves for example, yet with fewer manual workers on a line the risk of metal contaminants increases.

Installing a metal detection system is the first line of defence. However, it is equally important to adopt a joined up approach to quality assurance, ensuring proper procedures are in place for controlling rejects, as well as a fool-proof process to determine the source of any conta-

minants picked up. Equipped with this information, appropriate actions can be taken to protect against costly product recalls and damage to brand reputation.

Meat manufacturers are under greater pressure to adhere to increasingly stringent levels of compliance and third party audits, whilst also having to contend with an ever-changing inspection market. And with constant pressure on the bottom line, coupled with food safety legislation, the challenges continue.

Although today's inspection and detection systems are good, it is equally important to ensure it is suited to the environment you are operating in. Do you, for example, require a certified washdown system in order to meet retailer's hygiene standards? Unsurprisingly, meat processors can feel overwhelmed by the sheer breadth of choices and food safety initiatives they have to contend with.

Top tips

Whether you are looking to invest in a new metal detector or upgrading an existing system, here are some practical tips:

- Do not overlook testing procedures and record keeping. In meat processing environments, testing requirements are getting increasingly complex. We advise running detection and rejection of test samples on an hourly basis, at the beginning of a



In the raw ingredient phase, meat products are exposed to different processes introducing a possible metal contaminant.

product run or at a shift change, and whenever any settings are updated or changed (always check the industry standards and auditing requirements for testing frequency and procedure). As well as Ethernet, USB and wireless connectivity for easy data collection and HACCP compliance, Fortress' Contact Communication Software communicates with all generations of Fortress digital metal detectors for simple and effective event logging and data collection.

- Ask about signal strength. The sensitivity of a detector is dependent on many factors: aperture size, operating frequency, product speed and environment. Most limiting for the meat industry is in fact conductive (wet) products, such as raw meat which act like metal. 'Product effect' remains a challenge for all metal detectors, but over recent months there have been some sensitivity advancements. New FM software now effectively analyses and processes the signal from the product, resulting in a 40% sensitivity increase when inspecting challenging products.

- Consider installing metal detectors at specific checkpoints along the manufacturing process. Leaving it until the end of the production line could result in high levels of false rejects and unnecessary disposal of good product and packaging. An area survey prior to delivery and

installation is always recommended.

- Auto-assessments are especially useful when system access and positioning or environmental conditions hinder testing. Fortress recently unveiled its revolutionary Halo technology – an automatic testing system which removes the risk of human error and workplace injury at critical control points, while complying with industry standards.

- Investigate system compatibility before making a new investment. The 'Never Obsolete Commitment' from Fortress is essentially a backward-compatibility programme which enables customers to upgrade any existing Fortress detector (even those built 15 years ago) to help food processors remain compliant. This saves money and carbon footprint!

- Foil challenges. Generally speaking, metal detectors are capable of phasing out and running products packaged in laminate foils with a good level of sensitivity. More and more meat processors have adopted foil packaging as the norm to increase shelf life, enhance product appearance and capture fickle consumers through innovative design. However pure aluminium foil may be too challenging and a ferrous in foil detector would be recommended. Taking into account the various operational risks, meat processors are advised to seek impartial and professional advice. ■

