Perfect choice of Inspection Systems for food production

Metal Detection, Check Weighing, X-Ray Inspection.

Whether it is a loose screw that falls off a machine, a bone that manages to stay wedged in a piece of meat or a bit of glass that finds its way into a minced meat, contamination in a finished product can be a major blow to a brand. Food industry is experiencing the effects of a major regulatory shift that emphasizes preventing food contamination rather than responding to it. Zultec Group in partnership with Loma Systems has been helping manufacturer to protect brands, businesses and clients, whilst avoiding expensive product recalls with globally accredited food focused product inspection systems.

While update in X-Ray technology on the production line is increasing, metal detectors are still the choice for many food manufacturers and processors. But is it a question of price or complexity?

Both x-ray and metal detection offer advanced solutions. Yet the technologies are very different and provide specific advantages depending on what contaminants are likely to be found on the processing line. The technology choice will ultimately depend on the outcome of a hazard analysis and critical control points (HACCP) audit.

The problem with using a metal detector, off course, is that it overlooks many other threats to product safety. X-ray machines are far more versatile. The best way to look at the cost of an x-ray system is to look at how much the technology could save you. In terms of protecting your brand, no company wants the possibility of a range of contaminants not being detected according to their HACCP obligations. Take a typical production environment where a glass bulb could break, for example. If that glass contaminant is not detected, a consumer could unknowingly bite into it. Such contaminants that are not detectable by a metal detector could ruin a brand instantly if a consumer was hurt, and consumer trust would be gone.

And perhaps in the past the most common thought has been that a metal detector will suffice. But with increasingly complex packaging options and more

advanced machinery being used on the production line, sufficing isn't a viable option any more. **What will work best for a production line? What technology will ensure a safe, contaminant free product for consumers?**

Metal Packaging Challenges

One of the most common problems with metal detection is where the packaging of a product is a challenge for metal detectors. An x-ray machine works where packaging proves a problem, and often an insurmountable one, for metal detectors. Metalized foil seals on plastic pots or glass jars, metal screw caps on jars and even metal cans can be problematic for metal detectors but nor for x-ray technology. It is important to mention that only x-ray technology can inspect and identify contamination in food and drink metal cans and aluminum foil trays.

Skepticism Gives Way to Enthusiasm

For x-ray systems, products with multiple density variations have always been a challenge when detecting contaminants as the image that is displayed by traditional technology appears indecipherable for the operators.

Patented detection algorithms coupled with Adaptive Array Technology in latest Loma X5 system allows us to dynamically tailor resolution, depth and scaling to give the best detection performance for any product requiring inspection. It eliminates the previous need to specify the diode pixel size as X5 will adjust from 0.4mm, 0.8mm and 1.6mm to give the best detection performance regardless of the density of potential contaminant. The minimum power consumption coupled with long tube life

Beyond Simple Contamination

The quality of a product relies on more than just contamination in a pack. X-ray inspection systems can also carry out many other quality checks to avoid issues such as poor presentation, non-uniform products, incomplete packs or estimate weight. It is important to be able to spot problems that checkweighers also could not detect. For example, a pack that is supposed to contain four pieces of meat of approximately the same weigh but one piece is considerable over weight and one considerable under.

Conclusion

With one machine, manufacturers use less floor space and make a smaller investment to receive more benefits than product inspection. Cost of x-ray systems are not as expensive as they once were. X-ray technology that can detect broken or incomplete products inside sealed packaging eliminates customer complaints and fosters brand integrity, something that eventually contributes to an acceptable ROI.

In conclusion, while x-ray remains costly than metal detection, the added benefits make it a cost-effective solution. The additional quality checks that x-ray technology can offer could outweigh the additional cost of more versatile equipment. With minimum power consumption and a tube life of 7-10 years, Loma X-Ray systems can certainly be the winner if you have to worry about a lot of different non-metal contaminants.◆