



Meat and Poultry Q&A

1. What types of technology can be used to detect foreign material contamination in meat and poultry products? How do they work? Are there limitations?

Metal detection equipment is used to detect metal fragments, X-ray identifies metallic and non-metallic contaminants that are of sufficient *density* to create an x-ray image. When using metal detection, the detectable particle size is adversely affected by the signal of the meat and poultry. This is commonly known as *product effect*. The x-ray image is dependent on the density of the contaminant, being different than the product density. As a result, calcified bone is easier to detect than soft bone.

2. Are there any new technologies?

The latest development in metal detection is the use of simultaneous, multiple-frequency units that have been designed to reduce the adverse impact of *product effect* thus improving detection levels.

3. What kind of materials can your metal detectors find? What metals?

Metal detectors are used to detect ferrous, non-ferrous (aluminum, brass and copper) and stainless steel metal contaminants.

4. How does metal detection work?

As metal passes through the oscillator transmitting and receiving coil, the current induced in the coil changes. This causes an imbalance, which is amplified and detected in the electronic control unit.

5. Does meat make it harder to find contamination?

Yes, fresh meat presents more *product effect* to the metal detector than dry product. The *product effect* is accommodated by reducing the detection level that is achieved.

6. Is there soft foreign material contamination?

Very objectionable non-conductive contaminants such as hair, fingernails and other soft, light-weight contaminants that float are difficult to detect with X-ray and are typically avoided with enforcement of in plant food safety policies.

7. Product control software? What is that?

Metal detector product controls are used to adjust the metal detector settings to achieve the best possible detection levels given the product effect of the food being processed. Product controls can be used to group product settings for several products or store separate product settings for specific

products if need be.

8. Why is there so much foreign material contamination in the last few years? Is it increasing?

We are not sure there is more foreign material contamination. But we imagine technology enhancements have improved our ability to detect contamination and improved food safety practices and documentation may have increased the reporting of contamination incidents.

9. Is the USDA guideline foreign matter contamination helping at all?

Stringent food safety regulations have improved the reporting of contamination when it occurs.

10. Is bone detection hard?

X-ray technology is used to create a detectable image enhanced by density. Dense, calcified bone casts a better image and is easier to detect than soft bone.

11. Is there pressure on meat and poultry suppliers from their customers?

Yes, as retailing has become consolidated among fewer, larger companies they have more leverage in forcing the use of foreign contaminant detection and the documentation of its use.

12. Do different type metal and poultry processors have different plans?

Yes, those who have high risk for bone contamination readily adopt x-ray technology. Meat processors with high risk associated with metal knives and processing equipment tend to focus on metal detection usage.

13. Other information added?

Increased scrutiny has led to the need for meat and poultry suppliers to improve the documentation of their metal detector usage. Advanced Detection Systems' ProScan Max® III metal detector offers easy to use data logging of metal detector events and user specific pass codes.



ProScan Pipeline System



ProScan Conveyor System



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