

Foodsafety BYTES

Number: 20

Foreign bodies II

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Foreign bodies can contaminate a food product at any stage in the food supply chain, and so it is important to gather as much information as possible on the country or origin, and when contamination took place in order to be able to pinpoint the source of contamination. An assessment may need to be carried out to determine if the contamination is restricted to one product or batch, or if the contamination is more widespread.

Identification of foreign bodies.

There are a whole range of techniques used for the identification of foreign bodies:

Analytical methods: microscopy techniques such as light microscopy, scanning electron microscopy, infra-red spectroscopy and gas chromatography, and conventional wet chemistry methods.

Light Microscopy: used routinely for the examination of the morphology of samples and can help identify the type of biological material. For example a plant stem or bone.

Scanning Electron Microscopy (SEM) and X-ray Microanalysis: SEM provides rapid examination of the three-dimensional structure of many samples. More detailed microanalysis of SEM samples may be carried out using an X-ray microanalyser which can analyse inorganic objects like glass, metal and stone.

Metals

Metal fragments represent a common source of foreign body contamination despite the widespread use of metal detectors on production lines in the food industry. Metal fragment contamination in food can come from a number of possible sources; they can originate with the raw materials, derive from food processing, or be introduced by the consumer.

It is important to accurately identify the metal composition by X-ray microanalysis in order to correctly identify the source of the contamination.