



TECHNICAL SEMINAR





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THE IDENTIFICATION OF PRACTICAL FOOD FRAUD

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Practical Food Fraud and measures to reduce the risk.

By

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❖ Aim:

To think about the types of B2B fraud that can occur and some suggestions on how to combat it.

- What motivates a person /people to do this?
 - Financial benefit (any other reason?).
 - Opportunity –to make money, reduce cost, increase yield, increase margin.
 - Incentivised- rewards for people taking the risk.
 - Business/ Gang/ Group culture- 'no one in my peer group is bothered'
 - External / personal influencers- biggest driver is Financial-family, house, bills

What to look for or just keep in mind

➤ **Business-**

- Usually a group or clique behaviour- difficult for outsiders or new people to fit into these groups.
- Procedures/ controls- ownership/ control of documentation, (In-Out).
- The more complex a system, the easier it is to 'Make mistakes' or 'admin errors'.
- Warehouse/ Coldstore Stock reports- responsibilities, shared ownerships .
- 'Too Good to be true' bargains- we all love to think we can get a better deal.
- New Suppliers with product slightly below the market price for the goods.
- External activities out of your control – news, weather, conflict, economic factors, food trends.

Business Targets

B2B Tends to have minimal involvement with authorities, apart from annual or less frequent visits – general public complaints and random sampling of finished goods are used as a tool to gather spikes of activity. This information is shared between Local Authorities.

B2B operations are in general reluctant to share findings or report fraud- WHY?

Business reputation damaged

Supplier relationships damaged

Site visits and inspections of the reporting business, once issues have been identified-

Enforcement officers formally caution the Business and not the fraudster-

Unwanted publicity/ damage to industry reputation

Customer backlash- loss of sales- financial damage

Brand Damage

Product recall and associated additional costs Insurance premiums.

Media coverage

Recent Examples

Horsemeat- an over supply into the normal market, pushed prices down-an opportunity to 'off load' at a better price in an alternative market- Not a new idea-1 2nd World war rationing was also an issue. *Illegal market in 'knacker meat (moribund animals).*

Introduction of meat controls and staining of condemned meat, licensing of slaughter men and growth of EHO departments.

Spices- Indian supplier was caught and had to destroy tons of turmeric for dangerous adulteration using metanil yellow (not lethal but illegal as it enhances the colour of turmeric.) and red oxide of lead – the later being highly carcinogenic.

A company in India, was ordered to destroy 900 tons of black pepper contaminated with mineral oil. India is not the only supplier of pepper: Brazil, Indonesia, Vietnam and the Caribbean as well as Malaysia, Madagascar and China supplying Europe and America.

The mineral oil exhibits a shiny appearance and the volatile oils in the pepper are enhanced giving a higher quality and visual appearance.

Food Colouring Many of the E numbers have been reviewed several times and have been categorised into the types of food they are NOT permitted for use in. As they can enhance the natural colour e.g.- Annatto in Mayonnaise based sauces is banned as the more 'yellow a mayonnaise appears the more 'egg yolk' it appears to contain.

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- **Pepper**, suppliers grind it with papaya seed and even add a filler such as sawdust. Whole pepper is mixed with papaya seeds which are very similar in size and colour and have a pungent taste as well (but some varieties are relatively tasteless once dried). Even replacing just 10% with papaya seeds means a substantial profit for the suppliers.
 - **Turmeric**, used in Indian and many Asian cuisines is often stretched/ treated with artificial colouring and fillers such as corn flour (starch) yellow coloured talcum powder (Chalk) or sawdust, lead chromite (used in paint), or melanil yellow .
 - **Italian Olive Oil**- diluted with olive oil from other countries and even vegetable oils, premium price- scientific analysis has expanded and can now identify the origin of some oils.
 - **Sundried tomato Paste**- diluted with standard tomato paste, artificial red colouring to enhance appearance.
 - **Melamine** China reported an estimated 300,000 victims in total. Six babies died from kidney stones and other kidney damage and an estimated 54,000 babies were hospitalised. The chemical gives the appearance of higher protein content when added to milk, leading to protein deficiency in the formula. In a separate incident four years prior, watered-down milk had resulted in 12 infant deaths from malnutrition.

Processing examples -suggested controls/ checks

- Product missing from a sealed carton- lid seal intact, access underneath and folded shut.-*Review carton design with supplier.*
- Under weight pallets of stock, claimed as short delivery to customer –Under weights- short delivery to customer (Check case weights not pallet weights – ‘wet’ pallets weigh more than dry ones 3-5 kgs)– *Tare the pallets at the cold store warehouse before loading with cartons.*
- Adding water (increased yield to manufacturer) – ‘Golden Tap’ in sauces, liquid ingredients or stock manufacturer- *use of COAs, verifying them against analysis- reactive activity used as a policing tool.*
- Minced or blocks frozen meat or vegetables water added during the mixing and freezing process. *Sampling, testing and measuring drip loss, when defrosted.*
- Double glazing of fish/prawns and polyphosphate use- defrosting and drip loss, COAs, cook outs. Analysis or simple ‘squeeze test’.
- Packaging – Food contact tends to more expensive than alternatives. Certificates of analysis for YOUR packaging.
- Health Marks- EU directives outline size, shape, colour.

Processing examples -suggested controls/ checks

- ▶ Fattier meat in centre of frozen blocks for processing .
 - ▶ 1 litre of muscle would weigh 1.06 kg and 1 litre of fat would weight 0.9 kg. Therefore, muscle is about 18% denser than fat, for the same volume. Defrost of cut frozen blocks in half.
- ▶ **Heavier/ Thicker coating** applied to products to reduce meat core and increase product weight- COA and product sampling against agreed specification.
- ▶ Added starch to absorb more water and increase weight of finished ingredients- sampling and analysis,
- ▶ **End use fraud**- meat mixes once cooked are very difficult to identify as the DNA has been denatured- very expensive to test for and time consuming.
- ▶ **Raw** chicken fillets, boneless meat tumbled with simple brines- max 12% before noticeable change in quality. Cook or Squeeze test or scientific analysis.
- ▶ **Substitution with cheaper alternatives**- Vegetable oil mixed in with Olive Oil, Substitute Sunflower Oil for Soy oil or mixed with other vegetable oils to reduce price. Technology can now identify country of origin through analysis.

Process examples -suggested controls/ checks

- Balsamic vinegar of Modena –substituted with spirit vinegar, molasses and food colouring, thickener. Analysis and CoAs.
- **Animal Substitution** – Cow for Steer/ Heifer, Mutton for Lamb, Goat for Lamb, Hen for Chicken, Cat for Rabbit- analysis of raw material inspection of defrosted material, product training, product testing. Site audits and Inspections
- Breed substitution-very difficult to investigate- once identifying criteria have been removed- Is certification the answer, DNA analysis, Substituted certificates.
- Welsh Lamb trim not from Wales, -labels attracting higher prices, but from elsewhere in the UK/ EU. Audits and traceability at the factory inspection of packaging, delivery notes –mass balances.
- Provenance- 1 Clove Garlic 30p -but Hampshire Garlic 1.00, Italian Sundried Tomato Paste mixed with Chinese tomato pastes
 - traceability and site visits, Product Analysis- Counterfeit COAs.
- Misdirection and customer assumption- Aberdeen Angus beef- Angus Beef South America, Hampshire Pork for EU Pork,
 - traceability and site visits



As the customer what can I do?

- ▶ Assume nothing,
- ▶ Once you have it on site you take ownership-
- ▶ Know your raw material suppliers,
- ▶ Know you manufacturing suppliers
- ▶ Know Your raw materials
- ▶ Share the knowledge within the business,
- ▶ Learn about your raw materials-
 - ▶ Use external sources for information-
 - ▶ Laboratories, Universities, Industry Organisations
 - ▶ Buy in the knowledge- scientific, I.T technology (RFID, Block chain systems)
 - ▶ Learn from your mistakes

FOOD FRAUD

WHATS NEXT ?

WHERE FROM ?

MEDIA attention

FSA Investigation

DEFRA Alerts

WHISTLEBLOWER

***The challenge goes out to Technical, Commercial and all
Business operators***



Thank You

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