

Lessons from the European horse meat crisis

The discovery of horse meat in products described as 'beef' came as a shock to the general public. It was seen by several food professionals as a predictable risk that was missed, and by a handful of food fraud experts as a "told you so" event.

The fact that horse meat is part of a normal diet for many Europeans has meant that there are properly equipped abattoirs and processing plants operating under licence in the EU and countries supplying the EU. They are likely to be as safe as any beef operation.

Although questions have been raised about the risks of veterinary medication getting into the food

chain this has not been found to be an issue with the main suspect phenylbutazone.

Developed for clinical use in humans, a few people developed dangerous side effects so it was removed from general clinical use. It is still useful in veterinary practice.

The risk to humans from the accidental consumption of 'bute' in horse meat was described as infinitesimal in a normal diet.

This crisis has therefore been an issue of product description rather than an issue of food safety. It is most likely to be an issue of criminal fraud; however criminal fraudsters in food and drink have been likely, either deliberately or in ignorance,

to be producers of unsafe products. The event has certainly provided all parties involved in every stage of food production with a case study full of lessons for improving food safety. The systems of traceability set up for a food safety event were tested.

Risk assessment

In the established process of hazard analysis and consideration of risks, the possibilities of microbial, chemical and physical contamination are well known. These tend to be thought of as the likely result of accidental occurrences.

The potential of a deliberate contamination act is largely thought to be due to personal grievance or political motivation and likely to be rare and isolated. The potential for fraudulent contamination is a much more likely risk factor.

Food and drink can be protected from all such hazards if they are identified in advance.

Once they are known, systems can be established to monitor for them. If you were buying meat trim as an ingredient you would probably consider the variability of quality and look at fat content, the possibility of bone or metal contamination, and consider the risks of microbial contamination.

Such known risks could be diminished by visual inspection, laboratory testing, mechanical detection and/or separation. How would you be sure that no squirrel meat had been mixed in the bulk box?

Yes, I suggested squirrel. We now know about horse meat and we now know how to test for it, but there are more meat sources out in the world. Squirrel should be low on the risk list because practicality and volumes would make it extremely unlikely.

In South Africa it has been announced that water buffalo, donkey and zebra meat have been

Event timeline

2003

UK Food Standards Agency (FSA) tests 158 sausages for meat specification. One has traces of horse.

2012

January

Trader jailed for nine months for relabelling South American horse meat as German Halal beef.

February/March

EU warns national authorities of suspected horse meat in beef products made in Italy.

November

Northern Ireland inspectors query labelling of 'Polish' packed 'beef trimmings' in cold store.

2013

16 January

Food Safety Authority of Ireland finds burgers containing horse meat DNA. Of 27 products analysed, 10 contain horse DNA and 23 have pig DNA. This includes burgers from

ABP Food Group for Tesco. £300 million wiped off Tesco stock market value.

17 January

The ABP Food Group suspends 112 workers at its Silvercrest Foods plant in Ireland. UK retailers give FSA details of suppliers. Tesco starts advert campaign of apology and explanation.

21 January

Tests on Liffey Meats' burgers (made 10-16th Jan) show no presence of horse DNA.

23 January

Burger King switches from ABP Food Group to another supplier.

25 January

Waitrose removes frozen burgers made by Dalepak. FSA says tests at Dalepak plant found no horse or pork meat contamination. Tesco drops Silvercrest as they used unapproved suppliers.

30 January

Irish authorities believe 'filler product' made from horse meat and beef came from Poland.

1 February

Polish inspectors say six meat plants supplying beef have not proved positive for horse meat.

4 February

Rangeland Foods in Ireland suspended after 75% horse DNA is found in raw ingredients. Irish Department of Agriculture calls in police to aid its fraud investigation. ABP Food Group is estimated to have lost €45m (£39m) in contracts.

5 February

Meat linked to Silvercrest, found at Freeza Meats in Northern Ireland, contains 80% horse meat. Asda withdraws products supplied by Freeza Meats.

6 February

Tests of 18 Findus beef ready meals found 11 with 60-100% horse meat. Tesco and Aldi remove spaghetti and lasagne meals from French food supplier Comigel.

ABP says it bought 170 tonnes of contaminated meat from Irish meat trader McAdam Food Products. McAdam say they thought it was genuine Polish beef. FSA calls for UK food manufacturers to test all processed beef products.

7 February

Findus withdraws all beef lasagne ready meals supplied by Comigel. Catherine Brown, CEO of the FSA, says this is likely to be deliberate fraud.

8 February

Comigel withdraws products made from 'beef' supplier Spanghero. French inspection at Spanghero shows meat comes from Romania. FSA contacts Europol, which begin investigation.

9 February

UK Environment Secretary Owen Paterson meets retailers and agrees a new testing regime.

10 February

Aldi confirms two products contain up to 100% horse meat. Six French chains remove ready-

found in burgers. Now, the culling of half a million deer has been proposed in the UK. This illustrates the need for all food producers to look at the 'dark side' of the food chain and think of potential fraud products.

Testing and protection

To test every meat ready meal, every batch through the factory, or every consignment of ingredients would be unrealistic, impractical and unnecessary.

The successful fraudster operates on the premise of not being found out. Target their fraud with testing and you increase the risk to the fraudsters of being caught. Nobody is a criminal when they are watched, as long as the watcher is looking for the 'right-wrong-doing'!

Some businesses can reduce the risk by owning the supply chain. The retailers with the tightest control over their raw material sources and processing operations have tended to be less affected by horse meat contamination and the lesson has been learned by the consumer.

Had this event been paralleled by a similar fraud in poultry meat it may well have been a much lower risk to the products of the big vertically integrated poultry producers who own the process from the

hatchery to the supermarket delivery bay.

The complicated system of supply necessary to produce food and drink relies on trust. The customers buy from those they believe will supply good products, be they multi-national food retailers, the famous brand owner, the food makers or the individual pushing the shopping trolley.

The further away you get from the point of consumption the less control you have. Knowing your supplier well is a well understood safeguard, but for all the systems and certifications and inspections it may never be fraud proof.

The famous brand owner or retailer buys from a well organised manufacturer, who buys ingredients from an historically reliable trader, who is 'certain' he is buying ingredients from a certificated primary source. But is he?

Independent monitoring

There are on-line systems available that enable independent monitoring of suppliers down the chain.

They help in risk assessment and they have the ability to see the unsuspected break in the chain, the lapses in vigilance and the exaggerations of assurances.

More and more food companies

and retailers are using them. Those that did were able to quickly discover if they were using 'safe' suppliers.

They were able to assure their customers and demonstrate a transparent system. They were able to respond much quicker to the rapidly moving news and social media that resulted from and drove the crisis.

Traceability/transparency

It is a legal requirement in several countries that a food company should be able to quickly identify the next step back along the food chain to their suppliers and forward on the food chain to their customers.

The authorities when dealing with a food issue can then follow the food back to source or forward to potential sellers.

It is apparent that for the major producers and food businesses this is not enough. Protecting the reputation of the brand must involve the specification and knowledge of each step and there must be an ability to stop suppliers taking too much risk with your company's good name.

Food companies spend heavily on equipment and marketing. Technical departments are often seen as a reducible overhead.

This crisis emphasises the critical role they play in protecting brands and business.

The events of the past weeks have demonstrated the influence of the media on changing the decisions of the buyers. In the high street many shoppers switched rapidly from multiple retailers to local butchers on the assumption that they could be trusted to control their supply chain.

Some multiple retailers talked openly of their assured chain of supply and fared better in public loyalty. One of the retailers stated that in future they would make public the results of their testing program.

The manufacturers who bought the wrong material from the wrong supplier had nowhere to hide with plant closures, job losses and crashing share values.

The UK's Food Standards Agency initiated a program of testing. It was able to make a series of announcements that began to assure the public that within the area of potentially contaminated products less than 1% could be contaminated.

The UK had established an anti-fraud system before the horse meat event. With the potential for more fraud taking place in other products the idea is being mooted for a small central agency to focus upon the general fraud issue across the food industry. ■

meals from Findus and Comigel. UK Health Chief confident patients eating food in hospitals have not been put at risk. French minister says fraud could have netted £250,000.

The Romanian government investigates if horse meat has been mislabelled at abattoirs before exporting.

11 February

Owen Paterson says legal action over the scandal is to be mounted in Europe.

Tesco drops supplier of spaghetti bolognese with 60%+ horse meat. Meat traders from Romania, Cyprus and the Netherlands thought to be involved. 16 countries are warned.

UK Parliament committee Chair wants EU moratorium on the movement of all meat until source traced.

FSA orders tests for phenylbutazone. Meat from animals treated with 'bute' not allowed in food chain.

12 February

FSA and police visit a UK slaughterhouse and meat firm. Waitrose discovers pork DNA in beef meatballs.

French, Swiss and Dutch supermarkets remove ready-made meals from the shelves. France confirms the presence of horse meat in frozen meals.

13 February

EU Health Commissioner says it is a labelling issue. Horse meat is found in frozen lasagne in Switzerland and Germany.

14 February

Three men arrested in UK on suspicion of fraud. UK store Morrisons increases fresh beef sales after advert extols its transparent meat supply chain. In first week of February eight horses out of 206 tested by the FSA were positive for 'bute'. Rangeland Foods, Ireland, withdraws burgers tested positive for horse with 'beef' supplied from Poland.

France suggests Spanghero knew that 750 tonnes of horse meat was sold over six months. Production is stopped.

Ireland's Minister says there is more than one rogue trader and several countries involved. EU agrees to immediate launch of tests for horse DNA in meat products.

15 February

FSA says 29 out of 2,501 UK beef products are found to contain horse meat.

Norway and Austria find horse meat in frozen dishes.

Denmark tests for horse meat in pizzas.

Foodservice giant Whitbread finds horse meat in its products.

Hong Kong's Center for Food Safety recalls Findus Lasagne.

Tesco promises food testing program results to be available on new website.

Dutch prosecutors say company believed to have mixed horse meat with beef to sell as 'pure' beef.

Greencore Bolognese sauce tests positive. ASDA delists a number of products. Greencore shares drop 17%.

16 February

Bulgaria orders lasagne dishes to be pulled from the shelves.

FSA says phenylbutazone tests negative in finished product.

18 February

Owen Paterson meets major grocers to plan restoration of consumer confidence. Spanghero allowed to resume production of minced meat,

sausages and ready-to-eat meals. No longer allowed to stock frozen meat.

Nestle withdraws two pasta meals from Italy and Spain. They were supplied by H. J. Schypke – a sub-contractor of JBS Toledo, a major Belgian meat processor who then stops buying European meat.

Lidl pulls horse meat tainted ready-made meals from Finnish, Danish, Swedish and Belgian food stores.

Co-op, the Swiss 'organic, locally-sourced' retailer removes nine products and may face negligence charges.

20 February

FSA expands survey of food authenticity in processed meat products by local authorities to 514 samples.

1st March

FSA results of third round of UK testing reports. Of 1692 products and raw materials tested only 10 were positive.

The total results for all three rounds of tests are that 5,386 tests were negative for contamination out of 5,430 carried out – a total of 0.8% of contaminated products.