# Food Fraud

#### The Deadly Allergen Scandal

Adrian Rogers – FAMS 2019



Making the World's Food Safer®

## **Food Fraud in History**



Mid-13th-century England, guidelines prescribed the size, weight and ingredients for different types of bread and how much it should cost.

Bakers who failed to comply were driven through the streets with their bogus bread tied around their necks.

Repeat offenders lost their licence.

The rigid penal procedures were a reflection of the value that was attached to bread as an important staple food.



## **Food Fraud in History**



Peppermints: 1858 twenty people died and more than two hundred became seriously ill in Bradford, England.

The assistant of a local druggist accidently sold the sweetmaker arsenic instead of a substance made from plaster of Paris sugar substitute.

When the manslaughter charges were later dropped because there was no law against this type of offence, the local newspaper noted:

"The actual crime is that there is no law prohibiting the practice of adulterating foods."



Addition of a food-external - exogenous - substance to feign better quality or bulk up the food.

Addition of a food-internal - endogenous - substance to bulk it up or feign better quality.

Blending of foods of various geographical and/or botanical/zoological origins without the appropriate labelling.

Use of unlabelled or banned manufacturing processes.

False declaration. False details or claims are regularly made on the label as a result of food fraud.



Elliott Review into the Integrity and Assurance of Food Supply Networks

#### A National Food Crime Prevention Framework

"My systems approach is based on eight pillars of food integrity and means that no part can be considered in isolation and cherry picking of the recommendations will not work. For each pillar I describe the foundations, bricks and mortar that need to be put in place for it to be strong and robust. The public should be reassured that industry has taken my report seriously and has already started to implement many of the recommendations."

 $https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/350726/elliot-review-final-report-july2014.pdf$ 



Making the World's Food Safer®

#### **Recommendation 1 – Consumers First**

Government should ensure that the needs of consumers in relation to food safety and food crime prevention are the top priority.

#### **Recommendation 2 – Zero Tolerance**

Where food fraud or food crime is concerned, even minor dishonesty must be discouraged and the response to major dishonesty deliberately punitive.

#### **Recommendation 3 – Intelligence Gathering**

There needs to be a shared focus by Government and industry on intelligence gathering and sharing.



#### **Recommendation 4 – Laboratory Services**

Those involved with audit, inspection and enforcement must have access to resilient, sustainable laboratory services that use standardised, validated approaches.

#### **Recommendation 5 – Audit**

The value of audit and assurance regimes must be recognised in identifying the risk of food crime in supply chains.

#### **Recommendation 6 – Government Support**

Government support for the integrity and assurance of food supply networks should be kept specific, measurable, attainable, realistic and timely (SMART).



#### **Recommendation 7 – Leadership**

There is a need for clear leadership and co-ordination of effective investigations and prosecutions relating to food fraud and food crime; the public interest must be recognised by active enforcement and significant penalties for serious food crimes.

#### **Recommendation 8 – Crisis Management**

Mechanisms must be in place to deal effectively with any serious food safety and/or food crime incident.



Making the World's Food Safer®

## Food allergy – what are the risks?





Making the World's Food Safer®

## UK fatal reactions to food: 2008 - 2018

Confirmed or reported likely trigger foods



Data from Pumphrey& Gowland JACI 2007, Turner et al JACI 2014, inquest and media reports

ROMER Romer Labs

Making the World's Food Safer®

## **Lessons from fatal allergic reactions**

#### Since January 2014

- 44 probable fatal reactions to foods in the UK
- Average age 20 (3y 55y)
- 20 Male: 24 Female
- Inquests delayed waiting for police / local authority action?
- Key evidence not always available



Data from Pumphrey & Gowland JACI 2007, Turner et al JACI 2014, inquest and media reports



Making the World's Food Safer®

#### **Paul Wilson**





Paul Wilson's curry order January 30<sup>th</sup>, 2014



Making the World's Food Safer®

## **R v Zaman May 2016 - Offences**

- Gross negligence manslaughter causing the death of Mr Wilson
- Placing food on the market that was unsafe and injurious to health (178/2002 EC and Food Hygiene (England) Regulations 2013)
- Selling food not of the substance demanded (Food Safety Act 1990)
- Falsely describing food as containing almonds when it contained peanuts (Food Safety Act 1990)

Food offences – 18 months (on their own) Sentenced to 6 years in jail in total

(These offences took place before December 2014 when the Food Information Regulation 1169/2011 EC became enforceable.)





Making the World's Food Safer®

## Appeal autumn 2017

Royal Courts of Justice Strand, London 08/11/17



... the Appellant's negligence in this case was not just gross; his behaviour, driven by money, was appalling.



Given the very serious aggravating factors, even though the Appellant was a man of good character, we are wholly unpersuaded that a sentence of six years after a trial was manifestly excessive or, indeed, excessive at all.

#### **Conclusion**

The appeal in respect of both conviction and sentence is dismissed



## January 2017: Lancashire

## Teenager dies from severe allergic reaction after takeaway

Megan Lee, from Accrington, died on New Year's Day after eating food from a takeaway



**Two men sent for trial October 2018** 





If any information on this page is incorrect you can email the correct information to your local authority by using the email address below.

You can find out how to appeal against the rating given and find out about your right to reply. You can also ask for a re-inspection.

Display this rating on your web

You can display this rating on your website. Get the code.

#### ocal Author

Name: Hyndburn Website: www.hyndburnbc.gov.uk Email: enguiries@hyndburnbc.gov.uk







Making the World's Food Safer®

#### May 2017: South Sefton Magistrates

#### **Woman nearly died after forkful of lamb bhuna** Lal Miah handed £12,900 fine after woman's reaction to curry.



Lal Miah, from Nasib takeaway, pictured leaving South Sefton Magistrates Court in Bootle.

Making the World's Food Safer®

## March 2017: Bath



Bath takeaway boss fined after death of 15-year-old schoolgirl Chloe Gilbert who suffered allergic reaction

- Failing to ensure that documents were up to date at all times in respect of food allergies
- Failing to identify the hazard of serving food to a customer with a particular food sensitivity in the absence of a notice reminding customers to ask about allergens in the food
- Failed to establish documents and records to demonstrate the effective application of the required measures

(Article 5 (1) EU Regulation 852/2004)



#### June 2017: Bedfordshire

ITV REPORT 27 June 2017 at 1:04pm

Pub chain fined after allergic boy suffers severe reaction to wrong pudding



Staff at the Globe had been given incorrect information about what their puddings contained Credit: Old English Inns



Making the World's Food Safer®

## January 2018: Llandudno Magistrates Court



#### Food Allergy Court Case

Ty Asha Balti House Ltd, Denbigh Street, Llanrwst pleaded guilty to placing food on the market when unsafe and injurious to health with respect to the health sensitivities of a particular consumer, contrary to Regulation (EC) 178/2002 Article 14.

A customer with a severe peanut allergy was served a chicken korma that contained peanuts.

The case was heard at Llandudno Magistrates Court on Tuesday 30 January 2018.

Ty Asha Balti House Ltd was fined £4000, plus compensation to the victim of £500 and £2400 costs.



Making the World's Food Safer®

## January 2018: Dylan Hill, Barnsley



**Teen's death from nut allergy after meal at South Yorkshire restau...** A teenager died from an allergic reaction after eating a curry at a South Yorkshire restaurant - just months after a similar tragedy was narrowly av...

# REGULATION 28: REPORT TO PREVENT FUTURE DEATHS REGULATION 28 REPORT TO PREVENT FUTURE DEATHS THIS REPORT IS BEING SENT TO: 1. Secretary of State for Health, Richmond House, 79 Whitehall, London, SW1A 2NS 2. Food Standards Agency, Aviation House, 125 Kingsway, London, WC2B 6NH 1 CORONER Tanyka Rawden, Assistant Coroner for South Yorkshire (West)



Making the World's Food Safer®

#### February 2018: West Lancashire

# Guardian

Alom was fined £3,000, must pay a £100 surcharge and £1,625.62 costs after he pleaded guilty to three food safety offences and three of supplying dishes not being of the nature demanded by the purchaser.

The chairman of the bench said they considered it a "very serious matter with the potential harm that could have been caused."

# Restaurant flouted food safety rules





Making the World's Food Safer®

## June 2018: Cardiff





Barry restaurant owner/fined after serving unsafe food The owner of a takeaway restaurant in Barry has been fined for creating a dish that carried a significant risk of harm or death

valeofglamorgan.gov.uk

On Friday 29 June, Chungfai Li who owns 'Wongs' in Broad Street, pleaded guilty to one offence of placing unsafe food on the market under the General Food Regulation 2004, at Cardiff Magistrates Court.

...He imposed a 12 month community order with 300 hours of unpaid work requirement and ordered him to pay costs of £575 and a victim surcharge of £85. He told Mr Li that in his view if the offence were to happen again he would be sent to prison.



Making the World's Food Safer®

## July 2018: Lewes Crown Court

# Ex-restaurant owner fined over allergy failings

#### A former restaurant owner has been fined for putting a boy's life at risk by serving him a dessert containing nuts.

Stephen Nock was managing director at Bright ideas Studio Ltd, which previously ran Seasons Restaurant in Eastbourne.

In May 2017 a four-year-old boy was served an ice cream with a chocolate hazelnut wafer at the restaurant after his mother told staff he had a nut allergy.

It triggered an allergic reaction, resulting in an eight-hour stay at Eastbourne District General Hospital.

East Sussex Trading Standards found the menu and company allergen folder did not specify the ice cream came with a wafer or that it contained nuts, and staff training records were found to be inadequate.

Nock, 61 of Bermuda Place, Eastbourne, admitted breaching the Food Safety Act and was fined  $\pm 1,200$ .

He was also ordered to pay prosecution costs of £959 at a hearing at Lewes Crown Court on 20 July.

The Seasons restaurant is now under new management and has no connection to the former owner.



Making the World's Food Safer®

## August 2018: Alnwick



# Takeaway fined for selling curry with traces of peanuts in undercover council allergy sting

The takeaway has been fined £8,000 after selling a korma to trading standards officer, who posed as someone with a nut allergy

A takeaway was caught selling a curry containing traces of peanuts to a undercover council officer who told them she was allergic to nuts.

The woman specifically asked for a chicken korma that did not contain peanuts, posing as someone who had the allergy, which can be fatal.

A court heard she was assured there were none in the dish - but it turned out there were traces of it as coconut flour used in the recipe had been made at a factory which also handles peanuts.

Now Alnwick Indian Restaurant, trading as Mumbai Flavours, of Narrowgate, <u>Alnwick</u>, Northumberland, has been fined £8,000 plus £1,000 costs <u>at Newcastle Crown Court</u>.

The court was told the company has since introduced robust measures, including clearly marking the menu stating which dishes contain nuts and other allergins.



Making the World's Food Safer®

#### September 2018: Penrith



14 September 2018

#### Selling unsafe food costs Penrith restaurant £3000

Three partners in a Penrith restaurant have been ordered to pay £3000 in costs after serving a 14 year old customer suffering from a peanut allergy a meal containing peanut protein.

Tojomul Hoque, Suhail Miah and Abu Sufian were each given a 12 months community order and ordered to carry out 100 hours unpaid work and pay £3000 in costs at Carlisle Magistrates Court after pleading guilty to four offences under the Food Safety Act 1990.

The offences came to light after Cumbria County Council Trading Standards responded to a complaint from a local resident who said her daughter was taken to hospital after suffering anaphylactic shock having eaten a meal ordered at the Indiagate Indian Restaurant, Burrowgate, Penrith.

The court heard it had been specified when the meal was ordered that the meal should be free from nuts. Trading Standards sampled the same dish and under analysis it was found to contain peanut protein. The Public Analyst confirmed that there was sufficient quantity to present a real hazard to anyone who suffered from a nut allergy.





Making the World's Food Safer®

## September 2018: Lancashire

#### 20th September

#### Allergy risk tackled by Hyndburn food safety workshop



HYNDBURN'S food safety team has organised a free allergen management workshop for borough businesses on September 26.



Last year Oswaldtwistle 15-year-old Megan Lee died from a severe allergic reaction, or Anaphylaxis, after eating a take-away meal on New Year's Day.

The workshop follows a summit of North-West environmental health officers to discuss the enforcement of food labelling regulations.

Cllr Paul Cox, Hyndburn Council's food safety boss, said; "Nationally, there is a fatality from anaphylaxis every six weeks.

"Consumers need to understand that not every business is large enough to provide the complete separation that is essential. Cllr Paul Cox, Hyndburn Council's food safety boss, said; "Nationally, there is a fatality from anaphylaxis every six weeks.

"Consumers need to understand that not every business is large enough to provide the complete separation that is essential.

https://www.lancashiretelegraph.co.uk/news/16890968.allergy-risk-tackled-by-hyndburn-food-safety-workshop/



Making the World's Food Safer®

## September 2018: West London Coroner's Court

V



BBC Breakfast 🥥 @BBCBreakfast · Sep 28

Pret a Manger's allergy labelling was inadequate, says coroner in case of girl who died after eating a baguette.





#### My conclusion is a narrative one.

Natasha Ednan-Laperouse died of anaphylaxis in Nice on the 17<sup>th</sup> July 2016 after eating a baguette, purchased from Pret-a-Manger at LHR T5. The baguette was manufactured to Pret specifications and contained sesame to which she was allergic. There was no specific allergen information on the baguette packaging or on the langar barker and Natasha was reassured by that. That concludes the Inquest into the death of Natasha Ednan-Laperouse.





#### The Sydney Morning Herald

EXCLUSIVE NATIONAL HEALTHCARE

#### Child aged 10 dies after drinking coconut drink as importer admits label charges



A 10-year-old child died from an allergic reaction after drinking a "natural" coconut drink imported by a Sydney firm.

The canned product from Taiwan, Greentime Natural Coconut Drink, is sold in most states and was recalled just over a month later following the tragedy in December 2013. But it was never revealed that it was blamed for causing the fatal anaphylactic reaction in the child from Melbourne.

The NSW Food Authority said importer Narkena Pty Ltd, based in western Sydney, pleaded guilty in September to three labelling charges and will be sentenced later this month.

The authority said the company entered pleas of guilty to two charges that the drink was labelled in a way that falsely described the food and to one charge of selling food in a manner that contravened the Food Standards Code.





Making the World's Food Safer®







Making the World's Food Safer®

**Country of Origin of Recalled Products** 





Making the World's Food Safer®

- No definitive findings regarding the source of the dairy protein in all the recalled products
- Caseinate (e.g. Sodium caseinate).
- Possibility of shared equipment including spray dryers and co-packing processes.
- Based on the range of levels detected, the first is more likely, although the range of results reported and the presence of whey proteins indicates that both may be a possibility.



## **Cow milk in Human Milk**

Pediatrics. 2015 May;135(5):e1157-62. doi: 10.1542/peds.2014-3554. Epub 2015 Apr 6.

#### Cow's Milk Contamination of Human Milk Purchased via the Internet.

Keim SA<sup>1</sup>, Kulkarni MM<sup>2</sup>, McNamara K<sup>3</sup>, Geraghty SR<sup>4</sup>, Billock RM<sup>2</sup>, Ronau R<sup>3</sup>, Hogan JS<sup>5</sup>, Kwiek JJ<sup>6</sup>.

Author information

#### Abstract

**BACKGROUND:** The US Food and Drug Administration recommends against feeding infants human milk from unscreened donors, but sharing milk via the Internet is growing in popularity. Recipient infants risk the possibility of consuming contaminated or adulterated milk. Our objective was to test milk advertised for sale online as human milk to verify its human origin and to rule out contamination with cow's milk.

**METHODS:** We anonymously purchased 102 samples advertised as human milk online. DNA was extracted from 200 µL of each sample. The presence of human or bovine mitochondrial DNA was assessed with a species-specific real-time polymerase chain reaction assay targeting the nicotinamide adenine dinucleotide (NADH) dehydrogenase subunit 5 gene. Four laboratory-created mixtures representing various dilutions of human milk with fluid cow's milk or reconstituted infant formula were compared with the Internet samples to semiguantitate the extent of contamination with cow's milk.

**RESULTS:** All Internet samples amplified human DNA. After 2 rounds of testing, 11 samples also contained bovine DNA. Ten of these samples had a level of bovine DNA consistent with human milk mixed with at least 10% fluid cow's milk.

CONCLUSIONS: Ten Internet samples had bovine DNA concentrations high enough to rule out minor contamination, suggesting a cow's milk product was added. Cow's milk can be problematic for infants with allergy or intolerance. Because buyers cannot verify the composition of milk they purchase, all should be aware that it might be adulterated with cow's milk. Pediatricians should be aware of the online market for human milk and the potential risks.

Copyright © 2015 by the American Academy of Pediatrics.



Making the World's Food Safer®

## **Cow milk in Human Milk**

#### Customer Enquiry Romer labs testing

	Sample	Result (ppm Casein)
Milk exclusion Diet	1	< 0.2
Milk exclusion Diet	2 (Hindmilk)	< 0.2
Milk exclusion Diet	3 (Foremilk)	< 0.2
Milk exclusion Diet	4	< 0.2
Pre Milk exclusion	5	< 0.2

\* Mrs Rogers assistance

AQ Casein does not cross react with human milk



Making the World's Food Safer®

#### **S** INDEPENDENT

JOIN US SUBSCRIBE / R

#### NEWS POLITICS VOICES FINAL SAY SPORT CULTURE VIDEO INDY/LIFE INDYBEST LONG READS INDY100

#### FOOD FIRM IN 'NUTS-FOR-SPICES' ROW BLAMES FALSE TEST RESULTS

The supplier says these methods are prone to 'false readings', confusing almonds with mahaleb

Tom Bawden | @BawdenTom Thursday 5 March 2015 19:48 | 2 comments f 💟 🔯 💶 Click to follow

The nuts-for-spices row took a new twist today after one of the suppliers under investigation for alleged almond contamination challenged the accuracy of tests conducted by the official food regulator.

The Food Standards Agency is investigating a series of nut-contamination cases, after detecting almonds in supermarket meals and packets of spices containing cumin and paprika – a substitution that is potentially deadly to nut allergy sufferers.

The source of the contamination is yet to be determined and it is unclear whether the ground almond shells were mixed in with the spices accidentally, or were injected to "bulk up" the mix and save money on ingredients.

But the investigation has now run into difficulties after Bart Ingredients – a Bristol-based spice supplier, which recalled packets of ground cumin in the UK and Canada after traces of almond were detected by food watchdogs – attacked the FSA's test methods. Bart says these methods are known to be prone to "false readings", for example by confusing almonds and mahleb – a harmless spice made from the seeds inside cherry stones.









Making the World's Food Safer®

162 WALKER ET AL.: JOURNAL OF AOAC INTERNATIONAL VOL. 101, NO. 1, 2018

SPECIAL GUEST EDITOR SECTION: FOOD ALLERGENS NEW METHODS

#### Almond or Mahaleb? Orthogonal Allergen Analysis During a Live Incident Investigation by ELISA, Molecular Biology, and Protein Mass Spectrometry

MICHAEL J. WALKER, MALCOLM BURNS, MILENA QUAGLIA, GAVIN NIXON, CHRISTOPHER J. HOPLEY, KIRSTIN M. GRAY, VICTORIA MOORE, MALVINDER SINGH, and SIMON COWEN Laboratory of the Government Chemist, Queens Rd, Teddington TW11 0LY, United Kingdom



Figure 1. Timeline of cumin and paprika recall episodes in relation to UK technical appeals (9-11).



Making the World's Food Safer®

Step	Description	
1	Decision to accept and appropriate funding contribution	
2	Scientific and administrative case meeting to identify appropriate techniques and methods (more than one technique when possible) allocate tasks and responsibilities, and schedule work	
3	Appropriate legislation identified and checked	
4	Method(s) investigated, and, if necessary, modified	
5	Experimental work, multiple replicates on multiple days, reference materials and certified reference materials when possible, spikes, and all key steps witnessed by a second scientist	
6	Data compiled and all data transcriptions checked	
7	Results reviewed against quality criteria	
8	Batches repeated or new analytical runs if required	
9	Statisticians review datasets for outliers and batch effects and case-specific measurement uncertainties are calculated as appropriate	
10	Results interpretation	
11	Certificate drafted and reviewed and data independently checked	
12	Formal case review meeting with Government Chemist for examination of the case file, queries addressed, appropriate steps repeated i required, and rereview if necessary	
13	Certificate (official report typically 1500-3000 words) released to the immediate parties concerned	
3	Certificate (official report typically 1500-5000 words) released to the infinediate parties concerned	

#### Table 1. Typical steps in a Government Chemist technical appeal ("referee") case



Making the World's Food Safer®







#### Table 7. Summary of complementary approaches to resolve the disputed identity of Prunus allergen in the referred samples

Technique	Almond kernel	Mahaleb kernel	
Commercial ELISAs	Capable of screening for Prunus species protein and ascribing presumptive quantitative data al expressed as 'almond'		
	In the referred paprika sample two platforms produced data in the range 390 – 700 mg kg <sup>-1</sup> expressed as almond	In the referred curnin sample three platforms produced data in the range 1.3 – 12.2 mg kg <sup>-1</sup> expressed as almond	
Real time PCR assay demonstrated to be species- specific	No almond-specific assay available	The developed mahaleb-specific assay detected mahaleb DNA in the referred curnin sample in the approximate range <10 - <100 mg/s <sup>-1</sup> expressed as mahaleb. Mahaleb was not detected in the referred paprika sample	
Real time screening PCR Prunus assay (This assay was not developed until after the cumin case)	Almond DNA detected in the referred paprika sample	Mahaleb DNA not detected in the referred paprika sample	
LC-MS/MS Referred curnin sample	No peptides uniquely characteristic of almond were detected	Of 3 peptides known to be present in mahaleb 1 was detected	
LC-MS/MS Referred paprika sample	Two peptides uniquely characteristic of almond were detected	No peptides uniquely characteristic of mahaleb were detected	



Making the World's Food Safer®

Initial suspicions of bulking out expensive spices with cheaper almond or apricot shells was not born out.

ELISA screening unlikely to pick up the adulteration alone although coupled with novel PCR screening and MS confirmation it may be a possibility. In the opinion of the parties involved (FBO, regulators, and other interested parties), the U.K. cumin incident was handled about as well as it could have been throughout, based on the information and knowledge available at each stage, as the investigation proceeded. The FSA was correct to advise a product recall at the outset because the initial result was not irrefutably incorrect and the putative allergen was one of possibly significant impact. Subsequently there was open and honest communication that allowed the true cause of the incident to be uncovered and confirmed. Transparency throughout as to the progress of the investigation, avoidance of apportioning blame, or seeking damages for the cost of the incident were lauded as helpful in achieving a true understanding of cause and thereby assisting in the avoidance of a similar problem in the future



Making the World's Food Safer®

#### Conclusions

Food allergen immunoassays are currently the main analytical tool to investigate and confirm cases of allergen food fraud around the world.

Every food is different and presents it's own unique challenges with immunoassay analysis

If there is any doubt about how a food will perform VALIDATE





#### **ALLERGY ACTION - allergytraining.com**

# Hazel Gowland PhD, PGCE, MSOFHT, MREHIS, FIFST, FRSPH

- Peanut and nut allergy as a baby
- Working with the Anaphylaxis Campaign since 1994
- Develop and delivering effective allergy training since 1995
- Work with food suppliers, regulators, caterers, schools, nurseries
- Consumer Research for FSA on food labelling and shopping
- Research into the forensic aspects of food allergy deaths and 'near misses'







@AllergyAction



#### **Robin Sherlock**



I have had the privilege of being involved the food industry for nearly 20 years in a wide range of roles and have seen the enormous challenges that the industry faces in the management of food allergens. Over that time, I've been involved at the production floor level working with quality managers, production teams and engineers looking for practical solutions to deal with allergen management and have both developed and delivered training to a broad cross section of food companies from specialised boutique producers to some of the largest production sites both in Australia and internationally. I've always believed the best solutions are those developed by those working at the coal face of production and that the industry has consistently striven to provide safe food at an economical price to meet the needs of the allergic consumer. I look forward to continuing this relationship with the industry and providing workable solutions for all involved.



Making the World's Food Safer®

## **Thank you!**

www.romerlabs.com



Making the World's Food Safer®