Global tools available to fight food fraud

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Agenda

1. 2013 Horsemeat Incident
2. Global Initiatives
3. The Food Authenticity Network
   – What is it?
   – Content
   – Growth
   – The Future
UK government timeline on horse meat issue

2013

15 January - Food Safety Authority of Ireland issues horse and pig DNA
16 January - FSA issues first statement in response to FSAL news
18 January - FSA issues second statement - The results of all burgers tested for bute are found to be negative.
18 January - Chief scientist posts a blog entry: Making horse sense of contaminated burgers
24 January - The FSA issues a statement on horse in horse meat
25 January - The FSA issues a third update - results from the Dalepak plant
1 February - The FSA issues a statement following Ministry of Justice announcement about non-Halal meat
4 February - FSA and industry agree to publish testing programme
4 February - Horse meat is found in NI cold store
6 February - Meat testing protocol published
7 February - Findus beef lasagne products test positive for horse meat
7 February - The FSA issues an update on the FSA and industry testing programme
8 February - The FSA issues a further statement on horse meat investigation
8 February - AMI finds horse meat in beef lasagne and spaghetti Bolognese
9 February - The FSA issues a statement on meeting with Defra and food industry representatives
10 February - The FSA issues advice to public institutions
11 February - The FSA issues a statement on horse testing
11 February - Tesco finds horse meat in some Everyday Value Spaghetti Bolognese
12 February - FSA raids meat plant involved in alleged supply of horse meat
14 February - Arrests made at meat plants
14 February - Rangeland Foods withdraws burgers due to horse meat
14 February - Latest bute test results on horse carcasses
15 February - FSA publishes industry test results on beef products
15 February - Update on police investigations into horse meat
19 February - FSA meat testing survey expanded
21 February - Scotland's newest beef burger contains horse DNA
21 February - Burger company withdraws products
22 February - FSA update on testing of beef products for horse DNA
28 February - Update on EU sampling programme
1 March - Third FSA update on testing of beef products for horse DNA
1 March - The FSA's Chief scientist posts a blog entry: It's not as simple as in CSI
5 March - Update to Agency Board meeting
8 March - Update on progress of FSA beef product surveys
8 March - Slaughterhouse suspension lifted
10 March - Cutting plant suspension lifted

2014

March - Hungarian horse meat brand labelled as Halal found
26 March - Updated results of FSA UK-wide survey of beef products
9 April - Very low levels of bute found in Asda corned beef product
9 April - Update on Agency’s beef product survey
16 April - Results of Europe-wide beef product survey published
17 April - FSA review announced
23 April - Final result from UK-wide beef survey confirmed
4 June - Horse meat review - key findings
13 June - More results of beef product testing published
5 July - Horse meat final report on FSA response
12 July - FSA action plan issued following Troop report
19 July - Horse DNA detected in meat pies from Latvia
8 October - FSA publishes further beef product test results
31 October - Horse DNA detected in canned beef from Romania

2015

22 July - FSA publishes industry and European Union testing results
14 April - New European horse meat tests
29 January - FSA publishes further beef product test results

3 months
Recalls

Local authorities

Losses

Research

Consumer forums

Horse?

Supply chain

Pork?

Method performance?

SOUND ADVICE

Origin?

UK / EU / Global issue

Proficiency testing

Industry testing

Method?

Liability

Halal?

Labs?

Kosher?

UK Survey

Police

Bute?

Sampling

Carry over

Court cases

Reference materials

EU Surveys

UKAS?

Questions / rapid decisions

Action Limit?

Food industry – consumers – government - media
RESULTS OF UK INDUSTRY TESTING 1 MARCH 2013

By 13 June a further 19,050 tests conducted (3 positives above 1% action limit)
24,480 tests in total with 47 positives (0.19%).

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Total number of tests</th>
<th>Tests negative for horse*</th>
<th>Tests positive for horse*</th>
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<tbody>
<tr>
<td>Beef products</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Products</td>
<td>4196</td>
<td>4152</td>
<td>44</td>
</tr>
<tr>
<td>Raw materials/ingredients</td>
<td>927</td>
<td>927</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5123</strong></td>
<td><strong>5079</strong></td>
<td><strong>44</strong></td>
</tr>
<tr>
<td>Other (non-beef) meat products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Products</td>
<td>223</td>
<td>223</td>
<td>0</td>
</tr>
<tr>
<td>Raw materials/ingredients</td>
<td>84</td>
<td>84</td>
<td>0</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>307</strong></td>
<td><strong>307</strong></td>
<td><strong>0</strong></td>
</tr>
<tr>
<td><strong>All tests</strong></td>
<td><strong>5430</strong></td>
<td><strong>5386</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>
Adventitious Contamination / Carry Over?

- Does carry-over of meat species occur in UK meat processing plants?

- Raw minced beef – GMP
  - Deep chemical clean or a high pressure water wash between species
  - No carry-over of raw pork into raw beef to an LOD <0.1 % on a w/w basis.

- If no cleaning is performed between species, carry-over does occur
  - Needs to be considered by manufacturers when presenting information to consumers so the contents are accurately described.

- Evidence to differentiate between adventitious contamination & food fraud
Reviews

• Many government reviews globally
• Key UK Review - Elliot
  – **Objectives**
  – Examine the integrity and assurance of food supply networks
  – Factors impacting consumer confidence in the authenticity of food
  – Make recommendations
  – **8 pillars of food integrity:**
    1. Consumers first
    2. Zero tolerance
    3. Intelligence gathering
    4. Laboratory services
    5. Audit
    6. Government support
    7. Leadership
    8. Crisis management
• UK Government accepted the report & recommendations
What has been done since 2013?
Legislation / policy

1. EU – existing requirement
2. FSMA – new requirements
3. HACCP - Threat / vulnerability assessments
4. Third party certification schemes
   - Global Food Safety Initiative
   - Core principles: safety, integrity, quality & legality
   - CCFICs: TPA to support national food control system objectives
5. Global consensus on terms
   - Codex, CEN, ISO, ILSI, & GFSI…

Elliot review “Traders and brokers should be rigorously audited to agreed standards to detect involvement in fraud and for vulnerability to fraud”
Intelligence gathering

- Elliott Review: "industry to establish a 'safe haven' to collect, collate, analyse and disseminate information and intelligence"
- Food Industry Intelligence Network (FIIN)
  - Integrity of food supply chains and protect the interests of the consumer
  - Share intelligence with governmental bodies to better understand where risks may sit in the UK Food Industry from food fraud
  - Curation of anonymised (via legal host) database to collect industry data
  - Campden BRI provides technical and administrative support
  - Analyse data and produce regular reports
  - Greater industry transparency
  - Expanding
- Global Alliance on Food Crime – May 2018
EC Knowledge Centre for Food Fraud and Quality

Franz Ulberth
Franz.Ulberth@ec.europa.eu
Legal basis

Regulation (EC) No 178/2002 (General Food Law)

Article 8

Food law shall aim [...] at the prevention of:

(a) fraudulent or deceptive practices;
(b) the adulteration of food; and
(c) any other practices which may mislead the consumer.
Key characteristics of food fraud

- Violation of EU food law
- Intention
- Economic gain
- Customer deception
Food Fraud Network

The EU Food Fraud Network

Promoting cooperation between authorities

Expertise/ Enforcement

Investigative legal powers

Intelligence

Interpol

RASFF

European Commission
The Knowledge Centre for Food Fraud and Quality...

Disseminates
Collects
Validates knowledge

...and makes it available

Welcome to the European Wine Databank

European Reference Centre for Control in the Wine Sector – ERC-CWS

UK Food Crime Units

Food Crime - 'Financially motivated dishonesty relating to food production or supply, which is either complex or results in serious detriment to consumers, businesses or the overall public'

Scottish Food Crime and Incidents Unit (SFCIU)
Prosecutions in 2017….

- The Spanish Guardia Civil & Europol arrested 65 people
- Dutch businessman related to the 2013 Irish case of the beef burgers containing horse meat
Laboratory services

UK Agriculture Dept.’s Original Aims

• Act as a **trusted source of curated information** on food authenticity testing.
• Help **bring together** those organisations involved in the various authenticity testing disciplines in a more coordinated way and provide them with an opportunity to interact and **exchange knowledge on food fraud testing**.
• Act as the **key mechanism for the dissemination** of technical information on food authenticity and to support the transfer of knowledge help raise awareness of these methods and assist with their take up through promotion of knowledge transfer activities.
• Be an **open forum for knowledge exchange**, discussion of “fit for purpose” methods and promotion of best measurement practice in food authenticity analysis.
• Help **facilitate the advancement of new scientific approaches** and techniques through **discussion and co-operation** to help demonstrate the **UK’s potential as a world leader in food authenticity**.
The Food Authenticity Network

- Free and open access
- Interactive website based on an open-source content management system, with:
  - public and private areas based on member login
  - Forum capability
  - Webinar and online meeting facilities can be added
- Network platform - Ning
- Website: [http://www.foodauthenticity.uk/](http://www.foodauthenticity.uk/)
- Piloted
- Launched July 2015
Takes only minutes to sign-up....
Independent governance

Virtual Authenticity Network

- Management Committee
  - UK Government, Analysts, Food Industry, Professional body, Centres of Expertise & EC
- Network Secretary
- Centres of Expertise
- Stakeholders
- Laboratories

Project management
- Project manager
- IT support

LGC
## Organisations

<table>
<thead>
<tr>
<th>Defra and its Expert Food Authenticity Committees</th>
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<tbody>
<tr>
<td>Food Standards Agency and Food Fraud</td>
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<tr>
<td>LGC</td>
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<tr>
<td>Government Chemist Function and its Annual Reviews</td>
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<tr>
<td>EU Food Integrity Project</td>
</tr>
<tr>
<td>EC Food Fraud Network</td>
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<tr>
<td>Association of Public Analysts</td>
</tr>
<tr>
<td>Royal Society of Chemistry</td>
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</table>

<table>
<thead>
<tr>
<th>Global Food Traceability Center</th>
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<tbody>
<tr>
<td>The Institute of Food Science and Technology (IFST)</td>
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<tr>
<td>The Institute of Food Safety Integrity &amp; Protection (TiFSiP)</td>
</tr>
<tr>
<td>The Food Fraud Group (@foodfraudUK)</td>
</tr>
<tr>
<td>Michigan State University’s Food Fraud Initiative</td>
</tr>
<tr>
<td>The International Food Authenticity Assurance Organization (IFAAO)</td>
</tr>
<tr>
<td>Supplement Safety &amp; Compliance Initiative (SSCI)</td>
</tr>
<tr>
<td>International Life Sciences Institute (ILSI)</td>
</tr>
</tbody>
</table>
Trusted source of curated information

Linked documents library:
www.documents.foodauthenticity.uk/

Will link to:
FoodIntegrity Knowledge Base
Useful resource e.g. search on rice....
Centres of Expertise

- **Academic**
  - 1 CoE

- **General proficiency**
  - 9 CoEs

- **Specific technique**
  - 3 CoEs

- **Specific commodity**
  - 1 CoE

Direct access to named experts by authenticity area of expertise

CoEs announced December 2015
Food Fraud Mitigation

Reports listed on this page:

1. Thinking like a food fraudster – overview, Glenn Taylor, May 2016
3. Thinking like a food fraudster – Defence Strategies, Glenn Taylor, July 2016
5. Michigan State University Food Fraud Initiative Report – Applying Enterprise Risk Management to Food Fraud Prevention
6. European Commission’s monthly report on food fraud and authenticity
7. GI or faking food fraud through food safety management systems
8. Nestle Food Fraud Prevention Booklet
9. FSSC 22000 Guidance on Food Fraud Mitigation
Members by Category

>900 members

- Analyst/Food authenticity testing: 206
- Analytical equipment/test kit producer: 61
- Food industry consultant: 221
- Food industry/production: 28
- Journalist: 78
- Other: 62
- Reference material or PT provider: 229
- Regulator: 9
- University/Academia: 6

Total members: >900
Members by country

Figure 1: Food Authenticity Network - Where our Members Live

- **UK**: 74%
- **Rest of Europe**: 15%
- **Rest of World**: 11%

Countries with members: 45
Google Page rank 1 for search on ‘food authenticity’
The Future – what’s next?
Is it enough?

• Significant progress since 2013
• Food fraud commonly reported since 1800’s
• Eradication?
• Reports show consumers expect transparency from the food industry
• NFCU - £5M granted for investigations
• Global standardisation efforts - Codex, CEN, ISO…
• Supply chain integrity – Blockchain?
• **Need for global approach & architecture**
  – Codex, CCFICs
THE VISION

Global Food Authenticity Network
Funding

• 2015 – 2017:
  – UK Agriculture Dept.

• 2017 – 2018 (December):
  – UK Agriculture Dept.
  – Food Standards Scotland
  – Food Standards Agency

• 2019 onwards:
  – Transition to a public – private partnership model
Science Media Centre

• The SMC’s funding model is designed to reflect its position as an **independent press office** that is not linked to specific institutional interests.

• The Centre seeks donations from a wide variety of organisations with an **interest in the accurate reporting of science in the mass media**, including scientific institutions, science-based companies, charities, media organisations and government.
Response by attendees of Preventing Food Fraud Conference in February 2018:
What do you think is the annual cost of maintaining the Food Authenticity Network?

A. Under £100k
B. Under £500k
C. Under £1m
D. Under £2m
Growth Plans

• £30K - maintain a basic Network

• Annual caps (based on SMC model) for industry at £10k
Why should the Network be supported?

- Advice
- Research & methods
- Food fraud mitigation
- Best practice
- Latest news
- Free
- In one place
- Access to experts
- Events
- Training
- Legislation
- Policy
- Newsletters
- My Page
- Members ‘New Services’ page
- Discussion
Why should governments support the Network?

- UK/EU model can be easily adapted to include other regions
  - no need for each country to develop their own Network
  - Contributes to a global Network by working together as FF is global
- Ensure continued operation of a free open access resource for all - level playing field – less disputes
- Help build capability and capacity in countries
- Help improve society by fighting food fraud globally
  - lead to more secure food supply chains
  - increased consumer trust in the food they buy
Bespoke for each country / region

- UK/EU infrastructure can be built on to create bespoke tabs for each country / region:
  a. Policy & Law
  b. Centres of Expertise
  c. Research reports
  d. Methods

- What will cost?
  - UK/EU content ~£20k
Why should Industry support the Network?

• Brand protection
• Supply chain integrity and assurance
• Due diligence
• Increased consumer trust
• Ensure continued operation of a free open access resource for all - level playing field – less disputes
• Help improve society by fighting food fraud globally
• Corporate social responsibility
What will supporters get?

• Recognition that they support the Food Authenticity Network
• Use logo on their website and marketing material
• Supporters can be listed on Network website
Next Steps

• Funding to maintain Network until March 2021
• International growth:
  – METROFOOD-RI: European Infrastructure project
  – Governments
  – Industry
  – Food Agriculture Organization
• [www.foodauthenticity.uk](http://www.foodauthenticity.uk) - Join & Contribute
• [www.twitter.com/fauthenticity](http://www.twitter.com/fauthenticity) - Follow us
• Support - Selvarani.Elahi@lgcgroup.com
Acknowledgements

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  – UK Food Standards Scotland
  – UK Business Dept.

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  – Steve Ellison
  – Felicia Golden
  – Management Committee

• **The Elliott Review Team**