



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

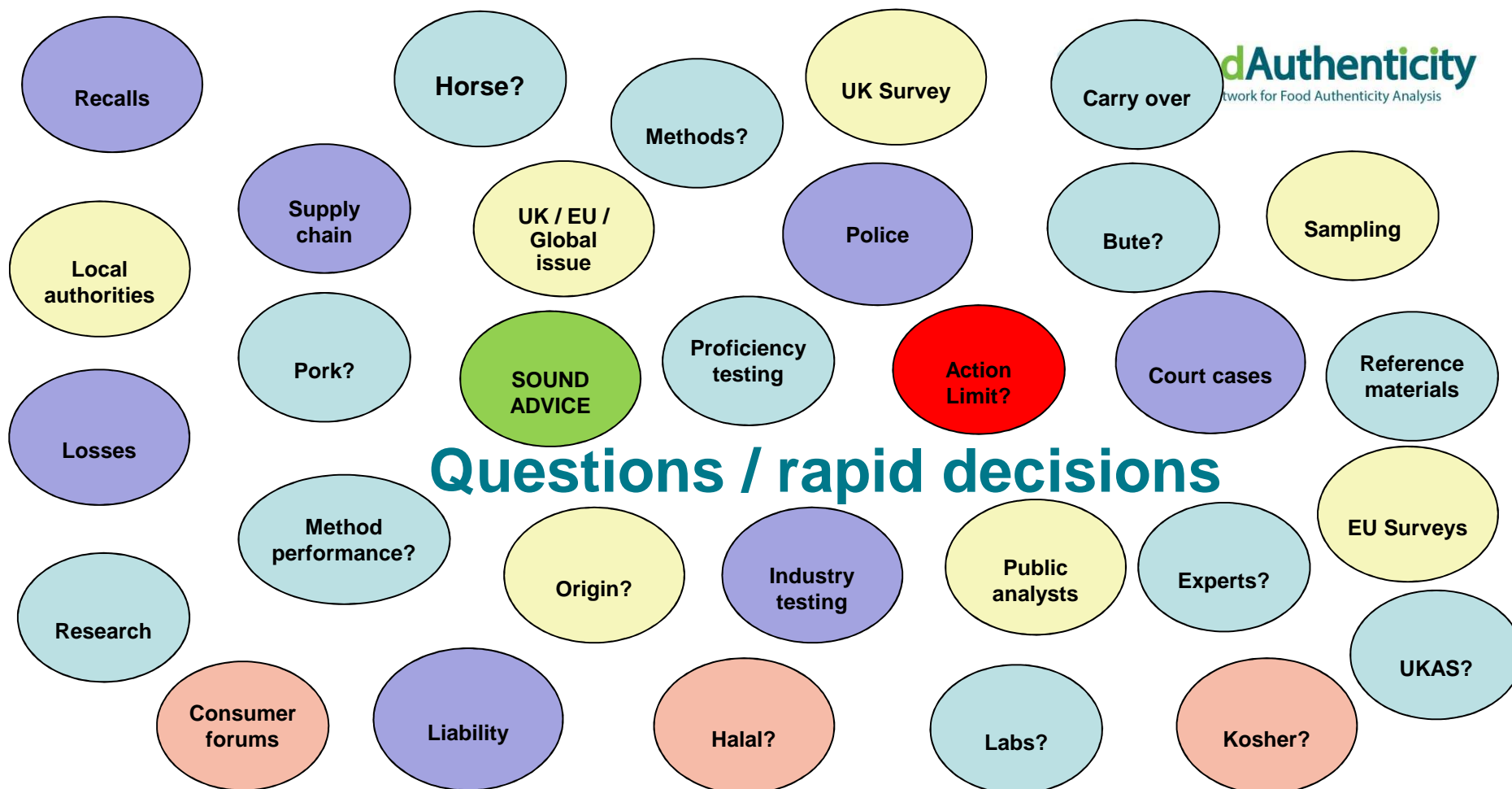
2013

- 15 January - Food Safety Authority of Ireland identifies horse and pig DNA
 - 16 January - FSA issues first statement in response to FSAI news
 - 18 January - FSA issues a second update - 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 statement on bute 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 - Aldi 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: frozen 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
 - 18 March - Cutting plant suspension lifted
 - 22 March - Hungry for horse meat found labelled as 'laked beef'
 - 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 pie from Latvia
 - 8 October - FSA publishes further beef product test results
 - 31 October - Horse DNA detected in canned beef from Romania
- 2014
- 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
- 2015



3 months





Food industry – consumers – government - media

RESULTS OF UK INDUSTRY TESTING 1 MARCH 2013



Table 2 Collated test results for horse (all results to 1 March 2013)			
Sample type	Total number of tests	Tests negative for horse*	Tests positive for horse*
Beef products			
Products	4196	4152	44
Raw materials/ingredients	927	927	0
<i>Total</i>	5123	5079	44
Other (non-beef) meat products			
Products	223	223	0
Raw materials/ingredients	84	84	0
<i>Total</i>	307	307	0
All tests	5430	5386	44

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

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

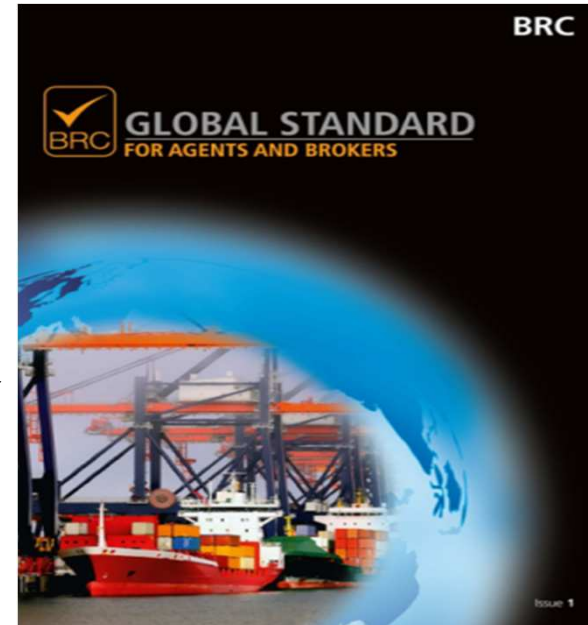
- Many government reviews globally
- **Key UK Review - Elliot**
 - **Objectives**
 - Examine the integrity and assurance of food supply networks
 - Factors impacting consumer confidence in the authenticity of food
 - Make recommendations
 - **8 pillars of food integrity:**
 1. Consumers first
 2. Zero 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

- Elliott Review
collate, and
- Food Industry
 - Integrity of
 - Share int
 - risks may
 - Curation
 - Campden
 - Analyse of
 - Greater in
 - Expanding
- Global Alliance



Head of Food Crime @NFCULondon · May 22

Representatives of five nations united by a shared belief that international, cross sector collaboration best protects consumers from serious fraud in food supply chains. I give you the Global Alliance on Food Crime.



en' to collect,
and intelligence''

of the consumer
understand where

Collect industry data
support



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



RASFF

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)

**FOOD CRIME
CONFIDENTIAL**

Report a food crime

Call **0207 276 8787**

or email

foodcrime@foodstandards.gsi.gov.uk

www.food.gov.uk/foodcrime



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/>
- Piloted
- Launched July 2015

Takes only minutes to sign-up....






Sign Up for FoodAuthenticity

About FoodAuthenticity



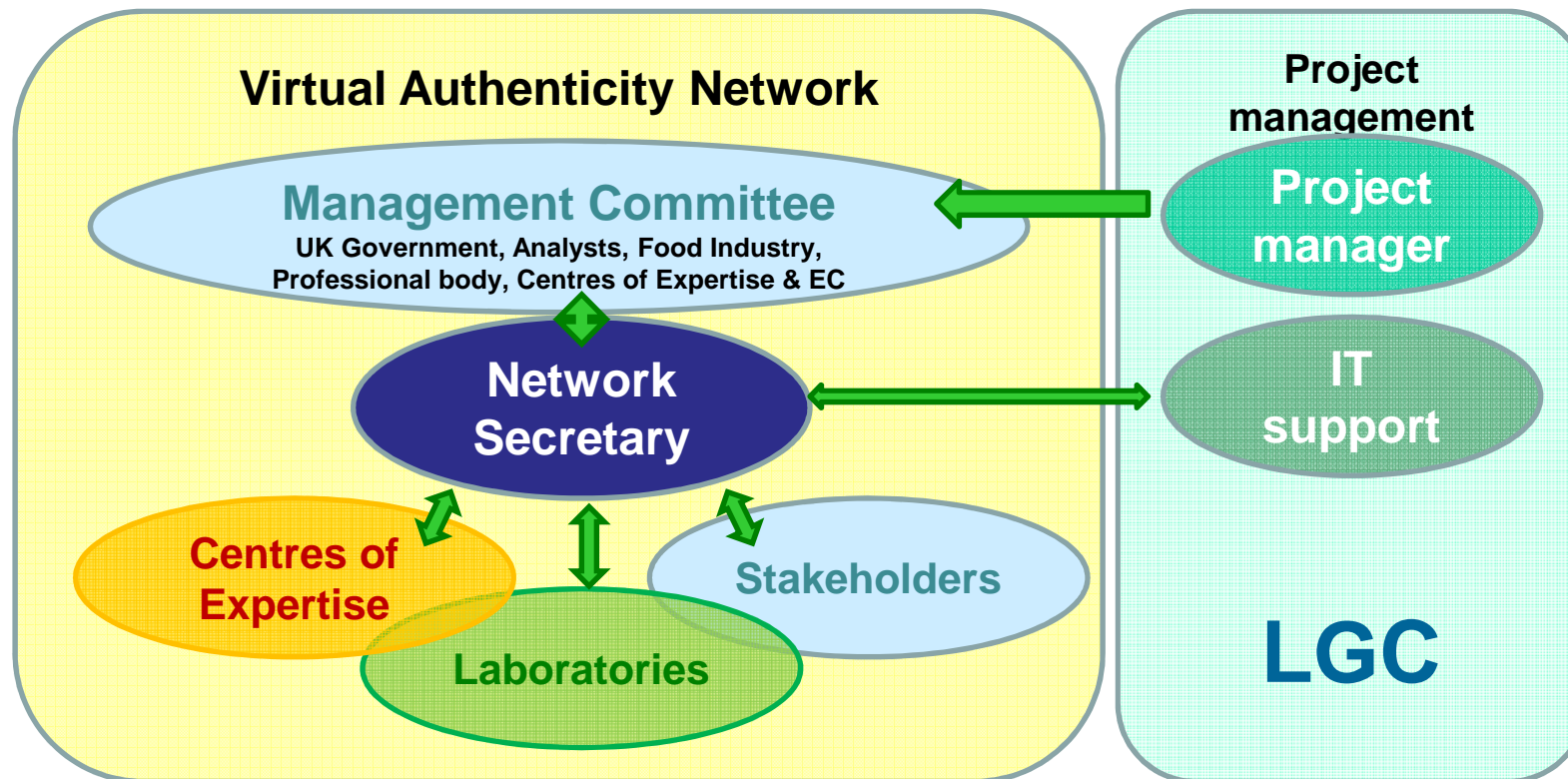
A Virtual Network for Food Authenticity Analysis

Birthdate
Month Day Year 
☐ I'm not a robot 


Already a member? [Sign in](#)

Powered by **NING**

Independent governance



Organisations



Defra and its Expert Food Authenticity Committees

Food Standards Agency and Food Fraud

LGC

Government Chemist Function and its Annual Reviews

EU Food Integrity Project

EC Food Fraud Network

Association of Public Analysts

Royal Society of Chemistry

Global Food Traceability Center

The Institute of Food Science and Technology (IFST)

The Institute of Food Safety Integrity & Protection (TiFSiP)

The Food Fraud Group (@foodfraudUK)

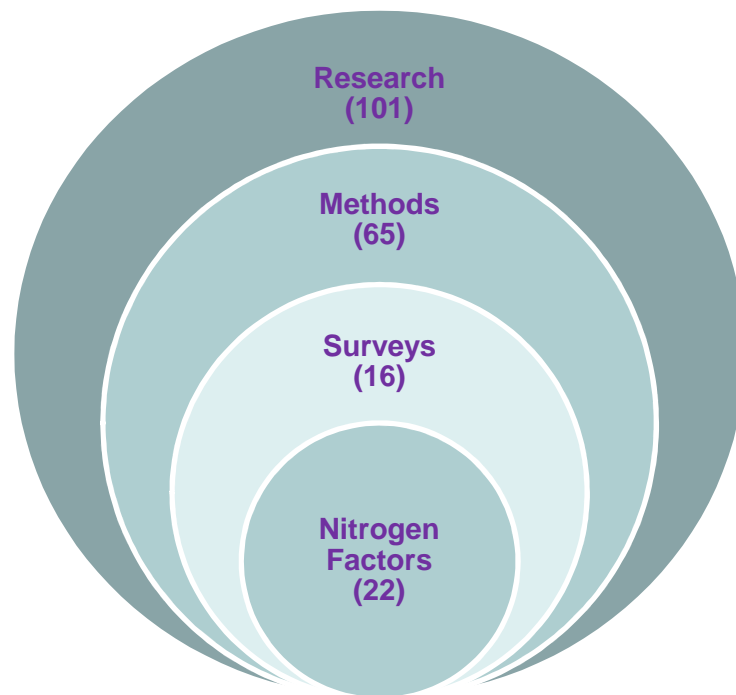
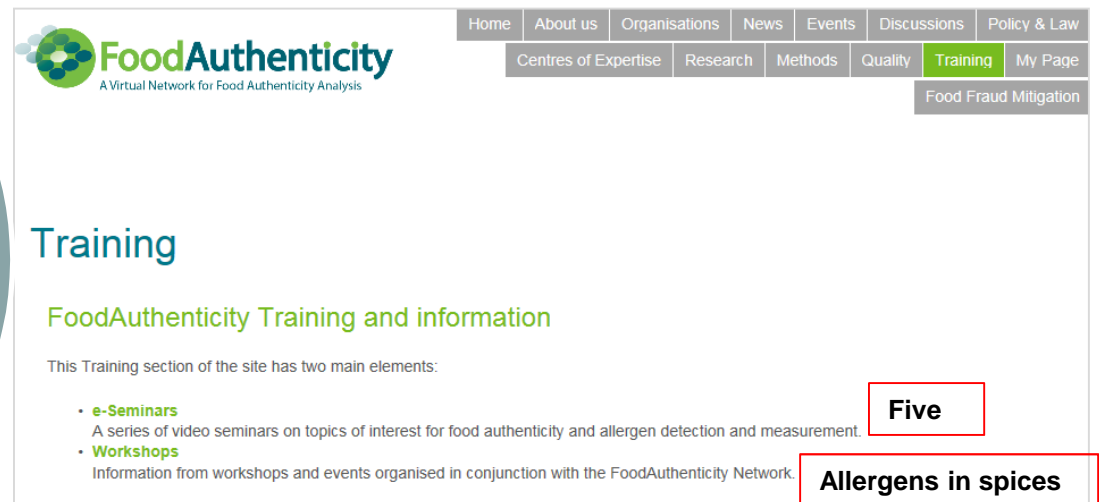
Michigan State University's Food Fraud Initiative

The International Food Authenticity Assurance Organization (IFAAO)

Supplement Safety & Compliance Initiative (SSCI)

International Life Sciences Institute (ILSI)

Trusted source of curated information

Home About us Organisations News Events Discussions Policy & Law
Centres of Expertise Research Methods Quality **Training** My Page
Food Fraud Mitigation

Training

FoodAuthenticity Training and information

This Training section of the site has two main elements:

- **e-Seminars**
A series of video seminars on topics of interest for food authenticity and allergen detection and measurement.
- **Workshops**
Information from workshops and events organised in conjunction with the FoodAuthenticity Network.

Five

Allergens in spices

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

Will link to:
FoodIntegrity Knowledge Base

Useful resource e.g. search on rice....



[2017 code of practice on basmati rice...any updated analytical ...](#)

www.foodauthenticity.uk/.../2017-code-of-practice-on-basmati-rice-any-updated-analytical-meth

Aug 2, 2017 ... There is an updated code of practice on basmati rice varieties which lists 28 additional varieties that can be labelled as basmati rice ...

[Chinese Local Government Introduces Block Chain to Prevent ...](#)

www.foodauthenticity.uk/.../chinese-local-government-introduces-block-chain-to-prevent-counte

Sep 11, 2018 ... Located in China's Heilongjiang province, Wuchang is known for its high quality Wuchang rice. However, over the past few years, there have ...

[A Discssion on the 2017 Code of Practice on Basmati Rice - News ...](#)

www.foodauthenticity.uk/.../a-discssion-on-the-2017-code-of-practice-on-basmati-rice



Aug 2, 2017 ... A new discussion has been posted on the 2017 Code of Practice on Basmati Rice asking for views on the need for updated methods of ...

[Duplex digital droplet PCR for the determination of non-Basmati rice ...](#)

www.foodauthenticity.uk/.../duplex-digital-droplet-pcr-for-the-determination-of-non-basmati-r

Dec 15, 2015 ... A new method has been developed to authenticate Basmati rice. The new duplex drop ddPCR assay is based on a previously published ...

[q-icp-ms - News - FoodAuthenticity](#)

www.foodauthenticity.uk/blog/list/tag/q-icp-ms

Oct 12, 2015 ... A method using the q-ICP-MS analysis of 19 elements has been developed to differentiate organic and conventional Brazilian rice samples.

[All Discussions - General discussion - FoodAuthenticity](#)

www.foodauthenticity.uk/general-discussion

Oct 12, 2017 ... There is an updated code of practice on basmati rice varieties which lists 28 additional varieties that can be labelled as basmati rice ...


[http://www.foodmanufacture.co.uk/regulation/food-f - News ...](#)

www.foodauthenticity.uk/.../http%3Awww.foodmanufacture.co.uk/regulation/food-f

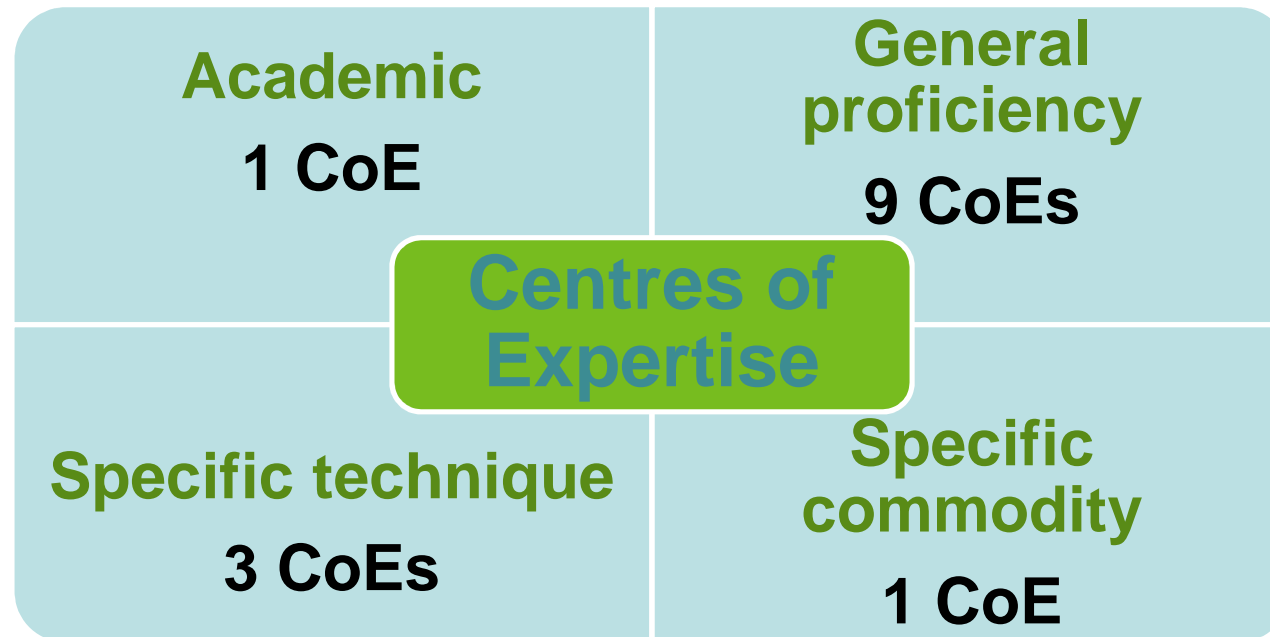
Jul 13, 2015 ... Fraudsters are targeting risotto rice sold in UK supermarkets by substituting expensive varieties with cheaper ones, the boss of Italy's biggest ...

[Italy has announced plans to bring in mandatory origin labelling for ...](#)

www.foodauthenticity.uk/.../italy-has-announced-plans-to-bring-in-mandatory-origin-labelling-

 Sep 7, 2017 ... decree implement a two-year trial for mandatory origin labelling for pasta and rice, requiring manufacturers to indicate the country of origin of

CoEs announced December 2015



Direct access to named experts by authenticity area of expertise

F Food Fraud Mitigation

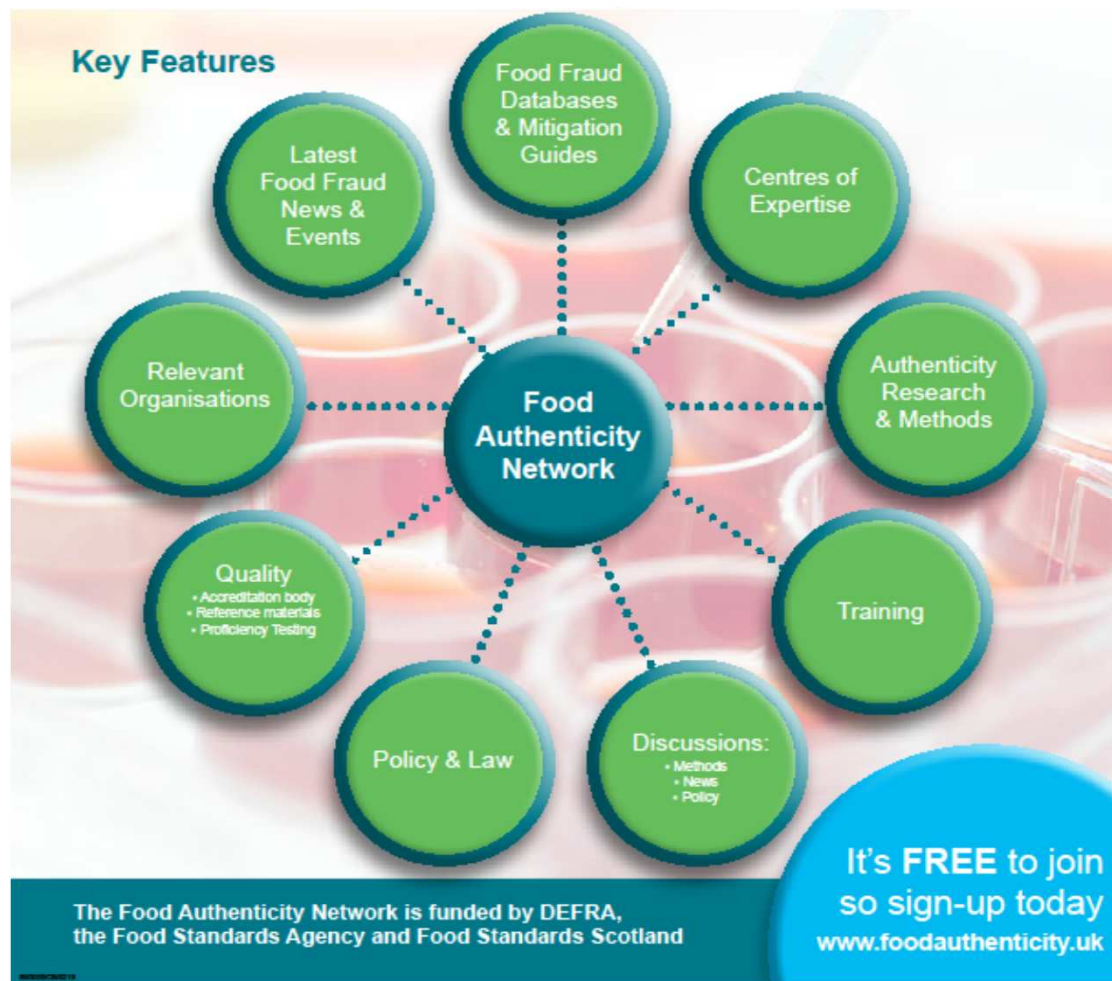
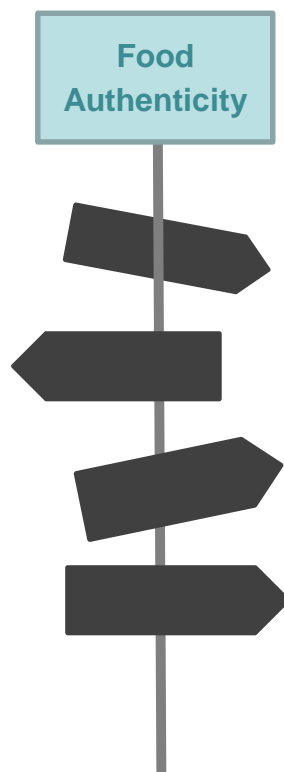
Food Fraud Mitigation

[Overview](#) [Services](#) [Guidance](#) [Reports](#)

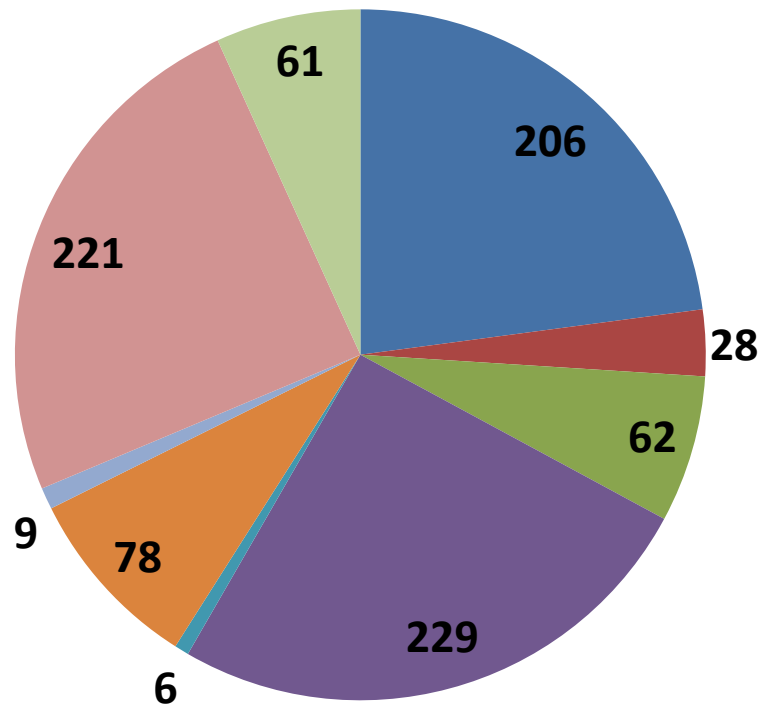
Reports listed on this page:

1. [Thinking like a food fraudster – overview, Glenn Taylor, May 2016](#)
2. [Thinking like a food fraudster – “Attack”, Glenn Taylor, June 2016](#)
3. [Thinking like a food fraudster – Defence Strategies, Glenn Taylor, July 2016](#)
4. [How do you use intelligence to defend against food fraud? Glenn Taylor, September 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. [GFSI Tackling food fraud through food safety management systems](#)
10. [Nestle Food Fraud Prevention Booklet](#)
11. [FSSC 22000 Guidance on Food Fraud Mitigation](#)





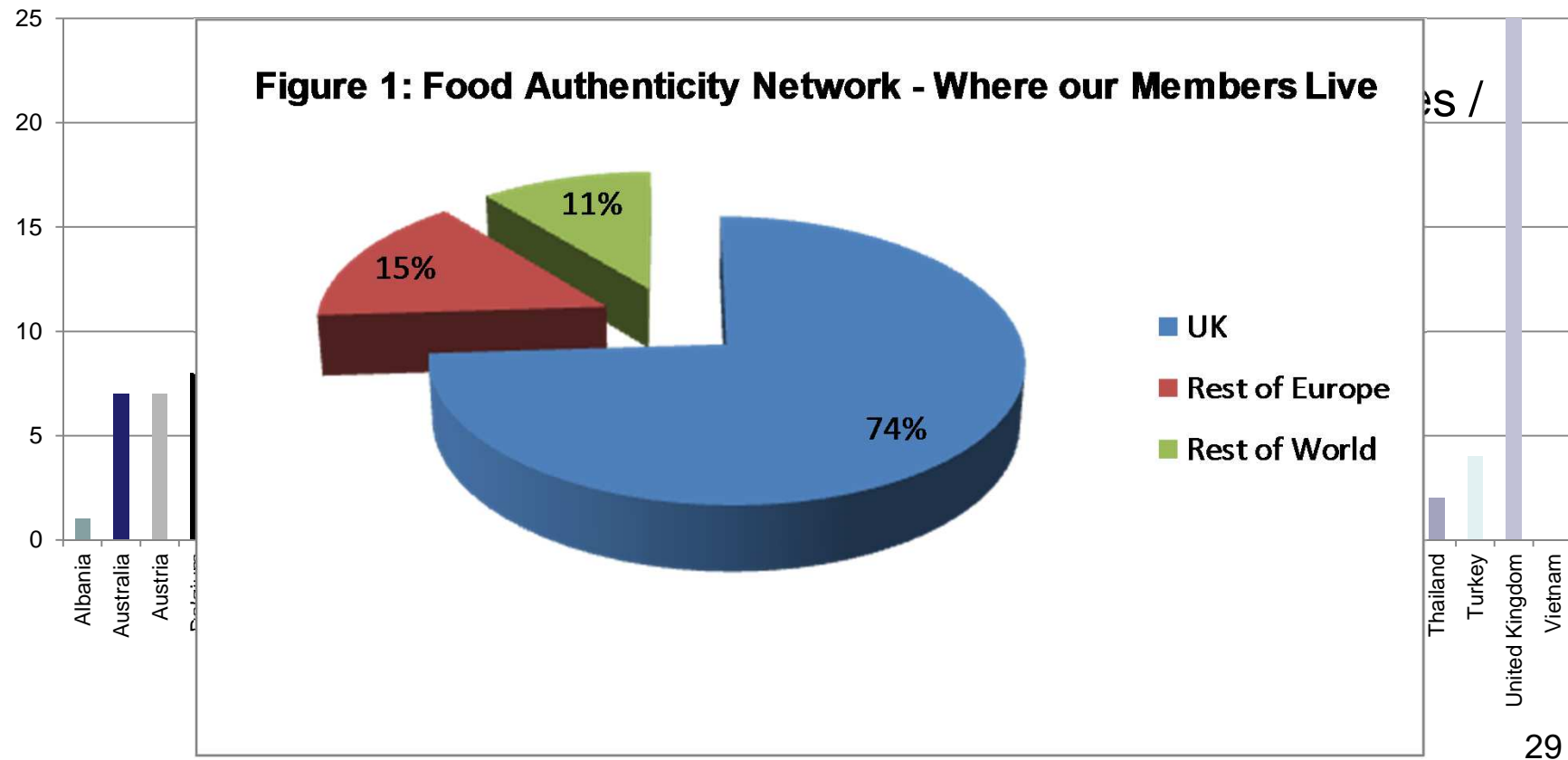
Members by Category



>900 members

- Analyst/Food authenticity testing
- Analytical equipment/test kit producer
- Food industry consultant
- Food industry/production
- journalist
- Other
- Reference material or PT provider
- Regulator
- University/Academia

Members by country



Tweets
595Following
392Followers
1,327Likes
394

Follow

Tweets

Tweets & replies

Media

New to Twitter?

Google Page rank 1 for search on 'food authenticity'

government funded initiative to help bring together those involved in food authenticity testing.

Virtual Network

foodauthenticity.uk

Joined August 2015



analysis, with an eye toward possible standardisation. Become a member and join the discussion here foodauthenticity.uk/general-discus... #analysis #chemistry



3



4

**Food Authenticity** @FAAuthenticity · Oct 9

A study by @Macquarie_Uni researchers found that 27% of commercial honey samples tested were of questionable authenticity. Read more about the study here foodauthenticity.uk/blog/authentic...



Sign up

You may also like · Refresh

**Food Integrity**
@FoodIntegrityEU**Food Fraud Group**
@foodfraudUK**Andy Morling**
@NFCULondon**John Spink**
@FoodFraud**Karen Constable**

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



EFSA report, April 2018: Emerging food safety issues: what do consumers want to know?



THE VISION



Global Food Authenticity Network

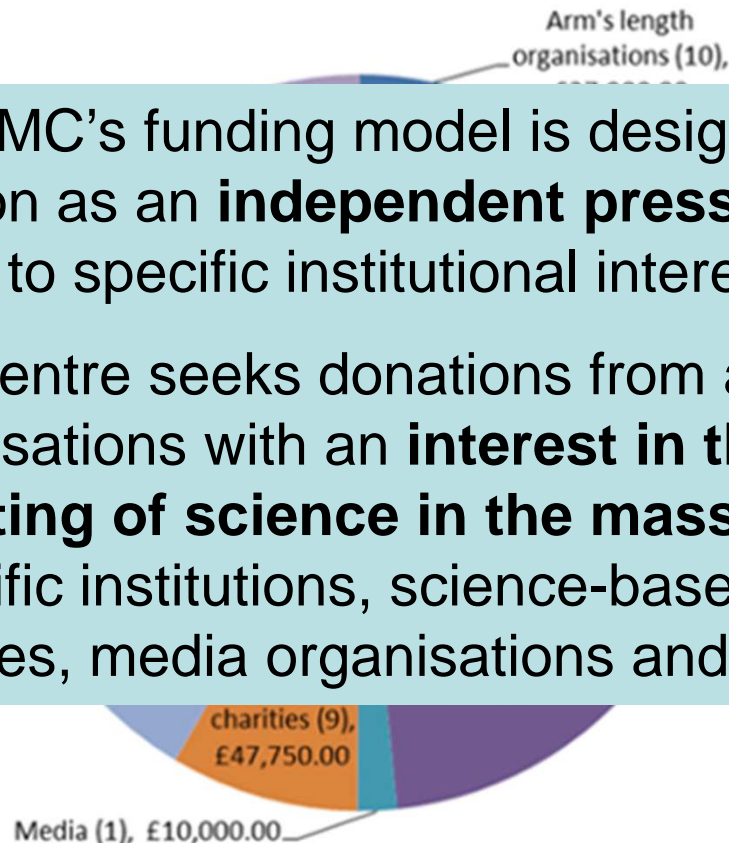


Funding

- 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.



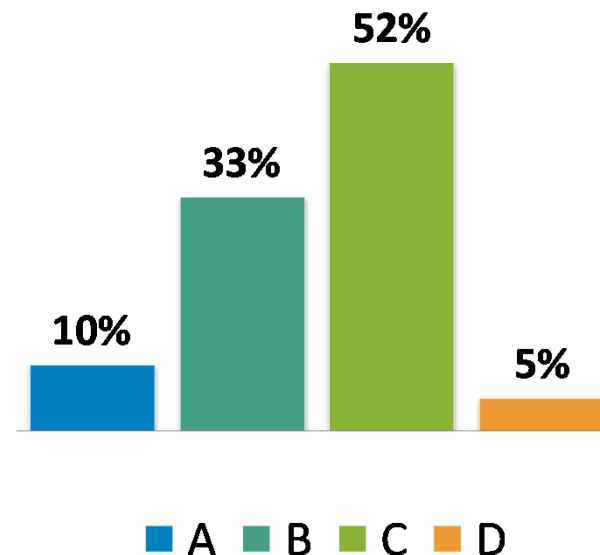
How much funding is required?



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?

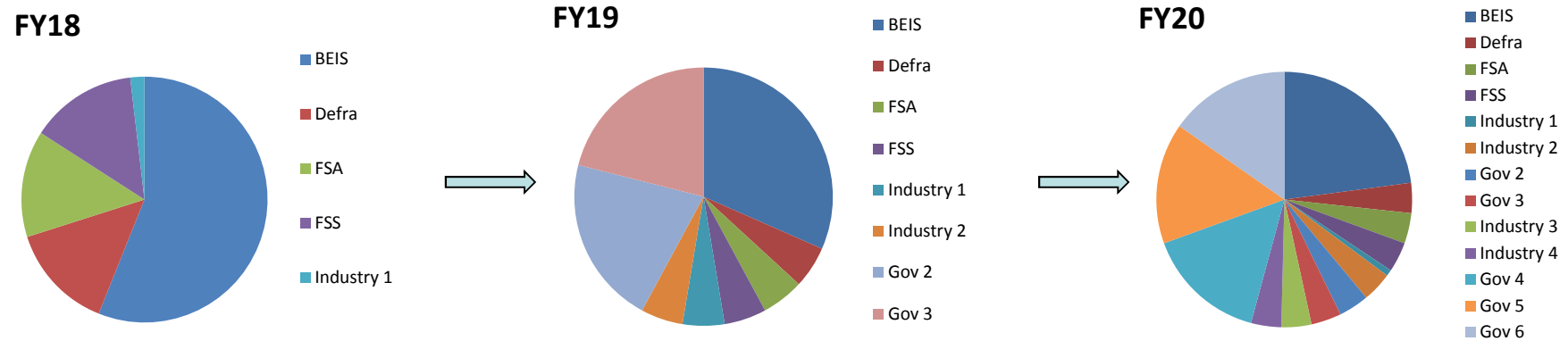
- A. Under £100k
- B. Under £500k
- C. Under £1m
- D. Under £2m



Growth Plans



- £30K - maintain a basic Network



- Annual caps (based on SMC model) for industry at £10k

Why should the Network be supported?



Why should governments support the Network?

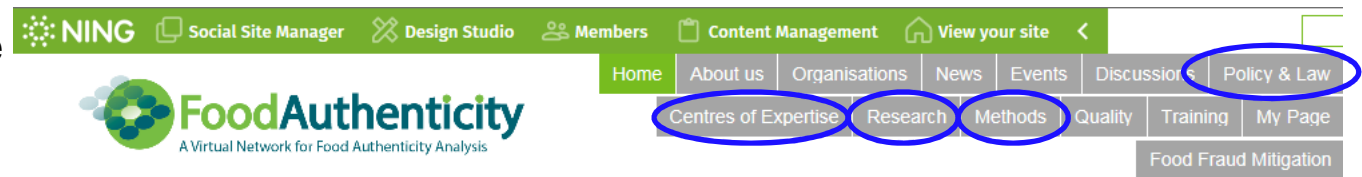
- UK/EU model can be easily adapted to include other regions
 - no need for each country to develop their own Network
 - Contributes to a global Network by working together as FF is global
- Ensure continued operation of a free open access resource for all - level playing field – less disputes
- Help 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:

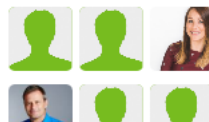
- a. Policy & Law
- b. Centres of Expertise
- c. Research reports
- d. Methods



- What will cost?
 - UK/EU content
 - ~£20k

Welcome to the Food Authenticity Network

New Members



Food Authenticity Network

The Food Authenticity Network is a UK government initiative to help bring together those involved in food authenticity testing.

The network, recommended by the Elliot review "Integrity and Assurance of Food Supply Networks", aims to raise awareness

New to
FoodAuthenticity?
Check out **who can join**
and our **terms of use**
and then
Sign Up Here

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 - Join & Contribute
- www.twitter.com/fauthenticity - Follow us
- Support - Selvarani.Elahi@lgcgroup.com

Acknowledgements

- **Funders**
 - UK Agriculture Dept.
 - UK Food Standards Agency
 - UK Food Standards Scotland
 - UK Business Dept.
- **Colleagues**
 - Mark Woolfe
 - Steve Ellison
 - Felicia Golden
 - Management Committee
- **The Elliott Review Team**

