



European Research Initiatives on Food Authenticity

Paul Brereton

Food and Environment Research
Agency





To be discussed

- EU drivers for research on food authenticity
- Examples of European projects
- FoodIntegrity
- Future initiatives

Why does food fraud occur?



- **Price differential**
 - If there are two similar products with a significant price differential and no easy way to differentiate between them then fraud is likely to occur
 - The EU has world class food system that provides added value to consumers and is under threat from counterfeiting with inferior products
- **Motivation**
 - Criminals who want to cash in on the added value of products produced by the EU Agri-food economy
- **Likelihood of detection**
 - Need methods and systems that can protect that added value and deter food fraud
- **Reward/penalty**
 - Not severe enough?



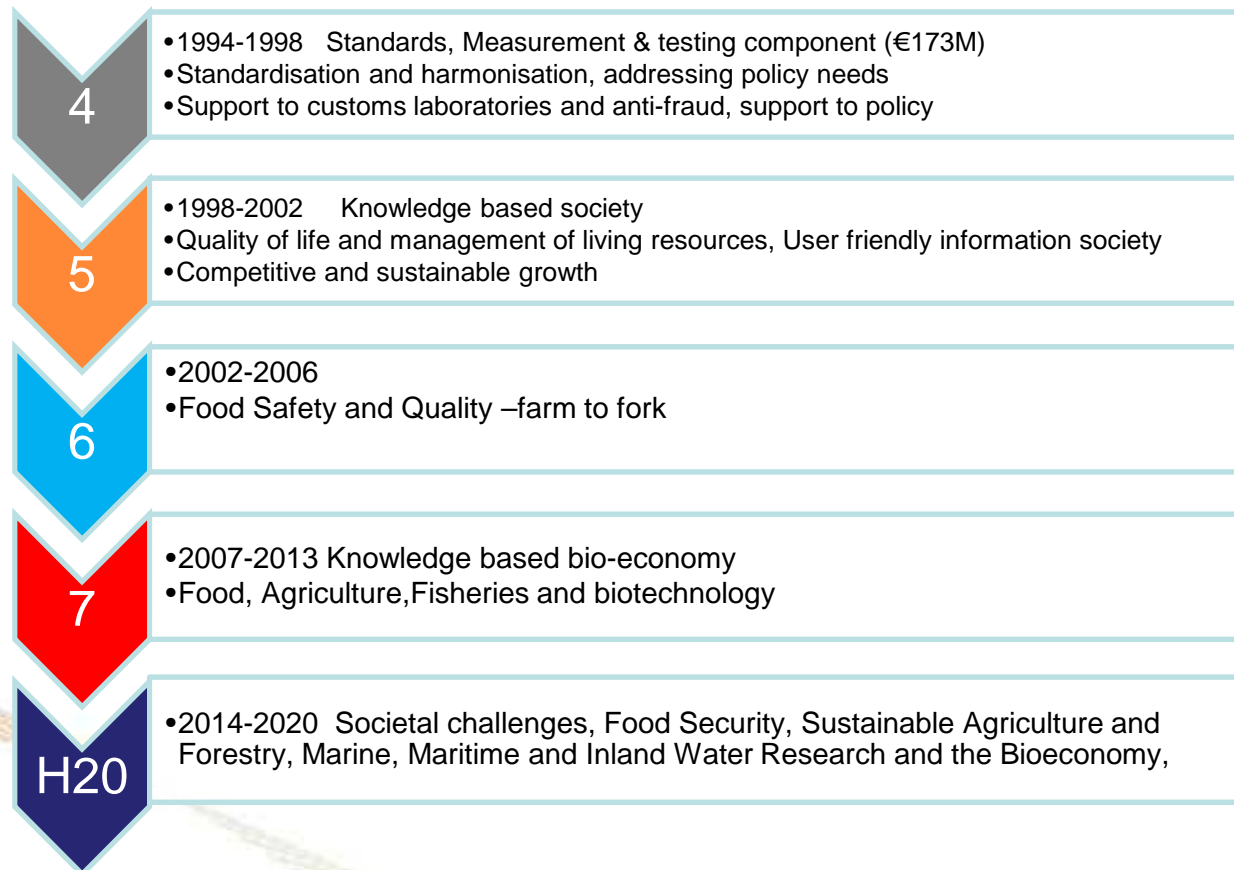
EU Common Agricultural Policy

- “Launched in 1962 the Common Agricultural Policy (CAP) is a partnership between agriculture and society, between Europe and its farmers. Its main aims are:
 - To improve agricultural productivity, so that consumers
 - have a stable supply of affordable food.
 - To ensure that EU farmers can make a reasonable living.”



http://ec.europa.eu/agriculture/cap-overview/2012_en.pdf

European Framework Programmes

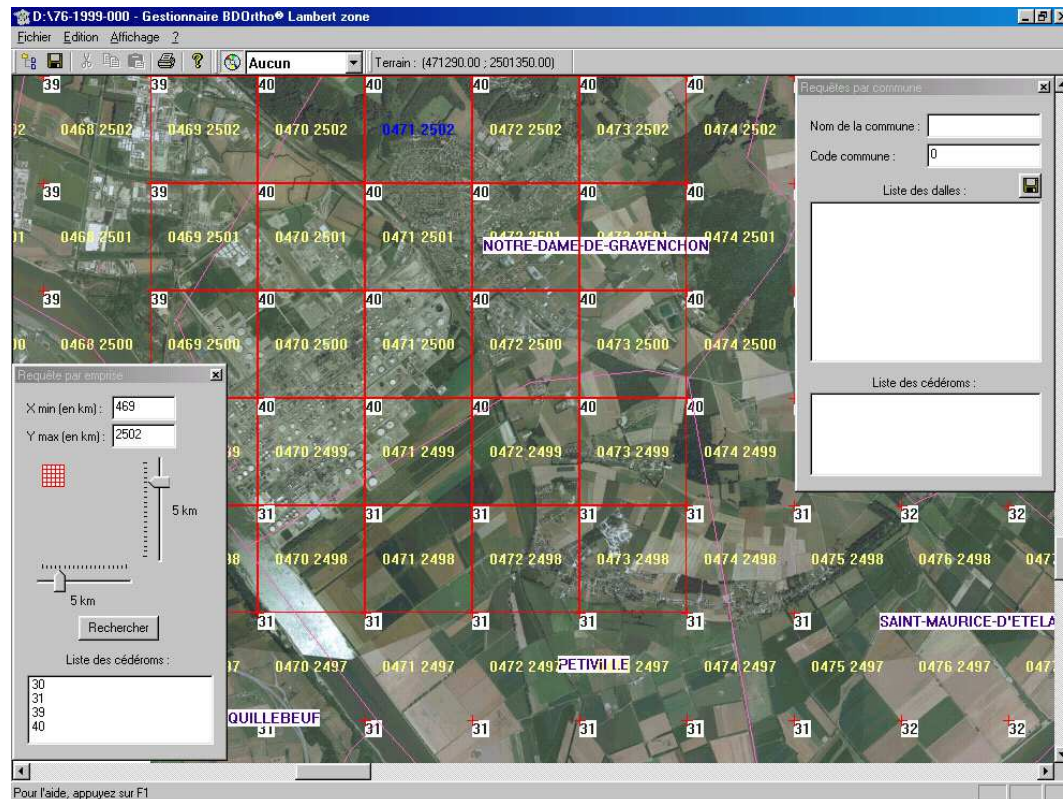




Satellite technology

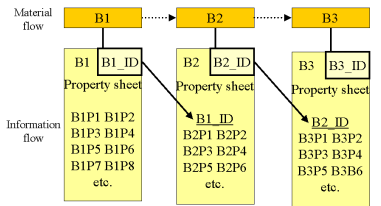


IST - 5th PCRD
Cross Programme Themes
CPA-3 Geographical
Information
Project IST-2001-34281
1st Position – 2001 IST
competition

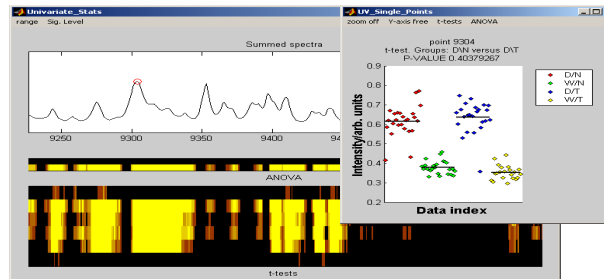


<http://www.geotraceagri.net/en/tools/geomatic.php>

TRACE Overview



Property sheets (manual or electronic) are keyed to globally unique batch (trade unit) ID which in turn reference previous property sheets through their unique ID. The reference link can be passive (only used in exceptional circumstances, i.e. recall) or it can be active and involve a request-response scheme where B2 can ask B1 for more information about a certain B1_ID, and get a (standardized, electronic) reply.



Traceability systems

Analytical tools

Consumer studies

(www.trace.eu.org)



Demonstration activities



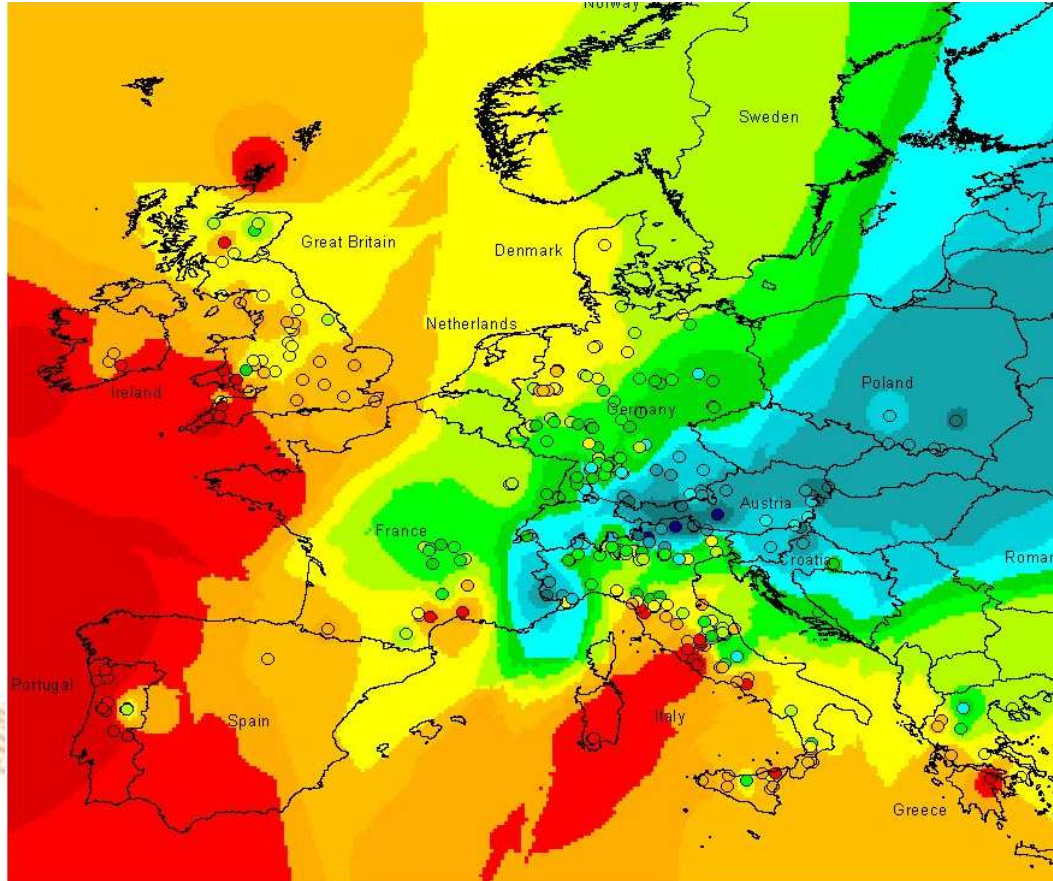
Training



Dissemination



$\delta^{18}\text{O}$ in water isoscape*



*Dr. S. Voerkelius, Hydroisotop GmbH

$\delta^2\text{H}$, $\delta^{18}\text{O}$ related to
climate



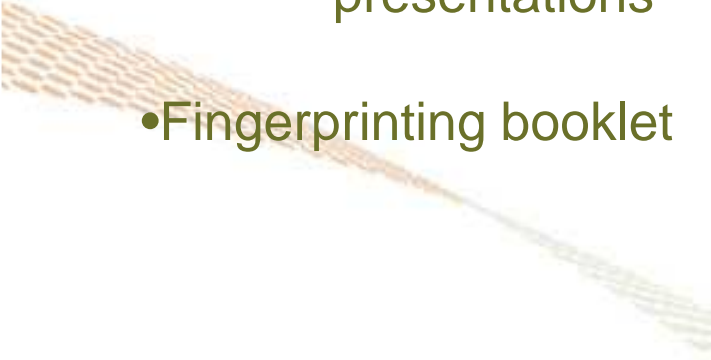
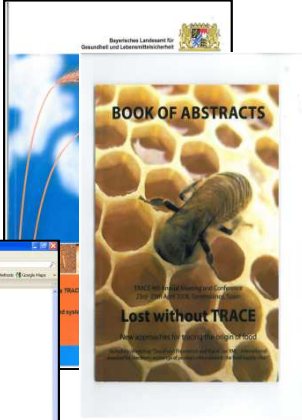
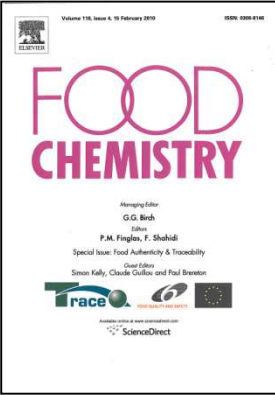
Van der Veer, G., Voerkelius, S., Lorentz, G., Heiss, G., J.A. Hoogewerff, J.A., 2009. Spatial interpolation of the deuterium and oxygen-18 composition of global precipitation using temperature as ancillary variable. *Journal of Geochemical Exploration*, 101 (2) 174-184.

Publications (www.trace.eu.org)



- 70 peer reviewed papers
- Special TRACE edition of Food Chemistry
- 12 Newletters
- 2 DVD/videos
- > 200 TRACE presentations
- Fingerprinting booklet

Food Chemistry Special Edition - Volume 118, Issue 4 – 15 February 2010



- Examples of previous EU projects

A promotional banner for an interactive conference. The background is orange. On the left, there is a white fork with a green question mark above it, and the text 'what's for lunch?' in white. In the center, the main title 'Interactive conference on a decade of EU-funded research into food integrity' is written in a bold, yellow, sans-serif font. Below the title, the date and location 'Brussels 20 September 2011 Charlemagne Building' are listed in a smaller, white, sans-serif font. On the right side, there is a small YouTube logo.

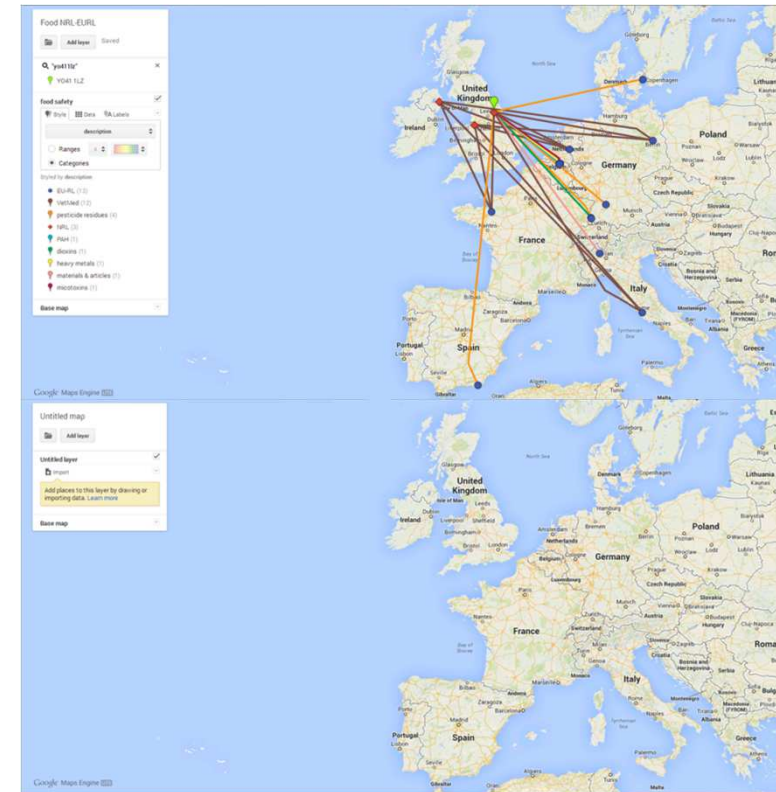
About FoodIntegrity

- 12M€ (9M€ EU FP7)
- 5 years
- 38 participants
 - 18 European
 - 1 China
- Food industry, regulators consumers & academia
- Wider network of associated partners



Rationale for FoodIntegrity

- Support needed for food authenticity research in Europe
 - New, harmonised methods and reference materials
 - For enforcement (robust)
 - For industry (screening)
 - To consolidate expertise
 - Databases and data sharing
 - Impact on industry and consumer
 - To better anticipate food fraud
 - To guide future research



Top: EURL/UKNRL structure for food safety
 Bottom: EURL/UKNRL structure for food authenticity

Consumer expectations



- Expect safety quality and authenticity to be assured
- Accurate labelling “It does what it says on the can”
- The Food Information for Consumers Regulation –embraces this sentiment
- ***They expect food integrity to be assured***



FOODINTEGRITY aims



- To provide Europe with a state of the art and **integrated** capability for detecting fraud and **assuring** the integrity of the food chain.
- To provide a **sustainable** body of expertise that can inform high level stakeholder platforms on food fraud / authenticity issues and priorities.
- To act as a **bridge** that will link previous research activities, assess capability gaps, commission research and inform Horizon 2020 research needs.



FoodIntegrity: key activities





FoodIntegrity-key impacts

- *Protect industry added value and increase consumer confidence*
 - Consolidate and co-ordinate expertise
 - Establish information sharing between stakeholder groups
 - Establish processes for harmonising and exploiting existing databases;
 - Fit for purpose methodology and QA
 - Food-fraud early warning system
 - Expert food authenticity platforms
 - Better understand impact of food fraud



How to get involved

Organisations wishing to take part in the wider FOODINTEGRITY network			

- Join the network for more information
- Become an associated partner
- Go to website for more information
www.foodintegrity.eu
- Contact us at:
Foodintegrity@fera.gsi.gov.uk

Authentication of food products

- (A) Authentication of olive oil - 2014
- (B) Authentication of food products - 2015





THANK YOU

Contact
FoodIntegrity@fera.gsi.gov.uk

