

The role of the JRC and Community reference laboratories to support EU food and feed safety policy



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<http://www.irmm.jrc.be>

<http://ec.europa.eu/dgs/jrc/index.cfm>

Background

Food crises and scares

BSE

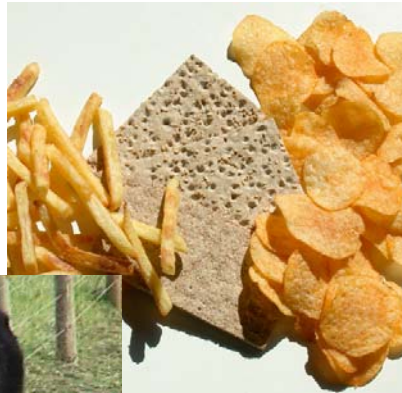
Dioxins

Nitrofurantoin

BADGE

Acrylamide

.....



- **White Paper on Food Safety (COM/99/719):** assuring the highest standards of food safety is a key priority for the Commission; identifies the need to establish a Community-wide framework for official controls
- **Regulation EC/178/2002 (general food law):** to protect public health and consumers' interests in relation to food, while promoting free movement of food within the EU
- **Regulation EC/882/2004 (official feed and food control):** sets out the approach that competent authorities of Member States must adopt for official controls

EU food and feed legislation

To protect the well-being of consumers, to allow them to make informed choices and to ensure free movement of goods

Safety aspects

- To limit amount of hazardous substances in food supply chain
- To ensure that legal limits are implemented and respected

Quality aspects

- To ensure compliance with label declaration (content of valued ingredients, origin, manufacturing process)



EU legislation requiring chemical measurements in foodstuffs

- Food labelling (nutritional properties, allergens)
- Common Agricultural Policy (intervention)
- GM food and feed labelling
- Residues of veterinary medicinal products (growth promoters, antibiotics, etc)
- Food contact materials
- Pesticide and veterinary drug residues (EU-wide monitoring programmes)
- Food contaminants and residues (mycotoxins, heavy metals, PAHs, PCBs, dioxins, etc)



Measurements and legislation

- millions of measurements are performed every year to implement European legislation
- important decisions are taken based on those measurements
- need for harmonized implementation of policies in EU27+

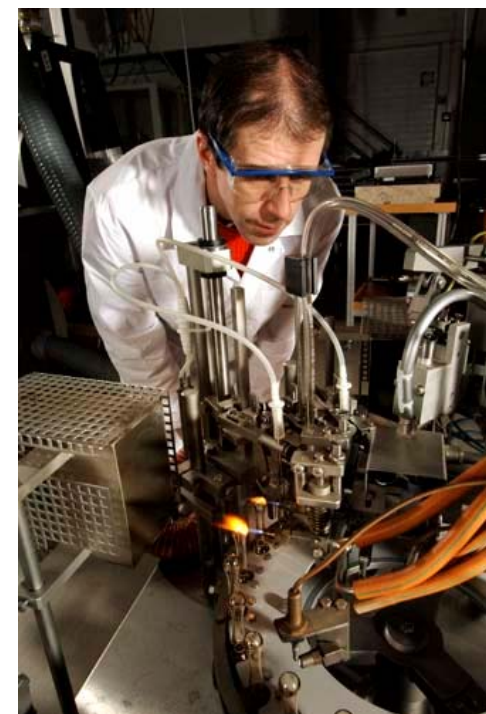


The role of JRC Institute for Reference Materials and Measurements

The mission of the IRMM is to promote a common and reliable European measurement system in support of EU policies

IRMM - CONFIDENCE IN MEASUREMENTS®

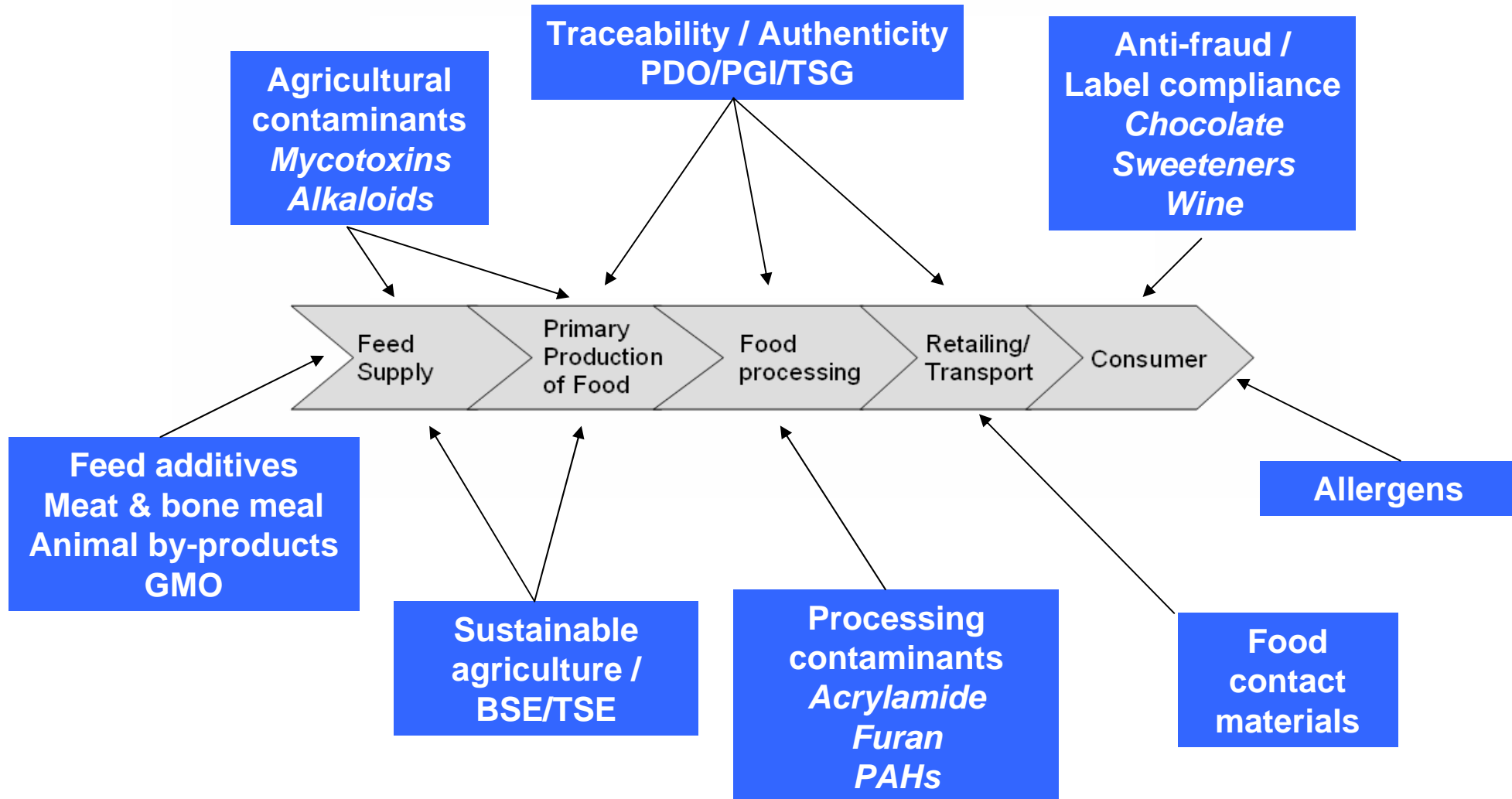
complementary to national activities:
providing quality assurance tools for all



The JRC Food Cluster

- **Institute for Reference Materials and Measurements (IRMM)**
Safety and quality of food and feed
Certified reference materials
Community reference laboratories for feed additives, heavy metals, mycotoxins, PAHs
- **Institute for Health and Consumer Protection (IHCP)**
BEVABS
Community reference laboratories for GMO, food contact materials
- **Institute for Prospective technological studies (IPTS)**
Prospective studies

JRC support to food and feed safety policy



Mycotoxins

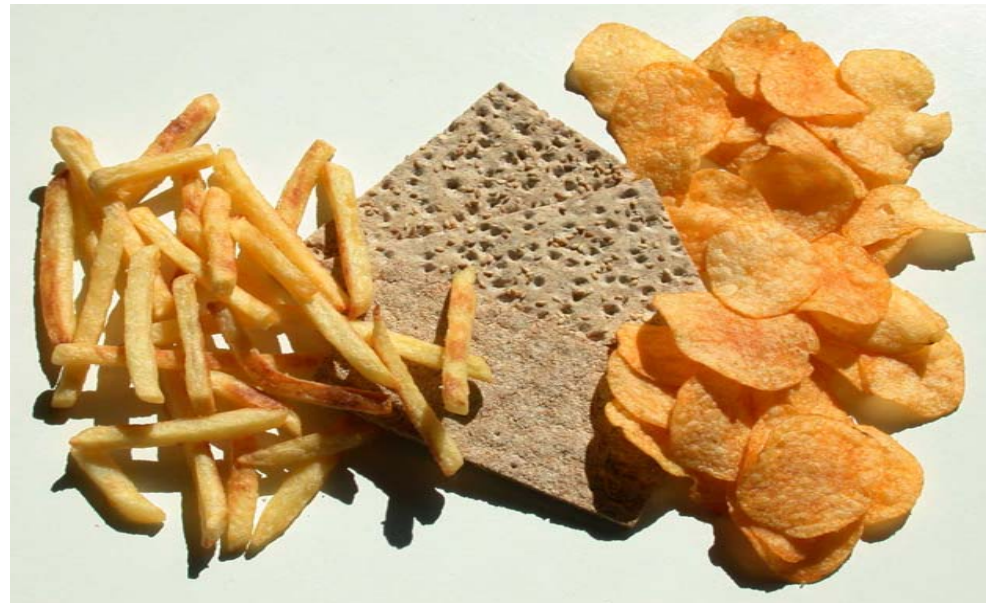
Optimisation, validation and support to standardisation of methods of analysis for:

- Aflatoxins
- Patulin
- DON
- Fumonisin
- T-2 and HT-2
- Zearalenone



Processing contaminants

- **Acrylamide**
- **Furan**
- **Phthalates**
- **Semicarbazide**
 - Method validation
 - Proficiency testing
 - Databanking
 - Food processing



Food contact materials

- Determine safety and suitability of consumer goods (food packaging materials, children toys, etc) for human use
- Development and harmonisation of experimental approaches to produce reliable data for risk assessment, as well as the monitoring of target contaminants at European level
 - packaging material,
 - the food matrix after migration, or
 - simple liquid medium used as food simulant

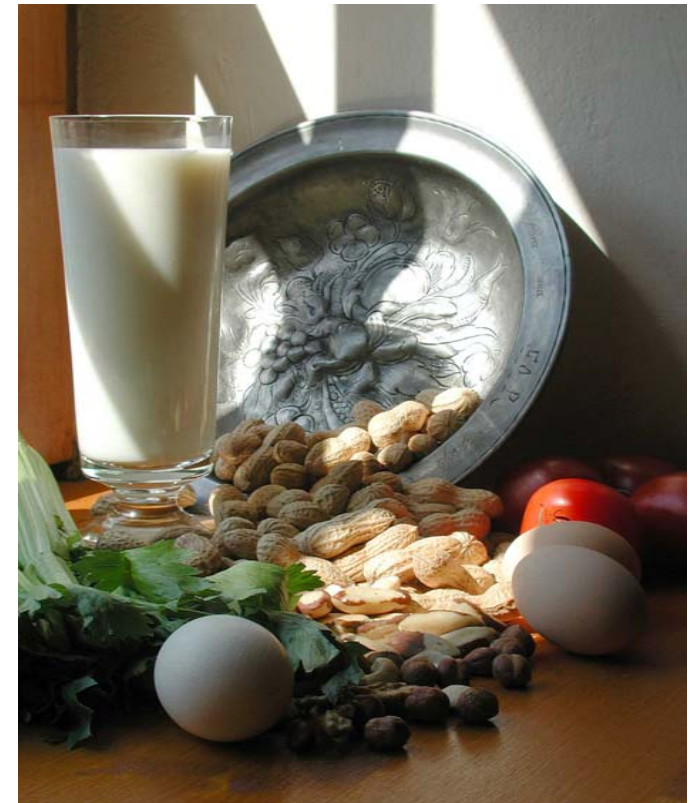


Food Allergens

- Labelling requirements for allergenic food (Directive 2003/89/EC)

Cereals	Nuts
Fish	Celery
Crustaceans	Mustard
Egg	Sesame seed
Peanut	Shellfish
Soy	Sulphites
Milk	Lupin

- Assessment of analytical approaches
 - Immunology, proteomics, genomics
- Investigate the influence of processing
- Provide test and reference materials



Sustainable agriculture

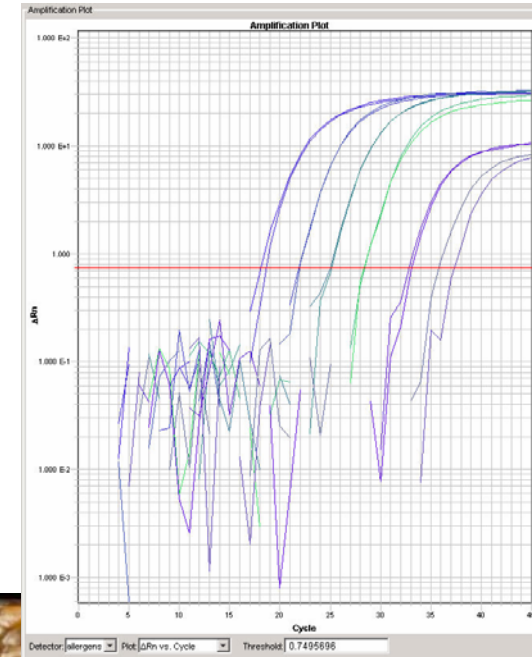
Discrimination organically / conventionally produced food

- Four crops, several growing seasons, comparable growing conditions (soil, climate, precipitation)
- Multivariate analysis: gross composition, secondary metabolites, $^{14}\text{N}/^{15}\text{N}$ ratio, radionuclides, gene expression, protein profile



Genetically modified organisms

- **Community Reference Laboratory for GM Food and Feed**
 - evaluation of the data provided by the applicant for authorisation
 - validation of the method for detection and identification of the transformation event
 - distribution of appropriate control samples to the members of the European Network of GMO laboratories (ENGL)
- **Development of certified reference materials for GM food and feed**



BSE/TSE tests

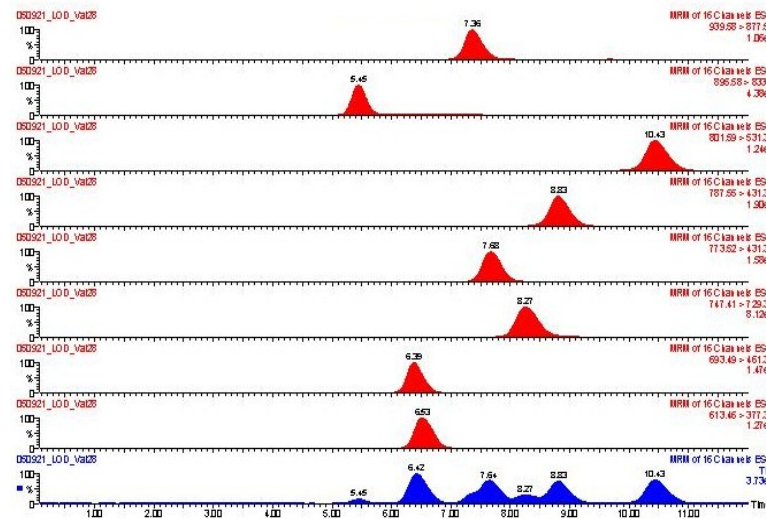
- **1999 - 2005: evaluation of 20 rapid *post mortem* tests for BSE and 10 for “Scrapies” (a total of 60.000 test samples prepared)**
- **3 evaluation rounds (2001, 2003, 2005)**
- **12 BSE tests approved for testing in EU**

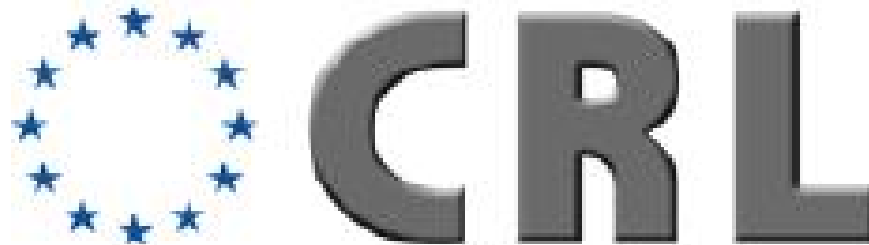


Feed safety



- CRL Feed Additives Authorisation
- Differentiation of animal by-products
- Detection systems for meat-and-bone meal
- Detection of banned substances in feed





- **Mandated by Regulation (EC) No 882/2004**
- **Amended by Regulation (EC) No 776/2006**

Community reference laboratories

- Community reference laboratories should contribute to a **high quality and uniformity of test results**, in areas where a need for precise analytical results exists (**regulatory limits**)
 - providing national reference laboratories with details of **analytical methods**, including reference methods;
 - coordinating application by the national reference laboratories of the methods, in particular by **organising comparative testing** and by ensuring an appropriate follow-up of such comparative testing in accordance with internationally accepted protocols
 - ⇒ **Structuring role**
 - ⇒ **Dissemination of traceability**

Legal frames

- (1) the support to the *authorisation* of products used in human and animal nutrition and**
- (2) the support to the efficient *control* of the compliance of food and feed with European legislation carried out by Member States' official control laboratories**

Note: The actual control aspect is the duty of national reference laboratories and competent authorities in the Member States – not the CRL.

Forty two CRLs in EU

**29 CRLs for feed
and food**



**13 CRLs for animal
health and live animals**

<i>Milk and milk products</i> AFSSA, FR	<i>Marine biotoxins</i> AESA, SP	<i>Dioxins and PCBs</i> CVUA-Freiburg
<i>Salmonella</i> RIVM, NL	<i>Bivalve molluscs</i> CEFAS, UK	<i>GMOs</i> JRC (Ispra)
<i>Campylobacter</i> SVA, SW	<i>Parasites</i> ISS, IT	<i>Food contact materials</i> JRC (Ispra)
<i>Listeria monocytogenes</i> AFFSA, FR	<i>Veterinary drug residues</i> RIVM, NL; AFSSA, FR; BVL, DE; ISS, IT	<i>PAHs</i> JRC (Geel)
<i>Coagulase+Staphylococci</i> AFSSA, FR	<i>Pesticides</i> DFVF,DK; CVUA-Freiburg, DE; LAGV, SP; CVUA- Stuttgart, DE	<i>Feed Additives</i> JRC (Geel)
<i>Escherichia coli</i> ISS, IT	<i>TSEs</i> VLA, UK	<i>Heavy metals</i> JRC (Geel)
<i>Antimicrobial resistance</i> DFVF, DK	<i>Animal proteins in feed</i> CRA-W, BE	<i>Mycotoxins</i> JRC (Geel)

CRL/NRL network

Reference System within the ERA

sharing experiences

CRL

sharing
intellectual
potential

combining
resources



sharing
technical
potential

Useful links and contacts

<http://ec.europa.eu/dgs/jrc/index.cfm>

<http://www.irmm.jrc.be>

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