

## **GMOs in Food, Metrology**

# **Networking, Enlargement and Capacity building towards harmonisation of GMO Detection and Interpretation of Results**

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- . **EU regulations**
- . **Community reference laboratory (CRL)**
  - **CRL GMFF**
  - **CRL GMO**
- . **Research activities**
- . **Networking**
- . **Training activities**

## Main EU and international legislations providing the mandate for the various **GMO** activities:

- Horizontal Directive 2001/18/EC (DG ENV) on **deliberate release** and **marketing** of genetically modified organisms (GMOs)
- The vertical Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on **genetically modified food and feed** (DG SANCO)
- Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the **traceability and labelling** of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC (DG SANCO and DG ENV)
- The Cartagena Protocol provides provisions for international exchange of information on **transboundary movements** (DG ENV)
- Regulation (EC) No 882/2004 on official **food and feed control**



- Labelling of GMOs and derived food and feed products at all stages when present above 0.9% (a strict regulation with a strong consumers' involvement)
- Traceability from the point of production or import down to the table and vice versa
- Post-market monitoring
- Extensive exchange of information on GMOs cultivated among MS and the EC and GMOs transported among MS and Third Countries (“Biosafety Clearing House”)



- European network of GMO laboratories: world wide reference for GMO testing
- Inaugurated in 2002 and by 2007 consisting of 27 MS (more than 100 control laboratories). Observers from Tunisia, Marocco, China, Malaysia
- Coordinated and chaired by the B&GMOs unit
- Its tasks:
  - Providing assistance with the method validations as mentioned in Regulation (EC) No 1829/2003
  - Scientific and technical discussions, aimed at harmonisation of procedures, sharing expertises, rapid exchange of data within its members. Topics discussed cover sampling, reference materials, unapproved GMOs
- Links with ISO – CEN – Codex Alimentarius
- Initiated EU-FP6 project “Co-Extra”
- Organisation of First global conference on GMO analysis in 2008

## Mandate of the CRL-GMFF, as part of the GM-FF authorisation process

- **Under Regulation (EC) No 1829/2003, the Commission, the European parliament and member states nominated the JRC as the Community Reference Laboratory (CRL) for GM food and feed**
- **The CRL-GMFF became operational in 2004**

## . Core task: Validation of GMO detection methods

- Operations are carried out aligned with the European Food Safety Authority
- It has a main role in (dis)approval of methods that are “fit for the purpose of regulatory compliance”
- Up to 2006: more than 20 methods of GMO detection validated. In 2007: more than 30 methods validated. More than 50 dossiers are in the pipeline (most dossiers are on crop plants; two dossiers on carnation; one dossier on yeast strain used in milk fermentation)
- It is ISO 9001 certified and ISO 17025 accredited

- **Provision of control samples**

  - To provide laboratories with appropriate tools to carry out necessary controls

- **Provision of guidance documents** on sampling and testing, method acceptance criteria, method performance criteria

- **Role in dispute settlements**

  - To provide guidance in case MS contest the outcome of test results

- **Role in emergency situations**

  - When unauthorised GMOs occur on the market

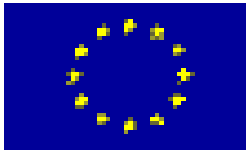
**Under Regulation (EC) No 882 / 2004, the CRL-GMFF has received a second Mandate, namely to coordinate national control**

## **Tasks**

- . Provision of analytical methods to NRLs
- . Organisation of proficiency tests
- . Conducting training courses for NRLs and experts outside EU
- . Provision of scientific and technical assistance to the EC
- . Establishing collaboration with laboratories in third countries

- **GMO detection methods:** development, optimisation, validation
  - DNA based / protein based methods
  - High throughput methods
- **Studies on stability of the insert:** Arabidopsis, maize Mon810 commercial varieties
- **Participation and leading role in EU projects:**
  - Co-Extra
  - Sigma
- **Sampling strategies, statistical tools :** KESTE, AMPE





## Joint JRC-WHO Training Courses “The Analysis of Food Samples for the Presence of Genetically Modified Organisms”

- . Training activities each year “Training the trainers”  
either in the JRC, in Accession Countries, and outside the EU
- . Training for journalists and *ad hoc* training, e.g. for Romania
- . Contribution to training activities (Co-extra, ILSI)
- . A training manual, available on-line, in several languages translated  
(English, Italian, French, Chinese, Russian, Romanian)
- . Interactive DVD “Detecting GMOs”
- . CD containing all information on-going in Europe on  
GMO detection



## Global

- Training course on GMO detection: theoretical and practical courses in 2009;
- Initiation of discussions towards the development of a Sino-European database of GMO methods and sequences (will be further developed as part of action plan 2009)
- In June 2008, the first Global conference on GMOs was organised. This event, and especially the workshop that followed, has led to several expressions of interest for developing a Global Network of control laboratories. Such endeavour will be evaluated starting in 2009 (towards globalisation of ENGL).



 **JRC**  
EUROPEAN COMMISSION



**1st Global Conference**  
on  
**GMO Analysis**

Villa Erba, Como, Italy  
24-27 June 2008

- Enlargement Workshop (for new MS, Candidate Countries, Potential Candidate Countries and Territories, Countries included in the European Neighbourhood Policy, and Others e.g. Turkish Cypriot Community and Russia) (~February/March 2009)
- Organisation of Regional Meetings (Asia, Middle East, Africa, Central & South America) with the support of DG SANCO; preparation of regional networks

- **International Centre for Genetic Engineering and Biotechnology (ICGEB)**  
Dedicated to advanced research and training in molecular biology and biotechnology. ICGEB yearly organise practical and theoretical training courses in biosafety issues and communication in GMO biosafety research.
- **United Nation Environment Programme (UNEP) Global Environment Facility (GEF).**  
Carries on a 'Strategy on Biosafety' adopted in the year 2000 to assist countries preparing for the Biosafety Protocol through the establishment of National Biosafety Frameworks (NBFs).
- **Food and Agriculture Organization of the United Nations (FAO)**  
Committed to the enhancement of food safety and quality along the food chain at international, regional and national levels via National biotech policy development, national capacity building etc.



**Thank you for your attention.**