

The LLP Regulation (EU) No 619/2011

(LLP: Low Level Presence)



Damien Plan

White River, South Africa, 8 February 2012

JRC Institute for Health and Consumer Protection (IHCP)

European Commission

- ***Background for adoption of the LLP Regulation***
- **Key provisions of the LLP Regulation**
- **Implementation of the LLP Regulation**

- **EU animal feed sector highly dependent on imported commodities**
- Every year approx. 33 Mio T of soyameal equivalents and 4 Mio T of maize, **imported mainly from Brazil, Argentina and USA, where GMO cultivation is widespread**
- **Asynchronous GMO approvals** (approvals granted outside the EU, still pending in the EU) mean **risk of traces or Low Level Presence of unapproved GMOs in EU imports**

- **EU mandatory GMO approval policy: unapproved GMOs should not be present on the EU market, but no harmonised EU rules on how to control/implement this so:**
 - Official control laboratories in the different EU Member States apply **different methods** of sampling and different rules for interpretation of results.
 - This may lead to **different conclusions** regarding compliance of imported commodities with GM FF reg. (EC) No 1829/2003 (GMO approval mandatory).
 - Operators are faced with **economic risks and legal uncertainty**, also possible shortages in feed supply.

Consequently, the European Commission (DG SANCO, supported by DG JRC) prepared a proposal for a new piece of EU legislation addressing this issue.

On 24 June 2011 Regulation (EU) No 619/2011 was adopted “laying down the methods of sampling and analysis for the official control of feed as regards presence of genetically modified material for which an authorisation procedure is pending or the authorisation of which has expired”

The so-called Low Level Presence (LLP) Regulation

25.6.2011	EN	Official Journal of the European Union	L 166/9
COMMISSION REGULATION (EU) No 619/2011 of 24 June 2011 laying down the methods of sampling and analysis for the official control of feed as regards presence of genetically modified material for which an authorisation procedure is pending or the authorisation of which has expired (Text with EEA relevance)			
THE EUROPEAN COMMISSION,			Parties, Parties to the Protocol have to inform the other Parties through the Biosafety Clearing House (BCH) on any final decision regarding domestic use, including placing on the market, of a GMO that may be subject to transboundary movement for direct use as food or feed or for processing. This information shall contain, inter alia, a risk assessment report. Countries which are not Parties to the Protocol may also provide such information on a voluntary basis. International information exchange mechanisms regarding the authorisation of GMOs and their safety assessments are also provided by FAO and OECD.
Having regard to the Treaty on the Functioning of the European Union,			
Having regard to Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules ⁽¹⁾ , and in particular Article 11(4) thereof,			
Whereas:			
(1) Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed ⁽²⁾ does not provide for special rules for the control of material which contains, consists of or is produced from GMOs (GM material) for which an EU authorisation procedure is pending or GM material the authorisation of which has expired. Experience has shown that in the absence of such rules, the official laboratories and the competent authorities apply different methods of sampling and different rules for the interpretation of the results of the analytical tests. This may lead to different conclusions as regards the compliance of a product with Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed ⁽³⁾ . As a result of the lack of harmonised rules, economic operators are faced with legal uncertainty and there is a risk that the functioning of the internal market will be affected.		(3) The EU imports significant quantities of commodities produced in third countries where GMO cultivation is widespread. While these imported commodities are used both in the production of food and feed, the majority of the commodities likely to contain GMOs are destined for the feed sector thereby entailing a higher risk of trade disruption for that sector in cases where Member States apply different rules for official controls. It appears therefore appropriate to limit the scope of this Regulation to the feed sector which, in comparison with other sectors related to the production of foodstuffs, has a higher likelihood for GM presence.	
(2) Different international information exchange mechanisms providing information on the safety assessments performed by countries authorizing the commercialisation of GMOs are in place. In accordance with the Cartagena Protocol on Biosafety to the Convention on Biological Diversity of which all Member States are		(4) Regulation (EC) No 1829/2003 provides that the placing on the market of genetically modified feed is subject to an authorisation procedure. The authorisation procedure includes the publication of an EFSA opinion of which the main component is a safety assessment. In giving its opinion, EFSA consults Member States upon receipt of a valid application and Member States have 3 months to make their opinions known. The opinion of EFSA has also to include a method for detection validated by the European Union Reference Laboratory (EU-RL).	
(3) Of L 165, 10.2.2004, p. 1. (2) Of L 54, 26.2.2009, p. 1. (3) Of L 268, 18.10.2003, p. 1.		(5) In practice, the validation by the European Union Reference Laboratory (EU-RL) is carried out independently of the other elements provided for in the authorisation procedure. Generally the method is validated and published before all of the other elements are fulfilled for completing the EFSA opinion. These methods are published on the website of the EU-RL and are available to the competent authorities as well as to any interested parties.	

- **Background for adoption of the LLP Regulation**
- ***Key provisions of the LLP Regulation***
- **Implementation of the LLP Regulation**

The key element of the new LLP regulation is setting out a technical zero at the level of 0.1%

This level of 0.1% related to mass fraction of GM material in feed is referred as to **the “Minimum Required Performance Limit” (MRPL)** in the LLP Regulation.

0.1% is the lowest level of GM material considered by the EU-RL for validation of quantitative methods and the lowest level where results are satisfactorily reproducible between official laboratories.

Scope – see article 2 (conditions to ‘benefit’ from LLP regulation)

- **Authorised for commercialisation in a third country**
- **Application for GMFF approval pending in the EU for at least 3 months** (and not identified by EFSA as susceptible to have adverse effects)
- **Quantitative detection method validated and published by the EURL GMFF**
- **Certified Reference Material available** (incl. information on the zygosity of the inserts and certified value of the GMO content given in mass fraction – see article 3)

Interpretation of results – see Annex II – harmonisation to ensure that in the EU the same conclusion is drawn from the same analytical results

- Outcome of analysis to be reported as $x \pm U$ where x is the analytical result and U the expanded measurement uncertainty
- U shall be specified by the official laboratory as described in the guidance document on Measurement Uncertainty for GMO testing developed by the JRC

Non compliance: a feed material shall be non-compliant when GM material is present at levels equal or above the MRPL i.e. if the level of 0.1%, taking into account the margin for error (uncertainty), is exceeded.

Definitions – see article 1:

- **Precision – Relative Repeatability Standard Deviation (RSDr):**
the relative standard deviation of test results obtained under repeatability conditions (**in practice $\leq 25\%$** because of existing EU Minimum Performance Requirements)
- **Minimum Required Performance Limit (MRPL):**
the lowest amount of analyte in a sample that has to be reliably detected by official laboratories (**in practice set at 0.1%** by the new LLP regulation)

Sampling – see Annexes I and II: harmonisation of official feed controls is also ensured through common methods of sampling.

- **Annex I: Methods of sampling (minimal size of samples)**
- **Annex II: Criteria for sample preparation (reference to ISO standards for sample homogenisation)**

- **Background for adoption of the LLP Regulation**
- **Key provisions of the LLP Regulation**
- ***Implementation of the LLP Regulation***

Further to the adoption of the LLP Regulation, the EURL GMFF, in consultation with the ENGL, developed a technical guidance document on the implementation of Regulation (EU) No 619/2011

This guidance document is available since September 2011 on the EURL website at <http://gmo-crl.jrc.ec.europa.eu/>

3 key topics addressed:

- Precision – RSDr**
- Measurement Uncertainty**
- Unit of measurement**

1. The EURL GMFF accepts only methods when the applicant shows that the RSDr at the level of 0.1 % (related to mass fraction of GM material) is $\leq 25\%$ (see EU minimum performance requirements).
2. The EURL GMFF will determine in-house the RSDr at the level of 0.1 % by running 15 replicates.
3. Following the validation ring-trial, the EURL GMFF will calculate again the RSDr (this time according to ISO standard 5725).

In order to meet the requirements of the LLP regulation (and to be accepted in the scope of LLP), all RSDr values mentioned above will have to be below 25%.

The Measurement Uncertainty should be determined by each official laboratory

The expanded measurement uncertainty U can be obtained by multiplying the standard uncertainty $u(x)$ by a coverage factor k

$$U = k \times u(x)$$

The coverage factor k is a function of the number of replicates and can be approximated to 2 when the number of replicates is at least 10 (the EURL will apply 15).

The standard uncertainty $u(x)$ corresponds to the relative standard deviation of test results obtained by the laboratory under repeatability conditions (RSDr).

Measurement results calibrated with a calibrant of a known mass fraction (e.g. a CRM), lead to measurement results expressed in mass fraction (likewise with a calibrant of a known copy number ratio and results in copy number ratios).

See Annex II: when results are expressed in DNA copy numbers they should be translated into mass fraction

Conversion between mass fraction and copy numbers is possible but includes an uncertainty. Proposed conversions:

For crops hemizygous for the GM insert (eg hybrid maize)

GM% in DNA copy = 0.5 GM% in mass

For crops homozygous for the GM insert (eg soya)

GM% in DNA copy = GM% in mass

To ensure a level of confidence of approximately 95%, the outcome of the analysis shall be reported as $x \pm U$ whereby x is the analytical result and U is the expanded measurement uncertainty.

A feed shall be considered as non compliant with Regulation (EC) No 1829/2003 (ie not accepted on the EU market) **when the analytical result (x) minus the expanded measurement uncertainty (U) equals or exceeds the level of 0.1 %** related to mass fraction of GM material:

$$x - U \geq 0.1\% \text{ or } x \geq 0.1\% + U$$

Example if $k=2$ and $RSDr=25\%$ this would mean

$$x \geq 0.1\% + (2 \times 25\% \times 0.1\%) \text{ i.e. } x \geq 0.15\%$$

**By defining the technical zero
in realistic and operational terms,
the new EU LLP regulation aims to bring
a technical solution
to the issue of LLP of unapproved GMOs**

