



Challenges to Achieve a Coherent GMO Legislation

A team of European scientists evaluated the coherence of existing analytical methods for the quantitative and qualitative detection of genetically modified products in the context of the current European legislation. The study provides new insights to the prediction of genetically modified material quantities and proposes new terminology.

Over the past years, the EU has installed a stringent system to regulate the marketing and production of genetically modified organisms (GMO). The current EU legislation establishes a pre-authorization safety assessment by the European Food Safety Authority (EFSA) to ensure that only GMOs which are safe, for human and animal consumption and for release into the environment can be placed on the European market. GM products labelling is also required in order to allow farmers, other users, and consumers to choose whether or not to purchase such products. Furthermore, this normative approach ensures that each GMO can be traced at each stage of its use. To achieve this, several analytical methods for the quantitative and qualitative detection of genetically modified products have been developed since the first appearance of genetically modified organism (GMO) in the early 1990s. Yet, the regulatory requirements and legal detection methodologies differ among the EU member states because there is no international standard to harmonise such analytical methodology.

A recent European study, partially funded by the European Commission, and in collaboration with the EC Joint Research Centre, has evaluated and identified the problems associated with the lack of coherence between legal requirements and analytical methods used for the qualitative and quantitative detection of GMOs. They have analysed the existing analytical methodology in relation with the current GMO legislation requirements.

According to the authors, problems arise from different definitions of the units of measurements, the expression of GM quantities, the terminology used to describe the transformation event, and the definition of genetic modification. The authors also highlighted the inconsistent legal status of products derived from GMO, also known as botanical impurities. If a maize ingredient that is contaminated with 1% of a 100% GM soybean is mixed with a perfectly non-GM soybean ingredient, the mixed product may partially contain genetically modified soybean DNA exceeding a defined limit. Not taking into consideration these impurities in the establishment of the GM concentration of a product may lead to unreliable GMO determination. One possible solution to this problem, proposed by the authors, could be to require that botanical impurities are considered as part of the ingredients, although this is likely to have negative implications for stakeholders. Another solution would be to require impurity determination in the ingredients prior to mixing.

The authors argued that the decision of the EC to recommend the use of DNA ratios to express GMO quantity, was an important step towards coherence with the legal requirements, but to date, it has not been fully implemented within the European Union. The authors recommend the immediate implementation of this measure for the detection of GMOs, including the determination of seeds impurities, in order to improve coherence.

The current study points out the need for a more precise terminology and provides new recommendations to improve coherence between GMO detection methods and legal requirements.

Source: Arne Holst-Jensen, Marc De Loose, and Guy Van den Eede (2006) "Coherence between Legal Requirements and Approaches for Detection of Genetically Modified Organisms (GMOs) and Their Derived Products", *J. Agric. Food Chem* 54(8): 2799 – 2809

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