



**American University of Science and Technology**  
**Analytical Testing Laboratories**  
**(AUST – ATL)**  
**Faculty of Health Sciences**  
**Department of Laboratory Science and Technology**

**GMOs Testing Laboratory**

**January 11, 2018**

## 1. Brief History

<b>2008</b>	Establishment of the laboratory under the QUALEB Program
<b>2009</b>	Collaboration with the Lebanese Quarantine at the Ministry of Agriculture to test GMOs in feed samples
<b>2010</b>	Organization of a conference on “ Genetically Modified Organisms – Current State of Affairs”, under the patronage of the minister of agriculture H.E. Hussein El Hajj Hassan
<b>2011</b>	ISO 17025:2005 accreditation from the Hellenic Accreditation System (ESYD)
<b>2011</b>	Member of the Lebanese National Committee for Biotechnology and Bio-safety at the Lebanese Ministry of Agriculture (decree 612/1, 2010)
<b>2012</b>	Authorization by the Lebanese Ministry of Trade and Economy to conduct GMOs analysis
<b>2013</b>	Designation by the Lebanese Ministry of Environment as national experts for international workshops organized by the Secretariat of the Convention on Biological Diversity (CBD)
<b>2014</b>	Designation by the Lebanese Ministry of Environment as National Biosafety Experts
<b>2014</b>	Moderator on a MENA regional project in collaboration with the European Union Reference Laboratory for GM Food and Feed (EURL-GMFF)
<b>2015</b>	Designation as MENA regional coordinator for GMOs analysis
<b>2016</b>	Winners of the second prize of the Inter-Universities competition “Using New Technologies in Food Fraud Detection”, organized by the Lebanese Ministry of Economy and Trade
<b>2016</b>	Trainers on GMO Detection in Africa, in collaboration with the United Nations Environment Programme (UNEP) and Global Environment Facility (GEF)
<b>2016</b>	Collaboration with the Norwegian Center for Biosafety – GenØk in the framework of the BiodiverSEEDy project
<b>2016</b>	Organization of the symposium “Genetically Modified Foods in Lebanon”, under the patronage of the minister of industry H.E. Dr. Hussein Hajj Hassan
<b>2016</b>	Organization of the first comparative testing round for the MENA network of GMOs laboratories
<b>2017</b>	Moderator of online discussions on “Detection and Identification of LMOs”, organized by the convention for biological diversity (CBD), through the biosafety clearing house (BCH)
<b>2017</b>	Collaboration with the Lebanese quarantine at the Ministry of Agriculture and the Lebanese University- Faculty of Agronomic Sciences, to test GMOs in agricultural seeds
<b>2017</b>	Re-nomination by the MENANGL as coordinator for the second stage of the MENA regional project

## 2. Activities

### 2.1. Research Activities

The AUST GMOs Testing Laboratory conducts research projects that aim at monitoring the GMOs status, developing cost effective GMOs test methods as well as boosting the development of GMOs regulatory measures in the country. Kindly find below a list of our related publications:

#### *Articles in Peer-Reviewed Journals*

- Mallah, N., Obeid, M., Abou-Sleymane, G. Comprehensive matrices for regulatory approvals and genetic characterization of genetically modified organisms. *Food Control*. 2017; 80:52-58.
- Agapito-Tenfen, S.Z., Lopez, F.R., Mallah, N., Abou-Slemayne, G., Trtikova, M., Nodari, R.O. and Wickson, F. Transgene flow in Mexican maize revisited: Socio-biological analysis across two contrasting farmer communities and seed management systems". *Ecology and Evolution*. 2017;7:9461–9472.
- Sakr, J., Mallah, N., Chalak, L., Abou-Sleymane, G. First comprehensive GMOs testing in Lebanon: screening, identification and quantification of GM soybean imports. *Food Control*. 2014; 36:146-152.
- Mallah, N. and Abou-Sleymane, G. The Lebanese Public Awareness on Genetically Modified Organisms. Manuscript in preparation.
- Saad, P., Mallah, N., and Abou Sleymane, G. Detection of Genetically Modified Sequences in Food Products Commercialized in the Lebanese Market. 2017. Manuscript in Preparation.
- Said, J., Mallah, N., El-Sayegh F., and Abou Sleymane, G. Tracing of Genetically Modified Sequences in Infant Foods Commercialized in the Lebanese and Foreign Markets. 2017. Manuscript in Preparation.

#### *Articles in Non-Peer Reviewed Scientific Journals*

Viljoen, C.#, Agapito-Tenfen, S.#, Abou-Sleymane, G.# Overview of available detection methods, including validated methods. *Biosafety Clearing House*. 2014

[https://bch.cbd.int/onlineconferences/portal\\_detection/discussions.shtml#topic1](https://bch.cbd.int/onlineconferences/portal_detection/discussions.shtml#topic1)

# equally contributed to this report.

### **Books**

Abdul Kader, A.M.; Abou-Sleymane, G.; Khatib, F.; Sakr, J. and Baum, M. (2011). Laboratory Manual for the Training Course on Detection of Genetically Modified Organisms and Biosafety for Food and Agriculture. ICARDA, FAO publication, ix+151 pp.

AGROVOC descriptors: GMO detection, Biosafety, Biotechnology.

## **2.2. Testing Activities**

The AUST GMOs Testing Laboratory serves as a National Reference Laboratory. It provides testing services for private and public institutions. The laboratory intends to keep up-to-date in the field. In this line, we participate in related international workshops and training courses that are mainly organized by EURL-GMFF and the CBD. Kindly check the list of workshops in the annex (page 4).

## **2.3. Regional Training Center**

The AUST GMOs Testing Laboratory serves as a regional center for GMOs analysis. In this regard, it conducts the following activities:

- Organizing training courses for laboratories from the Middle East and North Africa (MENA) region on GMOs analysis according to ISO 17025 standards.
- Moderating a regional project in collaboration with the European Union Reference Laboratory (EU-RL GMFF) that aims at establishing a network of MENA laboratories specialized in GMOs testing. The first stage was successfully moderated as part of a comparative testing round. In 2018, AUST GMOs Testing Laboratory was re-nominated by EURL and the participants to moderate the second stage of the regional project.

### 3. Annex

**2009**

***Country Representative***

FAO project TCP/RAB/3202, Study tour “Strengthening Capacities towards the Establishment of a Regional Platform for the Detection of Genetically Modified Organisms”, European Commission Joint Research Centre, EU-RL GMFF, Italy, December 14 – 18, 2009.

**2010**

***Conference Organizer, Under the Patronage of the Lebanese Minister of Agriculture***

“Genetically Modified Organisms Current State of Affairs”, AUST, Lebanon, May 26, 2010.

**2010**

***Trainers & Country Representative***

FAO project TCP/RAB/3202, “Strengthening Capacities towards the Establishment of a Regional Platform for the Detection of Genetically Modified Organisms”, Syria, June 2010.

**2011**

***Invited Lecturer***

*ISO procedures for GMOs Detection* - FAO project TCP/RAB/3202, “Strengthening Capacities towards the Establishment of a Regional Platform for the Detection of Genetically Modified Organisms”, Lebanon, January 24 – 27, 2011.

**2011**

***Invited Lecturer***

*1. Report on the study tour at EU-RL GMFF. 2. The regional platform website for GMOs; its maintenance, sustainability and future prospective* – “Strengthening capacities towards the establishment of a regional platform for the detection of genetically modified organisms”. Final Stakeholders Workshop. Dubai, United Arab Emirates. April, 2011.

- 2012** *Invited Lecturer & Country Representative*  
*Status and Experiences Related to The Implementation of GMO Legislation in Lebanon - “First International Workshop on Harmonization of GMOs Detection and Analysis in MENA Region”, Jordan, June 4 – 5, 2012.*
- 2013** *Country Representative*  
*“International Workshop of GMO-Analysis Networking”, Italy, April 8 – 10, 2013.*
- 2013** *Country Representative*  
*International training course “GMO Quantification: Proper Calibration and Estimation of Measurement Uncertainty”, Institute of Reference Materials and Measurements, Belgium, November 21 – 22, 2013.*
- 2014** *Country Representative*  
*International training workshop “Quality Management - ISO 17025 accreditation”, EURL-GMFF, Italy, May 20 - 22, 2014.*
- 2014** *Regional Workshop Co-organizer & Country Representative*  
*1. Next Steps in Initiating the MENA Network for GMOs Testing. 2. First Comprehensive GMOs Testing in Lebanon: Screening, Identification and Quantification of GM Soybean Imports - “The 2<sup>nd</sup> GMO Regional Workshop for MENA Countries”, EU-RL GMFF, Italy, June 25 – 26, 2014.*
- 2015** *Country Representative*  
*International training workshop “Practical Aspects of Regulatory GMO Testing”, EURL-GMFF, Italy, March 25 - 27, 2015.*
- 2015** *Co-Chair and Country Representative*  
*International workshop “Network of Laboratories for the Detection and Identification of Living Modified Organisms”, EU-RL GMFF, Italy, June 9 - 11, 2015.*
- 2015** *MENA Region Representative*  
*1. GMOs Testing Current Status in the MENA Region. 2. Genetically Modified Organisms: Current State of Affairs in Lebanon. “The 2<sup>nd</sup> International Workshop of GMO Analysis Networking”, EU-RL GMFF, Italy, July 21 – 23, 2015.*

- 2016**      ***Symposium Organizer, Under the Patronage of the Lebanese Minister of Industry***  
“Genetically Modified Foods in Lebanon”, AUST, Lebanon, May 06, 2016.
- 2016**      ***Trainers***  
Potential Support on GMO Detection Training, in collaboration with the United Nations Environment Programme (UNEP) and Global Environment Facility (GEF) – Basic Course, Liberia, September 2016.
- 2017**      ***Country Representative***  
International training workshop for the Asia and Pacific Region on “*Detection and identification of living modified organisms (LMOs)*”, CBD, Kuala Lumpur, Malaysia, March 20 – 24, 2017.
- 2017**      ***Region Moderator***  
“GMO TRG IV MENA Coordinators” Meeting, Varese-Italy, July 19-20, 2017.
- 2017**      ***Region Moderator***  
“Third MENA regional workshop on harmonization of GMO detection and analysis”, Varese, Italy, November 22-23, 2017.
- 2018**      ***Country Representative***  
“Practical aspects for regulatory GMO control implementation”, JRC Geel-Belgium, March 6-8, 2018.

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