EUROPEAN COMMISSION
DIRECTORATE-GENERAL
JOINT RESEARCH CENTRE
Directorate F - Health, Consumers and Reference Materials
**Food & Feed Compliance**

**Training Workshop on**

# GMO SCREENING STRATEGIES

**23-25 May 2018**
**CRA-W, Gembloux, Belgium**

**Organised by the**
**EU Reference Laboratory for GM Food and Feed (EURL GMFF)**
**with support of CRA-W, BE and RIKILT, NL**

## Day 1: Wednesday 23 May 2018

| Time | Topic | Speaker |
|---|---|---|
| 9:00 | *Welcome and Introduction*<br>▪ Welcome by the General Director of CRA-W<br>▪ Introduction to the workshop<br>▪ Programme<br>*Keynote lecture:* GMO screening: why and what? | |
| *10:30* | *Coffee Break* | |
| 11:00 | *Overview of screening methods*<br>▪ Screening for GMOs: a historical overview<br>▪ Validation and standardization of GMO screening methods<br>▪ Results of the questionnaire on GMO screening | |
| *12:30* | *Lunch* | |
| 13:30 | *Screening approaches used in official control (1)*<br>▪ Sharing practices and experiences of your laboratory (5-10 min talks using a powerpoint template provided) | Participants |
| 15:30 | *Coffee Break* | |
| 16:00 | *Screening approaches used in official control (2)*<br>▪ Sharing practices and experiences of your laboratory (5-10 min talks using a powerpoint template provided)<br>▪ Multiplex ddPCR for screening | Participants |
| *17:30* | *End of day 1* | |

**Day 2: Thursday 24 May 2018**

| Time | Topic | Speaker |
|---|---|---|
| 09:00 | *Screening strategies*<br>▪ Experiences with an extended screening for GMO-labelled samples at RIKILT<br>▪ The German approach to GMO screening<br>▪ Optimised screening approach using multiple SYBRGreen methods<br>▪ Multiplexing as screening tool in a routine laboratory | |
| *11:00* | *Coffee Break* | |
| 11:30 | *Screening methods*<br>▪ Development of various new screening methods<br>▪ Evaluation of systems for *tNOS* in fast and standard real-time PCR to screen for GMOs<br>▪ Identifying single copy reference genes with droplet digital PCR<br>▪ Case study on contaminants in mastermixes based on *nptII* screening | |
| *13:00* | *Lunch* | |
| 14:00 | *Screening support tools*<br>▪ Pre-spotted plates for GMO screening<br>▪ Online resources on the EURL GMFF website: GMOMETHODS, GMO-Matrix and GMO-Amplicons<br>▪ EUGinius and GMOSeek | |
| *15:30* | *Coffee Break* | |
| 16:00 | *Best practices in GMO screening*<br>▪ Summary and trends in GMO screening<br>▪ Are there gaps and needs?<br>▪ Group discussion | |
| *17:30* | *End of day 2* | |
| *18:30* | *Social dinner at local brewery* | |

**Day 3: Friday 25 May 2018**

| Time | Topic | Speaker |
|---|---|---|
| 09:00 | *Screening for unauthorised GMOs*<br>▪ An integrated strategy combining DNA walking and NGS to screen and detect unauthorised GMOs<br>▪ Enrichment Technologies combined with NGS<br>▪ Broad screening using DNA enrichment and subsequent NGS analysis | |
| *10:30* | *Coffee Break* | |
| 11:00 | *Summary and lessons learned*<br>▪ Panel discussion with selected experts<br>▪ What did you learn?<br>*AOB and wrap-up* | Participants |
| *12:30* | *Sandwich lunch* | |

## Summary

The EURL GMFF organised a training workshop for NRLs on the topic of GMO screening strategies, used as first line analysis approach for the presence of authorised and unauthorised GMOs in food and feed. The aim was to collect and share the common knowledge in this field and to discuss steps for harmonisation of such approaches within the EU.

Approx. 35 NRL representatives participated to the 2,5 day workshop, which was organised with support of CRA-W in Gembloux (host) and RIKILT in Wageningen, NL. The JRC participants chaired the workshop or individual sessions and each provided at least one presentation.

EU control laboratories are focusing on the detection of authorised GMOs and/or identification of unauthorised GMOs, and are using different sets of screening methods for this, varying from two to >30 screening methods per food or feed material. Several tools for data evaluation and resources on GMOs, e.g. JRC GMO-matrix, are being maintained in parallel in different institutes.

It was concluded that a certain degree of harmonisation would be beneficial for GMO control in food and feed, based on a minimal number of screening methods depending on the type of sample (food or feed) and type of crops present. The observation that different laboratories use different screening strategies, on the other hand, was seen as beneficial for the chance to detect unauthorised GMOs in food and feed.

The need for harmonisation of screening approaches will be further discussed within the European Network of GMO Laboratories (ENGL). One of the issues is also whether it is useful to provide guidance on this to control laboratories and if collaboration related to the collection and provision of information on GMOs would be a way forward to not unnecessarily replicate efforts and resources.

## Satisfaction survey

**Training workshop for NRLs on GMO screening strategies – participant's feedback**

**General Organisation and Logistic**

**Please, evaluate the organisation and logistics.: Organisation**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 10 | 50% |
| Above Expectations | | 10 | 50% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the organisation and logistics.: Location**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 17 | 85% |
| Above Expectations | | 3 | 15% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the organisation and logistics.: Communication with the participants**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 12 | 60% |
| Above Expectations | | 8 | 40% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the organisation and logistics.: Side events (lunch, coffee breaks, etc...)**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 9 | 45% |
| Above Expectations | | 11 | 55% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the organisation and logistics.: Social Dinner**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 2 | 10% |
| Above Expectations | | 17 | 85% |
| Not Applicable | | 1 | 5% |
| No Answer | | 0 | 0% |

**Event's Preparation**

**Please, evaluate the event's preparation.: Programme/objectives**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 13 | 65% |
| Above Expectations | | 7 | 35% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's preparation.: Selection of speakers**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 11 | 55% |
| Above Expectations | | 9 | 45% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's preparation.: Preliminary information received**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 18 | 90% |
| Above Expectations | | 2 | 10% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Event's Delivery**

**Please, evaluate the event's delivery.: Content, quality of presentations**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 10 | 50% |
| Above Expectations | | 10 | 50% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's delivery.: Discussion time / interaction between participants**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 11 | 55% |
| Above Expectations | | 9 | 45% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's delivery.: Management of sessions, discussions and wrapping-up**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 12 | 60% |
| Above Expectations | | 8 | 40% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's delivery.: Speakers performance**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 11 | 55% |
| Above Expectations | | 9 | 45% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's delivery.: Fulfillment of the objectives**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 11 | 55% |
| Above Expectations | | 9 | 45% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Please, evaluate the event's delivery.: Supporting material**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 1 | 5% |
| Met Expectations | | 18 | 90% |
| Above Expectations | | 1 | 5% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**General Comments**

**Please, evaluate the event in general.: Overall evaluation of the event**

| | | Answers | Ratio |
|---|---|---|---|
| Below Expectations | | 0 | 0% |
| Met Expectations | | 10 | 50% |
| Above Expectations | | 10 | 50% |
| Not Applicable | | 0 | 0% |
| No Answer | | 0 | 0% |

**Any additional comment (especially for explaining the reasons for “below expectations")**

Excellent quality, highly usefull, supporting material not yet availabe (hopefully materials will be delivered shortly - presentations).

Excellent discussion - one always expect high quality workshop, thatfore met expectation. organizers did a great job.
The afternoon with short presentations of all labs was too much for me. (This can be caused as well by the fact that the temperature in the room was very high and it gave me a headache. When the airco was on I could not hear well what was said.)
Also 2.5 days is very long. I would have preferred a more condensed training of 1.5 days. If all labs give the information on screening strategy in writing before the training this saves a lot of time. This information can then be distributed before the training.

At my first experience in a EURL-GMFF training workshop, I wish to thank for having allowed me to attend it. it was an exceptional occasion to share update info on screening strategies and ongoing studies on new perspectives for GMO official control in a friendly atmosphere.

I would like to use this opportunity to thank the organisers for putting together such a good event that, especially due to the networking possibilities, was very helpful and that gave me food for thought. Thanks!