**Evaluation Report**
proficiency test

**DLA ptGMS1 (2020)**

# GMO-Screening I (qualitative):

## 5 Samples with positive/negative amounts of p-35S, t-NOS, p-FMV, CP4 EPSPS, 35S-Pat, Cry1Ab/Ac / GMO-Maize (Bt11, MIR604) and GMO-Soya (RR GTS 40-3-2, RR2 MON89788)

***DLA - Proficiency Tests GmbH***
*Kalte Weide 21*
*24641 Sievershütten/Germany*

*proficiency-testing@dla-lvu.de* *www.dla-lvu.de*

*Coordinator of this PT:*
*Matthias Besler-Scharf, PhD. / Alexandra Scharf, MSc.*

## Allgemeine Informationen zur Eignungsprüfung (EP)
## General Information on the proficiency test (PT)

| | |
|---|---|
| *EP-Anbieter*<br>*PT-Provider* | **DLA - Proficiency Tests GmbH**<br>Kalte Weide 21, 24641 Sievershütten, Germany<br><br>Geschäftsführer/CEO: Dr. Matthias Besler-Scharf<br>Stellv. Leitung/Deputy Lead: Alexandra Scharf MSc.<br><br>Tel. ++49-(0)4532-9183358<br>Mob. ++49(0)171-1954375<br>Fax. ++49(0)4102-9944976<br>eMail. proficiency-testing@dla-lvu.de |
| *EP-Nummer*<br>*PT-Number* | DLA ptGMS1 (2020) |
| *EP-Koordinator*<br>*PT-Coordinator* | Dr. Matthias Besler-Scharf / Alexandra Scharf MSc. |
| *Status des EP-Bericht*<br>*Status of PT-Report* | Abschlussbericht / Final report (5 October 2020)<br><br>Gültig ist die jeweils letzte Version/Korrektur des Berichts. Sie ersetzt alle vorangegangenen Versionen.<br>Only the latest version/correction of the report is valid. It replaces all preceding versions. |
| *EP-Bericht Freigabe*<br>*PT-Report Authorization* | Dr. Matthias Besler-Scharf (Technischer Leiter / Technical Manager)<br>*- gezeichnet / signed M. Besler-Scharf*<br>Alexandra Scharf MSc. (QM-Beauftragte / Quality Manager)<br>*- gezeichnet / signed A. Scharf*<br>Datum / Date: 5 October 2020 |
| *Unteraufträge*<br>*Subcontractors* | Im Rahmen dieser Eignungsprüfung wurden nachstehende Leistungen im Unterauftrag vergeben: Keine<br>As part of the present proficency test the following services were subcontracted: none |
| *Vertraulichkeit*<br>*Confidentiality* | Die Teilnehmerergebnisse sind im EP-Bericht in anonymisierter Form mit Auswertenummern benannt. Daten einzelner Teilnehmer werden ausschließlich nach vorheriger Zustimmung des Teilnehmers an Dritte weitergegeben.<br>Participant result are named anonymously with evaluation numbers in the PT report. Data of individual participants will be passed on to third parties only with prior consent of the participant. |

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# 1. Introduction

The participation in proficiency testing schemes is an essential element of the quality-management-system of every laboratory testing food and feed, cosmetics and food contact materials. The implementation of proficiency tests enables the participating laboratories to prove their own analytical competence under realistic conditions. At the same time they receive valuable data regarding the verification and/or validation of the particular testing method [1, 5].
The purpose of DLA is to offer proficiency tests for selected parameters in concentrations with practical relevance.
Realisation and evaluation of the present proficiency test follows the technical requirements of DIN EN ISO/IEC 17043 (2010) and DIN ISO 13528:2009 / ISO 13528:2015 [2, 3].

# 2. Realisation

## 2.1 Test material

The test materials are 5 different mixtures of common in commerce food or feed samples from European and US-American suppliers (s. table 1). The raw materials were crushed, sieved (mesh <400 µm, <600 µm and <1,5 mm), mixed and homogenized. The composition of the samples is given in table 1.

Before homogenization microtracer particles were added in order to check the accuracy of mixing. After homogenization during bottling aliquots were taken for microtracer analysis (s. 2.1.1).

After homogenisation the samples were portioned to approximately 10 g into metallised PET film bags.

Table 1: Composition of DLA-Samples

| DLA-Sample | Ingredients (per 100 g) | GMO-Content Maize | GMO-Content Soya |
|---|---|---|---|
| 1 | Complete feed for laying hens (100 g)<br>Ingredients: Wheat, **maize**, **soy extraction flour**, calcium carbonate, sunflower extraction flour, refining fatty acids, alfalfa meal, monocalcium phosphate, sodium chloride, sodium carbonate and other additives<br>Nutrients per 100 g:<br>Crude protein 17 g, crude fiber 4,8 g, crude fat 5,0 g, crude ash 13 g | | positive<br>(GMO-Soya experimental) |
| 2 | Wheat flour Typ 405 (79 g)<br>Ingredients: Wheat<br>Nutrients per 100 g:<br>Protein 11 g, Carbohydrates 72 g, Fat 1,0 g<br>Maize flour, USA Supplier (11 g)<br>Ingredients: **Maize flour**<br>Nutrients per 100 g:<br>Protein 9 g, Carbohydrates 79 g, Fat 0 g<br>Maize flour, European Supplier (10 g)<br>Ingredients: **Maize flour**<br>Nutrients per 100 g:<br>Protein 7,5 g, Carbohydrates 77 g, Fat 1 g | -<br>positive<br>(GMO-Maize experimental)<br>- | -<br>-<br>- |
| 3 | Wheat flour Typ 405 (90 g)<br>Ingredients: Wheat<br>Nutrients per 100 g:<br>Protein 11 g, Carbohydrates 72 g, Fat 1,0 g<br>Soya flour, European Supplier (7,5 g)<br>Ingredients: **Soya flour toasted**<br>Nutrients per 100 g:<br>Protein 37 g<br>Soya Chunks, USA Supplier (2,5 g)<br>Ingredients: **Soya flour**<br>Nutrients per 100 g:<br>Protein 47 g, Carbohydrates 17 g, Fat 0,8 g | -<br>-<br>- | -<br>-<br>positive<br>(GMO-Soya experimental) |
| 4 | Wheat flour Typ 405 (100 g)<br>Ingredients: Wheat<br>Nutrients per 100 g:<br>Protein 11 g, Carbohydrates 72 g, Fat 1,0 g | - | - |
| 5 | Wheat flour Typ 405 (80 g)<br>Ingredients: Wheat<br>Nutrients per 100 g:<br>Protein 11 g, Carbohydrates 72 g, Fat 1,0 g<br>Maize flour, European Supplier (10 g)<br>Ingredients: **Maize flour**<br>Nutrients per 100 g:<br>Protein 7,5 g, Carbohydrates 77 g, Fat 1 g<br>Soya flour, European Supplier (10 g)<br>Ingredients: **Soya flour toasted**<br>Nutrients per 100 g:<br>Protein 37 g | -<br>-<br>- | -<br>-<br>- |

***Note:*** *The metrological traceability of temperature, mass and volume during production of the PT samples is ensured by DAkkS calibrated reference materials.*

*2.1.1 Homogeneity*

The **mixture homogeneity before bottling** was examined 8-fold by **microtracer analysis**. It is a standardized method that is part of the international GMP certification system for feed [14].
Before mixing dye coated iron particles of µm size are added to the sample and the number of particles is determined after homogenization in taken aliquots. The evaluation of the mixture homogeneity is based on the Poisson distribution using the chi-square test. A probability of ≥ 5 % is equivalent to a good homogeneous mixture and of ≥ 25% to an excellent mixture [14, 15].
The microtracer analysis of the present PT samples 2-5 showed probabilities of 96%, 78%, 99% and 93%, respectively. Additionally particle number results were converted into concentrations, statistically evaluated according to normal distribution and compared to the standard deviation according to Horwitz. For the assessment HorRat values between 0,3 and 1,3 are to be accepted under repeat conditions (measurements within the laboratory) [17]. This gave HorRat values of 0,6, 0,9, 0,5 and 0,7, respectively. The results of microtracer analysis are given in the documentation.

*2.1.2 Stability*

A water activity ($a_W$) of < 0,5 is an important factor to ensure the stability of dry or dried products during storage. Optimum conditions for storage is the $a_W$ value range of 0,15 - 0,3. In this range the lowest possible degradation rate is to be expected [16].

The experience with various DLA test materials showed good storage stability with respect to the durability of the sample (spoilage) and the content of the PT parameters for comparable food matrices and water activity ($a_W$ value <0,5).
The $a_W$ value of the PT samples was 0,45 - 0,48 (18°C). The stability of the sample material was thus ensured during the investigation period under the specified storage conditions.

## 2.2 Sample shipment and information to the test

The portions of the test materials (sample 1 to 5) were sent to every participating laboratory in the 20th week of 2020. The testing method was optional. The tests should be finished at Juli 24th 2020 the latest (extended).

With the cover letter along with the sample shipment the following information was given to participants:

*DLA ptGMS1 – GMO-Screening I (qualitative): 5 Samples with positive / negative amounts of p-35S, t-NOS, p-FMV, CP4 EPSPS, 35S-Pat, Cry1Ab/Ac / GMO-Maize (Bt11, MIR604) and GMO-Soya (RR GTS 40-3-2, RR2 MON89788)*
*There are 5 different test samples which possibly contain the above mentioned parameters. The indication of results and evaluation will be done exclusively qualitative (positive/negative). Results for specific sequences, screening sequences and other events can be analyzed.*

*Please note the attached information on the proficiency test.*
(see documentation, section 5.3 Information on the PT)

## 2.3 Submission of results

The participants submitted their results in standard forms, which have been sent by email or were available on our website. The results given as positive/negative were evaluated.
Queried and documented were the indicated results and details of the test methods like specificities, test kit manufacturer and hints about the procedure.
In case participants submitted several results for the same parameter obtained by different methods these results were evaluated with the same evaluation number with a letter as a suffix and indication of the related method.

All 22 participants submitted their results in time.

# 3. Evaluation

The evaluation of the GMO-screening proficiency test was done exclusively qualitative.

The results are presented for all 5 test samples in separate tables for each parameter p-35S, t-NOS, p-FMV, CTP2-CP4 EPSPS, 35S-Pat, Cry1Ab/Ac as well as GMO-Maize (Bt11, MIR604), Maize-DNA and GMO-Soya (RR GTS 40-3-2, RR2 MON89788), Lectin-DNA and other DNA.

## 3.1 Agreement with consensus values from participants

The qualitative evaluation of the ELISA and PCR results of each participant was based on the agreement of the indicated results (positive or negative) with the **consensus values from participants**. A consensus value is determined if ≥ 75% positive or negative results are available for a parameter.
The assessment will be in the form that the number of matching results followed by the number of samples for which a consensus value was obtained is indicated. Behind that the agreement is expressed as the percentage in parentheses.

## 3.2 Agreement with spiking of samples

The qualitative evaluation of the results of each participant was based on the agreement of the indicated results (positive or negative) with the **spiking of the five PT-samples** with GMO-containing ingredients (see Tab. 1).
The assessment will be in the form that the number of matching results followed by the number of samples is indicated. Behind that the agreement is expressed as the percentage in parentheses.

# 4. Results

All following tables are anonymized. With the delivering of the evaluation-report the participants are informed about their individual evaluation-number.

The participant results and evaluation are tabulated as follows:

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | | | | | |
| Number negative | | | | | |
| Percent positive | | | | | |
| Percent negative | | | | | |
| Consensus value | | | | | |
| Spiking | | | | | |

# 4.1 Proficiency Test GMO

## *4.1.1 Results: p-35S-Screening-Sequence*

### Qualitative valuation of results

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| p-35S | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | positive | positive | positive | negative | positive | 4/5 (80%) | 4/5 (80%) | |
| 2 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 3 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 4 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 5 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | Sample 5 positive < LOD |
| 6 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 7 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 8 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 9 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 10 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 11 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 12 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 13 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 15 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 16 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 17 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 18 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 19 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 22 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 22 | 22 | 22 | 0 | 1 |
| Number negative | 0 | 0 | 0 | 22 | 21 |
| Percent positive | 100 | 100 | 100 | 0 | 5 |
| Percent negative | 0 | 0 | 0 | 100 | 95 |
| Consensus value | positive | positive | positive | negative | negative |
| Spiking | positive | positive | positive | negative | negative |

*Comments:*
For all 5 samples consensus values with four times 100% and once 95% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.2 Results: t-NOS-Screening-Sequence*

## Qualitative valuation of results

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| t-NOS | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | positive | positive | positive | negative | positive | 4/5 (80%) | 4/5 (80%) | Sample 5 positive traces |
| 2 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 3 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 4 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 5 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | Sample 5 positive < LOD |
| 6 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 7 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 8 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 9 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 10 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 11 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 12 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 13 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | negative | positive | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 15 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 16 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 17 | negative | positive | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 18 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 19 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 22 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 20 | 22 | 22 | 0 | 1 |
| Number negative | 2 | 0 | 0 | 22 | 21 |
| Percent positive | 91 | 100 | 100 | 0 | 5 |
| Percent negative | 9 | 0 | 0 | 100 | 95 |
| Consensus value | positive | positive | positive | negative | negative |
| Spiking | positive | positive | positive | negative | negative |

*Comments:*
For all 5 samples consensus values with two times 100%, once 95% and once 91% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.3 Results: p-FMV-Screening-Sequence*

**Qualitative valuation of results**

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| p-FMV | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 3 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 4 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 5 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 6 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 7 | positive | positive | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 8 | positive | negative | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 9 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 10 | positive | negative | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 11 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 12 | - | - | - | - | - | | | |
| 13 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | negative | negative | negative | negative | negative | 3/5 (60%) | 3/5 (60%) | no positive sample detected |
| 15 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 16 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 17 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 18 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 19 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | positive | negative | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 22 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 19 | 1 | 16 | 0 | 0 |
| Number negative | 1 | 19 | 4 | 20 | 20 |
| Percent positive | 95 | 5 | 80 | 0 | 0 |
| Percent negative | 5 | 95 | 20 | 100 | 100 |
| Consensus value | positive | negative | positive | negative | negative |
| Spiking | positive | negative | positive | negative | negative |

*Comments:*
For all 5 samples consensus values with two times 100%, two times 95% and once 80% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.4 Results: CTP2-CP4 EPSPS-Screening-Sequence*

**Qualitative valuation of results**

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| CTP2- CP4 EPSPS | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 5 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | Sample 5 positive < LOD |
| 6 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 7 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 8 | - | - | - | - | - | | | |
| 9 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | positive | negative | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 14 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 15 | - | - | - | - | - | | | |
| 16 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 17 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | - | - | - | - | - | | | |
| 22 | positive | positive | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 13 | 12 | 13 | 0 | 0 |
| Number negative | 0 | 1 | 0 | 13 | 13 |
| Percent positive | 100 | 92 | 100 | 0 | 0 |
| Percent negative | 0 | 8 | 0 | 100 | 100 |
| Consensus value | positive | positive | positive | negative | negative |
| Spiking | positive | positive | positive | negative | negative |

*Comments:*
For all 5 samples consensus values with four times 100% and once 92% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.5 Results: 35S-Pat-Screening-Sequence*

**Qualitative valuation of results**

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| 35S-Pat | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | - | - | - | - | - | | | |
| 5 | positive | positive | positive | negative | negative | 3/3 (100%) | 5/5 (100%) | Sample 1 at LOD |
| 6 | negative | positive | negative | negative | negative | 3/3 (100%) | 3/5 (60%) | |
| 7 | negative | positive | negative | negative | negative | 3/3 (100%) | 3/5 (60%) | |
| 8 | - | - | - | - | - | | | |
| 9 | - | - | - | - | - | | | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | - | - | - | - | - | | | |
| 14 | negative | positive | negative | negative | negative | 3/3 (100%) | 3/5 (60%) | |
| 15 | - | - | - | - | - | | | |
| 16 | positive | positive | negative | negative | negative | 3/3 (100%) | 4/5 (80%) | |
| 17 | - | - | - | - | - | | | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | positive | positive | negative | negative | 3/3 (100%) | 5/5 (100%) | |
| 20 | negative | positive | negative | negative | negative | 3/3 (100%) | 3/5 (60%) | |
| 21 | - | - | - | - | - | | | |
| 22 | negative | positive | positive | negative | negative | 3/3 (100%) | 4/5 (80%) | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 3 | 8 | 3 | 0 | 0 |
| Number negative | 5 | 0 | 5 | 8 | 8 |
| Percent positive | 38 | 100 | 38 | 0 | 0 |
| Percent negative | 63 | 0 | 63 | 100 | 100 |
| Consensus value | none | positive | none | negative | negative |
| Spiking | positive | positive | positive | negative | negative |

*Comments:*
For the samples 2, 4 and 5 consensus values with 100% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).
For samples 1 and 3 no consensus values with ≥75% positive or negative results were obtained.

### *4.1.6 Results: Cry1Ab/Ac-Screening-Sequence*

**Qualitative valuation of results**

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| Cry1Ab/Ac | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 5 | - | - | - | - | - | | | |
| 6 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 7 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 8 | - | - | - | - | - | | | |
| 9 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 14 | negative | positive | negative | negative | negative | 4/5 (80%) | 5/5 (100%) | |
| 15 | - | - | - | - | - | | | |
| 16 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 17 | - | positive | negative | - | - | 2/2 (100%) | 2/2 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | - | - | - | - | - | | | |
| 20 | positive | positive | negative | negative | negative | 5/5 (100%) | 4/5 (80%) | |
| 21 | - | - | - | - | - | | | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 7 | 9 | 0 | 0 | 0 |
| Number negative | 1 | 0 | 9 | 8 | 8 |
| Percent positive | 88 | 100 | 0 | 0 | 0 |
| Percent negative | 13 | 0 | 100 | 100 | 100 |
| Consensus value | positive | positive | negative | negative | negative |
| Spiking | positive | positive | negative | negative | negative |

*Comments:*
For all 5 samples consensus values with four times 100% and once 88% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.7 Results: GMO-Maize Bt11*

## Qualitative valuation of results

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| GMO maize (Bt11) | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | - | - | - | - | - | | | |
| 5 | - | - | - | - | - | | | |
| 6 | negative | positive | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 7 | - | - | - | - | - | | | |
| 8 | - | - | - | - | - | | | |
| 9 | - | - | - | - | - | | | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 15 | - | - | - | - | - | | | |
| 16 | - | - | - | - | - | | | |
| 17 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | positive | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 20 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 1 | 7 | 1 | 0 | 0 |
| Number negative | 6 | 0 | 6 | 7 | 7 |
| Percent positive | 14 | 100 | 14 | 0 | 0 |
| Percent negative | 86 | 0 | 86 | 100 | 100 |
| Consensus value | negative | positive | negative | negative | negative |
| Spiking | negative | positive | negative | negative | negative |

*Comments:*
For all 5 samples consensus values with three times 100% and twice 86% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.8 Results: GMO-Maize MIR604*

## Qualitative valuation of results

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| GMO maize (MIR604) | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | - | - | - | - | - | | | |
| 5 | - | - | - | - | - | | | |
| 6 | - | - | - | - | - | | | |
| 7 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 8 | - | - | - | - | - | | | |
| 9 | - | - | - | - | - | | | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | negative | negative | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | no positive sample detected |
| 15 | - | - | - | - | - | | | |
| 16 | - | - | - | - | - | | | |
| 17 | - | positive | negative | - | - | 2/2 (100%) | 2/2 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | negative | positive | negative | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | - | - | - | - | - | | | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 0 | 5 | 0 | 0 | 0 |
| Number negative | 5 | 1 | 6 | 5 | 5 |
| Percent positive | 0 | 83 | 0 | 0 | 0 |
| Percent negative | 100 | 17 | 100 | 100 | 100 |
| Consensus value | negative | positive | negative | negative | negative |
| Spiking | negative | positive | negative | negative | negative |

*Comments:*
For all 5 samples consensus values with four times 100% and once 83% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.9 Results: Maize-DNA (Maize-specific)*

## Qualitative valuation of results

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| Maize specific DNA | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | positive | positive | positive | negative | positive | 4/5 (80%) | 4/5 (80%) | |
| 5 | - | - | - | - | - | | | |
| 6 | positive | positive | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 7 | - | - | - | - | - | | | |
| 8 | - | - | - | - | - | | | |
| 9 | - | - | - | - | - | | | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | negative | positive | negative | negative | positive | 4/5 (80%) | 4/5 (80%) | |
| 14 | - | - | - | - | - | | | |
| 15 | - | - | - | - | - | | | |
| 16 | positive | positive | negative | negative | positive | 5/5 (100%) | 5/5 (100%) | |
| 17 | - | positive | - | - | - | 1/1 (100%) | 1/1 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | positive | negative | negative | positive | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | positive | negative | negative | positive | 5/5 (100%) | 5/5 (100%) | |
| 21 | - | - | - | - | - | | | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 5 | 7 | 1 | 0 | 5 |
| Number negative | 1 | 0 | 5 | 6 | 1 |
| Percent positive | 83 | 100 | 17 | 0 | 83 |
| Percent negative | 17 | 0 | 83 | 100 | 17 |
| Consensus value | positive | positive | negative | negative | positive |
| Spiking | positive | positive | negative | negative | positive |

*Comments:*
For all samples consensus values with twice 100% and three times 83% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the maize-containing ingredients (spiking).

### *4.1.10 Results: CMO-Soya RR (GTS 40-3-2)*

## Qualitative valuation of results

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| GMO soya RR (GTS 40-3-2) | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | - | - | - | - | - | | | |
| 5 | - | - | - | - | - | | | |
| 6 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 7 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 8 | - | - | - | - | - | | | |
| 9 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | negative | negative | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 15 | - | - | - | - | - | | | |
| 16 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 17 | negative | negative | positive | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 21 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 8 | 0 | 10 | 0 | 0 |
| Number negative | 2 | 10 | 0 | 10 | 10 |
| Percent positive | 80 | 0 | 100 | 0 | 0 |
| Percent negative | 20 | 100 | 0 | 100 | 100 |
| Consensus value | positive | negative | positive | negative | negative |
| Spiking | positive | negative | positive | negative | negative |

*Comments:*
For all 5 samples consensus values with four times 100% and once 80% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.11 Results: GMO-Soya RR2 (MON89788)*

**Qualitative valuation of results**

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| GMO soya RR2 (MON89788) | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | - | - | - | - | - | | | |
| 5 | - | - | - | - | - | | | |
| 6 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 7 | positive | negative | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 8 | - | - | - | - | - | | | |
| 9 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 14 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 15 | - | - | - | - | - | | | |
| 16 | - | - | - | - | - | | | |
| 17 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | negative | positive | negative | negative | 5/5 (100%) | 5/5 (100%) | |
| 20 | positive | negative | negative | negative | negative | 4/5 (80%) | 4/5 (80%) | |
| 21 | - | - | - | - | - | | | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 8 | 0 | 6 | 0 | 0 |
| Number negative | 0 | 8 | 2 | 8 | 8 |
| Percent positive | 100 | 0 | 75 | 0 | 0 |
| Percent negative | 0 | 100 | 25 | 100 | 100 |
| Consensus value | positive | negative | positive | negative | negative |
| Spiking | positive | negative | positive | negative | negative |

*Comments:*
For all 5 samples consensus values with four times 100% and once 75% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

### *4.1.12 Results: Lectin-DNA (Soya-specific)*

**Qualitative valuation of results**

| Evaluation number | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Qualitative Valuation | Qualitative Valuation | Remarks |
|---|---|---|---|---|---|---|---|---|
| Lectin-DNA | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | Agreement with consensus value | Agreement with spiking of samples | |
| 1 | - | - | - | - | - | | | |
| 2 | - | - | - | - | - | | | |
| 3 | - | - | - | - | - | | | |
| 4 | positive | positive | positive | positive | positive | 3/3 (100%) | 3/5 (60%) | |
| 5 | - | - | - | - | - | | | |
| 6 | positive | negative | positive | negative | positive | 3/3 (100%) | 5/5 (100%) | |
| 7 | - | - | - | - | - | | | |
| 8 | - | - | - | - | - | | | |
| 9 | positive | positive | positive | positive | positive | 3/3 (100%) | 3/5 (60%) | |
| 10 | - | - | - | - | - | | | |
| 11 | - | - | - | - | - | | | |
| 12 | - | - | - | - | - | | | |
| 13 | positive | negative | positive | negative | positive | 3/3 (100%) | 5/5 (100%) | |
| 14 | - | - | - | - | - | | | |
| 15 | - | - | - | - | - | | | |
| 16 | positive | positive | positive | positive | positive | 3/3 (100%) | 3/5 (60%) | Sample 2 + 4 very small amounts |
| 17 | positive | - | positive | - | - | 2/2 (100%) | 2/2 (100%) | |
| 18 | - | - | - | - | - | | | |
| 19 | positive | negative | positive | negative | positive | 3/3 (100%) | 5/5 (100%) | |
| 20 | positive | negative | positive | negative | positive | 3/3 (100%) | 5/5 (100%) | |
| 21 | positive | negative | positive | positive | positive | 3/3 (100%) | 4/5 (80%) | |
| 22 | - | - | - | - | - | | | |

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| Number positive | 9 | 3 | 9 | 4 | 8 |
| Number negative | 0 | 5 | 0 | 4 | 0 |
| Percent positive | 100 | 38 | 100 | 50 | 100 |
| Percent negative | 0 | 63 | 0 | 50 | 0 |
| Consensus value | positive | none | positive | none | positive |
| Spiking | positive | negative | positive | negative | positive |

*Comments:*
For the samples 1, 3 and 5 consensus values with 100% positive or negative results were obtained, respectively.
The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).
For samples 2 and 4 no consensus values with ≥75% positive or negative results were obtained.

### *4.1.13 Results: Other Parameters (DNA)*

## Qualitative valuation of results

| Evaluation number | Parameter | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Remarks |
|---|---|---|---|---|---|---|---|
| | further DNA | pos/neg | pos/neg | pos/neg | pos/neg | pos/neg | |
| 12 | ABII | positive | positive | positive | negative | negative | |
| 5 | bar | negative | negative | negative | negative | negative | |
| 13 | bar | negative | negative | negative | negative | negative | |
| 17 | bar | negative | negative | negative | negative | negative | |
| 16 | CaMV | positive | negative | negative | negative | negative | |
| 6 | NK603-Mais | negative | positive | negative | negative | negative | |
| 17 | NPTII | negative | positive | positive | positive | negative | |
| 22 | NPTII | negative | positive | negative | negative | negative | |
| 9 | pat | positive | positive | positive | negative | negative | |
| 13 | pat | positive | positive | positive | negative | negative | |
| 16 | pat | negative | positive | negative | negative | negative | Sample 1 + 3 slightly positivee <LOD |
| 17 | pat | negative | positive | negative | negative | negative | |
| 9 | Pflanzen-Nachweis | positive | positive | positive | positive | positive | |
| 13 | pnos-nptII | negative | negative | negative | negative | negative | |
| 13 | Raps spezifische DNA | positive | negative | negative | negative | negative | |
| 6 | Raps spezifische DNA | positive | negative | negative | negative | negative | |
| 3 | Soja A2704-12 | positive | negative | positive | negative | negative | |
| 9 | GVO-Soja LL (A2704-12) | negative | negative | positive | negative | negative | |
| 3 | Soja A5547-127 | negative | negative | negative | negative | negative | |
| 3 | Soja CV127-9 | negative | negative | negative | negative | negative | |
| 3 | Soja DP305423-1 | negative | negative | negative | negative | negative | |
| 3 | Soja DP356043-5 | negative | negative | negative | negative | negative | |
| 3 | Soja MON87701-2 | positive | negative | negative | negative | negative | |

# 5. Documentation

## 5.1 Details by the participants

Note: Information given in German was translated by DLA to the best of our knowledge (without guarantee of correctness).

### 5.1.1 p-35S-Screening-Sequence

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | 20.5.20 | DNA | <10 copies / PCR-reaction | GEN-IAL / EN ISO 21570 | Machery-Nagel: NucleoSpin Food | Real Time PCR (GEN-IAL: genControl RT Triplex 35S/tNOS/EPSPS Kit) | |
| 2 | 25.5.20 | P35S/DNA | 0,025% | Imegen Screening kit | CTAB | Real time PCR | |
| 3 | 02.06. | 35S | 10 copies | GEN-IAL genControl RT-Triplex IV p35S / NOS / pFMV, incl. IC | Congen SureFood PREP Basic extraction kit | Real Time PCR, 45 cycles, reference material ERM-BF 410dp | |
| 4 | 04.06. | | 5 copies | §64 LFGB L 00.00-122 (modified) (2008-06) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | |
| 5 | 18.6.20 | p-35S | 0.1 % | DIN EN ISO 21569:2013-08 | mod. Wizard®-DNA-Clean-UP | Real Time PCR / 83 bp | sample -05: detectable but < 0,1% |
| 6 | 03.06. | 82 bp Amplikon | 0,01 | DIN EN ISO 21569: 2013-08 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 9.6.20 | 35S-CaMV Promotor | 0,01% | SureFood® GMO SCREEN 35S/NOS/FMV (S2026) | SureFood® Add-on (S1055) | real-time PCR | K00 |
| 8 | 28.5.20 | | 1% | SUREFOOD® GMO SCREEN 4PLEX 35S/NOS/FMV + IAC | omega E.Z.N.A. food DNA kit | | |
| 9 | 28.5.20 | DNA | 0.01% | genControl® RT-Triplex-35S/NOS/EPSPS Kit, GEN-IAL GmbH | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| 10 | 2.6.20 | | | biotecon GMO Screening kit | mericon food kit | real time pcr | |
| 11 | | | | R-Biopharm, S2026:2017-04 & QMAA-P-19:2018-08 (Multiplex-PCR) | | | |
| 12 | | | 5 copies, 0,05 % | Gene Scan TR 35S/NOS/ABII IPC | Sure Food Prep Advancded r-Biopharm | Real-Time PCR, 45 cycles | |
| 13 | 13.6.20 | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence 35S | 0,01% | foodproof GMO Screening 1 LyoKit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | 2020-06-09/ 2020-07-17 | Target-Sequence / -DNA | 0,1% | Bioside / ISO 21569:2005/Amd 1:2013 | Machery Nagel FOOD/PLANT extraction kit | Real time PCR | |
| 16 | 19.6.20 | Promotor des Cauliflower Mosaic Virus (CaMV35S) | 0.1 % | ASU L 00.00-122 mod | Maxwell FFS Kit, 200 mg Einwaage | | |
| 17 | 08.07.2020. | | 0,05% | TaqMan GMO Screening Kit | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | 14.7.20 | Target-Sequenz | 5 copies 5 mg/kg | R-Biopharm S2126 | R-Biopharm S1052 | Real-Time PCR | |
| 19 | 28.5.20 | | | L 00.00122 Ausgabe 06/2008 | | | |
| 20 | | | 0,1% | ASU L00.00-122 | CTAB-Methode | Real Time PCR | Real Time PCR/50 cycles |
| 21 | 2.7.20 | | 0,10% | In House Method | Magnetic Bead Extraction | Gel Electrophoresis | |
| 22 | 9.7.20 | DNA | 0,1% | SureFood Congen S2026 | As per Kit Instructions | As Per Kit Instructions | |

## 5.1.2 t-NOS-Screening-Sequence

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electrophoresis / cycles / amplificate length / reference material | |
| 1 | 20.5.20 | DNA | <10 copies / PCR-reaction | GEN-IAL / EN ISO 21570 | Machery-Nagel: NucleoSpin Food | Real Time PCR (GEN-IAL: genControl RT Triplex 35S/tNOS/EPSPS Kit) | Sample 5: traces (at LOD of test kit) |
| 2 | 25.5.20 | TNOS/DNA | 0,025% | Imegen Screening kit | CTAB | Real time PCR | |
| 3 | 02.06. | nos | 10 copies | GEN-IAL genControl RT-Triplex IV p35S / NOS / pFMV, incl. IC | Congen SureFood PREP Basic extraction kit | Real Time PCR, 45 cycles, reference material ERM-BF 410dp | |
| 4 | 04.06. | | 10 copies | §64 LFGB L 00.00-122 (modified) (2008-06) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | |
| 5 | 18.6.20 | t-Nos | 0.1 % | DIN EN ISO 21569:2013-08 | mod. Wizard®-DNA-Clean-UP | Real Time PCR / 83 bp | sample -05: detectable but < 0,1% |
| 6 | 03.06. | 87 bp Amplikon | 0,01 | DIN EN ISO 21569: 2013-08 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 9.6.20 | NOS Terminator | 0,01% | SureFood® GMO SCREEN 35S/NOS/FMV (S2026) | SureFood® Add-on (S1055) | real-time PCR | K00 |
| 8 | 28.5.20 | | 1% | SUREFOOD® GMO SCREEN 4PLEX 35S/NOS/FMV + IAC | omega E.Z.N.A. food DNA kit | | |
| 9 | 28.5.20 | DNA | 0.01% | genControl® RT-Triplex-35S/NOS/EPSPS Kit, GEN-IAL GmbH | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| 10 | 2.6.20 | | | biotecon GMO Screening kit | mericon food kit | real time pcr | |
| 11 | | | | R-Biopharm, S2026:2017-04 & QMAA-P-19:2018-08 (Multiplex-PCR) | | | |
| 12 | | | 5 copies, 0,05 % | Gene Scan TR 35S/NOS/ABII IPC | Sure Food Prep Advancded r-Biopharm | Real-Time PCR, 45 cycles | |
| 13 | 13.6.20 | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence T-NOS | 0,01% | foodproof GMO Screening 1 LyoKit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | 2020-06-09/ 2020-07-17 | Target-Sequence / -DNA | 0,1% | Bioside / ISO 21569:2005/Amd 1:2013 | Machery Nagel FOOD/PLANT extraction kit | Real time PCR | |
| 16 | 19.6.20 | Terminator des Agrobacterium tumefaciens (nos) | 0.1 % | ASU L 00.00-122 mod | Maxwell FFS Kit, 200 mg Einwaage | | |
| 17 | 08.07.2020. | | 0,05% | TaqMan GMO Screening Kit | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | 14.7.20 | Target-Sequenz | 5 copies 5 mg/kg | R-Biopharm S2126 | R-Biopharm S1052 | Real-Time PCR | |
| 19 | 28.5.20 | | | L 00.00122 from 06/2008 | | | |
| 20 | | | 0,1% | ASU L00.00-122 | CTAB-Methode | Real Time PCR | Real Time PCR/50 cycles |
| 21 | 02.07.20 | | 0,10% | In House Method | Magnetic Bead Extraction | Gel Electrophoresis | |
| 22 | 9.7.20 | DNA | 0,1% | SureFood Congen S2026 | As per Kit Instructions | As Per Kit Instructions | |

## 5.1.3 p-FMV-Screening-Sequence

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | 25.5.20 | PFMV/DNA | 0,025% | Imegen Screening kit | CTAB | Real time PCR | |
| 3 | 02.06. | FMV | 10 copies | GEN-IAL genControl RT-Triplex IV p35S / NOS / pFMV, incl. IC | Congen SureFood PREP Basic extraction kit | Real Time PCR, 45 cycles | |
| 4 | 04.06. | | 5 copies | §64 LFGB L 00.00-148 (modified) (2014-02) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | |
| 5 | 18.6.20 | p-FMV | 0.1 % | DIN EN ISO 21569:2013-08 | mod. Wizard®-DNA-Clean-UP | Real Time PCR / 82 bp | |
| 6 | 03.06. | 78 bp Amplikon | 0,01 | ASU §64 L 00. 00-148: 2014-02 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 9.6.20 | 34S-FMV Promotor | 0,01% | SureFood® GMO SCREEN 35S/NOS/FMV (S2026) | SureFood® Add-on (S1055) | real-time PCR | K00 |
| 8 | 28.5.20 | | 1% | SUREFOOD® GMO SCREEN 4PLEX 35S/NOS/FMV + IAC | omega E.Z.N.A. food DNA kit | | |
| 9 | 16.6.20 | DNA | 0.003% | in House Method | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| 10 | 2.6.20 | | | biotecon GMO Screening kit | mericon food kit | real time pcr | |
| 11 | | | | R-Biopharm, S2026:2017-04 & QMAA-P-19:2018-08 (Multiplex-PCR) | | | |
| 12 | | | | | | | |
| 13 | 13.6.20 | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence P-FMV | 0,01% | foodproof GMO Screening 1 LyoKit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | 2020-06-09/ 2020-07-17 | Target-Sequence / -DNA | 0,1% | Bioside / ISO 21569:2005/Amd 1:2013 | Machery Nagel FOOD/PLANT extraction kit | Real time PCR | |
| 16 | 24.6.20 | Promotor des Feigenwurz Mosaik Virus (pFMV) | 0.1 % | ASU L 00.00-148 mod. | Maxwell FFS Kit, 200 mg sample wheight | | |
| 17 | 08.07.2020. | | 0,05% | TaqMan GMO Screening Kit | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | 14.7.20 | Target-Sequence | 5 copies 5 mg/kg | R-Biopharm S2126 | R-Biopharm S1052 | Real-Time PCR | |
| 19 | 28.5.20 | | | L 00.00-148 Ausgabe 02/2014 | | | |
| 20 | | | 0,1% | L00.00-148 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | 03.07.20 | | 0,10% | In House Method | Magnetic Bead Extraction | Gel Electrophoresis | |
| 22 | 9.7.20 | DNA | 0,1% | sureFood Congen S2026 | As per Kit Instructions | As Per Kit Instructions | |

## 5.1.4 CTP2-CP4 EPSPS-Screening Sequenz

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | 20.5.20 | DNA | <10 copies / PCR-Reaktion | GEN-IAL / EN ISO 21570 | Machery-Nagel: NucleoSpin Food | Real Time PCR (GEN-IAL: genControl RT Triplex 35S/tNOS/EPSPS Kit) | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | 04.06. | | 5 copies | §64 LFGB L 00.00-125 (modified) (2009-06) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | Sample 3 weakly positive (<LOQ; LOQ=100copies) |
| 5 | 18.6.20 | CTP2-CP4 EPSPS | 0.1 % | genControl®RT Triplex V, GEN-IAL | mod. Wizard®-DNA-Clean-UP | Real Time PCR / 88 bp | Sample -05: detectable but < 0,1% |
| 6 | 03.06. | 88 bp Amplikon | 0,1 | ASU §64 L 00.00-154: 2014-08 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 10.6.20 | transition of CTP2 to Herbicide Tolerance Gene CP4 EPSPS | 0,01% | SureFood® GMO SCREEN 4plex BAR/PAT/ CrylAb/lac/ CTP2:CP4 EPSPS (S2128) | SureFood® Add-on (S1055) | real-time PCR | K01 |
| 8 | | | | | | | |
| 9 | 28.5.20 | DNA | 0.01% | genControl® RT-Triplex-35S/NOS/EPSPS Kit, GEN-IAL GmbH | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 17.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence CTP2-CP4-EPSPS | 0,01% | foodproof GMO Screening 2 LyoKit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | 24.6.20 | transition of CTP2 to CP4-EPSPS-Gene | 0.1 % | ASU L 00.00-125 mod. | Maxwell FFS Kit, 200 mg Einwaage | | |
| 17 | 10.07.2020. | | 0,05% | GMO Screen 4 plex(BAR,NPTII,PAT,CTP2: CP4 EPSPS) | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 28.5.20 | | | L 00.00-125 Ausgabe 12/2008 | | | |
| 20 | | | 0,1% | ASU L00.00-125 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | | | | | | | |
| 22 | 9.7.20 | DNA | 0,1% | sureFood Congen S2127 | As per Kit Instructions | As Per Kit Instructions | |

## 5.1.5 35S-Pat-Screening Sequenz

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | - | | | | | | |
| 5 | 18.6.20 | 35S-Pat | 0.1 % | genControl®RT Triplex V, GEN-IAL | mod. Wizard®-DNA-Clean-UP | Real Time PCR / 108 bp | Sample -01: at LOD |
| 6 | 03.06. | 111 bp Amplicon | 0,1 | ASU §64 L 00.00-154: 2014-09 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 10.6.20 | PAT Gen | 0,01% | SureFood® GMO SCREEN 4plex BAR/PAT/ CrylAb/lac/CTP2:CP4 EPSPS (S2128) | SureFood® Add-on (S1055) | real-time PCR | K01 |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | 23.6.20 | target-Sequence P-35S-pat | 0,01% | foodproof GMO Screening 2 LyoKit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | 25.6.20 | transition of CaMV35S to pat-Gene | 0.1 % | ASU G 30.40-1 mod. | Maxwell FFS Kit, 200 mg sample weight | | Sample 1 and 3 high Ct-values --> contents ~ 0,1 % |
| 17 | - | | | | | | |
| 18 | | | | | | | |
| 19 | 9.6.20 | | | QL-ELE-00-025 | | | |
| 20 | | | 0,1% | G 30.40-14 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | | | | | | | |
| 22 | 9.7.20 | DNA | 0,1% | sureFood Congen S2127 | As per Kit Instructions | As Per Kit Instructions | |

## 5.1.6 Cry1Ab/AC-Screening Sequenz

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | 04.06. | | 10 copies | §64 LFGB L 15.06-3 (modified) (2013-08) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | |
| 5 | | | | | | | |
| 6 | 03.06. | 74 bp Amplicon | 0,1 | ASU L 15.06-3:2013 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 10.6.20 | CrylAb/CrylAc Element | 0,01% | SureFood® GMO SCREEN 4plex BAR/PAT/ CrylAb/lac/CTP2:CP4 EPSPS (S2128) | SureFood® Add-on (S1055) | real-time PCR | K01 |
| 8 | | | | | | | |
| 9 | 16.6.20 | DNA | 10 copies | in House-Method | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 17.6. | | | r-biopharm (Congen) | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence Cry1Ab/Ac | 0,01% | foodproof GMO Screening 2 LyoKit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | 24.6.20 | cry1Ab/cry1Ac DNA-Sequences | 5 haploide Genomic copies | ASU L 15.06-3 mod. | Maxwell FFS Kit, 200 mg Einwaage | | |
| 17 | 10.07.2020. | | 0,05% | GMO Screen 4 plex(BAR,PAT,CrylAb/IAc, CTP2:CP4 EPSPS) | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | 0,1% | G 30.40-14 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | | | | | | | |
| 22 | | | | | | | |

## 5.1.7 GMO-Maize (Bt11)

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | - | | | | - | - | |
| 5 | | | | | | | |
| 6 | 04.06. | 110 bp Amplicon | 0,05 | ASU L 15.06-3:2013 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | - | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 17.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence | 0,1% | foodproof SL GMO Bt11 Maize Detection Kit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | nicht durchgeführt | | | | | | |
| 17 | 10.07.2020. | | 0,1% | QT/ZM/015 | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 28.5.20 | | | QT-EVE--ZM-006 | | | |
| 20 | | | 0,1% | JRC 2008 Event specific Method QT-EVE-ZM-015 | CTAB-Methode | Real Time PCR | Real Time PCR/50 cycles |
| 21 | 20.07.20 | | 0,10% | In House Method | Magnetic Bead Extraction | Gel Electrophoresis | |
| 22 | | | | | | | |

## 5.1.8 GMO-Maize (MIR604)

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | - | | | | - | - | |
| 5 | | | | | | | |
| 6 | - | | | | | | |
| 7 | 10.6.20 | MIR604 Maize (SYN-IR6Ø4-5) | 0,01% | in-house Method | SureFood® Add-on (S1055) | real-time PCR | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 17.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 Cycles | |
| 14 | 23.6.20 | target-Sequence | 0,1% | foodproof SL GMO MIR604 Maize Detection Kit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | nicht durchgeführt | | | | | | |
| 17 | 20.07.2020. | | 0,1% | QT/ZM/013 | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 28.5.20 | | | QT-EVE–ZM-013 | | | |
| 20 | | | 0,1% | JRC 2007 Event specific Method QT-EVE-ZM-013 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | | | | | | | |
| 22 | | | | | | | |

## 5.1.9 Maize-DNA (Maize-specific)

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | 03.06. | | 5 copies | §64 LFGB L 00.00-105 (modified) (2014-02) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | Sample 3 weakly positive (<LOQ; LOQ=100 copies) |
| 5 | | | | | | | |
| 6 | 04.06. | 134 bp Amplicon | 0,01 | DIN EN ISO 21569: 2013-08 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 17.6. | | | r-biopharm (Congen) | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 30 cycles | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | 18.6.20 | hmg-Gene | 25 haploide Genomic copies | ASU L 00.00-105 mod. (Annex C3) | Maxwell FFS Kit, 200 mg weight | | |
| 17 | 20.07.2020. | | 0,1% | QT/ZM/013 /015 | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 28.5.20 | | | QT-EVE--ZM-006 | | | |
| 20 | | | 0,1% | L.00.00-105 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | | | | | | | |
| 22 | | | | | | | |

## 5.1.10 GMO-Soya RR (GTS 40-3-2)

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | - | | | | - | - | |
| 5 | | | | | | | |
| 6 | 04.06. | 84 bp Amplicon | 0,01 | DIN EN ISO 21569: 2013-09 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 10.6.20 | GTS 40-3-2 Soya (MON-Ø4Ø32-6) | 0,01% | SureFood® GMO ID 4plex Soya II (S2162) | SureFood® Add-on (S1055) | real-time PCR | K01 |
| 8 | | | | | | | |
| 9 | 29.6.20 | DNA | 0.05% | in House Method | in House Method | Real Time PCR | Sample 1: 17% and sample 3: 24%; LOD: Specification of decimal places with "point" |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 16.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence | 0,1% | foodproof SL GMO GTS40-3-2 Soya Detection Kit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | 19.6.20 | transition of CTPGene to 35S-Promotor | 0.1 % | ASU L 00.00-105 mod. | Maxwell FFS Kit, 200 mg sample weight | | |
| 17 | 13.07.2020. | | 0,1% | QT-EVE-GM-005 | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 28.5.20 | | | QT-CON-00-003 | | | |
| 20 | | | 0,1% | L.00.00-105 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | 02.07.20 | | 0,10% | In House Method | Magnetic Bead Extraction | Gel Electrophoresis | |
| 22 | | | | | | | |

## 5.1.11 GMO-Soya RR2 (MON89788)

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | - | | | | - | - | |
| 5 | | | | | | | |
| 6 | 04.06. | 139 bp Amplicon | 0,01 | DIN EN ISO 21569: 2013-10 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | 10.6.20 | MON89788 Soya (MON-89788-1) | 0,01% | SureFood® GMO ID 4plex Soya II (S2162) | SureFood® Add-on (S1055) | real-time PCR | K01 |
| 8 | | | | | | | |
| 9 | 29.6.20 | DNA | 0.0015% | in House Method | in House Method | Real Time PCR | Sample 1: 7,5% and sample 3: 0,09%; LOD: Specification of decimal places with "point" |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 16.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| 14 | 23.6.20 | target-Sequence | 0,05% | foodproof GMO RR 2 Yield Soya Quantification Kit, Biotecon Diagnostics | Extraction with foodproof Sample Preparation Kit III, Biotecon Diagnostics Procedure: 1.Cells are lysed by incubation in the foodproof Sample Preparation Kit III extraction buffer. 2.Extracted DNA is digested in proteinase K to destroy endogenous nucleases and other proteins. 3.The DNA is applied to the included glass fiber filter and purified with the foodproof Sample Preparation Kit III wash buffer. 4. Purified DNA is then eluted using the foodproof Sample Preparation Kit III elution buffer and is ready to use. | Program for Light Cycler 96, Roche-Pre-incubation (1 cycle) Step 1: 37oC for 4 min Step 2: 95oC for 10min & Amplification (50 cycles) Step 1: 95oC for 5sec Step 2 (fluorescence detection) 60oC for 60 sec | |
| 15 | | | | | | | |
| 16 | nicht durchgeführt | | | | | | |
| 17 | 13.07.2020. | | 0,1% | QT/GM/006 | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 28.5.20 | | | QT-EVE-GM-006 | | | |
| 20 | | | 0,1% | JRC 2013 Event specific Method QT-EVE-GM-006 | CTAB-Method | Real Time PCR | Real Time PCR/50 cycles |
| 21 | | | | | | | |
| 22 | | | | | | | |

## 5.1.12 Lectin-DNA (Soya-specific)

| Evaluation number | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|
| | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electro-phoresis / cycles / amplificate length / reference material | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | 03.06. | | 5 copies | §64 LFGB L 00.00-105 (modified) C.2 (2014-02) | DNeasy Mericon Food Kit;Qiagen | Real Time PCR, TaqMan Universal-AB/ThermoFisher, 45 cycles | |
| 5 | | | | | | | |
| 6 | 04.06. | 81 bp Amplicon | 0,01 | DIN EN ISO 21569: 2013-09 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | 28.5.20 | DNA | 0.015% | in House Method | in House Method | Real Time PCR | LOD: Specification of decimal places with "point" |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | 17.6. | | | r-biopharm (Congen) | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 30 cycles | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | 18.6.20 | lectin-Gene | 5 haploide Genomic copies | ASU L 00.00-105 mod. (Annex B1) | Maxwell FFS Kit, 200 mg sample weight | | Sample 2 + 4 very bad Ct-values, very small soya amount contained. Not suitable for analysis of GMO soya. |
| 17 | 13.07.2020. | | 0,1% | QT-EVE-GM-005 and QT/GM/006 | Qiagen Dneasy Plant Kit | RT PCR | |
| 18 | | | | | | | |
| 19 | 9.6.20 | | | QT-EVE-GM-006 | | | |
| 20 | | | 0,1% | | | | |
| 21 | 09.07.20 | | 0,10% | In House Method | Magnetic Bead Extraction | Gel Electrophoresis | |
| 22 | | | | | | | |

## 5.1.13 Other Parameter (DNA)

| Parameter | Evaluation No. | Date of Analysis | Results given as | Limit of Detection | Test-Kit or Literature | Notes to Extraction | Notes to PCR-reaction | Further Remarks |
|---|---|---|---|---|---|---|---|---|
| *other events* | | Day/Month | Target-Sequence / -DNA | number of copies / % / ct-value | Manufacturer / Official Method | e.g. Extraction / enzymes / clean-up / DNA quality / DNA amount | e.g real time PCR / gel electrophoresis / cycles / amplificate length / reference material | |
| ABII | 12 | | | 5 copies, 0,05% | Gene Scan TR 35S/NOS/ABII IPC | Sure Food Prep Advancded r-Biopharm | Real-Time PCR, 45 cycles | |
| bar | 5 | 18.6.20 | bar | 0.1 % | genControl®RT Triplex V, GEN-IAL | mod. Wizard®-DNA-Clean-UP | Real Time PCR / 60 bp | |
| bar | 13 | 17.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| bar | 17 | 10.07.2020. | | 0,05% | GMO Screen 4 plex(BAR,NPTII,PAT,CTP2:CP 4 EPSPS) | Qiagen Dneasy Plant Kit | RT PCR | |
| CaMV | 16 | 24.6.20 | Cauliflower Mosaik Virus-specific DNA-Sequence | | ASU G 30.40-17 | Maxwell FFS Kit, 200 mg sample weight | | |
| NK603-Maize | 6 | 04.06. | | 0,05 | GMOMETHODS database; QT-EVE-ZM-008: 2005 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| NPTII | 17 | 10.07.2020. | | 0,05% | GMO Screen 4 plex(BAR,NPTII,PAT,CTP2:CP 4 EPSPS) | Qiagen Dneasy Plant Kit | RT PCR | |
| NPTII | 22 | 9.7.20 | | 0,1% | sureFood Congen S2127 | as per kit instructions | as per kit instructions | |
| pat | 9 | 16.6.20 | DNA | 10 copies | in House Method | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| pat | 13 | 17.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| pat | 16 | 25.6.20 | pat-Gen | 0.1 % | ASU G 30.40-14 | Maxwell FFS Kit, 200 mg sample weight | | Sample 1 + 3 weak positive signals with contents < 0,1 % |
| pat | 17 | 10.07.2020. | | 0,05% | GMO Screen 4 plex(BAR,NPTII,PAT,CTP2:CP 4 EPSPS) | Qiagen Dneasy Plant Kit | RT PCR | |
| Plant detection | 9 | 28.5.20 | DNA | 0.1% | in House Method | Genomic DNA from food, Macherey-Nagel | Real Time PCR | LOD: Specification of decimal places with "point" |
| pnos-nptII | 13 | 17.6. | | | Gen-ial | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 45 cycles | |
| Rapeseed specific DNA | 13 | 17.6. | | | r-biopharm (Congen) | CTAB, Proteinase K, FFS-Kit Promega | real time PCR, 30 cycles | |
| Rapeseed specific DNA | 6 | 04.06. | | | GMOMETHODS database: 2011 | CTAB, Prot. K, RNase A; Dneasy Mericon Food Kit; 100 ng/rxn. | Real Time PCR (Taqman), 45 cycles | |
| Soya A2704-12 | 3 | 05.06. | | 5 copies | GEN-IAL genControl RT Triplex Soya I | Congen SureFood PREP Basic Extraktionskit | Real Time PCR, 45 cycles | |
| GMO-Soya LL (A2704-12) | 9 | 29.6.20 | DNA | 0.02% | in House Method | in House Method | Real Time PCR | LOD: Specification of decimal places with "point" |
| Soya A5547-127 | 3 | 05.06. | | 15 copies | GEN-IAL genControl RT Triplex Soya I | Congen SureFood PREP Basic Extraktionskit | Real Time PCR, 45 cycles | |
| Soya CV127-9 | 3 | 05.06. | | 30 copies | GEN-IAL genControl RT Triplex Soya II | Congen SureFood PREP Basic Extraktionskit | Real Time PCR, 45 cycles | |
| Soya DP305423-1 | 3 | 05.06. | | 30 copies | GEN-IAL genControl RT Triplex Soya II | Congen SureFood PREP Basic Extraktionskit | Real Time PCR, 45 cycles | |
| Soya DP356043-5 | 3 | 05.06. | | 10 copies | GEN-IAL genControl RT Triplex Soya I | Congen SureFood PREP Basic Extraktionskit | Real Time PCR, 45 cycles | |
| Soya MON87701-2 | 3 | 05.06. | | 5 copies | GEN-IAL genControl RT Triplex Soya II | Congen SureFood PREP Basic Extraktionskit | Real Time PCR, 45 cycles | |

## 5.2 Homogeneity

### 5.2.1 Mixture homogeneity before bottling

**Microtracer Homogeneity Test**
**DLA -ptGM S1 Sample 1**

| | | |
|---|---|---|
| Weight whole sample | 1,08 | kg |
| Microtracer | FSS-rot lake | |
| Particle size | 75 – 300 | µm |
| Weight per particle | 2,0 | µg |
| Addition of tracer | 34,4 | mg/kg |

**Result of analysis**

| Sample | Weight [g] | Particle number | Particles [mg/kg] |
|---|---|---|---|
| 1 | 5,02 | 75 | 29,9 |
| 2 | 5,01 | 83 | 33,1 |
| 3 | 4,98 | 82 | 32,9 |
| 4 | 4,97 | 73 | 29,4 |
| 5 | 5,01 | 78 | 31,1 |
| 6 | 5,01 | 82 | 32,7 |
| 7 | 4,98 | 84 | 33,7 |
| 8 | 4,97 | 87 | 35,0 |

| **Poisson distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Degree of freedom | 7 | |
| Mean | 80,5 | Particles |
| Standard deviation | 4,85 | Particles |
| $\chi^2$ (CHI-Quadrat) | 2,05 | |
| **Probability** | **96** | % |
| Recovery rate | 94 | % |

| **Normal distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Mean | 32,2 | mg/kg |
| Standard deviation | 1,94 | mg/kg |
| rel. Standard deviaton | 6,0 | % |
| Horwitz standard deviation | 9,5 | % |
| **HorRat-value** | **0,6** | |
| Recovery rate | 94 | % |

**Microtracer Homogeneity Test**
**DLA -ptGMS1 Sample 2**

| | | |
|---|---|---|
| Weight whole sample | 1,00 | kg |
| Microtracer | FSS-rot lake | |
| Particle size | 75 – 300 | µm |
| Weight per particle | 2,0 | µg |
| Addition of tracer | 24,0 | mg/kg |

**Result of analysis**

| Sample | Weight [g] | Particle number | Particles [mg/kg] |
|---|---|---|---|
| 1 | 5,05 | 67 | 26,5 |
| 2 | 5,00 | 81 | 32,4 |
| 3 | 5,03 | 70 | 27,8 |
| 4 | 4,97 | 67 | 27,0 |
| 5 | 5,02 | 75 | 29,9 |
| 6 | 4,96 | 77 | 31,0 |
| 7 | 5,03 | 75 | 29,8 |
| 8 | 5,02 | 85 | 33,9 |

| **Poisson distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Degree of freedom | 7 | |
| Mean | 74,6 | Particles |
| Standard deviation | 6,52 | Particles |
| $\chi^2$ (CHI-Quadrat) | 3,99 | |
| **Probability** | **78** | % |
| Recovery rate | 124 | % |

| **Normal distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Mean | 29,8 | mg/kg |
| Standard deviation | 2,60 | mg/kg |
| rel. Standard deviaton | 8,7 | % |
| Horwitz standard deviation | 9,6 | % |
| **HorRat-value** | **0,9** | |
| Recovery rate | 124 | % |

**Microtracer Homogeneity Test**
**DLA -ptGMS1 Sample 3**

| | | |
|---|---|---|
| Weight whole sample | 0,89 | kg |
| Microtracer | FSS-rot lake | |
| Particle size | 75 – 300 | µm |
| Weight per particle | 2,0 | µg |
| Addition of tracer | 27,2 | mg/kg |

**Result of analysis**

| Sample | Weight [g] | Particle number | Particles [mg/kg] |
|---|---|---|---|
| 1 | 4,97 | 79 | 31,8 |
| 2 | 5,03 | 75 | 29,8 |
| 3 | 5,03 | 75 | 29,8 |
| 4 | 4,97 | 75 | 30,2 |
| 5 | 5,00 | 79 | 31,6 |
| 6 | 5,03 | 84 | 33,4 |
| 7 | 4,99 | 81 | 32,5 |
| 8 | 5,01 | 73 | 29,1 |

| **Poisson distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Degree of freedom | 7 | |
| Mean | 77,6 | Particles |
| Standard deviation | 3,76 | Particles |
| $\chi^2$ (CHI-Quadrat) | 1,27 | |
| **Probability** | **99** | % |
| Recovery rate | 114 | % |

| **Normal distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Mean | 31,0 | mg/kg |
| Standard deviation | 1,50 | mg/kg |
| rel. Standard deviaton | 4,8 | % |
| Horwitz standard deviation | 9,5 | % |
| **HorRat-value** | **0,5** | |
| Recovery rate | 114 | % |

**Microtracer Homogeneity Test**
**DLA -ptGMS1 Sample 5**

| | | |
|---|---|---|
| Weight whole sample | 0,99 | kg |
| Microtracer | FSS-rot lake | |
| Particle size | 75 – 300 | µm |
| Weight per particle | 2,0 | µg |
| Addition of tracer | 28,4 | mg/kg |

**Result of analysis**

| Sample | Weight [g] | Particle number | Particles [mg/kg] |
|---|---|---|---|
| 1 | 5,01 | 67 | 26,7 |
| 2 | 4,96 | 66 | 26,6 |
| 3 | 5,01 | 60 | 24,0 |
| 4 | 4,97 | 69 | 27,8 |
| 5 | 5,03 | 65 | 25,8 |
| 6 | 5,03 | 63 | 25,0 |
| 7 | 5,02 | 73 | 29,1 |
| 8 | 5,00 | 74 | 29,6 |

| **Poisson distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Degree of freedom | 7 | |
| Mean | 67,1 | Particles |
| Standard deviation | 4,83 | Particles |
| $\chi^2$ (CHI-Quadrat) | 2,43 | |
| **Probability** | **93** | % |
| Recovery rate | 94 | % |

| **Normal distribution** | | |
|---|---|---|
| Number of samples | 8 | |
| Mean | 26,8 | mg/kg |
| Standard deviation | 1,93 | mg/kg |
| rel. Standard deviaton | 7,2 | % |
| Horwitz standard deviation | 9,8 | % |
| **HorRat-value** | **0,7** | |
| Recovery rate | 94 | % |

## 5.3 Information on the Proficiency Test (PT)

Before the PT the participants received the following information in the sample cover letter:

| | |
|---|---|
| *PT number* | ***DLA ptGMS1*** |
| *PT name* | ***GMO-Screening I (qualitative): 5 Samples with positive/negative amounts of p-35S, t-NOS, p-FMV, CP4 EPSPS, 35S-Pat, Cry1Ab/Ac / GMO-Maize (Bt11, MIR604) and GMO-Soya (RR GTS 40-3-2, RR2 MON89788)*** |
| *Sample matrix** | *5 different Samples: possible ingredients: Products of soybean, maize and wheat flour and semolina* |
| *Number of samples and sample amount* | *5 different samples, 10 g each.* |
| *Storage* | *Samples: dry and dark at room temperature (long term cooled 2 - 10°C)* |
| *Intentional use* | *Laboratory use only (quality control samples)* |
| *Parameter* | ***qualtitative: p-35S, t-NOS, p-FMV, CP4 EPSPS, 35S-Pat, Cry1Ab/Ac / GMO-Maize (Bt11, MIR604) and GMO-Soya (RR GTS 40-3-2, RR2 MON89788)*** |
| *Methods of analysis* | *Analytical methods are optional* |
| *Notes to analysis* | *The analysis of PT samples should be performed like a routine laboratory analysis.*<br>*In general we recommend to homogenize a representative sample amount before analysis according to good laboratory practice, especially in case of low sample weights.* |
| *Result sheet* | *One result each should be determined for Samples 1-5 per parameter and filled in the result submission file.* |
| *Units* | *positive / negative (limit of detection: copies or percentage)* |
| *Number of significant digits* | *only qualitative* |
| *Further information* | *Further information can be given in the result submission file.* |
| *Result submission* | *The result submission file should be sent by e-mail to:*<br>***pt@dla-lvu.de*** |
| *Last Deadline* | ***the latest 24th July 2020*** |
| *Evaluation report* | *The evaluation report is expected to be completed 6 weeks after deadline of result submission and sent as PDF file by e-mail.* |
| *Coordinator and contact person of PT* | *Alexandra Scharf MSc.* |

* Control of mixture homogeneity and qualitative testings are carried out by DLA. Any testing of the content, homogeneity and stability of PT parameters is subcontracted by DLA.

# 6. Index of participant laboratories

| Teilnehmer / Participant | Ort / Town | Land / Country |
|---|---|---|
| | | SPAIN |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | Germany |
| | | ITALY |
| | | BELGIUM |
| | | Germany |
| | | GREAT BRITAIN |
| | | Germany |
| | | GREECE |
| | | GREAT BRITAIN |
| | | SERBIA |
| | | Germany |
| | | Germany |

*[Die Adressdaten der Teilnehmer wurden für die allgemeine Veröffentlichung des Auswerte-Berichts nicht angegeben.]*

*[The address data of the participants were deleted for publication of the evaluation report.]*

# 7. Index of references


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