



# NON-GM/"OHNE GENTECHNIK" ADD-ON

## Module 1: Compound Feed Manufacturing Company

CONTROL POINTS AND COMPLIANCE CRITERIA

ENGLISH VERSION 1.1

Valid from: 1 January 2020



## INTRODUCTION

### SCOPE DEFINITION OF THE ADD-ON MODULE

**THE SCOPE OF THIS GLOBALG.A.P. ADD-ON MODULE IS THE DEFINITION OF THOSE ADDITIONAL CONTROL POINTS AND COMPLIANCE CRITERIA FOR THE INSPECTION OF A COMPOUND FEED MANUFACTURING COMPANY THAT HAS THE CERTIFICATION ACCORDING TO THE GLOBALG.A.P. COMPOUND FEED MANUFACTURING STANDARD AND INTENDS TO PRODUCE AND TO SUPPLY COMPOUND FEED FOR LIVESTOCK AND AQUACULTURE PRODUCTION TO BE LABELED “SUITABLE FOR THE PRODUCTION OF FOOD LABELED “NON-GM” / “OHNE GENTECHNIK“ (CONTAINING NO GM RAW MATERIALS/FEED INGREDIENTS).**

THE APPLICABILITY OF THIS ADD-ON IS LIMITED TO

1. COMPOUND FEED MANUFACTURING COMPANIES LOCATED AND OPERATING IN EU MEMBER STATES WHERE THE EU REGULATIONS NO. 1829/2003 AND NO. 1830/2003 ARE MANDATORY AND IN FORCE
2. COMPOUND FEED MANUFACTURING COMPANIES LOCATED AND OPERATING IN COUNTRIES WHERE LOCAL LEGISLATION IS EQUIVALENT TO THESE EU REGULATIONS
3. COMPOUND FEED MANUFACTURING COMPANIES LOCATED AND OPERATING IN COUNTRIES WHERE THE COMMERCIAL CULTIVATION AND IMPORT OF GMOS IS PROHIBITED BY LAW.

**AS A PRE-REQUISITE THE SAID COMPOUND FEED MANUFACTURER SHALL HAVE THE GLOBALG.A.P. COMPOUND FEED MANUFACTURING STANDARD CERTIFICATION.**

**THE ADD-ON IS VOLUNTARY.**

**IN CASE OF PASSING THE AUDIT, A LETTER OF CONFORMANCE SHALL BE ISSUED BY THE CB.**



## **DEFINITIONS**

“**FEED**” is defined as substances or products, including additives, be it in processed, partially processed or unprocessed form, which are intended for oral feeding of animals. This includes compound feed.

“**NON-GM FEED**” is defined as feed **that is not subject to compulsory labeling as “genetically modified”** according to Regulations (EC) No. 1829/2003 and No. 1830/2003,

“**GM FEED**” is defined as feed **that is subject to compulsory labeling as being “genetically modified”** according to Regulations (EC) No. 1829/2003 and No. 1830/2003

The terms FEED, NON-GM FEED and GM FEED are used equally for Non-EU countries where local legislation has been approved to be equivalent to Regulations (EC) No. 1829/2003 and No. 1830/2003 and to countries where the commercial cultivation and import of GMOs is not approved by the authorities of the Country of Production or prohibited by law.

## CONTENTS

# PRODUCTION OF **NON-GM** / “OHNE GENTECHNIK” COMPOUND FEED

<b>NON-GM CFM 1</b>	<b>DESCRIPTION OF THE COMPOUND FEED MANUFACTURING FACILITY</b>
<b>NON-GM CFM 2</b>	<b>STAFF TRAINING FOR “NON-GM” PRODUCTION OF COMPOUND FEED</b>
<b>NON-GM CFM 3</b>	<b>INCOMING GOODS INSPECTION AND SEGREGATION</b>
<b>NON-GM CFM 4</b>	<b>RETENTION TIMES OF DOCUMENTATION AND TRACEABILITY</b>
<b>NON-GM CFM 5</b>	<b>CRISIS MANAGEMENT</b>
<b>NON-GM CFM 6</b>	<b>DECLARATION ON DELIVERY NOTES AND INVOICES “NON-GM” / “OHNE GENTECHNIK”</b>
<b>NON-GM CFM 7</b>	<b>TRANSPORT OF FINISHED FEED</b>
<b>ANNEX 1</b>	<b>SAMPLING AND TESTING PLAN FOR FEED WITH THE NON-GM CLAIM</b>
<b>ANNEX 2</b>	<b>METHODOLOGICAL REQUIREMENTS FOR LABORATORIES PERFORMING GMO-TESTING</b>
<b>ANNEX 3</b>	<b>ANALYTICAL REQUIREMENTS FOR LABORATORIES TESTING FEED WITH THE NON-GM CLAIM</b>

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM</b>	<b>MANUFACTURING OF NON-GM / “OHNE GENTECKNIK” COMPOUND FEED</b>		
	<i>Control points in this module are applicable to all compound feed manufacturers seeking certification according to the NON-GM compound feed manufacturing Add-on located and operating in EU Member States where the EU REGULATIONS NO. 1829/2003 and NO. 1830/2003 are mandatory and in force or located and operating in countries where local legislation is equivalent to these EU REGULATIONS or to countries where the commercial cultivation and import of GMOs is prohibited by law.</i>		
<b>NON-GM CFM 1</b>	<b>DESCRIPTION OF THE COMPOUND FEED MANUFACTURING FACILITY</b>		
<b>NON-GM CFM 1.1</b>	Is there a written organizational chart that assigns the responsibilities for the “NON-GM”/ “Ohne Gentechnik” compound feed manufacturing including a proxy (deputy plan) to cover the absence of the responsible production manager?	There shall be a written organizational chart that assigns the responsibilities for the “NON-GM”/ “Ohne Gentechnik” manufacturing of compound feed according to the “Non-GM” requirements including a deputy plan to cover the absence	Major Must
<b>NON-GM CFM 1.2”</b>	Are the specifications for NON-GM feed ingredients available that proof that these are NON-GM?	There shall be specifications available for the NON-GM feed ingredients that proof that these are NON-GM.	Major Must
<b>NON-GM CFM 1.3”</b>	Is a specific list of the suppliers available that deliver NON-GM materials/feed ingredients?	A specific list of the suppliers that deliver NON-GM materials/feed ingredients shall be available.	Major Must
<b>NON-GM CFM 2</b>	<b>STAFF TRAINING FOR “NON-GM” PRODUCTION OF COMPOUND FEED</b>		
<b>NON-GM CFM 2.1</b>	Is there an annual training of all staff members involved in the operating procedures of the “NON-GM”/ “Ohne Gentechnik” production of compound feed?	There shall be an annual training of all staff members that are involved in the operating procedures related to the production of compound feed according to the “NON-GM”/ “Ohne Gentechnik” requirements	Major Must
<b>NON-GM CFM 2.2</b>	Is there a documentation of the annual training on the “NON-GM”/ “Ohne Gentechnik” requirements detailing the training date, the training location, the instructor, the content and the attendees?	The annual training on the “NON-GM”/ “Ohne Gentechnik” requirements shall be documented regarding the training date, location, instructor, content and the attendees.	Major Must

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 2.3</b>	Is there a documented initial training of all new staff members involved in the production of NON-GM FEED?	The initial training of all new staff members involved in the production of NON-GM FEED shall be documented regarding training date, location, instructor, content and attendees. The training shall take place before the new staff members are integrated in the processing procedures.	Major Must
<b>NON-GM CFM 3</b>	<b>INCOMING GOODS INSPECTION AND SEGREGATION</b>		
<b>NON-GM CFM 3.1</b>	Is it ensured at goods receiving department by means of documentation that only NON-GM feed materials are used for the production and/or the labeling of compound feed according to the requirements for “Suitable for the production of food labeled “NON-GM”/ “Ohne Gentechnik”?	At the goods receiving department it shall be ensured by means of the delivery notes that only NON-GM feed materials are used for the production and/or the labeling of compound feed according to the requirements for “Suitable for the production of food labeled “NON-GM”/ “Ohne Gentechnik.	Major Must

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 3.2</b>	Is there a self-monitoring concept including a risk assessment of the compound feed manufacturing business for the segregated handling of GM and NON-GM feed as well as any possibility of introduction and contamination?	<p>There shall be a self-monitoring concept including a risk assessment of the compound feed manufacturing business for the segregated handling of GM and NON-GM feed as well as any possibility of introduction and contamination.</p> <p>The risk assessment shall include the cleaning processes.</p> <p>The self-monitoring and risk assessment concept of the feed business shall comprise at least the following criteria:</p> <ul style="list-style-type: none"> <li>• Compilation of all NON-GM and GM feed of the feed manufacturing business.</li> <li>• Segregated handling of NON-GM and GM feed at all stages of storage, processing and transport.</li> <li>• Identification and exclusion of sources of contamination and carryover.</li> <li>• Individual, batch-specific, written risk assessment of single-component feeds with a transparent risk grading (at risk/not at risk).</li> <li>• Specifications for all finished compound feed products.</li> <li>• Mixing protocols shall be available.</li> </ul>	Major Must

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 3.3</b>	Is there a risk-based sampling and analyzing plan of feed implemented according to the risk assessment of Control Point NON-GM CFM 3.2 and as required in ANNEX 1?	There shall be a risk-based sampling and analyzing plan of feed implemented according to the risk assessment of Control Point NON-GM CFM 3.2 and as defined in ANNEX 1. In case there are no GM plant raw materials approved by the authorities of the country of production for use in animal feed all preceding analyses at first year of sampling have proven to be in compliance with the requirements for NON GM feed production then in the second year the frequency may be reduced to 50% and in the third and following years may be reduced to 25% of the required samples according to ANNEX 1.	Major Must
<b>NON-GM CFM 3.4</b>	Are the analyses requested in Control Point NON-GM CFM 3.3 performed in an ISO 17025-accredited laboratory, and do the analytical procedures follow the requirements outlined in Annexes 2 and 3?	The analyses requested in Control Point NON-GM CFM 3.3 shall be performed in an ISO 17025-accredited laboratory and shall follow the methodological and analytical procedures outlined in Annexes 2 and 3.	Major Must
<b>NON-GM CFM 3.5</b>	Is it ensured by documentation of storage and production processes and by verification of implementation of these measures that at no time GM raw materials or GM feed can make their way into the flow of raw materials and feed intended for NON-GM feed production?	It shall be ensured by documentation of storage and production processes and by verification of implementation of these measures that at no time GM raw materials or GM feed can make their way into the flow of raw materials and feed intended for NON-GM production.	Major Must
<b>NON-GM CFM 3.6</b>	Does GM feed have the correct labeling and is it identifiable at all steps of storage and production?	GM feed shall have the correct labeling and shall be identifiable at all steps of storage and production.  N/A if no GM feed neither present nor used at compound feed manufacturing site.  N/A in countries where the commercial cultivation and import of GMOs is not approved by the authorities of the Country of Production or prohibited by law.	Major Must



N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 3.7</b>	Are the individual operative and risk oriented procedural steps documented in a separate document for the avoidance of comingling and for the segregation of commodity flows?	<p>To avoid the comingling and to verify the segregation of commodity flows the individual operative and risk oriented procedural steps shall be documented in a separate document.</p> <p>N/A in countries where the commercial cultivation and import of GMOs is not approved by the authorities of the Country of Production or prohibited by law.</p>	Major Must
<b>NON-GM CFM 3.8</b>	Does the compound feed manufacturer take responsibility to conduct a minimum of one internal self-assessment per year against the GLOBALG.A.P. NON-GM Add-on Standard Module 1 Compound Feed Manufacturing?	<p>There shall be documented evidence that one internal self-assessment per year has been completed under the responsibility of the compound feed manufacturer against the GLOBALG.A.P. NON-GM Add-on Standard Module 1 Compound Feed Manufacturing.</p> <p>The self-assessment checklist shall contain comments of the evidence observed for all non-applicable and non-compliant control points.</p> <p>This shall be done before the CB inspection (See General Rules for the NON-GM Add-on Standard).</p>	Major Must

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 4</b>	<b>RETENTION TIMES OF DOCUMENTATION AND TRACEABILITY</b>		
<b>NON-GM CFM 4.1</b>	Are all documents in context with the labelling of finished compound feed according to “Suitable for the production of food labeled “NON-GM”/ “Ohne Gentechnik“ retained for at least five years from the date of delivery of the finished compound feed?	All documents in context with the labelling of finished compound feed according to “Suitable for the production of food labeled “NON-GM” / “Ohne Gentechnik“ shall be retained for at least 5 years from the date of delivery of finished compound feed unless legal requirements stipulate a longer retention period . This addresses specifically delivery bills, invoices, purchase orders, declarations and specifications of raw materials/feed ingredients, means of production and the type of finished feed.	Major Must
<b>NON-GM CFM 4.2</b>	Is it possible to trace the compound feed described and labeled with the claim “Suitable for the production of food labeled “NON-GM”/ “Ohne Gentechnik“ back to the source of production within one working day and to compile quantitative statements and evaluations that permit conclusions on the flow of goods and their plausibility?	A traceability system shall be in place that allows at all times to identify instantly and unmistakably all compound feed in context with the described and labeled with the claim “Suitable for the production of food labeled “NON-GM”/ “Ohne Gentechnik“. Products shall be traceable back to the source of production within one working day providing compilation of quantitative statements and evaluations that permit conclusions on the flow of goods and their plausibility.	Major Must

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 4.3</b>	Does the feed mill follow a sampling and analyzing procedure on finished compound feed to be described and labeled with the claim “Suitable for the production of food labeled “NON-GM”/“Ohne Gentechnik”?”	The feed mill shall follow a sampling and analyzing procedure on finished compound feed described and labeled with the claim as “Suitable for the production of food labeled “NON-GM”/“Ohne Gentechnik” as expressed in ANNEX 1 . The analyses must be performed in an ISO 17025 accredited laboratory. In case there are no GM plant raw materials approved by the authorities of the country of production for use in animal feed all preceding analyses at first year of sampling have proven to be in compliance with the requirements for NON GM feed production then in the second year the frequency may be reduced to 50% and in the third and following years may be reduced to 25% of the required samples according to ANNEX 1.	Major Must
<b>NON-GM CFM 4.4</b>	Are the analyses requested in Control Point NON-GM CFM 4.3 performed in an ISO 17025-accredited laboratory and do the analytical procedures follow the requirements outlined in Annexes 2 and 3?	The analyses requested in Control Point NON-GM CFM 4.3 shall be performed in an ISO 17025-accredited laboratory and shall follow the methodological and analytical procedures outlined in Annexes 2 and 3.	Major Must
<b>NON-GM CFM 4.5</b>	Does the feed mill retain samples of all NON-GM feed batches delivered to customers and are these retained for a period of time appropriate to the intended purpose and shelf life of the feed?	The feed mill shall retain samples in suitable containers of all NON-GM feed batches delivered to customers. These reference samples shall be retained for a period of time appropriate to the intended purpose and to the shelf life of the feed. This applies both to feed delivered in bulk or packaged.	Major Must
<b>NON-GM CFM 5</b>	<b>CRISIS MANAGEMENT</b>		
<b>NON-GM CFM 5.1</b>	Is there a written crisis management system in place with an analysis of potential dangers?	There shall be a written crisis management system in place with an analysis of potential dangers. The course of action of the system shall be described. The emergency numbers plus the contact details of suppliers and clients shall be part of it.	Major Must

N°	Control Points	Compliance Criteria	Level
<b>NON-GM CFM 5.2</b>	Is there an internal system in place to block compound feed that is detected as not compliant with the declaration requirements “Suitable for the production of food to be labeled “NON-GM”/ “Ohne Gentechnik” from delivery?	There shall be an internal system in place to block compound feed from delivery that has been manufactured but is detected to be not in compliance with the requirements as requested for the declaration “Suitable for the production of food to be labeled “NON-GM”/ “Ohne Gentechnik”. The principle of precaution shall be the policy for the execution of the blocking system.	Major Must
<b>NON-GM CFM 6</b>	<b>DECLARATION ON DELIVERY NOTES AND BILLS “NON-GM” / ”Ohne Gentechnik”</b>		
<b>NON-GM CFM 6.1</b>	Is there a statement on the delivery notes and on the invoices declaring that the supplied compound feed is “Suitable for production of food labeled “NON-GM”/ “Ohne Gentechnik”?	There shall be a statement on the delivery notes and on the invoices declaring that the supplied compound feed is “Suitable for the production of food labeled “NON-GM”/ “Ohne Gentechnik”.	Major Must
<b>NON-GM CFM 7</b>	<b>TRANSPORT OF FINISHED NON-GM COMPOUND FEED</b>		
<b>NON-GM CFM 7.1</b>	Are transporters of NON-GM finished compound feed described and labeled with the claim “Suitable for the production of food to be labeled “NON-GM”/ “Ohne Gentechnik” monitored regularly by approved quality assurance schemes for transporters?	Transporters that are commissioned carriers of finished compound feed described and labeled with the claim “Suitable for the production of food to be labeled “NON-GM”/ “Ohne Gentechnik” shall be monitored regularly by approved quality assurance schemes for transporters, (e.g. GMP+ or other).  N/A in case there is no import and no use of GM raw materials in the country of production based on official regulations/policy.	Major Must

**ANNEX 1: SAMPLING AND TESTING PLAN FOR FEED WITH THE NON-GM CLAIM**

**Annual minimum of sampling and testing of the single feed components**

**INCOMING FEED DEPARTMENT**

Area	Sampling and testing for NON-GM Feed at INCOMING FEED DEPARTMENT
Sample material Production	Single-component feed
Exclusive Production of NON-GM feed	For every batch of single-component feed graded at risk.
Parallel production of NON-GM and GM feed	For every batch of single-component feed graded at risk.

200115\_GG\_NON-GM\_Add-on\_CFM\_Company\_Module\_1\_CPCC\_V1-1\_en

**Annual minimum of sampling and testing of the compound feed  
DELIVERING FEED DEPARTMENT**

<b>Area</b>	<b>Sampling and testing for NON-GM /Ohne Gentechnik at DELIVERING FEED DEPARTMENT</b>
<b>Sample material Production</b>	<b>Compound feed suitable for the production of NON-GM / Ohne Gentechnik</b>
<b>Exclusive Production of NON- GM feed</b>	<p>up to 10,000 t/year: 1 sample/test            ≥ 10,000 to 50,000 t/year: 2 samples/tests            ≥ 50,000 to 100,000 t/year: 4 samples/tests            ≥ 100,000 to 200,000 t/year: 6 samples/tests            ≥ 200,000 to 300,000 t/year: 8 samples/tests            for every additional 100,000 t: 2 additional samples/tests</p>
<b>Parallel production of NON-GM and GM feed</b>	<p>up to 2,000 t/year: 1 sample/test            &gt; 2,000 to 5,000 t/year: 3 samples/tests            &gt; 5,000 to 10,000 t/year: 5 samples /tests            ≥ 10,000 to 50,000 t/year: 10 samples/tests            ≥ 50,000 to 100,000 t/year: 15 samples/tests            ≥100,000 to 200,000 t/year: 20 samples/tests            ≥ 200,000 to 300,000 t/year: 25 samples/tests            for every additional 100,000 t: 5 additional samples/tests</p>

200115\_GG\_NON-GM\_Add-on\_CFM\_Company\_Module\_1\_CPCC\_V1-1\_en

## ANNEX 2: METHODOLOGICAL REQUIREMENTS FOR LABORATORIES PERFORMING GMO-TESTING

DIN and ISO standards and protocols of the Joint Research Centre are to be used (if available). For methods from other sources, including in-house methods, the laboratory must verify that similar minimum requirements are being fulfilled and that all relevant methods are accredited.

### 1. Testing process

#### 1.1. Milling

Depending on the sample matrix, the following minimum amounts of sample material are to be completely milled in each case:

- Feed: min. 400g, max. 1kg, entirely milled
- Raw materials (whole maize/corn kernels, soy beans, or rapeseed/canola grains, among others): at least 3000 grains or approx. the corresponding sample amount (maize/corn: at least 1000g; soy: at least 700g; rapeseed/canola: at least 60g), entirely milled
- Rice: see Annex 3 No. 1.4
- Salmon: see 1.1.2

Explanation: The given minimum quantities refer to entire grains and/or beans. For raw materials that exhibit better homogeneity (e.g., soya protein concentrate), smaller weighed portions may be used in coordination with the responsible laboratory and the client.

#### 1.2. Maceration (salmon)

Depending on the testing matrix, the following minimum quantities of sample material are macerated, respectively:

- Salmon filet: at least 5g each from at least 10 animals, completely macerated
- Salmon products: at least 50g, completely macerated

### **1.3. DNA extraction**

At least 2 DNA extractions are performed on each sample following milling/maceration/homogenization. The required weight is at least 2000mg for feed, seeds, and food, including salmon and salmon products as well as materials that are suspected of not being homogeneously distributed.

Explanation: In exceptional cases (for otherwise non-extractable material), the weight may be only 500mg.

### **1.4. PCR test**

Real-time PCR methods with probe technology (45 cycles) are recommended. When using conventional endpoint PCR methods, an additional confirmation reaction is carried out (e.g., real-time PCR with probe technology, restriction test, or sequencing). Each PCR test is performed in duplicate using the two independent DNA extractions.

## **2. Protecting the testing procedure**

All quality checks according to the relevant ISO and DIN standards must yield the results required by these standards. The laboratory ensures that the measurement results are not affected by any inhibitory effects. If the measurements are so different from the control values that the tolerance limits set by the laboratory for deviations or quality specifications are exceeded, the PCR process must be repeated. Methods for regularly carrying out and documenting QC measures must be established and implemented (e.g., control charts) in order to recognize systemic errors, instability of reagents etc. in a timely manner and implement appropriate countermeasures.

## **3. Approval of test results**

In accordance with the four-eyes principle, the results must be approved by an authorized person.



## ANNEX 3: ANALYTICAL REQUIREMENTS FOR LABORATORIES TESTING FEED WITH THE NON-GM CLAIM

### 1. Minimum requirements for raw materials/single-component feed

#### 1.1. Minimum requirements for raw soy materials/soy-based single-component feed

Determination and assessment of the summation value of the most relevant soy GMOs:

- Quantification of GTS 40-3-2 (RRS-1)
- Quantification of MON89788 (RRS-2)
- Qualitative detection of A2704-12 and A5547

In the event of a positive result for A2704 and/or A5547, the quantity of these GMOs can, for example, be estimated using the  $\Delta\Delta$ ct method or a similar method determining whether sufficient quantities of species DNA are present. For estimated test concentrations greater than 0.1%, a post-quantification must be carried out.

Alternatively, the laboratory may work with screening parameters that detect at least the GMOs mentioned. When using the pat gene (or LibertyLink constructs), A554-127 (or another single copy material) must be used as a reference material for estimation. In the subsequent identification/quantification of positive findings, at least all GMOs (if corresponding elements are positive) mentioned here must be quantified.

#### 1.2. Minimum requirements for raw corn/maize materials or corn/maize-based single-component feeds

##### 1.2.1 Screening for 35S Promoter (p35S) and NOS Terminator (tNOS).

Other screening elements can be implemented to narrow the corresponding GMO down.

##### 1.2.2 If positive:

In the event of a positive result for 35S Promotor (p35S) and/or NOS Terminator (tNOS), the quantity of these screening elements can, for example, be estimated using the  $\Delta\Delta$ ct method or a similar method. For estimated test concentrations (MON89034 or a suitable reference material for maize/corn that contains 35S in single copy) greater than 0.1%, identification and subsequent quantification must be carried out. If there are several positive results, the estimated individual values must be added together.

Testing at least for NK603, TC1507, MON810, MON89034.

1.2.3 If one or more of these GM corn types can be ruled out using the positive screening parameters, then the same number of commercialized GM corn/maize types that come into question must be searched for instead.

Positive screening results for concentrations greater than 0.1% must be clarified; if no GM corn/maize types can be found, other GM types must be analyzed, e.g. RRS-1.

1.2.4 Determining the summation value of the corn/maize GMO

Identified varieties must be quantified if the estimation of the concentration by, for example, the  $\Delta\Delta\text{ct}$  method or another similar method determining whether sufficient quantities of species DNA are present shows test concentrations greater than 0.1%.

RRS-1 positive:

Estimating the soy mass (weight) and assessing the amount of soy: Is it a relevant amount or a minimal trace amount? If botanical contamination with a GMO is established, an assessment according to the official guideline must take place.

### 1.3. Minimum requirements for raw canola/rapeseed materials/ canola/rapeseed-based single-component feeds

There are two possible testing procedures.

1.3.1 First testing procedure:

1.3.1.1 Triple screening that detects all currently relevant GM canola/rapeseed varieties and botanical impurities (e.g., tNOS, CTP2-CP4epsps (or pFMV), pat gene (or LibertyLink construct)).

1.3.1.2 ID depending on positive screening results

- tNOS positive: at least RRS + bar gene or MS8/RF3 directly
- CTP2-CP4epsps / pFMV positive: at least GT73

If no canola/rapeseed GMO is detected, the presence of a botanical contaminant containing GMO with other plant varieties must be clarified (estimation and assessment of masses). Is it a relevant quantity or a minimal trace amount? If botanical contamination with GM soy above a test concentration of 0.5% is detected, the GM soy content must be determined (see minimum requirements for feed containing soy). For botanical contamination of corn/maize, the GMO summation value for corn/maize with corn/maize contamination over 0.9% must be determined and a new evaluation pursuant to official guidelines must take place.

This official guideline is: Guideline for the Control of GMOs in feed (German: Leitfaden zur Kontrolle von GVO in Tierfutter – November 2011 version). Monitoring of the production, of handling, of use and of bringing to market of feed in connection with genetically modified organisms (GMOs) shall be done in accordance with the information at the following link: [http://www.ohnegentechnik.org/Leitfaden\\_Futtermittel](http://www.ohnegentechnik.org/Leitfaden_Futtermittel)

1.3.2 Second testing procedure:

#### 1.3.2.1 Estimating the soy mass:

For GM test concentrations greater than 0.5%, the quantity of GM soy must be determined (cf. Minimum requirements for feed containing soy).

#### 1.3.2.2 Qualitative evidence of canola GT73 + canola MS8 or canola RF3 (or bar gene)

#### 1.3.2.3 Determining the summation value of GM canola/rapeseed

Identified GM canola/rapeseed varieties must be quantified if the estimation of the quantity by, for example, the  $\Delta\Delta\text{ct}$  method or another method determining whether sufficient quantities of species DNA are present shows test concentrations greater than 0.1%.

Positive screening results must be clarified.

### 1.4. Minimum requirements for rice and rice products

#### 1.4.1 Preparation of laboratory samples

Two subsamples of at least 250g each must be created from the laboratory sample sent, and each must be analyzed separately (1 extraction, 2 PCRs per subsample:).

#### 1.4.2 Element-specific screening

p35S + tNOS + cry1Ab/cry1Ac sequence

#### 1.4.3 Construct-specific proof

In the case of events that cause a positive screening result for GMO content, the identification of the GMO-specific DNA-construct shall be performed based on an agreement between the company that has provided the sample and the laboratory.

#### 1.4.4 Exclusion of botanical impurities

GMO carryovers from other plant species (from corn/maize, soy, cotton and (naturally occurring) Cauliflower Mosaic Virus)

If the element-specific screening yields a positive result, design-specific proof is to be provided as the next step. In combination with the exclusion of botanical impurities and the Cauliflower Mosaic Virus, the sample must be examined for possible contamination with genetically modified rice.

#### 1.4.5 Evaluation of the PCR results

If the targeted sequence of genetically modified rice is established in at least one of the subsamples analysed, this result is to apply to the entire sample and therefore the batch. The batch cannot be marketed in the EU and cannot be labelled with the "Ohne GenTechnik" seal.

## **2. Minimum requirements for compound feed**

Determination and assessment of the summation value of the most relevant GMOs.

### **2.1. For soy ingredient**

- Quantification of GTS 40-3-2 (RRS- 1)
- Quantification of MON89788 (RRS-2)
- Qualitative detection of A2704-12 and A5547-127:

In the event of a positive result for A2704 and/or A5547-127, the quantity of this GMO can, for example, be estimated using the  $\Delta\Delta\text{ct}$  method or a similar method determining whether sufficient quantities of species DNA are present. Quantification must be carried out for test concentrations greater than 0.1%.

If the soya ingredient cannot be fully and properly analyzed, the practical LOD must be indicated.

### **2.2. For corn/maize ingredient**

Additional qualitative detection of the 4 commercialised corn/maize varieties:

- NK603
- TC1507
- MON810
- MON89034

In the case of a positive result, the quantity of this GMO can, for example, be estimated using the  $\Delta\Delta\text{ct}$  method or a similar method determining whether sufficient quantities of species DNA are present. Regular quantification of the GMOs detected must be carried out for test concentrations greater than 0.1%.

If the corn/maize ingredient cannot be fully and properly analyzed, the limit of detection (LOD) must be indicated.



### 2.3. For canola/rapeseed ingredient

Additional qualitative detection of

- GT73.

In case of positive identification, quantification of GT73 must take place if the estimation of the quantity by, for example, the  $\Delta\Delta\text{ct}$  method or another similar method determining whether sufficient quantities of species DNA are present shows test concentrations greater than 0.1%.

If the canola/rapeseed ingredient cannot be fully and properly analyzed, the practical LOD must be indicated.

Alternately, the laboratory may also work with screening parameters that detect at least the GMOs mentioned (soy, canola/rapeseed, corn/maize). In the subsequent identification/quantification of positive results, at least all GMOs (if corresponding elements are positive) mentioned here must be identified and, if necessary, quantified.

### **Copyright**

© Copyright: GLOBALG.A.P. c/o FoodPLUS GmbH: Spichernstr. 55, 50672 Köln (Cologne); Germany. Copying and distribution permitted only in unaltered form.