Qualitätssicherung. **Vom Landwirt bis zur Ladentheke.**

Guideline
Feed Monitoring

QS. Ihr Prüfsystem für Lebensmittel.

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Contents

1 Fundamentals

The purpose of feed monitoring is to monitor the quality assurance of feed in the QS scheme. Compliance with maximum levels, action thresholds and QS guidance values for, for example, mycotoxins, plant protection product residues, microorganisms, heavy metals, animal components, dioxin and dioxin-like PCBs as well as polycyclic aromatic hydrocarbons (PAH) within the feed and agricultural sectors are also regularly monitored.

This guideline regulates the uniform procedures as well as special, branch-specific and feed-specific requirements for feed monitoring and forms the basis for continuous monitoring of feed production, trade and storage. The goal is to detect errors in quality assurance, identify exceedances and to introduce effective measures for avoidance and reduction.

1.1 Scope

- Feed sector:
  - Feed additive production
  - Premix production
  - Compound feed production
  - Feed material production
  - Trade
  - Private Labeller
  - Small scale feed material producers
  - Mobile feed milling and mixing plants
- Agriculture:
  - Cattle farming
  - Pig farming
  - Poultry production
- QS approved laboratories

1.2 Responsibilities

Companies (or the coordinator for the stage agriculture) must always adhere to and be able to provide evidence for the QS scheme requirements.

1.2.1 Feed sector

Responsibility for implementing analyses, including entering sample related data and analysis results into the QS database and introducing any applicable measures, lies with the scheme participants and small scale feed material producers. In the case of mobile feed milling and mixing plants that trade in oils and fats, the relevant certification body organises regular feed monitoring. Plant operators whose trade products which are subject to positive release sampling are responsible for implementing the positive release sampling themselves.

1.2.2 Agriculture

All agricultural companies that use primary products for feed or mix feed themselves are subject to the feed monitoring. The organisation of feed monitoring, including the establishment of the test plan to control the feed as well as selection of the agricultural companies where the feed samples shall be drawn, is the responsibility of the coordinator who also performs the checks.

Livestock owners who exclusively feed complete feeds acquired from QS do not participate in feed monitoring. For agricultural companies that are QS certified for crop farming, grassland use or forage

production, the self-produced feed quantity is not taken into account when calculating the control plan. However, samples may still be taken on these agricultural companies for feed monitoring.

2 Sampling

The planning and execution of sampling lies within the area of responsibility of the scheme participants (producers, agricultural coordinators, traders, small scale feed material producers and – in the case of mobile milling and mixing plants – certification bodies). An external sampler from a laboratory or sampling institution can also be commissioned to take the sample. The place, method and frequency of sampling must be documented and appropriate for the product.

The sampler must take a representative sample. In doing so, individual samples must be taken from one batch at multiple places of the batch. The individual samples must be mixed together to create an aggregate sample, which is then separated to create representative laboratory samples. Forming average samples from different batches is not permitted.

In terms of the volume of the sample, it must be ensured that there is enough sample material for a second or potentially third analysis by another laboratory.

Unless the sampling procedure expressly demands otherwise, glass bottles and other glass vessels are not permitted for use as sample containers.

Note: *The supporting document on sampling and retained samples contains additional information on taking a representative sample.*

2.1 Requirements for the sampler

The sample must be taken by a competent person who has been trained in sampling feed.

2.2 Sampling at compound feed producers

To obtain a representative sample at a compound feed producer, the sample must always be taken from the flowing product stream during production. In the case of pelleted compound feeds, the sample must be taken at the entrance to the finished product cell, and in the case of meal and liquid forms, after the process step in which all components of the recipe have been dispensed and mixed in. Upon conclusion of the production process, any additional factors that may influence quality (e.g. through storage) must be examined based on HACCP. This may require additional sampling.

2.3 Sampling at agricultural companies

The sample must be taken by a competent person commissioned by the coordinator and in the presence of the livestock owner (e.g. during an audit). Sample taking by the livestock owner or employees of the agricultural company is not allowed.

In the case of silage, samples must be taken from at least three different points of the freshly cut surface, from which an aggregate sample must be created. It must be ensured that the sample is not taken from the edge area. Alternatively, a drill (sampling probe) may be used to take the sample. For feed stored in the open, an aggregate sample must be taken from at least five different points.

In the case of feed stored in closed and inaccessible areas, the sample has to be taken at the withdrawal point.

2.4 Sampling at mobile feed milling and mixing plants

Plant operators who trade in oils and fats or a mixture thereof must participate in QS feed monitoring for the traded products. This applies to bulk feed materials as well as fat and oil blends. The sample must be taken by the auditor.

For analyses carried out within the scope of positive release sampling, the plant operator is individually responsible for sampling. Plant operators who trade

- fatty acids from chemical refining
- fatty acid distillates from physical refining
- monoester of propylene glycol and fatty acids
- blended fats and oils, which contain fatty acids and blended fatty acids
- crude fish oil
- crude coconut oil

must subject their products to a positive release sampling before distribution.

A positive release sampling must also be carried out for the following products if a raw material other than vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**, was used for the production:

- crude fatty acids from splitting
- pure distilled fatty acids from splitting

A positive release sampling must be carried out for the following products as far as they are not produced with or from fatty acids from the splitting of vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**:

- fatty acids esterified with glycerol
- salts from fatty acid
- mono-, di- and triglycerides of fatty acids
- mono- and diglycerides of fatty acids esterified with organic acids

2.5 Sampling at delivery by ship

In the case of producers and traders, it must be ensured that at least one sample per ship and type of raw material (e.g. maize or wheat) is taken into account in the applicable control plan. Each part load (hold or storage room) of the ship must be incorporated as part of sampling.

2.6 Sampling report

Once the sample has been taken, the sampler must complete a sampling protocol as promptly as possible. The sampling protocol that is generated when sample related data are created in the QS database can be used for this purpose. More detailed information on creating sample related data in the database can be found in Chapter 5.1.

2.7 Packaging and Transport of the laboratory sample

Sample containers and methods of transport to the laboratory may not cause any alterations to the contents to be determined in the sample. The containers must be sealed in such a way that it is not possible for them to be opened and resealed without authorisation. They must be labelled in such a way that their traceability and identification as QS samples is always guaranteed.

Samples should be shipped to the laboratory within ten working days of the sample being taken. If necessary, products that alter over time must be stored and sent in an adequately cooled or frozen condition.

3 Requirements for laboratories

Analyses carried out as part of QS feed monitoring may only be carried out by QS approved laboratories. Laboratory approval by QS is necessary to ensure compliance with QS requirements and thus to guarantee that analysis results can be compared between laboratories at a consistently high level.

Applications to be approved by QS for feed monitoring can be made directly to QS Qualität und Sicherheit GmbH ("registration form for laboratories", see Annex 8.4). Upon request by QS, additional documentation required for the approval process must be submitted to QS. In the case of a positive decision, a framework agreement is concluded between QS Qualität und Sicherheit GmbH and the laboratory.

Approved laboratories are published on the QS homepage **www.q-s.de** and can be selected within the sample related data in the QS database.

3.1 Pre-conditions for QS approval

3.1.1 Accreditation in accordance with DIN EN ISO/IEC 17025

Laboratories must possess an accreditation for testing within the area of animal feed in accordance with the most recent version of **DIN EN ISO/IEC 17025**.

Additionally, QS stipulates the use of specific testing methods for analysing individual parameters (Annex 8.1: Parameters and methods table). Laboratories that have an accreditation in the appropriate area must also submit validation documents for the methods required by QS.

A distinction is made between reference methods, alternative methods and screening methods. Reference methods and screening methods are the standard methods used to analyse parameters. Beyond this, it is also possible to apply to QS for an alternative method to be approved for a particular parameter. An alternative method may be authorised by QS for a particular laboratory if its equivalence can be proven to QS by way of suitable validation documents that include measurement uncertainties and ring test results. QS takes a decision on the equivalence of an alternative method.

If the specified testing methods are implemented but not yet listed on the laboratory's accreditation certificate, provisional recognition can be arranged. Accreditation for the testing method must be concluded within the following 12 months.

3.1.2 Minimum requirements for the analysis spectrum

The laboratory has an obligation to provide QS with a list of all parameters that can be checked by the laboratory for the feed sector, along with their limits of quantification and any measurement uncertainties. The list must be classified in accordance with the required methods.

If active substances (parent substances) with complex residue definitions are recorded, an appropriate special method for precisely determining the metabolites must be applied upon their finding to satisfy **VO (EG) 396/2005**. The result of the special method is to be specified in the report.

3.1.3 Participation in ring tests

To be eligible for QS approval, a laboratory must have participated in ring tests for the parameters listed in their application within one year prior to submitting their application. The individual results of the ring tests and the spectrum of parameters tested by the laboratory must be submitted to QS for inspection. If there are no ring test results available for a particular parameter because no ring testing was offered for this parameter in the required matrix, the decision on whether to recognise a comparable ring test lies with QS.

In addition, laboratories that are undergoing the approval procedure must successfully participate in laboratory performance assessments organised by QS. If participation in a laboratory performance assessment is not successful, QS will decide how to proceed on a case-by-case basis.

3.1.4 Subcontracting

QS approved laboratories have the option to subcontract testing of an individual parameter to another QS approved laboratory. A subcontract can only be issued to laboratories that have a QS approval for the analysis of the relevant parameter themselves. The subcontract must be carried out by this specific laboratory and may not be passed on to another.

Subcontracting will only be approved by QS if at least one of the parameters is tested by the laboratory itself. The following documentation must be submitted for subcontracting approval:

- Name of the laboratory
- Subcontracting agreement between the laboratories, including specification of the parameters to be tested

If authorisation has been granted by QS, the analysis results are entered into the QS database by the commissioned laboratory.

An individual parameter can only be assigned to one laboratory in a subcontract. If the subcontracting arrangement for a particular parameter changes, QS must be informed immediately without prompting.

3.1.5 Validity of the approval procedure

If the required documents are not submitted by the laboratory within 12 months of being requested by QS, the approval procedure will be stopped. If there is still interest in participating in the QS scheme, a new approval procedure begins upon application.

3.2 Maintenance of QS approval

3.2.1 QS laboratory performance assessment

All QS approved laboratories have an obligation to participate in laboratory performance assessments organised or specified by QS. Commitment to participation applies to both laboratories that carry out testing on the relevant parameters themselves as well as those that subcontract the testing.

Subcontracted parameters assessed as part of a laboratory performance assessment are to be passed on to the subcontracted laboratory previously approved by QS. The sample must be clearly labelled as a laboratory performance assessment sample and may only be tested for the parameter regulated within the subcontract. The analysis must be carried out within the time frame defined in the test. The results of the subcontracted analysis must be submitted to QS by the laboratory participating in the laboratory performance assessment.

⇒Annex 8.7 Evaluation criteria laboratory performance assessment

3.2.2 Ring tests

Evidence of regular participation in additional ring testing for the recognised parameters within matrices relevant to animal feed must be provided to QS:

- Annual list of planned ring tests for the current calendar year (by 15 March of the current year)
- Annual list of actual ring tests carried out in the previous calendar year, including results and any measures initiated (at the latest by 15 March of the following year)
- Participation in ring tests must be verified for each parameter every year.

The obligatory QS laboratory performance assessment is not factored into this.

3.3 Loss of QS approval

If a laboratory loses its approval, existing orders may continue to be executed and results placed in the QS database up to a maximum of four weeks after losing approval. A new application for recognition to be reinstated may be submitted after a minimum of six months.

The following must be fulfilled with the renewed application:

- Documentation checks have been recompleted
- A laboratory audit has been carried out by QS at the laboratory's expense

Applications that are submitted later than 12 months after the loss of the approval will be considered as new applications.

⇒ Annex 8.4: Registration form for laboratories

3.4 Entering results in the QS database

3.4.1 Sample receipt

The laboratory may only analyse samples as QS samples if they are labelled by the company as QS samples and are identified as QS samples via the QS database. Any sample related data assigned to the laboratory must be handled and completed within the specified time frames by the laboratory.

A retained sample of sufficient proportions must be formed from each sample to be tested. The retained sample must be kept for at least three months after the analysis as ended, unless legal provisions stipulate a longer time frame.

3.4.2 Timely entry of analysis results

Analysis results must be entered against their corresponding sample number (ID) in the QS database by the laboratories. The following deadlines apply to entering analysis results:

- Analysis results must be entered no later than 30 working days after receipt of the sample.
- Analysis results must be entered no later than ten working days after conclusion of the complete analysis.
- Any complaints established by the laboratory must be entered into the QS database immediately, i.e. by the next working day following completion of the analysis.
- If the data record needs to be reset due to incorrect entries in the QS database, the laboratory must conclude it once again in the database within three working days after resetting it.

3.4.3 Information in the original report

The original report of the analyses entered in the QS database need to contain at least the following information:

- Name and address of the laboratory
- Information on the sample and the sampling (e.g. sampler, sample amount, condition/shipping)
- Sample-ID, sample receipt date and analysis period
- All tested active substances and metabolites as well as the appropriate limit of determination (substance spectrum incl. date and version number); information transmission (e.g. annex to the analytical report, link to the website) is left to the laboratory)
- Analytical methods (and any deviations)
- Subcontracts (if necessary)
- Results, complete with unit, reference and analytical tolerance (if necessary)
- Name of the releasing person

For positive findings:

- Summary of the detected active substances and metabolites as well as their sum values (where necessary)
- Residue definition and their maximum residue levels for active substances, metabolites and conversion rates according to currently valid regulations; the regulations are to be named. If no legal maximum residue level or action threshold is defined for a parameter, reference must be made to the corresponding QS guidance value.
- Evaluation of the marketability according to currently valid regulations (where possible)

3.5 Checking accreditation requirements

QS reserves the right to check compliance with accreditation requirements and rules as part of a laboratory audit carried out by itself or an authorised person or organisation. The laboratory has an obligation to allow QS or another person/organisation commissioned by QS to inspect all documentation related to its activities as part of QS feed monitoring. Furthermore, QS itself or an authorised third party may commission analyses at the laboratory. This can also take place within the scope of concealed samples.

4 Exceedance of maximum levels and guidance values

If the laboratory finds that a maximum level, action threshold or QS guidance value is exceeded in a sample, the result must first be verified within the laboratory. If the result could be verified, the scheme participant must be informed immediately. If necessary, the scheme participant can authorise for the laboratory result to be checked by another laboratory. The sample must be in its original condition (partial sample of the sample already analysed) to be used as a basis for re-examination in another laboratory. Information on the procedure for commissioning a second laboratory is given in Chapter 5.2.

4.1 Incident- and crisis management

In the event of a maximum level, action threshold or QS guidance value being exceeded, the scheme participant has an obligation to inform QS immediately (notification e.g. via paper of incident). QS will support the scheme participant in clearing up the matter and introducing measures. QS does not assume a duty to report to the authorities. The duty to report must be met by the company.

If the EU assessment values for the parameters DON, ZEA and OTA are exceeded, there is no obligation to notify QS. Nevertheless, measures for dealing with the goods must be established and documented within the company.

Note: *A plausibility check between the analysis value and the stored maximum level, action threshold or QS guidance value automatically runs in the database. If these are exceeded, the feed company is informed via email.*

Additional duties to report when participating in QM-Milk

If a maximum level, action threshold or QS guidance value for any parameters named in the feed agreement with QM-Milk has been exceeded, QM-Milk must be informed in addition to the QS head office. If a QS guidance value for aflatoxin B1 has been exceeded but usage of the feed on QM-Milk dairy farms cannot be excluded, the customer must be advised of the circumstances and instructed regarding usage of the feed (e.g. "Goods not suitable for feeding on QM-Milk dairy farms.").

4.2 Residues of plant protection products in feed oils/fats or fatty acids

Residues of plant protection products in feed oils/fats or fatty acids have to be evaluated by the laboratory according to the following **test cascade**:

- The first step is to check whether a maximum residue for the plant protection product detected is stipulated in the directive on undesirable substances in animal nutrition (**2002/32/EC** and subsequent decisions).
- If no values are defined, the maximum residue levels from the EU pesticide regulation (**regulation (EC) no. 396/2005**) apply.
- In addition, we recommend referring to the GMP+ Int. document "GMP+ BA1 Specific Feed Safety Limits" (ref. p. 78 ff).
- The pesticide regulation allows processing factors to be used as a reference when evaluating plant protection product residues in processed or composite feeds. The German Federal Institute for Risk Assessment (BfR) has also provided processing factors for some plant protection product residues, which can be used as a reference. Ultimately, however, the on-site production processes of the specific company must be considered.

Maximum residue levels must be entered into the QS database by the laboratories. In some cases, the necessary information on the company's (principal's) location-specific production processes must be sent to the commissioned laboratory in order for them to be in a position to conduct a suitable evaluation of the analysis results.

5 QS database

Each analysis result for QS feed monitoring is recorded in the QS database. Participants can evaluate their company's own data in this database (e.g. broken down by results for individual locations, the entire company or even by product). In addition, QS can evaluate each sample related data and analysis result in the QS database. These evaluations are carried out on the basis of compliance with data protection requirements.

Data protection

Each scheme participant has access to its own data saved in the database. In accordance with our "Data Protection Declaration – Database" (**www.qs-plattform.de**) the data is protected from access by anyone not authorised by QS Qualität und Sicherheit GmbH.

5.1 Entry of sample related data by scheme participants

The sample related data and analysis results for all analyses required by QS feed monitoring – including gate keeping, positive release sampling, additional- and ad hoc monitoring plans – must be entered into the QS database.

The sample related data must be entered into the QS database before completion of the analysis and set to "laboratory commissioned" status. The data should thus be entered before the sample is sent to the laboratory. It is not possible to commission a laboratory in the QS database once the analysis has been completed. The date the laboratory is commissioned must be earlier than the date the analysis is completed, otherwise the data records will be automatically deleted from the database.

When entered into the QS database, the sample is given a unique sample ID, which must be communicated to the laboratory. For this purpose, the sampling protocol can be printed out and attached to the sample once the sample related data have been created.

When entering the sample related data, a distinction is made between the following sample types:

- regular sample: sampling that falls under regular, branch-specific monitoring by QS
- Gate keeping: sample that is taken as part of gate keeping for an uncertified supplier
- positive release sampling: sample that has been taken as part of positive release sampling for specific fats and oils
- Special release: sample that has been taken as part of a special release granted by QS specifically for the company

- Additional control plan: sample that has been taken as part of an additional control plan
- Ad hoc plan: sample that has been taken as part of an ad hoc plan

Once the principal has selected and commissioned a laboratory in the database, the laboratory is given access to the data in order to generate the laboratory related data belonging to the sample and to enter the analysis results and evaluation. As soon as the laboratory has completed entry of the analysis results, the principal is able to view the analysis results.

Note: *The dioxin and dioxin-like PCB parameters can be analysed via a combined analysis. If this is the case, the relevant parameter (sum of dioxins and dioxin-like PCBs) must be commissioned in the QS database. The individual parameters dioxin and dioxin-like PCB are then automatically selected together, enabling the laboratory to enter the result for all parameters.*

Note*: Further information on how to use the QS database and enter sample related data can be found in the QS database (**www.qs-plattform.de**) under the "Support" menu item. Instructions on how to use the database and enter sample related data for feed companies and coordinators are stored in this section (Database instructions > Feed monitoring).*

5.2 Entry of analysis results by labs

Only QS approved laboratories are permitted to carry out analyses for QS feed monitoring. To do so, they must be commissioned for an analysis by scheme participants within the QS database. They can then view the sample related data (data from the sampling protocol) entered by the principal.

When a laboratory receives a sample, they must check whether the sample related data that has been entered is complete. The laboratory is not permitted to analyse a sample until all the data has been entered. The laboratory then analyses the sample for the commissioned parameters according to the sampling protocol.

If substances of plant protection products are detected above the limit of quantification yet are not included in the commissioned spectrum of parameters, the principal must be informed. These substances must be added to the data record manually or via a csv upload.

If no exceedance has been detected, the laboratory enters the analysis result into the QS database without delay.

Exceedance of maximum levels and guidance values

If an exceedance has been detected, the laboratory has an obligation to inform the principal of the analysis result immediately. If the principal accepts the result, the laboratory enters the analysis result into the QS database and concludes the data record. In addition to the detected value, the maximum level, action threshold or QS guidance value must also be entered along with the analysis range, provided these have not been preallocated in the database.

In the case of a positive finding for salmonella, the serotype must also be entered into the comment field for the laboratory related data along with the sub-species and serovar. If animal components are detected, the type of animal must be noted, or at least whether the finding is critical or not.

If the principal does not accept the analysis result, a second analysis with another laboratory can be commissioned. In this case, the procedure is as described in Figure 1 (decision tree for cases where a maximum level, action threshold or QS guidance value has been exceeded). For the second analysis of a sample in the status "clarification necessary", sample material is taken from the retain sample of the laboratory first commissioned and sent to the second laboratory for examination. In the case of the parameters Salmonella and animal components, a positive detection cannot be reversed by further testing. For these parameters, a positive result is always recorded as "positive" in the QS database, even

if sample material from the retain sample is subsequently found to be "negative". The situation is similar for the parameter packaging material. For this parameter, too, the analysis result of the initial analysis is always entered in the QS database. The "clarification necessary" process is therefore irrelevant for these parameters.

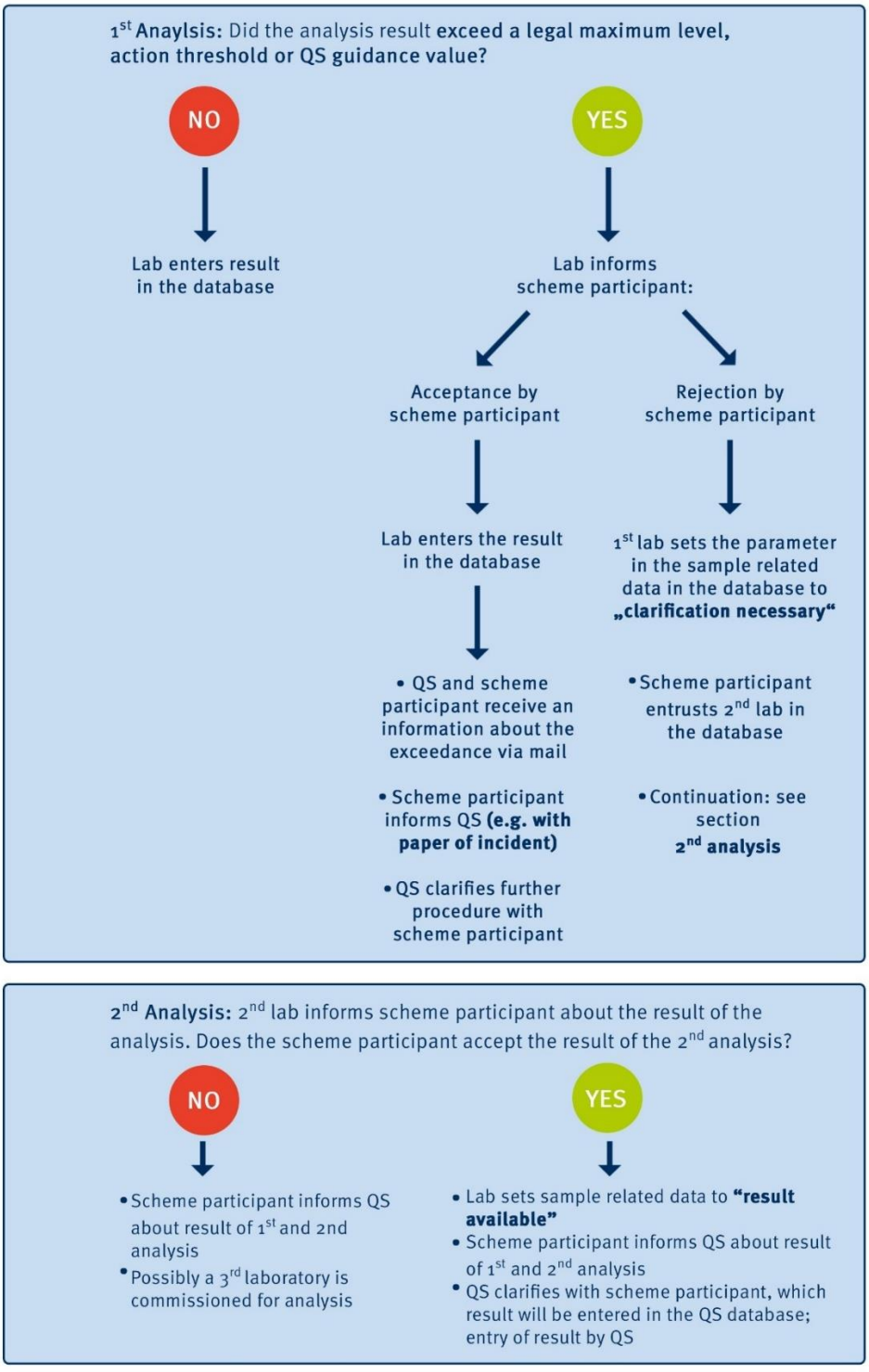

Figure 1: decision tree for cases where a maximum level, action threshold or QS guidance value has been exceeded

6 Feed control plans

General control plans

The indications listed in the control plans are minimum requirements. In the context of a company's duty of care and the statutory provisions, more frequent analyses of specific parameters may be required. These must be determined and defined by the company in its internal risk assessment.

The minimum parameters for feed analyses are defined in the QS control plans per branch or animal type.

Control plans for the feed sector

Control plans apply per company premises (location-specific). The analysis frequency is dependent on the annual quantity (tonnage) of QS feed per location. The tonnage is applicable to all feeds that are specified in each control plan. The tonnage indicated in the control plans relates to the fresh mass or the "usual commercial state" of each product, unless dry mass is explicitly stated.

Note: *Using the QS EasyPlan Feed monitoring planner at* ***www.qs-easyplan.de****, you can easily create your location-specific control plans in a digital format for participation in QS feed monitoring*

If there is no branch-specific control plan available for a feed material producer or trader's product group, they are to request a site-specific control plan from QS. The supporting document "Request for a Site-Specific Control Plan" (see **www.q-s.de**, documents, feed monitoring) is to be used for this purpose. A location-specific control plan is only ever provided on a temporary basis and is valid for a maximum of one year.

Analyses are to be distributed systematically over the entire year or season. Up to 50 % of the specified end product controls can be replaced by analyses into the raw material or intermediate product provided contamination or concentration of undesirable substances during the production process can be ruled out. Analysis of pesticide residues should never be carried out on processed product (such as compound feed), but rather on the unprocessed primary product or raw material.

Note: *If fewer batches are produced than individual analyses requested each year, the number of analyses can be reduced in line with the batches produced.*

Additional control plans and ad hoc monitoring plans

In some cases, **additional control plans** (included as an annex to this guideline) may apply. They must be complied with wherever relevant.

If products are increasingly contaminated with undesirable substances (e.g. maximum levels or QS guidance are exceeded), QS may respond immediately – independent of any revisions to the feed monitoring guideline – and create an **ad hoc monitoring plan**. In doing so, the number of analyses on the products in question may be increased, notwithstanding the feed monitoring guideline. Where relevant, the ad hoc monitoring plan must be complied with in addition.

6.1 Control plans agriculture

The number of analyses on individual parameters that are needed per year per coordinator are calculated by the coordinator annually on a fixed day. The basis for this calculation is the feed quantity either produced independently or purchased as an agricultural primary product by the coordinated livestock owners throughout one year. If the annual feed quantity is not known, it can be estimated by taking the number of animal places and multiplying it by a calculation factor (⇒ Chapters 6.1.1, 6.1.2, 6.1.3).

The number of analyses should be allocated as broadly as possible to the coordinated agricultural companies to enable as many individual samples as possible to be taken, and a large number of coordinated agricultural companies to be taken into account. It is not permissible for a sample to be tested for all of the requested parameters.

The flexible proportion is to be allocated to the specified parameters by the coordinator. In doing so, regional and seasonal deviations in harmful or undesirable substances and organisms should be taken into account.

When selecting samples for analysis, the following should be considered:

Samples for the analysis of pesticide residues must be taken from the agricultural primary product rather than the final self-mix.

Analyses for active antibiotic substances must be carried out on the final self-mix (trough sample). If it is known that self-mixtures containing antibiotics or coccidiostats need not be tested for the declared antibiotics or coccidiostats, but for the other substances listed in Annex 8.2.

The control plans in chapter 6.1.1 to 6.1.4 are to be established and adhered to separately per species (pigs, cattle, poultry) to all self-mixing livestock owners.

If the number of required analyses corresponds to more than 80% of the self-mixing locations per animal species of a coordinator, the respective sampling plan can be extended to two years upon request, verification and approval by QS.

A cooperation with other coordinators and thus the establishment of common test plans per animal species is possible. The joint test plan must be confirmed by QS.

6.1.1 Control plan Agriculture (Pigs)

Table 1: Minimum number of feed analysis

Total feed quantity per species [t]	**Number of analyses per year**
less than 10,000	one examination per 250 t
more than 10,000 to 50,000	55
more than 50,000 to 100,000	78
more than 100,000 to 200,000	113
more than 200,000	186

Table 2: Frequency of annual analyses - pig producing self-mixing companies

Parameter	**Ratio (%)**
Dioxin	4
Dioxin-like PCB	2
Non-dioxin-like PCB	2
Heavy metals (Pb, Cd, Hg, As)	6
Pesticides	6
Salmonella	25
Mycotoxins **Aflatoxin B1** **DON** **ZEA**	 - 25 15
Antibiotic active substances	5
Animal components	-
Flexible portion of the coordinator	10
Total	**100**

Table 3: Estimation of the annual feed quantity using the calculation factor

Production Scope	**Number**	**Number of used animal space (year)**	**Annual feed quantity calculation factor**
Pig fattening	2001	Fattening	0.625
Gilt / boar rearing	2002	Rearing	0.625
Sow production and piglets up until weaning	2004	Sows	1.1
Piglet rearing	2008	Piglet rearing	0.25

Estimated annual feed quantity (t) = animal spaces x calculation factor

6.1.2 Control plan Agriculture (Cattle)

Table 4: Minimum number of feed analyses

Total feed quantity per species [t]	**Number of analyses per year**
less than 10,000	one examination per 250 t
more than 10,000 to 50,000	55
more than 50,000 to 100,000	78
more than 100,000 to 200,000	113
more than 200,000	186

Table 5: Frequency of annual analyses - cattle producing self-mixing companies

Parameter	**Ratio (%)**
Dioxin	4
Dioxin-like PCB	2
Non-dioxin-like PCB	2
Heavy metals (Pb, Cd, Hg, As)	6
Pesticides	6
Salmonella	-
Mycotoxins **Aflatoxin B1** **ZEA** **DON**	 15 10 10
Antibiotic active substances	10
Animal components	10
Flexible portion of the coordinator	25
Total	**100**

Table 6: Estimation of the annual feed quantity using the calculation factor

Production Scope	**Number**	**Calculation factor annual feed quantity**
Cattle fattening	1001	6.5
Calf fattening (on milk substitutes)	1002	-
Feeder production		
Calf rearing	1004	1.3
Dairy farming	1004	1
Suckling / nursing cow production	1008	5
	1016	5

Estimated annual feed quantity (t) = animal spaces x calculation factor

6.1.3 Control Plan Agriculture (Poultry)

Table 7: Minimum number of feed analyses

Total feed quantity per species [t]	Number of analyses per year
less than 10,000	one examination per 250 t
more than 10,000 to 50,000	55
more than 50,000 to 100,000	78
more than 100,000 to 200,000	113
more than 200,000	186

Table 8: Frequency of annual analyses - poultry producing self-mixing companies

Parameter	Ratio (%)
Dioxin	4
Dioxin-like PCB	2
Non-dioxin-like PCB	2
Heavy metals (Pb, Cd, Hg, As)	6
Pesticides	6
Salmonella	50
Mycotoxins **Aflatoxin B1** **ZEA** **DON**	 - - -
Antibiotic active substances	5
Animal components	-
Flexible portion of the coordinator	25
Total	**100**

Table 9: Template for annual feed quantity estimation

Production Scope	Number	Annual feed calculation factor[1]
Broiler fattening	3001	0.025
Turkey rearing	3002	0.042
Turkey fattening	3004	0.042
Peking duck rearing	3008	0.004
Peking duck fattening	3016	0.004
Laying hen farming	3032	0.042
Broiler breeder farming	301	0.042
Turkey breeder farming	304	0.042

Estimated annual feed quantity (t) = animal spaces x calculation factor

6.1.4 Control plan Agriculture Bakery Products

This control plan has to be implemented for all animal species and has to be applied in addition to the control plans in the chapters 6.1.1 to 6.1.3.

There is at least one sample per company and year to analyse.

Table 10: Minimum number of annual analyses

Amount in t / Parameter	<10,000	≥10,000 - <50,000	≥50,000
Aflatoxin B1	15%	15%	15%
DON	15%	15%	15%
ZEA	15%	15%	15%
Dioxin	5%	5%	5%
Dioxin-like PCB	5%	5%	5%
Non-dioxin-like PCB	5%	5%	5%
Salmonella	15%	15%	15%
Heavy metals (Pb, Cd, As, Hg)	5%	5%	5%
Packaging material	10%	10%	10%
Flexible portion of the coordinator	10%	10%	10%
Total	**20**	**40**	**60**

6.2 Control plans compound feed producers

Table 11 illustrates which control plans or tables apply to which types of compound feed (pig, cattle and poultry feed as well as sheep, goat, horse and rabbit feed). Tables 12 to 16 provide information about how often the individual feeds must be analysed each year.

The analysis requirements for laying hen feed as well as for mineral feeds, substitute milk products, blended fats/fatty acids and blended oils/fats (blended vegetable oils or fats) are described separately in ⇒ Chapters 6.2.2, 6.2.3, 6.2.4, 6.2.5 and 6.2.6.

If a compound feed (e.g. supplementary feed) is produced "for all animal types", it must comply with the control plans for pig, cattle and poultry feed as well as feed for sheep, goats, horses and rabbits (tables 12 to 17).

Positive release sampling

The following products are subject to a positive release sampling within the QS scheme:

- fatty acids from chemical refining
- fatty acid distillates from physical refining
- monoester of propylene glycol and fatty acids
- blended fats and oils, which contain fatty acids and blended fatty acids
- crude fish oil
- crude coconut oil

A positive release sampling must also be carried out for the following products if a raw material other than vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**, was used for the production:

- crude fatty acids from splitting
- pure distilled fatty acids from splitting

A positive release sampling must be carried out for the following products as far as they are not produced with or from fatty acids from the splitting of vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**:

- fatty acids, esterified with glycerol
- salts from fatty acids
- mono-, di- and triglycerides of fatty acids
- mono- and diglycerides of fatty acids esterified with organic acids

Compound feed producers who use these products also have the option to procure products that are not yet release tested. However, they must then undertake positive release sampling on behalf of their suppliers before the products are processed. This option is only valid if the compound feed producer has received special authorisation from QS.

Gate keeping

Companies that act as gatekeepers in accordance with **Annex 9.2** to the feed sector guideline must carry out the analyses that are ordered in accordance with the annex in addition to the regular analyses per the control plan. This involves carrying out monitoring for each uncertified supplier and raw material delivered.

Control plans for compound feed producers

Table 11: Overview – control plans for compound feed producer

Compound feed (for)	Name of feed	Number Table
Cattle		
	Fattening feed	12, 14
	Calf feed	12, 14
	Milk performance feed	12, 13

Compound feed (for)	Name of feed	Number Table
	Substitute milk products	19
Pig		
	Sow, piglet and pig fattening feed	12, 15
	Substitute milk products	19
Poultry		
	Fattening feed	12
	Breeding poultry feed	12, 16
	Laying hen feed	17
Sheep and goats		
	Fattening feed	12, 14
	Lambs feed	12, 14
	Dairy sheep/goat feed	12, 13
	Substitute milk products	19
Horses	Horse feed	12
Rabbits	Fattening/ breeding feed	12
Fish	Fish feed	Control plan on request
Wild boar/fallow deer	Wild boar/fallow deer feed	Control plan on request
Pigeons/geese/quails	Pigeons/geese/quails feed	Control plan on request
All animal species	Supplementary feeds for all animal species	12, 13, 14, 15, 16, 17
Mineral feeds	Mineral feeds	18
Oils and fats	Blended fats/blended oils/blended fatty acids	20 (positive release sampling)

6.2.1 Control plan Pig, Cattle, Poultry, Sheep, Goat, Horse and Rabbit feed

Table 12 stipulates how many analyses are to be carried out per parameter per year based on the annual tonnage of pig, cattle and poultry feed as well as sheep, goat, horse and rabbit feed. The analyses are to be allocated to each feed type. The focus of QS feed monitoring should be on cattle, pig and poultry feed. Nevertheless, the feeds for other animal types must also be taken into account proportionately.

In addition to the analyses stipulated in Table 12, additional parameters must be analysed per animal type each year (see Tables 13 to 16). For feed for laying hens only the separate control plan applies (⇒ Chapter 6.2.2).

In addition to these control plans, the additional control plan for aflatoxin B1 (Annex 8.5) may also need to be considered.

Table 12: Analyses for pig, cattle and poultry feed as well as feed for sheep, goats, horses and rabbits

Amount in t / Parameter	<2,000	≥2,000 - <5,000	≥5,000 - <10,000	≥10,000 - <50,000	≥50,000 - <100,000	≥100,000 - <200,000	≥200,000
Dioxin	1	1	1	2	2	3	6
Dioxin-like PCB	1	1	1	2	2	3	6
Non-dioxin-like PCB	1	1	1	2	2	3	6
Salmonella	1	3	6	9	15	18	36
Heavy metals (Pb, As, Hg, Cd)	1	1	2	3	4	6	12
Pesticides	1	2	3	5	8	10	12
Packaging material[1]	1	2	3	5	6	8	10
Ergot[2]	Every batch delivered is to be checked for ergot.						
Total	**7**	**11**	**17**	**28**	**39**	**51**	**88**

[1] Analysis only when purchasing former foodstuff from food manufacturers that are unpacked.
[2] Examinations (optical controls) on ergot (claviceps purpurea) are to be conducted and documented by the company itself as an incoming goods inspection in unground grain. If ergot is found, subsequent count and documentation take place (no entry in QS database).

Table 13: Additional analyses for milk performance feed (including dairy sheeps/goat feed)

Amount in t / Parameter	<2,000	≥2,000 - <5,000	≥5,000 - <10,000	≥10,000 - <50,000	≥50,000 - <100,000	≥100,000 - <200,000	≥200,000
Aflatoxin B1	1	2	4	6	8	16	24
Animal components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.						
Total	**1**	**2**	**4**	**6**	**8**	**16**	**24**

Table 14: Additional analyses for fattening feed for cattle, sheep, goats as well as for calves and lambs

Amount in t / Parameter	<2,000	≥2,000 - <5,000	≥5,000 - <10,000	≥10,000 - <50,000	≥50,000 - <100,000	≥100,000 - <200,000	≥200,000
Animal components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.						

Table 15: Additional analyses for pig feed (sow feed, piglet feed and pig fattening feed)

Amount in t / Parameter	<1,000	≥1,000 - <2,000	≥2,000 - <5,000	≥5,000 - <10,000	≥10,000 - <50,000	≥50,000 - <100,000	≥100,000 - <200,000	≥200,000
DON	1	2	4	6	8	12	16	24
ZEA	1	2	4	6	8	12	16	24
OTA	0.5	1	2	3	4	6	8	12
Total	**2.5**	**5**	**10**	**15**	**20**	**30**	**40**	**60**

Table 16: Additional analyses for breeding poultry feed

Amount in t / Parameter	<2,000	≥2,000 - <5,000	≥5,000 - <10,000	≥10,000 - <50,000	≥50,000 - <100,000	≥100,000 - <200,000	≥200,000
Salmonella	2	6	12	18	30	36	72
Total	**2**	**6**	**12**	**18**	**30**	**36**	**72**

Note: *Feed for breeding poultry contains only breeding poultry feed for fattening turkey, broiler and laying hen.*

6.2.2 Control plan laying hen feed

In Table 17 it is determined how many annual analyses per parameter are to be conducted depending on the annual tonnage (t) of laying hen feed. For producers producing exclusively feed for laying hens, only this control plan applies (6.2.2).

Table 17: Analyses for laying hen feed

Amount in t / Parameter	<5,000	≥5,000 - <20,000	≥20,000 - <40,000	≥40,000 - <60,000	≥60,000
Dioxin	1	3	4	6	8
Dioxin-like PCB	1	3	4	6	8
Non-dioxin-like PCB	1	3	4	6	8
Salmonella	5	5	6	7	8
Heavy metals (Pb, As, Hg, Cd)	1	2	3	4	5
Pesticides	2	5	6	7	8
Total	**11**	**21**	**27**	**36**	**45**

6.2.3 Control plan mineral feed

In Table 18 it is determined how many annual analyses per parameter are to be conducted depending on the annual tonnage (t) of mineral feed. For producers producing exclusively mineral feed, only this control plan applies.

Table 18: Analyses for mineral feed

Amount in t / Parameter	<500	≥500 - <5,000	≥5,000 - <30,000	≥30,000
Dioxin	1	2	4	6
Dioxin-like PCB	1	2	4	6
Non-dioxin-like PCB	1	2	4	6
Heavy metals (Pb, As, Hg, Cd)	2	6	10	14
Total	**5**	**12**	**22**	**32**

6.2.4 Control plan substitute milk products

In Table 19 it is determined how many annual analyses per parameter are to be conducted depending on the annual tonnage (t) of substitute milk products (for calves, piglets and lambs). For producers producing exclusively substitute milk products, only this control plan applies.

Table 19: Analyses for substitute milk products

Amount in t / Parameter	<1,000	≥1,000 - <5,000	≥5,000
Dioxin	1	2	4
Dioxin-like PCB	1	2	4
Non-dioxin-like PCB	1	2	4
Salmonella	3	6	12
Total	**6**	**12**	**24**

6.2.5 Positive release sampling of blended fats and oils (with processed fatty acids and blended fatty acids)

Producers of blended fats and oils that contain fatty acids and blended fatty acids must subject their final products to a batch-related positive release sampling before distribution. This means that these products may only be put into circulation if acceptable analysis results for specific parameters (no objections) are available and provided to the customer.

Analysis parameters for positive release sampling:

- Dioxin
- Dioxin-like PCB
- Non-dioxin-like PCB
- Heavy metals
- Nickel (only to be analysed when nickel is used in the production process)
- Pesticides
- PAH

Note: *Additionally, the following quality parameters should be tested using a risk-based approach and their results compared with the internal specifications and contracts in place: Fatty acid pattern, moisture and impurities, free fatty acid content, melting point and cholesterol.*

In addition to the positive release sampling pf the final product, the compound feed producer must comply with the control plan per Table 28 for each raw material.

When purchasing feed materials that are subject to positive release sampling (according chapter 6.2), the results of positive release sampling must be requested from the supplier. If the final products are subject to positive release sampling, undertaking positive release sampling on behalf of the supplier is not necessary.

6.2.6 Control plan for blends of oils and blends of fats (blends of vegetable oils or fats)

In Table 20 it is determined how many annual analyses per parameter are to be conducted depending on the annual tonnage (t) of blended oils and blended fats that do not contain any fatty acids or blended fatty acids. For producers producing exclusively blended oils and blended fats that do not contain any fatty acids or blended fatty acids, only this control plan applies.

Table 20: Analyses for blends of oils and blends of fats

Amount in t / Parameter	<1,000	≥1,000 - <5,000	≥5,000 - <10,000	≥10,000 - <100,00	≥100,000- <250,000	≥250,000
Dioxin	2	4	6	9	12	17
Dioxin-like PCB	2	4	6	9	12	17
Non-dioxin-like PCB	2	4	6	9	12	17
Nickel[1]	1	1	3	4	6	8
Pesticides	1	1	3	4	6	8
PAH	2	4	6	9	12	17
Total	**10**	**18**	**30**	**44**	**60**	**84**

[1] Only to be analysed, when nickel is used in the production process.

6.3 Control plan premixes and feed additive producers

6.3.1 Control plan premixes and feed additives

For companies that exclusively produce QS premixes and/or feed additives, the following table applies.

Table 21: Analyses for premixes and feed additives

Amount in t / Parameter	<1,000	≥1,000 - <5,000	≥5,000 - <30,000	≥30,000
Dioxin	1	2	4	6
Dioxin-like PCB	1	2	4	6
Non-dioxin-like PCB	1	2	4	6
Heavy metals (Pb, As, Hg, Cd)	2	6	10	14
Antibiotic active substances[1]	The number of analysis is to be determined risk-oriented exclusively for **products from third party countries or unknown origin** within the company-owned QM-system.			
Total	**5**	**12**	**22**	**32**

[1] Analysis in fermentation products.

6.4 Control plans feed material producers

Control plans for feed material producers are divided according to the individual branches. Information on the allocation of feed materials to their respective control plans can be found in **Annex 9.5 QS list of feed materials** to the Guideline Feed Sector.

The column "small scale feed material producers/<1,000 t" relates to feed material producers who are audited based on the requirements listed in the guideline "QS inspection for small scale feed material producers " as well as to producers that are certified for the production scope (72) feed material production and do not produce more than 1,000 t of the feed included in the respective control plan. .

The number of analyses on pesticide residues and animal components is not specified in all control plans, but must be established in this case by the company using a risk-based approach.

Analyses of pesticide residues should never be carried out on processed product, but rather on the unprocessed primary product or raw material.

How to determine the analysis frequency for feed material producer control plans

In the control plans for feed material, the number of analyses for some of the parameters is specified as a variable. The number of analyses is dependent on the company's risk assessment (HACCP) and on analyses carried out previously. The company's own analyses can also be used as a reference. If it can be demonstrated that a parameter does not represent a considerable risk on the basis of representative analysis results related to the feed material, the number of samples can be reduced to the lower value of the range. Otherwise, the upper value must be used.

If the number of analyses is to be reduced, the feed company must reasonably justify and be able to document the chosen scope of analysis on the basis of its risk assessment and available analysis results. If positive findings (e.g. of Salmonella) are determined during sampling, or a maximum level, action threshold, guidance value or any internal intervention values within the company are exceeded during sampling, the feed company must conduct a new risk assessment and adjust the analysis frequency if applicable. The sampling scope and risk assessment are checked during an audit.

The time frame observed for previous analyses must be adequately adapted to the risk assessment and respective contamination risk. If no previous analysis results are available, the highest number of analyses stipulated in the respective control plans must be carried out.

For the parameters dioxin, dioxin-like PCB, non-dioxin-like PCB and PAH, it must be ensured that the number of analyses cannot be reduced if the feed material is subjected to drying via direct firing. Alternatively, the company must be able to prove – in the form of a risk assessment (e.g. drying using natural gas, propane gas or liquefied natural gas (LNG)) and on the basis of previous analysis results – that the quantity of undesirable substances in the feed is not increased beyond the legal maximum levels or action value limits during the drying process.

6.4.1 Control plan Grains, their products and by-products

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

In addition to this control plan, the additional control plan Aflatoxin B1 (annex 8.5) may need to be considered.

Table 22: Analyses of feed from mills

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 – ≤10,000	>10,000 – ≤25,000	>25,000 – ≤50,000	>50,000 - ≤100,000	>100,000
Aflatoxin B1[1]	2	4	6	12	16	24	30
DON[2]	1	1-2	2-3	3-6	5-8	6-12	8-15
ZEA[2]	1	1-2	2-3	3-6	5-8	6-12	8-15
OTA[2]	1	1-2	2-3	3-6	5-8	6-12	8-15
Fumonisins B1/B2[1,2,9]	1	1-2	2-3	3-6	5-8	6-12	8-15
Salmonella	1	2	4	5	6	10	12
Dioxin[3]	0.5[4]	0.5/1	0.5/1	1/2	1/2	1/2	1/3
Dioxin-like PCB[3]	0.5[4]	0.5/1	0.5/1	1/2	1/2	1/2	1/3
Non-dioxin-like PCB[3]	0.5[4]	0.5/1	0.5/1	1/2	1/2	1/2	1/3
Heavy Metal (Pb, Cd, As, Hg)	1	1	2	3	5	8	10
Pesticides[5]	1	1	2	3	5	8	10
PAH[3,8]	0,5[4]	0,5/1	0,5/1	1/2	1/2	1/2	1/3
Ergot[6]	Every batch delivered is to be checked for ergot.						
T2/HT2-Toxins[7, 9]	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.						
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.						
Total	**11**	**14-21**	**24-30**	**39-55**	**56-72**	**78-106**	**98-134**

[1] Analysis are only required for maize and maize by-products.
[2] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)
[3] If during the production or processing process the feed material is subjected to direct drying by direct firing with natural gas, propane gas and liquid natural gas (LNG), the respective lower number of analyses can be carried out. If other fuels are used, the respectively higher number of analyses must be carried out. In the case of indirect drying as well as no drying, the lower number of analyses can be carried.
[4] In this category an analysis for dioxin, dioxin-like PCBs, non-dioxin-like PCBs and PAH shall be performed at least every 2 years.
[5] Examinations for pesticides are performed as receiving inspections on whole-grain cereals and correspond with the examination package from the VDM European Cereal Monitoring system for whole-grain cereals.
[6] Examinations (sensory and optical control) for ergot (*claviceps purpurea*) are to be conducted and documented by the company itself as an incoming goods inspection. If ergot is found, subsequent count and documentation take place (no entry in QS database).
[7] Analysis are only required in oats and oat by-products.
[8] Analysis are only required in products that are dried by direct firing during the production or processing process.
[9] Transition period: examinations are mandatory from 01.03.2022.

Terms and conditions for mills participating in EGM:

For mills participating in the EGM (European Grain Monitoring of the VDM), the requirement that only up to 50 % of the specified end product controls can be replaced by analyses in the raw materials or intermediate feed products is not applicable. In this way, the mills can use all of the examinations from EGM for the QS control plan, provided that contamination and the concentration of undesired substances during the production process can be excluded. It should be noted, however, that all of the analysis results required in the QS control plan must be entered into the QS database.

The mills are obliged to remove cereal dusts from the food chain before milling. Evidence of proper disposal must be presented to the VDM who then confirms, by means of a certificate and by publishing the mills in the internet, that proof of correct disposal has been produced in the form of protocols and/or invoices.

6.4.2 Control plan for Starch Production, their products and by-products

Maize starch production including glucose production

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan

In addition to this control plan, the additional control plan Aflatoxin B1 (annex 8.5) may need to be considered.

Table 23: Analyses for products of maize starch producers

Amount in t / Parameter	<25,000	≥25,000 – <100,000	≥100,000 - <200,000	≥200,000
Aflatoxin B1[1]	1-2	2-4	4-8	6-12
DON	1	2	4	6
ZEA	1	2	4	6
OTA	1	2	4	6
Fumonisins B1/B2[2]	1	2	4	6
Dioxin	1	1	1	2
Dioxin-like PCB	1	1	1	2
Non-dioxin-like PCB	1	1	1	2
Salmonella[1]	1-2	2-4	3-6	4-8
Heavy metals (Pb, As, Hg, Cd)	1	2	4	6
Pesticides	1	2	4	6
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.			
Total	**11-13**	**19-23**	**34-41**	**52-62**

[1] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)
[2] Transition period: examinations are mandatory from 01.03.2022.

Wheat and barley starch production including glucose production

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 24: Analyses for products of wheat and barley starch producers

Amount in t / Parameter	<25,000	≥25,000 – <100,000	≥100,000 - <200,000	≥200,000
DON[1]	1-2	2-4	4-8	6-12
ZEA	1	2	4	6
OTA	1	2	4	6
Dioxin	1	1	1	2
Dioxin-like PCB	1	1	1	2
Non-dioxin-like PCB	1	1	1	2
Salmonella[1]	1-2	2-4	3-6	4-8
Heavy metals (Pb, As, Hg, Cd)	1	2	4	6
Pesticides	1	2	4	6
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.			
Total	**9-11**	**15-19**	**26-33**	**40-50**

[1] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)

Potato starch production including glucose production

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 25: Analyses for products of potato starch producers

Amount in t / Parameter	<25,000	≥25,000 – <50,000	≥50,000 - <100,000	≥100,000
Dioxin	1	1	1	2
Dioxin-like PCB	1	1	1	2
Non-dioxin-like PCB	1	1	1	2
Salmonella[1]	1-2	2-4	3-6	4-8
Heavy metals (Pb, As, Hg, Cd)	1	2	4	6
Pesticides	1	2	4	6
PAH[2]	1	1	1	2
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.			
Total	**7-8**	**10-12**	**15-18**	**24-28**

[1] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)
[2] Analysis are only required in products that are dried by direct firing during the production or processing process.

6.4.3 Control plan oil seeds, oil fruits and other oil-supplying plants, their products and by-products as well as feed fats

Oil mills

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 26: Analyses for products of oil mills

Amount in t / Parameter	Small scale feed material producer /≤1,000	>1,000 - ≤10,000	>10,000 – ≤100,000	>100,000 – ≤300,000	>300,000 – ≤600,000	>600,000
Aflatoxin B1[1,2]	1	1	2	3	6-10	6-12
DON[2]	1	1	2	3	4-6	4-8
ZEA[2,3]	1	1	2	3	4-6	4-8
Dioxin	1	1	2	3	6	8
Dioxin-like PCB	1	1	2	3	6	8
Non-dioxin-like PCB	1	1	2	3	6	8
Salmonella	3	6	12	18	36	48
Heavy metals (Pb, As, Hg, Cd)	1	1	2	3	6	8
Pesticides	1	1	2	3	6	8
PAH[4]	1	1	2	3	6	8
Hydrocyanic acid[2,5]	1	1	2	3	4-6	6-8
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.					
Total	**13**	**16**	**32**	**48**	**90-100**	**116-132**

[1] For special feed, the control plan in Table 27 applies additionally for Aflatoxin B1 analysis
[2] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4).
[3] In rapeseed, linseed, sunflower, soya and their by-products the parameter ZEA is not to be examined if they are of European origin.
[4] Analysis are only required in products that are dried by direct firing during the production or processing process.
[5] Only in linseeds and mechanically pressed linseed cake without heating process

Feed materials with a high risk for Aflatoxin B1

In addition to the control plan for oil mills, the following control plan must be followed for aflatoxin B1 critical feed material. The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 27: Analyses for feed materials with a high risk for Aflatoxin B1

Amount in t / Parameter	<10,000	≥10,000 – <100,000	≥100,000 – <300,000	≥300,000 – <600,000	≥600,000
Aflatoxin B1	4	8	12	16	24
Total	**4**	**8**	**12**	**16**	**24**

Feed fats and feed oils (including animal fats)

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 28: Analyses for feed fats and feed oils (including animal fats)

Amount in t / Parameter	Small scale feed material producer/≤1,000	>1,000 - ≤5,000	>5,000 - ≤10,000	>10,000 - ≤100,000	>100,000 - ≤250,000	>250,000
Dioxin	2	4	6	9	12	17
Dioxin-like PCB	2	4	6	9	12	17
Non-dioxin-like PCB	2	4	6	9	12	17
Nickel[1]	1	1	3	4	6	8
Pesticides[2]	1	1	3	4	6	8
PAH[3]	1	2	3	4	6	8
Insoluble impurities	1	1	3	4	6	8
Total	**10**	**17**	**30**	**43**	**60**	**83**

[1] Only to be analysed, when nickel is used in the production process.
[2] Investigation in animal fat is not required.
[3] Analyses are required in ruminant fats and in animal fat for which there is no proof of non-ruminant origin. Transition period: examinations are mandatory from 01.03.2022.

Producers who produce products of Table 26 (e.g. rapeseed expeller) as well as products of Table 28 (e.g. rape seed oil) as QSfeed must adhere to the parameters Dioxin and Dioxin-like PCB only in accordance with the control plan in Table 28 for feed fats and feed oils (e.g. rape seed oil).

Positive release sampling feed material

Producers of the following products must perform a batch-related positive release sampling of their final products before they are marketed. That means that these products may be marketed only if acceptable examination results are available on certain parameters provided to the customer.

1. Products from vegetable oils and fats:

- fatty acids from chemical refining
- fatty acid distillates from physical refining
- monoester of propylene glycol and fatty acids

A positive release sampling must also be carried out for the following products if a raw material other than vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**, was used for the production:

- crude fatty acids from splitting
- pure distilled fatty acids from splitting

A positive release sampling must be carried out for the following products unless they are produced with or from fatty acids from the splitting of vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**:

- fatty acids, esterified with glycerol
- salts from fatty acids
- mono-, di- and triglycerides of fatty acids
- mono- and diglycerides of fatty acids esterified with organic acids

Analysis parameters for the positive release sampling of products from vegetable oils and fats are:

- Dioxin
- Dioxin-like PCB
- Non-dioxin-like PCB
- Heavy metals
- Nickel (only to be analysed when nickel is used in the production process)
- Pesticides
- PAH

Note: *Additionally, the following quality parameters should be tested using a risk-based approach and their results compared with the internal specifications and contracts in place: fatty acid pattern, moisture and impurities, free fatty acid content, melting point and cholesterol.*

2. Other products subject to positive release sampling:

- crude fish oil
- crude coconut oil

Analysis parameters for the positive release sampling of crude fish and coconut oil:

- Dioxin
- Dioxin-like PCB

6.4.4 Control plan tubers, roots, their products and by-products as well as for sugar cane molasses and vinasse

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 29: Analyses for feed from the processing of tubers and roots and for sugar cane molasses and vinasse

Parameter / Amount in t	<50,000[3]	≥50,000 – <100,000[3]	≥100,000[3]
Aflatoxin B1	From the start of the campaign, one sample must be taken and analysed on at least three days within the first two weeks.[4]		
DON			
ZEA			
Salmonella[1]	1-4	2-8	4-12
Heavy metals (Pb, Cd, As, Hg)[1]	1-2	2-4	4-8
Dioxin-like PCB[1]	1	1-2	1-3
Non-dioxin-like PCB[1]	1	1-2	1-3
Dioxin[1]	1	1-2	1-3
Pesticides[2]	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.		
PAH[1,5]	1	1-2	1-3
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.		
Total	**6-10**	**8-20**	**12-32**

[1]Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)
[2] Analysis takes place in the final product
[3] The tonnage refers in this control plan on 90% dry matter.
[4] Only for Sugar beet pulp (Positions **Annex 9.5 QS list of feed materials**: 04.01.07 to 04.01.11 as well as 04.01.13 and 04.01.17); the analysis results must be deposited in the QS database within three weeks of the start of the campaign. If the QS guidance values are exceeded, QS and the purchasers of the goods must be informed and a use recommendation (percentage use limitation for the ration or for use in compound feed) must be given.
[5] Analysis are only required in products that are dried by direct firing during the production or processing process.

6.4.5 Control plan by-products of fermentation- and distillation industry

Breweries and distilleries

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 30: Analyses of by-products of breweries and distilleries

Parameter / Amount in t	Small scale feed material producer/ ≤1,000 TM	>1,000 - ≤10,000 TM	>10,000 TM
Dioxin	0.5[1]	1	2
Dioxin-like PCB	0.5[1]	1	2
Non-dioxin-like PCB	0.5[1]	1	2
Salmonella	1	2	4
Heavy metals (Pb, Cd, As, Hg)	1	2	4
Pesticides	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.		
PAH[2]	0.5[1]	1	2
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.		
Antibiotic active substances	The number of analyses is to be determined exclusively for **products from third countries or unknown origin** with regard to risks within the scope of the company's own QM system.		
Total	**4**	**8**	**16**

[1] An analysis for Dioxin, Dioxin-like PCB, Non-dioxin-like PCB and PAH must be made every 2 years in this category.
[2] Analysis are only required in products that are dried by direct firing during the production or processing process.

The tonnage in this control plan refers to dry matter.

By-products from malt houses

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 31: Analyses for by-products from malt houses

Parameter / Amount in t	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤10,000	>10,000
OTA	1	1	2	3
DON	1	1	2	3
ZEA	1	1	2	3
Dioxin	0.5[1]	0.5[1]	1	2
Dioxin-like PCB	0.5[1]	0.5[1]	1	2
Non-dioxin-like PCB	0.5[1]	0.5[1]	1	2
Salmonella	1	2	4	6
Heavy metals (Pb, Cd, As, Hg)	1	1	2	3
Pesticides	1	1	2	3
Total	**7.5**	**8.5**	**17**	**27**

[1] An analysis for Dioxin, Dioxin-like PCB and Non-dioxin-like PCB must be made every 2 years in this category.

Products of (bio-)ethanol production

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 32: Analyses for products of (bio-)ethanol production

Parameter / Amount in t	<150,000t	≥150,000
Aflatoxin B1	1	2
DON	4	8
ZEA	4	8
Dioxin	1	1
Dioxinlike PCB	1	1
Non-dioxinlike PCB	1	1
Salmonella [1]	2-4	3-6
Heavy metals (Pb, Cd, As, Hg)	2	4
Pesticides	2	4
PAH[2]	1	1
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.	
Antibiotic active substances	The number of analyses is to be determined exclusively for **products from third countries or unknown origin** with regard to risks within the scope of the company's own QM system.	
Total	**19-21**	**33-36**

[1] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)
[2] Analysis are only required in products that are dried by direct firing during the production or processing process.

6.4.6 Control plan minerals

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 33: Analyses for minerals

Amount in t / Parameter	<20,000	≥20,000 – <100,000	≥100,000
Mining products like carbonates			
Dioxin	1	2	3
Dioxin-like PCB	1	2	3
Non-dioxin-like PCB	1	2	3
Heavy metals (Pb, As, Hg, Cd)	2	4	8
Total	**5**	**10**	**17**
Other minerals			
Dioxin	2	4	6
Dioxin-like PCB	2	4	6
Non-dioxin-like PCB	2	4	6
Heavy metals (Pb, As, Hg, Cd)	4	8	16
Total	**10**	**20**	**34**

6.4.7 Control plan former foods, products and by-products of food production

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 34: Analyses for former foodstuff, products and by-products of food production

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤25,000	>25,000 - ≤50,000	>50,000
Dioxin[1]	1	1	2	2-3	3
Dioxinl-ike PCB[1]	1	1	2	2-3	3
Non-dioxin-like PCB[1]	1	1	2	2-3	3
Salmonella[1]	2	2-4	4-8	6-12	8-14
Heavy metals (Pb, Cd, As, Hg)	1	1	2	3	3
PAH[2]	1	1	2	3	4
Packaging material[3]	1	2	3	5	6
Total	**8**	**9-11**	**17-21**	**23-32**	**30-36**

[1] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)
[2] Analysis are only required in products that are dried by direct firing during the production or processing process.
[3] Examination are only required for products which were unpacked.

Table 35: Additional analyses for products based on cereals and nuts (examples: old bread, pastry, dough)

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤25,000	>25,000 - ≤50,000	>50,000
Aflatoxin B1	1	1	2	3	4
DON	1	1	2	3	4
ZEA	1	1	2	3	4
Total	**3**	**3**	**6**	**9**	**12**

Table 36: Additional analyses for products based on milk (examples: milk, yogurt, cream, ice cream)[1]

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤25,000	>25,000 - ≤50,000	>50,000
Antibiotic active substances	1	1	2	3	4
Total	**1**	**1**	**2**	**3**	**4**

[1] By-products from the dairy industry fall under the control plan 6.4.9

Table 37: Additional analyses for products based on cocoa (examples: chocolate, chocolate bar)[1]

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤25,000	>25,000 - ≤50,000	>50,000
Aflatoxin B1	1	1	2	3	4
Pesticides[1]	1	1	1-2	2-3	2-4
Total	**2**	**2**	**3-4**	**5-6**	**6-8**

[1] Analysis quantity is to be determined according to HACCP-based risk assessment (see chapter 6.4)

6.4.8 Control plan fish and other marine animals, their products and by-products

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 38: Analyses for fish and other marine animals, their products and by-products

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤ 10,000	>10,000 - ≤50,000	>50,000
Dioxin	1	2	4	8
Dioxin-like PCB	1	2	4	8
Non-dioxin-like PCB	1	2	4	8
Salmonella	2	4	8	16
Heavy metals (Pb, Cd, As, Hg)	2	4	8	16
PAH	1	2	4	8
Organochlorine compounds (except Dioxins and PCBs)[1]	2	4	8	16
Antibiotic active substances [2]	2	4	6	8
Total	**12**	**24**	**46**	**88**

[1] Analysis spectrum according to **VO (EU) No. 574/2011**
[2] For products from aquacultures (third party countries) analysis of: Chloramphenicol, furaltadone, furazolidone, leucomalachit green, malachit green, nitrofurantoin.

Due to the requirements of **EU Regulation 1069/2009** on these products analyses are only carried out in the final products.

6.4.9 Control plan milk products

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 39: Analyses for milk products

Amount in t / Parameter	Small scale feed material producer/ ≤1,000 TM	>1,000 - ≤10,000 TM	>10,000 - ≤50,000 TM	> 50,000 TM
Dioxin	1	2	3	4
Dioxin-like PCB	1	2	3	4
Non-dioxin-like PCB	1	2	3	4
Salmonella	1	5	7	9
Heavy metals (Pb, Cd, As, Hg)	1	2	3	4
Antibiotic active substances[1]	1	2	3	4
Total	**6**	**15**	**22**	**29**

[1] The analyses should be carried out in the final product (feed).

The tonnage in this control plan refers to dry matter (TM).

6.4.10 Control plan glycerine as by-product of the processing of vegetable oil

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 40: Analyses for plant glycerine and raw plant glycerine

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 - ≤10,000	>10,000 - ≤20,000	>20,000
Dioxin	2	2	4	4
Dioxinl-ike PCB	2	2	4	4
Non-dioxin-like PCB	2	2	4	4
Salmonella	1	2	3	4
Heavy metals (Pb, Cd, As, Hg)	1	2	3	3
PAK	1	2	3	3
Pesticides	1	1	2	2
Methanol[1]	1	2	3	4
Total	**11**	**15**	**26**	**28**

[1] Examinations of Methanol only for Glycerine, crude

6.4.11 Control plan dried grass meal

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 41: Analyses for dried grass meal

Amount in t / Parameter	≤5,000	>5,000 - ≤10,000	>10,000 - ≤30,000	>30,000
DON	1	2	2	4
ZEA	1	2	2	4
Dioxin	1	2	3	5
Dioxin-like PCB	1	2	3	5
Non-dioxin-like PCB	1	2	3	5
Salmonella	1	2	4	6
Heavy metals (Pb, Cd, As, Hg)	1	2	3	5
PAH	1	2	3	5
Animal Components	The number of analyses should be determined with regard to risks within the scope of the company's own QM system.			
Pesticides				
Total	**8**	**16**	**23**	**39**

6.4.12 Control plan for drying plants

The control plan applies to drying plants, which dry primary agricultural products and feed by direct firing on behalf of third parties.

Table 42: Analyses for drying plants

Amount in t / Parameter	<5,000	>5,000 - <10,000	>10,000
Dioxin[1]	0,5/1	1/2	2/3
Dioxin-like PCB[1]	0,5/1	1/2	2/3
Non-dioxin-like PCB[1]	0,5/1	1/2	2/3
PAH[1]	0,5/1	1/2	2/3
Total	**2/4**	**4/8**	**8/12**

[1] If during the production or processing process the feed material is subjected to direct drying by direct firing with natural gas, propane gas and liquid natural gas (LNG), the respective lower number of analyses can be carried out. If other fuels are used, the respectively higher number of analyses must be carried out.

6.4.13 Control plan for straw for feed purposes

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 43: Analyses for straw for feed purposes

Parameter / Amount in t	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤10,000	>10,000
DON	0.5[1]	1	2	2
ZEA	0.5[1]	1	2	2
Dioxin[2]	0,5/1	1/2	1/2	2/3
Dioxin-like PCB[2]	0,5/1	1/2	1/2	2/3
Non-dioxin-like PCB[2]	0,5/1	1/2	1/2	2/3
PAH[2,3]	0,5/1	1/2	1/2	2/3
Salmonella	0,5[1]	1	2	2
Heavy metals (Pb, Cd, As, Hg)	0.5[1]	1	1	1
Pesticides	0.5[1]	1	1	1
Total	**4.5/6.5**	**9/13**	**12/16**	**16/20**

[1] The parameter must be analyzed at least every 2 years.
[2] If during the production or processing process the feed material is subjected to direct drying by direct firing with natural gas, propane gas and liquid natural gas (LNG), the respective lower number of analyses can be carried out. If other fuels are used, the respectively higher number of analyses must be carried out. In the case of indirect drying as well as no drying, the lower number of analyses can be carried.
[3] Analysis are only required in products that are dried by direct firing during the production or processing process.

6.4.14 Control plan for by-products from fruit and vegetable processing

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 44: Analyses for by-products from fruit and vegetable processing

Parameter / Amount in t	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤10,000	≤10,000
Aflatoxin B1	1	1	2	3
OTA[1]	1	1	2	3
Dioxin	1	1	2	3
Dioxin-like PCB	1	1	2	3
Non-dioxin-like PCB	1	1	2	3
Salmonella	1	3	5	8
Heavy metals (Pb, As, Hg, Cd)	1	1	2	3
Pesticides	2	3	5	8
PAH[2]	1	1	2	3
Hydrocyanic acid[3]	1	1	2	3
Total	**11**	**14**	**26**	**40**

[1] Analysis only required in products from fruit processing.
[2] Analysis are only required in products that are dried by direct firing during the production or processing process.
[3] Analysis only required for products made from almonds and apricots.

6.4.15 Control plan for pulses, their products and by-products

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 45: Analyses for pulses, their products and by-products

Parameter / Amount in t	Small scale feed material producer/ ≤1,000	>1,000 - ≤5,000	>5,000 - ≤25,000	>25,000
DON	1	1	2	3
ZEA	1	1	2	3
Dioxin	1	1	2	2
Dioxin-like PCB	1	1	2	2
Non-dioxin-like PCB	1	2	3	3
Salmonella	1	2	2	3
Heavy metals (Pb, Cd, As, Hg)	1	1	2	3
Pesticides	1	1	2	4
Total	**8**	**10**	**17**	**23**

6.4.16 Control plan for products from hop processing

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products are covered by this control plan.

Table 1: Analyses for hop and hop products

Amount in t / Parameter	Small scale feed material producer/ ≤1,000	>1,000 – ≤5,000	>5,000 – ≤10,000	>10,000 - ≤30,000	>30,000
Dioxin	1	1	2	3	5
Dioxin-like PCB	1	1	2	3	5
Non-dioxin-like PCB	1	2	3	3	5
Heavy metals (Pb, Cd, As, Hg)	1	1	2	3	5
Pesticides	1	2	4	6	8
PAH[1]	1	1	2	3	5
Total	**6**	**8**	**15**	**21**	**33**

[1] Analysis are only required in products that are dried by direct firing during the production or processing process.

6.5 Control Plan for traders

6.5.1 Control plans for traders of compound feeds

To traders of compound feed the respective control plans for compound feed producers apply (Chapter 6.2).

6.5.2 Control plans for traders of premixes and feed additives

To traders of premixes and feed additives the control plan for premixes and feed additive producers apply (Chapter 6.3.1).

6.5.3 Control plans for traders of feed materials

The control plans in this chapter apply to traders of feed material.

In Table 47 of the control plan for traders of feed material (bulk goods) it is determined how many analyses have to be conducted depending on the annual quantity of QS feed material and agricultural primary products traded.

The general control plan schema (Table 48) illustrates the parameters for which each feed material must be analysed. Analyss are to be distributed among the traded goods throughout the year using a risk-based approach. If feed materials from different feed material groups are traded, the analyses are distributed among all groups and parameters on a rotational basis.

In preparing the control plan, the following must be observed:

If the number of annual analyses exceeds the number of parameters to be analysed (example: 10 analyses on 6 given parameters), proceed as follows:

- Each parameter must be analysed at least once a year
- Individual parameters are analysed several times a year on a risk-oriented basis

If the number of specified parameters exceeds the number of analyses to be performed annually (e.g. 9 parameters for 5 specified analyses), proceed as follows:

- In the first year, as many parameters must be analyzed in a risk-oriented manner as the number of analyses specified (in the example 5).
- In the following years, the other parameters must be analyzed so that a rotating system with underlays on all parameters is created.

Traders who dry their feed materials using the direct drying method (e.g. to store maize) must also meet the requirements of the drying plant control plan for these products (⇒ Chapter 6.4.12).

An analysis of plant protection product residues is only required if unprocessed primary products are traded. If it is not possible to gain access to the raw material, e.g. in the case of a traders who only trades in processed products (e.g. brans, meals), there is no need for an analysis of pesticide residues.

Companies that act as gatekeepers in accordance with **Annex 9.2** to the feed sector guideline must carry out the analyses that are ordered in accordance with the annex, in addition to the regular analyses per the control plan. This involves carrying out monitoring for each uncertified supplier and raw material delivered.

Table 47[1]: Analyses of traded goods

Amount in t	**<500**	**≥500 - <1,000**	**≥1,000 - <5,000**	**≥5,000 - <10,000**	**≥10,000 - <20,000**	**≥20,000 - <50,000**	**≥50,000 – <100,000**	**≥100,000 – <500,000**	**≥500,000 – <1 m.**	**>1m.**
number of analyses	3	5	10	15	20	30	40	75	100	150

[1] The required analyses have to be distributed rotating to all traded feed material.

The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the respective groups. The explanations of the abbreviations can be found in Chapter 7.2.

Table 48: Control plan systematic for traders

Parameter	**GK**	**NMV**	**NWGV**	**NKV**	**ÖF**	**NZV**	**NBB**	**NMÄ**	**BET**	**MK**	**NLI**	**NMIV**	**GLY**	**HF**	**GM**	**NOV**	**FuF**	**FM**	**St**	**HOP**
Aflatoxin B1	X[1]	X	-	-	X	X[16]	-	-	X	-	X[2]	-	-	-	-	X	-	-	-	-
DON	X	X	X	-	X	X[16]	-	X	X	-	X	-	-	X	X	-	-	-	X	-
ZEA	X	X	X	-	X[17]	X[16]	-	X	X	-	X	-	-	X	X	-	-	-	X	-
Fumonisins B1/B2[3]	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T2/HT2-Toxins[4]	X[6]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dioxin	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dioxin-like PCB	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-dioxin-like PCB	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Salmonella	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	-	X	X	X

Parameter	GK	NMV	NWGV	NKV	ÖF	NZV	NBB	NMÄ	BET	MK	NLI	NMIV	GLY	HF	GM	NOV	FuF	FM	St	HOP
Heavy metals (Pb, As, Hg, Cd)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	X	X
Heavy metal (Ni)[5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Animal Components[6]	X	X	X	X	X	X	X	-	X	-	-	-	-	-	X	-	-	-	-	-
Pesticides	X	X	X	X	X	X	X	X	X	-	-	-	X	X	X	X	X[7]	X[8]	X	X
Ergot[9]	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAH	X[10]	-	-	X[10]	X[10]	X[10]	X[10]	-	X[10]	-	X[10]	-	X	-	X	X[10]	X[7]	X	X[10]	X[10]
Methanol[11]	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
OTA	X	X	X	-	-	-	-	X	-	-	-	-	-	-	-	X[18]	-	-	-	-
Antibiotic performance promoters	-	-	-	-	-	-	X[12]	-	X[12]	-	X[13]	X	-	-	-	-	-	X[14]	-	-
Hydrocyanic acid	-	-	-	-	X[15]	-	-	-	-	-	-	-	-	-	-	X[19]	-	-	-	-
Packaging material	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Insoluble impurities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X[20]	-	-	-

[1] For Cereal grains (GK): In case of trade with Maize and Maize by-products the parameter Aflatoxin B1 must always be included for the analysis carried out.
[2] Analysis only for products on a grain- and nut-base required.
[3] Analysis are only required if maize and maize by-products are traded. Transition period: examinations are mandatory from 01.03.2022.
[4] Analysis are only required in oats and oat by-products. Transition period: examinations are mandatory from 01.03.2022.
[5] Only to be analysed, when nickel is used in the production process.
[6] The number of analyses should be determined with regard to risks within the scope of the company's own QM system.
[7] Analysis not required for animal fat
[8] Organic chlorine compounds (except Dioxins and PCB), analysis spectrum according to **VO (EU) No. 574/2011**
[9] Examinations (sensory and optical control) for ergot (*claviceps purpurea*) are to be conducted and documented by the company itself as an incoming goods inspection. If ergot is found, subsequent count and documentation take place (no entry in QS database).
[10] Analysis are only required in products that are dried by direct firing during the production or processing process.
[11] Analysis on Methanol only for raw plant glycerine
[12] The number of analyses is to be determined exclusively for products from third countries or unknown origin with regard to risks within the scope of the company's own QM system.
[13] Analysis only for products on a milk-base
[14] For products of aquacultures (products from third countries) analysis of: Chloramphenicol, furaltadone, furazolidone, leucomalachit green, malachit green, nitrofurantoin
[15] In linseeds and mechanically pressed linseed cake without heating process
[16] Only for Sugar beet pulp (Positions Annex 9.5 QS list of feed materials: 04.01.07 to 04.01.11 as well as 04.01.13 and 04.01.17); the analysis results must be deposited in the QS database within three weeks of the start of the campaign. If the QS guidance values are exceeded, QS and the purchasers of the goods must be informed and a use recommendation (percentage use limitation for the ration or for use in compound feed) must be given.
[17] In rapeseed, linseed, sunflower, soya and their by-products the parameter ZEA is not to be examined if they are of European origin.
[18] Analysis only required in products from fruit processing.
[19] Analysis only required for products made from almonds and apricots.
[20] Analyses are required in ruminant fats and in animal fat for which there is no proof of non-ruminant origin. Transition period: examinations are mandatory from 01.03.2022.

In addition to this control plan, the additional control plan Aflatoxin B1 (annex 8.5) may need to be considered.

For specific products (e.g. fatty acids) positive release sampling has to be performed. If those products are traded, chapter 6.5.4 positive release sampling has to be complied with in addition to chapter 6.5.3.

6.5.4 Positive release sampling trade

Traders of the following products must subject their products a batch-related positive release sampling before placing them on the market.

1. Products from vegetable oils and fats:

- fatty acids from chemical refining
- fatty acid distillates from physical refining
- monoester of propylene glycol and fatty acids

A positive release sampling must also be carried out for the following products if a raw material other than vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**, was used for the production:

- crude fatty acids from splitting
- pure distilled fatty acids from splitting

A positive release sampling must be carried out for the following products unless they are produced with or from fatty acids from the splitting of vegetable oil, which falls under number 02.20.01 of the **Annex 9.5 QS list of feed material**:

- fatty acids, esterified with glycerol
- salts from fatty acids
- mono-, di- and triglycerides of fatty acids
- mono- and diglycerides of fatty acids esterified with organic acids

Analysis parameters for the positive release sampling of products from vegetable oils and fats are:

- Dioxin
- Dioxin-like PCB
- Non-dioxin-like PCB
- Heavy metals
- Nickel (only to be analysed when nickel is used in the production process)
- Pesticides
- PAH

Note: *Additionally, the following quality parameters should be tested using a risk-based approach and their results compared with the internal specifications and contracts in place: Fatty acid pattern, moisture and impurities, free fatty acid content, melting point and cholesterol.*

2. Other products subject to positive release sampling:

- crude fish oil
- crude coconut oil

Analysis parameters for the positive release sampling of crude fish and coconut oil:

- Dioxin
- Dioxin-like PCB

7 Definitions

7.1 Explanation of Symbols

References to related documents are highlighted by the use of **bold text**.

References to other sections of the Guideline are indicated by ⇒ .

Notes (regarding legal requirements), ***suggestions*** (regarding process assurance or as support for management) and ***explanations*** (about QSframework, for transparency) are identified by *text in italics*. Notes, suggestions and explanations are no QS requirements, they are not controlled, and they are not included in the evaluation.

7.2 Abbreviations

AGW	Action threshold
As	Arsenic
BaP	Benzo[a]pyren
BaP_{eq}	Benzo[a]pyren equivalent
BET	Products of (bio-)ethanol production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group products of (bio-)ethanol production.
Cd	Cadmium
DON	Deoxynivalenol/Vomitoxin
EGM	European grain monitoring of the VDM (association of German mills)
FuF	Feed fats and oils (including animal fats) The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group feed fats and oils (including animal fats).
FM	Fish and other marine animals, their products and by-products The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group fish and other marine animals, their products and by-products.
GEF	Breeding poultry feed
GK	Cereal grains, their products and by-products The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group cereal grains, their products and by-products.
GLY	Glycerine as by-products from seed oil production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group glycerine as by-products from seed oil production.
GM	Dried grass meal The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group dried grass meal.
HACCP	Hazard Analysis and Critical Control Points
HF	Pulses, their products and by-products The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group pulses, their products and by-products.
HG	Maximum level
Hg	Mercury
HOP	Hop and hop products The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group hop and hop products.

KE	Small scale feed material producers
LHF	Laying hen feed
MAT	Substitute milk products
MFS	Blends of fat and blends of fatty acids
MGF	Poultry fattening feed
MIN	Mineral feed
MK	Mineral raw materials The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group mineral raw materials.
MLF	Milk performance feed
NBB	By-products of breweries and distilleries The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group by-products of breweries and distilleries.
NKV	Products and by-products from potato starch production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group products and by-products from potato starch production.
NLI	Foodstuff identical stuffs and by-products of the food industry The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group foodstuff identical stuffs and by-products of the food industry.
NMÄ	By-products from malting The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group by-products from malting.
NMIV	By-products from milk production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group by-products from milk production.
NMV	Products and by-products from maize starch production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group products and by-products from maize starch production.
NOV	By-products from fruit processing The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group by-products from fruit processing.
NWGV	Products and by-products from wheat and barley starch production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group products and by-products from wheat and barley starch production.
NZV	By-products from sugar production The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group by-products from sugar production.
ÖF	Oil seeds and oil fruits and other oil-supplying plants, their products and by-products The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group oil seeds and oil fruits and other oil-supplying plants, their products and by-products.
OTA	Ochratoxin A
PAH	Polycyclic aromatic hydrocarbons
Pb	Lead
PCB	Polychlorinated biphenyls
PSM	Pesticides
RMF/KF	Cattle fattening feed/calf feed

RW	Guidance value
SF/FF/MSF	Sow feed/Piglet feed/ Pig fattening feed
St	Straw for feed purposes The **Annex 9.5 QS list of feed material** to the Guideline Feed Sector shows which products fall under the group straw for feed purposes.
TM/TS	Trockenmasse (dry matter/ mass)
VDM	Association of German Mills
VO	Regulation
ZEA	Zearalenone

7.3 Terms and definitions

- products from third countries:

Products originating in countries which are not parties to the European Economic Area.

8 Annexes

The following annexes have been published separately.

8.1 Table of Parameters and Methods Table

8.2 Table of Limit-/QS Guidance Values

8.3 Analysis spectrum for Pesticides

8.4 Registration form for laboratories

8.5 Additional control plans

8.6 Ad-hoc monitoring plans

8.7 Evaluation criteria laboratory performance assessment

Revision information Version 01.01.2022

Criteria/Requirement	Changes	Date of change
2.4 Sampling at mobile feed milling and mixing plants	**Enhancement** and **clarification** of the products covered by the positive release sampling	01.01.2022
3.1.5 Validity of the approval procedure	**New chapter** with regulations on the validity of an approval procedure	01.01.2022
3.3 Loss of QS approval	**Clarification** that any applications submitted later than 12 months after the loss of the approval are considered as new applications	01.01.2022
3.4.3 Information in the original report	**New chapter** on the required information in the original report	01.01.2022
5.2 Entry of analysis results by labs	**Clarification:** For the second analysis of a sample in the " in the status "clarification necessary", the initial laboratory must send sample material from their retained sample to the second laboratory. For findings of parameters that are unevenly distributed in a sample (Salmonella, animal components and packaging material), the "clarification necessary" process is irrelevant.	01.01.2022
6.2 Control plans compound feed producers	**Enhancement** and **clarification** of the products covered by the positive release sampling	01.01.2022
6.3.1 Control plan premixes and feed additives	**Clarification** that the analyses for antibiotic active substances are to be carried out for products from third countries as well as products of unknown origin.	01.01.2022
6.4 Control plans feed material producers	**Clarification** for which feed material producers the new column "small scale feed material producers/<1,000 t" is relevant.	01.01.2022
6.4.1 Control plan Grains, their products and by-products	**New** classification of the tonnages of the control plan *Analyses of feed from mills and* **enhancement** of the parameters **Fumonisins B1/B2** in maize(-products); **T2/HT2-Toxins** in oat(-products) and **PAH** in directly dried products (Table 22).	01.01.2022

Criteria/Requirement	Changes	Date of change
6.4.2 Control plan for Starch Production, their products and by-products	**Enhancement** of the control plan *Analyses for products of maize starch producers* by the parameters **Fumonisins B1/B2** und **OTA** (Table 23). **Addition** of products from barley starch production to the control plan and renaming of the control plan to *Analyses for products of wheat and barley starch producers*. **Enhancement** of the control plan by the parameter **OTA** (Table 24). **Enhancement** of the control plan *Analyses for products of potato starch producers* by the parameter **PAH** in directly dried products (Table 25).	01.01.2022
6.4.3 Control plan oil seeds, oil fruits and other oil-supplying plants, their products and by-products as well as feed fats	**New** classification of the tonnages of the control plan *Analyses for products of oil mills and* **enhancement** of the parameter **PAH** in directly dried products (Table 26). **New** classification of the tonnages of the control plan *Analyses for feed fats and feed oils (including animal fats) and* **enhancement** of the parameter **Insoluble impurities** in ruminant fats and in animal fat for which there is no proof of non-ruminant origin (Table 28). **Enhancement** and **clarification** of the products covered by the positive release sampling	01.01.2022
6.4.4 Control plan tubers, roots, their products and by-products as well as for sugar cane molasses and vinasse	**Enhancement** of the control plan *Analyses for feed from the processing of tubers and roots and for sugar cane molasses and vinasse* by the parameter **PAH** in directly dried products (Table 29).	01.01.2022

Criteria/Requirement	Changes	Date of change
6.4.5 Control plan By-products of fermentation- and distillation industry	**Addition** of products from distilleries to the control plan and renaming of the control plan to *Analyses of by-products of breweries and distilleries*. **New** classification of the tonnages of the control plan and **enhancement** of the control plan by the parameter **PAH** in directly dried products. **Clarification** that the analyses for antibiotic active substances are to be carried out for products from third countries as well as products of unknown origin (Table 30). **New** classification of the tonnages of the control plan *Analyses for by-products from malt houses* (Table 31). **Addition** of products from (bio-)ethanol production to the control plan and renaming of the control plan to *Analyses for products of (bio-)ethanol production*. **Enhancement** of the control plan by the parameter **PAH** in directly dried products. **Clarification** that the analyses for antibiotic active substances are to be carried out for products from third countries as well as products of unknown origin (Table 32).	01.01.2022
6.4.7 Control plan former foods, products and by-products of food production	**New** classification of the tonnages of the control plans of this chapter (Table 34, 35, 36, 37)	01.01.2022
6.4.8 Control plan fish and other marine animals, their products and by-products	**New** classification of the tonnages of the control plan *Analyses for fish and other marine animals, their products and by-products* (Table 38)	01.01.2022
6.4.9 Control plan milk products	**New** classification of the tonnages of the control plan *Analyses for milk products* and **clarification** that the analyses for antibiotic active substances are to be carried out the final product (feed) (Table 39).	01.01.2022
6.4.10 Control plan glycerine as by-product of the processing of vegetable oil	**New** classification of the tonnages of the control plan *Analyses for plant glycerine and raw plant glycerine* and **enhancement** of the control plan by the parameter **PAH** (Table 40).	01.01.2022
6.4.12 Control plan for drying plants	**Renaming** the chapter **Clarification** by which companies the control plan is to be applied. **Cancellation** of the product-specific control plans, as these are not relevant for contract dryers.	01.01.2022
6.4.13 Control plan for straw for feed purposes	**Addition** of a control plan for straw for feed purposes	01.01.2022

Criteria/Requirement	Changes	Date of change
6.4.14 Control plan for by-products from fruit and vegetable processing	**New** classification of the tonnages of the control plan *Analyses for by-products from fruit and vegetable processing* and **enhancement** of the control plan by the parameter **OTA** in products from fruit processing, **PAH** in directly dried products and **Hydrocyanic acid** in products made from almonds and apricots (Table 44).	01.01.2022
6.4.15 Control plan for pulses, their products and by-products	**New** classification of the tonnages of the control plan *Analyses for pulses, their products and by-products* (Table 45).	01.01.2022
6.4.16 Control plan for products from hop processing	**Addition** of a control plan for hop and hop products	01.01.2022
6.5.3 Control plans for traders of feed materials	**Addition** of *Control plan systematic for traders* (Table 52) according to the amendments of the control plans for feed material producers (chapter 6.4.).	01.01.2022
6.5.4 Positive release sampling trade	**Enhancement** and **clarification** of the products covered by the positive release sampling	01.01.2022
7.2 Abbreviations	**New** Abbreviation HOP: Hop and hop products **New** Abbreviation BET: Products of (bio)ethanol production (before SCH) **New** Abbreviation NBB: By-products of breweries and distilleries (before NBH) **New** Abbreviation NWGV: Products and by-products from wheat and barley starch production (before NWV)	01.01.2022

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