

 Technical Specifications

TS 1.6 - Sampling

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Welcome

This Feed Certification scheme document helps you to provide feed safety world-wide. By meeting the requirements set by GMP+ International together with our stakeholders, we aim to help you get the feed certification you need. Please read the information in this document carefully.

Let's make this work together!

1. Basic principles

In the sampling protocols no distinction is made between characteristics which are homogenous and those which are not homogenous within a batch (for example undesirable substances such as mycotoxins and toxic seeds). In practice, a number of examples follow, it makes no difference.

Undesirable substances in feed:

Cereal grains: Various mycotoxins can be present in grains. These appear to a greater or lesser extent depending on the growing season. During harvesting the grains are loaded from the combine into a tipper and brought to a compound feed company or a collection point. At the compound feed company it is possible that the grain is taken in directly via the dumping pit. The undesirable substances are mixed homogeneously through the batch by the dumping of the combine into the tipper and the unloading into the dumping pit.

If the grain is brought to another collection point then the grain is sampled, dumped and reloaded and taken to a storage location or compound feed company. The analysis for undesirable substances must be done from the tipper as the undesirable substances will be more evenly distributed through the batch due to mixing. On intake into the production site there will be a homogeneously-mixed undesirable substance mixed through the batch.

In the event of the transport of grains over water a great number of batches are brought together. As the original batches are mixed together to a great extent it may be assumed that the undesirable substances are distributed homogeneously across the batch. In the event of laying-up at a storage and transshipment depot the batch will be mixed further so that in the event of transport to the compound feed factory there will be a homogenous batch.

Aflatoxin: With respect to Aflatoxin B₁ it is known that it can be highly heterogeneous distributed across the batch (Park and Poland, 1989). It is indicated here that if the product is made smaller by grinding (for example into flour), the heterogeneity is lessened. In the GMP+ FSA module products are critically sampled and analysed for Aflatoxin in accordance with an established schedule. This is often in accordance with the Gafta contract.

The GAFTA Sampling Rules state that a collective sample of at least 20 kg must be taken from the batch per 500 tons of product.

The random samples may amount to a maximum of 1 kg. ISO 6497 states that from 100 to 500 tons the collective sample must be at least 64 kg. It appears that the GAFTA sampling is compliant in spite of deviations from ISO and EU (indicates 40 subsamples for 80 tons of product). FOSFA contracts keep to ISO 5555 and ISO 542.

On the basis of the above it is assumed that the sampling method is used for GAFTA. If the sampling with subsamples with respect to GAFTA is extrapolated to vehicles for example of a maximum of 50 tons then 2 random samples per vehicle will be enough. The collective sample will amount to 2 kg. With respect to bagged goods, one batch of 50 tons in 25 kg bags would mean that 2 of the 2000 bags must be sampled.

The numbers of random samples indicated in the protocols and the quantity of the collection sample are minimum numbers and quantities.

Dioxin in steamed potato peelings: Within the framework of the former Dutch legislation with respect to minerals supply records (MINAS) one subsample was enough for steamed potato peelings. In samples which were examined within the framework of the contamination with dioxin in the Netherlands in November 2004 it was assumed that they contained dioxin and this was also found. It was shown that in this case one random sample was sufficient.

Undesirable substances in compound feed:

In the compound feed industry the end feed are made from various raw materials. The various feed materials, feed additives and premixtures are weighed in the factory. The feed materials from silos are usually ground. The components are mixed in the mixer. Due to the grinding and mixing any undesirable substances which may be present will be distributed homogeneously throughout the batch of compound feed. The empiric coefficient of variation amounts to an average of 6%.

2. Requirements for samplers

The minimum requirements for samplers are subdivided into working conditions and training / experience.

2.1. Working conditions

The sampler must have an independent position¹ with respect to the activities relating to the production and trading of feed additives, feed materials, premixtures and compound feed in the company. This must be expressed in the job description and the organisational chart for the company. The sampler must conform with the strict implementation of the GMP+ sampling protocols in accordance with this document.

The sampler must have free access to all buildings and departments if this is necessary for sampling. This must be described in the job description.

2.2. Training and Experience

The sampler:

- a) must be familiar with the products to be sampled.
- b) must be able to make proper use of the required sample materials.
- c) must be familiar with the protocols and applies them.
- d) must be assessed once a year by other personnel in the organisation with respect to the correct use of the GMP+ sampling protocols. A plan will be available for this purpose
- e) must demonstrate by way of the taking of a training course or equivalent that he has knowledge of the sampling protocols which apply to him or her. He must have regular refresher training in sampling protocols if possible.

¹ By independent is meant that he or she may not be forced by their immediate supervisor or management not to take samples or to take them in a different way. This must be demonstrable, for example by showing the position of the sampler in the organisational chart of the company or by an additional (signed) statement from management. It is therefore possible for production workers also to fulfil the role of sampler.

3. Storage Duration and Condition

Retained samples must:

- a) be kept available at least for a period that is corresponding to the use of the feed, placed on the market;
- b) comply with the below-mentioned requirements regarding minimum storage duration and storage conditions.

Product	Minimum storage duration	Storage conditions
Compound feed (including milk replacer)	3-6 months	Cool, dry and dark
Premixtures / processing aids	1 year or longer if there is still product in storage	Cool, dry and dark
feed additives	6 months	Cool, dry and dark
feed materials (dry, artificially dried, naturally dried)	6 to 12 months depending on the moment of delivery	Sample pot, cool, dry and dark
Fresh feed materials	Max 1 month, storage life often only a few days and will be fed as soon as possible	In air-tight sample bag in freezer
Preserved feed materials (products which are acidified or which have been subjected to natural acidification for the purpose of extending the shelf life of these products)	As long as the product is provided as feed up to a maximum of 2 years.	Preserved product (for example wrapped grass hay bale or green maize silage) is therefore "packaged", that it is available during the storage period for analysis.
Liquid and wet feed materials which are sensitive to decay due to their high moisture content	3 months or as long as it may be assumed that the product will be provided as feed.	In air-tight deepfreeze sample pot
Liquid and wet feed materials which are not sensitive to decay	3 months or as long as it may be assumed that the product will be provided as feed.	Sample pot, cool, dry and dark

4. Literature

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2. Product Board Animal Feed, DW 2.03-3 Decree PDV Minas Regulation Protocols 2003, Productschap Diervoeder, The Hague, The Netherlands.
3. GAFTA No. 124, Sampling Rules, Rules for sampling, analysis instructions and analysis certification, 2004, The grain and feed trade association, Gafta House, London, England
4. ISO International Standard, 2001, ISO 5555 Animal Fats and Oils- Sampling, ISO copyright office, Geneva, Switzerland
5. ISO International Standard, 2002, ISO 6497 Animal feeding stuffs- Sampling, ISO copyright office, Geneva, Switzerland.
6. ISO International Standard, 2001, ISO 11648-2 Statistical aspects of sampling from bulk materials- Part 2: Sampling of particulate materials. ISO copyright office, Geneva, Switzerland.
7. Douglas L.Park en Albert E. Pohland, Overview of Sampling, Sampling and Sample Preparation for Detection and quantitation of Natural Toxicants in Food and Feed, 1989, J. Assoc.off. anal. Chem. Vol 72, No 3, 1989, p. 399.
8. PDV quality manual, 2002, IB-09015 Sampling Instruction, Productschap Diervoeder, The Hague, The Netherlands
9. 31976L0317, 1976, First Directive76/371/EEG from the Commission of 1 March 1976 laying down rules for the community sampling methods for the official control of feeds, 1976. Official Journal No. L102 of 14/04/1976 pages 0001-0007.
10. The GMP+ FC scheme, GMP+ BA4 *Minimum Requirements for Sampling and Analysis*.
11. ISO International Standard, 2002, ISO 6644 Flowing cereals and milled cereal products- Automatic sampling by mechanical means, 2002, ISO copyright office, Geneva, Switzerland.

5. Sampling protocols

5.1. Sampling protocol: Dry and Wet feed materials delivery by Inland waterways vessel / Coaster ²

Purpose

The obtaining of as representative a sample as possible from the batch of dry or wet feed materials in the event of supply by inland waterway vessel or coaster.

Implementation

a. Sample material

Samples must be taken by using a scoop, a hand scoop or sample drill consisting of one or more compartments. The sample drill must be adjusted to the depth of the product in the hold. In addition, use can be made of automatic sampling equipment. Automatic sampling equipment must be able to take samples over the whole production flow or to the extent that this is possible. The sampling equipment must be able to be adjusted to the size of the subsamples and the frequency of sampling.

In the event of manual sampling the subsamples must be collected in a plastic bucket or an equivalent bin. All the parts of the sampling equipment and the storage facilities for the collective sample, sample tools and sample bags or pots must be clean, dry and free of odours foreign to the product.

The sampling equipment must be easily accessible for inspection, cleaning, maintenance, repair and for sample verification.

b. Sampling location

If the sample drill is used for sampling, the sample must be taken in the hold of the vessel before the vessel is unloaded if the sample drill is used for sampling. In that case, the whole load must be accessible. If it is not possible to sample the hold then the flow must be sampled during unloading. If use is made of automatic sampling equipment then the sample must be taken as close as possible to the point where the transfer of ownership of the product takes place (just after intake). Samples must be taken such that contamination of the samples, equipment or containers in which the samples are stored with, for example rain or dust, is prevented.

c. Sampling

The sample must be taken by collecting a number of sub-samples and making a collective sample from these and then preparing a final sample.

The number of sub-samples depends on the quantity of product delivered, see the table.

² GMP+ certified companies may, if desired, make use of demonstrably established and agreed use of sampling in the port which takes place on the basis of Fosfa or Gafta and make use of simpler sampling at their own company.

Quantity in tons	Number of sub-samples	Minimum quantity of collective sample	Final sample
up to 5,000 tons: for each 500 tons	minimum 5	for each 500 tons minimum 1.0 kg	300 g
5,000 – 10,000 tons for each 1000 tons	minimum 5	for each 1000 tons minimum 1.0 kg	300 g
More than 10,000 tons for each 5,000 tons	minimum 5	for each 5000 tons minimum 1.0 kg	300 g

Sub-samples

The individual sub-samples must be of the same size. If the sample is taken during unloading of the vessel then the sub-samples must be spread over the whole time that the vessel is being unloaded. If the samples are taken using the sample drill then the sub-samples must be spread across the whole load.

If use is made of automatic sampling equipment then the samples must be taken over as wide a cross-section as possible of the product flow such that nearly every part of the batch has a likelihood of flowing into the sampling machine.

The sub-samples must be taken by allowing a small part of the batch to flow continuously into the sampling equipment or by taking a series of sub-samples at a determined interval. If the sub-samples are taken at intervals then samples must be taken throughout the whole time that the batch is flowing past the sampling equipment.

In the event of manual sampling the sub-samples which are taken must be collected on a clean, flat base where contamination by the work environment is prevented or collected in a collection bin (such as a bucket).

Collective sample

The sub-samples which are taken must be collected into a collection receptacle (a bucket for example). The product which is present must be well mixed to produce a collective sample.

Final sample

A final sample must be made from the collective sample. This refers to the kept samples. If inspection of the batch is desired then two or more final samples must be taken from the collective sample.



d. Sample sealing and storage

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

5.2. Sampling protocol: Feed materials, Compound feed, Premixtures and Feed additives in receptacles

Purpose

The obtaining of the most representative sample possible from the batch of feed materials, compound feed, premixtures and feed additives in receptacles such as bags, drums, big-bags, etc.

Implementation

a. Sample material

Samples must be taken by using a sample of a scoop, a hand scoop or sample drill. The samples must be collected in a plastic bucket or a similar receptacle. The sampling equipment and the sample bags or pots must be clean, dry and free of odours foreign to the product.

b. Sampling location

Contamination from the work environment must be prevented by using a clean, dry location.

c. Sampling

The sample must be taken by collecting a number of sub-samples and making a collective sample from these and then preparing a final sample. The number of units (for example bags or big bags) that must be sampled depends on the size of the batch. Per unit, in the case of sacks and big bags, must if possible be sampled at the top of the bag, big bag etc., in the middle and at the bottom. If this is not possible the unit must be opened at the top and a sample must be taken from the top.

Product	Quantity	Number of sub-samples	Minimum quantity of collective sample	Minimum quantity of final sample
Feed materials	up to 50 tons (for example up to 2000 units of 25 kg)	2	2 kg	300 g
Feed materials	more than 50 tons (for example more than 2000 units of 25 kg)	1 per 25 tons	1 kg per sub-sample	300 g
Compound feed	All quantities	1	300 g	300 g
Premixtures	All quantities	1	100 g	100 g
Feed additives	Up to 1000 kg	2	250 g	100 g

Product	Quantity	Number of sub-samples	Minimum quantity of collective sample	Minimum quantity of final sample
Feed additives	From 1000 kg up to 50 tons (for example up to 2000 units of 25 kg)	2	1 kg.	100 g
Feed additives	more than 50 tons (for example more than 2000 units of 25 kg)	1 per 25 tons	500 g per sub-sample	100 g

Sub-samples

The individual sub-samples must be of the same size.

Collective sample

The sub-samples which are taken must be collected into a collection receptacle (a bucket for example). The product which is present must be well mixed to produce a collective sample.

Final sample

A final sample must be made from the collective sample. This refers to the kept samples. If inspection of the batch is desired then two or more final samples must be taken from the collective sample.

d. Sample sealing and storage

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

5.3. Sampling protocol: Compound feed, Dry feed materials, Premixtures and Feed additives in bulk per axle or during bagging

Purpose

The obtaining of the most representative sample possible from the batch of compound feed, dry feed materials, premixtures or feed additives in the event of transport in bulk per axle or during bagging.

Implementation

a. Sample material

Samples must be taken by using a scoop, a hand scoop or sample drill consisting of one or more compartments. The sample drill must be adjusted to the depth of the product in the vehicle. In addition, use can be made of automatic sampling equipment. Automatic sampling equipment must be able to take samples over the whole production flow or to the extent that this is possible. The sampling equipment must be able to be adjusted to the size of the subsamples and the frequency of sampling.

In the event of manual sampling the subsamples can be collected in a plastic bucket or an equivalent bin.

All the parts of the sampling equipment and the storage facilities for the collective sample, sample tools and sample bags or pots must be clean, dry and free of odours foreign to the product. The sampling equipment must be easily accessible for inspection, cleaning, maintenance and for sample verification..

b. Sampling location

Preferably during loading or unloading of the vehicle. If this is not possible then from the stationary vehicle where the whole load must be accessible. Sampling during the production process is also possible. It is important then that after sampling there are no more additives to or treatments of the product. If the product is bagged then a sample can be taken during bagging. If use is made of automatic sampling equipment then the sample must be taken just after intake or as close as possible during loading. In the event of sampling of compound feed and premixtures the samples can be taken as closely as possible beyond the mixer. Samples must be taken such that contamination of the samples, equipment or containers in which the samples are stored with, for example rain or dust, is prevented. If the delivery consists of two parts (vehicle and trailer) then they can both be considered to be one batch.

c. Sampling

The sample must be taken by collecting a number of sub-samples and making a collective sample from these and then preparing a final sample.

The number of sub-samples depends on the quantity of product supplied, produced or to be delivered, see the table.

Product	Quantity in tons	Number of sub-samples	Minimum quantity of collective sample	Final sample
Feed materials	up to 50 tons	2	2 kg	300 g
Compound feed	up to 50 tons	1	300 g	300 g
Premixtures	up to 50 tons	1	100 g	100 g
Feed additives	up to 50 tons	2	100 g	100 g

Sub-samples

The individual sub-samples must be of the same size. If the sample is taken during loading or unloading of the vehicle or during the production process then the sub-samples must be spread over the whole time that the vehicle is being loaded or unloaded or the production time. If the samples are taken using the sample drill then the sub-samples must be spread across the whole batch using a sample drill. If applicable the sub-samples must be taken from multiple compartments or hatches.

If use is made of automatic sampling equipment then the samples must be taken over as wide a cross-section as possible of the product flow such that nearly every part of the batch has a likelihood of flowing into the sampling machine.

The sub-samples can be taken by allowing a small part of the batch to flow continuously into the sampling equipment or by taking a series of sub-samples at a determined interval. If the sub-samples are taken at intervals then samples must be taken throughout the whole time that the batch is flowing past the sampling equipment.

Collective sample

The sub-samples must be collected into a collection receptacle (a bucket for example). The product which is present must be well mixed to produce a collective sample.

Final sample

A final sample must be made from the collective sample. This refers to the kept samples. If inspection of the batch is desired then two or more final samples must be taken.

d. Sample sealing and storage

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

5.4. Sampling protocol: Liquid feed materials and Wet feed in bulk, Transport per axle

Purpose

The obtaining of as representative a sample as possible from the batch of liquid feed materials and wet feed (liquid and solid) in bulk in the event of transport per axle.

Implementation

a. Sample material

Liquid samples must be taken by using, the vehicle drain cock. Samples from a solid product must be taken by using a scoop, a hand scoop or sample drill consisting of one or more compartments. When using a sample drill this must be adjusted to the depth of the product in the vehicle or after unloading. The samples must be collected in a plastic bucket or an equivalent receptacle. A mixing spoon is required for mixing liquid product. The sampling equipment and the sample bags or pots must be clean, dry and free of odours foreign to the product.

b. Sampling location

During the loading of the truck:

1. there must be no residual load in the truck;
2. after loading the product must be quickly delivered (meaning within a few hours) to the customer
3. no additional loading must take place after the sampling;
4. for products which are collapsing or where lighter elements are drifting up it is desirable prior to and during the loading to stir it to obtain a good representative sample.

Solid products can be sampled after unloading. Liquid products can also be sampled during unloading.

c. Sampling

The sample must be taken by collecting a number of sub-samples and making a collective sample from these and then preparing a final sample. The number of sub-samples depends on the quantity of product supplied or to be delivered, see the table.

Product ³	Quantity in tons	Number of sub-samples	Minimum quantity of collective sample	Final sample
Liquid	up to 50 tons	min. 2	250 g	250 g
Solid	up to 50 tons	min. 2	500 g	500 g

³ In the event that the product is loaded from a large identified batch, day production or stock silo (more than 50 tons), from which in accordance with this procedure final samples have been taken, the final samples can be decreased, if by adding together these final samples, a sample of a minimum of 250 grams for liquid or of 500 grams for solid products is created.

Sub-samples

When taking a sub-sample via a drain cock the old material must be allowed to drain out (not to use it as a sub-sample). In addition, the diameter of the ball valve must be enough to prevent the sieving out of solids.

The individual sub-samples must be of the same size. If the sample is taken during loading or unloading of the vehicle then the sub-samples must be spread over the whole time that the vehicle is being loaded or unloaded. For solid products samples must be taken across the batch.

This must be done by taking sub-samples across the batch using a sampling drill or a scoop. The liquid samples which are taken must be put in a sample pot or something like that and collected in a bucket or equivalent receptacle. The other sub-samples must also be put in a bucket or equivalent receptacle. If inspection shows that the product is insufficiently homogenous then a single sub-sample (= collective sample) is sufficient.

Collective sample

The sub-samples must be collected into a collection receptacle (a bucket for example). The product which is present must be well mixed to produce a collective sample.

Final sample

A final sample must be made from the collective sample. If inspection of the batch is desired then two or more final samples must be taken from the collective sample.

d. Sample sealing and storage

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

5.5. Sampling protocol: forage products

Purpose

To obtain the best possible representative sample from the batches of forage products.

Implementation

a. Sample material

Samples must be taken by using the hands, a scoop, a hand scoop or sample drill consisting of one or more compartments. The sample drill must be adjusted to the depth of the product (for example in the silage or loading compartment). The samples must be collected in a plastic bucket or an equivalent receptacle. The sampling equipment and the sample bags or pots must be clean, dry and free of odours foreign to the product.

b. Sampling location

Preferably during loading or unloading of the vehicle. If this is not possible then from the stationary vehicle where the whole load must be accessible. If loading is done from a rick or silage then this is one unit.

c. Sampling

The sample must be taken by collecting a number of sub-samples and making a collective sample from these and then preparing a final sample. The number of sub-samples depends on the quantity of product supplied or to be delivered, see the table.

Quantity in tons per unit	Number of sub-samples	Minimum quantity of collective sample	Minimum quantity of final sample
up to 50 tons	Minimum 5	500 grams	250 grams
> 50 tons	Minimum 10	500 grams	250 grams

Sub-samples

The individual sub-samples must be of the same size. If the sample is taken during loading or unloading of the vehicle (for example feed potatoes) then the sub-samples must be spread over the whole time that the vehicle is being loaded or unloaded. If the samples are taken using the sample drill then the sub-samples must be spread across the whole batch using a sample drill if possible.

In the event of packs or bales then 5 units (bales or packs) must be sampled from the batch spread across the batch (if possible at the top, middle and bottom of the batch). If the batch can only be accessed from one side then the samples must be taken from that side.



Collective sample / final sample

The sub-samples must be collected into a bucket or bag. The product which is present must if necessary be reduced and well stirred or mixed to produce a collective sample. This collective sample can also serve as a final sample.

d. Sample sealing and storage

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

5.6. Sampling protocol: Products in Tank storage and Silos or sheds in the event of an emergency or an incident

Purpose

To obtain the best possible representative sample from the batch in the event of an emergency or an incident during tank storage or during storage in silos or sheds.

Implementation

a. Sample material

Samples must be taken by using a scoop, a hand scoop or a sample drill. The sample drill must be adjusted to the depth of the product in the shed. The samples must be collected in a plastic bucket or an equivalent receptacle. The sampling equipment and the sample bags or pots must be clean, dry and free of odours foreign to the product.

b. Sampling location

During turning over from one silo to another or at the location where the batch is stored. If this is technically not possible then it must be established how this is implemented.

c. Sampling

The sample must be taken by collecting a number of sub-samples and making a collective sample from these and then preparing a final sample. The number of sub-samples depends on the quantity of product in storage. See the table.

Product	Form	Quantity in tons	Number of sub-samples	Minimum quantity of collective sample	Minimum quantity of final sample
Feed materials	Dry	up to 50 tons	2	2 kg	600 g
		from 50 to 500 tons	1 per 25 tons	1 kg per 25 tons 100 tons :4 kg 250 tons :10 kg etc. 500 tons: 20 kg	600 g
		the part of the batch in excess of 500 tons	1 per 50 tons	1 kg per sub-sample	600 g



Product	Form	Quantity in tons	Number of sub-samples	Minimum quantity of collective sample	Minimum quantity of final sample
Compound feed	Dry	up to 50 tons	2	2 kg	600 g
		from 50 to 500 tons	1 per 25 tons	1 kg per 25 tons 100 tons:4 kg 250 tons:10 kg etc. 500 tons: 20 kg	600 g
		the part of the batch in excess of 500 tons	1 per 50 tons	1 kg per sub-sample	600 g
Premixtures	Dry	up to 50 tons	2	2 kg	200 g
		from 50 to 500 tons	1 per 25 tons	1 kg per 25 tons 100 tons:4 kg 250 tons:10 kg etc. 500 tons: 20 kg	200 g
		the part of the batch in excess of 500 tons	1 per 50 tons	1 kg per sub-sample	200 g
Feed additives	Dry	up to 50 tons	2	2 kg	200 g
		from 50 to 500 tons	1 per 25 tons	1 kg per 25 tons 100 tons:4 kg 250 tons:10 kg etc. 500 tons: 20 kg	200 g
		the part of the batch in excess of 500 tons	1 per 50 tons	1 kg per sub-sample	200 g
Feed materials	Liquid	up to 50 tons	1	500 g	500 g
		Above 50 tons	1 per 50 tons	7 kg	600 g
Compound feed	Liquid	up to 50 tons	1	500 g	500 g
		Above 50 tons	1 per 50 tons	7 kg	600 g
Premixtures	Liquid	up to 50 tons	1	250 g	250 g
		Above 50 tons	1 per 50 tons	7 kg	200 g
Feed additives	Liquid	up to 50 tons	1	250 g	250 g
		Above 50 tons	1 per 50 tons	7 kg	200 g

Sub-samples

The individual sub-samples must be of the same size. If the sample is taken during turning over from one silo to another silo then the sub-samples must be spread over the whole time of turning over. If the samples are taken using the sample drill then the sub-samples must be spread across the whole batch.

Collective sample

The sub-samples must be collected into a collection receptacle (a bucket for example). The product which is present must be well mixed to produce a collective sample.

Final sample

A final sample must be made from the collective sample.

d. Sample sealing and storage

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

5.7. Sampling protocol: Samples for microbiological examination

Purpose

To obtain a sample where the microbiological condition of the product is not changed.

Implementation

This sampling protocol may possibly be used in combination with other sampling protocols when sampling takes place for analysis of both microbiological and chemical characteristics.

a. Sample material

Samples must be taken by using a scoop, a hand scoop or sample drill consisting of one or more compartments. The sample drill must be adjusted to the depth of the product in the vehicle. The sample materials used are disinfected (with 95% alcohol or another bactericidal agent) or are sterile.

b. Sampling location

Depends on the purpose of the sampling.

In the event of sampling of the bacteriological status of delivered feed, sampling must preferably be done during loading or unloading of the vehicle. If this is not possible then from the stationary vehicle where the whole load must be accessible. If the product is bagged then a sample must be taken during bagging. Samples must be taken such that contamination, for example by rain or dust, of the samples or containers in which the samples are stored is prevented. If the delivery consists of two parts (vehicle and trailer) then they can both be considered to be one batch.

c. Sampling

Sterile gloves must be used and hands must be disinfected. During sampling, coughing, sneezing or talking is not allowed. If necessary, measures must be taken to avoid infection from clothing, hair, etc. Bags, pots and bottles, etc. must be kept open as short as possible and with the opening turned upwards at an angle of 45°. The insides of bags, pots, covers and the sampling tools must not be touched with the hands if the sample material could come in contact with it. Scoops, etc. must be kept by the handles. Sampling by pouring out must be avoided. If this cannot be avoided then the edge must be disinfected over which the pouring is done prior to use. Contact with heat / sunlight / damp / equipment must be avoided. The sample size must amount at least 60 grams which is sufficient for a duplicate determination. This is also the final sample.



d. Sample sealing, storage and consignment

The sample must be labelled such that it can easily be identified. The label must contain at least the following information: date of sampling, product identification, batch identification, sampler, supplier, production unit where the sample was taken. The sample must be kept in such a way that damage to and deterioration of the sample is avoided. The sealing must be such that opening the sample inevitably leads to an irrevocable break in the seal on the sample.

Consignment of the sample must be done in a sterile bottle or bag. Deliver samples of wet by-products to the laboratory within 24 hours. Other samples must be sent within two working days.



Feed Support Products

That was a lot of information to digest and one might ask, what is the next step? Luckily we can offer support for the GMP+ Community when doing this. We provide support by means of various tools and guidances but as each company has a shared responsibility to feed safety, and therefore tailor-made solutions cannot be offered. However, we do help by explaining requirements and provide background information about the requirements.

We have developed various supporting materials for the GMP+ Community. These include various tools, ranging from Frequently Asked Questions (FAQ) lists to webinars and events.

Supporting materials related to this document (Guidelines and FAQ's)

We have made documents available which give guidance to the GMP+ requirements as laid down in the module GMP+ FSA and GMP+ FRA. These documents give examples, answers to frequently asked questions or background information.

Find our Feed Support Products here:

Guidelines:

More information: <https://gmpplus.org/en/feed-certification-scheme-2020/gmp-fsa-fra-certification/support/>

At GMP+ International, we believe everybody, no matter who they are or where they live, should have access to safe food.

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Disclaimer:

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