



Acceptance guideline raw materials in feed factory

Reception raw materials

Sampling process



Raw materials sampling in the feed factory is a critical phase for anyone, serving as the first line of defence in ensuring food and feed safety.



This essential process involves **collecting small, representative samples** from larger raw materials batches to assess their overall condition. It's a fundamental step for identifying potential issues such as moisture content, pests, and contaminants, which could compromise the integrity of the raw material.



Sampling is not just about meeting regulatory requirements; it's about **safeguarding the reputation of their produce** and ensuring the highest possible market value.



It provides **vital data** that inform decisions on unloading, storage, processing, and distribution, helping to maintain the quality of the feed produced, to obtain optimum performance from layers hens, and improve the profitability for egg producer.

How to sample materials

Raw materials samples provide a powerful record of quality when are taken and stored correctly. If you take just one sample from a single point in a raw material batch, its characteristics are unlikely to be representative of the total batch. Best practice is to take a series of incremental samples (relatively small sample), from different parts of any given lot, blend them thoroughly and then take a subsample for analysis.

Raw materials sampling stages are:



1

Take various serial samples.

2

To combine serial samples and mixed them to form a large aggregate sample.

3

Make representative samples. There are several methods (of varying complexity) that produce optimally mixed grain. A simple method is coning and quartering (figure 1):

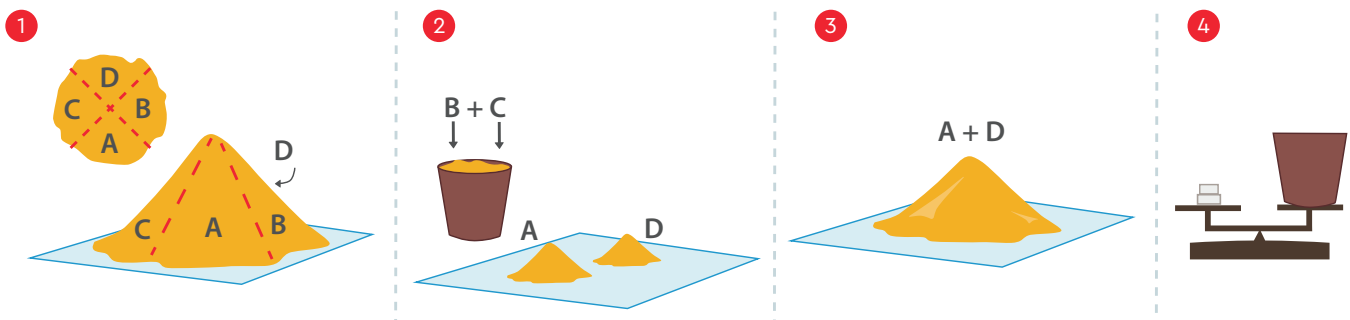
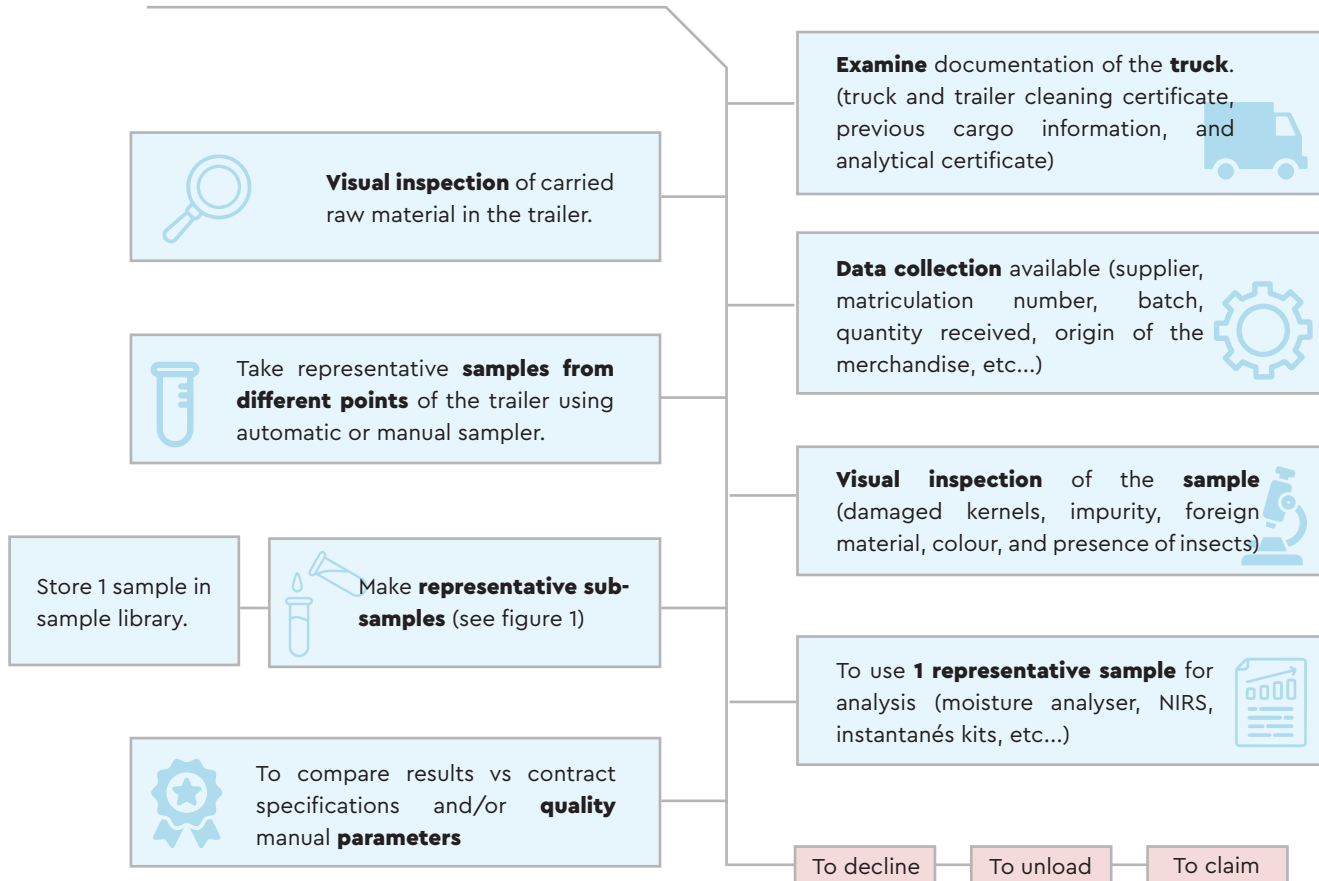


Figure 1: Sampling using coning and quartering method. (Source: grain sampling guide 2022)

- 1 A heap of tipped grain will take the rough form of a cone – it can be described as having four quarters (e.g. A, B, C and D).
- 2 Select two opposite corners (e.g. A+D). Remove the other two quarters (e.g. B+C) and return them to the original aggregate container.
- 3 Mix the selected samples (e.g. A+D) to form a new cone of grain.
- 4 Repeat until the size of one of the quarters is the equivalent weight of the final sample required (e.g. 1 kg).

Chart flow during reception raw materials



Evaluation of feed ingredients for quality

The feed ingredients are usually subject to the following types of tests:



Physical evaluation of the raw materials is the first analysis we do on the raw materials enter in the feed factory. This requires to be highly trained to identify the changes in the nature of the raw materials. **The most important physical parameters to evaluate in the raw materials are:**

Colour

Will reveal the quality of the ingredients. Any change in the colour of the feed ingredients give an indication of the maturity of the grain, storage conditions, presence of toxins, contamination due to sand, possible use of insecticides/fungicides which gives dull and dusty appearance. Browning or blackening due to heat on improper storage reduces nutritive value.



Size

Size is related to energy content of the grains. Generally, smaller grains, lower will be the metabolizable energy value due to more proportion of coater hulls. To evaluate the cereals, weight of a fixed number of grains is taken, usually 100 grains or fixed volume. Higher weight indicates a higher ME value. This technique is called Test Weight.



Homogeneity

The presence of contaminants like other grains, broken grains, husk, weed, or infected seeds is viewed.



Smell

Good indicator. Just standing near the stock itself will immediately indicate any difference in the normal smell. Any change in the normal smell of the ingredients should be viewed with suspicion.



Taste

Each ingredient has a different taste, any change in the taste like bitterness could indicates the presence of contaminants like mycotoxins.



Touch

Icy raw materials could indicate high moisture content. Also, high moisture content, may be formed clumps due to improper storage, packing of fresh warm solvent extracted meal, which crumbles on application of light pressure. Clumps can be detected by inserting a hand inside the bag. Clumps formed due to excess of moisture will be very hard.

