

## 8.2.5. Raw Material Weighing Tolerances.

### Standard

Are there defined raw material weighing tolerances and are these monitored?  
*For example, refer to equipment supplier specifications.*

### Purpose

To ensure raw material weighing tolerances are established and recorded.

### Reason

Raw material weighing tolerances are important for ensuring accurate formulation, feed consistency and regulatory compliance.

Feed formulations are specifically designed to meet the nutritional requirements of livestock, any deviation from defined weighing tolerance can compromise the formulation and have significant effects on animal health and regulatory compliance.

### What is Acceptable?

Tolerances should be established according to supplier specifications or previous equipment data. Tolerances can be listed in raw material specification and referred to when issuing a batching record (Fact Sheet 8.2.3). The operator shall consider the following processes when defining raw material weighing tolerances:

#### Formula & Target Weight

Formulas are developed with exact quantities of each raw material according to the required nutrient composition. Once a formula and target weight is established, the formula can be scaled up or down based on batch size. The operator uses target weight to develop a tolerance limit.

#### Define Tolerance

The tolerance range of a raw material is specifying how much the actual weight can vary from the target weight without negatively impacting the final feed quality. The tolerance may be expressed in percentage or absolute weight, either is acceptable. The operator shall be consistent and use the same unit for all raw materials.

When defining weighing tolerances, the operator shall have a list of high-risk or critical raw materials – these weighing tolerances may be smaller than non-critical/low-risk raw materials.

#### Weighing Equipment

The operator shall take into consideration the type of weighing equipment used in production and how these can negatively impact the weight tolerance. Automated weighing systems are programmed to weigh each raw material according to defined targets or allowable tolerance range. For these to operate with consistency and accuracy – the operator shall carry out scheduled maintenance and calibration (Fact Sheet 2.2.4 to 2.2.7).

Manual weighing may be used for small raw material or smaller batches. Where scales are used, operators shall ensure they are calibrated according to a scheduled program (Fact Sheet 2.2.4 to 2.2.7). Note, this system can introduce human error and inconsistency and should be risk assessed where appropriate.

Precision dosing equipment may be used for micro-ingredients. These are often utilised for accurate addition of raw material. The same principles of scheduled maintenance and calibration apply for any dosing equipment.

#### In-process Monitoring

The addition of certain raw materials may be crucial to meet a specified nutritional requirement, and in such cases, the operator may monitor weight tolerance using a CCP. Non-critical raw materials also require monitoring. In-process controls can be incorporated into manufacturing instructions (Fact Sheet 8.2.1 & 8.2.2), to continuously monitor tolerance ranges. Real-time measurement will ensure that any raw materials falling outside the range are adjusted before production is completed.

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