

STANDARD OPERATION PROCEDURE
Faculty of Biosciences, NMBU

Method name: Dry matter

BIOVIT No.: Arb1044

1. Introduction

Water is an important component of the feed. The water content of feeds varies greatly. It is therefore important to know the liquid and dry matter content of the feed in relation to how much feed the animal receives in a feed ration.

The method determines the amount of dry matter in the samples after drying at $103\text{ °C} \pm 2\text{ °C}$ to constant weight (minimum 9 hours for some matrix). Samples must be dried for a minimum of 4 hours, or overnight. Raw samples must be left overnight. Grass and silage samples are dried at 60 °C overnight. This is to avoid loss of volatile compounds.

Calculation was corrected for the loss of volatiles in silage during drying according to Volden, H., 2011 and are made by those who have requested the analysis.

2. Reagents

No reagents.

3. Risk assessment

Use pliers and gloves when removing the samples from the drying cabinet.

If you burn yourself; cool the burn under cold running water for the first few minutes.

Then use lukewarm running water so that frost damage does not occur.

Use dust mask when needed.

4. Equipment

- Scale (precision 0.0001 g).
- Drying cabinet ($103\text{ °C} \pm 2\text{ °C}$).
- Scintillation glass, porcelain, or metal crucibles.
- Steel tray (to put the samples in).

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5. Sample material

The method can be used for all organic material. Degree of grinding 1 mm on "dry" material. The method can also be used on raw samples.

6. Work procedure

- a) Mark scintillation glass or porcelain crucibles with the sample number.
- b) Weigh the empty scintillation glass and register the weight (**W₀**).
- c) Tare the weight and weigh in about 0.5 - 1.0 g sample (**W₁**).
- d) The samples are placed in a drying cabinet at 103 °C ± 2 °C. The samples are dried for a minimum of 4 hours or overnight.

Time	Type of sample
4 hours	Pre-dry samples
Over night	Crude sample

- e) Dried samples are cooled in a desiccator (with active desiccant, silica gel) to prevent sample from gathering moisture as it cools.
- f) When the temperature of the dried samples has become stable (room temperature), the samples are weighed (**W₂**).

7. Calculation of the analysis result

$$\frac{(W_2 - W_0)}{W_1} \times 1000 = \text{amount of dry matter in the sample, stated in g/kg}$$

W₀ = Scintillation glass weight.

W₁ = Sample weight before drying.

W₂ = Scintillation glass and sample weight after drying.

Note (!): Some samples, e.g. silage, contain volatile compounds. This is corrected by those who have requested the analysis.

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