

METHOD SPECIFICATION
Faculty of Biosciences, NMBU

METHOD NAME: CF (Crude Fiber)

BIOVIT No .: Msp1043

1. Method of analysis / Principle / Main instrument

CF (Crude fiber) is a chemical fraction in Weende's system for characterizing feed materials. This fraction consists mainly of cellulose and lignin. It provides, together with the nitrogen-free extract (NFE), a measure of the carbohydrate content of the sample (1).

The method can be used to determine CF in grains, flour, feed and other fibrous materials. CF is defined as the organic residue after sequential treatment of the sample with H₂SO₄ (1.25%) and NaOH (1.25%) solutions. Finally, the residue is dried and weighed. The method is based on Weende's method and historically this method should indicate the amount of indigestible fiber in the sample. However, the method does not give the total amount of fiber and it is estimated that what is measured in the sample is 50 - 80% of the cellulose, approx. 20% of the hemicellulose and 10 - 50% of the lignin.

Main instrument: Ankom²⁰⁰ Fiber Analyzer (Ankom Technology)

2. Reference and any modifications

Crude Fiber Analysis in Feeds- Filter Bag Technique (for A200 and A200I), 2013,
Crude Fiber Method, Method 7 (Ankom Technology)

(AOCS Standard Procedure Ba 6a-05, Reapproved 2017).

Modification: the samples are extracted with acetone and not petroleum ether

3. Requirements for grinding and storage

The filter bags are made so that they can hold 95% of particles larger than 30 µm.

The method can be used on most types of samples, but to be guaranteed good results, the manufacturer recommends that the particle size must not be less than 1 mm (for samples

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painted on cutting mills) and not less than 2 mm (for samples painted on grinding mills). Smaller particles will increase the probability of errors in the analysis results.

The samples must be at room temperature.

4. Contact persons

Lab manager: Hanne Kolsrud Hustoft

Responsible for analysis: Elin Kristoffersen / Heidi Askerud

5. Other literature

- 1) McDonald, P., Edwards, P. A., Greenhalg, J. F. D., Morgan, C. A., 2002. Animal Nutrition, 7th edition, Prentice Hall, Harlow.
- 2) Komarek A. R., 1994. Fiber Analysis System, Patent No. 5,370,007. Unites States Patent.
- 3) FAO. 2011. Quality assurance for animal feed analysis laboratories. FAO Animal Production and Health Manual No. 14. Rome.
- 4) Commission Regulation (EC) No 152/2009. 27 Jan 2009. Laying down the methods of sampling and analysis for the official control of feed. Annex III, P, Official Journal of the European Union L54 / 1 from 26/02/2009.

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