

METHOD SPECIFICATION
Faculty of Biosciences, NMBU

Method name: ADF (Acid Detergent Fiber)

BIOVIT No: Msp1036

1. Method of analysis / Principle / Main instrument

Modern methods in food and feed analyzes divide the chemical content into two main fractions

- cell walls
- cell contents

Acid detergent fiber (ADF) is part of the cell wall and is defined as cellulose and lignin. Cellulose and lignin can be separated from the rest of the cellular material by treating the sample with an acidic soap solution. The material that is not washed away is defined as ADF.

The ADF fraction determined usually contains a small amount of inorganic material. To correct for this inorganic part, the sample can be incinerated at 550 ° C. The residues after incineration are a measure of the inorganic part of the sample and one can then decide what is called ash-corrected ADF, or ADF on organic matter basis, (ADFom). It is this form that is recommended for use by Animal Feed Science and Technology when NDF values are to be published in peer-reviewed journals (3).

Main instrument: Ankom²⁰⁰ Fiber Analyzer (Ankom Technology)

2. Reference and any modifications

Acid Detergent Fiber in Feeds - Filter Bag Technique (for A200 and A200I), 2017, ADF Method, Method 5 (Ankom Technology)

<https://www.ankom.com/analytical-methods-support/fiber-analyzer-a200>

3. Requirements for grinding and storage

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

BIOVIT/NMBU						MSP
Prepared by Michel Brunet Berg	Approved by Hanne Kolsrud Hustoft	Valid from 03.2012	Revision 03.2020	Replaced 03.2018	Document name Msp 1037 ADFom_ENG.d ocx	Page 1/2

The method can be used on most sample types, but the manufacturer recommends that the particle size is not smaller than 1 mm for samples grinded on cutting mills and not smaller than 2 mm for samples grinded on grinding mills to guarantee good results. Smaller particles will increase the probability of errors in the analysis results, since they can escape through the pores in the filter bag. This will lead to the ADF value being underreported and ADS (Acid Detergent Solubles) will be overestimated.

The samples must be at room temperature.

4. Contact persons

Label manager: Hanne Kolsrud Hustoft

Responsible for analysis: Elin Kristoffersen / Heidi Askerud

5. Additional 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) Uden, P, Robinson, P. H., Wiseman, J., 2005. Use of detergent system terminology and criteria for submission of manuscripts on new, or revised, analytical methods as well as descriptive information on feed analysis and / or variability. Anim. Feed. Sci. Tech., 118, 181-186

BIOVIT/NMBU						MSP
Prepared by Michel Brunes Berg	Approved by Hanne Kolsrud Hustoft	Valid from 03.2012	Revision 03.2020	Replaced 03.2018	Document name Msp 1037 ADFom_ENG.d ocx	Page 2/2