

METHOD SPECIFICATION
Faculty of Biosciences, NMBU

Method name: ADL (Acid Detergent Lignin)

BIOVIT No: Msp1035

1. Method of analysis / Principle / Main instrument

ADL (Acid Detergent Lignin) is defined as the residue after extraction with a boiling acid acetyltrimethyl ammonium bromide solution, followed by extraction with 72% sulfuric acid. In practice, this is done by first having the samples undergo an ADF procedure (Acid Detergent Fiber-ARB 1036). The samples are then extracted into H₂SO₄ for 3 hours with regular stirring, before finally rinsing the samples well and ashing them in order to correct for inorganic material.

Main instrument: Ankom²⁰⁰ Fiber Analyzer

2. Reference and any modifications

Determining Acid Detergent Lignin in Beakers, 2016, Method 8 (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.

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 NDF value being underreported and NDS (Neutral Detergent Solutes) will be overestimated.

The samples must be at room temperature.

4. Contact persons

Lab manager: Hanne Kolsrud Hustoft

Responsible for analysis: Elin Kristoffersen / Heidi Askerud

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5. Additional literature

- [1] McDonald, P., Edwards, P. A., Greenhalg, J. F. D., Morgan, C. A., Animal Nutrition, 6th edition, Prentice Hall, Harlow, 2002
- [2] Mertens, D. R., *J. AOAC. Int.*, **2002**, 85, 1217-1240
- [3] Komarek A. R., Fiber Analysis System (Patent), 5,370,007, December 6th 1994
- [4] Reeves, J.B., Journal of Dairy Science, 1997, 80: 4

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