

METHOD SPECIFICATION
Faculty of Biosciences, NMBU

Method name: Crude fat -Accelerated Solvent Extraction (ASE)

BIOVIT-no: Msp1045

1. Method of analysis / Principle / Main instrument

Accelerated Solvent Extraction (ASE) is an alternative extraction method. The method is compared with the Soxhlet method with HCl hydrolysis (See Table 1).

The extraction takes place by pumping a solvent into an extraction cell (with the sample inside) which is then given a selected temperature and pressure. The extract is then transferred from the cell to a collection glass. The extract is placed in a water bath under nitrogen to evaporate the solvent and then dried in a vacuum oven. Finally, the sample is weighed. This is a fast and straightforward method with low solvent consumption.

Table 1. Comparison of samples analyzed at IHA and AnalyCen

	% fat IHA	% fat AnalyCen*
Silage 1	3,6	3,7
Silage 2	3,3	3,0
Silage 3	2,6	2,6
Microbes 400	15,9	14,9
Microbes 438	7,5	8,9
Bioprotein	7,7	8,0
Autolysat	7,7	7,4
Cat feed	21,1	22,5
Fish fertilizer	3,3	3,1
Mink fertilizer 10	3,8	4,6
Mink fertilizer 11	4,7	4,4
Mink feed	25	30,2
Pig fertilizer 1	6,6	6,2
Pig fertilizer 4	7,3	7,4
Pig feed	5,4	5,4

*% fat with HCl hydrolysis

Main instrument: ASE® 350 Accelerated Solvent Extractor (Dionex, USA)

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2. Reference and any modifications

- 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.

Modification: The reference uses 100% petroleum ether, but for many types of samples either 20 or 30% acetone is required. See "Arb1045 crude fat" for more details.

3. Requirements for the grinding and storage

Dry samples must be grinded at 1 mm and stored at room temperature.
Liquid samples are stored in the refrigerator or freezer.

4. Contact persons

Lab manager: Hanne K. Hustoft

Responsible for analysis: Frank Sundby /Milena Bjelanovic

5. Additional literature

- 1) Technical Note 209; Sample Preparation Techniques for Food and Animal Feed Samples. Accelerated Solvent Extraction, (Dionex, USA)
- 2) Application Note 345; Extraction of Fat from Dairy Products (Cheese, Butter and Liquid Milks) Using Accelerated Solvent Extraction, (Dionex, USA)

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