

Applied method (e.g. AOAC, DIN, EN, ISO, EPA, ASTM, §64, company sop, etc.)

AOAC 990.03: Protein (Crude) in Animal Feed, combustion method, 2002.

Instruments

1	Analytical Balance (readability 0,1 mg or better)
2	Homogenizer, e.g. Speed Rotor Mill, Pulverisette 14 (Fritsch), 1 mm sieve size
3	DUMATHERM N Pro, standard configuration

Gases and Consumables

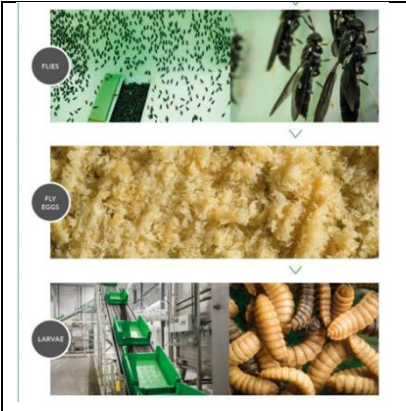


1	Helium and Oxygen, bottle gas, min. quality grade 5.0
2	Nitrogen or compressed air as bottle gas, min. quality grade 2.6.
3	DumaReact, Combustion Reactor, packed with catalyst, 14-0245
4	DumaTube, Quartz glass for reactor, 14-0203
5	DumaFoil, Tin Foil for packing the samples, 14-0017
6	DumaEDTA, Standard for Calibration, purity > 99 %, 14-0032

Method Settings

Sample Weight	150 +/- 10 mg
Packing of the sample	Tin foil 14-0017
Combustion Method	B 1,8 (O ₂ dosing 300 ml O ₂ / min, 1.8 ml O ₂ / mg sample)
Protein Factor	6,25
Combustion temperature [°C]	1030
Reduction temperature [°C]	750
Recommended Calibration Range	1 – 25 mg N abs. (EDTA, 20 equidistant points, 10-250 mg)

Homogenization / Preparation / Weighing

The sample was measured as received. In case the level of homogenization is not resulting in acceptable repeatability's according to the above mentioned norm (sd<=0,28), the sample would have been grinded additionally to 0.75 mm sieve size with a speed rotor mill.

		
<p>Sample original, flies, fly eggs and larvae ...</p>	<p>sample powder as received ...</p>	<p>... weighing process</p>

Example Results

Results with sample as received already pre-grinded:



Dumatherm Stickstoff / Protein Analysator

Seriennummer : 1005 Auftraggeber : Dijkstra / Protix
Software Version: DUMATHERM MANAGER V8.07c Operator : Dr. Werner Küppers

Datum	Zeit	Probenname	Gewicht [mg]	Feuchte [%]	Protein faktor	Stickstoff Peakfläche [mV*s]	N Gewicht [mg]	Stickstoff [%]	Protein [%]
25.06.2019	15:16:40	6732a	158,533		6,25	5,330E+04	13,532	8,536	53,35
25.06.2019	15:21:28	6732a	151,938		6,25	5,081E+04	12,904	8,493	53,08
25.06.2019	15:26:14	6732a	154,493		6,25	5,217E+04	13,248	8,575	53,59
25.06.2019	15:31:04	6732a	156,521		6,25	5,242E+04	13,310	8,504	53,15
25.06.2019	15:35:52	6732a	155,733		6,25	5,260E+04	13,355	8,576	53,60
25.06.2019	15:40:35	6732a	151,089		6,25	5,085E+04	12,916	8,549	53,43

Kalibrierung nummer und standardname : für N\M EDTA WKU 240619 (L-Q-THAM 0,2%N; THAM 0,5%N; EDT/

Method : B1,8
Seriesname : Probentabelle 1

Durchschnitt	8,539	53,37
Standardabweichung	0,035	0,22
RSA [%]	0,409	0,41

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Remarks

It is important to take a representative sample weight of the well homogenized sample material.

Mix the sample before weighing thoroughly with a spatula to receive a representative sample portion for weighing.