

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

AOAC 992.15, Crude Protein in Meat and Meat Products including Pet Foods, Combustion Method, 1992

Instruments

- | | |
|---|--|
| 1 | Analytical Balance (readability 0,1 mg or better) |
| 2 | Homogenizer, e.g. Grindomix GM200 Knife Mill or TEFAL Moulinette |
| 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 | DumaSorb®, Absorbent for liquid samples, 25g, 14-0022, alternatively
DumaSorb®eco, Absorbent for liquid samples, 50g, | 14-0295 |
| 7 | DumaEDTA®, Standard for Calibration, purity > 99 %, | 14-0032 |

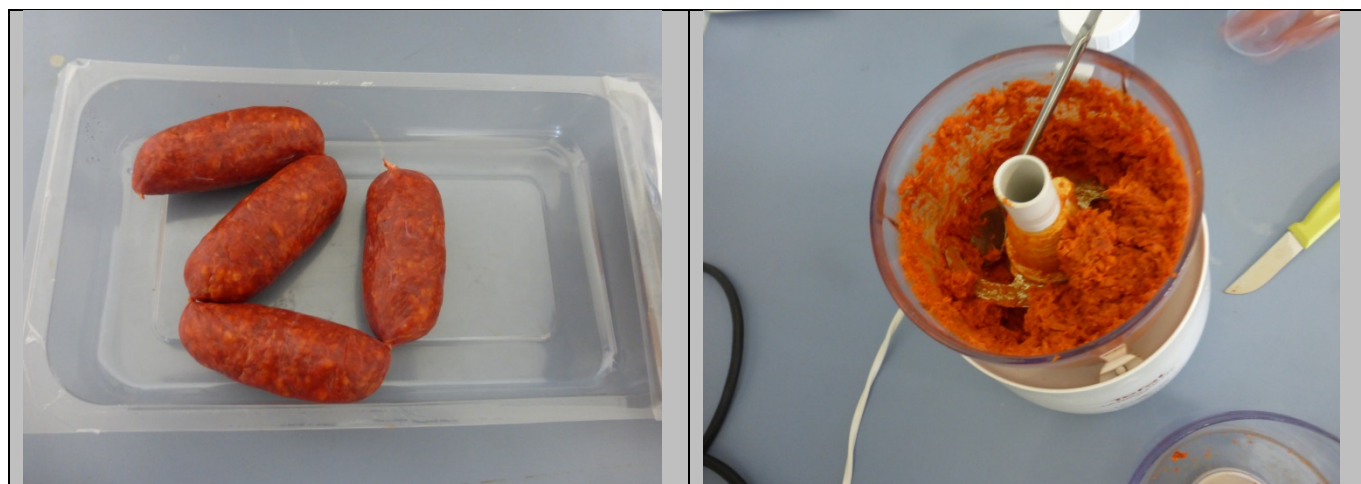
Method Settings

Sample Weight	300 mg
Packing of the sample	Tin foil
Combustion Method	C 1,6 (200 ml O ₂ / min, 1.6 ml O ₂ / mg sample)
Protein Factor	6,25
Combustion Temperature	1030 °C
Reduction temperature [°C]	750
Recommended Calibration Range	1 – 15 mg N absolute (measured with 10-150 mg EDTA)

Homogenization / Preparation

The sample is taken from the fridge and directly homogenized with a regular kitchen grinder (type Moulinette). The mashed material is thoroughly mixed again with a spatula and taken with a spatula for weighing into the tin foil.

The material should be max. at room temperature (≤ 20 °C) during the weighing procedure.



Example Results



Dumatherm Nitrogen / Protein Analyser

Serial Number : 859
Software Version: DUMATHERM MANAGER V6.17d

Submitter :
Operator : Serviceman

Date	Time	Sample name	Weight [mg]	Moisture [%]	Protein factor	Nitrogen Peak Area [mV*s]	N Weight [mg]	Nitrogen [%]	Protein [%]
13.07.2017	10:12:36	6085 Chorizo	297,750		6,25	3,573E+04	9,203	3,091	19,32
13.07.2017	10:18:45	6085 Chorizo	339,743		6,25	3,959E+04	10,197	3,002	18,76
13.07.2017	10:25:10	6085 Chorizo	378,647		6,25	4,489E+04	11,561	3,053	19,08
13.07.2017	10:31:28	6085 Chorizo	357,401		6,25	4,198E+04	10,813	3,025	18,91
13.07.2017	10:37:32	6085 Chorizo	327,709		6,25	3,845E+04	9,903	3,022	18,89

Average	3,039	18,99
Standard Deviation	0,035	0,22
RSD [%]	1,138	1,14

Calibration number for N : EDTA (L-Q-Q) EDTA
and standard name :
Method : C 1,6
Series Name :

Temperatures:

Combustion Reactor 979 °C
Reduction Reactor 800 °C
Degassing Oven 299 °C

Flow Rates:

He I 194,0 sccm
He II 200,0 sccm
O₂ 200,0 sccm

Times:

Sample Delay 9 s
Sample Stop 13 s
Run Time Auto

AOAC 992.15 allows for meat and meat products in combustion analysis standard deviations of $s_r \leq 0,41$ for % Protein.
The received results are within this range. No further sample homogenization or increase of weight is necessary.

Remarks

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