

Total fat in meat products with E-800 HE

UniversalExtractor E-800 HE: Total fat determination in meat products

1. Introduction

The total fat contents of meat products were determined with the UniversalExtractor E-800 HE. The samples were homogenized, hydrolyzed and extracted with a hot extraction method using different solvents.

2. Experimental

Equipment: HydrolEx H-506, UniversalExtractor E-800 HE

Samples: Cooked sausage, LVU No. 22-01 with a certified fat content of 18.850 g/100g (+/- 0.364 g/100g); Sausage “Cervelat”, purchased at a local supermarket, labelled fat content 22 g/100g; Sausage “Bratwurst”, purchased at a local supermarket, labelled fat content 22 g/100g.

Determination: The samples were hydrolyzed with 100 mL of 4 M hydrochloric acid using the HydrolEx H-506 for 30 min. The hydrolyzate was transferred and washed with deionized water, until a neutral pH was obtained. The glass sample tubes were dried in a vacuum oven, drying oven or microwave oven. After cooling down in a desiccator, the glass sample tubes were placed into the beakers of UniversalExtractor E-800 HE. The hot extractions were carried out with the UniversalExtractor E-800 HE using the parameters specified in Table 1.

Table 1: Hot Extraction with UniversalExtractor E-800 HE

Step	Value
Extraction method	Hot extraction
Solvent	Petroleum ether or Hexane
Extraction step	10 min (heating level 5-7*)
Rinse step	30 min (heating level 5-7*)
Number of drains	3
Dry step	3 min (heating level 3-5*)
Solvent volume	50 mL

*Depending on the solvent.

3. Results

Table 2 shows the results of the total fat determinations of meat products using different solvents.

Table 2: Results of total fat determination using UniversalExtractor E-800 HE with different solvents (n =3).

Sample	Petroleum ether [%] (rsd in %)	Hexane [%] (rsd in %)
Cooked sausage	18.76 (0.85)	19.00 (0.24)
Cervelat	25.32 (0.70)	24.96 (0.56)
Bratwurst	20.02 (0.37)	19.89 (0.78)

4. Conclusion

The determination of fat in meat products using the HydrolEx H-506 and the UniversalExtractor E-800 HE provides reliable and reproducible results. These results correspond well to the labelled values, with low relative standard deviations (rsd).

5. References

- [1] ISO 1444:1996 Meat and meat products – determination of free fat content
- [2] AOAC 991.36 Fat (Crude) in Meat and Meat Products

For more information, please refer to Application Note 845/2024.

