IAFMM

international association of fish meal manufacturers

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RECOMMENDED METHOD OF ANALYSIS FOR DETERMINATION OF DIETHYL ETHER EXTRACT FROM FISH MEAL

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1. General

Determines the crude fat content (diethyl ether extract) in fish meal.

2. Principle

The fat is extracted with diethyl ether, the extract is weighed after evaporation of the solvent.

3. Reagents

All reagents shall be of analytical quality.

Dry diethyl ether, free of peroxides and ethanol, specific gravity 0.714 to 0.716. B.P. 34.5°C.

Sodium sulphate, anhydrous.

Pumice stone.

4. Apparatus

Vacuum drying cabinet.

Soxhlet extraction apparatus or Goldfisch apparatus.

Desiccator of glass or metal with freshly dehydrated indicating silica gel or activated alumina indicator grade.

5. Method

Accurately weigh, to the nearest 1 mg, the sample of approximately 5g and mix with 2g to 3g of anhydrous sodium sulphate. Place mixture into a fat-free extraction thimble which is closed with fat-free cotton wool.

The extraction with diethyl ether is done in an extraction apparatus (Soxhlet or Goldfisch) for 6 hours with the temperature so regulated that siphoning occurs about 15 times an hour. The ether extract is caught in a dried weighed flask containing a few pieces of pumice stone. The ether is distilled off and the residue is dried for 30 minutes in the vacuum drying oven at a temperature of 75°C. Afterwards it is cooled in a desiccator and weighed to the nearest 1 mg. The residue should be dried for another 30 minutes to make sure the weight of the fat stays constant. (The loss in weight should be less than 1 mg).

6. Calculation

$$\frac{\text{Gain in weight of flask (g)}}{\text{Wt. of sample (g)}} \times 100 = \text{Fat content (\%)}$$

7. Repeatability

The difference between the results of two parallel determinations carried out simultaneously or in rapid succession by the same analyst should not exceed 0.20% diethyl ether extract.