Experiment #2

DETERMINATION OF CRUDE FAT IN A FOOD SAMPLE

Purpose:

To teach students the method of estimation of fat or oil in a food sample.

Preparing the sample:

Dry the product and remove moisture in order to facilitate entry of the organic solvent, because moisture restricts the entry of organic solvent. Then size reduction is done to increase the surface area of food particles of sample. After this, we go for acidic hydrolysis which helps in breaking of protein fat emulsion and increases the availability of fat for the solvent.

Requirements:

Weighing balance, Soxhlet apparatus, Drying oven, Thimble, Heating mantle, Glass rod, Desiccator with silica gel, Diethyl ether (Boiling temperature 60°-80°c), Cotton plugs

Procedure:

- Weigh 5 gram of grounded and dried sample and place it in the thimble. Place the thimble in the soxhlet extractor.

- Take a 150ml round bottom flask and clean it and fill the flask with 75-100 ml diethyl ether.
- Place the whole apparatus on a heating mantle and allow the diethyl ether to boil.
- Continue the extraction process for 8-12 hours.
- Separate the condensing unit from extraction unit and allow the sample to cool down.
- Place the thimble with sample in the oven and after removing it place in the desiccator.
- Weight the thimble with sample.

Calculation:

- Empty thimble = w1
- Thimble with sample = w2
- Weight of sample = p

$$\text{Crude fat (\%)} = \frac{\text{Weight of thimble with sample – weight of empty thimble}}{\text{Weight of sample}} \times 100$$

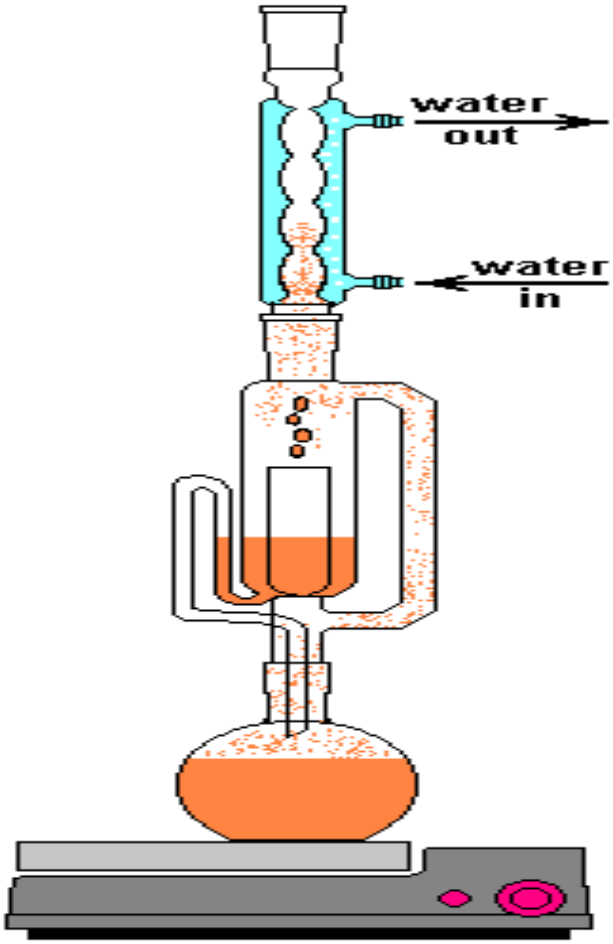

diagram soxlet apparatus