**. DETERMINATION OF TOTAL CRUDE FAT / OIL BY SOXHLET’S METHOD**

**Aim:** To estimate the total amount of lipids present in the given sample.

**Principle:** Lipids in sample is dissolved in organic non polar solvents like petroleum spirit, benzene, hexane etc. Lipids/ Fat dissolved in solvent can be extracted by heating and cooling simultaneously in a condenser.

Material:

1. Soxhlet apparatus : It consists of three parts fitted into one another. These three parts are extraction flask, extraction thimble and water condensor.

2. Petroleum spirit B.P. 40-60° C.

3. Whatman No. 1 filter paper sheet..

Procedure:

1) Weigh 2 to 5 gm of 60 mesh oil seed sample (previously ground and dried at 105 oC for 24 hours for removing moisture) or 10 gm of other sample.

2) Prepare a small packet of sample with Whatman No.1 filter paper.

3) Take weight of empty dry extraction flask.

4) Plug the bottom of thimble by putting cotton or glass wool to avoid the

possibility of passing out the sample particles in extraction flask.

5) Connect the rubber tube, water tap to condenser. See that water supply to the condenser is constantly flowing.

6) Put the packet of sample in thimble and pour organic solvent to 2/3 capacity of thimble. Take extraction flask containing 2/3 organic solvent.

7) Connect these extraction flask and thimble to the condenser unit with heating coil.

8) Put the apparatus on heating mantle and start water supply to the condenser. Regulate the rate of heating to allow continuous volatilization of solvent, its simultaneous condensation.

9) Continue heating slowly till 6-8 siphoning collected in extraction flask. And stop heating.

10) Take out extraction flask from the extraction unit. Which contains crude fat with little ether. .

11) Evaporate excess ether on water bath OR in open air.

12) Keep the flask in the oven at 105 oC for 1 hour and evaporate remaining spirit.

13) Cool to the room temperature and weigh it accurately to know the quantity of crude fat / oil extracted.

Observations:

i) Wt. of sample taken = 5 gm (X)

ii) Wt. of empty flask = ….. g (W1)

iii) Wt. of flask + oil = ……..g (W2)

Calculation:

(W2 – W1)

% Crude fat / oil = --------------------- x 100

X

**Results:** Given sample contains………% of oil.