**Experiment No. 12: Pupal Oil Extraction**

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**Aim:** To extract the oil in the given pupal sample.

**Introduction:** The dried pupal powder contains water (11.1%), fat (29.57%), protein (48.98 %), glycogen (4.65%), chitin (3.35%), ash (2.17%), vitamins and others components (3.7%). The above data shows that the pupa is a very good source of fat and protein. The pupal oil extraction is very simple process. The dried and clean pupal powder is first soaked in solvents like hexane, chloroform, petroleum, ether *etc.*, in a closed bottle followed by filtering and evaporating the solvent. These solvent vapors can be condensed and reused. Extraction of oil can be done in hot or cold condition. But as hot extraction method gives more quantity of oil, cold extraction method is not generally used.

**Requirements:** Heater, vessel, balance, glass wares, pupal sample, petroleum ether *etc*.,

**Procedure:**

1. Take 100 g of pupal powder in an air tight bottle and add 200 ml of petroleum ether. Keep it for 24 hours.
2. After 24h filter using filter or double layered muslin cloth in to a separate beaker and evaporate at 50-60°C in a water bath.
3. After evaporating the solvent, crude pupal oil remains in the beaker. Now record the weight of the oil and calculate the % of oil obtained using the following formula.

**Report:** The given sample contains _____ % of oil.

**Observations and Calculations:**

Weight of the pupal powder = _____ (W) g

Volume of petroleum ether at 1:2 ratio = W X 2 = _____ ml

Weight of the empty bottle = _____ ($W_1$) g

Weight of the bottle with oil = _____ ($W_2$) g

Weight of the oil = $W_1 - W_2 = W_3$ g

Pupal Oil % = $\frac{W_3 \text{ X100}}{W}$ = ____ %.

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