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Anthelmintic Activity of *Bauhinia tomentosa* Leaf Extracts

Project Overview

This project investigates the **anthelmintic potential** of *Bauhinia tomentosa*, a medicinal plant from the Fabaceae family traditionally used for multiple therapeutic purposes. Helminth infections affect billions globally, highlighting the need for safer, plant-based alternatives to synthetic anthelmintic drugs.

Project Summary

Leaves of *Bauhinia tomentosa* were collected, dried, and extracted using the **maceration method** with different solvents, including:

- Aqueous
- Petroleum ether
- Chloroform
- Ethanol
- Diethyl ether

Phytochemical screening confirmed the presence of important bioactive compounds such as **alkaloids, saponins, steroids, cardiac glycosides, carbohydrates, and proteins**.

Experimental Approach

The **anthelmintic activity** of each extract was tested at **50 mg/ml** and **100 mg/ml** concentrations using **Pheretima posthuma** (Indian earthworms) as the model organism.
Albendazole (50 mg/ml) served as the standard reference.

Two key parameters were recorded:

- **Time to paralysis**
- **Time to death**

Key Findings

Among all tested extracts:

- **Ethanol extract (100 mg/ml)**
- **Chloroform extract (100 mg/ml)**

showed the most significant anthelmintic activity, demonstrating both faster paralysis and death times compared to other extracts.

My Roles & Responsibilities

As part of this group project, I contributed to several key experimental and operational components:

- **Plant Material Handling:** Collected *Bauhinia tomentosa* leaves for authentication and ensured proper sourcing and documentation.
- **Laboratory Preparation:** Procured all required chemicals, reagents, and materials needed for extraction and phytochemical analysis.
- **Model Organism Procurement:** Purchased *Pheretima posthuma* (Indian earthworms) and ensured their safe transport and maintenance before experiments.
- **Solution Preparation:** Prepared all test extract solutions at required concentrations (50 mg/ml and 100 mg/ml) and ensured accuracy and consistency.
- **Experimental Execution:** Handled earthworms with utmost care, performed anthelmintic assays, and monitored paralysis and death times with precision.

- **Data Management:** Recorded, compiled, and analyzed experimental data systematically.
- **Scientific Communication:** Drafted the project report and contributed to creating materials for a scientific presentation meeting.

Skills Gained

Through this project, I developed and strengthened several technical and transferable skills:

- **Pharmacognosy & Natural Product Research** – Plant extraction, solvent selection, and phytochemical screening.
- **Laboratory Skills** – Solution preparation, experimental setup, biological handling, and observation-based assays.
- **Data Recording & Analysis** – Maintaining clear experimental logs, data compilation, and interpretation.
- **Attention to Detail** – Careful handling of biological specimens and adherence to experimental protocols.
- **Scientific Writing & Presentation** – Drafting abstracts, preparing presentation materials, and communicating results effectively.
- **Team Collaboration** – Contributing to group-based experimental research and coordinating shared tasks.