

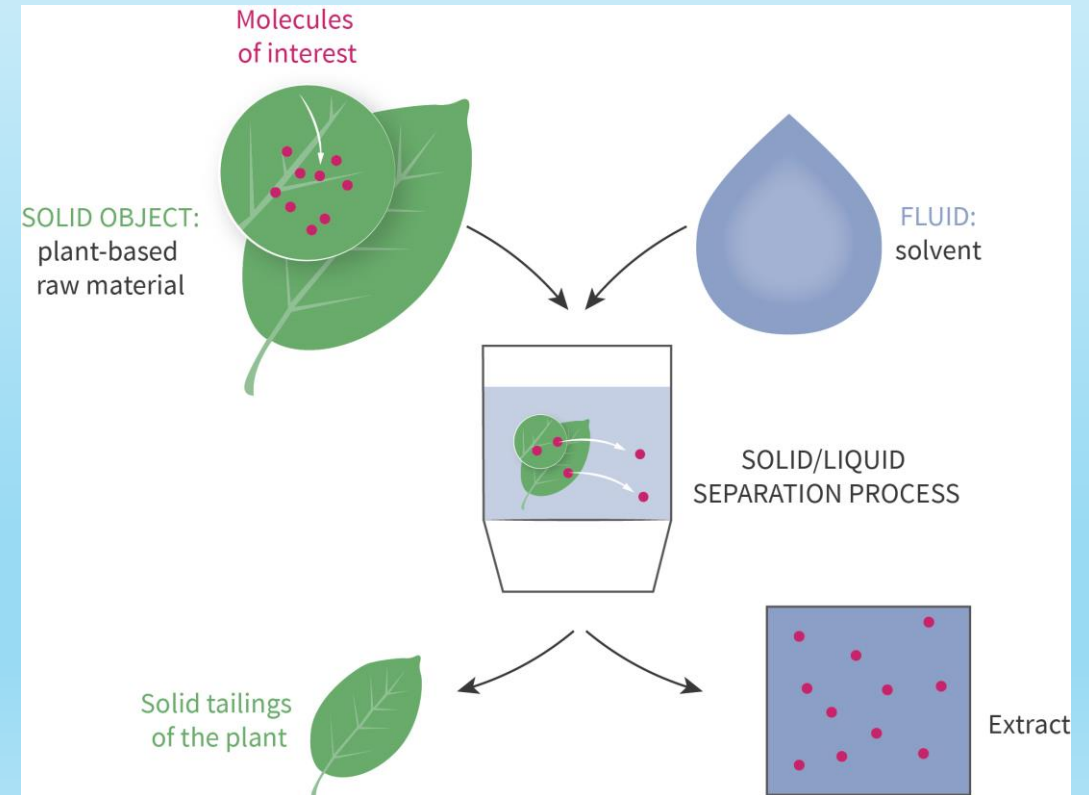


EXTRACTION TECHNIQUES OF MEDICINAL PLANTS

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Extraction

- **Extraction**, as the term is used pharmaceutically, involves the separation of medicinally active portions of plant or animal tissues from the inactive or inert components by using selective solvents in standard extraction procedures. The products so obtained from plants are relatively impure liquids, semisolids or powders. The purposes of standardized extraction procedures for crude drugs are to attain the therapeutically desired portion and to eliminate the inert material by treatment with a selective solvent known as **menstruum**.



- The extract thus obtained may be ready for use as a medicinal agent in the form of tinctures and fluid extracts, or may be further processed to be incorporated in any dosage form such as tablets or capsules, or it may be fractionated to isolate individual chemical entities such as hyoscine and vincristine, which are modern drugs. Thus, standardization of extraction procedures contributes significantly to the final quality of the herbal drug

- **Maceration** In this process, the whole or coarsely powdered crude drug is placed in a stoppered container with the solvent and allowed to stand at room temperature for a period of at **least 3 days** with frequent agitation until the soluble matter has dissolved. The mixture then is strained to collect the filtrate.



- **Infusion** Fresh infusions are prepared by macerating the crude drug for a short period of time with cold or boiling water. These are dilute solutions of the readily soluble constituents of crude drugs.

- **Digestion** This is a form of maceration in which gentle heat is used during the process of extraction. It is used when moderately elevated temperature is not objectionable. The solvent efficiency of the menstruum is thereby increased.

- **Decoction** In this process, the crude drug is boiled in a specified volume of water for a defined time; it is then cooled and strained or filtered. This procedure is suitable for extracting water-soluble, heat stable constituents.

- The starting ratio of crude drug to water is fixed, e.g. 1:4 or 1:16. Then, the concentrated extract is filtered and used as such or processed further.



Plants used in this Lab:

1. *Zingiber officinale* (Common name Ginger) part used roots

- Ginger work as expectorant helping loosening and expel mucus from the lung it can also stop the painful tickle at the back of throat that can trigger a cough
- Ginger also effective for preventing and reducing nausea, vomiting, it has carminative, antibacterial, antiviral and anti- inflammatory properties that prevent digestive problem. (caution ginger may cause gastric upset in patient with ulcer).



***Mentha piperita* (Common name Peppermint)**

Peppermint help relive the irritating tickle cough , it is also anti - oxidant , anti- inflammatory , anti- allergic due to its phenolic compound and volatile oil



Syzygium aromaticum (Common name Clove)

- Clove strong antiseptic, antibacterial, and used to reduce gum infection in preparation of mouth wash



Procedure :

