Galenicals

Introduction to Galenicals

Definition

- Galenicals are medicinal preparations that are obtained by extracting active constituents from plant or animal tissues using suitable solvents and techniques.
- They are named after *Claudius Galen*, a Greek physician and pharmacist, who developed methods to prepare medicines from natural sources.
- These preparations serve as the foundation of traditional pharmacy and are considered the precursors to modern pharmaceutical dosage forms..



Historical Background

- **Claudius Galen (129–c. 200 AD):** Regarded as the father of galenic pharmacy.
- Galen emphasized the importance of preparing standardized medicines from herbs, minerals, and animal parts.
- His formulations and techniques became the basis of pharmaceutical compounding for centuries.

Characteristics of Galenicals

Aspect	Details
Origin	Derived from natural sources – mainly plants and animals
Nature	Semi-purified; not completely refined or synthesized
Techniques Involved	Extraction, maceration, percolation, infusion, decoction
Pharmaceutical Role	Basis for dosage form development (tinctures, extracts, spirits, etc.)
Formulation Type	Solutions, semi-solids, and powders used for internal or external use

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Classification of Galenicals

Type	Description
1. Liquids	Tinctures, Infusions, Decoctions, Extracts, Spirits
2. Semi-solids	Ointments, Pastes, Gels
3. Solids	Powders, Tablets (traditional), Capsules (crude powdered materials)

Equipment for Different Extraction Processes

A. Infusion

Definition:

- An **infusion** is the extraction of **water-soluble constituents** from **soft plant parts** (e.g., flowers, leaves) by soaking them in hot or cold water.

Principle:

- Hot solvent extracts soluble constituents from soft plant parts (flowers, leaves).

Equipment:

- Glass beaker/jar or SS316L kettle
- Water bath/hot plate
- Stirrer
- Filter cloth/paper

Steps:

1. **Drug preparation:** Clean and size-reduce the drug (moderately coarse powder).
2. **Weighing:** Take required amount of drug and solvent (usually water).
3. **Heating solvent:** Heat water to 60–90 °C (not boiling).
4. **Steeping:** Add solvent over the drug in vessel, cover tightly.
5. **Standing time:** Allow to steep 15–30 minutes with occasional stirring.
6. **Filtration:** Pass through muslin cloth or paper filter to remove marc.
7. **Collection:** Collect filtrate → infusion (clear liquid extract).

B. Decoction

Definition:

- A **decoction** is a method of extraction where **hard plant parts** (e.g., roots, bark, seeds) are **boiled in water** to extract water-soluble substances.

Principle:

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- Extraction by boiling/simmering hard plant materials like roots, bark, or seeds.

Equipment:

- Boiling kettle or flask with reflux condenser
- Heating mantle/steam jacket
- Stirrer
- Filter press/cloth

Steps:

1. **Drug preparation:** Coarsely powder hard material.
2. **Weighing:** Usually 1 part drug with 4–16 parts water.
3. **Boiling:** Heat mixture to boil, then maintain gentle simmer (30–60 min).
4. **Reflux (optional):** Attach condenser to prevent solvent loss.
5. **Agitation:** Stir occasionally for uniform heating.
6. **Cooling & settling:** Allow to cool slightly, marc settles.
7. **Filtration & pressing:** Filter hot; press marc to recover trapped extract.
8. **Collection:** Combine filtrate + pressed liquid = decoction.

C. Maceration

Definition:

- **Maceration** involves **soaking** the drug in a suitable solvent at **room temperature** for several days to allow the soluble constituents to dissolve.

Principle:

- Prolonged soaking of crude drug in solvent at room or controlled temperature.

Equipment:

- Amber glass jar or SS316L maceration tank
- Shaker/incubator
- Filtration unit

Steps:

1. **Drug preparation:** Powder the crude drug (moderate size).
2. **Pre-moistening:** Wet the drug with some solvent to swell tissues.
3. **Soaking:** Add full volume of menstruum (e.g., water, ethanol).
4. **Sealing:** Close vessel to prevent evaporation/microbial growth.
5. **Standing:** Keep 1–7 days with occasional stirring/shaking.
6. **Sampling (optional):** Test aliquots for extraction strength.

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7. **Filtration:** Filter through muslin/filters; press marc.
8. **Collection:** Combine filtrates → macerate.

D. Percolation

Definition:

- **Percolation** is a **continuous** extraction method where the solvent is allowed to **flow slowly through** a column of powdered drug.

Principle:

- Solvent continuously passes through a column of moistened drug for efficient extraction.

Equipment:

- Glass/SS percolator
- False bottom & distributor plate
- Stopcock/valve
- Receiver flask

Steps:

1. **Drug preparation:** Powder crude drug (moderate-fine, uniform).
2. **Imbibition (pre-soaking):** Moisten with menstruum; keep 4–6 h closed.
3. **Packing:** Transfer drug into percolator; pack evenly (not compressed).
4. **Initial soaking:** Cover drug bed with menstruum; macerate 12–24 h.
5. **Percolation start:** Open stopcock; percolate solvent slowly (0.5–1 mL/min).
6. **Collection:** Collect percolate in fractions until exhaustion.
7. **Testing:** Check later fractions (color, assay); stop when negligible extractives.
8. **Final step:** Press marc; combine fractions → concentrate to desired strength.

Methods of Preparation Spirits

Definition:

- Spirits are **alcoholic or hydroalcoholic solutions** of **volatile substances** (like essential oils or aromatic compounds).
- The alcohol content is usually high (around 60–90%), which helps dissolve and preserve volatile constituents.

Characteristics:

- Clear, aromatic liquids.

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