

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

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Coimbatore -641035

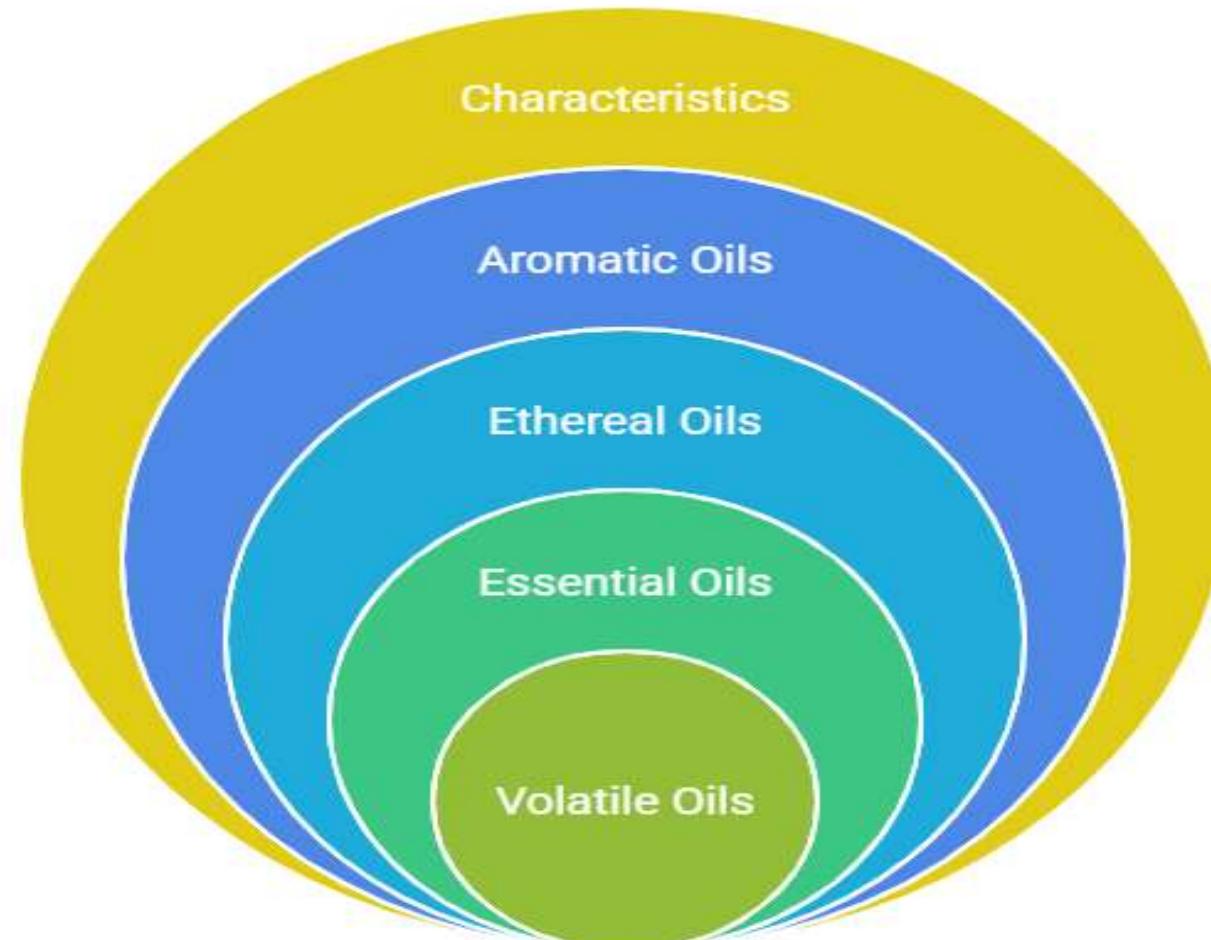
COURSE NAME : PHARMACOGNOSY AND PHYTOCHEMISTRY II (BP504T)

V SEM / IIYEAR

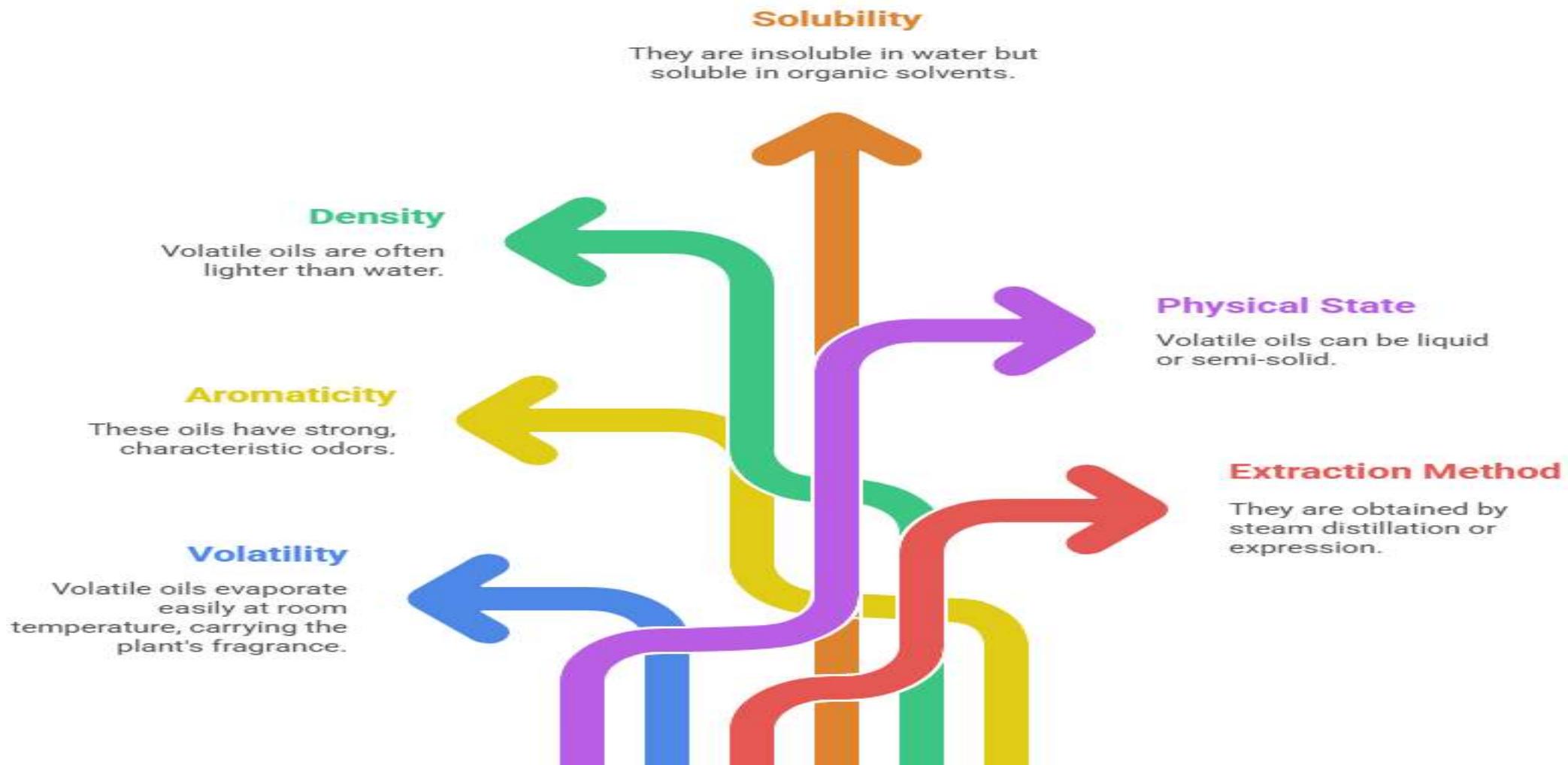
TOPIC 1 : VOLATILE OILS

Volatile Oils

- Odorous, volatile, and concentrated
- Oils carrying plant fragrances
- Alternative name for volatile oils
- Common name for volatile oils
- Core substances produced by plants



What are the key characteristics of volatile oils?



What are the key characteristics of essential oils?

Obtained by Distillation/Expression

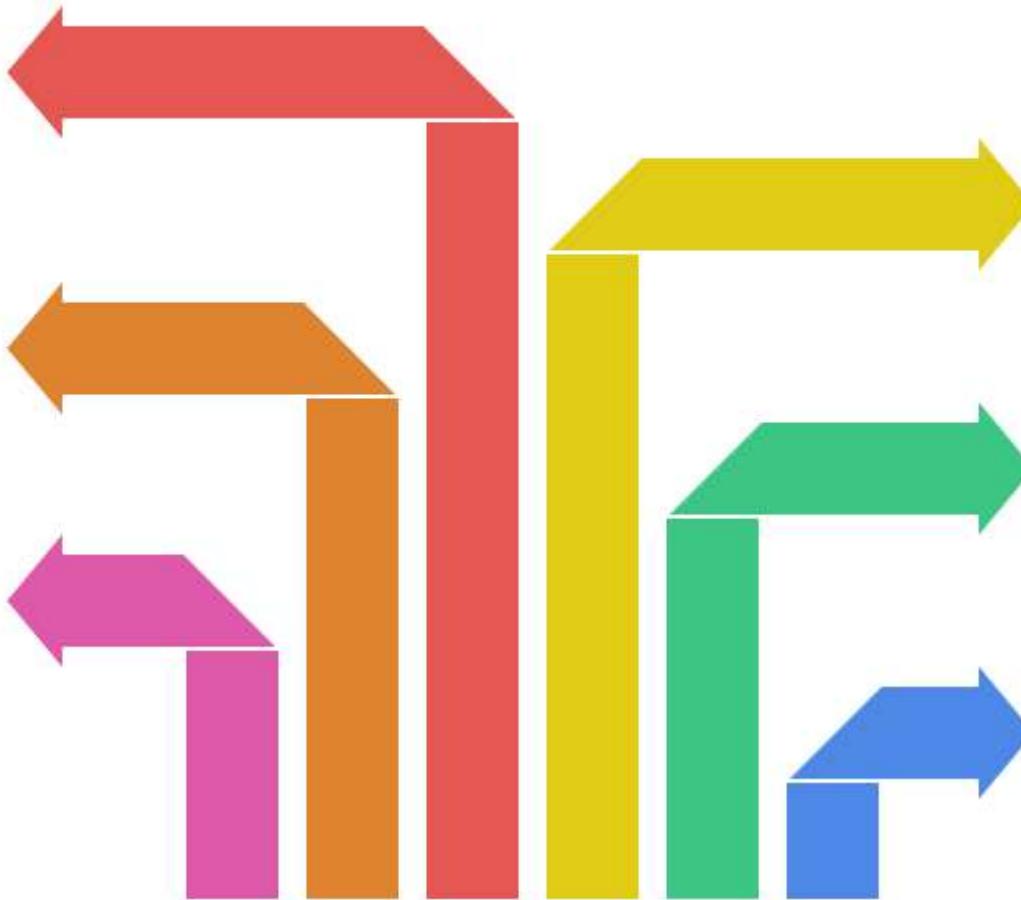
Produced through specific extraction methods.

Insoluble in Water

Do not mix with water, requiring organic solvents for dissolution.

Aromatic

Possess strong odours, used in perfumes and aromatherapy.



Liquid/Semi-solid

Exist in liquid or semi-solid states, affecting storage and application.

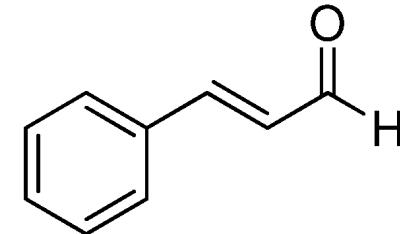
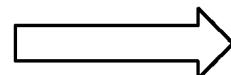
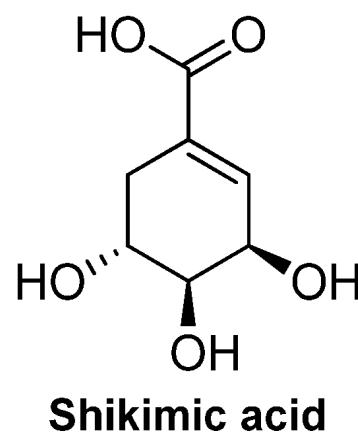
Lighter than Water

Float on water, useful for separation techniques.

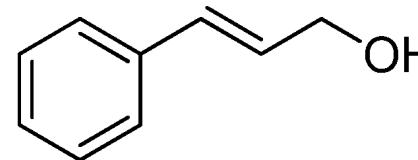
Volatile

Evaporate easily, contributing to their aroma.

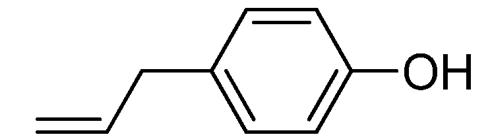
- Phenylpropanoids



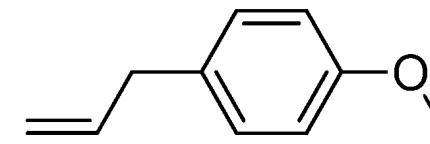
Cinnamaldehyde



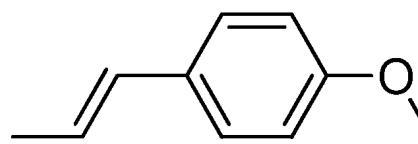
Cinnamyl alcohol



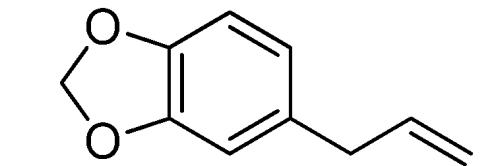
Chavicol



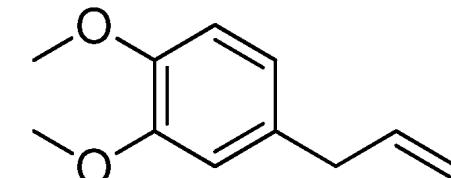
Estragole



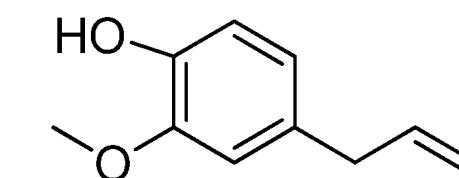
Anethole



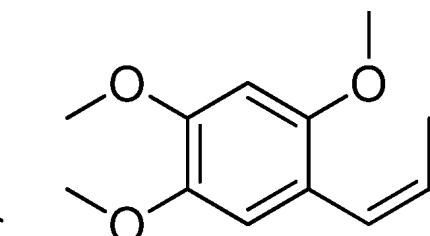
Safrole



Methyl eugenol



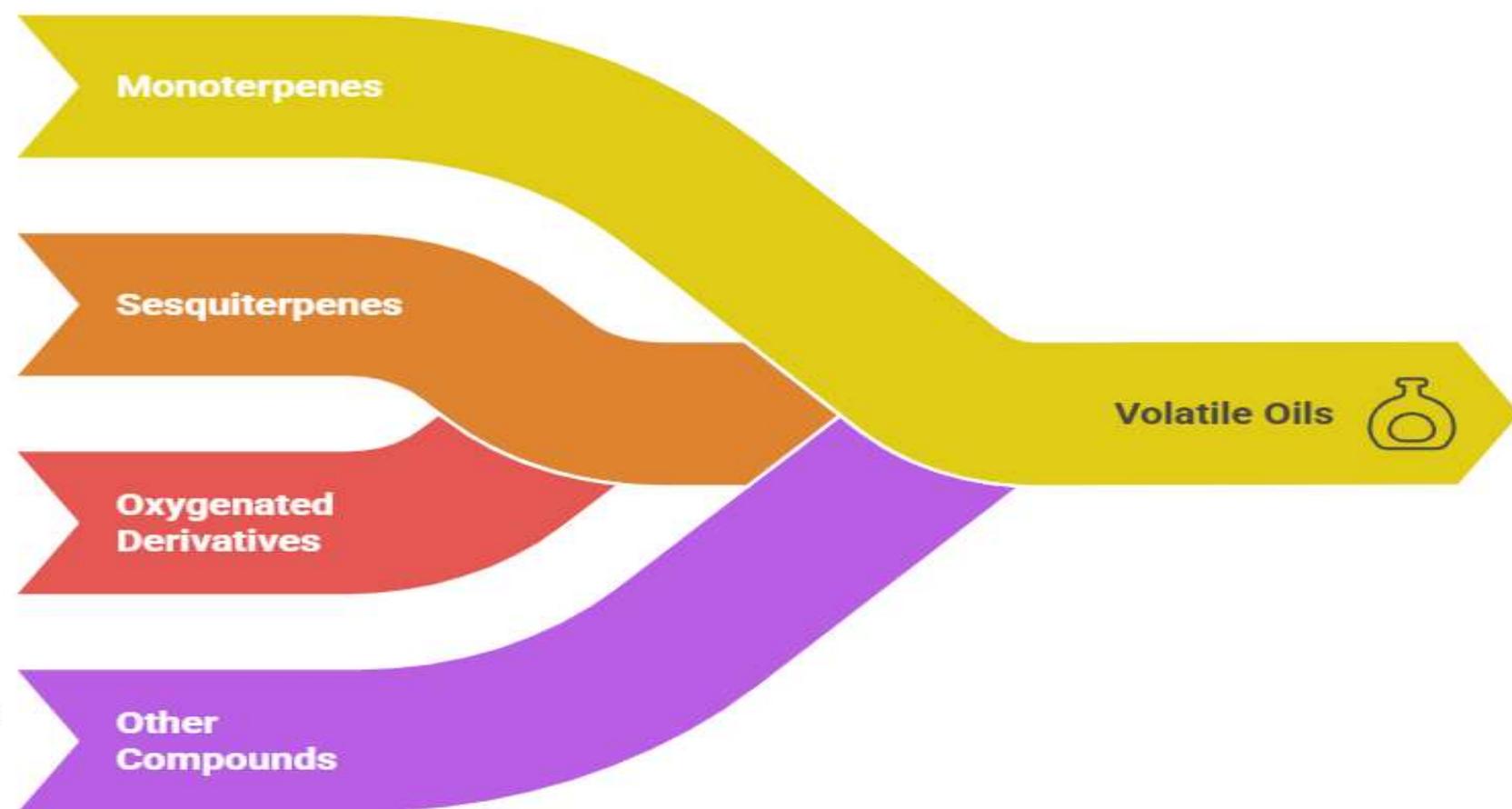
Eugenol



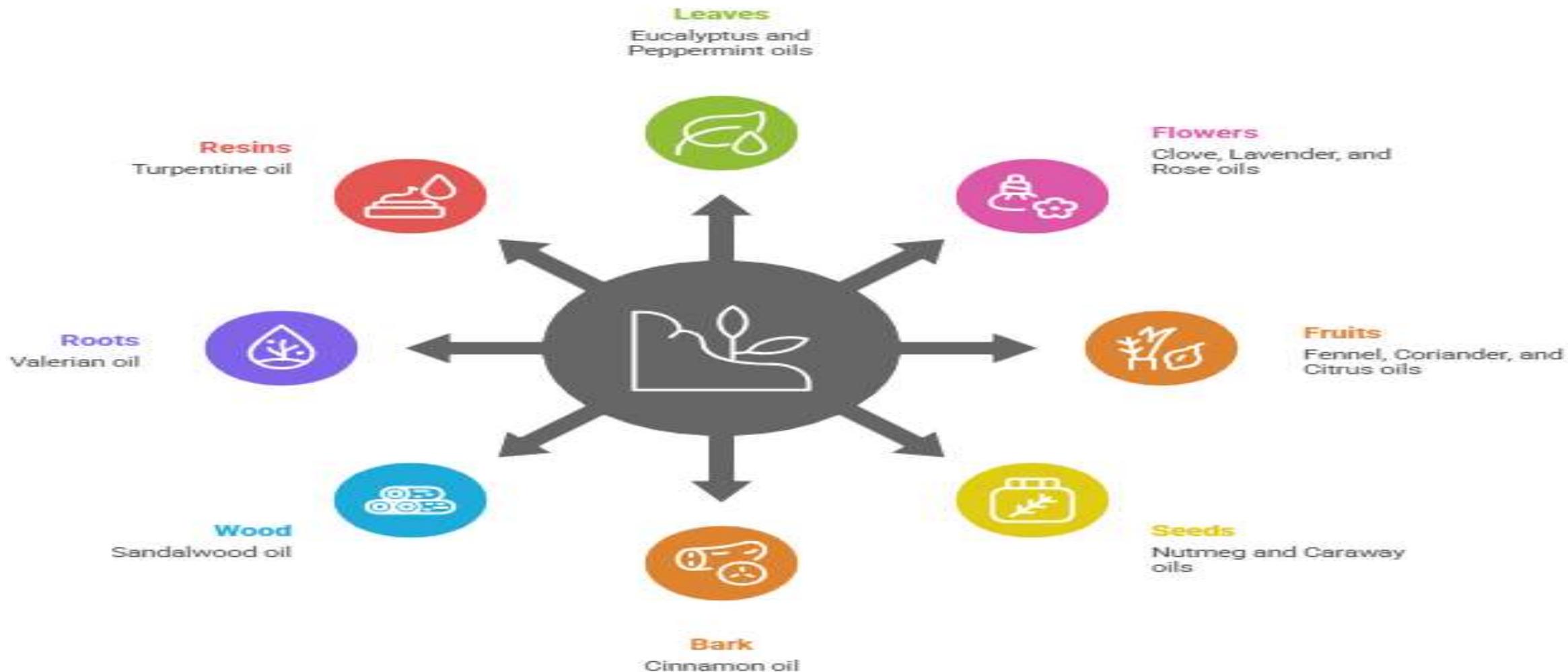
β-Asarone

Aromatic Symphony of Volatile Oils

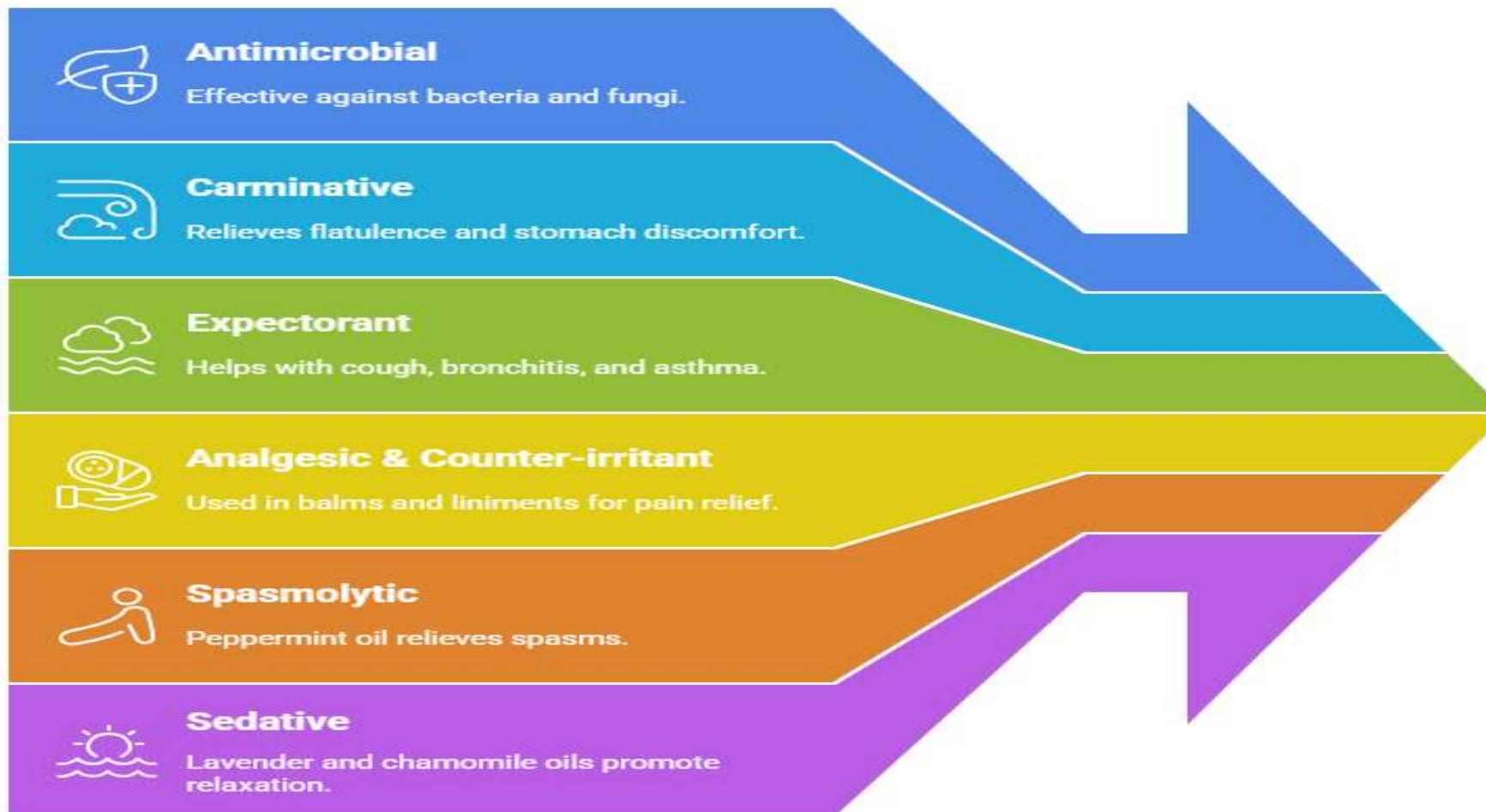
- 1 $C_{10}H_{16}$ compounds found in citrus and eucalyptus.
- 2 $C_{15}H_{24}$ compounds found in ginger and clove.
- 3 Pharmacologically active alcohols, aldehydes, ketones, esters, phenols, oxides.
- 4 Sulphur and aromatic compounds in garlic, onion, almond.



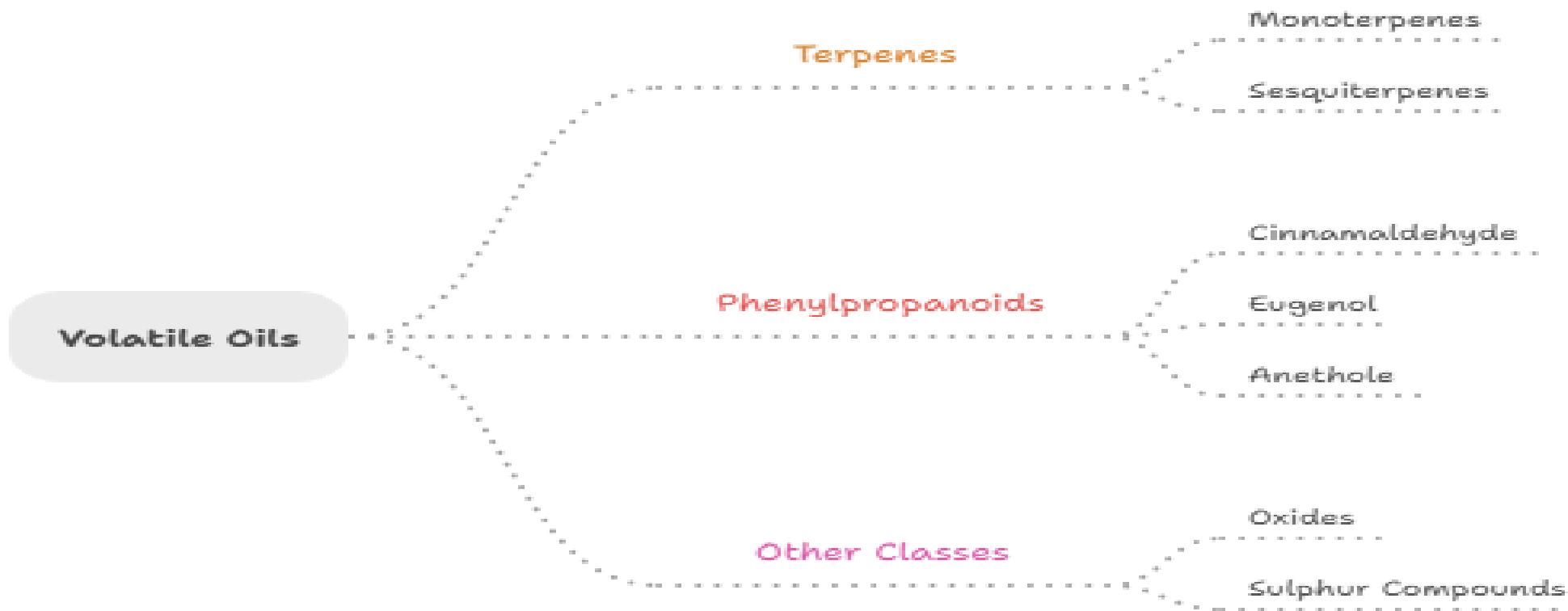
Sources of Volatile Oils



Volatile Oils in Health



Chemical Classes of Volatile Oils



Diverse Applications of Volatile Oils

Pharmaceutical Industry



Used in balms, ointments, and cough syrups

Perfumery & Cosmetics



Essential in soaps, creams, and incense sticks

Agricultural Use



Acts as natural pesticides



Food Industry

Provides flavouring in bakery and beverages



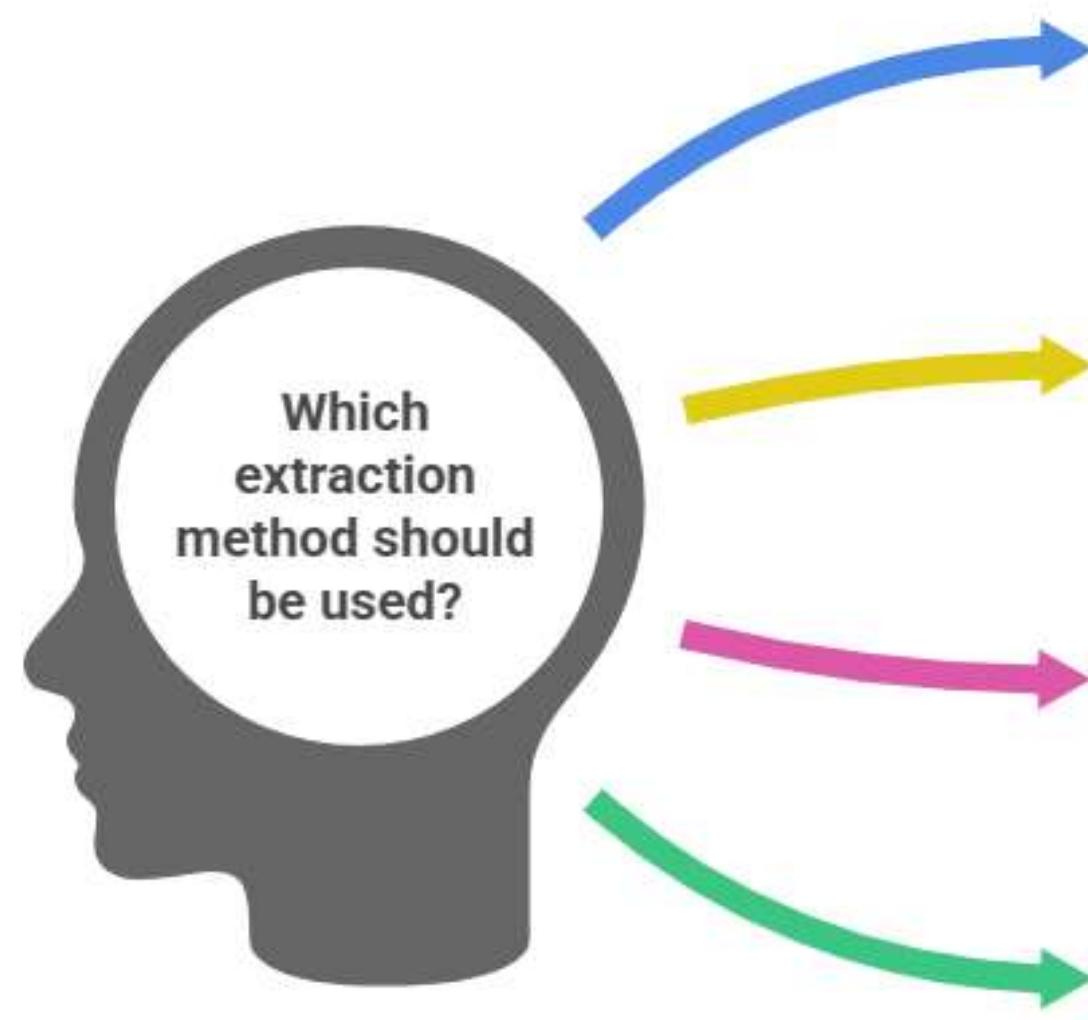
Aromatherapy

Offers stress relief and mood enhancement



Dental Preparations

Clove oil used for toothache relief



Steam Distillation

Suitable for common oils like clove and eucalyptus

Expression (Cold Pressing)

Ideal for citrus oils like lemon and orange

Enfleurage

Best for delicate flowers like jasmine and rose

Solvent Extraction

Used for heat-sensitive oils

Identification and Storage



Solubility Test

Soluble in 90% alcohol, insoluble in water.



Odour Test

Characteristic smell for identification.



TLC / GC-MS

Identifies volatile oil composition.



Sudan III Test

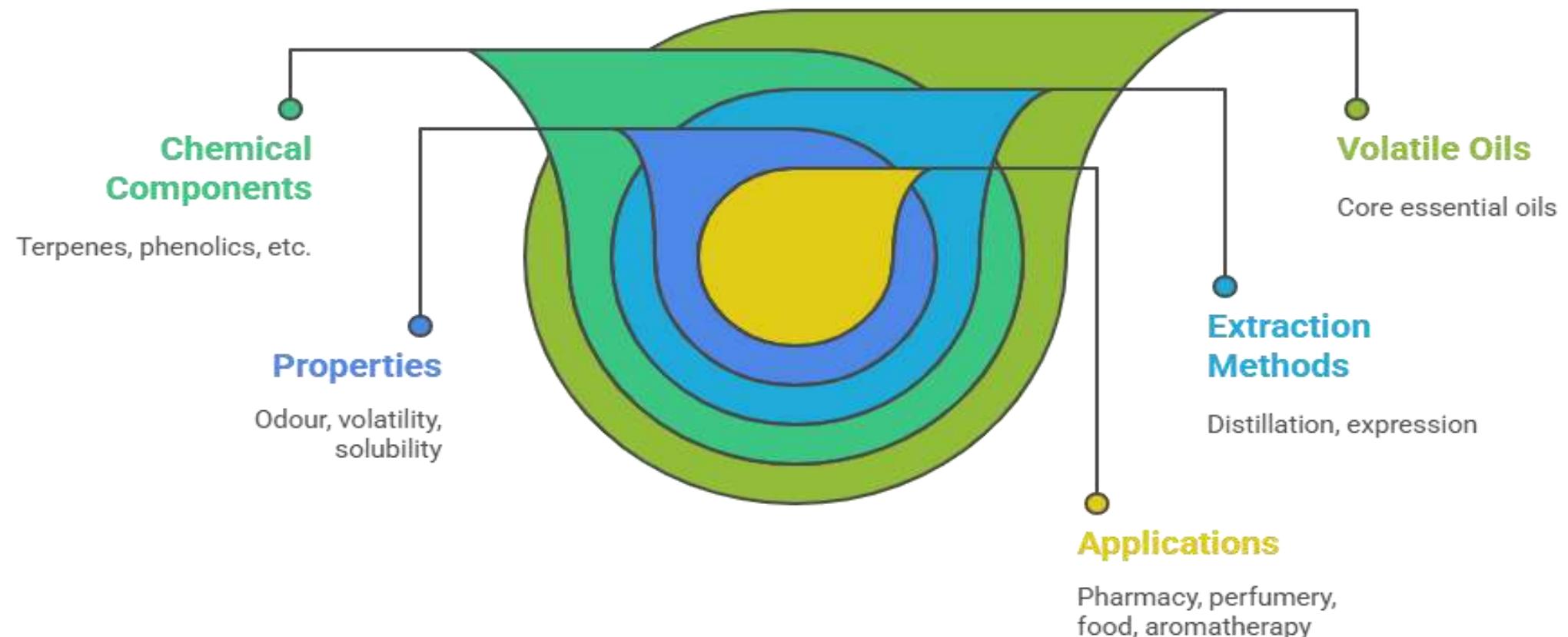
No permanent stain, differentiates from fixed oil.



Storage

Store in amber bottles, protect from light, heat, and air.

Volatile Oils Composition and Uses



What is the answer to the volatile oils assessment question?

