

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES



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

Approved by Pharmacy Council of India, New Delhi.

Coimbatore -641035

COURSE NAME : PHARMACOGNOSY

D.PHARM / I YEAR

TOPIC 9 : VOLATILE OIL

DESIGN THINKING STAGES IN CLASSIFICATION

Empathize: Understand the users — in this case, students, pharmacists, or researchers who use the alphabetical classification system.

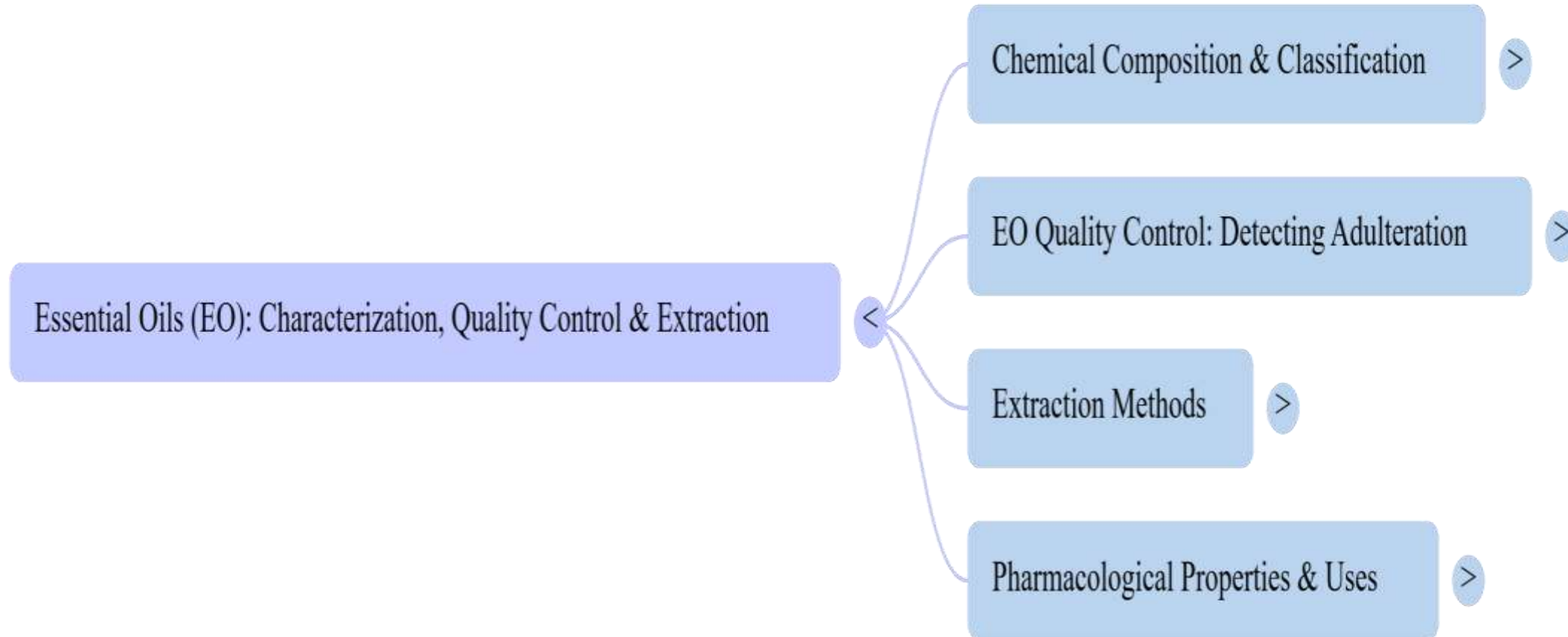
Define: Clearly define the problem based on the insights from the empathize stage.

Ideate: Generate possible solutions or improvements.

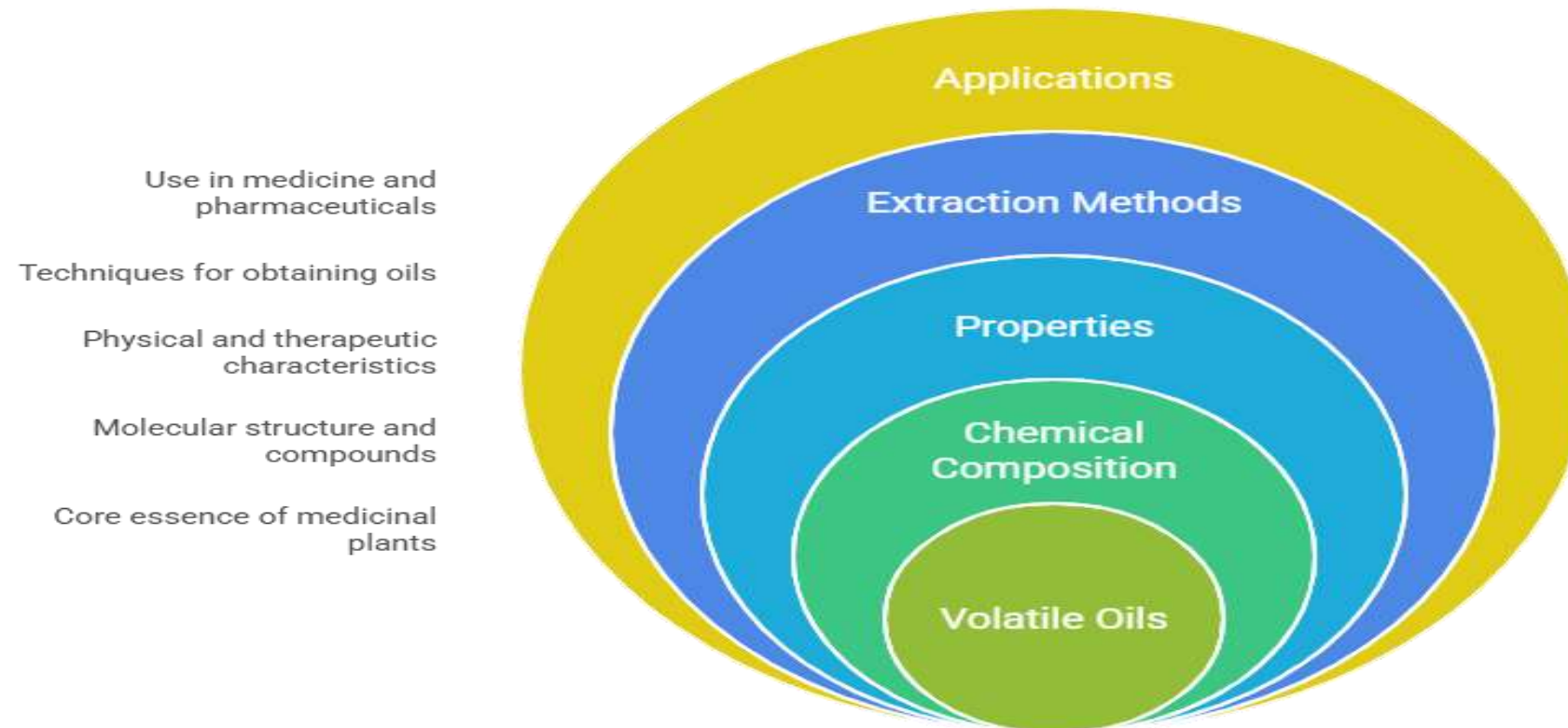
Prototype: Create a tangible version of your solution

Test: Evaluate the prototype with real users.

MINDMAP

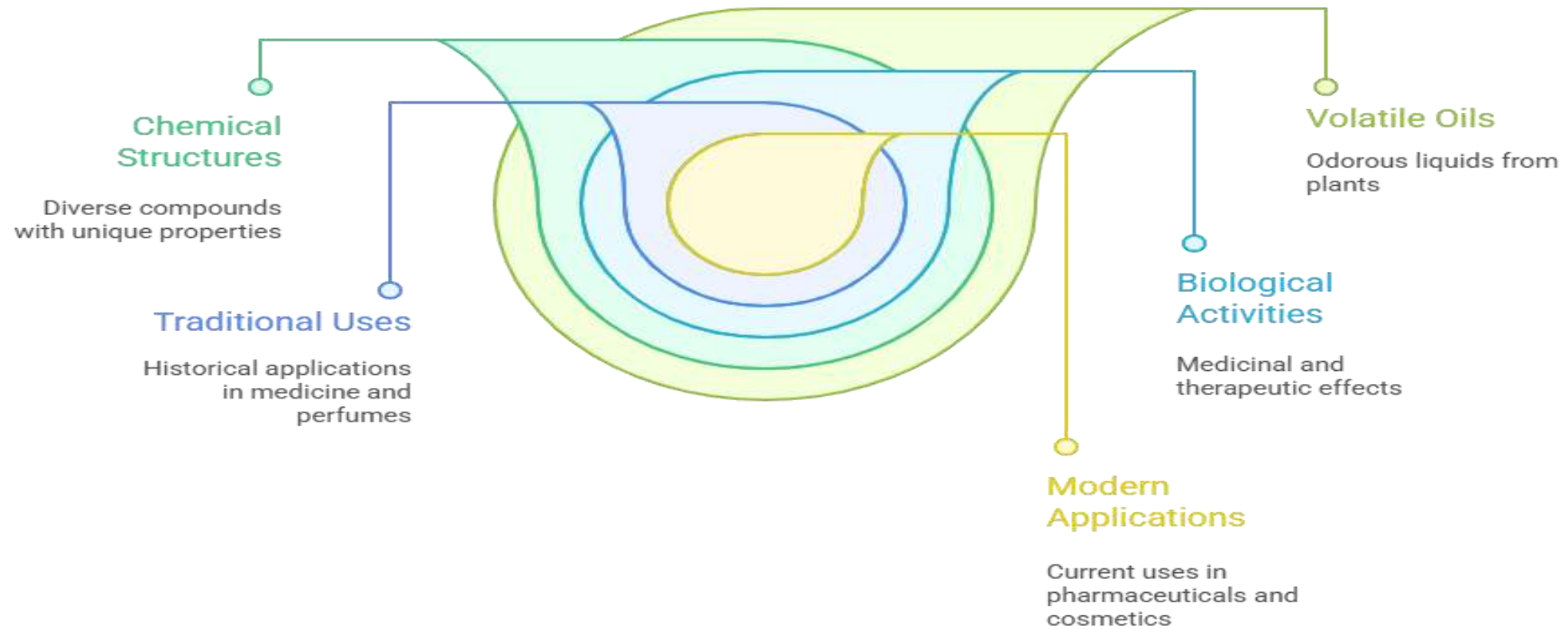


Volatile Oils in Pharmacognosy

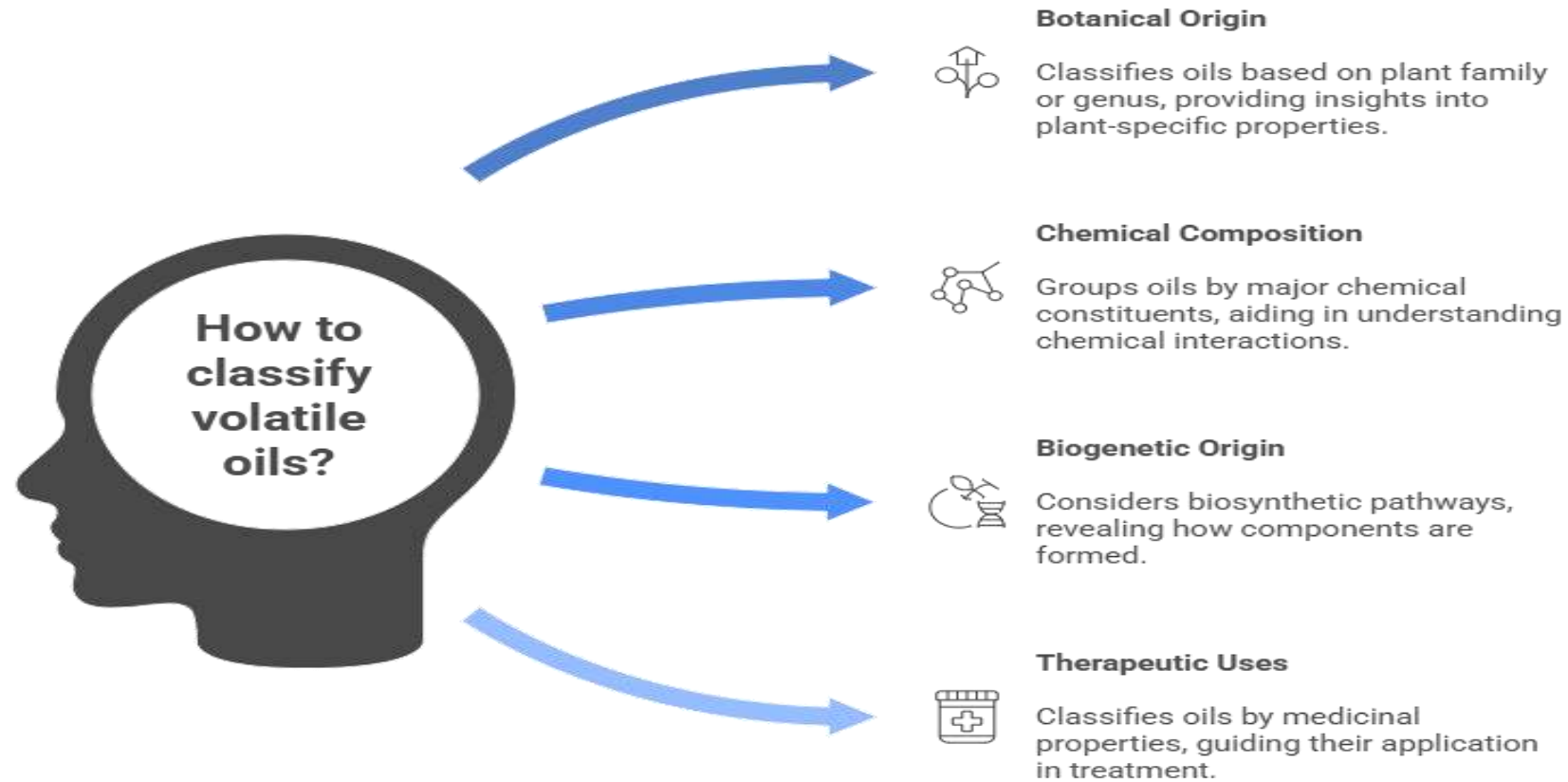


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Volatile Oils in Pharmacognosy

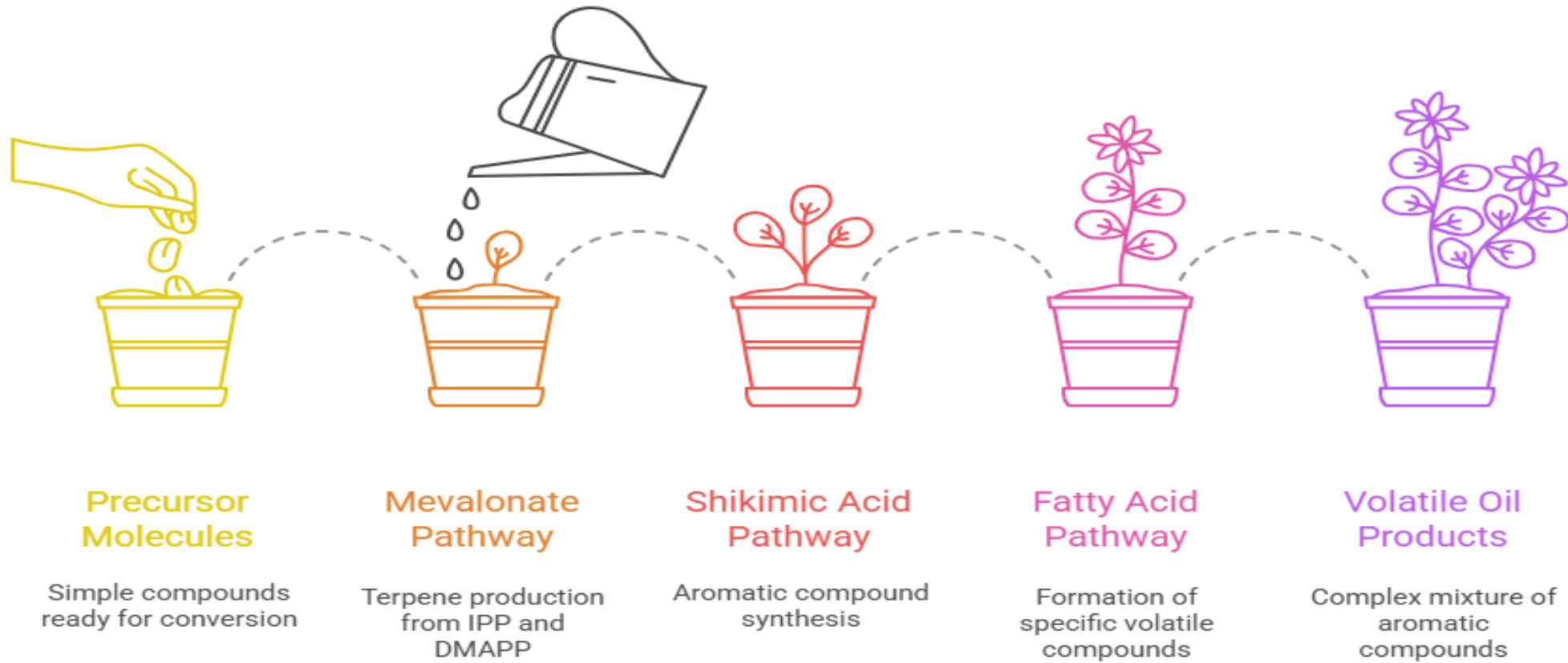


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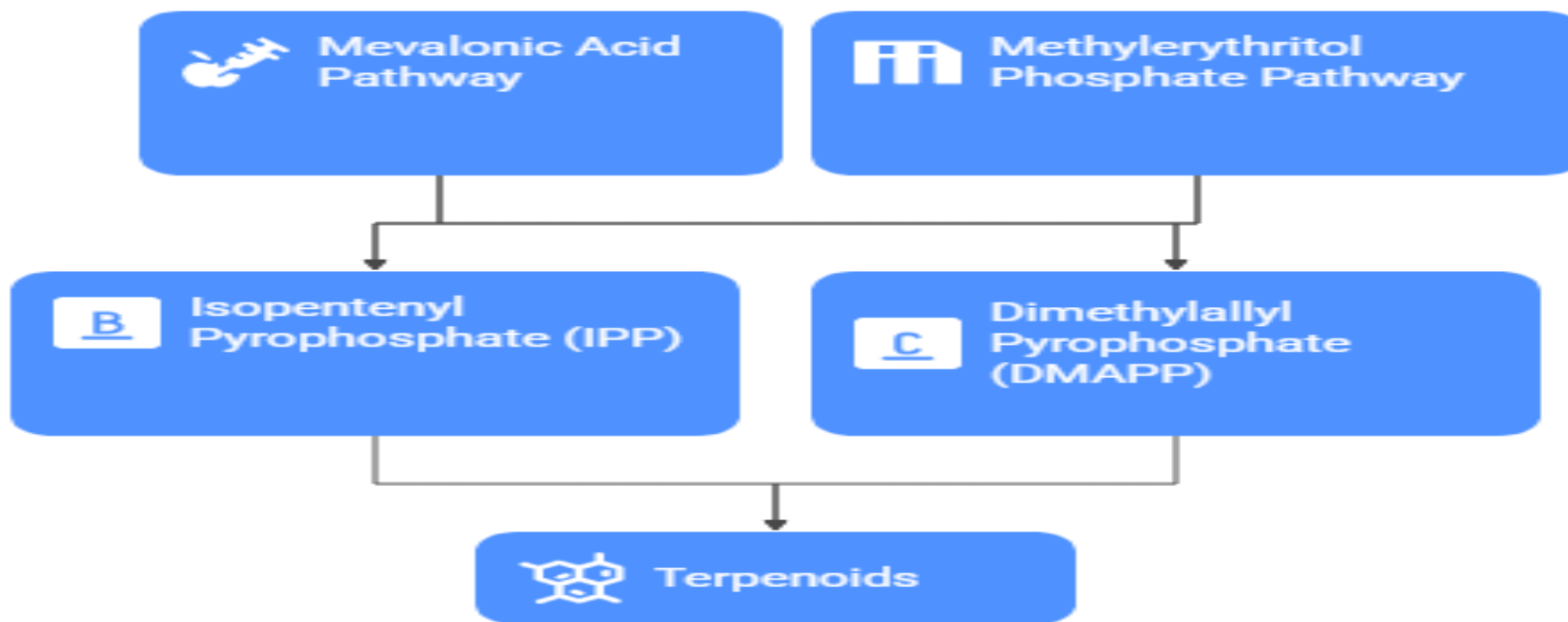
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Biosynthesis of Volatile Oils



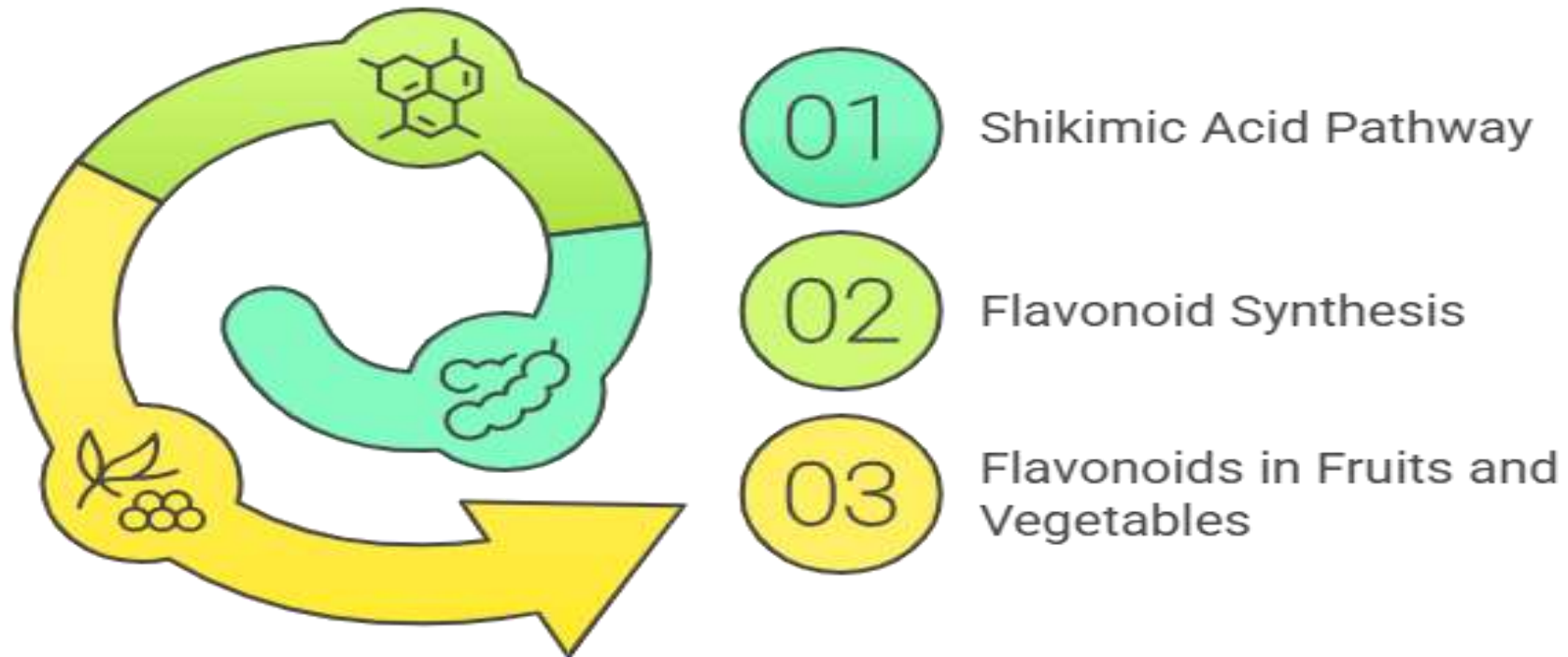
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Biosynthesis of Terpenoid Building Blocks



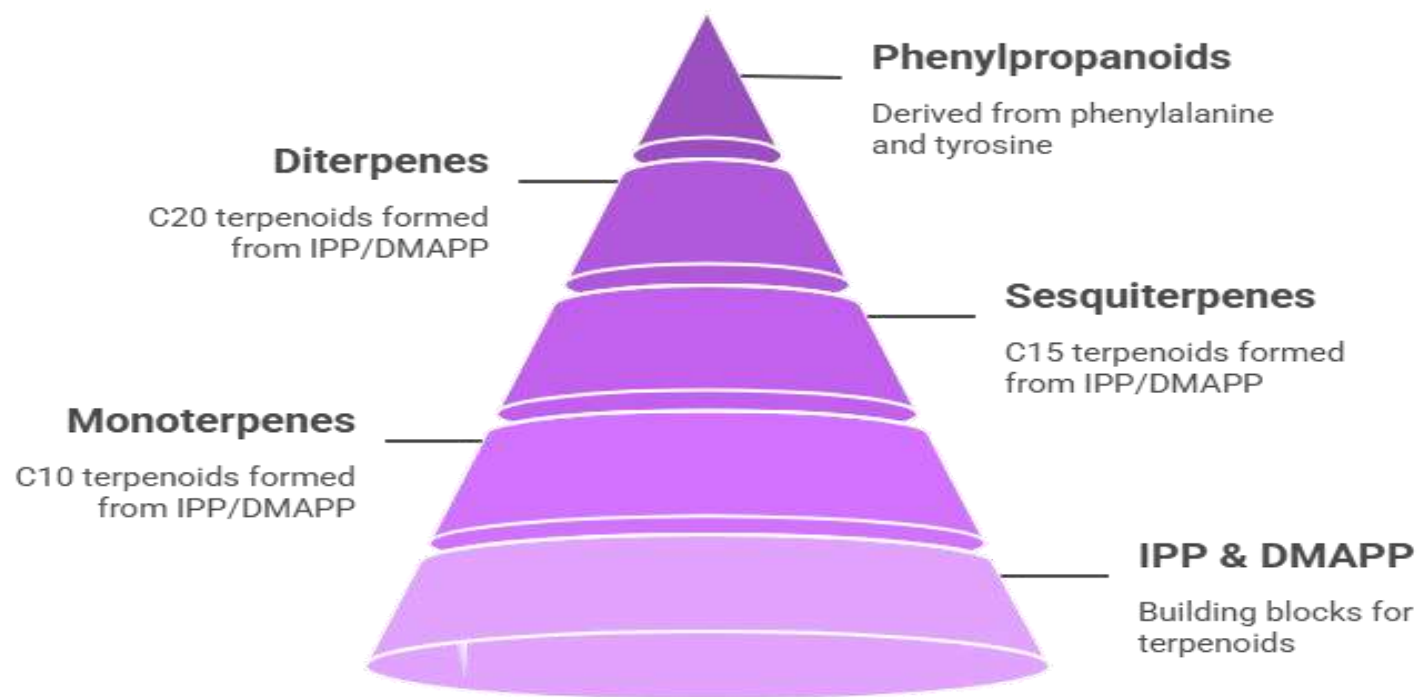
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Flavonoid Synthesis Pathway



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Volatile Oil Composition Hierarchy

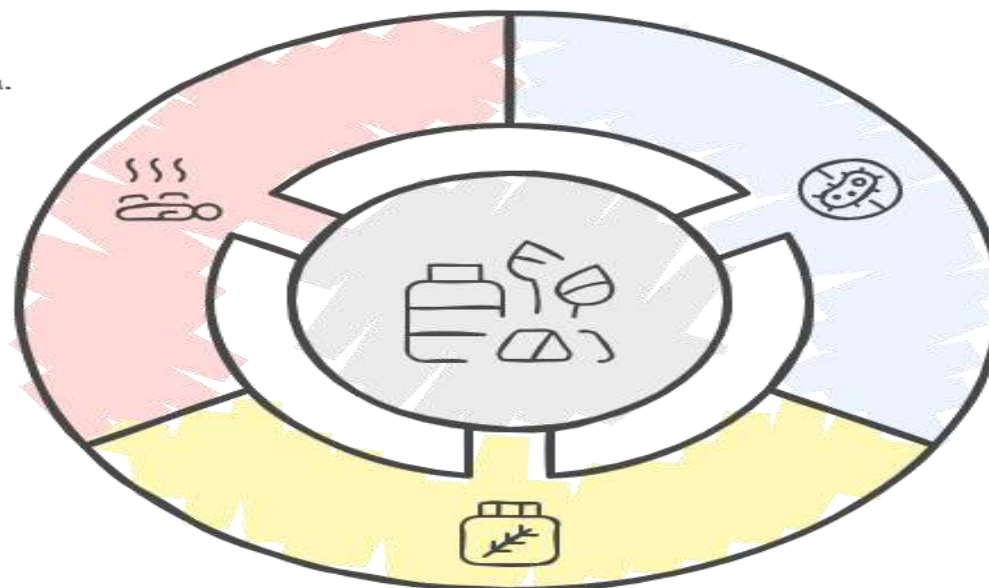


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Pharmacological Activities of Volatile Oils

Analgesic
Oils like peppermint and clove relieve pain.

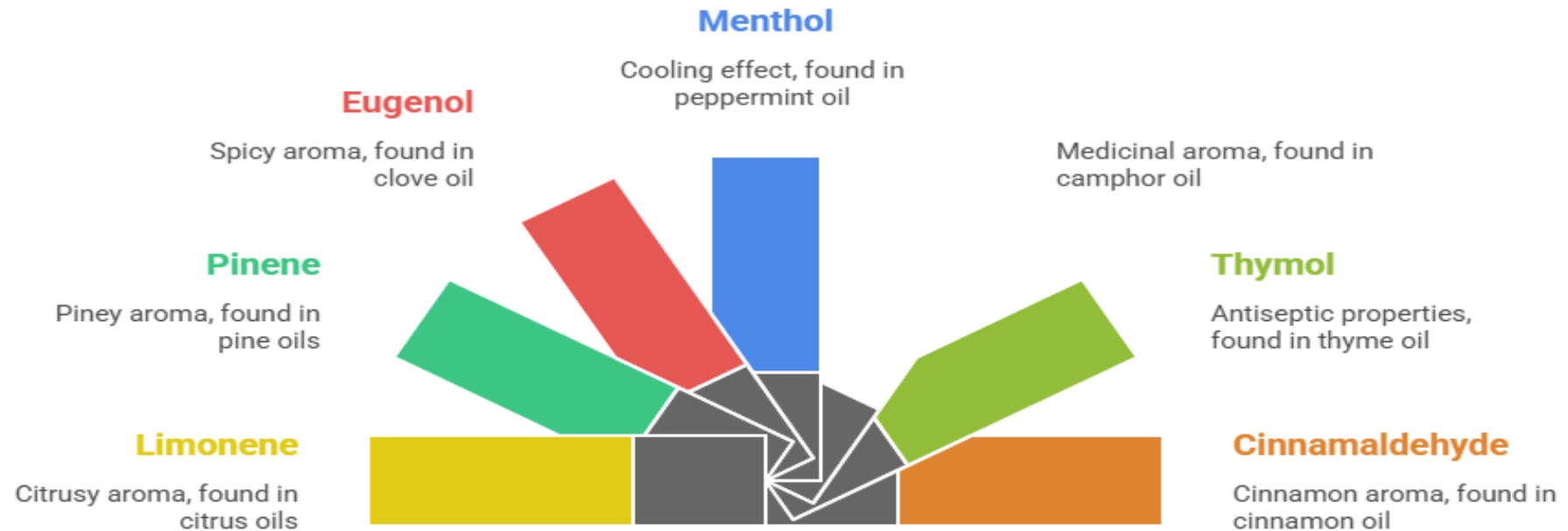
Antimicrobial
Oils like tea tree and thyme fight bacteria, fungi, and viruses.



Anti-inflammatory
Oils like chamomile and lavender reduce inflammation.

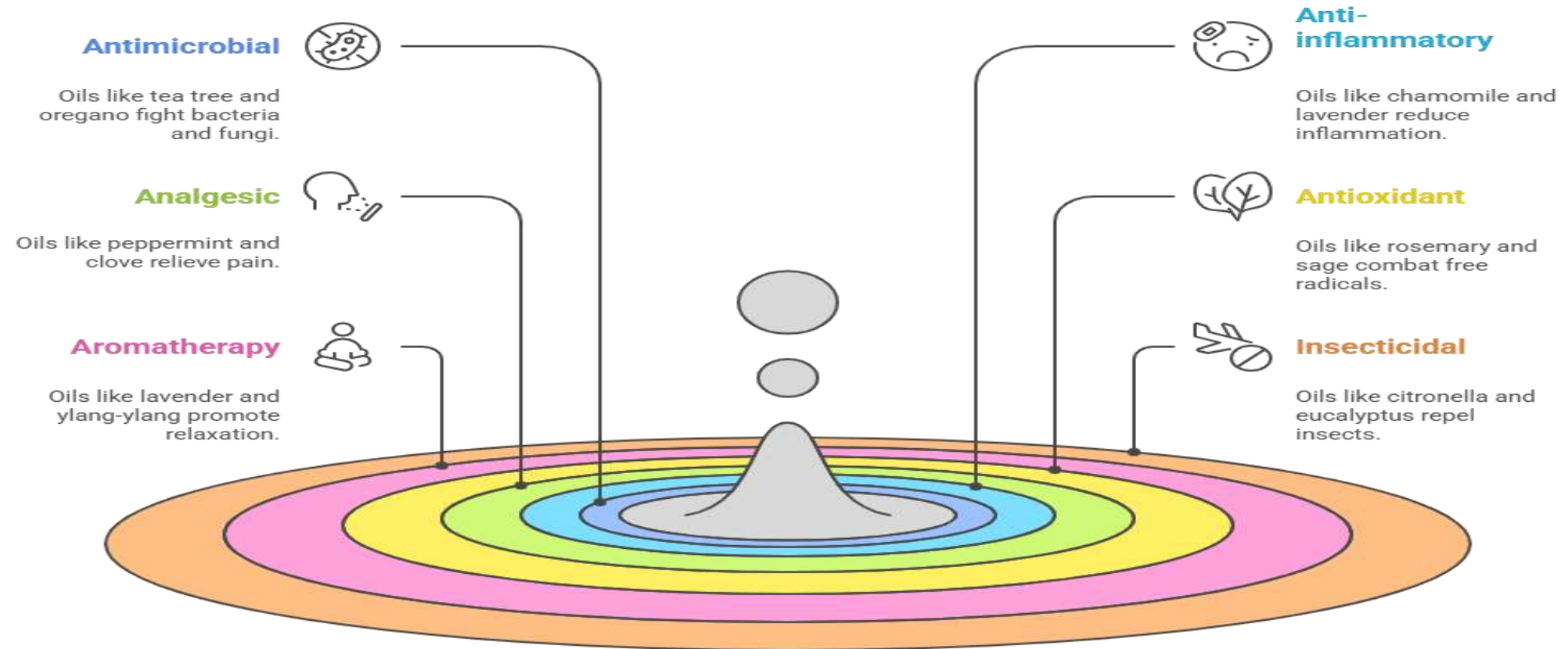
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Which volatile oil constituent should be used based on desired aroma or effect?



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Pharmacological Activities of Volatile Oils




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ASSESSMENT

Which plant part should be used for volatile oil extraction?





Root
Suitable for oils with earthy or grounding properties







Stem
Used for oils with woody or structural characteristics






Leaf
Ideal for oils with fresh or herbaceous scents





Flower
Best for oils with floral or aromatic qualities



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Which extraction method is best for citrus fruit peel?



Maceration

Involves soaking the peel in a solvent, which may not be as efficient for citrus oils.



Enfleurage

A traditional method using fat to absorb oils, not commonly used for citrus.



Expression (Cold Pressing)

The most frequent method, preserving the oil's quality and aroma.



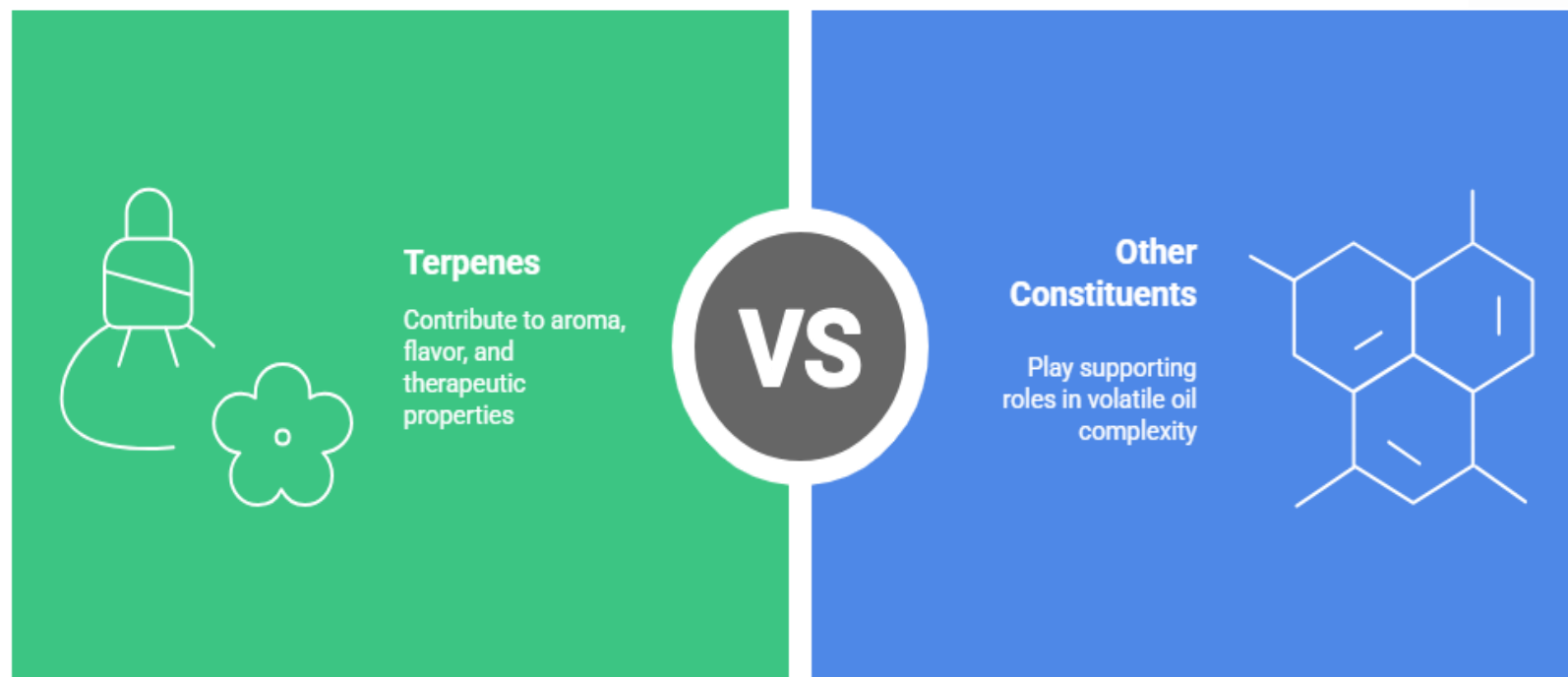
Supercritical Fluid Extraction

A modern method, but may alter the oil's composition.



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Which chemical constituent is most responsible for the therapeutic properties of volatile oils?



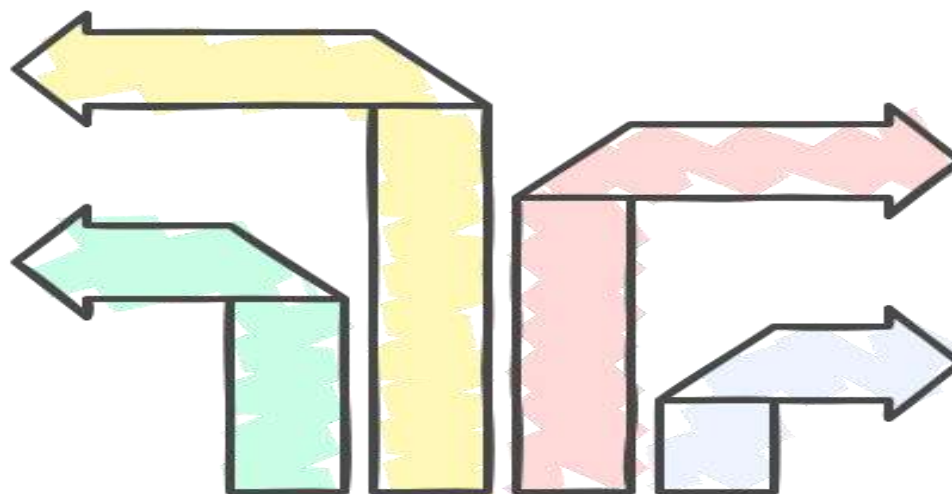
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Which property is NOT associated with volatile oils?

Optical Activity
Many volatile oils exhibit optical activity, which is important in chemical analysis.

Aromatic Odor
Strong aromatic qualities are a defining characteristic of volatile oils.



Solubility in Water
Volatile oils are generally not soluble in water, limiting their use in certain applications.

High Volatility
Volatile oils evaporate quickly at room temperature, making them aromatic.

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What is the main application of the volatile oil from the depicted plant?



Food Preservative

Used to extend the shelf life of food products.



Insecticide

Applied to repel or eliminate insects.



Flavoring Agent

Added to beverages for enhanced taste.



Fragrance and Relaxation

Used in perfumes and aromatherapy for calming effects.



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REFERENCES

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Thank You

