

Essential Oils, Biodiesel, and Bioethanol

<https://gemini.google.com/app/13f35e2f518633b7>

Response: Statements **(a)** and **(d)** are correct.

Analysis of Statements

- **(a) Correct:** Essential oils are aromatic, hydrophobic liquids containing complex mixtures of volatile chemical compounds (such as terpenes and phenylpropanoids) extracted from plants.
- **(b) Incorrect:** Biodiesel is produced from non-volatile vegetable oils (fixed oils/triglycerides) or animal fats, not volatile essential oils.
- **(c) Incorrect:** Methanol is commonly reacted with triglycerides via transesterification to produce fatty acid methyl esters (biodiesel).
- **(d) Correct:** Bioethanol derived from the fermentation of plant sugars or starches (e.g., sugarcane, corn) is a well-established renewable energy source.

Correct Options: (a) and (d)
