Biodiesel: Tomorrow’s Fuel, Today’s Solution

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Objective: Study of physical & chemical properties of biodiesel fuels derived from poultry & plant fats

Experimental methods:
• Synthesize FAMEs (transesterification)
• Extract FAME mixture
• Analyze pdt mixture (IR & $^1$H-NMR spectroscopy)

Synthesis of biodiesel (FAMEs) from triglycerides

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\begin{align*}
\text{CH}_2\text{O} \quad \text{CH} \quad \text{CH}_2\text{O} \\
\text{CH} \quad \text{O} \quad \text{C} \quad \text{CH}_3 \\
\text{CH}_2\text{O} \quad \text{C} \quad \text{O} \quad \text{CH}_3
\end{align*}
\]

Heat catalyst

CH$_3$OH + \text{CH}_3\text{O} \quad \text{C} \quad \text{O} \quad \text{CH}_3

Conclusion:
• We have been successful in making biodiesel mixtures
• We are now studying the properties of these mixtures
• We will study combustion energy, viscosity, and cloud point of biodiesel mixtures
• Biodiesel has much potential as an alternative to diesel fuel
• Biodiesel is cleaner burning than diesel fuel

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