OFFICIAL ABSTRACT and CERTIFICATION

Creation of Carbon Neutral Fuel Using Peanuts

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The demand for carbon-neutral fuel sources is increasing as our society demands alternative fuels to lessen global warming. The goal of this experiment was to use peanuts to create biodiesel. When utilized properly, peanut oil can provide a carbon-neutral fuel source, do to it being a highly abundant and productive crop. The oil was converted into biodiesel through transesterification using methanol and sodium hydroxide. To determine the amount of lye used, a solution of isopropanol and our oil was titrated to determine free fatty acids concentration. Conversion efficiency of 65% was achieved. Further calculations show that 647.5 liters of biodiesel per acre can be produced on a commercial scale, given current crop land yields.

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1. As a part of this research project, the student directly handled, manipulated, or interacted with (check ALL that apply):

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