The Relationship Between Oil and Biodiesel Quality

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This experiment was performed to determine what base oil would produce the highest quality of biodiesel. The oils used were Canola, Vegetable Oil, and Safflower Oil. these oils were chosen as they have varying levels of Oleic acid, a fatty acid easily converted to biodiesel in the transesterification process. The biodiesel was produced using methanol and potassium hydroxide as a catalyst. Four biodiesel quality tests were performed: water content, titration, 3/27, and cloud point. It was hypothesized that the Safflower would prove to be the highest quality, due to it containing the highest concentration of oleic acid, which is one of the fatty acids most important in the production of biodiesel. Results indicated that Safflower was superior to or equal to canola and vegetable oils in three of the four quality tests. Cloud point was the only test in which Safflower did not outperform the other oils.

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