



## Effect of Temperature on Acid Esterification of Free Fatty Acids in Chicken Fat

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### Abstract

In biodiesel production, use of low cost feedstock such as rendered animal fats may reduce the biodiesel cost. One of the low cost feedstock is the chicken fat for biodiesel production. However, chicken fats often contain significant amounts of free fatty acid (FFA) which cannot be converted to biodiesel using an alkaline catalyst due to the formation of soap. Therefore, the FFA level should be reduced to desired level (below 2%) by using an acid catalyst before transesterification. Reduction in FFA content using Acid Esterification depends on Alcohol to oil molar ratio, reaction time, catalyst amount, agitation speed and temperature. Effect of temperature on Acid Esterification of Chicken fat was studied while keeping other parameters constant. The experimental results were found that 60°C is the most suitable temperature for reducing FFA in Chicken fat using an acid catalyst and temperature higher than this is cannot be used due to methanol loss due to vaporization.

**Keywords:** *Acid Catalyst, Bio-Diesel, Esterification, Free Fatty Acids, Temperature*

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