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A Method For Treating Free Fatty Acids of Crude Plant-Derived Oils To Obtain Fatty Acid Alkyl Esters



▶ MORE INFORMATION

MEGA-TREND

- Chemicals and Materials

TECHNOLOGY READINESS LEVEL (TRL)

- TRL 4

PATENT/ GRANTED NUMBER

- MY-176013-A

▶ TECHNOLOGY OVERVIEW

The present invention relates to a method for reducing free fatty acids content in crude plant-derived oil, comprising esterifying and transesterifying the crude plant-derived oil, and characterized by the steps of: heating the crude plant-derived oil; mixing an alcohol comprising 1-4 carbon chain length with the heated oil at a molar ratio of the alcohol to the heated oil of 8: 1 to 20: 1; reacting solid sulphonic acid catalyst with the heated oil containing the alcohol to form treated oil having free fatty acids content of maximum 1% by weight at a temperature in a range of 40-70°C for a time in a range of 3-150 minutes; removing excess alcohol and the solid sulphonic acid catalyst from the treated oil; wherein said catalyst is recycled for further free fatty acid reduction in a fresh crude plant-derived oil; reacting the alkali catalyst and the alcohol with the treated oil to produce a mixture comprising fatty acid alkyl ester and crude glycerol; evaporating the excess alcohol and separating the crude glycerol from the mixture comprising fatty acid alkyl ester; and purifying the mixture comprising fatty acid alkyl ester with water and dehydrating the purified mixture comprising fatty acid alkyl ester.

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