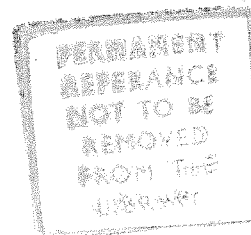


STUDIES ON ELECTROCHEMICAL REDUCTION OF
UNSATURATED FATTY ACIDS
OF RUBBER SEED OIL

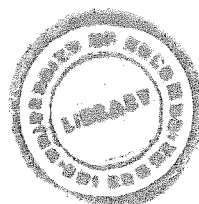


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ABSTRACT

Rubber seed oil is a by product of rubber industry in Sri Lanka. Processes to extract the oil from rubber seeds have been developed and improved to minimise the cost and increase the purity. Rubber seed oil has been reported to contain a high percentage of C₁₈ unsaturated acids in the form of tri-glycerides. Simple calculations reveal that about 96 percent w/w solid material which consists of about 85 percent stearic acid mixed with about 15 percent palmitic acid, could be obtained from rubber seed oil, if hydrogenation and hydrolysis processes are carried out effectively.

Stearic acid is widely used in paints, cosmetics, rubber and various other industries. At present the stearic acid requirements of Sri Lanka are met totally by imports.

Thus, the development of an industrial method to produce stearic acid from locally available rubber seed oil is of great economic importance. If such method could be carried out as a small scale cottage industry, it will give opportunity for more self employment in the country.

The work described in this thesis resulted in the development of such a method which, though low in efficiency, produced solid product consisting of about 85 percent stearic acid, the rest being the saturated C₁₆ acid, palmitic acid. In addition to stearic acid, glycerol could be an easily recoverable byproduct of this process.