

RECENT ADVANCES IN BIOENVIRONMENTAL ENGINEERING

■ Suleyman A. Muyibi ■ Maan Alkhatib ■
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CHAPTER 5

Kinetic Studies on biodiesel production from Crude Palm Oil

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Introduction

Crude Palm Oil (CPO) is meant to anticipate oversupply. In the year of 2005, oversupply of CPO in Malaysia reached 0.40 million tons. It is estimated that this amount will keep rising reaching 1.3 million tons in 2010. The data of 2007 shows that from about 3 million hectares of palm tree plantations, 6.7 million tons of CPO is produced. Besides that, if the fuel subsidy is no more available, PAME (palm oil methyl ester – processed CPO which can be used as 100% biodiesel or a blend with other fuels) can be able to substitute diesel oil that is readily available to be marketed with a competitive price (MPOB, 2006). Utilizing such resource for biodiesel should be considered. Nevertheless, extraction of biodiesel from CPO directly can help save the time and effort which is consumed in producing refined palm oil. If the biodiesel yield and cost production of CPO transesterification process was of the same value or better than the one refined, bleached and deodorized palm oil, it will be convenient to directly use CPO.

Based on few criteria, palm oil is the most potential vegetable oil which can be used as raw material to manufacture biodiesel (Ramadhas, 2006), and on the other hand the usage of CPO