UNIVERSITI TEKNOLOGI MARA

A LITERATURE REVIEW ON THE POSSIBLE SOURCES FOR PRODUCTION OF FATTY ACIDS

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ABSTRACT

The main purpose of this research review is to find out the possible sources for production of Fatty acids (FA). There is a lot of sources of Fatty Acid which is come from animal origin, plant origin and also can be produce from the *synthesis of bacteria* from spent mushroom compost. This research just only focused only one source from each origin that may be discussed in this review of production FA. Fatty acids is a carboxylic acid which is consisting of hydrocarbon chain and also consist a terminal carboxyl group (-COOH). Fatty acids also brought high potential industrial demand in many sector such as industry foods, agriculture, pharmaceutical, cosmetic, textile, and many more industries related to fatty acids. Therefore, fatty acids production would be review in Malaysia scenario for the last few years (2013, 2014 and 2015) regarding to their local consumptions, import and export. Production of Fatty acid in Malaysia could be achieve by review on the commodity of tall oil Fatty Acids. This tall oil fatty acids commodity will show the trend of the production fatty acids at the local region in Malaysia, import and export. So, it is suggested to get a data on the last 3 years with regards to production for import and export quantity. Fatty acids also have beneficial value towards human health that is come from the essential fatty acids linolenic and linoleic fatty acids which may be discussed further in this review.

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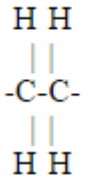
CHAPTER 1

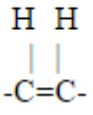
INTRODUCTION

1.1 GENERAL INTRODUCTION TO FATTY ACIDS

There are three (3) types of Fatty Acids that can be probably categorized such as saturated, monounsaturated and polyunsaturated Fatty Acids. Generally, all Fatty Acids have chains of carbon (C) atoms with hydrogen (H) atoms linked to the carbon atoms. The maximum possible number of H atoms attached to every C atom is called as saturated Fatty Acids as in Figure 1(a) because it "saturated" with H atoms and single bond with C atom. Not all Fatty Acids exist as saturated form. It may exist also in unsaturated form, Figure 1(b) which is monounsaturated and polyunsaturated. The forming of unsaturated Fatty Acids happen when a pair of H atoms in the middle of the chain is missing that can led to creating a gap and then forming a double bond instead of single bond of C-H. There are few of H atoms, it is said to be "unsaturated". Monounsaturated Fatty Acids consist only one double bond whereas polyunsaturated consist more than one double bond.



Carbon-Carbon Single Bond



Carbon-Carbon Double Bond

(a) Saturated Fatty Acids (b) Unsaturated Fatty Acids

FIGURE 1