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IDENTIFICATION AND QUANTIFICATION OF FREE FATTY ACID AND STRIPPING EFFICIENCY IN OIL PALM FRUIT.

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ABSTRACT

Oil palm fruit is such an edible oil that have been widely used in this new era. The uses and benefit probably gave people so much advantages that it can be used widely in life. The invention of oil palm fruit towards the manufacturing such as soap, butter and biomass fuel really gives idea to people to get profit and promote to use a less hazardous compound in life. The aim of this research is to identify and quantify free fatty acid content and stripping efficiency in oil palm fruit at low level at low microwave power level. A high free fatty acid content gives low quality production of oil palm fruit. A long duration storage also affect the content free fatty acid simultaneously the stripping efficiency of oil palm fruit. The parameter that have been used are the stripping efficiency content, the free fatty acid in palm oil fruit and the quality oil produce. The limitation is the equipment used which is microwave compared to the specific machine or equipment as the oil palm industry since industries produce a large scale compare to the research studies. The parameters used by using ratio 1:0, 1:0.5 and 1:1 palm fruit to water. Findings shows that a high power resources of microwave gave higher stripping efficiency to the palm fruit and the addition of water effect the stripping efficiency decreases. Free fatty acid content obtained between 0.49-0.55 based on % of palmitic acid. Conclude that heating required to ensure a good stripping efficiency. However, the process of stripping should be proceed immediately to avoid the free fatty acid content of palm fruit increases.

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INTRODUCTION

1.1 Research background

1.1.1 Oil palm fruit

Palm oil fruit probably widely use in the world which is basically comes from the tropical rain forest region of West Africa. It is well known as commercialize and adaptable as it is nutritious vegetable oil, trans-fat free and very rich with vitamins and antioxidants. This oil palm fruit produced by clustered bunch of fruit and have an oval drupe shape. (Robiah Yunus *et* al. 2014). This plant probably grows wild and produce more oil per land area than the other plant such as soya, rapeseed and sunflower crops. Normally, the plant will produce fruits after 30 months of plantation and will grow up to sixty feet. It contributes a lot in food industrial as a cooking oil, margarine and pizza, chocolate and ice cream as it hides as vegetable oils.

Palm oil fruit also known as versatile and uniqueness due to ability produce two type of oil which is crude palm oil and palm kernel oil. Crude palm oil probably a natural semi-solid oil and produced from fleshy mesocarp while the kernel oil from the seed. The versatility in food application have been increased by separated into liquid olein and solid stearin. Olein mostly applied in as a cooking oil while stearin used in food processing. Palm kernel oil really important raw material for oleo chemical industry and make specialty fats for various food products. This two types of oil