THERMAL PROPERTY CHARACTERIZATION OF CHITIN FROM LEUCAENA LEUCOCEPHALA EXTRACTION

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ABSTRACT

Thermal property characterization of chitin from Leucaena Leucocephala (LL) extraction is obtained by using themagravimetric analysis (TGA) and Elemental Analyzer. The purposes of this research were to characterize chitin by extraction of LL pod with 6M HCL by using Thermagravimetric Analysis (TGA) and Elemental Analyzer. By using the equipments, the thermal property can be determined. The samples are prepared by chemical process, which are extraction of chitin using 6M HCl and neutralization using 12M NaOH . The prepared samples then will be test for the thermal property by the TGA and Elemental Analyzer.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Chitin $(C_8H_{13}O_5N)_n$ is a long-chain polymer of an *N*-acetylglucosamine, a derivative of glucose, and is found in many places throughout the natural world. The structure of chitin is comparable to the polysaccharide cellulose, forming crystalline nano fibrils or whiskers. Chitin is the second most abundant polymer in nature, providing the osmotic stability and tensile strength to countless cell walls and rigid exoskeletons. In terms of function, it may be compared to the protein keratin. Chitin has proved versatile for several medicinal, industrial and biotechnological purposes.

From present study, most of the research focus on the extraction of chitin is from animal sources. In animal, chitin is a major constituent of the exoskeleton, or external skeleton, of many arthropods such as insects, spiders, and crustaceans. There are studies on extraction of chitin from fish scales, crab, shrimp, and insect. The process of