

FEASIBILITY OF DNA FORENSICS FROM SEA TURTLE PRODUCTS

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**FEASIBILITY OF DNA FORENSICS FROM SEA TURTLE PRODUCTS**

**By**

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JABATAN SAINS MARIN  
FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN  
UNIVERSITI MALAYSIA TERENGGANU

**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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## LIST OF ABBREVIATIONS

bp	-	base pair
cm	-	centimeters
hr	-	hour
L	-	liter
mg	-	milligram
min	-	minute
ml	-	milliliter
mM	-	micromolar
ng	-	nanogram
RM	-	Ringgit Malaysia
rpm	-	revolutions per minute
μl	-	microliter
°C	-	degrees celcius
%	-	percent

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## ABSTRACT

This is a feasibility study to find the best part and best method for DNA extraction from sea turtle products. The samples used in this study were dead specimens of hawksbill turtle (*Eretmochelys imbricata*) and green turtle (*Chelonia mydas*) from the Department of Fisheries, Sabah and eggs from markets around Kuala Terengganu. The DNA of samples from different parts was extracted using both conventional method (CTAB Protocol) and DNA commercial extraction kit. The most effective method to extract DNA was the conventional method while the best parts for DNA extraction were the flippers and neck for hawksbill and only the flippers for the green turtle. As for the eggs, the shell and yolk showed presence of DNA. This study is a preliminary study to determine the origin of turtles. However, MtDNA analysis to determine the origin of the samples was unsuccessful due to the quality of DNA in the sea turtle products.



## **KEBOLEHAN MENGAPLIKASIKAN FORENSIK DNA KE ATAS PRODUK-PRODUK PENYU**

### **ABSTRAK**

Kajian ini bertujuan mencari kaedah dan bahagian terbaik untuk mengekstrak DNA daripada produk-produk penyu. Sampel yang digunakan dalam kajian ini terdiri daripada spesimen kering penyu agar (*Chelonia mydas*) dan penyu karah (*Eretmochelys imbricata*) dari Jabatan Perikanan, Sabah dan telur penyu dari beberapa pasar di Kuala Terengganu. Sampel DNA daripada beberapa bahagian diekstrak menggunakan dua cara iaitu cara konvensional (Protokol CTAB) dan penggunaan Kit Ekstrak. Keputusan kajian menunjukkan kaedah yang berkesan ialah kaedah konvensional manakala bahagian terbaik untuk mengekstrak DNA adalah bahagian leher untuk penyu agar dan bahagian leher dan juga kaki sirip untuk penyu karah. Untuk telur penyu pula, DNA diperolehi daripada bahagian telur kuning dan cengkerang sahaja. Kajian ini merupakan permulaan untuk menentukan asal produk-produk penyu ini diperolehi. Walaubagaimanapun, analisis mtDNA untuk menentukan asal produk-produk penyu gagal berikutan kualiti DNA pada sampel yang diperolehi adalah rendah.