MICROPROPAGATION OF *KAPPAPHYCUS ALVAREZII* (DOTY) DOTY (SOLIERIACEAE, RHODOPHYTA)

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A Dissertation Submitted
to the College of Fisheries and Ocean Sciences
In partial fulfillment of the requirements for the Degree
Doctor of Philosophy in Fisheries (Aquaculture)

UNIVERSITY OF THE PHILIPPINES IN THE VISAYAS
February 2004

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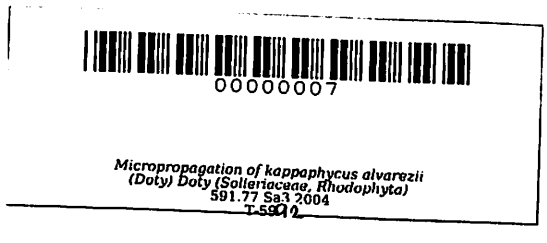

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDICES

LIST OF APPENDICES

LIST OF APPENDICES

LIST OF APPENDICES

CHAPTER I

GENERAL INTRODUCTION

The commercial farming of carrageenophytes belonging to the genus *Kappaphycus* began in the Philippines in the early 1970's. About three decades after, the industry had become one of the country's largest fisheries exporters involving about 180,000 families, approximately 47,000 ha. farming areas, 13 processors and ten exporters (Guerrero, 1999; Buendia, 1998; Hurtado and Cheney, 2003). The highest seaweed producing areas are the Sulu Archipelago in Western Mindanao, Central Visayas and the Southern Tagalog regions.

There are four species of *Kappaphycus* present in the Philippines and two of these - *K. alvarezii* and *K. striatum* - are cultured in large-scale. Because the former is easier to grow, it has supplanted the latter which was the dominant cultivated species in previous years (Lobban and Harrison, 1994). Morphologically, *K. alvarezii* is characterized by smooth branch surfaces, large, fleshy, cartilaginous and cylindrical thalli with group of apical cells at tip of branches (Trono, 1997). Referred to by a number of colloquial names such as the "cottonii" types and "tambalang", *K. alvarezii* was formerly placed under the genus *Eucheuma*. Presently, it is taxonomically classified as *Kappaphycus* because of its distinct type of carrageenan (Doty, 1988).

The main by-product from *Kappaphycus* is κ - carrageenan, a hard-gelling colloid, which has multitudes of applications in food and non-food industries. In 1994, when