

**CAPABILITY OF TWO PLANT GROWING SYSTEMS IN REDUCING
BACTERIA IN AQUAPONICS SYSTEM**

By

KAE MATEO DAMIAN

An Undergraduate Thesis presented to the Faculty of the College of Fisheries in
partial fulfillment of the requirements for the degree of

BACHELOR OF SCIENCE IN FISHERIES

Department of Aquatic Resources, Ecology and Management
COLLEGE OF FISHERIES
CENTRAL LUZON STATE UNIVERSITY
Science City of Muñoz, Nueva Ecija
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TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF APPENDIX TABLES	xi
LIST OF APPENDIX FIGURES	xii
ABSTRACT	xiii
INTRODUCTION	
Background of the Study	1
Statement of the Problem	3
Significance of the Study	3
Objectives of the Study	3
Scope and Limitation of the Study	4
Time and Place of the Study	4
REVIEW OF RELATED LITERATURE	
Aquaculture	5
Aquaponics	5
Tilapia	5
Lettuce	6
Microbial Hazards and Risks	6
MATERIALS AND METHODS	
Experimental System	7
Experimental Design	7

Experimental Set-up	8
Experimental Lay-out	9
Experimental Fish	10
Experimental Vegetable	10
Collection of Water Samples	10
Preparation of Culture Media	10
Total Bacterial Count	11
Statistical Analysis	11
RESULTS AND DISCUSSION	12
SUMMARY, CONCLUSION AND RECOMMENDATIONS	16
LITERATURE CITED	17
APPENDICES	20

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
1	Treatments used in the study	7
2	Total viable bacteria (CFU/mL) in the water from influent during the study period	13
3	Total viable bacteria (CFU/mL) in the water from effluent during the study period	14

LIST OF FIGURES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
1	Cylindrical Plastic Barrel (cut into halves)	8
2	Experimental lay-out of the study	9
3	Average Mean of Influent and Effluent	15

LIST OF APPENDIX TABLES

<u>Appendix Table No.</u>	<u>Title</u>	<u>Page</u>
1	Group statistics on the total viable bacteria (CFU/mL) on the influent of the two treatments	21
2	Independent sample test on the total viable bacteria (CFU/mL) on the water of influent of the two treatments	22
3	Group statistics on the total viable bacteria (CFU/mL) on the effluent of the two treatments	24
4	Independent sample test on the total viable bacteria (CFU/mL) on the water of effluent of the two treatments	25

LIST OF APPENDIX FIGURES

<u>Appendix Figure No.</u>	<u>Title</u>	<u>Page</u>
1	Experimental set-up of the study	27
2	Collection of water samples	27
3	Water samples	28
4	Tripticasein Soy Agar (T.S.A.)	28
5	Weighing of saline using digital balance	29
6	Weighing of T.S.A. using digital balance	29
7	Preparation of culture media	30
8	Autoclave	30
9	Plating of culture media	31
10	Applying the serial dilution	31
11	Spread plate method	32
12	Plates incubated for 18-24 hours	32
13	Counting of colonies	33

CAPABILITY OF TWO PLANT GROWING SYSTEMS IN REDUCING BACTERIA IN AQUAPONICS SYSTEM^{1/}

ABSTRACT

Aquaponic systems provide the advantages of both reducing water usage and effluent. Fish aquaponic system offers an environmentally friendly, natural food-growing method that harnesses the best attributes of aquaculture and hydroponics without the need to discard any water or filtrate or add chemical fertilizers.

A study was conducted to determine the capability of two plant growing systems in reducing bacteria in aquaponics system. Two treatments with three replicates were used in the study. Treatment 1 composed of lettuce with growing media (mixture of rice hull, sand and gravel) while Treatment 2 consisted of lettuce without growing media (floating). Water was sampled once a week for six (6) weeks. Two water samples were collected, first was before passing through the plants (influent) and secondly was after being filtered by the plants (effluent). Counting of viable bacteria was done by following the standard procedures of serial dilution and spread plate method.

The highest number of viable bacteria was observed during the first week of the study, and during the following week the number of viable bacteria trended to reduce. Statistical analysis shows that there were no significant differences between Treatment 1 (lettuce with growing media) and Treatment 2 (lettuce without growing media).

It is recommended that further study be conducted try to used bigger culture systems rather than barrel container and used other growing media on different aquaculture crops with higher economic value. It is also suggested to lengthen the culture period to get more conclusive results.

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