



Ain Shams University  
Faculty of Science  
Zoology Department



**ACIDIFIED SUBSTANCES AS GROWTH PROMOTERS  
FOR THE FRESHWATER PRAWN, *MACROBRACHIUM  
ROSENBERGII* AND THE NILE TILAPIA,  
*OREOCHROMIS NILOTICUS***

*A Thesis submitted for the award of the Degree of Doctor of Philosophy in Science  
(Ph.D) in Zoology (Aquatic Biology)*

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# Contents

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	<i>Page</i>
Acknowledgments	iii
Abstract	iv
List of Tables	v
List of Figures	ix
<b>Chapter I Introduction and Aim of the Work</b>	<b>1</b>
<b>Chapter II Review of the Literature</b>	<b>8</b>
<b>Chapter III Materials and Methods</b>	<b>77</b>
III.1. Experimental aquatic animals	77
III.2. Experimental culture techniques	78
III.3. Preparation of experimental diet	84
III.4. Growth performance and Feed utilization	86
III.5. Proximate Composition	88
III.6. Digestibility trial	89
III.7. Statistical analysis	90
III.8. Histological studies	91
<b>Chapter IV Results and Discussion</b>	<b>93</b>
IV.1. Growth rates	93
IV.1.1. Experiment I (Nile tilapia)	93
IV.1.2. Experiment II (Freshwater prawn)	113
IV.1.3. Experiment III (Freshwater prawn)	124
IV.2. Histological studies	131
IV.2.1. Experiment I (Nile tilapia)	131
IV.2.1.1. Liver and pancreas	131
IV.2.1.1.1. Control tilapia (Group I)	131
IV.2.1.1.2. Treated tilapia (Group II)	133
IV.2.1.2. Gonads	148

# Contents

---

	<i>Page</i>
IV.2.1.2.1. Control tilapia (Group I)	148
IV.2.1.2.1.1. Ovary	148
IV.2.1.2.1.2. Testis	151
IV.2.1.2.2. Treated tilapia (Group II)	156
IV.2.2. Freshwater prawn ( <i>Macrobrachium rosenbergii</i> )	167
IV.2.2.1. Hepatopancreas	167
IV.2.2.1.1. Control prawn (Group I)	167
IV.2.2.1.2. Treated prawn	169
IV.2.2.1.2.1. Experiment II (Group II)	169
IV.2.2.1.2.2. Experiment III (Group III)	171
IV.2.2.2. Gonads	186
IV.2.2.2.1. Control prawn (Group I)	186
IV.2.2.2.1.1. Ovary	186
IV.2.2.2.1.2. Testis	189
IV.2.2.2.2. Treated prawn	191
IV.2.2.2.2.1. Experiment II (Group II)	191
IV.2.2.2.2.2. Experiment III (Group III)	191
<b>Chapter V Summary</b>	198
<b>Chapter VI References</b>	204
<b>Chapter VII Arabic summary</b>	

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## Abstract

In present study three experiments were carried out to investigate the effect of dietary sodium lactate, calcium lactate and calcium propionate levels as organic acids salts on growth, nutrient digestibility, proximate body composition, feed utilization and histological induces of the Nile tilapia, *Oreochromis niloticus* and the freshwater prawn, *Macrobrachium rosenbergii*.

The results demonstrated that calcium propionate at a levels of 2% for Nile tilapia (experiment I) and either 2% and 3% for freshwater prawn (experiment II) recorded the highest significant growth performance, survival rate, feed utilization, body composition and digestibility were obtained, also, less histological alternations of liver, pancreas and hepatopancreas were observed. Improving growth performance, survival and feed utilization was recorded also with the dietary sodium lactate at a level of 1% for freshwater prawn (experiment III) with mild impact histological effects of hepatopancreas. No gonads intact were observed in all experiments treatments of Nile tilapia and freshwater prawn, except slight histological alteration of testis's Nile tilapia.

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**Key Words:** *Oreochromis niloticus*, *Macrobrachium rosenbergii*, organic acids salts, acidifiers, sodium lactate, calcium lactate, calcium propionate, nutrition of Nile tilapia, nutrition of freshwater prawn, liver, pancreas, gonad, hepatopancreas.



## *List of Tables*

<i>Table No.</i>	<i>Title</i>	<i>Page</i>
1	Essential amino acid requirements for growth of young Nile tilapia (g/100 g Protein).	27
2	Chemical properties of selected acids and salts.	67
3	Effects of organic acids and their salts in animal nutrition.	69
4	Ingredients and proximate composition (%) of the experimental basal tested diets used in the experiment I and II.	83
5	Ingredients and proximate composition (%) of the experimental basal tested diets used in the experiment III.	85
6	Ingredients composition (%) of the digestibility experimental basal tested diets used for digestibility trial in the experiment I and III.	92
7	Growth performance and Survival rate (%) of Nile tilapia, <i>O. niloticus</i> fed on different organic acid salts as acidifiers sources and levels.	100

## *List of Tables*

<i>Table No.</i>	<i>Title</i>	<i>Page</i>
8	Feed utilization of Nile tilapia, <i>O. niloticus</i> fed on different organic acid salts as acidifier sources and levels.	101
9	The interaction effects of different dietary organic acid salts as acidifiers sources and levels on growth performance, survival (%) and feed utilization of <i>O. niloticus</i> (Wet weight basis).	102
10	Proximate body composition of <i>O. niloticus</i> fed on different organic acid salts as acidifier sources and levels (% Wet weight basis).	105
11	The interaction effects of different dietary organic acid salts as acidifier sources and levels on proximate body composition of <i>O. niloticus</i> (% Wet weight basis).	106
12	Apparent protein digestibility (APD) coefficients and apparent lipid digestibility (ALD) coefficients of different organic acid salts as acidifiers diets by <i>O. niloticus</i> (mean $\pm$ SD) <sup>A</sup> .	111

## *List of Tables*

<i>Table No.</i>	<i>Title</i>	<i>Page</i>
13	The interaction effects of different dietary organic acid salts as acidifiers sources and levels on apparent protein digestibility (APD) coefficients and apparent lipid digestibility (ALD) coefficients of experimental diets of <i>O. niloticus</i> fingerlings (mean±S.d) <sup>A</sup> .	112
14	Growth performance and Survival (%) of freshwater prawn, <i>M. rosenbergii</i> fed on different organic acid salts as acidifier sources and levels.	117
15	Feed utilization of freshwater prawn, <i>M. rosenbergii</i> at different organic acid salts as acidifiers sources and levels.	118
16	The interaction effects of different dietary organic acid salts as acidifiers sources and levels on growth performance, Survival (%) and feed utilization of freshwater prawn, <i>M. rosenbergii</i> .	119

## *List of Tables*

<i>Table No.</i>	<i>Title</i>	<i>Page</i>
17	Proximate composition of whole body of <i>M. rosenbergii</i> fed on different organic acid salts as acidifier sources and levels (% Wet weight basis).	122
18	The interaction effects of different dietary organic acid salts as acidifiers sources and levels on proximate body composition of <i>M. rosenbergii</i> (% Wet weight basis).	123
19	Growth performance and feed utilization of freshwater prawn, <i>M. rosenbergii</i> fed different dietary sodium lactate (Na-lactate) levels	127
20	Proximate body composition of freshwater prawn, <i>M. rosenbergii</i> fed different dietary sodium lactate (Na-lactate) levels (% Wet weight basis).	127
21	The interaction effects of different dietary sodium lactate (Na-lactate) levels on apparent protein digestibility (APD) coefficients and apparent lipid digestibility (ALD) coefficients of experimental diets of <i>M. rosenbergii</i> (mean $\pm$ SD) <sup>A</sup> .	130

## *List of Figures*

<i>Figure No.</i>	<i>Title</i>	<i>Page</i>
1	Photomicrograph of a section of the liver of untreated Nile tilapia, <i>O. niloticus</i> showing normal hepatocytes in liver tissue.	142
2	Photomicrograph of a section of the liver of untreated Nile tilapia, <i>O. niloticus</i> showing large sinusoids were surrounding by reticulo-endothelial cells which lie among the hepatocytes.	142
3	Photomicrograph of a section of the liver and pancreas of untreated Nile tilapia, <i>O. niloticus</i> showing pancreatic tissue.	142
4	Photomicrograph of a section of the liver and pancreas of Nile tilapia, <i>O. niloticus</i> treated with 2% sodium lactate showing slight vaculation, destructed hepatocytes and some congestion of the portal vein in the pancreatic tissue.	142