



**Potentials of Plant Polyphenol for Better Performance of
Giant Freshwater prawn
(*Macrobrachium rosenbergii*)**

Md. Rubel

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Master of Science in Fisheries Resource Management

**Department of Fisheries Resource Management
Faculty of Fisheries
Chittagong Veterinary and Animal Sciences University
Chittagong-4225, Bangladesh**

June 2018

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The Author

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This is to certify that we have examined the above Master's thesis and have found that the thesis is complete and satisfactory in all respects and that all revisions required by the thesis examination committee have been made

Prof. Dr. Md. Manirul Islam

Supervisor

Dr. Sk. Ahmad-Al-Nahid

Co-Supervisor

Dr. Sk. Ahmad-Al-Nahid

Chairman of the Examination Committee

**Department of Fisheries Resource Management
Faculty of Fisheries
Chittagong Veterinary and Animal Sciences University
Khulshi, Chittagong-4225, Bangladesh**



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Abbreviation

PL	-	Post Larvae
FCR	-	Feed Conversion Ratio
cm	-	Centimeter
mg	-	Milligram
DoF	-	Department of Fisheries
Ltd.	-	Limited
Kg	-	Kilogram
FAO	-	Food and Agriculture Organization
CF	-	Condition Factor
CHO	-	Carbohydrate
Kcal	-	Kilocalorie
SE	-	Standard Error
SEM	-	Standard Error of Mean
SGR	-	Specific Growth Rate
<	-	Less than
>	-	Greater than
e.g	-	Example
et al.	-	And his Associates
etc.	-	Et cetera
g	-	Gram
%	-	Percentage
i.e.	-	That is
Sig.	-	Significance
Ref.	-	Reference
MS	-	Master of Science
CVASU	-	Chittagong Veterinary and Animal Sciences University

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Abstract

Giant freshwater prawn (*Macrobrachium rosenbergii*) is an important and highly valued product for international market and almost all Bangladeshi prawns are therefore exported. An experiment on potentials of plant polyphenols for better performance of farmed giant prawn was conducted for five months. Polyphenol is a natural sugarcane plant extract from *Saccharum officinarum* which is rich in minerals and nutrients, also has anti-inflammatory and anti-bacterial properties. In this experiment (growth performance, survival rate, Feed conversion ratio (FCR), proximate composition) were observed. Four different percentage of polyphenol supplemented feed 0% (0 mg/ kg feed), 0.2% (60mg/kg feed), 0.4% (120mg/kg feed), 0.6% (180mg/kg feed) were supplied named T₀(control), T₁, T₂, T₃ treatment respectively. Each treatment was three replications. Post larvae of prawn were stocked for the experiment which initial length was 2cm. In experiment, it was found that prawn showed better growth performance at T₃ polyphenol supplemented feed. In this treatment prawn reached length up to 6.27(±0.51) cm, where 5.22(±0.48) cm at T₂, 4.99(±0.26) cm at T₁, and 4.85(±0.13) cm at control. And the average weight were (2.13±0.19) g at 0.6% polyphenol supplemented feed, where 1.16(±0.24) g at 0.4%, 1.12(±0.19) g at 0.2% and 0.89(±0.10) g at control. The FCR value were 2, 1.85, 1.86, 1.15 for T₀, T₁, T₂, T₃ respectively. And the values of protein content were 8.88, 15.54, 17.71, 14.45 for T₀, T₁, T₂, T₃ respectively. Specific growth rate found in T₀, T₁, T₂, T₃ treatment groups were 0.26±0.14, 0.35±0.05, 0.31±1.4, 0.49±0.22 respectively. And the condition factor were 0.78±0.03, 0.89±0.03, 0.81±0.06, 0.87±0.13 in T₀, T₁, T₂, T₃ supplemented treatment groups respectively. During the research period no mortality was recorded due to any kind of diseases and contamination. Thus also support that polyphenol increase survival rate. Polyphenol may also have nutritive properties which influenced growth performance at freshwater prawn.

Key words: Polyphenol, Freshwater prawn, Growth performance