COMPARATIVE STUDY ON GROWTH PERFORMANCE OF GREEN MUSSEL (*Perna viridis)* CULTIVATED ON RAFT AND LONGLINE IN THE COAST OF BAY OF BENGAL

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Roll No.: 0119/15

Registration No.: 714

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A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Marine Bioresource Science

Department of Marine Bioresource Science

Faculty of Fisheries

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Chattogram 4225, Bangladesh

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

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LIST OF ABBREVIATIONS

Acronym	Definition
SD	Standard deviation
SPSS	Statistical package for social science
Avg.	Average
Sp	Species
ANOVA	Analysis of variance
DO	Dissolve oxygen
TSS	Total suspended solids
Chl-a	Chlorophyll-a
Ppt	Parts per thousand
Mg/L	Milligram per liter
°C	Degree Celsius
<	Less than
>	Greater than
Et al	And his associates
Etc.	Et cetera
Ppm	Part per million
Cm	Centimeter
g	Gram
NTU	Nephelometric Turbidity unit
m/s	Meter per second
CVASU	Chattogram Veterinary and Animal Sciences University

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ABSTRACT

Green mussel (*Perna viridis*) is one of the most potential mariculture shellfish species not only in context of Bangladesh but also for the world. Developing of *P. viridis* culture techniques can be a great source of livelihood for many people. A thorough study on the feasible green mussel culture method in the context of Bangladesh is essential for farmers and investors to adapt this new and non-conventional species for commercial aquaculture farming. Therefore, the main purpose of this study was to compare the growth performance of the green mussel cultivated on raft and longline in the coast of Cox's Bazar, Bangladesh and investigate the relation of growth with the eco-physiological factors of *P. viridis*. Raft and long-lines were stationed in the coast of Bay of Bengal near Nuniar Chora, Cox's Bazar for green mussel culture. Water sampling was done twice a month basis for a period of 13 months from November 2019 to November 2020 and *P. viridis* were sampled from February 2020 to November 2020 after naturally spat settlement. Collected green mussel samples were brought to the laboratory to measure live weight and shell length for analyzing the growth performance. From the study, the maximum live weight and maximum shell length of *P. viridis* was found 54.56 g and 12.20 cm, respectively which was cultivated in the raft. There was no significant variation in growth of *P. viridis* cultivated on longline and raft. The growth increment of *P. viridis* was higher in August than the other months in both raft and longline culture methods. All the water quality parameters of the two culture sites were suitable for green mussel culture and had influence on the growth of green mussel. However, the study will be helpful for local communities to develop green mussel culture near the coast adjacent to their homestead in Nuniar chora, Cox's Bazar, Bangladesh.

Keywords: Green mussel, growth, longline, raft, Nuniar chora, economic viability, Cox's Bazar coast