

**EVALUATION OF HATCHERY GRADING SYTEM
OF *Penaeus monodon* SHRIMP HATCHERIES IN
NORTH WESTERN PROVINCE OF SRI LANKA**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirement of
The degree of
Bachelor of Science in Aquatic Resources Technology

By
GONADUWAGE LIHINI MADUSHANI PERERA

**Aquatic Resources Technology Degree Programme
Department of Animal Science
Faculty of Animal Science and Export Agriculture
Uva Wellassa University**

2016

ABSTRACT

At present, 45 hatcheries operate in the North Western Province of Sri Lanka to supply post larvae to the shrimp aquaculture industry. In 2014, considering 27 factors, including available facilities and level of Better Management Practices implemented, all the hatcheries categorized into 5 grades as A to E. All E graded hatcheries had been upgraded as a compulsory requirement to issue the aquaculture management license. This study was carried out to evaluate the hatchery grading system and 26 shrimp hatcheries were selected among 45, using stratified sampling and lottery method. Selected hatcheries were evaluated using the same criteria and graded as 3 of B, 20 of C and 3 of D grade. As their production records the actual production of the hatcheries is found to be 1.55 ± 0.74 times higher than the estimated capacity. PCA and Multiple Regression were done to identify the most effective factors to the grading and it reveals PC1 was positively influenced by all the factors ($p < 0.05$). 14 factors were negatively loaded in PC2 axis. Detailed Descriptive Analysis for production based factors reveals that, the percentage implementation of Wet feed, Dry feed, Spawning, Hatching and Indoor algae was recorded at 34.6%, 23.1%, 61.5%, 76.9%, & 46.2% respectively. It was recorded the proper water quality testing for the Total Vibrio Count or Total Bacteria Count was not followed by any hatchery. Record keeping is not comply with required information to evaluate the quality of the final product of post larvae. Legal right is identified as a compulsory requirement that essential to fulfilled by each hatchery prior to commence the production and should not be evaluated for the grading. Contradiction of these findings indicated that the necessity of revalidation of the hatchery grading system for better performance of the post larvae production.

Key words: - *Penaeus monodon*, Hatchery grading, Total Vibrio Count, Total Bacteria Count