

**Preliminary study of Salinity change on Vibrio count
and Gut – Muscle ratio of *Penaeus monodon* post larvae
(PL09 to PL 13).**

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 Animal Science

By

B.W.V.P.S.KUMARA

**Animal Science Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
2013**

ABSTRACT

Globally, shrimp farming has been a significant agro-based economic activity since the early 1970s. Shrimp farming showed a booming expansion and soon became a multimillion dollar industry (Islam et.al. 2004). But there were many risks and challenges, especially in the culture techniques and the degradation of environmental quality, biodiversity, and natural brood-stocks. In the wake of this development, the sector also generated a large demand for shrimp post larvae (PL). There are several methods which used to measure the quality of the post larvae in shrimp industry. Gut – Muscle Ratio is such a main parameter which comes under microscopic observation of post larvae. Management, Physical & biological characteristics lead to alter the GMR of shrimp post larvae. Under water quality parameters salinity of water is critical from hatching to grow-out stage. Availability of *Vibrio* bacteria also plays an important role with the health of early stages. Therefore this preliminary study was conducted to find out the effect of those two factors for the quality of post larval stages of the *Peneaus monodon*. One thousand one hundred twenty post larvae were selected for the study. Five hundred sixty post larvae were used as experimental sample and remain 560 PL were maintained for replacement stock. PL was obtained from same brood stock. Bulk stored tank was monitored from hatching stage to the nursery stage (PL6). Post larvae were selected at the PL stage 6. This selection was done randomly from nursery tank and transferred into glass tanks. Glass tank was partitioned into four quarters. 10 PL were introduced into one quarter. Glass tanks were placed inside the laboratory premises for regulatory mechanism of the temperature at 30°C. pH and Dissolved Oxygen were maintained at constant levels. Gut-Muscle Ratio of the post larvae was determined under microscopic conditions (x10). Twenty post larvae were observed from every tank at 9.00 a.m. from PL 9 to PL 13. Water samples were collected twice per day (8.00 a.m. and 8.00 p.m.) for bacterial detection. Water samples were diluted with sterilized distilled water up to 10x1 and cultured using TCBS agar medium. After 24 hours of incubation, plates were observed by using colony counter. Recorded data was analyzed by using Minitab 15 statistical software (Two-Way ANOVA, $\alpha - 0.05$). There is an effect of salinity and the *Vibrio* count to the Gut Muscle Ratio of *Peneaus monodon* post larvae. To obtain good quality post larvae the salinity should be 30ppt. At the salinity level of 31ppt, *Vibrio* spp bacteria multiplication was declined. Based on that, to obtain good quality larval production, Salinity of the sea water is ideal between 30ppt and 31ppt. *Vibrio* count must maintain at minimum levels for obtain quality post larvae.