Contamination of Bacteria in Artemia (*Artemia salina* Linnaeus, 1778) and Brackish water Flea (*Diaphanosoma* sp.) Culture Using Organic Waste Fermented Solution

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Abstract

Bacterial contamination in artemia and brackish water flea culture process were monitored from October 2008 to July 2009 at Samutsongkram Marine Shrimp Research and Development Center. Total count bacteria in artemia, brackish water flea and feed using in culture process were monitored every 3 months throughout the study. Feed using in this culture process was fermented organic matter solution which was prepared by fermenting the mixture of *Caulerpa racemosa*, *Soliria robusta*, *Acanthophora spicifera*, rap-rap, shrimp by-product and monosodium glutamate processing residue. Feed using for artemia was produced at 70 part per thousand (ppt) salinity while feed using for brackish water flea was produced at 15 ppt salinity. Fermented organic matter solution was fermented for at least 3 months before being used. After one year of study, we found the average total count bacteria and average total *Vibrio* sp. in artemia was $2.16 \times 10^8$ CFU/g and $3.70 \times 10^6$ CFU/g of artemia respectively. Feed using for artemia had average total count bacteria and average total *Vibrio* sp. at $2.12 \times 10^5$ CFU/ml and 7.0 CFU/ml, respectively. Average total count bacteria and *Vibrio* sp. in brackish water flea was $1.10 \times 10^8$ CFU/g and $8 \times 10^5$ CFU/g, respectively. For feed being used in this study, we found the average total count bacteria count and *Vibrio* sp. in feed solution was $2.00 \times 10^7$ CFU/ml and $14.50$ CFU/ml respectively. Average total coliform and fecal coliform bacteria in artemia and brackish water flea feed was 4.50, 2.00 22.00 and 13.80 MPN/100 ml, respectively. From this study, it can be concluded that artemia and brackish water flea culture which were produced by feeding with fermented organic matter solution had bacterial contamination level lower than standard. This artemia and brackish water flea culture system should be promoted as an alternative way to efficiently utilize organic matter in shrimp farm.

**Keywords:** organic fermenter, bacteria, *Artemia salina* (Linnaeus, 1778), *Diaphanosoma* sp.

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