11th Global Summit on

AQUACULTURE & FISHERIES May 24-25, 2018 Osaka, Japan

In-Vitro study of protein encapsulated in chitosan microcapsules for early feeding of fish larvae

Goh Chee Keong and Tang Lok Hing Republic Polytechnic, Singapore

In this paper, an attempt was made for encapsulation of chitosan loaded with egg yolks as protein source through layer-bylayer (LbL) assembly technique and followed by its *in-vitro* digestibility study, which is suitable for use in the early feeding of fish larvae. The chitosan-based microcapsules were designed to produce microcapsules with a suitable size-range for easy recognition and ingestion by marine fish larvae (50-100 μ m), sufficient stability in terms of protein leakage and appropriate digestibility by the simulated-enzymes of marine fish larvae guts. Desired particle-size and stability against protein leakages over 8 hours were successfully achieved by optimizing the encapsulation process conditions. The digestibility trend of the chitosan microcapsules loaded with egg yolks was found similar to that measured for Artemia nauplii, which is commonly live feeds used for the feeding of fish larvae. Thus, the outcome of the *in-vitro* evaluation showed a promising characteristic as artificial larval feed with respect to entrap nutrients for further development to partially or fully replace live feeds in fish larval cultivation.

Biography

Goh Chee Keong has obtained his Bachelor's Degree with honours in Industrial Chemistry from the University of Putra Malaysia. He has received his Master of Science (Material Chemistry) and PhD at the same university. Currently, he is a Senior Manager at Republic Polytechnic, Singapore and is involved in development, formulation and characterization of novel encapsulated artificial feeds for marine fish larvae, such as Asian seabass (Lates calcarifer), which is currently funded by the Ministry of Education Translational R&D and Innovation Fund (MOE-TIF).

goh_chee_keong@rp.edu.sg

Notes: