ADVANCES IN TROPICAL AQUACULTURE Tahiti, Feb. 20 - March 4, 1989
AQUACOP, IFREMER Actes de Colloque 9 p. 609

# 57

# Enrichment of live foods

**T. WATANABE**
*Laboratory of Fish Nutrition, Tokyo university of Fisheries. 5-7 Konan 4, Minatao-ku, TOKYO 108. Japan*

**Abstract** — *Live foods such rotifers and Artemia are still indispensable for mass propagation of larval fish. At present, more than 20 fish and crustacean species are mass produced in Japanese governmental fish farming centres and private hatcheries. Fry are either released into the coastal areas or used for commercial cultivation. This culture technology is rapidly developing with new species being introduced each year and larval rearing is increasingly identified as the number one constraint. Artemia is used most extensively, particularly for the mass production of Kuruma prawn,* ***Penaeus japonicus.***

*The dietary value of Artemia nauplii for fish and shrimp larvae is dependent on the geographical origin of the particular strain. This dietary value is mainly controlled by the essential fatty acid (EFA) composition. However, this can be manipulated and the direct and indirect methods of enrichment used in Japan are reviewed. The principal factor for fish is n-3 highly unsaturated fatty acids (n-3 HUFA) such as 20 :5n3 and 22 :6n3. Differences in rates of incorporation of n-3 HUFA into live food and their nutritional quality will be discussed from the viewpoint of the different lipid classes such as methyl esters and triglycerides. Results have shown that the enrichment in terms of n-3 HUFA incorporation into live feed by both the direct and indirect methods is very effective in improving the dietary value of rotifers and Artemia nauplii.*