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CHAPTER- 8

LIVE FEED; THE LIVING CAPSULE OF NUTRITION

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Introduction

Complete nutrition and adequate feeding are most important criteria while culture fish in captivity as it affects growth and metabolism in fishes. The nutrient requirements of all animals vary throughout their life cycle. Complex morphological and physiological changes invariably modify feeding and nutritional requirements. Nutrition of finfish during the embryonic stage is provided by the yolk sac and oil globules. The transition from an endogenous to an exogenous food supply, which marks the onset of the larval stage, is one of the most critical phases of the life cycle and is the period when much of the mortality of hatchery-reared stock occurs (De Silva and Anderson, 1995). Live feeds are proven to be essential first-feed for many larval fish, essentially all those that hatch from small eggs with limited yolk reserves and often immature feeding and digestive

functions. Live feeds provide larval fish with essential nutrients that are naturally 'microencapsulated' in bite-sized packages.

Live feed is live organisms produced in nature and include all plants origin phytoplankton and animal origin zooplankton lives grazed upon by fishes. Live feeds contain all the essential nutrients such as proteins (amino acids), lipids (fatty acids), carbohydrates, vitamins, minerals, and thus are commonly known as living capsules of nutrition (New, 1998). Live feed is indispensable link between endogenous and exogenous feeding of commercially cultured aquatic animals. Live food could be of microscopic in size and is necessary for rearing of larval fish and crustaceans as well as molluscs or until the animals can ingest formulated feed. Filter feeding organisms such as bivalves and mollusc may feed with live food even at post larval stage.

Providing suitable live feed at appropriate time play a major role in accomplishing maximum growth and survival of the young ones of commercially cultured aquatic animals. To realize maximum production and profitability, the nutritional components of natural foods must be recognized and quantified. Nutritional quality of live food organisms can enhance through different techniques of enrichment and bioencapsulation. Production of live food organisms continues to be a very crucial first step in the intensification of aquaculture.

Why live food is preferred over formulated feed for larvae?

As the larvae are tiny extremely fragile organism which is physiologically not fully developed, their culture is usually carried out under controlled hatchery conditions which require