Course Code: 547V02 **Duration: 30 Hrs**

LIVE FEED CULTURE TECHNIQUES

Course objectives:

- To understand the culture techniques of microalgae
- To learn the isolation and culture of zooplanktons
- To acquire the knowledge in Artemia
- To understand the culture techniques of copepods
- To learn the culture techniques of mealworms and tubifex worms

Unit I - Algal culture techniques: Physical and chemical conditions required. Collection, identification and isolation of microalgae. Preparation of various culture media. Preparation and maintenance of stock microalgal culture. Out-door and indoor culture techniques.

Unit II - Zooplankton Culture- Morphology, biology and life history. Daphnia, Moina, and Rotifers. General Culture conditions for freshwater and marine rotifers. Culture techniques. Enrichment.

Unit III - Utilization of Artemia in Aquaculture-Biology and Ecology of Artemia. Cyst Production. Biology of cyst. Hatching of cyst- decapsulation, harvesting. Nutritional quality of nauplii - enrichment for nutrients and disease control. On growing techniques for Artemia

Unit IV - Copepod Culture- Collection of wild zooplankton: Techniques. Zooplankton Nets. Grading. Transport and storage. Life cycle. Nutritional Quality. Mass Culture Techniques. Calanoids and Harpacticoida.

Unit V – Tubifex worms and Mealworms Morphology, biology and life history. General Culture methods for tubifex worms. Culture techniques of mealworms. Enrichment.

References

Anderson RA (Ed.) (2005). Algal culturing techniques". Academic Press. 596p.

Anuraj A, J Raymond Jani Angel, Venkatesh R Thakur, et al. (2015). Live food organisms in aquaculture. CIARI, Port Blair, p 23.

Holt G.J. (Ed) (2011). Larval Fish Nutrition. Wiley Blackwell. 435 p.

Josianne G. Støttrup and Lesley A. McEvoy. (Eds). (2003). Live Feeds in Marine Aquaculture. Blackwell Science. 337p.

Lavens P and Sorgeloos P (Eds.) (1996). Manual on the production and uses of live food for aquaculture. FAO Fisheries Technical Paper No. 361. Rome, FAO. 1996.

Course outcome

After completion of the course, students will be able to

- understand the importance of microalgae in aquaculture industry
- learn the methodology for isolation and mass culture of zooplanktons
- comprehend the methodology and culture techniques of artemia
- learn the methodology for isolation and copepods culture
- apply the novel techniques used to culture live feeds