VETERINARY TECHNOLOGY
(COMMERCIAL FISH FARMING/AQUACULTURE)
SKILL ENHANCEMENT COURSE (SEC)

CFF620S COMMERCIAL FISH FARMING/AQUACULTURE-III (HEALTH MANAGEMENT & PROJECT FORMULATION)

CREDITS: THEORY: 2, PRACTICAL: 2
MAX MARKS: THEORY: 30, PRACTICAL: 30
MIN MARKS: THEORY: 12, PRACTICAL: 12

THEORY (2 CREDITS)

UNIT 1: HEALTH MANAGEMENT OF FISH

Host, Pathogen and Environment Interaction. Disease development process. Stress in aquaculture and its role in disease development. Scope and current scenario of therapeutics in aquaculture. Health monitoring of commercially important aquaculture species, disease diagnosis of bacterial, fungal, viral diseases of fish and their control. Role of physical (injuries, health, cold) chemical (pH, salinity, toxins, ammonia, nitrogenous waste, endogenous chemicals and metabolites, free radicals, oxidants).

UNIT 2: PROJECT FORMULATION

Concept of entrepreneurship; entrepreneurial and managerial characteristics. Introduction to fish business management- Concept of management, management process (planning, organising, staffing, leading and controlling). Economies of an aqua-farm, Capital (recurring, non-recurring).Government and non-government agencies for finance and promotion of fish culture and breeding like, state fisheries departments, RKVY, NFDB, NABARD, JKEDI etc.

PRACTICALS (2 CREDITS)

Live and post mortem examination of fish. Techniques in disease diagnosis: microbiological, haematological, histopathological, immunological Demonstration of various chemotherapeutic agents. Disease treatment, estimation of dose, calculation of concentration, and administration of drugs & chemicals (copper sulphate ($CuSO_4$, $KMnO_4$, Chloromycetin etc). Prophylaxis and control of fish diseases. Workout of economics of different culture practices. Conducting market surveys, analysis of primary and secondary market data. Estimation of demand and supply using simple regression. Analysis of credit schemes of banks and the government.

BOOKS RECOMMENDED

1. Swain, P., Sahoo, P.K. and Ayyapan, S. 2006. Fish and Shellfish Immunology - An Introduction. Narendra Publishing House, New Delhi.

2. Pelczar, Michael J. 1993. Microbiology. Tata McGraw-Hill publishing Company Ltd., New Delhi.

3. Roberts, R.J. (Ed). 2001. Fish Pathology (Third edition). W.B. Saunders, London.

5. The Easy Aquarium By Zupo Valerio

6. Aquarium Plants: The Practical Guide By Pablo Tepoot

7. A Text Book of Fish Diseases By E. Amalacher

8. Fish Diseases and Disorders by Neha Charan.

9. Bacterial Diseases in the Marine Ornamental Fish and its Control By Ajith Kumar

10. Diagnosis and Control of Diseases of Fish and Shellfish By G. Bassleer

11. Fish Disease: Diagnosis & Treatment By E. J. Noga