

Aquaculture (Theory)

Unit 1: Aquaculture:

Difference between culture and capture fisheries. Concepts and history of aquaculture. An overview of global aquaculture and its status in South East Asia. Prospects of aquaculture in North East India.

Unit 2: Aquaculture Practices:

Classification of aquaculture based on salinity (freshwater, brackish water and marine water), temperature (warm water and cold water), species (finfish, shellfish, molluscs and seaweeds) and management intensity (traditional, extensive, semi-intensive and intensive). Farm mechanization.

Unit 3: Polyculture:

Concept of monoculture and polyculture. Composite fish culture: pond preparation, fertilization, liming, species selection, combination ratio, stocking density, feeding and harvesting. Economics of composite fish culture.

Unit 4: Integrated Fish Farming:

Principle of integrated fish farming and its advantages. Agro-based fish culture (paddy-cum-fish, horticulture-cum-fish), livestock-cum-fish (Pig-cum-fish, duck-cum-fish, poultry-cum-fish). Economics of different types of integrated fish farming.

Unit 5: Fish Farm Management:

Criteria of site selection, soil and water characteristics. Construction of fish farm: Nursery, rearing and stocking ponds. Water quality management: Application of different types of lime and dosage, application of fertilizers (organic and inorganic). Aquatic weeds and their control. Effect of algal bloom, predatory insects, weeds fishes and their control.

Suggested Reading:

1. Ahmed, S. H. (1998). Advance in Fisheries and Fish production. Narendra Publishing House, Allahabad.
2. Chakroff, M. (1982): Freshwater Fish Pond Culture and Management. Scientific Publishers Main Bhawan, Jodhpur.
3. Desilva, S. & Andensan, T. A. (1995). Fish Nutrition in Aquaculture. Chapman & Hall.
4. Jhingran, V. G. (2007). Fish and Fisheries of India. Hindustan Publishing Corporation (India) New Delhi.
5. Kumar, A. & Bandyopadhyay, P. (2008). Aquaculture and Fisheries. Daya Publishing House, Delhi-35..
6. Pandey, N. & Malik, D. S. (2008). Integrated Fish Farming. Daya Publishing House, Delhi- 35.
7. Sharma, U. & Grover, S. P. (1982). An Introduction to Indian Fisheries. Bishensing Mahendrapal Singh, Dehra Dun - 1.
8. Tilak, R. & Sharma, U. (1982). Game Fishes of India and Angling. International Book Distributors, Dehra Dun.
9. Timmernams, J. A. & Khan, H. (1979). Textbook of Fish culture, Breeding and Cultivation of fish. Fishing New Book Ltd. England.

Aquaculture (Practical)

1. Estimation and comparison of nitrate, phosphate, chloride and sulphate content from different natural water and farm water bodies.
2. Identification and classification of aquatic macrophytes.
3. Identification and classification of aquatic insects.
4. Analysis of soil from agricultural land/hilly areas/ fish farm (texture, moisture content, pH, conductivity, nitrate and phosphate,)

DISTRIBUTION OF MARKS:

1. Estimation of Nutrients
 2. Identification & classification of aquatic macrophytes/insects
 3. Analysis of soil
 4. *Viva – Voce*
 5. Laboratory record
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