

DEPARTMENT OF ZOOLOGY
CERTIFICATE COURSE ON ORNAMENTAL FISH CULTURE ZO 23 03

SYLLABUS

TOTAL- 30 HOURS

UNIT 1. INTRODUCTION TO ORNAMENTAL FISH CULTURE **12 HOURS**

1.1 Species of ornamental fishes, their taxonomy and biology. **7 hours**

Freshwater species - Live bearers and egg layers.

Marine ornamental species, Habitat and collection from nature.

Maturation, Breeding habits, Spawning, Parental care, Fertilization and development of eggs

Types of eggs-Pelagic and Demersal.

Hatching, larval rearing

Other marine ornamental organisms - anemones, lobsters, shrimps, octopus, starfish etc.

1.2 Collection and Transport **5 hours**

Methods of collection. Types of nets-Cast net, drift net, drag net.

Transportation of live fish.

UNIT 2. CONSTRUCTION AND MAINTENANCE OF AQUARIUM **15 HOURS**

2.1 Construction of home/public aquarium **7 hours**

Materials used - Wooden and metal frames, Frameless tanks. Sealants and gums. Aerators and filters. Handnets and other equipments. Water quality requirements- Temperature, pH, Salinity etc. Gravel/pebbles, plants and other materials. Ornamental objects and fishes. Control of snail and algal growth. Cleaning the aquarium –Siphoning, Water exchange.

2.2 Nutritional requirements of aquarium fishes. **5 hours**

Different kinds of feeds, Live feed culture (Daphina, Moina, Marine algae, Rotifers, Copepods, Artemia). Enrichment of live feed, Use of pigments for colour enhancement, Preparation of dry feeds.

2.3 Common diseases of aquarium fishes, diagnosis and treatment.

3 hours

UNIT 3. ECONOMICS OF ORNAMENTAL FISH CULTURE

3 HOURS

Aquarium keeping as a hobby, Fresh water and marine ornamental fish trade, Prospects of fresh water and marine ornamental fish –importing, exporting and income generation.

REFERENCES

- Alappat, H.J. & A. Biju Kumar 1996. *Aquarium Fishes (A Colourful Profile)*. B.R. Publ., Delhi, 106 pp.
- Atz, W. 1971. *Aquarium Fishes*. Pelham Books Ltd., London, 110 pp.
- Axelrod, H.R. & W. Vorderwinkler 1962. *Encyclopedia of Tropical Fishes with Special Emphasis on Techniques of Breeding*. TFH. Publ., Inc., NJ, 763 pp.
- Biju Kumar, A. & H.J. Alappat 1996. *A Complete Guide to Aquarium Keeping*. Books for All, Delhi, 80 pp.
- Dholakia, A.D. 2009. *Ornamental fish Culture & Aquarium Management*. Daya Publishing House, Delhi, 313pp.
- Faulkner, D. & J.W. Atz 1971. *Aquarium Fishes, Their Beauty, History and Care*. Pelham Books, London, 110 pp.
- Favre, H. 1977. *Dictionary of the Freshwater Aquarium*. Wardlock Ltd., London, 160 pp.
- Frey, H. 1961. *Illustrated Dictionary of Tropical Fish*. TFH. Publ. Inc., NJ, 768 pp.
- Gohm, D. 1984. *Tropical Fish*. Hamlyn Publ. Group Ltd., London, 143 pp.
- Gopakumar G. 2011. *Marine Ornamental fish Culture: Package of Practices*. CMFRI Cochin. 100pp.
- Innes, W.T. 1953. *Exotic Aquarium Fishes*. Innes Publ. Co., Philadelphia, 533 pp.
- Kurup, M.B. 2008. *Ornamental Fish Farming, Breeding and Trade*. Dept. Fish., Govt. Kerala, 280 pp.
- Meenakshi, J., N.K. Yadava & R.K. Gupta. 2010. *Freshwater Ornamental Fishes*. Mangalam Publications, Delhi, 397pp.
- Mills, D. 1987. *The Practical Encyclopedia of the Marine Aquarium*. Salamander Books Limited, London.

- Petrovicky, I. 1988. Aquarium Fish of the World. Hamlyn Publ. Group Ltd., London, 499 pp.

READING MATERIALS

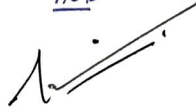
- Rataj, K. & R. Zikal 1971. Aquarium Fishes and Plants. The Hamlyn Publ. Group Ltd., London.
- Riddlei, P. 1947. The Aquarium. Innes Publ. Co., Phil., 365 pp.
- Sanford G and R. Crow 1991. *The Manual of Tank Busters*. Salamander Books
- Santhanam, R., N. Sukumaran & P. Natarajan 1984. A Manual of Freshwater Aquaculture. Oxford & IBH Publ. Co. Pvt. Ltd., New Delhi, 193 pp.
- Talwar, P.K. & A.G. Jhingran 1991. Inland Fishes of India and Adjacent Countries, Vols. I & II. Oxford & IBH Publ. Co., Pvt. Ltd., New Delhi, 1158 pp.
- Thabrow De WV. 1981. *Popular Aquarium Plants*. Thornbill Press.
- Wilkie, D. 1971. Aquarium Fish. Pelham Books Ltd., London, 214 pp

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