

Value Added Course B.Sc.III ZOOLOGY

“Aquarium Fish Keeping

Duration :-30 Hours (Theory &Practicals)

Course Coordinator: _Dr.Abdar M.R.

Course Code: VA-006

Course Name: -AQUARIUM FISH KEEPING

Introduction: An aquarium is a glass container which displays the aquatic organisms in a simulated natural environment by introducing aquatic plants, rocks, gravels, artificial decorative etc. Maintenance of physico-chemical and biological parameters of water inside the aquaria is of utmost importance. Different types of equipments are required for controlling aeration, water movement, temperature, suspended organic matter, illumination etc inside the aquaria. Utmost care should be taken while feeding aquarium fishes. Over feeding is always harmful to fishes. In effect, an aquarium is a biological entity. Each of its elements – water, glass, light, sand, gravel, plants, fish, make a harmonious whole, with the same ecological balance as exists in nature.

SELLECTION OF A TANK

A . Tank with a water capacity of 125-250 L is most conventional. An appropriate size would be an 80 cm tank (80x40x40cm) or a meter size tank (100x50x50cm). The most popular size of home aquarium is 60 cm length x 30 cm width x 40 cm height, with a capacity of 57 L (15 gallons). Never the less, aquaria size depends much on availability of space and point of attraction. Aquaria Tanks are usually measured as = Length x Depth x Height Aquarium tank is of prime importance. An aquarist must consider its shape, size and material used Tanks may be of several kinds: Metal frame tank, Plexi-glass tank , or All glass tank

B. AQUARIA TYPES: Based on water regime contained in the aquaria they may be of two types:

1. Fresh water aquaria,
2. Marine water aquaria

C. AQUARIA BOTTOM:The base of an aquarium is known as bottom. Over this base aquaria bed is prepared. This serves following two basic purposes: • To make the fish feel more at home, and • To provide a growing medium for aquatic plants. Unless a particular species of fish has special requirements, the composition of the bed is mostly governed by the needs of the plant to be placed in aquaria bed. Plants

suitable for the purpose can be grouped in following categories: • Rooted plants – Vallisneria, Sagittaria. • Cuttings – Fanwort, Hygrophila, Ceratophyllum, Limnophila. • Floating Plants – Lemna, Riccia, Salvinia

D. AQUARIA STAND, HOOD AND PLACEMENT • Aquaria stand is wooden/metallic structure on which aquarium is placed. This must be flat and level and capable of carrying the load of entire set. • Aquaria hood is the top most covering of an aquarium to keep the fishes confined in the tank, minimize water loss by evaporation, offers more protection against intruders and helps in light attachment.

E. FISHES OF CHOICE After maintenance of adequate water load in the aquarium (2.5cms of fish to each gallon of water) fishes of choice should be introduced in the aquarium. Aquarium fishes are both exotic and indigenous). Some of the popular aquarium fishes are listed below: (1) Barbustetrazona and B.ticto (2) Bettasplendens (3) Botiadareo (4) Carassiusauratus (goldfish) (5) Colisalalia (6) Colisachuna (7) Cyprinus carpio (8) Gambusiaaffinis (9) Hemichromisbimaculatus (10) Lebistes reticulatus (guppy) (11) Macropodusopercularis (12) Nemacheilus aureus (13) Poecilia reticulata (14) Pterophyllum scalare and P.eimekei (angelfish) (15) Tilapia macrocephala (16) Trichogaster trichopterus (17) Puntius ticto

F. PHYSICO- CHEMICAL REQUIREMENTS OF AQUARIA WATER Water plays an important role in survival and growth of fishes. Physicochemical regime of aquaria water should be maintained well within the recommended limits, viz., Temperature of 76 to 80 °F, pH - 7.6 to 8.4 and Specific Gravity - 1.002 to 1.007 (optimal). Using marine synthetic salt will improve the success in the brackish water setup compared to marine setup. The synthetic salt contains all the trace elements and buffers required to give the correct pH. The salt should be mixed at half the recommended strength. **J. FOOD AND FEEDING OF AUARIUM FISHES** Most of the aquarium fish are carnivores and their diet should reflect this. In most cases, lots of live food will be required but this depends upon the choice of species to be kept. Synthetic aquaria foods are available in market. Overfeeding should always be avoided

Objectives:

1. To Set up Aquarium fish Industry as cottage Industry.
2. To Know about the Endemic and Exotic species of Aquarium fishes.
3. To develop skill of handling and packing of aquarium fishes.
4. To transport of aquarium fish species.

Course Outcomes:

1. Understand the exotic and endemic aquarium fish species.
2. Knowledge about the transport, packing and handling of aquarium fish species.
3. Understand the biology of aquarium fish species.
4. Understand the sexual dimorphism of freshwater and marine water aquarium fishes.

Course Guidelines and other details:

Course Coordinator: Prof. (Dr.) Mohan RamchandraAbdar Contact No. 9422782135

Year of Implementation: Course syllabus will be implemented from academic year 2021-22 for B.Sc.&III Zoology Students.

Programme Duration & Hours: 30 Hours (theory & practical's)

Syllabus :

Sr No.	Name of Topic	Theory	Practical	Hours
1	Introduction to Aquarium Fish Keeping: The potential scope of Aquarium Fish Industry as a Cottage Industry, Exotic and Endemic species of Aquarium Fishes	03	02	05
2	Biology of Aquarium Fishes: Common characters and sexual dimorphism of Freshwater and marine water Aquarium fishes such as Guppy, Molly, Sword tail, Gold fish, Angel fish, Blue morph, Anemone fish and Butterfly fish	03	02	05
3	Food and feeding of Aquarium fishes: Use of live fish feed organisms. Preparation and composition of formulated fish feed	03	02	05
4	Fish Transportation: Live fish transport-Fish handling, packing and forwarding techniques	02	05	07

5	Maintenance of Aquarium: General Aquarium maintenance-budget for setting up an aquarium Fish Farm as Cottage Industry	03	05	08
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