

# AQUARIUM ACCESSORIES AND EQUIPMENTS

## CHAPTER 1 : AQUARIUM ACCESSORIES FOR SMALL SCALE UNITS

### 3.1.1 Introduction

A person maintaining ornamental fishes in his house/work place may need only limited equipments and accessories. On the other hand an entrepreneur may need a lot of equipments and accessories to satisfy his customer's needs.

### 3.1.2 Equipments and accessories needed for small scale ornamental fish farm

#### Glass / Fibre Glass Tank



A small tank made of sheetglass/floatglass or transparent fiberglass may be kept in a strong stand made of wood, steel etc. To prevent accumulation of dust particles a hood may be provided. Such hoods will serve as 'lid' for the tank.

#### **Accessories for fish tanks:**

To beautify aquarium tank, various accessories are used depending on one's taste and affordability. They are as follows :

#### **Hood:**

An enclosure housing light fixtures for aquarium illumination, usually incorporating a cover for the entire tank



Hood or tank cover is made of glass, wood or tin plate.

**Stand:** A support for an aquarium tank, usually not enclosed below the tank



To keep aquarium tank in position a stand made of wood or metal is required. It must be capable of carrying the weight of tank

**Light Source:** Aquarium lights to be fixed inside the hood give bright illumination to the inner environment and help to maintain healthy plants and fishes. Direct and excessive sunlight increases water temperature and development of algal bloom. Lamps may be fluorescent tubes, mercury vapour lamps or metal halide lamps. Lighting for 10 to 15 hours a day is considered sufficient for an aquarium of 5 l capacity a lamp with 10 watt is enough.

#### **Heaters:**



Heaters are required in cool places where the temperature is less especially during night hours. Heating is most commonly done by using immersion heaters with adjustable thermostat.

### **Air Pumps and Accessories**



In order to keep good water quality in the ornamental tanks and for maintaining the fish in a healthy manner, oxygenation of water is very important. For this purpose, air pumps costing Rs.200 to 500 per piece are available in the market. Air tubes and controlling devices are also needed to regulate the airflow to the system. Air stones are useful for production of small air bubbles and for efficient oxygenation.

### **Filter**



Biofilters and mechanical filters are frequently used to maintain ornamental fish in an aquarium. Some of the filters used in ornamental fish farming include under gravel filter, box filter, poly U filter, power filter, etc. Biofilter can be set up by ornamental fish culturist himself by knowing the principle and by using the easily available raw materials. For institutional establishment and for aquarium maintenance, biofilters coupled with a sump and overhead tank will be of much use. In such flow through systems, a small electric pump (of lesser capacity) will be needed to lift water from sump to overhead tank/filtering units.

### **Hand Nets**



To handle ornamental fishes without subjecting them to injury/diseases, hand nets are very important. Hand nets made of mosquito nets or velon screen or bolting silk are in common use. The brood stock of ornamental fish should normally be handled by hand nets made of velon screen (no.30-40).

## **CHAPTER 2: AQUARIUM ACCESSORIES AND EQUIPMENT** **FOR LARGE SCALE UNITS**

### **3.2.1 Aeration Devices**

If ornamental fishes are mass reared in pond systems, good aeration facilities are very much essential. Various aeration devices are used in aquaculture to oxygenate the water in the culture system. They can be mainly classified as surface aerators, diffuser aerators and turbine aerators. Besides, the water inlet system can also be set up in such a way to facilitate gravity aeration (splash board, race way, transversely corrugated inclined plane etc). Among the various aerators, paddle

wheel aerators (a surface aerator type) are readily available in the market at reasonable price (1 HP aerator costs Rs.15,000 to 20,000). Aspirator type aerators are also available in different brand names in global market. For oxygenation of pond bottom, aspirator aerators (air injectors) are efficient. If the depth of the culture system is more than 2m, one can choose aspirator type aerator.

### 3.2.2 Pumps and pipe lines

For mass rearing of ornamental fishes, the culture system should be free from any weed fish and predator fish. For keeping the weed fish and predator fish at bay, it is advisable to avoid using water from natural water bodies such as rivers, irrigation tanks, reservoirs, etc. Underground water with good quality especially from rich aquifers is always preferable. In the above background, quality pumps are highly essential. In order to maintain good water quality, water exchange may be needed under high density stocking. In such cases, to carryout periodic flushing and emergency irrigation, pumps assume priority.

### 3.2.3 Other equipment and accessories

To bring brood stock of fish from far off places to the farm, fish transportation tins are needed. In addition to brood stock, transportation of ornamental fish seeds also needs certain common accessories. Polythene bags are needed for fish transport. An oxygen cylinder with a pressure gauge is highly essential for oxygenating the water kept in the transportation tin and polythene bags. To make the eggs hatchout, hapas made of gada cloth/bolting silk/velon screen are also essential.

### 3.2.4 Food / feed production units

For the production of live food organisms, cement tanks and FRP tanks of assorted size will be beneficial. To prepare fish feed pellets, mixers, grinders, steaming devices, pelletizers, driers, etc., are needed in commercial ornamental fish farms. To produce pure algal culture (single cell food needed for baby ornamental fish), algal culture units with air conditioned facilities, illumination system, containers, autoclave etc, may be needed in large scale intensive aquarifarm.