

SEM IV ZOOA/ZOOG

SEC (B)

Unit 5: Maintenance of Aquarium

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- ✓ An aquarium is a miniature form of an ecosystem which adds to the beauty of our home.
- ✓ This natural “living jewels” makes our living room more attractive and reduce the tensions experienced by the family members or the visitors.
- ✓ The major advantage of aquarium keeping is the low expenditure incurred when compared to other pets.

History of keeping aquarium fishes as pets

- ❖ The idea of aquarium fish keeping is as old as recorded in history.
- ❖ The Sumerians, Assyrians and Egyptians have all kept fish in ponds.
- ❖ By the end of the 17th century gold fish was introduced in several countries and became popular in England and Scotland.
- ❖ The opening of the fish house in London Regent Park during the spring of 1853 is the world's first aquarium.

Fabrication of aquarium tank and accessories

For the safety and reliability of aquarium tank these factors should be considered:

- ☐ Aesthetic beauty
- ☐ Size and shape of the tank
- ☐ The volume of water

Table 1: Size of the tank and required thickness of the glass

Tank size in feet	Thickness in mm
LxBxH	
2x1x2	4
3x1x2	6
4x1x2	8
3x2x2	10
4x2x2	10
5x2x2	12
6x2x2	12
7x2x2	12

Additional care-

- ✓ There is no additional cross belt in the upper portion of the tank up to a size of 3x1x2.
- ✓ The tanks above 3x1x2 size and up to 4x2x2' size requires additional cross belt on the upper side.
- ✓ Above 4x2x2' size needs beading and cross link with a size of two inch.
- ✓ Recently, imported modular tanks of various sizes are available in the market.

Fabrication of the tank

- ❖ Fabrication of aquarium tank is an art which can be learnt within two to three days of practical experience.
- ❖ The good quality glass, gum, glass cutter and silicone sealant can be purchased from glass merchants.
- ❖ When taking measurement for cutting the glass or giving order care must be taken about the side glass (width wise glass).
- ❖ Regarding the width; deduct two times thickness of selected glass from the width of base glass.

Fabrication of the tank

Step 1: The base glass must be placed on a leveled floor after pasting sealant near to the edges for fixing the other side glass.



Fabrication of the tank

Step 2: Then sealant must be pasted along two sides of lengthy glass and fix above the base glass. Later paste sealant on one edge of side glasses and fix it in the corner of lengthy glass. Finally attach the lengthy glass to the previous one.



Fabrication of the tank

Step 3: After finishing the mould, firmly tie a sting covering four sides of the tank for avoid sliding the glass while pasting sealant in the corners. **To keep them in position in a fixed manner adhesive tapes are applied.**



Step 4 : For complete fixing, keep the fixed glasses in position firmly, overnight.

Step 5 : After 24 hrs pour water to check for any leakage, if any leakage is present adhesive can be applied and then dried.



Aquarium installation



Round aquarium



Plants in aquarium



Aquarium with filter

Height of the tank- The aquarium tank should always be kept at height of 2.5 feet for viewing from standing and sitting positions in a living room.

Hood and lighting-

- ❖ The tank is covered with beautiful roofs made up of plywood or any other wood.
- ❖ The roof is provided with feeding facility and the facility to attach suitable lighting.
- ❖ The tank must be placed not far away from the window, (but not close to the window) which helps to allow some natural light into the aquarium and to promote the growth of plants inside the tank.
- ❖ Keeping the tank near to the window invite excess algal growth, which will destroy the beauty of the tank.
- ❖ For easy operation and safety providing electrical plug points near to the tank is ideal.



Commercial Chinese type Aquarium

Accessories for tank setting

Items	Units
1. Aquarium tank	1
2. Aquarium hood	1
3. Aerator	1
4. Air tube	2 meter
5. Air regulator	2
6. Air stone	2
7. T-joint and I-joint	2
8. Florescent light with fittings	2.
9. Thermocool sheet (suitable size)	1
10. River sand (3 to 4mm) enough quantity	
11. Rocks and drift wood enough quantity	
12. Aquarium plant"	
13. Thermo meter	1
14. Heater with thermostat	1
15. Power filter	1
16. Hand net	1
17. Filter bed	1
18. Magnetic cleaner	1

Advance preparation for tank setting-

- ❖ Necessary drift wood, river sand and rocks should be thoroughly washed under running water till water turns clear.
- ❖ Some quantity of gravel and river sand(raw) mixed with vermicompost is better for growth of the plants.
- ❖ This mixture should be spread just below the washed river sand.
- ❖ Landscaping is to be decided well in advance, we can use silicone sealant for making desired shape in wood or in rock.

Reference

Venugopalan, K. M. *Aquarium Making and Maintenance*.
Manual published for Winter School on Technological Advances
in Mariculture for Production Enhancement and Sustainability.
Central Marine Fisheries Research Institute, Kochi.

Photo/Plates Courtesy:

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