

CULTURE OF INFUSORIA

Introduction

Successful production of seed of finfish and shellfish species in aqua hatcheries mainly depends on the supply of abundant quantity of proper live food organisms at appropriate time. Live food organism in this respect serve as "Living Capsules of Nutrition". Providing appropriate live food organisms at appropriate time plays a major role in achieving optimum growth and survival of the young ones of finfish and shellfish. Selection of suitable live food organisms depends on mouth size, age and size of larvae of finfish and shellfish. Infusoria are most primitive of all organisms in the animal kingdom. Besides being small in size, they are soft bodied and nutritionally rich. Owing to these qualities, they serve ideally as starter feed for early stages of finfish and shellfish in aqua hatcheries. The tiny microscopic single celled animalcules, collectively called as infusoria, belong to the Class Ciliata under the Phylum Protozoa of the animal kingdom. Infusorian microorganisms inhabit ponds and tanks of freshwater, brackish water and marine habitats having decaying weeds, organic matter and foul smelling debris. Infusoria feed upon the microorganisms such as bacteria, algae, and flagellates and also on debris. Cilia present on the body act as chief locomotory and food catching organelles in most of the infusoria. Two types of reproduction occur in infusoria i.e. asexual and sexual. Asexual reproduction occurs by binary fission and sexual reproduction by conjugation.

Culture of infusoria

The most commonly cultured freshwater species are *Paramecium* and *Stylonychia*. These organisms are cultured using several methods. A few common methods are described below

By using banana peelings

Keep 2 to 3 banana peelings in a big jar or glass aquarium filled with filtered freshwater. For an aquarium containing about 50 litre of water. Cover the container with cloth. It will prevent the entry of mosquitoes and flies, but will allow entry of air. Keep the container in a cool place where natural light is available. In a day or two, the water will turn milky and may also emit foul smell. This is due to the multiplication of a large number of bacteria causing decay of banana peelings. A film of slime will be formed on the water surface. In about 4 to 5 days, the water will turn clear, becoming transparent with light yellowish colour. This is because of the floating spores of infusoria in the air, which have settled on the water and are feeding upon the bacteria and multiply in large numbers. Subsequently, the film of the slime on the water surface breaks up and disintegrate. The culture is now ready for feeding the early stages of fish larvae. Once the culture reaches its peak density, it must be harvested, if not, the density will suddenly fall due to lack of space and oxygen depletion. The culture will sustain upto 2 to 3 weeks if regular harvesting is done and a few drops of milk is added to it regularly.

By using hay infusion

Take dry hay (straw) into a pan and pour boiling water over it. Transfer the hay together with water to a jar or aquarium. After this, repeat the process as described under banana peeling method above.

By using lettuce leaves

Aquarium set-up with banana peelings for culture of infusoria. In place of hay, lettuce leaves can also be used for the culture of infusoria. But in this case, pouring of boiling water will not be required, plain water will do. After this, follow the same process as stated for banana peelings above.

By using milk

Add a teaspoon of skimmed milk or two pinches of milk powder to the culture tank filled with 50 litre of water. Thereafter, follow the same process as described for using banana peelings.

By using apple snail

Keep the snail, *Ampullaria globosa* in an aquarium and feed with lettuce leaves or water plants such as Hydrilla. The droppings (faeces) of snail will contain half digested leaves and will give rise to a large population of infusoria, when added to the water.