

## BREEDING HABITS OF SOME ORNAMENTAL FISHES FROM LATUR DISTRICT (M.S.) INDIA

Dr. Korde Seema Sheshrao<sup>1</sup>, Pathan A.V.<sup>2</sup>

<sup>1</sup>Head, Department of Fishery science, Azad Mahavidyalaya, AUSA Dist. Latur 413512

<sup>2</sup>Department of Zoology, Azad Mahavidyalaya, AUSA- 413520, Maharashtra, India.

Email: [seemakorde9@gmail.com](mailto:seemakorde9@gmail.com)

### ABSTRACT

Present study deals with study of captive breeding of economic ornamental fishes which is very important not only for a sustainable trade of these species but also to conserve the natural stock. Breeding of popular exotic species is also undertaken to meet the high demand of the local aquarium fish market. Present study shows various aspects of breeding comprise selecting the breeding pair, conditioning the brood fishes, observing spawning and raising its young. According to the breeding habits of fish, the breeding tanks have to be prepared. Fishes either produce egg or live young. In this study average Fecundity and Spawning/ year was studied in some ornamental fishes including Fighting Fish, Gourami, Oscar, Zebra Fish, Gold Fish, Angel Fish, Tiger Barb, Kissing Gourami, Guppy, Xiphophorus and Black Molly

**KEYWORDS:** Ornamental Fishes, Fecundity Spawning,

### INTRODUCTION

Ornamental fish keeping is one of the most popular hobbies in the world today. The growing interest in aquarium fishes has resulted in steady increase in aquarium fish trade globally. The trade with a turnover of US \$ 5 Billion and an annual growth rate of 8 percent offers a lot of scope for development. The top exporting country is Singapore followed by Hongkong, Malaysia, Thailand, Philippines, Sri Lanka, Taiwan, Indonesia and India. The largest importer of Ornamental fish is the USA followed by Europe and Japan. The emerging markets are China and South Africa. Over US \$ 500 million worth of ornamental fish are imported into the USA each year.

India's share in ornamental fish trade is estimated to be Rs 158.23 lakh which is only 0.008% of the global trade. The major part of the export trade is based on wild collection. There is very good domestic market too, which is mainly based on domestically bred exotic species. The overall domestic trade in this field cross 10 crores and is growing at the rate of 20 per cent annually. The earning potential of this sector has hardly been understood and the same is not being exploited in a technology driven manner. Considering the relatively simple technique involved, this activity has the potential to create substantial job opportunities, besides helping export earnings.

A certain number of fish are maintained in aquaria in homes, hotels, work places and other public purpose spots on account of their beautiful colours, agile swimming activities and attraction. These fish are more popularly known as 'ornamental fishes'. Ornamental fish is often used as a generic term to describe aquatic animals kept in the aquarium for hobby, including fishes, invertebrates such as corals, crustaceans (e.g., crabs, hermit crabs, shrimps), mollusks (e.g., snails, clams, scallops), and also live rock. Live rock is a general term for any type of rock encrusted with, and containing within its orifices, a wide variety of marine organisms including algae and colorful sessile invertebrates. Ornamental fishes form an important commercial component of aquaculture, providing for aesthetic requirements and upkeep of the environment. Aquarium keeping of fish began in 1805 with the first public display Aquarium opened at Regent's park in England in 1853. Development of aquaria picked up further and by 1928, there were 45 display aquaria open to public, with over 500 aquaria presently functioning worldwide.

## MATERIAL AND METHOD

The present work was conducted at department of zoology Rajarshi Shahu Mahavidyalaya, Latur, District Latur, Maharashtra state, India.

The basic requirements for successful breeding and rearing of ornamental fish are adequate space, quality water and sufficient feed. Considering this the following investments are required for breeding Ornamental fish species as shown in fig.1.

- 1. Tanks:** The tanks can be of RCC or brick masonry work having flat bottoms with inlet and outlet pipes. Clay, cement, fibre glass or plastic tanks can also be used. Rearing of fishes should be done in large tanks. Size of the tanks vary according to the space, the number and type of fish cultured.
- 2. Aquariums:** Glass tanks of varying size are required for breeding. Small glass bottles of 250 ml are used for keeping individual male fighter fishes. Number and size of the glass tanks depend on the specific breeding / spawning behavior of the species selected.
- 3. Overhead tank:** An overhead tank of suitable size for storing and to enable sedimentation of water is required.
- 4. Water Supply:** Deep tube wells would be the best source of water. Recycling of water through bio-filters or other sort of filtering mechanism can be tried. Other sources like dug wells, Municipal water if available can also be used. A small pump to lift the water to overhead tank and a network of pipes are needed to feed the culture tanks.
- 5. Work Shed:** Work shed should be designed in such a way that the tanks get filtered sunlight. Translucent HDPE sheets can be used. This also protects the culture tanks from falling debris and bird dropping etc.
- 6. Aeration equipment's:** A blower pump with network of tubes for aeration is a must. Continues power supply should also be ensured through generator set or UPS or inverter



Betta splendens



Trichogaster gourami



Astronotus ocellatus



Brachydanio rerio



Carassius auratus



Pterophyllum scalare



Puntius tetrazona



Helostoma temminckii



Poecilia reticulata



Xiphophorus maculatus



Poecilia sphenops

Fig. 1. Ornamental fish species selected for present study

## OBSERVATION & RESULT:

### Culture/Rearing:

The culture/rearing of these fishes can be taken up normally in cement tanks. Cement tanks are easy to maintain and durable. One species can be stocked in one tank. However, in case of compatible species two or three species can occupy the same tank. Ground water from dug wells / deep tube wells are the best for rearing.

**Feeding:** All young fish are fed mainly with Infusoria, Artemia, Daphnia, Mosquito larvae, Tubifex and Blood worms. For rearing, formulated artificial or prepared feed can be used. At present no indigenous prepared feed for aquarium fish is available. The amount and type of food to be given depends on the size of the fry. Feeding is generally done twice in a day or according to requirement. For rearing from fry stage dry/ prepared feed can be used.

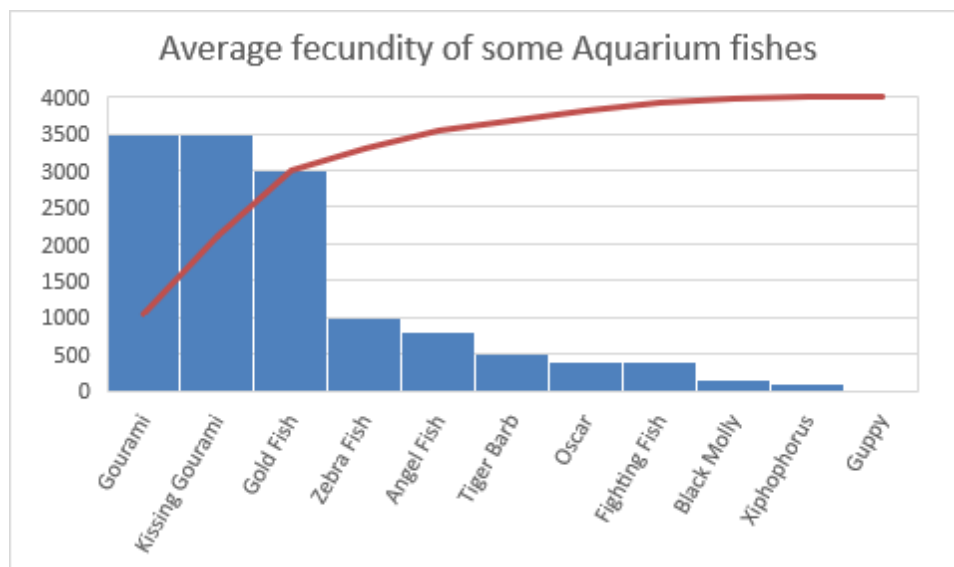
**Breeding:** The method of breeding is based on the family characteristics of the fish. The success of breeding depends on the compatibility of pairs, the identification of which is a skill born out of experience. Generally the brooders are selected from the standing crop or purchased and reared separately by feeding them with good

live food. However, it is always better to buy good brooding stock. Otherwise, the original characteristic of the species keeps on getting diluted because of continuous inbreeding. The results were shown in table.1. and Graph.1 and Graph.2.

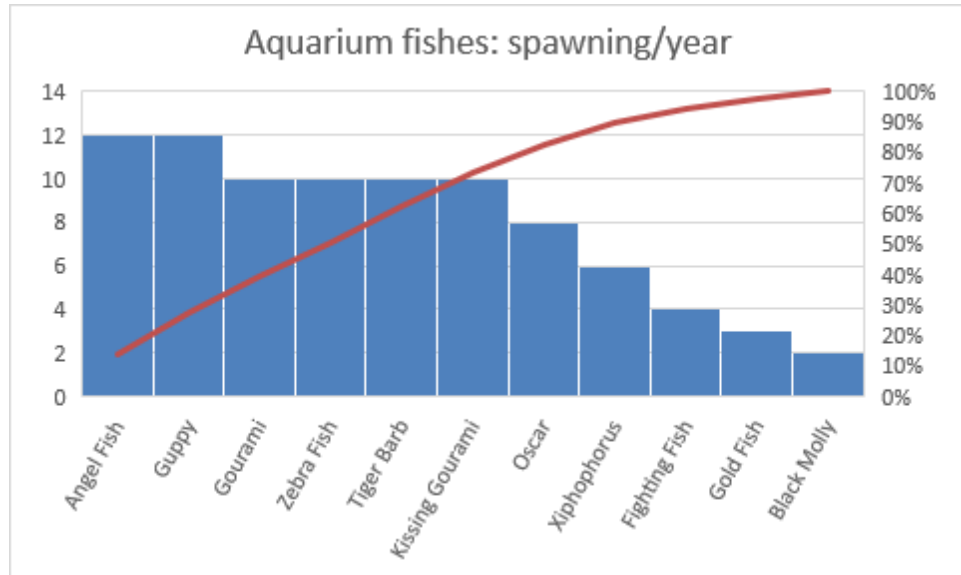
**Table.1. Showing annual data of aquarium fishes, average fecundity and spawning per year**

Sr. No.	Common Name	Scientific Name	Average Fecundity	Spawning/ year
1	Fighting Fish	<i>Betta splendens</i>	390	04
2	Gourami	<i>Trichogaster gourami</i>	3500	10
3	Oscar	<i>Astronotus ocellatus</i>	400	08
4	Zebra Fish	<i>Brachydanio rerio</i>	1000	10
5	Gold Fish	<i>Carassius auratus</i>	3000	03
6	Angel Fish	<i>Pterophyllum Scalare</i>	800	12
7	Tiger Barb	<i>Puntius tetrazona</i>	500	10
8	Kissing Gourami	<i>Helostoma temmincki</i>	3500	10
9	Guppy	<i>Poecilia reticulata</i>	20	12
10	Xiphophorus	<i>Xiphophorus maculatus</i>	90	06
11	Black Molly	<i>Poecilia sphenops</i>	142	02

**Graph. 1.** Showing Average fecundity of some aquarium fishes



Graph. 2. Showing spawning/year of some aquarium fishes



### CONCLUSION:

It is concluded that reproductive cycle (fecundity-length, mean length at sexual maturation, sex ratio, maturity development stages, and reproductive season) is related with fecundity and spawning per year. This study will help in popularization of ornamental fish farming in local area and in turn will help to set profitable small scale ornamental fish farm in small space under the hardy climatic conditions (low and high temperature) with less investment.

### ACKNOWLEDGMENTS

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