



A STUDY ON ORNAMENTAL FISH SHOPS OF SELECTED AREA IN HARYANA AND DELHI, INDIA

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(Received on October 25, 2025; Revised on November 15, 2025; Accepted on December 14, 2025)

ABSTRACT

Fish make us aware of life underwater. They help us to understand the aquatic ecosystem and diversity of life. Their different shapes and colours attract and gets everyone attention. Culturing ornamental fishes or 'aquariculture' refers to farming and controlled cultivation or propagation of aesthetic, chromatically diverse and visually compelling fishes in a man-made ecosystem or aquariums. "Living jewels" is another name given to ornamental fishes. Cultivation of economically important ornamental fishes provide additional opportunity for the expansion of aquaculture industry. This study aims to get valuable insights from the shop owners particularly of Delhi and Bahadurgarh area in Haryana, India. For this study, total five shops were selected, two shops in Bahadurgarh, Haryana and three shops in Delhi. The collection of data is done by field survey and personal interview. This study provides a collective outlook of the characteristics and problems faced commonly in ornamental fish business.

Keywords: Aquarium accessories, aquaculture industry, living jewels, ornamental fishes, ornamental fish business.

INTRODUCTION

Fishes are natural resource, having an aquatic type of habitat. Fishes served as a fundamental source of nutrition for millennia and have ornamental and aesthetic value in domestic settings for centuries. Being an excellent source of protein and significantly valued for their oil, fishes are the natural source of polyunsaturated fatty acid and offers health benefits to humans. Fishes have consistently been recognized for their high nutritional content, wherein some are very attractive to the eyes and provide calmness. The diverse shapes and attractive colours of ornamental fishes have captured the heart of millions, earning them the fitting title of "Living Jewels".

Asia is the home to 3500 fish species (Kottelat & Whitten, 1996). The Asian region provides approximately 60% of the marine and freshwater ornamental fish in global trade (Raja et al., 2010). India is considered as a mega-diverse region in terms of Ichthyofaunal diversity. Western-Ghat region of India

is known for its biodiversity, with many native ornamental fish species. Majority of ornamental fishes

are imported in India from Singapore, Hong Kong, Malaysia, USA, China, and Japan (Patel et al., 2023, Rani et al., 2014).

Pet keeping of ornamental fishes at homes was initially done by the ancient Romans. Later in 18th century, people of England and Scotland have also started rearing of ornamental fishes. Now ornamental fish rearing based on colour, design pattern and body shape is rising across the world. Many countries are engaged in the global business of ornamental fish trade wherein approximately 2500 species of fishes are available in the market, including 1500 species of freshwater fishes (Patel et al., 2023). Due to its commercial potential the ornamental fish farming is establishing its place in global market. Many Asian and European countries have also started capturing and rearing of different ornamental fish breeds. Globally, pet keeping ornamental fishes have become the second most popular habit after photography (Patel et al., 2023).

Ornamental fishes really are nature's wonderful creation. Most common method to keep them is by using aquarium, plastic tanks or garden ponds as a method of decoration, recreation and leisure. Ornamental fish business is growing rapidly due to its strong demand and attractive prices. Home aquariums have shifted from traditional glass tanks to imported moulded aquariums. There is increasing demand for aquariums in hotels, hospitals, airports, banks etc. as a means of decoration. Initially in India, four states including Tamil Nadu, Maharashtra, West Bengal and Kerala were engaged in ornamental fish trade.

Many rural and urban areas are economically benefited by aquaculture as it provides employment opportunities. With discovery of new fish species yearly, their presence is still declining which highlights the need for more in-depth research for sustainable and ethical distribution of ornamental fishes (Shraborni et al., 2024). Presence of fish parasites indicates poor water quality and hygiene (Biswas et al., 2023, Budakoti, S. B. (Dec2023). Moreover, providing probiotics such as Bacillus subtilis can help to improve fish immunity and better survival chances (Ghosh, et al., 2008).

MATERIAL AND METHODS

To carry out this study, shops at Karampura and Lakshmi Nagar area of Delhi and Bahadurgarh area of Haryana were visited. To collect data, field survey along with personal interview was carried out.



Fig.1: Survey of ornamental fish shop
Information gathered from shop owners include their educational background, types of ornamental fishes auctioned, aquarium tanks most frequently chosen by buyers, health status & diseases of ornamental fishes, common nutritional & medicinal requirements and the economic importance of ornamental fish business.

RESULTS AND DISCUSSION

Sample size includes five shops. All the shops mainly dealt in selling fishes, aquariums, fish food and their accessories.

Age of shopkeepers: Total five shopkeepers were interviewed during this study. All the shopkeepers were male. Age of shopkeepers varied from 30 to 50 and above 50 years. One shopkeeper was of 30 years, two shopkeepers were in the age group 30 to 40 years and one shopkeeper was above the age of 50.

Educational qualifications and experience of the shopkeepers: Among these 05 shopkeepers, 03 were 10th pass, 01 was 12th pass and 01 was graduate. All these shopkeepers had more than 5 years of experience in this field.

Available aquarium accessories and their prices: A variety of important aquarium accessories were available in these shops, such as thermometers, aerators, filters, glass heaters etc. Decorative items like toys, plants, colourful stones, LED light and sand options were also available in variety.



Fig.2: Aquarium accessories in ornamental fish shop

Table 1. Aquarium accessories and their respective price

Category	Price per piece (in Rupees)
Thermometer	200-350
Glass Heater	250-600
Controller	35-60
Hood	350-1200
Joint	5-25
Others	50-1000



Procurement of Live specimen:

Around 93.3% shop owners revealed that the live specimen procurement is mainly from Maharashtra, West Bengal, Gujarat, and Tamil Nadu.

Clinical signs/observations at the time of visit/physical examination:

During the visits, it was noticed that most of the fishes were healthy. However, when the shop owners were asked and during the observation, skin infection is the most common problem. Some fishes are bearing long, thread-like structure to their vent and very few fish had ‘anophthalimia’ (absence of one or both eyes).

Available Ornamental Fishes in Shops:

Commonly available ornamental fishes in different shops were Gold Fish, Colourful Tetras, Koi Carp, Guppy, Molly, Gourami, Albino Sucker Catfish, Tin Foil Barb, Indonesian Tiger, Red Tail Shark, Rainbow Shark, Polar Parrot, Black Sucker Catfish, Red Parrot, Other Fishes

Table 2. List and percentage of ornamental fishes available in shops

S.No	Name of the Fish	Percentage
1	Gold Fish	11.98%
2	Tetras Fish	9.78%
3	Koi Carp	7.39%
4	Guppy Fish	7.58%
5	Molly	6.59%
6	Gourami	8.38%
7	Albino Sucker Catfish	6.19%
8	Tin Foil Barb	7.19%
9	Indonesian Tiger	0.4%
10	Red Tail Shark	3.99%
11	Rainbow Shark	5.79%
12	Polar Parrot	7.58%
13	Black Sucker Catfish	4.99%
14	Red Parrot	3.99%
15	Other Fishes	9.98%

Table. 3 Minimum and Maximum prices of different Ornamental Fishes

S.No	Fish Type	Minimum price in Rs.	Maximum price in Rs.
1	Gold Fish	30	120
2	Tetras Fish	28	75
3	Koi Carp	80-90	200
4	Guppy Fish	25	70
5	Molly	35	80
6	Gourami	80	350
7	Albino Sucker Catfish	45	100
8	Tin Foil Barb	100	200
9	Indonesian Tiger	150	1000
10	Red Tail Shark	40	150
11	Rainbow Shark	40	120
12	Polar Parrot	30	100
13	Black Sucker Catfish	50	200
14	Red Parrot	45	180
15	Other Fishes	30	300

Types of medicine or drug used for the treatment of fishes:

Most commonly and effectively used medicine or disinfectant is Acriflavine and KMNO4 (Potassium Permanganate). Some shop owners used generic company-based medicines , salt treatment, and treatment with methylene blue.



Fig. 5 Some company-based medicines and water cleaner

Table 3. Concentration of medicines used for some ornamental fishes

Name of the Fish	Concentration of Medicine Used	Remarks
Guppy	Acriflavine 50%	Effective
Goldfish	KMnO4 20%	Used for fungus
Molly	Company based medicine 10%	Preventive dose
Indonesian Tiger	Salt treatment 10%	Stress control
Tetras Fish	Methylene Blue 10%	Antifungal

Constraints / problems faced by shopkeepers in ornamental fish business:

During the study shopkeepers have discussed about the constraints they are facing in ornamental fish business-

1. Lack of ornamental fish hatcheries
2. High Mortality Rate of ornamental fishes (death rate) (50%).
3. Health of fishes due to water quality management (15%).
4. Transportation issues (15%).
5. Power supply cut impacts the aerators & filters causing stress or death of fish (5%)
6. No insurance of fishes (5%).
7. Lack of supportive government policies (10%).

CONCLUSION

In this study, focused survey about shop owner was done. Data collected for this study include the educational qualifications of shopkeepers, their work experience, variety of auctioned fishes, aquarium accessories, health management and nutrition of ornamental fishes.

Mostly shopkeepers between the age of 31-50 years are engaged in this business, with experience of more than 05 years. All the shop owners were using rectangular shaped aquariums. Aerators and filters were commonly used with tap water from daily supply. Variety of decorative items like colourful stones, artificial plants, lights, etc. were available in shops. The most common fish disease was skin infection. Sometimes long thread-like structures were also found to be attached at fish vents and rarely the

disease ‘anophthalmia’ which results in loss of one or both eyes were observed. In order to cope up with these diseases, shopkeepers were using Acriflavine, KMNO4, Methylene Blue, salt treatment and probiotics.

Availability of fish stock was moderate due to the lack of local suppliers and breeders.

Moreover, the demand for exotic fishes was very low due to high cost and less natality rate.

Shopkeepers are facing many problems in this ornamental fish business, most common is the high mortality rate, transportation, lack of governmental subsidies and schemes. Government can provide support to ornamental fish vendors with the development of schemes related to financial assistance, marketability and insurance of costly exotic fishes.

In conclusion, this study provides a collective view of the various characteristics of ornamental fish business and challenges faced by shopkeepers. After face-to-face discussion with shopkeepers engaged in this business, the study also highlighting the crucial need of some good Government policies for the betterment of the ornamental fish keeping business ethically.

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