

*Breeding of Polar Blue Parrot (*Amatitlania nigrofasciata* blue): A Unique Freshwater Cichlid*

Gourav Ranjan Padhi*, Roshan Kumar Ram, Pravesh Kumar, Mogalekar H.S. and Aditi Banik

College of Fisheries, Dholi, Muzaffarpur- 843121, Bihar

Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur- 848125, Bihar

Corresponding Author

Gourav Ranjan Padhi

Email: ranjangourav111@gmail.com



OPEN ACCESS

Keywords

Polar blue parrot, Ornamental fish, Breeding, Parental care

How to cite this article:

Padhi, G. R., Ram, R. K., Kumar, P., Mogalekar, H. S. and Banik, A. 2025. Breeding of Polar Blue Parrot (*Amatitlania nigrofasciata* blue): A Unique Freshwater Cichlid. *Vigyan Varta* 6 (2): 153-157.

ABSTRACT

Polar blue parrot (*Amatitlania nigrofasciata* blue) fish has recently gained attention among hobbyists and ornamental fish enthusiasts due to their intriguing behavior and responsiveness to human activity. This is hardy fish and easy to handle and, making it popular choice for aquariums. This fish exhibits unique breeding behavior and strong parental care, ensuring high offspring survival rates and ease of rearing. The significant sexual dimorphism facilitates easy sex identification during breeding. Adaptable to captive conditions, it can reproduce 3–4 times annually, with fry displaying high survival rates. The breeding process begins with mate selection, followed by the cleaning of a substrate where the female lays eggs. Fertilized eggs remain attached to the substrate for two days before hatching, after which fry begin swimming. Initially, fry fed by help of mother, later transitioning to natural food and crushed supplemental feed consuming independently. However live feed is the best for good growth and coloration. Fry demonstrate group swimming behavior and collective feeding. A natural environment with adequate sunlight further enhances its growth and development. Due to aesthetic appeal and high market demand, polar blue parrot is highly valued in the ornamental fish industry..

INTRODUCTION

Ornamental fishes are peaceful nature and attractive colourful fishes, which are often called as 'living jewel' for their beautiful colours and playful behaviour. Keeping ornamental fish at home is emerging as one of the most popular hobbies in the world next to photography (Das *et al.*, 2005; Singh and Ahmed 2005). The ornamental fish industry is rapidly gaining importance due to its significant economic potential and opportunities (Andrews 1990; Singh and Ahmed 2005; Tlusty *et al.*, 2013). The global ornamental fish trade, valued at approximately USD 18–20 billion, has seen substantial growth, with India emerging as a promising market. In India, the ornamental fish sector is valued at Rs. 555 crores and has the potential to expand to Rs. 5,000 crores (Sinha, 2020). However, despite this promising outlook, India's contribution to the international trade of ornamental fish remains limited. Although standardized captive breeding technologies have been developed for several ornamental fish species, mass-scale production has been achieved for only a few. One of the primary challenges in expanding the ornamental fish industry is the complex nature of reproduction and larval rearing in captivity. Nevertheless, private entrepreneurs have made significant efforts, leading to the successful commercial breeding of a limited number of species. Currently, approximately 280 exotic species and 100 indigenous species are being produced and traded in India (Pandey and Mandal, 2017).

Polar parrots are striking yet somewhat controversial freshwater cichlids that are gaining popularity in the Indian market due to their hardy nature and responsiveness to human interaction. This hybrid cichlid, originally developed in Taiwan, is a cross between the convict cichlid and the red blood parrot cichlid. Like other cichlids, polar

parrots exhibit territorial behavior. Their coloration resembles that of the convict cichlid, and they have a distinctive circular body with a beak-shaped mouth. The most common color variants are the polar white parrot and the polar blue tiger-striped parrot (Fig. 1). Among these, the polar blue tiger-striped parrot dominates the market due to its widespread availability. Initially imported, this fish is now bred extensively across India, contributing to their growing prominence in the ornamental fish industry.

Life cycle and sexual dimorphism in Polar blue parrot

The Polar blue parrot is a continuous breeder, reproducing year-round under suitable conditions. They generally prefer a temperature range of 23–28°C and slightly acidic water for breeding. Their lifecycle includes several stages, such as egg, spawn, fry, and adult. Eggs hatch within 48–72 hours of spawning, and after 2–3 days, the fry begins swimming. During this phase, parents assist in feeding until the fry can independently consume food. Initially, crushed supplemental feed or live feed, such as *Artemia*, can be provided to promote growth and enhance coloration. After 15–20 days, the fry become independent, can be separated from the parents, and can be fed with supplemental feed.

Polar blue parrot typically grows to a size of 4–6 inches and exhibit distinct sexual dimorphism. Males are usually larger, with pointed dorsal fins, while females have rounded dorsal fins and a more rounded body shape. Females also exhibit deeper coloration, often developing a yellow or deep orange hue in the abdominal region as they mature (Fig. 2). In contrast, mature males display bright blue hues during their later life stages (Fig. 3).

Broodstock development and Management

Broodstock development for Polar blue parrot fish is crucial for ensuring healthy breeding and successful spawning. The process typically requires a minimum of two months, during which optimal care and feeding are provided. Broodstock are fed twice daily with a combination of live feed, such as Artemia and other zooplankton, or high-quality supplemental feed. This diet promotes gonadal development and facilitates smooth spawning. During broodstock rearing, the fish are kept in tanks with a fine sandy substrate, enough hiding place, and sufficient spaces to reduce aggression and encourage natural pairing behavior. Maintaining water quality is essential for creating a stress-free environment, which is achieved through regular siphoning and tank cleaning. These measures ensure the broodstock remain healthy and in optimal condition for reproduction.

Courtship, Breeding and Spawning

Polar blue parrot exhibits fascinating courtship behavior under temperature range 23-28°C and pH 6.5 to 8.0. Once paired, they begin swimming together and display notable behavioral changes. A tank with 30-gallon water is required for one pair of polar blue parrot fish. They generally form pairs, which helps to reduce stress and hostility. However, some individuals may exhibit aggressive behavior, particularly if there is a higher proportion of males in the tank. Aggression can be mitigated by providing additional shelters, such as pipes, rocks, and pots. Occasionally, polar parrots may display cannibalistic tendencies and prey on smaller fish; therefore, it is essential to provide them with adequate and appropriate feeding. Compatible tank mates are typically other cichlid varieties, of equal sizes which are often preferred. During the breeding phase, the female begins cleaning the selected breeding

site, while the male assumes a protective role, guarding the area and driving away any nearby tank mates. It is advisable to remove other tank mates at this stage to prevent disturbances. The species exhibits strong territorial instincts during breeding, with the female remaining near the breeding site and the male patrolling and defending the surrounding area (Fig. 4).

Parental care

Female polar blue parrot typically lay 100–300 eggs, depending on their age. They prefer soft surfaces for spawning and attach the eggs to the prepared area, where they remain for the next few days. After spawning, both the male and female take on the responsibility of guarding the eggs. Fertilized eggs appear transparent and take approximately 48–72 hours to hatch. As the fry begin to develop, their movement gradually increases, with the parents actively protecting them from other fish in the tank. The newly hatched fry is very small and stay in close groups near the female for protection until they can swim independently (Fig. 5). Further they are shifted to large tanks having algal bottom and optimal exposure to sunlight which promote higher survivability and growth (Fig. 6).

CONCLUSION

The ornamental fish industry, with its significant economic potential, has emerged as a rapidly growing sector globally and in India. Despite India's relatively limited contribution to international trade, the domestic market shows immense potential for expansion. The hybrid polar blue parrot cichlid has become a popular choice in the Indian ornamental fish market due to its hardy nature, unique appearance, and interactive behavior. They display fascinating characteristics, such as pronounced sexual dimorphism, territorial tendencies, and distinct courtship behaviors. Their breeding and parental care strategies,

including the collaborative guarding of eggs and nurturing of fry, highlight their suitability for captive breeding. While their aggressive tendencies and occasional cannibalism require careful management through appropriate tank conditions and compatible mates, these challenges are manageable with adequate care. The successful breeding and widespread availability of polar blue parrot in India demonstrate the potential for further growth in the ornamental fish industry. Continued efforts in research, captive breeding standardization, and market expansion will enable this sector to achieve its full potential, contributing significantly to both domestic and international trade.

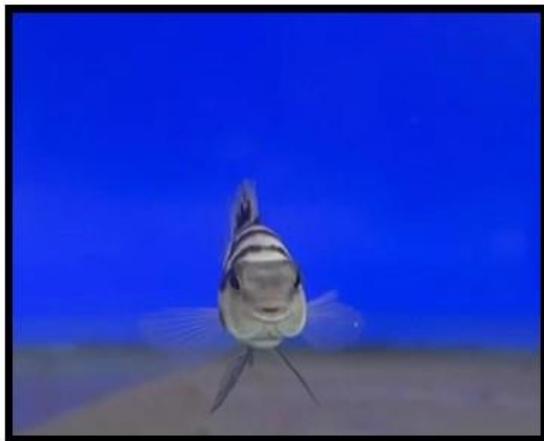


Fig. 1 -*Amatitlania nigrofasciata*



Fig. 2- Orange coloration found in the abdomen region of adult female polar parrot



Fig. 3 – Adult male Polar Parrot (3 Inch +)

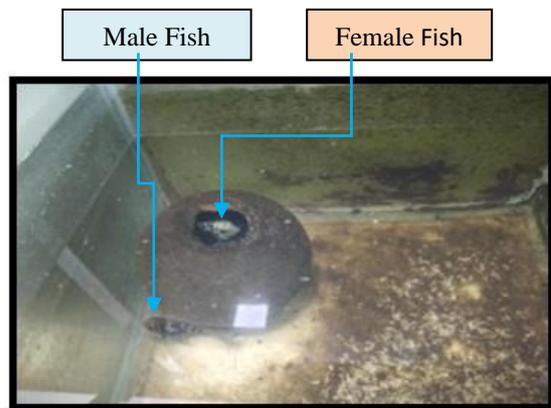


Fig. 4 – Female preparing place for breeding and the male guarding outside

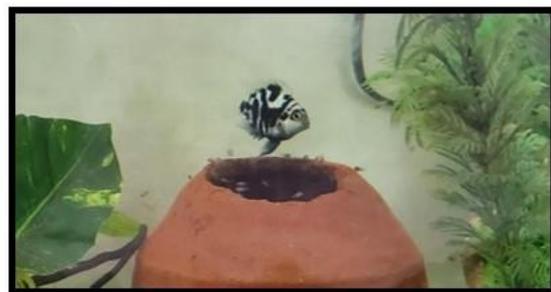


Fig. 5- Six days old fry swimming along female parent



Fig. 6 – Transferring fry into large cement tanks



REFERENCES

- Andrews, C (1990). The ornamental fish trade and fish conservation. *Journal of Fish Biology* 37 (Supplement A): 53–59.
- Das, M., S. Sarma & A.K. Das (2005). Status of ornamental fishes of Assam. *Fishing Chimes* 25(3): 13–15.
- Pandey P.K. and Mandal S.C. 2017. Present status, challenges and scope of ornamental fish trade in India. *Aqua Aquaria India*, 1- 10.
- Singh, A.K. & S.H. Ahmed (2005). Ornamental fish culture in Bihar: prospects as a cottage industry. *Fishing Chimes*, 25(6): 9–18.
- Sinha A. (2020). Ornamental fish trade in India. Smart Agripost- Fisheries
- Thrusty, M.F., A.L. Rhyne, L. Kaufman, M. Hutchins, G.M. Reid, C. Andrews, P. Boyle, J. Hemdal, F. McGilvray & S. Dowd (2013). Opportunities for public aquariums to increase the sustainability of the aquatic animal trade. *Zoo Biology*, 32: 1–12.