



Reproduction of *Puntigrus tetrazona* (Bleeker, 1855) in aquarium

Petru Burduhos

Department of Environmental Engineering and Protection, Faculty of Agriculture, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Cluj-Napoca, Romania. Corresponding author: P. Burduhos, petru.burduhos@usamvcluj.ro

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Introduction. The reproduction of *Puntigrus tetrazona* (Bleeker, 1855), commonly known as the Sumatra barb (Bud et al 2016), in aquarium settings can be a fascinating and rewarding experience for hobbyists. This species, native to Southeast Asia, exhibits interesting breeding behaviors that can be observed and studied in captivity (Cui et al 2020). Understanding the reproductive process of Sumatra barbs is essential for successfully breeding them in an aquarium environment. A brief description of the reproduction of the species *P. tetrazona* is the purpose of this paper.

Species overview. *P. tetrazona*, a member of the Cyprinidae family, is a small, schooling fish known for its striking appearance and lively behavior. Characterized by its distinctive black stripes and vibrant orange-red coloration (Wijianto et al 2020), the Sumatra barb is a popular choice among aquarium enthusiasts (Figure 1). In their natural habitat, these fish inhabit slow-moving streams and rivers with dense vegetation.



Figure 1. *Puntigrus tetrazona* (source: Derek Ramsey (Ram-Man); https://en.wikipedia.org/wiki/Tiger_barb).

Reproductive behavior. Sumatra barbs exhibit typical egg-scattering breeding behavior. During the breeding season, which can be induced in captivity by replicating certain environmental conditions, males become more colorful and aggressive in their pursuit of females. The courtship ritual involves chasing, displaying fins, and darting movements.

Once a female is ready to spawn, she releases her eggs while the male simultaneously releases sperm to fertilize them. The eggs are adhesive and typically attach to plant leaves or other surfaces within the aquarium. After spawning, the adults may consume the eggs, so providing ample hiding places for the eggs is crucial for their survival.

Environmental conditions for breeding. Creating optimal breeding conditions in the aquarium is essential for triggering the reproductive behavior of Sumatra barb. Some key factors to consider include those presented below.

Water parameters. Maintain stable water parameters within the ideal range for Sumatra barb, including a temperature of 75-80°F (24-27°C), pH level around 6.5-7.0, and moderate hardness.

Tank setup. Provide plenty of plants, both floating and rooted, to serve as spawning sites and hiding places for the eggs and fry. A well-aerated tank with gentle water flow mimicking their natural habitat is beneficial.

Diet. Offer a varied diet rich in protein to condition the breeding pair. Live or frozen foods such as bloodworms, brine shrimp, and *Daphnia* can help stimulate breeding behavior (Petrescu-Mag 2007ab).

Lighting and photoperiod. Mimic the natural day-night cycle by providing 10-12 hours of light followed by darkness to simulate seasonal changes.

Breeding management. To encourage breeding, it is essential to maintain a well-balanced aquarium environment and monitor the behavior of the fish closely. Pre-spawning separation of males from females in aquaria with suitable conditions to fill females with spawn and males with milk can increase the chances of successful spawning and egg survival. Once spawning occurs, the adults should be removed from the breeding tank to prevent them from consuming the eggs or fry.

Egg and fry care. After spawning, the fertilized eggs will hatch within 24-48 hours, depending on water temperature. The newly hatched fry are initially transparent and require microscopic foods such as infusoria, and later commercial fry food (Koncara et al 2019). As they grow, their coloration becomes more pronounced, resembling miniature versions of adult Sumatra barb. Regular water changes and maintenance are crucial for ensuring the health and development of the fry.

Conclusions. The reproduction of *P. tetrazona* in aquariums offers hobbyists a unique opportunity to observe and appreciate the natural behaviors of these fascinating fish. By creating suitable breeding conditions and providing proper care for the eggs and fry, aquarists can enjoy the rewarding experience of witnessing the life cycle of Sumatra barb firsthand.

Conflict of interest. The author declares no conflict of interest.

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Authors:

Petru Burduhos, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Agriculture, Department of Environmental Engineering and Protection, 3-5 Calea Mănăştur Street, 400372 Cluj-Napoca, Romania, e-mail: petru.burduhos@usamvcluj.ro

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