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Roop Chand Fish Farming

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Abstract

Aquaculture diversification is increasingly recognized as a key strategy for enhancing fish production, farm income and nutritional security in India. Among the non-traditional freshwater species, Roopchand fish, scientifically identified as *Piaractus brachypomus*, has emerged as a promising candidate for commercial culture owing to its fast growth, omnivorous feeding habit and adaptability to pond environments. The present article provides a scientific overview of the taxonomy, biological characteristics, feeding behaviour, pond management practices, polyculture potential, health management and economic significance of Roopchand fish farming. Special emphasis is given to sustainability concerns and biosecurity issues associated with the culture of exotic species. The article highlights the future prospects of Roopchand aquaculture in India and outlines research priorities required for its responsible expansion.

Keywords: Roopchand fish, *Piaractus brachypomus*, aquaculture diversification, freshwater fish culture, pond management, sustainable aquaculture.

Introduction

Aquaculture has become one of the fastest growing food-producing sectors in the world, contributing significantly to global fish supply and rural livelihoods. In India, the rapid expansion of freshwater aquaculture has traditionally been based on Indian major carps. However, increasing demand for fish, rising production costs and market competition have necessitated diversification towards new candidate species.

Roopchand fish, commonly referred to as Pacu and scientifically known as *Piaractus brachypomus*, has gained attention as an alternative species for commercial aquaculture. The species is appreciated for its high growth rate, efficient feed utilization, consumer acceptability and adaptability to a wide range of culture conditions. Its introduction into Indian aquaculture systems reflects the broader strategy of enhancing productivity through species diversification (FAO, 2018).

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Taxonomy

Roopchand belongs to the family **Serrasalmidae** and order **Characiformes.** The species is native to the Amazon and Orinoco river basins of South America. It was introduced into Asian aquaculture systems primarily for its rapid growth and hardy nature (Jhingran, 1991). Biologically, Roopchand exhibits a deep, laterally compressed body with strong dentition adapted for omnivorous feeding. The species is capable of tolerating moderate fluctuations in water quality and temperature. Optimal growth is observed at water temperatures between **24 and 32°C**, with neutral to slightly alkaline p^H (FAO, 2018). These characteristics make the species suitable for semi-intensive and intensive freshwater culture systems.

Feeding Habits

Roopchand is an omnivorous species capable of utilizing both natural pond productivity and supplementary formulated feeds. The species feeds on phytoplankton, macrophytes, detritus and pelleted diets, which allows flexible feeding strategies in different culture systems. Experimental and field studies have shown that Roopchand performs well on feeds containing **24-30% crude protein**, achieving favourable feed conversion ratios under controlled feeding regimes (Tacon and Metian, 2015). Under semi-intensive management, the species can attain **800-1200g body weight within 6-9 months**, demonstrating its high growth potential (Nandeesha and Senthil, 2019). Roopchand exhibits good compatibility with Indian major carps and other freshwater species in polyculture systems. The species occupies a distinct feeding niche and does not compete severely with surface or bottom feeders.

Polyculture systems offer several advantages, including higher total fish yield, improved utilization of natural productivity and reduced production risk. Integration of Roopchand into carp-based polyculture systems can significantly enhance overall farm profitability (Nandeesha and Senthil, 2019).

Pond Preparation

Successful Roopchand farming begins with proper pond preparation. Earthen ponds with clay loam soil and good water retention capacity are preferred. Pre stocking operations include drying of ponds, eradication of predatory fishes, application of lime to correct soil acidity and fertilization to promote plankton development.

Stocking density depends on the intensity of culture. In semi intensive systems, stocking densities of **3000-5000 fingerlings per hectare** are commonly recommended. In polyculture systems, stocking ratios are adjusted to ensure balanced utilization of pond niches (Jhingran and Pullin, 2015).

Water Quality Management

Water quality management is a critical determinant of growth performance, feed efficiency and health status of Roopchand fish in pond culture systems. Maintenance of optimum physicochemical parameters ensures proper metabolic activity and reduces stress-induced susceptibility to diseases. The recommended water quality parameters for Roopchand culture include dissolved oxygen levels above **5 mg/L**, p^H between **6.5 and 8.5**, ammonia concentration below **0.05 mg/L** and water transparency in the range of **30-40 cm** (Boyd, 2020; FAO, 2018). Regular monitoring of dissolved oxygen, p^H, temperature and ammonia should be carried out to detect early deviations from the optimum range. Periodic water exchange, use of aeration devices during early morning hours, and removal of excess organic matter help in maintaining favourable water quality. Although Roopchand is considered relatively hardy, prolonged exposure to poor water quality may result in reduced feeding, impaired growth and increased disease incidence. Therefore, systematic water quality monitoring and timely corrective measures are essential components of sustainable Roopchand aquaculture.

Feed Management

Feed management plays a decisive role in determining the growth performance, feed efficiency and profitability of Roopchand fish farming. As an omnivorous species, Roopchand efficiently utilizes both natural pond productivity and supplementary formulated feeds. In semi-intensive culture systems, pelleted feeds containing 24-30% crude protein are generally recommended to support rapid growth and efficient feed conversion (Tacon and Metian, 2015). Feeding is usually practiced at 2-4% of the standing biomass per day, depending on fish size, water temperature and culture intensity. The daily ration should be divided into two equal portions and supplied during morning and evening hours to maximize feed utilization and minimize wastage. Overfeeding should be strictly avoided, as uneaten feed deteriorates water quality and increases the risk of disease outbreaks.

Periodic estimation of biomass through sampling is essential to adjust feeding rates accurately. Adoption of demand feeding, use of floating pellets and maintenance of proper feeding records contribute significantly to improving feed efficiency and reducing production costs (Nandeesha and Senthil, 2019).

Health Management

Health management is an integral component of successful Roopchand aquaculture. Although the species is considered relatively hardy, stress due to poor water quality, overcrowding, nutritional deficiencies and sudden environmental fluctuations may predispose fish to bacterial and parasitic infections. Preventive health management is more effective than

curative treatment. Important preventive measures include maintenance of optimal water quality, use of healthy and certified seed, avoidance of overstocking, regular pond sanitation and periodic monitoring of fish behaviour and feeding response. The application of probiotics and immunostimulants has been reported to improve gut health and enhance disease resistance (FAO, 2018).

In the event of disease occurrence, early diagnosis and timely intervention are essential to minimize mortality and economic losses. Farmers are advised to seek technical guidance from fisheries extension personnel before using any chemotherapeutic agents to avoid drug misuse and environmental contamination.

Harvesting

Harvesting is generally carried out after 6-9 months of culture when fish attain marketable size. Partial harvesting may be practiced to regulate standing biomass and maintain growth rates. Post-harvest handling involves rapid icing, hygienic washing and grading to maintain product quality. Market acceptance of Roopchand is increasing in many regions due to its firm flesh, low fat content and attractive appearance (FAO, 2018).

Conclusion

Roopchand fish farming represents a scientifically sound and economically viable option for aquaculture diversification in India. Its rapid growth, feeding flexibility and market acceptability make it suitable for semi-intensive and intensive culture systems. However, sustainable development requires strict biosecurity measures, environmental safeguards and strong extension support. With proper management and scientific guidance, Roopchand aquaculture can contribute significantly to fish production, rural employment and food security.

References

Boyd, C.E. (2020). *Water Quality: An Introduction*. Springer, New York.

FAO (2018). *The State of World Fisheries and Aquaculture*. Food and Agriculture Organization of the United Nations, Rome.

Jhingran, V.G. (1991). *Fish and Fisheries of India*. Hindustan Publishing Corporation, New Delhi.

Jhingran, V.G., & Pullin, R.S.V. (2015). *A Hatchery Manual for the Common, Chinese and Indian Major Carps*. Asian Development Bank, Manila.

Nandeesha, M.C., & Senthil, K. (2019). *Principles of Aquaculture*. Indian Council of Agricultural Research (ICAR), New Delhi.

Tacon, A.G.J., & Metian, M. (2015). Feed matters: Satisfying the feed demand of aquaculture. *Reviews in Fisheries Science & Aquaculture*, 23 (1), 1-10.