

# Recent Advances in Shrimp Culture in India

**Khushbu Gurawa<sup>1</sup>, Lavish Saran<sup>2\*</sup>, Anjali Paikra<sup>3</sup>, Nirmal Patel<sup>1</sup>  
and Eshita Shrivastava<sup>4</sup>**

<sup>1</sup>M.F.Sc. Scholar, Department of Fish Processing Technology,  
CCS Haryana Agriculture University, Hisar-125004, Haryana

<sup>2</sup>M.F.Sc. Scholar, Department of Aquatic Animal Health Management,  
CCS Haryana Agriculture University, Hisar-125004, Haryana

<sup>3</sup>M.F.Sc. Scholar, Department of Fisheries Extension, Economics and Statistics,  
CCS Haryana Agriculture University, Hisar-125004, Haryana

<sup>4</sup>M.F.Sc. Scholar, Department of Aquatic Environment Management,  
CCS Haryana Agriculture University, Hisar-125004, Haryana

**Corresponding Author**

Lavish Saran

Email: lavishsaran36@gmail.com



**OPEN ACCESS**

## Keywords

Aquaculture, Biosecurity, Disease management, Sustainability

## How to cite this article:

Gurawa, K., Saran, L., Paikra, A., Patel, N. and Shrivastava, E. 2025. Recent Advances in Shrimp Culture in India. *Vigyan Varta* 6 (9): 80-82.

## ABSTRACT

India's prawn aquaculture has grown significantly during the 1990s thanks to *Litopenaeus vannamei* adoption, species diversification, and better farming practices. Biosecurity, improved health management, and super-intensive systems increased production, and the industry is expected to rise from USD 7.3 billion in 2022 to USD 14 billion by 2028. Disease outbreaks (EHP, white spot), environmental stress, and socioeconomic problems are still problems, nevertheless. The goal of policies like PMMSY and the Coastal Aquaculture Authority Act is sustainable expansion, which calls for stricter laws, environmentally friendly operations, and efficient disease prevention.

## INTRODUCTION

Since the 1990s, India's prawn aquaculture has grown quickly, although it has encountered obstacles

due to illness and inadequate regulation. The Aquaculture Authority was established in 1996 as a result of significant losses caused by the

White Spot Virus in 1994. By 2017, India was the second-largest shrimp producer in the world thanks to increased production brought about by the 2003 introduction of *Litopenaeus vannamei*. Although disease outbreaks and environmental concerns continue to be obstacles, the business, which was valued at \$7.3 billion in 2022, is expected to grow to \$14 billion by 2028.

**Developments in India’s Prawn Farming Sector**

Category	Key Points (Summary)	References
Technological and Species Advancements	Shrimp aquaculture was transformed by the introduction of <i>Penaeus vannamei</i> because of its increased viability and production. While super-intensive and biofloc systems increased yields and disease control, PCR-screened fry decreased the risk of WSD. Aquatic health was improved via surveillance and quarantine. <i>P. vannamei</i> productivity was estimated to have reached 0.7 million MT, with approximately 61% of farms attaining moderate-to-high sustainability.	Vijayan et al., 2021
Economic Growth and Market Dynamics	Shrimp farming is the main driver of India's fisheries industry,	Kumar et al., 2024

	employing about 7 million people. Forecasted market growth is 11% per year, from USD 7.3 billion in 2022 to USD 14 billion in 2028. With the switch from black tiger shrimp to <i>P. vannamei</i> , exports increased and India became the fourth-largest exporter of seafood. Salinity and feed prices affect revenue, yet states like Odisha and Tamil Nadu exhibit notable growth despite weather, illness, and technological difficulties.	
Disease Management and Biosecurity	White Spot Disease (WSD) and Enterocytozoon hepatopenaei (EHP) remain major threats. Strong biosecurity, quarantine, and health management are crucial for reducing risks, ensuring survival, and sustaining productivity.	General sector findings

**Disease Monitoring and Management:** Prawns require constant health monitoring because of their poor, non-specific immune systems and lack of long-term immune memory. Biosecurity, good water quality, and sufficient nutrition are essential for disease control. In contaminated prawn farms, the implementation of Best Management Practices

(BMPs) has been shown to be successful in lowering EHP infections while also markedly increasing growth rates and feed conversion.

**Biosecurity Measures:** Worldwide, prawn farming is very lucrative, although it is hindered by frequent disease outbreaks. It is crucial to maintain biosecurity by using quarantine, surveillance, emergency responses, and Specific Pathogen Free (SPF) stocks. Because regional collaboration is essential to maintaining prawn production and guaranteeing long-term food security, developing countries can benefit from Asia's policies (Chrisolite *et al.*, 2025).

**Regulatory Framework and Future Directions:** The Indian government uses emergency planning, quarantine, and surveillance to control aquatic health. By preventing serious illnesses like EHP and white spot disease, focusing on aquatic animal health management, and promoting improved farming methods, initiatives like PMMSY promote sustainable prawn culture (Vijayan *et al.*, 2023).

### Environmental and Social Considerations

The rapid growth of prawn aquaculture in India between 1990 and 1999 resulted in pollution, salinization, and the loss of mangroves. Social tensions continue, as does the overuse of broodstock and lax regulation. More awareness, stricter regulations, and licenses are necessary for sustainable growth. The prawn culture of Bangladesh showcases enhanced livelihoods in spite of environmental costs like biodiversity loss and salinity, while PMMSY encourages efficiency (Vijayan *et al.*, 2023).

## CONCLUSION

India's prawn aquaculture has advanced significantly thanks to the use of better species, cutting-edge technologies, and enhanced management techniques. Global competitiveness and production have increased due to the adoption of *Litopenaeus vannamei*, biosecurity protocols, and super-intensive farming. Sustainability is nevertheless still impacted by enduring issues including disease outbreaks, environmental deterioration, and ineffective regulations. To guarantee long-term growth, institutional frameworks must be strengthened, environmental protections must be upheld, and responsible farming must be encouraged. The Indian prawn culture industry has enormous potential for future economic growth and sustainable aquaculture methods with the right interventions and ongoing innovation.

## REFERENCES

- Chrisolite, B., Debbarma, S., & Subash, P. (2025). Biosecurity and Its Role in the Prevention of Shrimp Diseases. In *Shrimp Culture Technology: Farming, Health Management and Quality Assurance* (pp. 283-297). Singapore: Springer Nature Singapore.
- Kumar, N., & Sarkar, S. (2024). Delving into the Ebb and Flow: India's Shrimp Production and Export Dynamics.
- Vijayan, K. K., & Alavandi, S. V. (2021). Brackishwater Aquaculture Health Management with Special Reference to Shrimp Farming in India: Status and the Way Forward. *Journal of the Indian Society of Coastal Agricultural Research*, 39(2), 15-29.