

Prevalent Bacterial Diseases in Shrimps and Their Treatment

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Abstract

Shrimp aquaculture plays a significant role in India's coastal economy, particularly in Andhra Pradesh. However, bacterial diseases remain a major constraint, causing reduced growth, deformities, and crop losses. This study investigated prevalent bacterial diseases affecting shrimp culture ponds in the coastal regions of Andhra Pradesh, based on interactions with farmers and aqua technicians. The following bacterial diseases were identified: vibriosis, bacterial shell disease, black splint disease, and non-viral white spot disease. Their symptoms, treatments, and preventive measures are outlined to aid shrimp farmers in adopting better health management practices.

1. Vibriosis

Cause: Opportunistic pathogens belonging to the genus *Vibrio*. Their pathogenicity varies across species and strains, and infections are often linked with poor pond conditions and shrimp stress.

Symptoms:

- Systemic vibriosis: lethargy, reddish coloration, and shrimp congregating at pond edges.
- Localized vibriosis: lesions without redness.

Treatment:

- Improve pond environment: reduce feed, flush pond water, increase aeration (Kiran & Shyam, 2012).
- Without water quality management, recurrence is inevitable.

2. Bacterial Shell Disease

Cause: Opportunistic bacteria invade damaged shell areas, secreting enzymes that erode shell layers.

Symptoms:

- Haemolymph leakage followed by bacterial proliferation.
- Severe erosive lesions; if uncontrolled, infection spreads internally, leading to granulomas and septicemia.

- Usually associated with poor water quality, high stocking density, and pond bottom fouling.

Treatment:

- No direct chemical cure.
- Improve water quality by partial harvesting and water exchange.

Prevention:

- Remove organic waste and sludge between culture cycles.
- Apply lime and dry pond bottom.
- Establish balanced algal ecosystem.
- Avoid overfeeding and sudden algal bloom crashes (Srinivas & Venkatrayalu, 2016).

3. Black Splint Disease

Cause: Associated with *Vibrio alginolyticus* and low salinity levels, often linked to bacterial shell disease.

Symptoms:

- Black lines or nodules in tail muscle.
- Deep tunnel-like lesions with proliferating bacteria and melanised haemocytes.
- Lesions persist through moulting.

Treatment:

- No effective treatment available.

allows for better visualization of the retrobulbar space.

- **Similarities and Drawbacks:** Shares procedural steps and potential benefits/drawbacks with the subconjunctival approach, primarily due to the conjunctival incision and subsequent dissection planes.

After the globe and desired associated structures are removed, hemostasis is carefully achieved. The orbital space can be left to granulate and fill with tissue, or in some cases, an intraorbital prosthesis (e.g., silicone sphere) may be implanted to maintain orbital volume, though this is less common in general practice and carries its own risks. The skin edges are then meticulously sutured to permanently close the eyelid aperture, creating a cosmetic outcome.

Postoperative Care

- **Pain Relief:** Administer prescribed NSAIDs and opioids such as tramadol. Observe for signs of pain such as vocalization or lethargy. Use cold compresses to minimize swelling.
- **Incision Protection:** An Elizabethan collar is critical to prevent pets from manipulating the surgical area.
- **Wound Observation:** Inspect daily for swelling, redness, discharge, or dehiscence of the wound.
- **Restricted Activity:** Restrict physical activity up to two weeks. Keep pets indoors.
- **Feeding:** Begin with water, followed by small amounts of food. Normal feeding normally returns within 24 hours.
- **Environmental Adaptation:** Maintain environment as normal for pets adapting to blindness.
- **Veterinary Follow-Up:** Follow through on all appointments to check on healing.
- **Monitor for Complications:** Inform the vet if there are symptoms of infection, abnormal swelling, foul odour, or other severe signs. There can be rare complications such as fistulas, mucoceles, or even emphysema in certain breeds of dogs

Conclusion

Enucleation is an essential surgical procedure for small animal trauma, intraocular neoplasia, or chronic glaucoma. Although the procedure itself is simple, success is achieved through accurate patient choice,

effective preparation, and expertise. Adequate post-operative care is important in ensuring easy recovery and enhanced animal welfare. Enucleation is a last resort, yet it remediates severe pain and manages incurable eye disease.

References

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