

# Significance of finfish and shellfish diseases in aquaculture

## Introduction:

- Fish diseases caused by bacteria, viruses and parasites are a primary concern in aquaculture.
- Indeed, effective control of infectious diseases is one of the most critical elements in successful aquaculture.
- Therefore, both the aquaculture industry itself, and mandated governmental fish health management programs, maintain a variety of measures to control and minimize the effect of infectious diseases in culture fish populations in fish farms and aquaculture sites.
- Nevertheless, diseases can and do occur in these populations.

# Definition of fish disease

- The fish is said to be sick when an abnormality occurs in both anatomically and physiologically.
- Anatomically occur deformity of body parts of fish such as head, tail, fins, eye, belly and internal organ damages (Liver, Kidney, Gut etc.).
- In physiological abnormalities in organ function of vision, breathing, digestion, blood circulation and others.
- Disease by spreading classified as follows;
  - 1) Endemic disease outbreaks ie fish / shrimp on a certain area does not spread to other areas.
  - 2) Epidemics spread of fish / shrimp that extends to other areas.

# Reason for disease outbreak in aquaculture

- **Causes of Fish Diseases**

A disease that leading to huge mortality of fish are caused by:

- 1) Pathogens such as parasites, fungi, bacteria and viruses.
- 3) Environment-containing toxins (poisons) such as algae toxin, metal toxin, bacterial toxin, fungal toxin etc.
- 4) Fluctuations of high or low water quality parameters.
- 5) The inadequate nutrition composition of food.
- 6) Weak immune system of the fish.

# Need for health management in aquaculture

- Aquaculture is currently one of the fastest growing food producing industries in the world with an average growth rate of 6.2%.
- The aquaculture and fisheries sectors also provide significant nutritional requirements to people in developed and developing countries and a source of income and livelihood to approximately 58.3 million people, equivalent to 10-12% of the world population.
- With a dramatic increase in population growth and an ever-increasing demand for seafood, aquaculture is an increasingly important source of sustainable food production.
- The need for sustainable aquaculture has led to an increase in research and development across a range of areas such as nutrition; environmental impacts, good management procedures and disease control, and consequently contributed to great improvements in these areas.

## Contd-

- However, the greatest threats to sustainable aquaculture are biological (infectious disease) and chemical agents (agro-chemicals, chemotherapeutants, contaminants, and organic pollutants).
- Aquaculture industries frequently suffer heavy financial losses that threaten their growth and sustainability, mainly due to uncontrolled microbial diseases.
- Disease outbreaks (parasitic, viral and bacterial) in the past have resulted in losses amounting to billions of dollars to the aquaculture industry.
- Advances in the understanding of many of these pathogenic organisms cause disease and implementation of good management practices within the industry have helped in the control of many pathogens.