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ENVIRONMENTAL STRESSORS ON FISH

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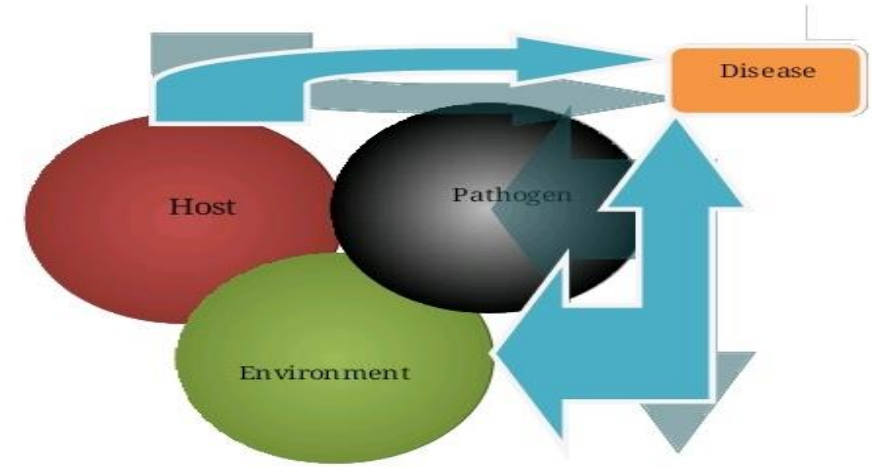
Introduction

Stress The initial contributors to fish sickness and mortality in aquaculture are physiological stress and physical injury. Physical or chemical stimuli that trigger biological reactions that contribute to disease and death are defined as stressors. Many microorganisms that can cause fish disease are constantly present in the water, soil, air, and fish. In nature, fish are often impervious to these infections, and they are willing to seek out the most basic of living conditions. Increased fish density and poor water quality (i.e., low dissolved oxygen, undesirable temperature or pH, increased levels of CO2, ammonia, nitrite, sulphide, organic matter within the water); injury during handling (i.e., capture, sorting, shipping); inadequate nitrite, sulphide, organic matter within the water; inadequate nitrite, sulphide, organic matter within the water); inadequate nitrite, sulphide These conditions may cause the fish to lose their resistance, allowing disease and parasite infestation to spread.



Environment Stress due to Pathogen, Host and Environmental

What is Stress?

- Any condition that causes physical or mental discomfort and causes the release of stress-related hormones or certain physiological responses is referred to be stress.
- Physical, psychological, and environmental stressors are all common.
- Stress can be either brief and acute or prolonged and chronic.
- Mild, short-term stress has minimal negative health consequences, but long-term stress and severe, short-term stress are linked to a number of illnesses and mortality in aquarium fish.

Stress and Its Causes

- Ammonia levels have risen.

- Nitrate levels have increased
- A P_H level that is too high or too low.
- Temperature Changes Improper Salinity
- Low Oxygen
- Treatments with medicine and water
- Other fish Harassment

Water quality

- In ponds and other culture units, don't exceed the carrying capacity of the fish.
- Keep track of the water's quality.
- Maintain dissolved oxygen concentrations of at least 5 mg/L.
- Although not immediately fatal, sub-optimal dissolved oxygen (D.O) levels can stress fish, causing mortality to be delayed.
- Organic trash, nitrogenous wastes (ammonia and nitrite), carbon dioxide, and sulphide should all be avoided.

Transporting and handling of fish

- Use a variety of capture methods that reduce physical injury and stress, such as knitted mesh nets instead of knotted nets to reduce injury and scale loss.
- When it comes to handling fish, haste and gentleness are essential.
- Reduce the number of times the fish are pulled from the water source, and transfer the fish as rapidly as possible.

Nutrition

- Feed a high-quality diet that fits the species' nutritional needs, and use the optimum feeding rate and feeding method (either over-feeding orstarving the fish should be avoided).

Sanitation

- To reduce the risk of transmission, quarantine all new fish, obcontainers, nets, and equipment.
- Send a sample of bedbugs and illness pies from one community to a diagnostic laboratory to be checked for parasites and obversion to viral and bacterial infections.
- Keeping disease-carrying fish out of the hatchery water system is a must (e.g., reservoir ponds, springs, streams).
- Immediately removing all lifeless fish from a production system when they are discovered.

Conclusion

The fish's normal defences against invading infections are weakened as a result of the stress. The underlying stress factors, as well as the disease organism, should be recognised when disease epidemics occur. Chemical disease therapies must be preceded or followed by stress factor monitoring. A disease therapy is just a man-made method of slowing down an illness long enough for the fish's immune system to respond. Any stress that has a negative impact on the fish will result in a disease outbreak. The cost of preventing disease outbreaks is less than the cost of treating dead fish.