Chapter 9
Fish health and diseases

Managing fish health and diseases
Under culture conditions fish are more likely to encounter disease as many fish are kept close together, sometimes under stressful conditions. It is therefore very important that farmers carefully watch their fish for any strange behaviour. If disease is detected early it can be treated accordingly; disease treated too late may result in the loss of all the fish in the pond or cage.

There are two basic types of disease – non-infectious and infectious. Non-infectious includes nutritional, environmental and genetic problems. Nutritional problems include not providing the correct diet or vitamins to the fish. An environmental problem, such as high ammonia levels, can also cause the fish to get sick. Genetic problems usually occur when there is inbreeding among the broodstock. As these three things (nutrition, environmental, genetics) can be easily controlled, it is clear that non-infectious diseases only occur when there are poor management practices.

For an infectious disease to occur there needs to be an imbalance between two or more of these components: 1) the host (the fish), 2) the pathogen (the bacteria, fungus, parasite, etc.), and 3) the environment (e.g. water quality). When all three are in balance, the chance of disease is small. However, when one of the components is compromised, the opportunity for disease opens up. Infectious diseases are generally more difficult to control than non-infectious diseases and may therefore result in losing many or all of the fish. It is therefore very important to identify and treat the disease early — before it is allowed to develop beyond the point where it cannot possibly be treated.

One of the most sensitive fish organs prone to disease and parasitic infestation are the gills. If the gills are damaged or infected, the fish is unable to obtain the oxygen it needs. Fish that are having difficulty breathing tend to gather at water inlets, near the surface of the pond, or along the edges. They may 'gasp' at the surface as they try to obtain extra oxygen from the air even if the dissolved oxygen in the pond appears normal. Generally these fish are easier to catch as they have less energy and cannot escape as easily as healthy fish. In addition to treating the disease, extra oxygen should be supplied in the form of paddlewheels, aerators or sprayers.

Diseases of pond fish are usually caused by fungi, bacteria, protozoans, worms or crustaceans. Most often, diseases can be controlled with proper pond management. This includes draining the pond, drying it, and liming it regularly, and also by preventing wild fish or unfiltered water from entering the pond. Some diseases will inevitably kill the fish, while others can be controlled by treating the pond or the fish with chemicals.

State vet dissecting a fish to determine the disease affecting it. Farmers should contact their local state vet and consult them should they need their services.

Some diseases attack fish in ponds because the fish are stressed due to some environmental factor, such as overcrowding, low oxygen levels, or insufficient or poor-quality food. All of these conditions weaken the fish thereby allowing them to get diseases more easily. The farmer should watch the fish for signs of stress and disease. A change in normal behavior

may be a sign of disease (e.g. gasping at the surface for air, rubbing the body or head against the sides of the pond, or ragged fins and sores on the body). Something is wrong when a fish population stops eating suddenly. The farmer must check the fish daily, especially in very hot weather.

If fish are thought to be sick or are dying for unknown reasons, a few of the fish should be removed from the pond and examined for disease. The fish should ideally be kept alive and immediately transported to a specialist who can identify the disease and provide the appropriate treatment. If the fish cannot be kept alive, it should be sealed in a packet and placed on ice (but not frozen); this is to ensure that any parasites remain attached to the fish so they can been seen on examination.

During harvesting it is possible to check the health of the fish. Harvested fish can be quickly treated using short chemical baths. These baths may also be useful as preventative control against disease and parasites and to reduce the incidence of fungal infections, which may occur due to handling during sorting.

Details of specific diseases and their treatment are summarized in Appendix 3.

INFO BOX: WHEN FISH ARE SICK

- Speak to your state vet about the problem. Keep his or her telephone number at hand.
- Treat one pond or tank for a start. If it looks as though this is working, then apply the treatment to the other containments.

Disease treatments

Reality must prevail in the treatment of diseases: there is little point in spending large amounts of money to administer expensive drugs to a pond-full of sick fish when the cash value of the fish is little more than the cost of the treatment. Most diseases are caused by poor environmental factors and it is far more cost-effective to remedy the root cause of the problem than to medicate for the symptoms. When disease gets to a magnitude that all the fish in a large pond are suffering from it, the best solution is to sacrifice those fish, disinfect the pond with lime, and start over again, making sure that the poor environmental conditions that led to the initial stress are identified and remedied.

If medication in smaller containments is both practical and desirable, the actual diagnosis and treatment of disease should only be done by suitably trained personnel. A small mistake in dosage or adding an incorrect chemical can kill all the fish in the tank or cage, so if in doubt ask!