

# **Practical ichthyology**

## **Fish diseases**

Disease: deviation from healthy condition.

Disease infected fish can be divided in to:

- 1-infectious disease.
- 2-nutritional disease.
- 3- environmental disease.
- 4- genetical disease.

### Disease transmission

- Vertical: parent (egg, sperm) to offspring.
- Horizontal: fish to fish.

### Signs of diseases

- 1- fish do not feed.
- 2-erratic swimming or lethargic swimming.
- 3-excessive mucous production.
- 4-Ascites: fluid filled body cavity.
- 5-necrosis: dead tissue within a living animal.
- 6-eroded fins.
- 7-swollen internal organ.

8-exophthalmia.

9- hemorrhage.

### Health management

- Stocking and handling of fish

- \* Careful handling during transport
- \* Prophylactic treatment
- \* Water quality and temperature
- \* Crowding

- Feed management

- \* Good quality feed
- \* Storage

- Water flow

### Disease control and hatchery management

1- minimizing stress on cultured fish

2-stock fish free from disease

3- use water free from pathogen

4- isolate equipment and production areas: use disinfectants

5-remove sick or dead fish immediately

6-good nutrition and feeding

7- vaccination

8- disinfection

9- quarantine