

Farm Structures FACTSHEET



BRITISH
COLUMBIA

Ministry of Agriculture and Food

Order No. 720.000-1
October 1985

FISH POND MANAGEMENT

Water Quality Criteria and Control

Proper management of water quality is necessary to maintain the best environment for pond fish culture. The following problems and methods of control are briefly explained.

Dissolved Oxygen

Solubility decreases with increasing temperatures and increasing altitude. Concentrations should be above 5.0 mg/litre (41.73 pounds/million gallons U.S.). Mechanical nightly aeration is advisable.

Carbon Dioxide

If dissolved oxygen levels are low, appreciable carbon dioxide hinders oxygen uptake by fish. When CO₂ concentrations are in the 10-15 mg/litre (83.5 to 125.25 pounds/million gallons U.S.) range, it may be desirable to reduce these accumulations by the additions of 1.68 mg/litre (14 pounds/million gallons U.S.) of hydrated lime for each 1 mg/litre (8.35 pounds/million gallons U.S.) of CO₂.

pH

Best growth of fish is achieved in the pH range of 6.5 to 9. Agricultural gypsum will reduce high pH.

Ammonia

Ammonia may be present in ponds from fertilizers and fish excrement. Fish receiving large amounts of supplemental feed may develop concentrations of ammonia in the pond.

There is no effective method of preventing accumulation of ammonia build up in ponds other than periodic cleaning.

Nitrate

Nitrate occurs from the oxidation of ammonia and the reduction of nitrate and causes brown blood disease.

Nitrates can be toxic if fish are exposed for several days. Treatment of 25 mg/litre (200 pounds/million gallons U.S.) sodium chloride for each 1 mg/litre (8.35 pounds/million gallons U.S.) nitrite is recommended.

Clay Turbidity

Clay particles will restrict light and limit photosynthesis. The addition of alum (aluminum sulphate) at 25-30 mg/litre (200 to 250 pound/million gallons U.S.) will be effective in most cases.

FOR FURTHER INFORMATION, CONTACT:

Written by R.G. Bryant, Engineering Technician
Phone: (604) 556-3100
Email: suzanne.jaques@gems8.gov.bc.ca

RESOURCE MANAGEMENT BRANCH

Ministry of Agriculture and Food
1767 Angus Campbell Rd.
Abbotsford, BC CANADA V3G 2M3