Fish Health Management

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Fish Diseases

• Most common is Red Sore Disease in late winter or Spring

• Also, bacterial diseases after partial Oxygen Depletion
  – Stress brings on the diseases when the immune system slows down
Red Sore Disease
Red Sore on Frozen Fish
Controlling Red Sore in Recreational Ponds

• Fish regularly to keep the fish from over crowding.
• Install and use an aerator.
• Keep pond water level at the full point.
  – Fix seepage
  – Add water, if a well is available.
• Apply oxidizer only if pond volume is small and you are able to handle the chemical safely.
Handling Samples

• Get Live Fish if possible
• Images are okay
• To ship
  – Live fish is best
  – Or, wrap in paper two and ship UNFROZEN with cool pack. NOT FREEZER PACK or ICE
  – Frozen fish for pesticide testing only
Making Images

• 1. Gross signs of outside of fish
• 2. A look at the gills
• 3. A look at the intestines
• 4. Any bloody areas
• 5. Wet mount under the microscope
  – Usually a gill clip in a drop of water
Remove Operculum and Expose The Gills
Open the Visceral Cavity for Inspection

Hemorrhage on viscera

Pale liver, kidney, or spleen

Inspect intestine for parasites

Fluid and color
How to make good water quality work for you – start with the fish.

Management tips to better yields and higher quality fish.
Selecting Broodstock

• Use disease resistant strains or strains resistant to low oxygen
• Stock at reasonable densities and move fish as they grow larger than market size
• Use fast growing and aggressive strains
• Sort your brooders each year for good traits
• Keep brooders well-fed and in good water quality
USDA 103 strain of channel catfish
Grows 10 to 20% faster so shorter grow-out and less risk
Selected for resistance to ESC disease, also
What is the history of your fish?

Parental History
Hatchery Records
Client Endorsements

What are you taking for granted?
Stocking Fry

• Choose an ending size and stock accordingly
• Never stock more than 200,000 per acre - 150,000 or less is better
• Consider vaccination
  – THIS IS IMPORTANT!
• Stock when pond is properly prepared
Selecting Fingerlings

• Plan ahead to buy when fingerlings are in good condition.
• **Buy the largest fingerling you can afford and at least a 4 inch size.**
• Know the health history of the fingerlings you use, **visit the hatchery.**
• **Inspect all fingerling deliveries for health and size.**
Stocking Catfish for Fast Growth

- Plan to harvest catfish within 5-6 months after stocking.
- Densities of 5,000 to 7,500 catfish per acre are most successful.
- Restock fingerlings only after most of the older catfish have been harvested.
- Stock in Feb-April or Sept-Nov if possible.
Harvest at 1.5 pounds or larger

Larger fish means holding for a longer time, increasing risk, and using resources.
Feed Catfish Carefully

• Use the best feed you can afford.
• Know the performance history of your feed from the experience of others.
• Feed as much as the fish will eat except in water above 85 F or below 70F.
• Consider that fish with full stomachs may not handle stress well.
Raising Small Catfish

• Less than ¾ pound – high demand in GA
• Cost is in fingerlings — 1.5 to 2 fingerlings to make a pound of production
• Stock at 15,000 per acre or more
• Harvest frequently, once each month
• Control your own fingerling supply — must have a steady supply of seedstock
• Demand a high market price by providing quality and service.
Use Experienced Workers for Feeding Duties
Reduce the Stress on Your Catfish

• Keep **dissolved oxygen** levels at 4.0 ppm or higher.
• Maintain a **chloride** level of at least 50 ppm by adding salt.
• Maintain at least 50 ppm **alkalinity** by liming.
Chemistry is part of Aquaculture

Oxygen
ORP
Ammonia
Carbon Dioxide
Use Adequate Aeration – 1 to 4 HP/A
Monitors and Efficient Aeration

Typical Daily Oxygen Curve for Outdoor Ponds

- **40-80% Saturation**
- **Minimum Safe Level of Oxygen**

- ■ More Aeration than Required—Wasting Energy
- ○ Just Right Aeration
- ● No Aeration—Stress & Possible Fishkill at Times
Other Chemical Treatments

- Copper - algae control and reduces parasite populations
- Diquat – aquatic weed control
- Potassium permanganate – bacteria and organic matter reduction
- Formalin – parasite control
Copper Treatments

• Use copper liquids for more safety in soft water

• Copper accumulates over time

• Vary copper use with other algicides to reduce acquired resistance

• 0.1 to 1.0 ppm depending on target
Alternative Algal Treatments

- Peroxide – GreenClean, PAK 27, Phycomycin at 8 to 25 pounds/Acre-ft

- Diquat at 0.4 to 0.7 ppm

- Hydrothol-191 at 0.04 to 0.1 ppm
Potassium Permanganate

- On old treatment but not currently labeled for food fish
- Is the treatment as bad as the disease?
  - Toxicity at 4 ppm or higher
  - Variable permanganate demand
  - Do you know how it works?
  - NOT FDA approved
Other Water Oxidizers

- For between Fish Crops
  - Hydrated Lime
  - Calcium Hypochlorite

- For Hatchery Use
  - Peroxide – 35% Perox-Aid
Formalin

- This is FDA approved for parasite control.
- Use 15 to 25 ppm in ponds and tanks for warm water fish
- Kills phytoplankton
- Works better in clear water
Summary

• Fish farm management requires time and effort
  – ATTEND TO DETAILS, IT PAYS OFF
• Apply risk management to get higher yields by avoiding fish losses