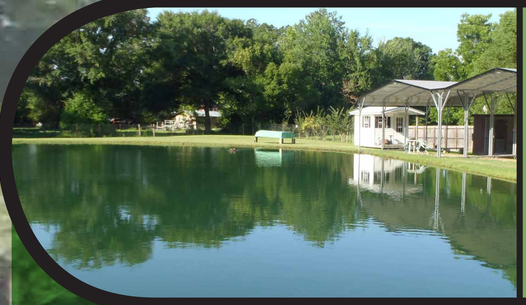

UF | IFAS Extension
UNIVERSITY of FLORIDA

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Why fishes die in my pond?

Mainly when there are:

- Reduced levels of dissolved oxygen in the pond.
- High levels of ammonia in the pond.

Where does the pond get it oxygen?

- The most important source of dissolved oxygen is photosynthesis.
- It is the process by which plants manufacture their food. Aquatic plants are mainly planktons and algae that produce oxygen in the presence of sunlight.
- Most of the time there is a balance between how much oxygen is produced and how much is used.
- In general, dissolved concentrations are lowest at dawn and highest at dusk.

What happens in the pond at nights?

- Under some conditions, the balance can be disturbed and oxygen level becomes low to kill fish.
- At night, no oxygen is produced, but respiration of aquatic organisms (algae, fish & microorganisms) remove oxygen from the water.
- When oxygen consumption exceeds its production from photosynthesis & diffusion from the air, the level of dissolved oxygen in the pond declines.
- Five (5) ppm of dissolved oxygen (DO) is recommended for optimum fish health.
- Below 2 ppm, fishes become stressed, and below 1 ppm, they begin to die.

What conditions cause oxygen depletion

- Runoff from water shed (turbid water) reduces photosynthesis.
- Overstocking and excessive feeding rates.
- Long periods of hot weather can reduce the levels of oxygen concentrations in ponds.
- The solubility of oxygen in ponds declines with increasing environmental temperatures.

What is ammonia?

- Ammonia comes from waste products of fish after consuming feeds, uneaten feeds, dead algae and aquatic plants.
- In trace amounts, it is odorless and colorless .
- Water analysis is required to determine if it is present in your pond.
- Analysis is done for Total Ammonia Nitrogen (TAN)
- Total ammonia nitrogen in the pond exist as ammonium ions (NH_4^+) or ammonia (NH_3).
- Ammonia is toxic to fish.

What should I do to prevent fish kill in my pond?

- Consider aerating you pond.
- Avoid excessive feeding. Reduce feeding rate if fishes are dying.
- Avoid over stocking. Harvest fishes as they increase.
- Avoid run-off containing nitrate and phosphate from farmland entering you pond.
- Remove aquatic weed manually if possible.
- Avoid chemical weed control in ponds if possible during hot summer months.
- Consider using grass carps to control aquatic weeds.

Photo of dead fishes killed overnight (Basil Bactawar)

Figure 1: Shows discoloration of the skin of the fish due to ammonia (Basil Bactawar)