

**DIS IS
WHAT
WE DO!**





Fish Diseases, Identification, Prognosis, and Treatment

Courtesy of The Koi Store

Special thanks to the Atlanta Koi Club & Atlanta Water Gardens



What Is A Disease?

- * A disorder of structure or function in a human, animal, or plant, especially one that produces specific signs or symptoms of that affects a specific location and is not simply a direct result of physical injury



What Affects Koi?

- * Parasites
- * Viruses
- * Bacteria
- * Water Quality
- * Fungal Issues



Microscopes

- * Major Components:

- * Oculars (eye looker inners)
- * Stage
- * Objectives (different magnifications)
- * Filters
- * Coarse & Fine Focus
- * Maximum magnification is 400X



Parasites

* 7 major types

1. Ichthyophthirius Multifillis
2. Flukes
3. Costia
4. Trichodina
5. Learnea
6. Argulus
7. Chilodenella

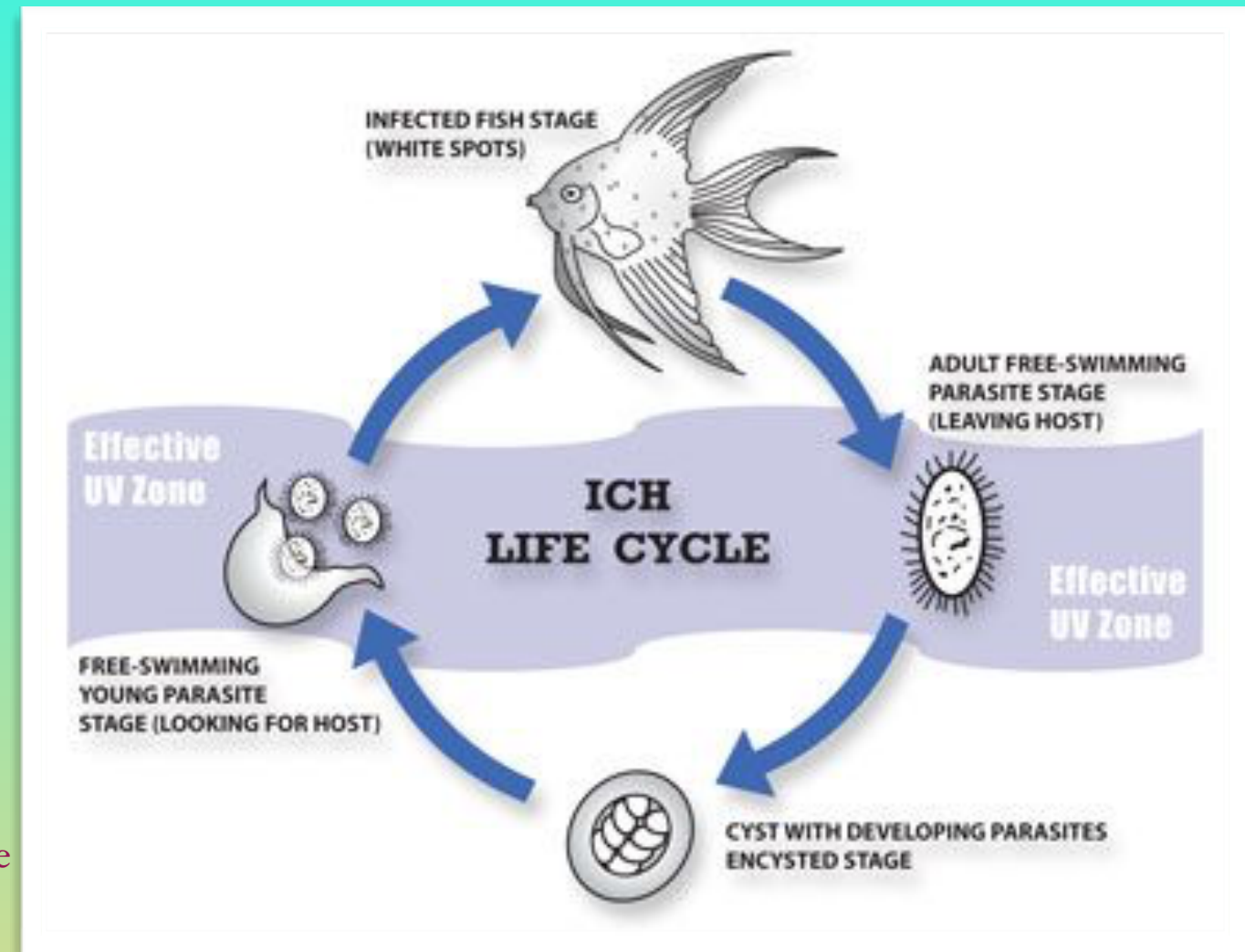
* Identification of particular parasites is of utmost importance early on



Ciliates

I. Ichthyophirius Multifilllis

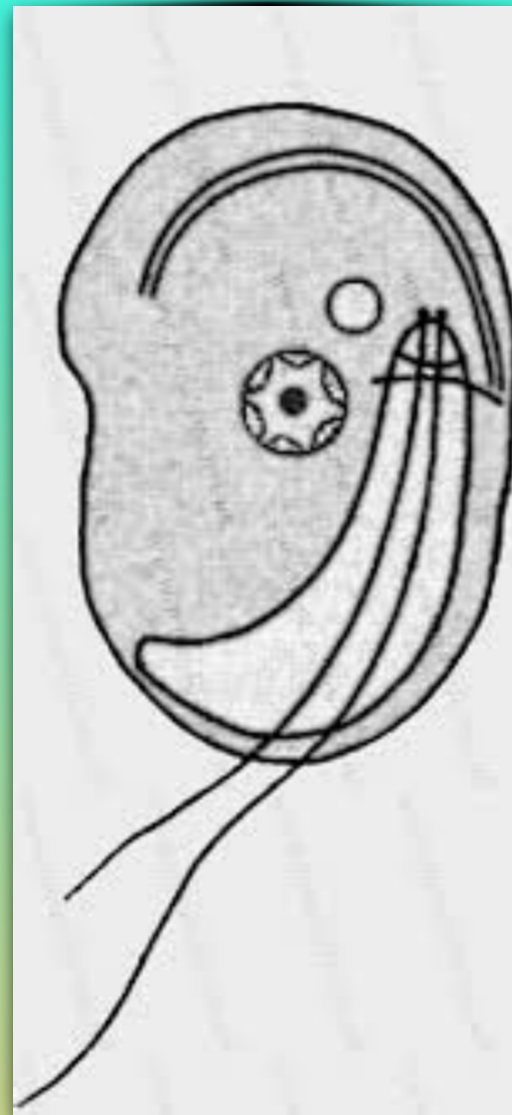
- A. Commonly known as Ich or Ick
- B. Doesn't always manifest as white spots on Koi
- C. Has to be identified microscopically
- D. Treatments can include:
 - * Salt
 - * Potassium Permangnate (for the novice it is useful to have an ORP meter to measure concentration)
 - * Currently there is nothing to kill Ich on the fish without killing its host, therefore you must end the Ich's life cycle
 - * All Ciliates and Trematoda can also be treated with FMG (Formalin Malachite Green)



Ciliates Continued

2. Ichthyobodo Necater

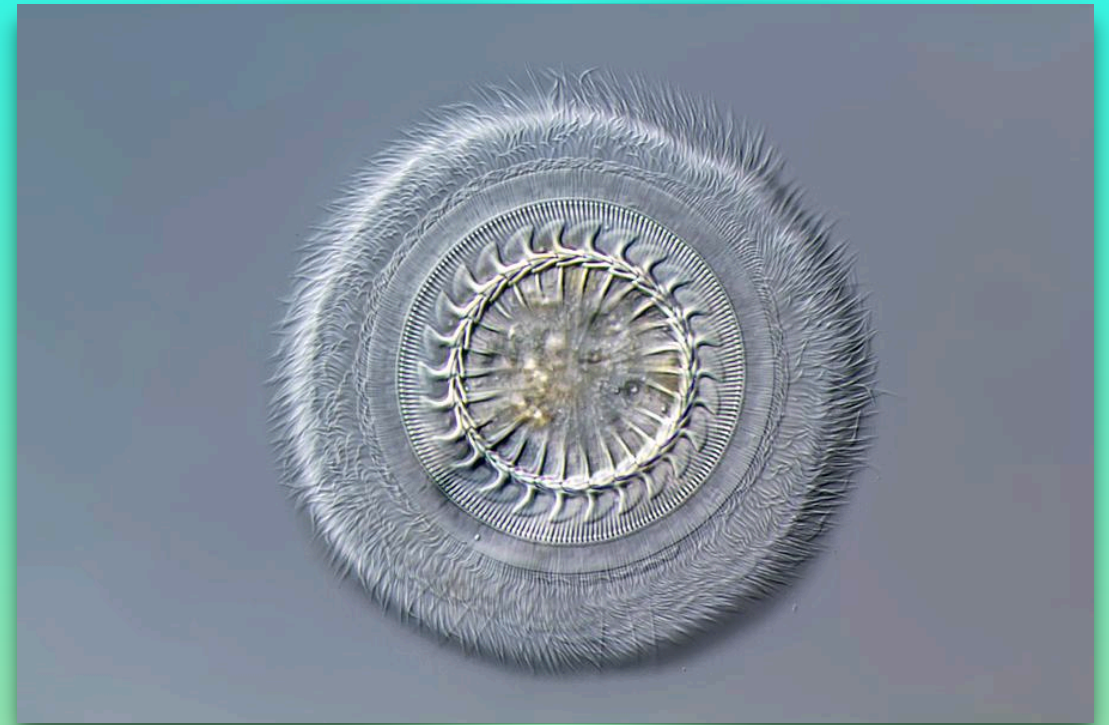
- A. Also known as Costia
- B. Multiplies rapidly
- C. Most deadly when attacking the gills
- D. Treatments can include:
 - * Potassium Permanganate
 - * Nitrofurazone



Ciliates Continued

3. Trichodina

- A. Looks similar to flying saucers
- B. Characterized by the presence of a ring interlocking cytoskeletal denticles
- C. Treatments can include:
 - * Potassium Permanganate
 - * Salt
 - * Acriflavin
 - * Nitrofurazone



Ciliates Continued

4. Chilodenella

- A. Can also be referred to as Killer Don
- B. Dual nuclear structure
- C. Can be difficult to diagnose
- D. Treatments can include:
 - * Potassium Permanganate
 - * Nitrofurazone
 - * FMG



Trematoda

I. Flukes

A. Two main types of Flukes:

- * Dactylogyrus (Egg laying)

- Eye spots

- Can take longer to kill

- * Gyrodactylus (Live bearer)

- No eye spots

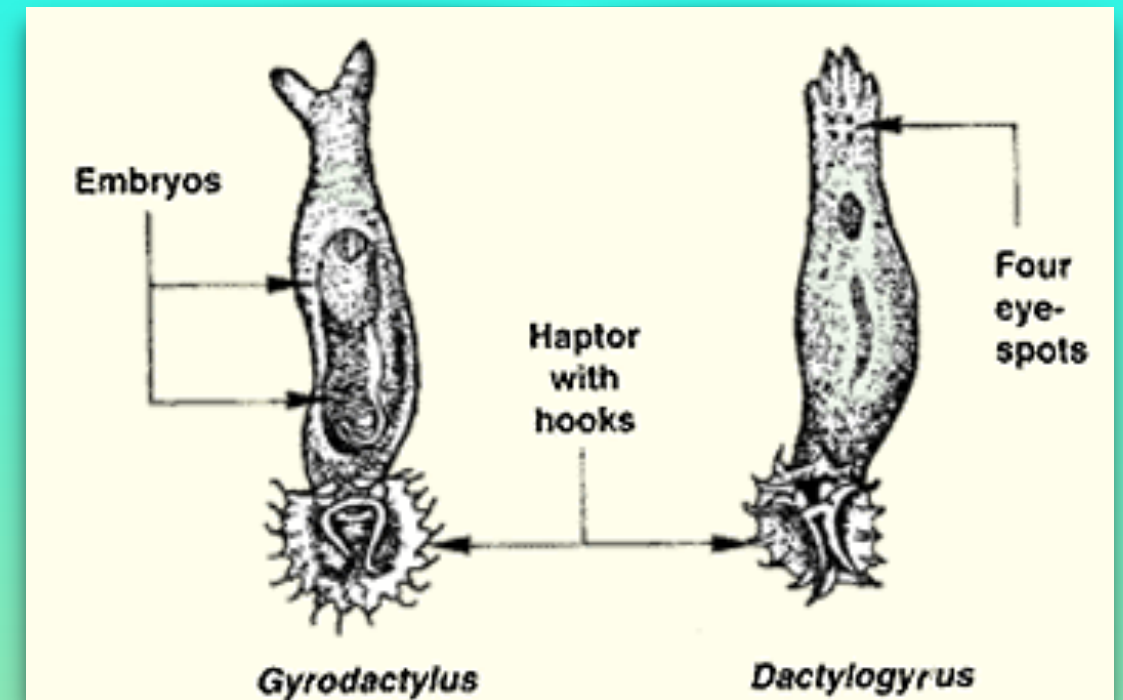
- Shorter recovery process

B. Treatments can include:

- * Potassium Permanganate

- * Praziquantel

- * Fenbendazole



Crustaceans

2. Argulus Foliaceus

- A. Commonly referred to as Fish Lice
- B. Known to be the vehicle for other fish diseases
- C. Can be seen with the naked eye
- D. Treatments can include:
 - * Dimilin (Diflubenzuron)
 - * Physical removal
 - * Can NOT be treated with FMG



Crustaceans Continued

3. Learnea

- A. Also known as Anchor Worms
- B. Must not only do physical removal of parasite but also full tank treatments
- C. Treatments can include:
 - * Potassium Permanganate
 - * Dimilin (Diflubenzuron)
 - * Physical removal
 - * Can NOT be treated with FMG



Bacteria

- * Bacterial diseases in Koi are surprisingly not usually caused by actual bacteria
- * Other causative events open the fish's defense and immune systems
 - * Such as: Poor water quality, stress, overcrowding, parasites, and mechanical
 - * Pathogens bacteria are ubiquitous in the fish's environment and can only "get the upper hand" when the fish is somehow compromised



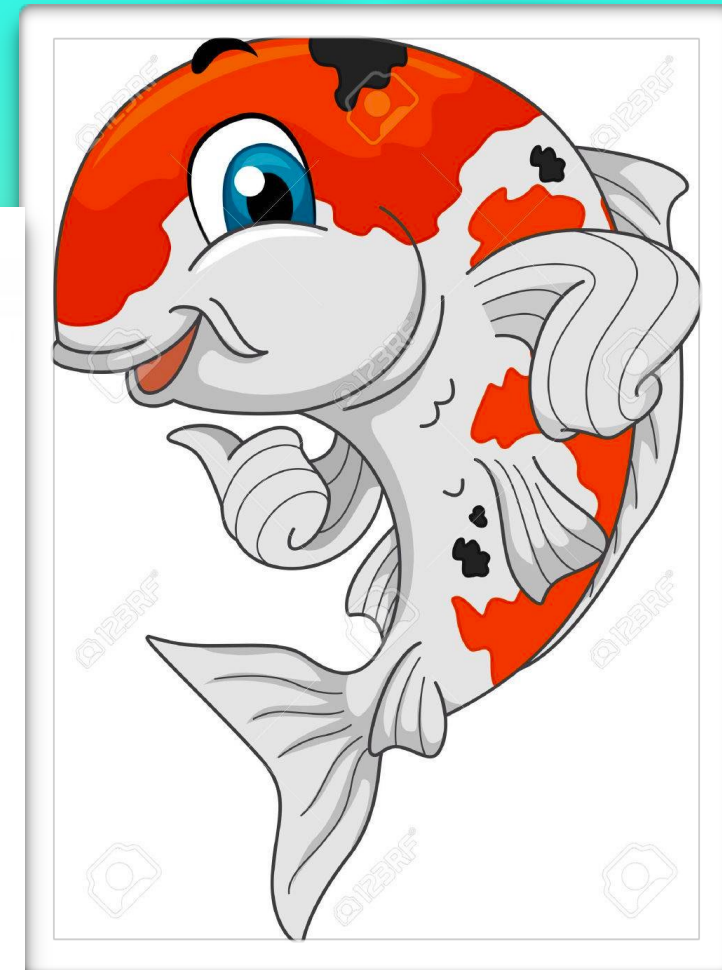
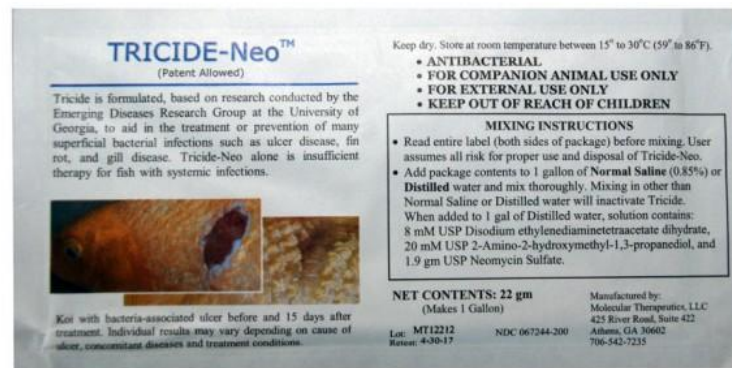
Manifestations of Bacteria

- * Mouth, tail, and fin rot
- * Ulcers
- * Septicemia
- * Dropsy
- * General Malaise



Treatments for Bacteria

- * Raise salt level in tanks/ponds
- * Rectify water quality issues
- * Identify and eliminate pathogens
- * Injectable/dissolvable antibiotics
- * Antibiotic dips (Tricide Neo)
- * FMG
- * Potassium Permanganate
- * Reduce bacterial levels in environment
 - * Without compromising beneficial bacteria



Viral Diseases Affecting Koi

- * Koi Herpes Virus (KHV)
- * Carp Pox
- * Spring Viremia of Carp SVC
- * Lymphocystis
- * Sleeping Sickness
- * The key to Viral Diseases is prevention!



Testing Modality For KHV

- * Virus Neutralisation

- * serological titer virus

- * Enzyme-linked immunosorbent assay (ELISA)

- * detects and measures antibodies in blood

- * PCR (Polymerase Chain Reaction)

- * Reveals viruses

- * NOT an appropriate screening tool

- * White blood cell PCR



Fungal Issues

- * Usually secondary involvement due to other stress factors
- * Some common fungal diseases found in fish are:
 - * Saprolegniasis
 - * Branchiomycosis



Fungal Treatments

- * Clean wound & apply potassium permanganate slurry
- * Nitrofurazon
- * Most importantly, check water hygiene and quality!



Water Quality

- * Seneye Unit:

- * Constantly monitors water and alerts you to possible issues

- * Rectify negative parameters

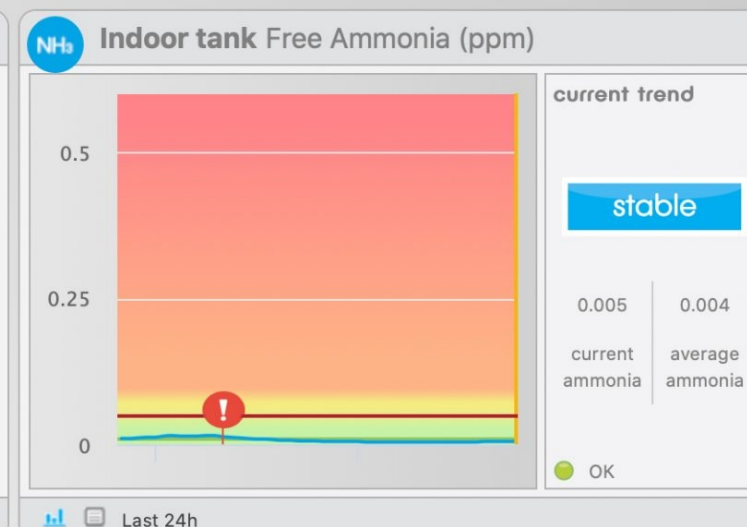
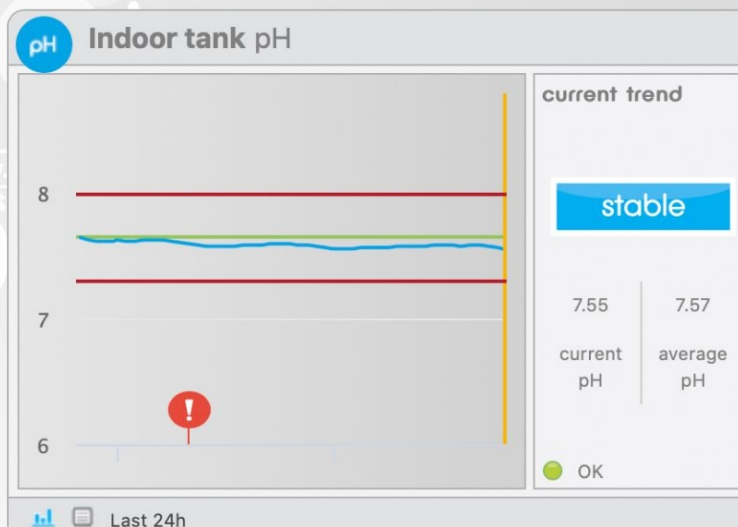
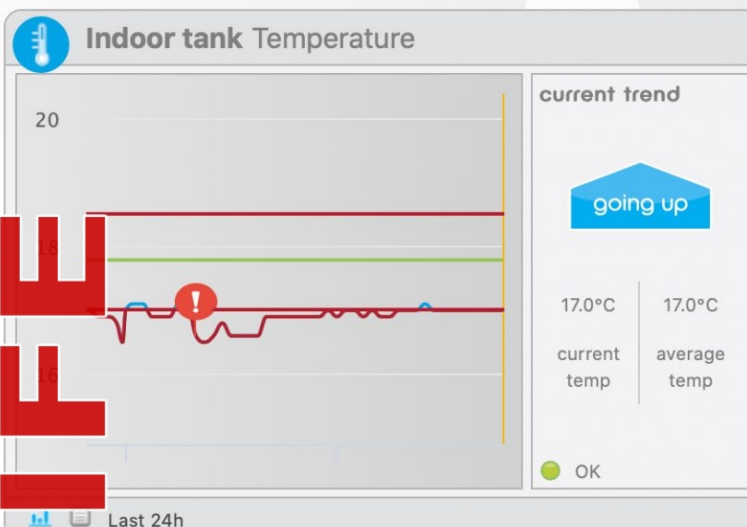
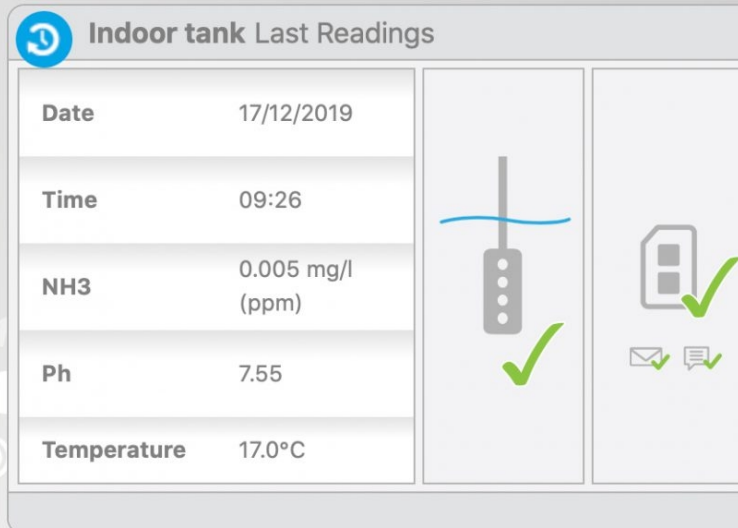
- * Chlor-am-ex

- * Salt

- * Adjust pH

- * Fritz-alkalinty boost- we use massive amounts of oyster shells to buffer water and maintain constant pH





seneye Information

Questions?

Thanks for showing us these little beauties @floridaaquarium. Can anyone tell us where these leafy sea dragons can... <https://t.co/1MR9lyCQX3>

Seneye Spectra goes way beyond measuring PAR' - Thanks @JakeAdams ! Check out the link below for more:... <https://t.co/1uRcU9CuOe>

Check out the new #seneyenode in one of the fish ponds at

Reset Dashboard



Thank You for Having The Koi Store!

