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Broodstock Health

Dr. Erik Johnson

- By Dr. Erik Johnson
- Fish Health Veterinarian
- Author: Koi Health & Disease 2006 Reload
- Author: Fancy Goldfish

Koi Health For Broodstock - Athens Georgia 2006

Brood Stock Health By Dr. Erik Johnson

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Nitrite

Dr. Erik Johnson

- Not a common problem in broodstock facilities which are usually either holding for a FEW DAYS ONLY or are completely cycled (The nitrogen cycle mentioned before is “complete”)
- Blocked by salting to as low as 0.1%
- Removed by constant flow through.

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Nitrate

Dr. Erik Johnson

- Common, COMMON in broodstock holding facilities which are often INDOORS and free of green foliage / algae to reduce same.
- Still, it takes weeks to months for Nitrate to weaken fish to cause:
 - Slow healing wounds
 - Increased vulnerability to other infections

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pH

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- A measurement
- An important one though. Any pH higher than 6.9 is “okay” for Koi
- Koi don’t care about a pH rise of two points.
- They hate a pH drop of any two points.
- Carbonic acid drops pH
- Bicarbonate / carbonate supports pH

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Bacterial Issues

Dr. Erik Johnson

- Condensing fish stresses them and they often produce more mucus
- The mucus is “bacteria food”
- Condensing populations of fish ease bacterial spread as well.

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Preventing Spread

Dr. Erik Johnson

- Feed medicated food in these holding facilities if you feed at all
- Medikoi is well formulated and contains a good mix of antibiotics.
- I am nowhere near as enthusiastic about other formulations.
- Ultraviolet Sterilizers may be helpful

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Controlling Bacterial Issues

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- Broodstock often have some dents and scratches.
- If body language is good and they will be detained for a short time, no treatment may be indicated.
- If treatment is desired – Nuflor is suggested... One injection is good before return to pond.

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Viral Issues

Dr. Erik Johnson

- Spring Viremia of Carp
- Carp Pox
- Koi Herpes Virus
- The one to worry about is Koi Herpes Virus. This kills 90% of exposed fish and under 2% of infected fish that survive will carry virus in the tissues for several months after infection and survival.

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SVC – Spring Viremia

Dr. Erik Johnson

- A rhabdovirus that kills 10% of the fish it infects by making them vulnerable to Aeromonas or other bacterial pathogens.
- Low mortality with HIGH morbidity in studies by Ken Wolf, USFWS.
- Reportable Disease – Meaning if detected – your pond / farm will be closed and quarantined, for a very long time.
- Testing for this has been downgraded as a priority for APHIS and other regulatory agencies.

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Koi Herpes Virus

Dr. Erik Johnson

- Infectious in warm water, with a narrow window of 70-80° F
- Too cold (< 70°F) – Virus resides inactive.
- Too warm (83-86°F) – Clinical signs resolve.
- Shows up 4-7 days after infection depending on temperatures
- Skin, gills and kidneys basically peel and die.
- 90% of infected fish are dead by Day 14

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Prevention / Diagnosis

Dr. Erik Johnson

- Don't have, own, or keep KHV infected fish
- Keep KHV infected fish off your farm or lot
- Don't do breeder exchange programs with any UNTESTED fish.
- Testing is done with SEROLOGY on blood of any fish that proposes to come onto your lot. Fish are bled and samples sent to UGA
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Control KHV

Dr. Erik Johnson

- During infection – you can stop losses and restore fish health by:
 - Diagnose any parasitic or bacterial co-infections.
 - Treat and parasitic or bacterial co-infections.
 - Heat fish water to 86°F at a rate of one degree Fahrenheit per hour until 86°F is reached.
- Research may be underway that suggests the fish may be cured by heat – so don't kill survivors. Simply store them in landlocked ponds offsite until we know.

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Last Considerations

Dr. Erik Johnson

- Broodstock are big fish which are highly resistant to a lot of things that might kill smaller younger fish.
- Split fins and ulcers, and luxated caudal airbladder lobes are common and may not need treatment.
- The most expensive broodstock will jump out of the tank.
- The power will go out on the tanks if you leave town for a conference or delivery.

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