



DEPARTMENT OF FISH AND GAME

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FISH PATHOLOGIST REPORT

Location

Iron Gate Hatchery

Species

Steelhead fry (11K fish at 1,275/lb)

Date

May 21, 2010

Holding Area

Hatchery troughs, Lots 1 through 4

Disease Condition

Fish were placed in troughs and shortly thereafter some losses were noted. Losses started low, spiked, and then came back down a bit. Daily losses from first notable value to more-or-less background were 25, 108, 167, 132, 101, 53 and 16 fish per day (day of diagnostic). Some moribund fish were euthanized and evaluated using light microscopy. These fish had mixed bacteria (Aeromonad/Pseudomonad-type) on skin and gill scrapes, and also in intestines. No other pathogens or parasites found.

Recommendations

Given amount of spawning steelhead that returned to the hatchery in 2009-2010, these newly hatched fish are very valuable. Treat with oxytetracycline medicated feed (terramycin) at a rate of 3.75 g of oxytetracycline per 100 lbs of fish, per day, for 10 days. This is achieved by feeding 2% body weight per day if feed has 2 g oxytet per lb of feed, or feed at 1% body weight per day if feed has 4 g oxytet per lb of feed.

Also consider a potassium permanganate (KMnO4) flush. Do TWO flushes per day, for TWO consecutive days, at about 30 minutes apart. Since fish are in troughs and not in raceways, the method is a little different. Troughs are 360 gallons receiving 33 gpm, turning over once every 11 minutes. Make a stock solution by adding 3.5 g KMnO4 to 1.5 g water.

This will equal 0.018 oz KMnO4 per oz of stock solution.

- On day one add 2.5 oz stock solution (3.69 mg/gal or 0.94ppm)
On day two add 5.0 oz stock solution (7.3 mg/gal or 1.9 ppm)

Calculations

0.018 oz KMnO4 per oz stock solution
2.5 oz stock solution x 0.018 oz KMnO4 per oz stock solution = 0.045 oz KMnO4
0.045 oz KMnO4 in 360 gallons = 0.00013 oz KMnO4/gal water
0.00013 oz x 28.35 = 0.00369 g KMnO4/gal water
0.00369 x 1000 = 3.69 mg KMnO4/gal water
360 gal water = 1362.6 L water
0.045 oz KMnO4 per 1362.6 L water = 1275.75 mg KMnO4/1362.6 L water or
0.94 mg per L (or 0.94 ppm). Therapeutic dose is recommended at 2 ppm static or 7.6 mg/gal as flush.

Comments

It is the responsibility of Iron Gate Fish Hatchery to comply with any applicable water quality discharge regulations while performing these treatments.

Submitted By: Mark Clifford, Ph.D., Associate Fish Pathologist, CDFG

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