

Management of Bacterial Kidney Disease with the “New” Kirkegaard and Perry Antibodies

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Idaho Department of Fish and Game (IDFG) and other fisheries agencies of the Pacific Northwest have utilized enzyme-linked immunosorbent assay (ELISA) to successfully limit epizootics caused by *Renibacterium salmoninarum*, the cause of bacterial kidney disease (BKD). The successful IDFG fish health program for chinook salmon *Oncorhynchus tshawytscha* is based on reliable ELISA results to cull the eggs of high risk females and is dependent upon the quality of the commercially available antibody reagents.

Commercially available polyclonal antibodies have been available through Kirkegaard and Perry (KPL) since the late 1980s. The high quality of these affinity purified antibodies of mother batch 1 lots led to consistent results and an ability to utilize ELISA data to limit BKD epizootics. In 1996, the batch 1 antibodies were depleted, which initiated production of the mother batch 2 antibodies. The optical density (OD) values from these ELISA comparisons were not consistent with the batch 1 optical density (OD) values and required adjustment (Scott and Johnson 2003).

In July of 2003, KPL provided the Eagle Fish Health Laboratory (EFHL) the opportunity to evaluate new lots of coating antibody and horseradish peroxidase-labeled conjugated antibodies that were processed with a new affinity column. Three PNFHPC laboratories tested the same sample set with similar results. The ELISA OD values correlated well with the mother batch 1.

These new KPL antibody lots were implemented into the ELISA-based culling program at IDFG facilities in 2003. EFHL expects a statewide culling rate of approximately 10.0%. In 2003, the culling rate for IDFG chinook spawning activities was at 10.6%. The ELISA-based culling program will continue to be an integral component of our BKD management at IDFG.

References

Scott, R. and K. Johnson. 2003. BKD ELISA: Correlation Between “New” Kirkegaard and Perry Antibody Lots and Those of Mother Batch 1. Fish Health Section/American Fisheries Society Fish Health Newsletter. October 2003.