Quick fish sampling guide for disease diagnostics **Histology sampling guide**

Step 1: Sample collection



For fry or eggs < 1cm:

For swim-up fry or fertilized eggs < 1 cm: Place 3–5 whole fry and/or eggs in 10% neutral buffered formalin (NBF) fixative at a ratio of fish to fixative of 1:10.



Avoid the use of tubes with narrow bottoms, especially conical, as tissues do not mix adequately with fixative. Better to use flat bottom tubes.

B For fingerlings 1–5 cm:

Cut off gill opercula. Open abdomen. Pull out viscera to protrude slightly from opening to expose internal organs. Place fish in 10% NBF fixative at a ratio of fish to fixative of 1:10. *Caution: Do not to cut the intestines.*



15 ml

For fish > 5 cm:

Dissect a 5 x 5 mm section (clean cuts) for each organ (take whole organ if < 5 mm thick). For standard histology, collect from brain, gill, eye, heart, pyloric caeca, stomach, intestine, spleen, liver, kidney and a representative lesion if any (see below for more details).



Place organ specimens in 10% NBF fixative at a ratio of fish to fixative of 1:10.





Step 2: Fixation

Immerse 5 x 5 mm tissue sections in 10% NBF fixative at a 1:10 ratio. Store at room temperature away from sun for 24–48 hours.



Step 3: End of fixation



Drain NBF and dispose safely

Store at 4°C

Note: Proceed with 70% ethanol for long-term storage or when doing specialist stains such as immunohistochemistry (IHC). For immediate processing, the 70% is not needed. Please note it is also harder to ship samples in alcohol, as it may require dangerous goods paperwork.



www.worldfishcenter.org

In partnership with



This work was undertaken as part of the CGIAR Research Program on Fish Agri-Food Systems (FISH) led by WorldFish, the CGIAR Inspire Challenge project on Rapid Genomic Detection of Aquaculture Pathogens the Norwegian Agency for Development Cooperation (Norad) project Increased Sustainability in the Aquaculture Sector in sub-Saharan Africa, through Improved Aquatic Animal Health Management, and the Feee Future (FIF) Innovation Lab for Fish (FIL) project Improving Biosecurity: A Science-Based Approach to Manage Fish Disease Risks and Increase the Socieconomic Contribution of the Nigerian Catifs and Tilapia Indust.

The programs are supported by contributors to the CGIAR Trust Fund, Norad, and the FtF FIL through the United States Agency for International Development (USAID