

Integrity of ds DNA (FISH) Under Diverse Preservative Condition

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Abstract—Successful preservation of tissue samples is a pre requisite for long field studies in remote areas. However, there is little published information concerning field preservation of fish tissues for DNA analysis. DNA was extracted from 2 cyprinid fishes preserved in non-buffered formalin (4% & 10%), buffered formalin (4% & 10%) & ethanol (70% & 90%) under 5 different time durations and two different temperature conditions {RT/DF}. The quantity and quality of extractable DNA were assessed. It was revealed that, besides buffered formalin and ethanol preserved sample showed highest quantities and quality of DNA. The higher the water content of the preserving solution the greater the damage to the DNA. The presence of formaldehyde (BF/NBF) in the solutions proved to be very detrimental to quality of DNA. Fixation with formalin, a widely adopted procedure to preserve tissue samples, leads to extensive degradation of nucleic acids and thereby compromises the quality of DNA. The length of time in storage and the storage temperature also affected the quality and quantity of DNA.

Keywords: buffered formalin, fixation, preserve, extraction, temperature.