

8.9 PROTOCOL FOR PROCESSING FISH TISSUES

Overview

This protocol indicates steps to be undertaken to prepare fish tissue samples for metals or trace organic analyses.

Sources

British Columbia MWLAP (2003)

At a glance

Trace metal analyses

- 1** Each specimen should be identified, weighed, measured, and scale samples taken for aging before dissection. Gender should be determined after dissection, and maturity should be commented on if possible (i.e., degree of egg or sperm development).
- 2** Wipe specimen clean of mucous and foreign matter with a 4% nitric acid/de-ionized water solution prior to dissection. Dissect specimens on a cleaned glass or plastic surface only.
- 3** When removing a block of tissue from the specimen, the cutting instrument (plastic or stainless steel knife) should be wiped clean after each incision using a paper towel soaked with de-ionized water. Use a new paper towel for each specimen dissected. The preferred location on the fish for a sample of muscle tissue is the upper part of the side behind the dorsal fin. Care should be taken not to cut into the digestive tract during dissection. If the target fish are small, composite tissue samples may be required (this will be identified in the project design).
- 4** Remove a minimum of 100 g of muscle tissue and place in a pre-labeled tissue cup (acid washed, leak-proof plastic containers available from the issuing laboratory). Remove the liver and place in a pre-labeled tissue cup. Muscle tissue samples should be free of skin and bones. Liver samples must exclude the gall bladder.
- 5** Immediately place each tissue cup in a cooler containing ice packs.
- 7** Wipe the glass or plastic dissecting board clean with the 4% nitric acid/de-ionized water solution before proceeding to the next specimen. The acid should be certified pure and a QC check conducted of the working solution for contamination. An alternative is to use solvent washed aluminum foil as a disposable clean surface (replace after each specimen).

Trace organic analyses

- 1** Each specimen should be identified, weighed, measured, and scale samples taken for aging before dissection. Gender should be determined after dissection, and maturity should be commented on if possible (i.e., degree of egg or sperm development).
- 2** Wipe specimen clean of mucous and foreign matter with de-ionized water (stored in a glass container) prior to dissection.

Dissect specimens on a glass or stainless steel surface only. At no time should the sample come into contact with plastic.

dissecting **3** When removing a block of tissue from the specimen, the pre-cleaned (solvent washed, heat treated) cutting instrument should be wiped clean after each incision using a paper towel soaked with de-ionized water. Use a new paper towel for each specimen dissected. Care should be taken not to cut into the digestive tract during dissection.

4 Remove a minimum of 50 g of muscle tissue and place in a pre-labeled glass container (acetone washed, heat treated at 400°C and available from the issuing laboratory). Remove the liver and place in a pre-labeled glass container. Muscle tissue samples should be free of skin and bones. Liver samples must exclude the gall bladder.

5 Immediately place each tissue cup into a re-sealable bag (e.g. Ziploc) and then in a cooler with ice packs (or dry ice if possible if sample is to be analyzed for volatile or semi-volatile organics).

6 Wipe the dissecting board clean with de-ionized water before proceeding to the next specimen.