



Naturhistoriska
riksmuseet

Manual for collection, preparation and storage of mussels

Swedish Museum of Natural History
Department of Contaminant Research
P.O. Box 50 007
SE -104 05 Stockholm
Sweden



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Collection

Blue mussels (*Mytilus edulis*) are the only mussel species that is collected within the Swedish environmental monitoring program.

Area of collection

Localities used for collection within the Swedish environmental monitoring program is; Kvädöfjärden at the Swedish east coast (Baltic Sea), Nidingen and Fjällbacka, at the Swedish west coast.

Time of collection

Collection should be carried out annually during the late autumn when the reproduction period is over and the population structure is as homogenous as possible. The collection should also be conducted as close as possible in time and space each year, in order to reduce difference in uptake of contaminants due to variability of these factors.

Collections of material can in some cases be based on commercial capturing methods and are not standardized in those cases.

Collection

The size interval should be narrow, preferably between 3 - 8 cm at the Swedish west coast, and 1- 4 cm at the Swedish east coast.

When the organisms have been collected, they should be rinsed externally in clean water from the area of collection to wash away sediments and other foreign matter. They should then be allowed to remain in clean sea water from the area of collection for 12-24 hours to allow them to remove sediments and other foreign matter as pseudo faeces. Care must be taken that the water remains cold so that the organisms do not perish. The storage tank should preferably be made of glass.

At each capturing event the following data are collected:

- date of collection
- method of capture
- locality, coordinates alternatively
- collector
- species
- number of individuals
- remarks if any

Equipment for collection

- jars
- plastic bags
- labels
- freezer

Transportation

If the mussels are transported frozen to the ESB they should be cleaned alive and opened with minimum lesions to the soft tissues. The mussels should be inverted and allowed to drain on a clean surface at least 5 minutes before the soft tissue is removed in order to minimize influence on dry weight determination. The samples will then be frozen. Otherwise they should be transported alive in an aerated aquarium with ambient water.

Preparation

Blue mussel (Mytilus edulis)

Representative specimens should be selected. Individuals with fouled, eroded or bored shells should not be included.

Mussels should be cleaned alive and opened with minimum lesions to the soft tissues. The mussels should be inverted and allowed to drain on a clean surface at least 5 minutes before the soft tissue is removed in order to minimize influence on dry weight determination. After draining off the shell liquor, the whole soft body of the animal, excluding the adductor muscle, should be carefully removed from the shell.

When removing the tissue and placing it in containers, it is very important to utilize the appropriate materials for cutting tools and storage containers. In particular, for heavy metal analysis, direct contact between tissue and metallic material should be avoided. As concerns tissue for organochlorine analysis, direct contact between the tissue to be analyzed and plastic should be avoided.

Soft bodies intended for formaldehyde fixation or for immediate extraction should be taken care of in connection to the preparation, since each freezing and thawing is negative from the view of preservation. These samples are stored in glass jars.

Prior to storage, the organic material is homogenized. The samples are then being frozen. Information on the number of individuals, acquisition number and locality should be registered.

Length, breadth, and shell weight is determined and registered for each individual when the shells are dry.

Equipment

- scale
- caliper
- scalpel (stainless)
- knife (stainless)
- ceramic knife
- forceps (stainless)
- plastic bags
- aluminum foil
- laminate
- glass jars
- laboratory blotting paper
- homogenizer

Storage

The dried shells are stored in plastic bags at room temperature (c. 18°C).

Samples of homogenized soft bodies are put in cleaned glass jars with plastic lids. Aluminium foil is placed between the jar and the lid. The glass jars are stored frozen (-20°C).

Whole individuals are packed separately in laminate. The packages are stored frozen (-20°C).

Equipment

- plastic bags
- aluminium foil
- laminate plastic bags
- labels
- freezer
- glass jars
- sealer (welder) for laminate plastic bags