

A draft manual for the sampling and analysis of meiobenthic samples from the intertidal-subtidal sandy substrates during the MED-CORE Project

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Sampling of the littoral or the supralittoral zone of the Mediterranean can be done typically at any time due to the absence of tides. Habitats of the littoral zone can vary from mud's to gravel and in most sediment type's cylindrical tubes are sufficient to sample the upper portion of the sediment. These tubes can be made from any available rigid material. Plastic tubes are relatively inexpensive and easy to use. The diameter of the tubes should be chosen depending on the volume and depth of the sample required. Corers with inner diameter of 2-4 cm can be used in many different habitats and provide a sample that can be sorted in it's entirety. A tight-fitting stopper secured in the upper end of the coring tube will provide suction to hold the sediment in place while the corer is removed. Another stopper may secure the lower end of the tube for transporting.

If samples from the sublittoral zone are required then samples should be taken by SCUBA divers. Samples taken by divers are usually of good quality because they are able to position the samplers with care and insert the corer slowly without disturbing the sediment.

After sampling, fixation of meiofauna is normally done by bulk fixation of the sediments. Fixation depends on the taxonomic group of interest and the purpose of the study. Formalin (10%) represents the most popular fixative as most meiofaunal taxa such as nematodes and copepods remain identifiable after fixation. If formalin is used as a fixative it should be buffered either with borax or hexamethylene tetramine since calcium carbonate will dissolve at pH lower than 8.0. Seawater should be used as a dilutant for either fixatives or preservatives because soft meiofauna animals may be damaged due the increased osmotic pressure of seawater.

In the following table some necessary equipment for sampling beach meiofauna is listed:

FIELD EQUIPMENT CHECKLIST

1. Vehicle transport.
2. Field maps and sites data (including vehicle access info)
3. Camera and film.
4. Writing board with sampling protocol proforma.
5. Field data recording sheets
6. Measuring rope
7. Sample containers
8. Formaldehyde preservative (10% formalin/ 4% formaldehyde)
9. Rose Bengal (saturated solution in 5% formalin)
10. Sample labels (pre-written if possible)
11. Pencils, pens, felt markers etc.
12. Hand spade
13. Core tubes and bungs (ca. 22mm, 44mm internal diam.)

14. Scuba/snorkel gear
15. Thermometers
16. Salinometer (refractometer) (if not available small vials for taking samples)
17. Work surface for dividing cores
18. Rubber hammer
19. Cool box (for live samples if needed)
20. Polythene bags
21. Plumb line (for water depth)
22. Core tube basket (holding upright core samples)
23. Carbon/chlorophyll containers
24. Macrofauna equipment (discuss what we need)
25. Theodolites
26. Sieve 0.045mm
27. Rings for slicing
28. Spate for slicing
29. Wash bottles.
30. Core piston.
31. Buckets
32. Sieve 0.500mm