

Sampling of herring from the commercial pound net fishery

1. Purpose of sampling

The general aim of the sampling is obtaining biological information on the structure of the commercial catches: which length/age groups prevail in the catches and how the fishery affects on the stock structure.

2. PSU (primary sampling unit). PSU is the fishing trip.

3. Sampling frame. All Estonian herring catches taken in the coastal fishery with pound nets.

4. Sampling frequency and spatial coverage.

Sampling takes place on monthly basis from April to June): every month 3-7 samples of herring in sub-divisions (28-1, 29 (Western Estonian Archipelago Sea) and 32).

5. Selecting the fishing vessel and trip.

Samples are collected from every Sub-division listed under paragraph 4, once a week if possible. In sub-division 28.1 (Gulf of Riga), 2-3 samples are collected in Saaremaa Island and 3-4 samples in the Pärnu Bay area per month. Prior to the sampling trip the information on catches, unload place and the timing are obtained from the fishers. In the harbour, the boat is selected randomly if possible. Refusal of sampling by the fishers is recorded.

6. Sample size.

A sample of app 10 kg (1 bucket) is collected per trip in order to estimate the species composition of the catch (specimens by species are counted and weighed). The sample is taken from the different parts of the catch.

App 120-130 specimens (but not less than 30 fish), are randomly collected. All collected specimens are measured (TL), weighed and the sex and maturity stage are determined (using the 6- stage scale described in BITS- manual). Additionally, the otoliths (*sagittae*) are removed for age determination.

7. Information obtained from the skipper

- Mesh size
- Number of pound nets checked during the trip
- Coordinates of pound nets and time from the previous check (soaking time)
- Depth
- Name of the port of unload.
- Catch weight by species (kg)
- Length of the boat

Data to be recorded in lab:

100 specimens are analysed and the following information is collected from each fish

- Total length (TL (0.1 cm))

- Individual weight (0.1 g)
- Sex and maturity stage (according to 6-stages scale described in the BITS manual)
- Collection of otoliths (*sagitta*) for age determination
- Age determination is performed from the otoliths rinsed in the alcohol with microscope using the upper lighting.

8. Data storage

Primary data are storage indefinitely both on paper and digitally. The primary data are recorded as the Excel files with agreed format and stored in the PC of the responsible scientist and in the database of MEI. All otoliths are deposited in the archived of the EMI. Technical parameters of the sampled vessels are obtained from the Estonian Fishing Vessel Registry.