

Harbor sampling of large pelagic (Herring and Markel)

Herring:

Sampling

All relevant vessels are monitored by the AIS for vessels entering the harbor of Skagen were close to 95 % of the landings are sampled and in Hirtshals 10% of the landings are sampled. In Skagen the foreman Ralf can be contacted in advance to get information on planned future landings in the harbour

If one or more EU vessels are present in the harbors samples are collected. The main part of the landings in Jylland are in one of the two harbors.

In the harbour of Hirtshals samples are not put aside and it is therefore more difficult to get samples from the weekend or that have been landed in the evenings. . At the "kgl. Vejer" in Hirtshals samples is to be collected in the small cabin behind the office, where the landed fish is placed in large containers. The sample needs to be 125-150 specimen.

Information on the catches can be collected at the office: catch by area ect.

In Skagen the samples are collected in the factories cooling room where the samples are placed in orange basked in plastic bags with information on the catch, vessel and area attached. The basked can be found at the last gate between the cooling room and the factory. The samples are lifted in plastic containers and can be transported to the car on a caring wagon "sækkevogn". The samples are already stored in samples with 125-150 specimen.

For both harbors the samples are taken to the laboratory for further analysis.

Data processing

Herring from area 2A and 4A (EU-vessels).

The sample is collected in trays and length measures in scm- groups ranked from smallest to largest. When all the sampled herrings are placed in trays, the fish are counted by scm, weighted in scm groups and punched in the scheme with length/weight information. A subsample is collected for further data processing. The subsample is roughly on 25 individuals and if the total number of fish in the sample is close to 125 is every 5th fish selected for further analysis if the total number is close to 150 fish it is every 6th fish that is selected for further analysis. The smallest and largest fish needs to be part of the sample.

The Swedish Skagerrak samples are sampled according to the bilateral agreement. The sample is randomly reduced to close to 100 fish. The sample is packed in plastic bags and send to the Charlottenlund lab.

as individual fish and the otoliths are removed from 95 – 100 specimen. The otoliths and copy of the sample information is copied and send together to Sweden.

Mackerel:

The Mackerel fishing season is conducted in a limited period and all the landings in Denmark is landed in Hirtshals. All Mackerel samples are collected at the "kg. vejer og måler" in Hirtshals. A sample is close to 90 individuals. All individuals are length measured and aged. Information from the catch is obtained from the "kg. vejer og måler" and can be linked to the individual sample. The fish is aged and the data is punched in the database.

For both herring and mackerel the sample information is punched in the excel sheet "industriprøver" and a journal number is attached to each sample for the mackerel.

Improvement to the data sampling program:

- Get an overview of the total landings by country, stock and harbor to estimate how many percent of the landings are covered by the selected harbours.
- Conduct an analysis of the length distribution in the mackerel and herring samples to see how many individuals are needed for a length measurement.