



Naturhistoriska
riksmuseet

Manual for collection, storage and preparation of Starlings

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As a part of the program for environmental monitoring of contaminants in biota, young starlings are collected from a number of localities in Sweden. The Department of Contaminant Research at the Swedish Museum of Natural History is responsible for collecting starlings from some of these localities. The department also receives starlings from the other localities that are included in the program and are responsible for storage of all collected starlings in SESB. The department is also responsible for sampling starlings for contaminants analyses.

Collection

About twenty-five young starlings are collected from each locality. The young should be sampled as fledglings, which mean that on the day of sampling, they should be around three weeks old and are able to leave the nesting box.

The advantage of using young individuals instead of adults is that young have accumulated noxious substances from food received from the nearest surroundings of the nesting boxes. Thus the levels in their tissues represent the current pollution of the area.

One fledgling is taken from each nesting box. The fledgling is made unconscious by a light blow to the head and put to death by suffocation. - The tips of the thumb and forefinger are carefully stuck up under the wings on each side of the ribcage (*thorax*).

- A light but still sufficiently firm pressure with the fingers will lead to the rapid (within 20-30 seconds) suffocation of the bird. - The pressure should not be hard as to cause bleeding (noticeable in the beak).

Note that chemicals must not be used for killing the bird!

The bird is put in a thin polythene bag along with a label with notes on species, day of sampling, locality, number of young and eggs in the nest, and name of the collector. The text on the label should be possible to read through the polythene bag.

The material should as soon as possible be placed in a freezer or preferably on dry ice.

Equipment for collection

- plastic bags
- labels
- ladder
- freezer box
- dry ice

Transportation

During the time between reception of material from the field and final packing, the temperature of the material should be kept as low as possible. If the material is not transported by the collector it should be sent in the most rapid and most reliable way available, if possible cooled by dry ice.

Some specimens are stored at -80°C. These are to be used for biochemical studies or for analyses of non-persistent compounds. For these specimens extra care should be taken to keep the time and temperature for transportation as low as possible.

Storage

When the starlings arrives at the laboratory an initial inspection and examination is done. Each specimen is given an individual acquisition number and an acquisition form for each bird is prepared. Before the starlings are stored whole in the SESB, their body weight is noted on respective acquisition form.

Each starling is kept in an individual, labelled plastic bag. All specimens from one location are placed in a laminate bag. The collection bag from each location should contain a label for identification with acquisition number, species and locality. The bag is sealed in a chamber vacuum machine.

Material that is left after preparation for chemical analysis is stored in the SESB. Pack tissue and organs separately in aluminum foil and put them in a labeled, laminated plastic bags, one for each bird. The bag is hermetically sealed. Pack all samples from the same locality together in a laminate plastic bag, labeled with locality, content and identification number. The bag is sealed in a chamber vacuum machine.

Equipment for storage

- plastic bags
- aluminium foil
- labels
- laminate bag

Preparation

All preparation of material is made easiest if the material is lightly thawed but still frozen. In that state the tissues are firm and samples or organs can be cut out and handled with forceps.

Muscle

The skin is opened by a ventral cut along the breastbone. The breast muscles are uncovered by pulling the skin sides apart and a sample is extracted. To get a sufficient amount of tissue for several analyses both breast muscles are extracted. Weight of muscle sample is noted.

Liver

The abdomen is opened and *sternum* is bent upwards. The liver is uncovered using a scalpel, and forceps and taken out. The gall-bladder is separated from the liver. Weight of the liver without gall-bladder is noted.

Kidney

The abdomen is opened (see "liver," above). The kidneys are uncovered by taking out the intestines. Both kidneys are removed and weighed.

In connection to the preparation of kidneys, the sex of the specimen is determined.

Equipment for preparation

- scale
- scalpel (stainless)
- forceps (stainless)
- plastic bags
- aluminium foil
- laboratory paper