
EXPERIMENT 9 PACKING OF SICK OR DEAD BIRDS AND OTHER MATERIALS FOR EXAMINATION

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9.1 INTRODUCTION

Many diseases in poultry produce similar changes when observed externally; we call these externally observable changes as “Symptoms”. Further, each disease produces certain changes internally which we refer to as “Lesions”; but, again many diseases do produce similar lesions. Therefore, on many occasions we may have to resort to further investigation through laboratory examination. Hence, it is necessary to send sick birds, dead birds as well as some other material for laboratory examination to have a definite (confirmative) diagnosis of diseases. Therefore, sick birds, dead birds or other materials need to be properly packed and sent to the laboratory.

Objective

After performing this experiment, you will be able to:

- demonstrate the packing of sick, dead birds and other materials to be sent for a laboratory for confirmative diagnosis of disease.

9.2 EXPERIMENT

9.2.1 Principle

Sick birds, dead birds and other material should be carefully packed so that they reach the diagnostic laboratory in good condition to help conduct the required laboratory test(s) and arrive at a confirmative diagnosis. You must remember that dead birds/material collected quickly deteriorate and fail to help diagnosis if proper care is not taken.

9.2.2 Requirements

- Sick and dead birds
- Other materials like blood, impression smears, serum samples, tissue samples collected from live or dead birds

- Corrugated/thermocole boxes for packing
- Gloves, mask and cap for the person handling the material
- Sterile scissors, scalpel, spatula, knives etc., for performing necropsy/post-mortem (after death) examination.

9.2.3 Procedure

The procedures would be different in cases of live birds, dead birds and other materials.

(i) Sick Birds

- 1) Pick up all or representative sick birds (if number is very large) showing varied symptoms for sending to the laboratory.
- 2) Take corrugated boxes of appropriate size. Punch holes of appropriate size on all the four sides for ventilation.
- 3) Place the sick birds properly inside the box.
- 4) Seal the top and bottom of the box properly with tapes.
- 5) Enclose complete flock history and your observations along with the consignment.

(ii) Dead Birds

- 1) Always send recently died birds.
- 2) If the distance to the laboratory is not much, then the birds can be properly packed in ordinary corrugated boxes.
- 3) If the distance is long and in hot climate, send the birds in thermocole boxes with ice or ice packs.
- 4) The number of birds to be sent should depend on the symptoms before death and wherever possible, it is preferable to send all the birds.
- 5) If similar symptoms are observed in all birds, about 10% birds of the total mortality should be sent.
- 6) If the symptoms are varying, send about 50% of dead birds. Weak, emaciated, lame, putrefied or decomposed birds need not be sent.
- 7) The boxes should be properly sealed.
- 8) It is important to record an accurate flock history to be sent along with the birds.

(iii) History Sheet

The history sheet both in case of sick and dead birds should provide the following information:

- 1) Location of the farm, type of the bird (broiler, chicks, grower, layer, breeder), age of the flock, number of birds in the flock, feed and water source, feed consumption, growth rate, production % (before and after the start of the problem), housing, lighting and litter condition.

- 2) Hatchery source, type of operation (breeder or commercial), feeding programme and feed formulation, complete vaccination history.
- 3) The date of first detection of the illness, severity of the illness, number of birds affected (morbidity), and number of birds died (mortality), medication history and response to medication.

(iv) Other Materials

When post-mortem is conducted at the farm by a veterinarian, some materials are to be sent to the laboratory for further examinations. The procedure for their collection, packing and sending is as follows:

(a) Organs and Tissues

- 1) With a sterilized scissors, cut the affected organ such that the cut part should have the affected part along with some normal organ.
- 2) Place the tissue in the clean, sterilized glass vial containing normal saline.
- 3) If the organ is to be sent for histopathological examination, add 10% formal saline to the vial.

(b) Blood

- 1) In a dead bird, sterilize the heart surface with hot spatula.
- 2) Collect the blood from right upper chamber or right lower chamber of heart with a sterilized syringe or a sterilized pasture pipette.
- 3) Transfer the blood to a sterilized glass vial having some anticoagulant to prevent the clotting of blood.
- 4) Collect the blood as early as possible after the death of the bird.
- 5) Dispatch the vial in ice and saw dust.
- 6) In a live bird, collect blood either from heart or from wing vein depending upon the age of the bird.
- 7) For collecting blood from heart of a live bird, an expert is required. However, from the wing vein, collection of blood is as follows:
 - locate the wing vein running across the first joint of the wing in the underside of the wing;
 - remove any small feathers present in the wing by pulling;
 - sterilize the area by applying spirit which also helps in easy observation of the vein;
 - pierce the skin with the needle of a sterile syringe just adjacent to the vein and then gently push the tip of the needle into the vein; blood freely starts flowing into the syringe;
 - after collecting the desired quantity, withdraw the needle, press and hold the punctured spot with a cotton swab for sometime to help prevent further bleeding. Size of the needle and quantity of blood to be collected depends on the disease suspected and laboratory tests planned to be undertaken.

(c) Serum

- 1) Collect the blood in sterilized syringe as described above.
- 2) Transfer to sterilized tubes placed in slanting position and allow it to clot.
- 3) After sometime, transfer the serum collected by using a sterilized pasture pipette into another sterilized glass vial.
- 4) Add Merthiolate 1: 1000 strength as a preservative.
- 5) Dispatch the glass vial in the same way as for blood.
- 6) If serum is to be transported for a long distance, send it on ice.
- 7) It should never be exposed to direct sunlight.

(d) Pus and Nasal Discharge

- 1) Collect the pus or nasal discharge directly on sterilized cotton swab.
- 2) Place the swab with sample into sterilised glass vial.
- 3) Dispatch on ice.

(e) Blood Smear

- 1) Place a small drop of blood about 2.5 cm from one end of the slide and hold it horizontally.
- 2) Using edge of another slide, touch the drop so that blood moves across the horizontal slide along the edge of the slide touching it.
- 3) Move the top slide quickly and smoothly to get a uniform thin blood smear.
- 4) Place the slides in slide box.
- 5) Pack properly and dispatch.

(f) Impression slide

- 1) Cut part of the organ whose impression smear is required.
- 2) Blot the cut edge with a filter paper.
- 3) Press a clean slide against the cut part of the organ/tissue.
- 4) Dry the slides and fix in methyl alcohol.
- 5) Place the slides in slide box.
- 6) Pack properly and dispatch.

(g) Pieces of intestines and their contents

- 1) Cut the intestine from both sides of the affected area.
- 2) Tie the ends with a clean thread.
- 3) Put the piece in an open mouthed glass bottle.
- 4) Dispatch them in ice.

9.2.4 Observations

- i) Will you collect nasal discharge directly on cotton
(Sterilized/Non-sterilized)
- ii) Name the type of box for sending dead birds during summer?
..... (Thermocole with ice/Card board box)
- iii) Name the chemical used as preservative of serum
(Dettol/Merthiolate)
- iv) Name the chemical for fixing of slide (Ethyl alcohol/Methyl alcohol)

Observe the procedure of packing of sick or dead birds and other materials demonstrated by an expert and note down the procedure in your own language.

9.3 PRECAUTIONS

- Along with dead birds, always send some sick birds also.
- Dispatch the samples as early as possible to the laboratory after collection.
- Send sick and dead birds to the laboratory along with complete history. This gives clue for confirmative diagnosis.
- Take utmost care to prevent contamination of the material to be sent for laboratory tests both while collection as well as packing and dispatch.
- Some of the diseases can spread to humans and other animals; therefore, take necessary precautions by wearing protective gloves, mask and cap while on necropsy, handling and dispatch of suspected infective material.
- Dispose the left-overs after post-mortem examination taking precautions as per norms.