SAMPLING

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Sampling

- To identify the disease, case history and clinical signs give tentative diagnosis so.

- The exact confirmatory diagnosis can be determined by lab. Diagnostic method which depends on proper samples.

General guideline taken in consideration during samples collection

1. Samples should be collected from **clinical cases** at different stages of the diseases, **in contact animals** and **recently dead** animals.
2. Samples should be taken from affected site from **edge of lesion** include some **normal** macroscopic tissue
3. Sample must be collected as **aseptically** as possible before the administration of any form of **treatment.**

4. Sample should be submitted **individual** in separate clean sterile container that are clearly labeled by:

- **Tissue** enclosed or type of sample.
- **Full description** of animal, date of collection
- **Disease suspected**.
- Type of desire **examination**

5. Sample must be send **as quickly as possible** to lab if delayed must be kept in refrigerator **at 4 C**

1. Abortion cases

A) Aborted fetus

- Whole fetus should be submitted if possible,
- If not **fetal abomasal** content (**brucellosis**), or part from organ which give characteristic lesions.

B) Aborted Dam

- Piece from placenta or one or more cotyledon in cattle or sheep
- Uterine & vaginal discharges

If ***leptospira*** abortion,

- take **20 ml of midstream of urine** from dam preserved in 1.5ml of formalin 10%
- Paired serum samples at acute and convalescent stage from dam
- **Placenta, fetal membranes, Lung, Liver** in formalin 10% for **histopathology**

If ***Salmonella abortus*** abortion,

gall bladder & mesenteric Ln., feces, blood & serum.

2. Blood sample

Sample collected aseptically in different form as:

1. **Whole blood**; with anticoagulant for hematological ex. Or for cultivation
2. **Blood smear**; for piroplasmosis, pasterulla
3. **serum**; Blood without anticoagulant for serological examination.

Technique

- Shaved the area over the vein
- Clean thoroughly with a detergent
- Dried and disinfected by ethyl alcohol 70%
- Collected blood sample by sharp pore needle according to size of animal

3. Milk sample

- Milk sample should be collected from cow **as soon as possible** and before administration either systemic or local treatment
- Washing the whole udder by **warm water, soap & dryness** by clean towel
- Touch teat orifice with **alcohol 70%**
- Discard **first** stream of milk
- Collect the **next stream** in clean sterile narrow neck bottle
- Sample send to lab **as soon as possible** especially in hot weather or preserved by add **1 part boric acid 5%** :10 part milk to prevent souring or clotting of milk

4. Pus sample

It take from abscess in course of specific diseases such as

- Strangles in horse
- Edematous skin disease in buffalo, UL in equine
- Caseous lymphadenitis in sheep

Open abscess; sample must be collect under complete aseptic condition

- Wash by warm water and soap, dryness and touch with **alcohol 70%**
- Pus smear for staining
- Pus swab for cultivation

Closed abscess

- Wash by warm water and soap, dryness and touch with alcohol 70%
- Puncture by **large pore needle** and collected the sample in sterile dry

5. Skin sample

- It used for diagnosis of some disease such as **mange, Ring worm**
- Pinch fold of skin between **healthy and affected** part using index and thumb finger
- Scraping **the crest of the fold** using sharp scalpel **at one direction** to avoid destruction of etiological agent till oozing of the blood
- Empty the scrape in **centrifuge tube** or Petri dish then add **sod. Or potassium** hydroxide 10%
- Gentle **heating** but not boiling then wait until cooling
- Take few drop on slide and examine **microscopically**

- In case of ring worm taken plucked hair because the causative agent present as basal portion.

6. Urine sample

- It used for **urine analysis**, **culture** or for available bacterial **count**
- Urine sample collect by **catheter** **in** **horse, buffaloes, cow, ewe dog and cat.**
- In **other animals** collected by **owner** by advising him to collect sample in **first distrusting at morning.**

7. Saliva and sputum

Saliva;

- mainly in suspicion of some **viral disease** such as **rabies, FMD**
- Saliva collected in clean sterile bottle with **glycerin buffer 50%**

Sputum;

- in case of pneumonia, TB, parasitic infestation of the lung
- Sputum collected by sputum cap or from the wall in front of animal
- If animal have persistent cough, held the sheet of paper in front of the animal

8. Internal organs

- Following the PM examination, take parts from different **organs give characteristic lesions** either for **microbiological** or **histopathological** examination

- In suspicion of **septicemic disease** take all **paranchymatus organs**
- **Clostridial disease**, take **intestinal content**

9. Viral specimen

- Sample collect for **viral isolation** such as **feces, skin scraping, body fluid** and **whole blood** with anticoagulant

- **Histopathology** ex, can be carried on **tissue**

- **Serology** ex, **paired serum samples** at acute, convalescent stage with 3-4 week interval

10. Fecal sample

For bacteriological examination

- It must be collected directly without contamination by sterile cotton swab from rectum
- For isolation of ***enterobacteracae***

For parasitological examination

- Direct from **rectum** using disposal gloves
- Or from fresh **feces** on the ground under the animals
- In **dog and cat**, using **thermometer** of glass rod
- Sample can be present **24 h outside** refrigerator without hatching or disintegration
- If sample stay **more than 24 h**, must be kept in **refrigerator at 4 C for 48** h

Samples taken from dead animals

- It must be taken **immediately after death** from **stomach + 15 feet** of intestine ligate and send to lab
- Evacuate the stomach by **longitudinal incision in stomach** and evacuate the content
- Open **the tape water to remove** some of adhering parasites to internal surface