GUIDELINES FOR SUBMISSION OF SEROLOGY SPECIMENS

Serum

1. Collect approximately 5 ml of blood via sterile syringe. Separation of the clot can be facilitated by tilting the syringe at an approximate 45-degree angle for 1-2 hours for blood to clot at room temperature protected from extremes of heat and cold.
2. Collect approximately 0.5-1 ml of serum into sterile storage tube and transport to the laboratory in a cooler container.

Swabs

1. Submit dry swabs in sterile containers are acceptable.

Egg Albumin

1. Collect approximately 1 ml of egg albumin, keep it in cooler container.

GUIDELINES FOR SUBMISSION OF MICROBIOLOGY SPECIMENS

General submission guidelines

1. Specimens should be as fresh as possible.
2. For certain specimens such as clinical and pathological specimens, take from the edge of lesion, and to include adjacent and accompanying tissue, if possible.
3. Ensure the collection of specimens is done in aseptic manner.
4. Collect clinical specimens prior to antibiotic treatment.
5. Submit generous portions of tissue or several milliliters of liquid.
6. Maintain the specimens at proper storage temperature.
7. Submit specimens in clearly labeled, airtight, sterile containers.

Tissues and Organs

1. Collect as soon as possible after death. Use a heated scalpel blade to sear the surface of the organ (e.g., lung or liver), slit open and insert a sterile cotton swab.
2. Rotate the swab, remove and place into transport medium. Alternatively, submit whole tissues (approx. 4 cm^3) unfixed in sterile or clean containers.

Swabs

2. Submit swab in transport medium (bacteria on dry swabs desiccate rapidly).
3. If the specimen is submitted to the laboratory within 3 hours, dry swabs in sterile containers are acceptable.

Faeces

1. Collect fresh faeces from the rectum or cloaca using a sterile or clean container.

Environmental samples (e.g.: water, soil)

1. Collect representative samples in appropriate sterile or clean containers.
2. Send a minimum 250 ml of water sample or 100 g of soil sample.

Feather pulp

1. Send feather pulp in suitable clean container.

Abscess Material

1. Collect approximately 3 ml of pus along with scrapings from the abscess wall if practicable and submit in a sterile container. Material from recently formed abscesses is preferred.

GUIDELINES FOR SUBMISSION OF MOLECULAR SPECIMENS

Collection of Samples

One of the important factors that determine the successful detection of pathogen-specific PCR product is the types of samples sent for analysis. Specimens should be as fresh as possible. Table 1 shows the types of tissue samples that are recommended for analysis by molecular testing.

Table 1: Tissue/swab samples recommended for identification of avian and swine pathogen

NO.	TYPE OF DISEASE/ VIRUS	SAMPLE REQUIRED
1	• Influenza A (AI) • Avian Influenza H5 (AIH5) • Avian Influenza H7 (AIH7) • Avian Influenza H9 (AIH9)	Lung, trachea, intestine, swab (trachea, oropharyngeal and cloaca)
2	• Infectious Bronchitis Virus (IBV)	Lung, trachea, kidney, reproductive tract, swab (trachea)
3	• Newcastle Disease Virus (NDV)	Lung, trachea, cecal tonsil, brain, kidney, intestine, proventriculus, swab (trachea)
4	• Infectious Bursal Disease Virus (IBDV)	Bursa
5	• Avian Reovirus (REO)	Liver, spleen, leg tendon/joint fluid samples
6	• *Mycoplasma gallisepticum* (MG)	Tracheal tissue/swab, hock joint fluid, swab (choanal)
7	• *Mycoplasma synoviae* (MS)	Tracheal tissue/swab, hock joint fluid, swab (choanal)
8	• Fowl Adenovirus (IBH)	Liver, heart, gizzard
9	• Fowl Adenovirus 8b (IBH 8b)	Liver, spleen, kidney, swab (throat, cloaca)
10	• Marek's Disease Virus (MDV)	Feather tip, spleen
11	• Avian Metapneumovirus (aMPV)	Trachea, lung, swab (trachea)
12	• Avian Leukemia Virus Subgroup J (ALV-J)	Serum
13	• *Salmonella* spp. (SAL)	Swab: environmental, egg shell, fecal, cloacal Animal feeds, food products, egg mixture
14	• Porcine Circovirus Type 2 (PCV2)	Serum, lymph node or tonsil tissue
15	• Classical Swine Fever Virus (CSFV)	Whole blood, lymph node, spleen, or tonsillar tissue samples

16	• Actinobacillus pleuropneumonia (APP)	Swab (nasal, lung)
17	• Porcine reproductive and respiratory syndrome virus (PRRSV)	Serum, lung tissue, semen, saliva
18	• Swine influenza virus (Type A)	Saliva/oral fluids
19	• Food and mouth disease (FMD)	Saliva/oral fluids

Tissues and Organs

1. Send specimens in sealable plastic bags.
2. Collect specimen from clinically ill birds in a pool of 3 to 5 samples from different birds per plastic bag.
3. Label the specimen clearly and send for testing in a cooler container.
4. If the samples require storage, store at –20°C or below.
5. If possible, do not mix specimens from different organs in the same plastic bag.
6. Avoid contamination of the specimens.

Environmental samples (e.g.: water)

1. Collect representative samples in appropriate sterile or clean containers.
2. Send a minimum 250 ml of water sample.

Feather pulp

1. Send feather pulp in suitable clean container.

Swabs

1. Submit swab in suitable transport medium.
2. If the specimen is submitted to the laboratory within 3 hours, dry swabs in sterile containers are acceptable.

Serum

1. Collect approximately 5 ml of blood. Allow blood to clot at room temperature.
2. Collect approximately 1 ml of serum into sterile storage tube and transport to the laboratory in a cooler container.

FTA Cards

1. Apply the sample (liquid/pressed tissue/swab) firmly onto the FTA card, air dry at room temperature. Label the FTA card with appropriate sample identification.
2. Samples on FTA card can be store and send to laboratory at room temperature storage.
3. Always wear gloves to avoid contamination of FTA card.

GUIDELINES FOR SUBMISSION OF MYCOTOXIN SPECIMENS

Animal Feed

1. Collect representative samples in appropriate sterile or clean containers.
2. Send a minimum 100g of feed sample.

GUIDELINES FOR STORAGE OF SPECIMENS

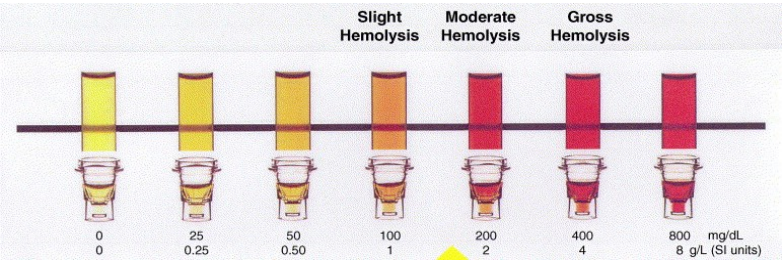
DEPARTMENT	SPECIMEN TYPE	STORAGE CONDITION
Serology	Serum	• For short term usage, keep chill (4°C - 8°C) • For long term usage, store at –20°C or below
Microbiology	Tissues & Organs	Keep chilled (4°C - 8°C)
	Swab	Keep chilled (4°C - 8°C)
	Faeces	Keep chilled (4°C - 8°C)
	Environmental samples (e.g.: water, soil)	Keep chilled (4°C - 8°C)
	Feed	Keep chilled (4°C - 8°C)
	Feather pulp	Keep chilled (4°C - 8°C)
	Abscess material	Keep chilled (4°C - 8°C)
	Egg	Room temperature
Molecular	Tissues & Organs	Store at –20°C or below
	Environmental samples (e.g.: water)	Store at –20°C or below
	Feather pulp	Store at –20°C or below
	Swab	Store at –20°C or below
	Serum	Store at –20°C or below
	Whole blood in EDTA	Keep chilled (4°C - 8°C). Do not freeze.
	FTA Card	Keep chilled (4°C - 8°C)
	Egg	Keep chilled (4°C - 8°C)
	Liquid	Store at –20°C or below
	Fluff	Store at –20°C or below
	Feed	Store at –20°C or below

SAMPLES REJECTION

Test	Specimen Type	Minimal Volume / Weight Required for Testing	Rejection Criteria
Serology (Elisa)	Serum	50 ul	• Mislabelled (ID on specimen and request form do not match) • Unlabelled • Specimen collected in incorrect tube type • Insufficient quantity for testing • Haemolysed & Lipemic (cloudy) (serum sample) • Damaged, rotten, contaminated, or integrity questioned specimen
	Swab	1 swab/sample	
	Egg Albumin	Whole egg	
Serology (HI)	Serum	100 ul	
Molecular	Organ / Tissue	2 g	
	Blood / Liquid	0.5 ml	
	Feed	100 g	
Mycotoxin	Feed	100 g	
Microbiology	Feed	100 g	
	Organ / Tissue	10 g	
	Water	250 ml	

Serum

1. Haemolysed, contaminated serum is not acceptable for testing (however, low to moderate haemolysis does not in general affect the ELISA performance).
2. Frequent causes of haemolysed serum and plasma include exposure to excessive temperatures or time delays prior to separating sera from the red blood cells, blood collection using a needle of too small gauge, or failure to remove the needle when transferring the blood sample from the collection syringe.



Tissue & Organ

1. Lysed, rotten, contaminated tissue and organ is not acceptable for testing.

Swab

1. Contaminated swab is not acceptable for testing.

SAMPLES FOR RETENTION

1. Samples should be retained for the appropriate length of time post-analysis. Effective on 1st January 2024, the retention period for samples sent to the Sedingin Embun laboratory is as follows:
    - Samples for Serology- retained for 1 month.
    - Samples for Molecular/PCR testing - retained for 1 month.
    - Samples for Mycotoxin testing – retained for 1 month.
    - Raw sample for Microbiology testing – disposed immediately post-analysis.
    - Positive culture for Microbiology testing – retained for 1 month.

2. If not specified by the customers, samples will be disposed of after retention time. Samples will be collected and disposed of by a registered waste collector for incineration once on a monthly basis.

Disclaimer:

- Laboratory will be only entertaining the laboratory services request that accompany with the **Sample Submission and Supplies Requisition Form.**
- The submitter should **complete all the information required** in the Sample Submission and Supplies Requisition Form. The form must be endorsed by the submitter.
- We seek cooperation from the client to submit different Sample Submission and Supplies Requisition Form if they want to request for mix of laboratory services which in different department and/or with different turnaround time (TAT).
- Label the samples clearly. Client can keep the samples (e.g., organ) in freezer to preserve it if they cannot send to laboratory within office hour.
- For samples that have been compromised (e.g., damaged, contaminated, or integrity questioned), the client is notified verbally or electronically by management of the issue and consulted on the course of action to take. Any abnormality or deviation from standard conditions of the samples shall be recorded in **Non-Compliance Sample Request Form** and submitter shall be informed. The discussion and outcome shall be recorded. The sample is stored until further instructions are provided by laboratory management and consensus from the client. Laboratory staff are responsible to for adhering to sample rejection and acceptance policies.
- Please contact laboratory staff for more enquiries.

REFERENCES

1) Chapter 1.1.2 Collection, Submission and Storage of Diagnostic Specimens. WOAH Terrestrial Manual 2018.
2) Pockit Premix Reagent User Manual. GeneReach Biotechnology Corporation (latest edition).
3) SC 1.6 Specific Criteria for Accreditation in the Field of Veterinary Testing. Issue 2, 30 April 2020. Standards Malaysia.
4) Guidelines for Specimens Submission. Veterinary Laboratory Services Unit, Faculty of Veterinary Medicine, Universiti Putra Malaysia 9 October 2023.