

A standard approach to poultry disease investigation



This resource is a guide for veterinarians when investigating disease in poultry.

It covers base samples to be collected during any poultry disease investigation and specific additional samples to be collected according to the disease syndrome or suspected disease.

For the collection of post-mortem samples, please read this guide in conjunction with the [chicken necropsy guide](#).

For any questions about sampling, please contact your local Department of Primary Industries and Regional Development, Western Australia ([DPIRD](#)) [Field Veterinary Officer](#) or the [Animal Health Laboratories](#).

If [avian influenza](#) or exotic [Newcastle disease](#) are suspected, report the incident as soon as possible to your local [DPIRD Field Veterinary Officer](#) or call the emergency animal disease hotline on **1800 675 888**. DAFWA will investigate these outbreaks.

In other incidents that meet the case definition for Newcastle disease ([see Code of practice: managing the risk of Newcastle disease in Western Australia](#)), report the incident and submit the samples specified in the [Newcastle disease sample collection webpage](#).

Base sample set for poultry

Collect the following samples as part of any disease investigation in poultry. Transport samples as soon as possible to the laboratory at 4°C. Do not freeze samples.

The number of birds to sample depends on the context of the disease investigation and how many birds are available for post-mortem sampling.

Ante-mortem

- Blood
 - 2 millilitres of blood from each bird (if possible), in a serum blood tube (red top)
 - If possible, hold at room temperature for 30 minutes–2 hours before refrigeration
- Swabs
 - cloacal swab in viral transport medium (VTM).
 - choanal (oral) swab in VT
- Faeces
 - fresh sample in a plain sample container.

For details on how to collect a cloacal and choanal swab, please see the [Newcastle disease sample collection webpage](#).

Post-mortem

- Swabs
 - cloacal swab in VTM
 - choanal (oral) swab in VTM.
- Gut content
 - faeces or cloacal/colonic content.
- Fresh tissue samples in separate sterile sample containers
 - brain
 - lung
 - liver
 - spleen
 - bursa (if present)
 - swabs of any gross lesions in Amies transport medium.
- Fixed tissue samples (pool all samples in a specimen container in formalin with 10:1 formalin:tissue ratio)
 - brain
 - lung
 - liver
 - spleen
 - kidney
 - heart
 - proventriculus
 - ventriculus
 - duodenum
 - pancreas
 - jejunum
 - ileum
 - colon
 - caecae
 - bursa (if present)
 - any gross lesion.

Additional samples according to disease syndrome

For each of the following disease syndromes, the associated samples should be collected in addition to the base sample set. This will give the laboratory the best opportunity to diagnose the disease condition.

Note that Amies transport medium and VTM should be routinely stocked by most veterinary clinics. Mycoplasma media is less commonly stocked but can be sourced through your [DPIRD Field Veterinary Officer](#) or the [Animal Health Laboratories](#).

Early chick mortality

- yolk sac swab in Amies transport medium
- coelomic swab in Amies transport medium
- consider chilled whole chicks or collect fresh samples and then fix the whole chick and submit whole.

Diarrhoea

- impression smears of intestine
- intestinal swabs in Amies transport medium.

Illthrift

- feed samples in a plain sample container.

Anaemia

- blood film
- fixed tibia, cracked or halved (bone marrow)
- ectoparasites.

Respiratory disease

- Ante-mortem
 - oculonasal discharge swab in Amies transport medium.
- Post-mortem
 - oculonasal discharge or sinus exudate swab in Amies transport medium (+/- mycoplasma media)
 - pulmonary/tracheal parasites in a plain sample container
 - fresh and fixed trachea
 - fresh and fixed nasal sinus
 - fixed air sac
 - fresh tracheal exudate in a plain sample container.

Ocular discharge

- Ante-mortem
 - oculonasal discharge swab in Amies transport medium (+/- mycoplasma media)
- Post-mortem
 - oculonasal discharge or sinus exudate swab in Amies transport medium
 - fresh and fixed trachea
 - fresh and fixed nasal sinus.

Leg weakness and paralysis

- feed samples in a plain sample container
- ventricular/intestinal content in a plain sample container
- fresh and fixed tibia, tendon and skeletal muscle
- fixed sciatic nerve (can be submitted with muscle)
- fixed brachial plexus
- fixed thoracolumbar vertebrae/ spinal column.

Nervous signs

- feed samples in a plain sample container
- ventricular/intestinal content in a plain sample container
- fresh and fixed tibia, tendon and muscle
- fixed sciatic nerve
- fixed brachial plexus
- fixed thoracolumbar vertebrae/spinal column.

Poor feathering/skin conditions

- ectoparasites
- skin scrapes
- fixed skin
- fresh skin or skin swabs in Amies transport medium.

Sudden death

- feed samples in a plain sample container
- ventricular/intestinal content in a plain sample container.

Egg drop

- feed samples in a plain sample container.

Facial swelling

- fixed nasal sinus
- fresh nasal sinus and/or sinus swabs in Amies (+/- mycoplasma media)
- subcutaneous swabs in Amies transport medium.

All Page Links

[1] <https://www.agric.wa.gov.au/livestock-biosecurity/chicken-necropsy-guide>

[2] https://www.agric.wa.gov.au/livestock-biosecurity/animal-biosecurity-welfare-program-contacts-western-australia?page=0%2C4#smartpaging_toc_p4_s1_h2
[3] https://www.agric.wa.gov.au/livestock-biosecurity/animal-biosecurity-welfare-program-contacts-western-australia?page=0%2C5#smartpaging_toc_p5_s0_h2
[4] <https://www.agric.wa.gov.au/livestock-biosecurity/avian-influenza>
[5] <https://www.agric.wa.gov.au/livestock-biosecurity/newcastle-disease>
[6] <https://www.agric.wa.gov.au/livestock-biosecurity/code-practice-managing-risk-newcastle-disease-western-australia>
[7] <https://www.agric.wa.gov.au/livestock-biosecurity/newcastle-disease-sample-collection-western-australia>
[8] <https://www.agric.wa.gov.au/livestock-biosecurity/newcastle-disease-information-commercial-poultry-producers>
[9] <https://www.agric.wa.gov.au/livestock-biosecurity/dpird-diagnostics-and-laboratory-services-ddls-animal-pathology>
[10] <https://www.agric.wa.gov.au/livestock-biosecurity/sampling-and-post-mortem-resources-veterinarians>
[11] <https://www.agric.wa.gov.au/sites/gateway/files/Standard%20approach%20to%20poultry%20disease%20investigation%20printable.docx>

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