



## Tips for pet bird pathology submissions to the AHL

The Animal Health Laboratory has postmortem and histopathology services available for pet birds. These procedures are valuable in supporting the veterinarian's clinical evaluation. Samples submitted can include tissue biopsies, tissues, or the whole body of a deceased bird.

### Case Submission

If you have any questions regarding sample submission, please call the laboratory and ask to speak to one of our avian pathologists: AHL Guelph (Phone 519-824-4120 ext. 54530) or AHL Kemptville (Phone 613-258-8320).

### Euthanasia

The method of euthanasia can potentially create tissue artefact and limit histologic evaluation. KCl is a recommended method of euthanasia that will preserve tissues for histologic evaluation. See references below\*.

### Biopsies

If a feather abnormality is being investigated, it is important to submit a sample of skin that includes a pulp feather. Sending a feather alone does not provide enough tissue to evaluate histologically.

### Postmortem

If a whole bird is to be submitted for a postmortem examination, as soon as the bird dies it should be soaked in cold water completely wetting feathers and skin, and then placed promptly in a refrigerator. This will offset the normal high body temperature that contributes to early postmortem change. If the body cannot be submitted shortly after death, or if there is a prolonged wait, the body can be frozen. Please note that freezing is not ideal as this will cause freeze/thaw artifacts in the tissues and make histologic evaluation more difficult. When shipping whole bodies to the AHL, please ship them on frozen ice packs as soon after death as possible.

If the bird is very small (e.g., finch), a veterinarian can do a partial postmortem by retracting the keel, taking a look for obvious gross lesions, taking samples of a few fresh tissues to hold frozen at their clinic (see list below), open the skull to expose the brain, and then place the entire bird in a formalin jar. (If necessary, the tail feathers and wings can be removed.) This allows us access to all the tissue we may need for histologic evaluation.

If a veterinarian decides to do a full postmortem, please submit a wide selection of tissues for histologic evaluation. More than one histology jar can be submitted per case in order to ensure the proper ratio of 10 parts formalin to 1-part tissue. As histologic results may indicate the need for additional testing (e.g., bacteriology, virology, toxicology) we suggest that you also save tissues frozen at the clinic (freeze in a chest freezer). Depending on gross postmortem findings, here are some suggestions for **tissues to submit for histology**:

- from all birds (minimum) - brain, heart, trachea, lung, liver, spleen, kidney, crop, proventriculus, ventriculus, pancreas and intestine, plus any other affected tissues detected at postmortem

In addition to the minimum:

- from juvenile birds – thymus, bursa, or cloaca with the bursa attached

- from birds that are suspicious for PDD (Avian Bornavirus, ABV) - crop, proventriculus/gizzard (whole, combined), 3-4 pieces of small intestine, adrenal glands (cranial portion of the kidney), and nervous system tissues as listed below
- from neurologic cases - brain (in situ), spinal cord (in situ) and peripheral nerves (brachial plexus, sciatic)

**Tissues to hold frozen at the clinic** (collect and package tissues separately in labelled bags):

- General: brain, liver, kidney, intestine and lung
- Specifically (preferred tissues \*):
  - Aves polyomavirus (AvPyV)/Beak & Feather Disease Virus (BFDV)/Psittacid Herpesvirus (PsHV) PCR  
**(psitpcr)**- kidney, spleen, liver, thymus, bursa
  - Avian Bornavirus (ABV) PCR (**abvrrt**) – brain\*, liver, crop, proventriculus, gizzard
  - Chlamydia PCR (**cppr**) – spleen\*, liver, kidney, feces

**\*Euthanasia**

1. Taylor M, Smith D. Potassium chloride as a euthanasia agent in psittacine birds when histopathologic assessment of tissues is desired. AHL Newsletter 2010; 14:26.
2. Raghav R, Taylor M, Guincho M, Smith D. Potassium chloride as a euthanasia agent in psittacine birds: Clinical aspects and consequences for histopathologic assessment. Can Vet J 2011; 52:303–306.