



EQUINE LABORATORY SAMPLE SUBMISSION

Top 10 ways to maximize your laboratory dollars

10. Information is Key

At the end of a long day, filling in a submission form completely is never high on a vet's priority list. However, if you can fill in these few items, your lab's ability to get you a good answer to your diagnostic question increases significantly.

Key point to fill in	Why it's important
Age of animal (even if approximate)	Bacterial samples are plated differently depending on the age of the animal (adult vs young, vs neonate)
Your differential diagnoses and main clinical complaint	Helps lab diagnosticians suggest additional testing and helps to direct us in what you are seeing clinically
Treatments used	Helps with interpretation of bacteriology results, helps with histology, some treatments affect blood results
Sample type	Different bacteriology plating techniques are used for different sample types
Recent submissions on the same animal (including case number if possible)	Helps the lab team correlate your results to previous samples.

If you could only do one thing...

We recently looked closer at the data for antimicrobial resistance in Ontario samples. The network was looking to provide a guide for practitioners for the most useful antimicrobials for common infectious conditions based on our local anti-biogram (respiratory infections, joint infection, etc.) similar to the Hagyard Laboratory guide. **Sadly, 88% + of samples submitted from horses in Ontario for bacteriology have no sample site provided.** This means that the practitioner has not indicated on their sample where the swab/fluid/tissue came from on the horse (incision, skin, uterine sample, etc.). Not providing this information has implications for the quality of your results: knowing the site of the sample allows the bacteriology team to plate samples appropriately. For example, fecal samples are plated differently than skin panels, as are ear, and reproductive samples; there are over 25 plating methods at AHL.

Young animal samples are often plated differently than adult animals. Further, providing the antibiotic treatments currently being used, and/or when the treatment was stopped, helps the bacteriology team interpret the significance of bacteria grown (opportunistic, primary pathogen, etc.).

Take home message: On culture samples, ALWAYS provide at a minimum: species, animal age, sample site, antibiotics used, success of antibiotics, and when treatment stopped before sample was taken.

9. Be Prepared

There is nothing more frustrating than hearing from the lab that you have sent the wrong sample, or submitted it in the wrong tube, etc. This usually happens when the patient is the farthest drive from the clinic, or is the most fractious 2- year-old in your practice. Take a few minutes while getting your supplies ready and double check your lab's User's Guide, or give the lab a quick call to ensure you have the right equipment on hand to collect the sample correctly.

8. Safe Arrival

When the lab receives your samples, remember that they have been packaged by you, set in a holding container, transported, and then received by the lab. It is wise to think of your samples in transit like luggage on an airline. If you've ever seen the airline staff heaving bags in a carefree manner, all the while your holiday memorabilia is being smashed, you know what we mean. Consult with our packaging videos [here](#), or consider a few small things:

- Wrap your blood tubes with a paper towel to prevent them breaking. Broken tubes happen more than you would think.
- Really tighten formalin jars, put them in a WhirlPak bag for transport and protect them from freezing (you can add 10% alcohol in the winter to help prevent this).
- Ensure your submission form is in a leak-proof bag.
- Pack more icepacks than you think are needed.

7. Don't skimp on the goods

On a postmortem or biopsy sample, it is crucial to take representative, adequate samples. Sample often, and have a checklist with you if you are doing a postmortem. It doesn't cost more to send in a complete set of organ samples. Consult AHL LabNotes for a free [checklist](#) and [best practices](#). Also see tip number 4 below for a note on fresh samples.

6. Pamper your pieces

When evaluating small samples such as biopsies, it is crucial to making a good diagnosis to see as much as possible. Pulling with forceps, macerating the tissue with rat-tooth forceps, or roughly squeezing with plain forceps can really decrease the odds of a diagnosis under the microscope. Handle tissues with the care of a newborn, or fragile egg. Again, avoid freezing.

5. Less is more- don't overstuff the histo jar

In a small histology jar, the old rule of 10 parts formalin to 1 part tissue should be strictly observed. What does this look like? In a small jar, tissues equaling no more than the size of 1 large grape should be in the jar. Remember that the pathologist will only be looking at 0.005 mm of each piece of tissue, so large pieces are not needed (brain excepted). Taking samples of multiple masses? Put them in separate jars labeled carefully to match your submission form/location of body map. If uncertain about submitting brain, please call and ask to speak to a client services veterinarian or pathologist first.

4. Fresh is Best

When your pathology team looks at samples you've sent in for histology, there may be additional questions. For example, a bacterial infection may be found. Perhaps some hyphae are found, or evidence of toxin. What drugs might work on this infection? What kind of toxin could it be? Saving fresh tissue allows additional testing like culture/susceptibility, toxicology screen etc. There is no additional cost to send WhirlPaks of properly labeled fresh tissue to the lab with instructions to "HOLD" (make sure you label what organ/site it is from though). You can also save these samples in your own freezer and submit if needed.

3. Label like you mean it

Vets aren't known for their outstanding hand writing, but this is taken to the extreme on tiny tubes and submission forms. Make sure you print clearly, and label everything you send. Your lab unpacks hundreds of samples per day, and the goal is to process your sample as fast as possible to turn around results. Deciphering hieroglyphics, guessing which sample belongs with which unlabeled tube, or without a submission form slows the process down. In some cases, like EIA testing, poor/no labeling means we can't process the sample. Many labs, including AHL, have the option of digital submissions. **Our newly launched digital submission option allows submitting a form from the road, from any mobile device.**

2. Containers: the good, the bad, and the downright ugly

We've all been there; you drive to the far end of the practice area, and Trainer X asks for a test on a horse. Or you got home late from a call and didn't stock your truck before heading out. The right sample container isn't on hand, so you pop it in a readily available container. While this would make MacGyver really proud, it makes getting you good diagnostic results really hard. Culture samples submitted in Coke bottles, histology samples sent in Furacin jars, fecal samples sent in red top containers (they turn into poop-splotions due to the gas), formalin in a Ziploc bag with tissue floating like a carnival fish, or the worst, histology samples in a small mouthed water bottle are all things received in the past year. Some of these examples call into question sample integrity, and some are really unsafe for anyone handling the samples. Formalin-fixed tissue firms and expands, making it impossible to extract from water bottles. Leaking formalin jars are dangerous, and anything but a screw-top container can't be trusted not to leak. A note about WhirlPaks: they are superior to Ziplocs because they are actually leak proof, and more importantly, are sterile inside, a key factor when sending in possible bacteriology samples.

1. Words of Wisdom

If you aren't clear on the diagnosis, are questioning part of the conclusions, or just plain have questions, your lab is always willing to talk to you. The written report for you should be treated like a conversation starter unless there is a slam-dunk diagnosis.