



## Wednesday-Only *Salmonella* Rapid Surveillance for Equine Facilities

<http://ahdc.vet.cornell.edu/programs/salmonella>

- The Cornell AHDC now has a *Salmonella* Spp. environmental surveillance program for equine facilities with next-day result availability. Please contact us at [salmonella@cornell.edu](mailto:salmonella@cornell.edu) to register your facility for this testing program.
- Surveillance samples must be submitted (be in the lab) on Wednesday each week by 3 PM. Samples should be collected Tuesday and shipped overnight, or collected Wednesday morning and hand delivered to the lab.
- If not shipping directly to the lab, store samples at refrigeration temperature until they are packaged for shipping as directed. Samples must not be collected more than 5 days prior to expected delivery to the laboratory.
- Samples arriving on other days or after 3pm will be processed by routine *Salmonella* culture testing. If there is a need for expedited results on a different day, contact [salmonella@cornell.edu](mailto:salmonella@cornell.edu) to make STAT arrangements (additional fees will apply).
- A combination of enrichment culture and PCR will be performed for \$30 per sample.
- Screening results will be reported by 5pm on Thursday.
- PCR-positive samples will be further cultured in order to determine bacterial viability and positive cultures will be serogrouped. Culture, serogroup and serotype identification of *Salmonella* Sp isolated will incur an additional charge of \$30.00 per sample tested.
- A preliminary *Salmonella* culture report for PCR positive samples will be available in 48 hours. Serogroup results will be reported within 3-5 days.
- Antibiotic sensitivity testing is available if desired for an additional \$25.00 per isolate and the results will be reported within 3-5 days.

## Materials and Directions

### Materials required



Autoclaved dry/unscented Swiffer cloths or autoclaved 4x4 gauze pads



Evaporated skim/fat-free milk - any brand (NOT sweetened/condensed) and autoclaved opener



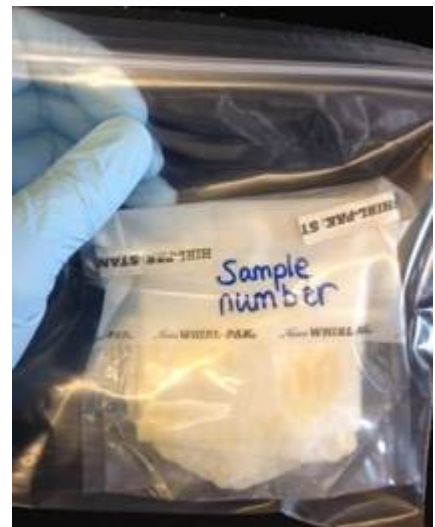
Sterile Whirl-pak bags or sterile collection jars, also zipper-lock bags for secondary containment



Exam gloves

### Directions for Collecting *Salmonella* Environmental Surveillance Samples

1. Map out areas that are to be tested on a diagram of the facility (see Floor Layout on page 3 for an example).
  - Surfaces should have been recently cleaned, disinfected, and be dry. Please see [AAEP Biosecurity Guidelines](#) for equine facility cleaning and disinfection instructions. Scroll down to Environmental Factors.
  - Areas of high horse traffic are important to sample. These areas may include stocks, stalls, foaling stalls, ICU areas, isolation/quarantine areas, etc. Sample only after the area has been cleaned and disinfected.
  - Some areas may require multiple swabs if there are large areas or various parts such as examination room floor, stocks, crash cart, etc.
  - Areas within the hospital such as offices and administrative areas can also be tested to determine the source of contamination in the animal care areas. Instruments such as ultrasound machines can also be swabbed.
  - In some cases, feed may be important to test and this should be discussed with the laboratory prior to sending samples.
  - Please do not swab inside of drains, since they cannot be disinfected well and do not provide clinically relevant information.
2. Put on exam gloves.
3. Open a pack of autoclaved gauze pads or swiffers and a can of evaporated skim milk. It is ideal to use an autoclaved can opener, otherwise be sure that the opener has been cleaned, disinfected, and dried.
4. Wipe areas to be tested i.e. corners of stall, stall walls, stall doors, stall bars, bucket hangers, buckets, etc. with a cloth or pad. One gauze swab or Swiffer pad can be used for multiple areas if you are not interested in finding out what specific area is contaminated.
5. Place each dirty cloth in a Whirlpak or sterile jar (include only one cloth per Whirlpak or jar) and label with permanent marker. Do not label beforehand to prevent incorrect labeling.

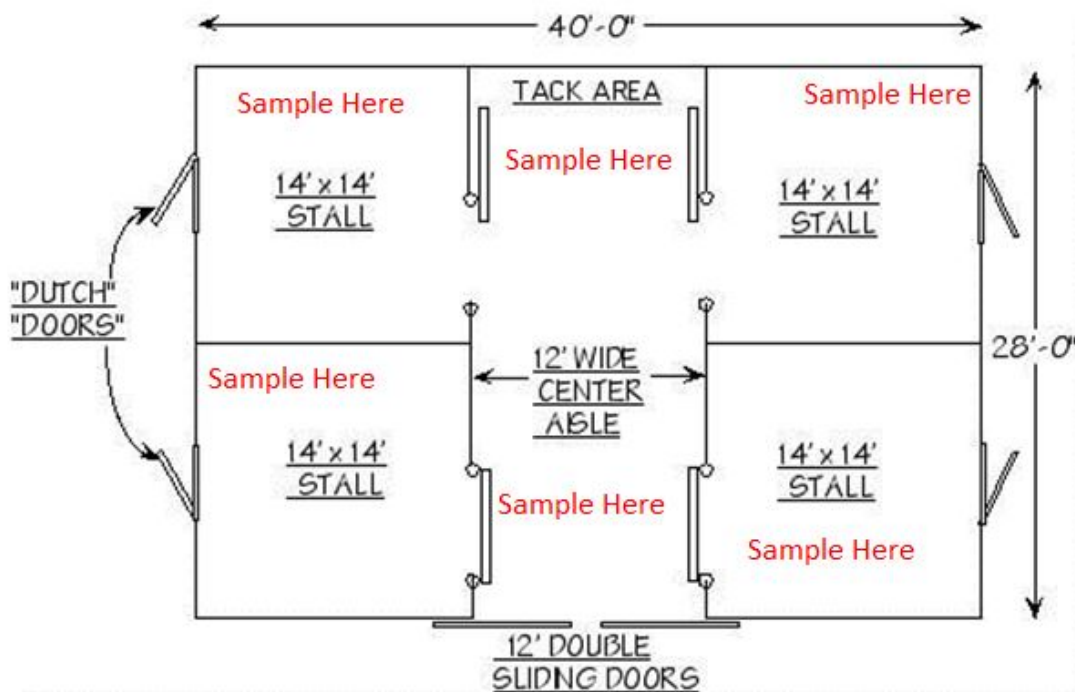


6. Pour in ~5cc of evaporated skim milk to just barely moisten the cloth (does not have to be saturated).
7. Place each Whirlpak or jar inside an individual zipper-lock bag, so that if there is leakage, cross-contamination of samples does not occur.
8. **Change gloves between swabs\*** and repeat for additional areas.
9. Complete the pre-filled [environmental \*Salmonella\* submission form](#). If you have more than 10 samples, please use the [Submission Continuation form](#).
10. **Ship** by overnight delivery on ice packs or [hand deliver](#) such that samples arrive by 3pm. We appreciate having samples as early in the day as possible. **Be sure to include the submission form with the shipment.**
11. If not shipping directly to the lab, store samples at refrigeration temperature until they are packaged for shipping as directed. Samples must not be collected more than 5 days prior to expected delivery to the laboratory.

\* PCR testing is very sensitive. It is easy to cross-contaminate samples if one sample is positive, unless careful attention is paid to changing gloves between handling samples and clean sample collection materials.

### **Example of Floor Layout at Equine Facility**

A copy of a map locating your testing areas is helpful.



## **Result Interpretation**

1. Screening by real-time PCR will be under “Molecular Diagnostics” in the report. Each sample result will be in one of the following formats:
  - **Negative** – No *Salmonella* Spp. DNA was detected, and no further testing of this sample is required.
  - **Positive** – *Salmonella* Spp. DNA was detected. A cycle threshold (C<sub>t</sub>) value between 1 and 35 will be provided, which is inversely correlated with the amount of target DNA present. This sample will automatically be cultured to determine bacterial viability, and if *Salmonella* is isolated, it will be serogrouped and serotyped.
  - **Suspect** – *Salmonella* Spp. DNA was detected at a low level, which is unlikely to correlate with the presence of viable bacteria and may not be repeatable. A cycle threshold (C<sub>t</sub>) value between 35 and 40 will be provided, which is inversely correlated with the amount of target DNA present. This sample will automatically be cultured, and if *Salmonella* is isolated, it will be serogrouped and serotyped.
  - **Inconclusive** – The sample contained a high level of inhibitory agents that interfered with the amplification reaction and no conclusions can be made regarding the presence or absence of *Salmonella* DNA in this sample. Please contact the lab ([salmonella@cornell.edu](mailto:salmonella@cornell.edu)) to discuss re-sampling.
2. Confirmatory culture results with serogroup and serotype identification will be provided for any positive or suspect samples. No additional charges will apply for serotyping. The serotyping will be done after referring the isolate to NVSL. Those results will be added to the report on a later date in approximately 2-4 weeks.
3. Antibiotic sensitivity (MIC) will be provided upon request for an additional fee.